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**DYNAMICS
OF SOCIAL STRUCTURE**



**POLAND'S
TRANSFORMATIVE YEARS
1988–2013**

Edited by
KAZIMIERZ M. SŁOMCZYŃSKI and **IRINA TOMESCU-DUBROW**
with
Danuta Życzyńska-Ciołek and **Ilona Wyszumłek**

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This volume stems from the project *Polish Panel Survey, POLPAN 1988–2013: Social Structure and Mobility* (hereafter, POLPAN Project), funded in 2012 by the (Polish) National Science Center under a four-year grant for the Institute of Philosophy and Sociology, Polish Academy of Sciences (IFiS PAN) – Maestro grant: 2011/02/A/HS6/00238. The project is led by Kazimierz M. Slomczynski, professor of sociology at IFiS PAN and professor emeritus at the Department of Sociology of The Ohio State University (OSU). Professor Slomczynski directs the POLPAN study from its very beginning in 1987–1988. A group of academics from IFiS PAN and the University of Warsaw served as co-principal investigators for the 2012-funded project. Krystyna Janicka, Zbigniew Sawiński, Irina Tomescu-Dubrow, Joshua K. Dubrow, Henryk Domański and Zbigniew Karpiński are from IFiS PAN. Anna Kiersztyn and Michał Bojanowski joined from the University of Warsaw. In addition, the project's core research team included Kinga Wysieńska-Di Carlo (IFiS PAN, currently at the Albert Shanker Institute in Washington, USA), Katarzyna Andrejuk (IFiS PAN), Ewa Jarosz (IFiS PAN, currently at the University of Oxford, UK), Anna Baczko-Dombi (IFiS PAN and University of Warsaw), Marta Kołczyńska (IFiS PAN, currently PhD candidate at OSU), Ilona Wysmulek, Olena Oleksiyenko, Danuta Życzyńska-Ciołek, Anna Franczak (PhD students at the Graduate School for Social Research, IFiS PAN), and Dorota Laskowska (IFiS PAN). In the last stage of the POLPAN Project, Anna Gromada and Nika Palaguta, both PhD students at the Graduate School for Social Research, IFiS PAN, joined the team as

research assistants. Marcin W. Zieliński (University of Warsaw and IFiS PAN) helped with archiving the data.

New data, collected through face-to-face interviews with 2,780 respondents, represent a key element of the POLPAN Project, and of the 1988–2013 POLPAN study in general. Diligent data entry, checks and data cleaning are essential steps of the survey lifecycle. High data quality would not have been possible without the meticulous and thoughtful work the Center of Sociological Research at IFiS PAN carried out. We extend special thanks to Franciszek Sztabiński (Head of the Center), Dorota Laszkowska, Anna Gumbrycht, and Teresa Żmijewska-Jędrzejczyk for their invaluable help.

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POLPAN Workshop 2012 [“Warsztaty POLPAN”], held in Jabłonna, Poland, October 7–9, 2012.

Workshop on Panel Design and Analysis. The workshop consisted of two parts: (1) “Panel Survey Design” at IFiS PAN, Warsaw, May 6-7, 2013, and (2) “Panel Analysis Program” at the Department of Sociology, The Ohio State University, USA, May 20–26, 2013.

The Polish Panel Survey POLPAN 1988–2013: A Cross-National Perspective involved an international conference followed by a 2-day workshop. Both were held in Warsaw, at the IFiS PAN, March 19–21 2014.

Longitudinal Survey Research: Methodological Challenges. The international event comprised the conference “The Present and Future of Longitudinal Cross-Sectional and Panel Survey Research” and the workshop “Harmonization of Survey and Non-Survey Data.” It was held at IFiS PAN, Warsaw, December 15–18, 2015.

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The session *Social and Political Change in Contemporary Poland: New Research from the Polish Panel Survey POLPAN* held at the *Midwest Slavic Conference 2015*, The Ohio State University, USA, March 13–15, 2015.

The session *Transformation and the Social Changes* held during the conference *Post-1945 Poland: Modernities, Transformations and Evolving Identities*, University of Oxford, GB, June 11–12, 2015.

Cross-National Studies: Interdisciplinary Research and Training Program (CONSIRT) was involved in organizing most POLPAN events. We thank the administrative staff of CONSIRT at both PAN and OSU.

In this volume, authors used, to a varying extent, work they published earlier in different academic outlets. The list of relevant sources is as follows:

Slomczynski, Kazimierz M., Irina Tomescu-Dubrow, and Zbigniew Sawiński. 2013. Modeling Occupational Careers for a Turbulent Economy: From Simple to Complex Approaches. *International Journal of Sociology* 42(4): 56–70.

Tomescu-Dubrow, Irina. 2015. International Experience and Labour Market Success: Analysing Panel Data from Poland. *Polish Sociological Review* 191(3): 259–276.

Mikucka, Małgorzata. 2013. The Transition to Insecurity: Employment Dynamics and Its Sociodemographic Differentiation. *International Journal of Sociology* 42(4): 71–99.

Kiersztyn, Anna. 2012. Employment Instability: A Dynamic Perspective. *International Journal of Sociology* 42(1): 6–30.

Kiersztyn, Anna. 2015. Solidarity Lost? Low Pay Persistence during the Post-Communist Transition in Poland. *Polish Sociological Review* 192(4): 493–509.

Domański, Henryk and Dariusz Przybysz. 2012. Friendship Patterns and Social Inequality. *International Journal of Sociology* 42(1): 31–59.

Kryszczuk, Maciej D. and Brian E. Green. 2015. Digital Divide in Poland: An Exploration of Some Sociological Impacts of Personal Computer Possession, Internet Use and PC Proficiency. *Management and Business Administration. Central Europe* 23(3): 2–18.

Karpiński, Zbigniew. 2012. Popular Assessments of Earnings in Various Occupations. *International Journal of Sociology* 42(1): 87–107.

Kolczyńska, Marta and Joseph J. Merry. 2016. Preferred Levels of Income Inequality in a Period of Systemic Change: Analysis of Data from the Polish Panel Survey, POLPAN 1988–2003. *Polish Sociological Review* 194(2): 171–189.

Kunovich, Robert M. 2013. Perceived Unemployment: The Sources and Consequences of Misperception. *International Journal of Sociology* 42(4): 100–123.

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The data from the POLPAN study are archived at the (Polish) Archive of Social Data (ADS) and at GESIS – Leibniz-Institute for the Social Sciences. Currently, over one thousand scholars searched the POLPAN data through the archiving institutions. We thank these institutions for their excellent work.

We invite readers to reach out to other POLPAN-related resources, including the volume *Social Inequality and the Life Course: Poland's Transformative Years, 1988–2013*, as well as the Project's website, polpan.org. On the website, we provide detailed information on the design and methodology of POLPAN, including questionnaires, in both Polish and English. Those interested can also receive access to the POLPAN data by contacting project administrators directly.

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INTRODUCTION: DYNAMICS OF SOCIAL STRUCTURE

This book is about dynamics of the social structure during Poland's transformative years, that is, from the end of the state socialist era to the near present. Social structure has three main dimensions. One, social structure is a system of large, interrelated, and relatively stable social groups that defines the main setting where fundamental social processes occur. Two, it is a normative pattern of behavior that sets limits on thought and action that cannot be changed by isolated individual actions (Rytina 1999: 1802). Three, it is both the system of social categories of the population and the institutional framework in which individuals and groups strive, conflict, and cooperate.

During social change, a given system of population categories, groups, and institutions can suddenly end; their existence during the transition era can be out-of-step with the new system. Dynamics of the social structure thus produce tensions and conflict between people, groups, and institutions. The idea of dynamic social structure implies that structures are both stable and changeable. The case of Central and Eastern Europe, with Poland as a prominent example, demonstrates that even during radical social transformations, the key social and economic phenomena of the social structure – such as labor markets and employment relations, and perceptions toward allocation of economic resources and justifiable levels of inequality, among other things – are major forces that continue to stratify society (albeit in new forms, duration, and magnitude).

Theories of societal transition must address the question of how specific segments of the social structure react to social change and how the social

structure influences this change. These theories depend on empirical evidence.

The Polish Panel Survey POLPAN, 1988–2013

The empirical foundation of this book stems from analyses of the Polish Panel Survey. POLPAN, as it is called, is a series of integrated surveys based on face-to-face interviews conducted every five years since 1988 with adult residents of Poland. By 2013, POLPAN has become the longest continuously run panel survey in Central and Eastern Europe that focuses on changes in social structure and has individuals as the units of observation. POLPAN offers the unique opportunity to assess the extent of *within-person* variation (i.e., the change within people over time) in relation to the *between-persons* variation (i.e., differences between people over time) for a period spanning 25 years. Thus, it provides the necessary dynamic framework to properly understand the functioning of social structure – that is, how individuals influence social structure while being influenced by it.

POLPAN integrates the rich tradition of Polish sociology (represented by Stanisław Ossowski, Julian Hochfeld, Jan Szczepański, and the research program of Włodzimierz Wesółowski) with the classical empirical research on social structure in Poland (by Włodzimierz Wesółowski, Adam Sarapata, Stefan Nowak, Stanisław Widerszpil, Jan Małanowski, and Michał Pohoski), discussed in Wesółowski and Słomczyński (1977). For the far-reaching analyses of POLPAN 1988–2013, the studies conducted in the 1970s and 1980s (by Krzysztof Zagórski, Marek Ziółkowski, Edmund Wnuk-Lipiński, and Jacek Wasilewski) are of great importance, as indicated in Tomescu-Dubrow et al. (forthcoming).

This theoretical base informs the key topics that POLPAN covers, including respondents' occupational careers, decisions on education and ongoing training, perceived sources of success in life, views on the role of the state and economic transformations, and many other aspects of Poles' adaptation to social change. With POLPAN, researchers can test hypotheses about the impact of social resources and psychological characteristics on individuals' economic biographies. Moreover, it is possible to examine how these very resources and attitudes impact peoples' achievements and their placement in the social structure.

The research design of, and the methodological changes to POLPAN over the years facilitate such analyses. In 1988, the initial survey was conducted on a national sample representing Poland’s adult population (aged 21–65), with N = 5,817. In 1993, this sample was randomly reduced to 2,500 individuals; 2,259 were successfully interviewed. In each of the consecutive five-year waves we aimed to reach the core panel. For an adequate age balance, since 1998 we have supplemented the core panel with additional subsamples of young cohorts. Thus, POLPAN 1998 collected information from 1,752 men and women interviewed in 1988 and 1993, as well as from a new sample of 383 people aged 21 to 30 in 1998. In 2003, panel respondents represented 87% (N = 1,474) of the full sample (N = 1,699), while the renewal sample equalled 225 respondents aged 21–25 years. POLPAN 2008 interviewed 1,805 respondents, of whom 581 were newly added individuals aged 21–25 years, while the rest (N = 1,224) participated in at least one previous panel wave. In 2013, the main stage of POLPAN covered 2,196 people, of whom 1,699 had participated as respondents in earlier waves, and 497 represented the young generation, aged 21 to 25. Following intensive efforts to reach all respondents who belonged to the original sample in 1988, we successfully increased the total number of individuals who participated in the last wave of POLPAN to 2,780, out of whom 2,283 had been previously interviewed at least once. Figure A below presents respondents’ histories of participation in the survey.

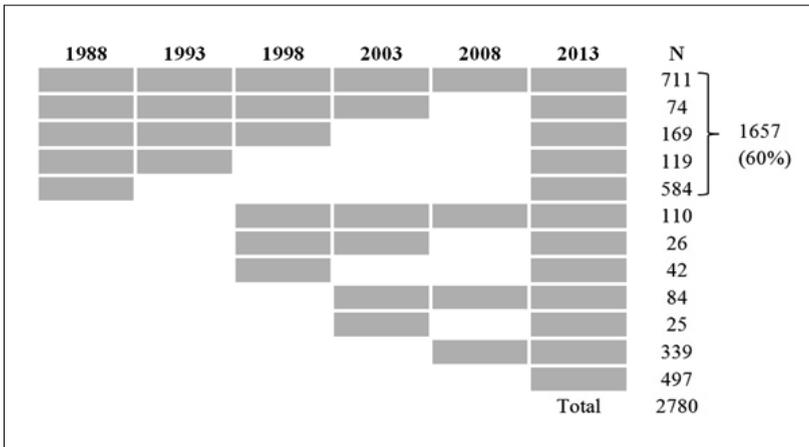


Figure A. POLPAN 2013: Histories of Participation in the Survey

To date, there is no other research worldwide, in which life histories of individuals from a nationally-representative sample of adults would be collected for such a long time span, reaching 25 years, while also opening the possibility of panel research on the renewal samples of the young. We also note that scholars can use POLPAN for cohort analyses, thanks to the expanded samples of young respondents.

Four Keys to Social and Economic Transformation of the Social Structure

This book explores four main social and economic phenomena that, across nations, are fundamental to radical transformations of the social structure: labor market processes, precarity, processes and mechanisms of inequality, and perceptions of allocation, attainment, and inequality. Taken together, they are keys that have unlocked societal transformation in Poland.

The first are **labor market processes**. In “Occupational Careers: From Simple to Complex Approaches,” Slomczynski, Sawiński, and Tomescu-Dubrow study dynamics of individuals’ jobs in Poland, focusing on both structural opportunities and individual determinants. Their chapter is rooted in the idea that occupational trajectories characterize social inequality – such as scores on the socio-economic index (SEI) – in a dynamic manner. In their analyses the authors use CONVERTER, which is a special software program designed for use with POLPAN. It transforms the records of jobs a particular person holds from a floating time form (consecutive jobs) to fixed time points (calendar years).

The next chapter, “International Experience and Labor Market Success,” by Tomescu-Dubrow, is about the nexus of globalization, Poland’s post-1989 transformation, and the labor market. In the wake of a globalizing economy, employers across Europe are looking for that “international experience” element in the resumes of job applicants. Working or living abroad gives people skills and knowledge that businesses can use as they look for new markets and opportunities across the world. International experience seems like a good investment, but to date empirical studies on its relationship to income and upward mobility are few outside of the USA. In examining relative income gains, Tomescu-Dubrow finds that Poles who went abroad, even for as little as two months, have a higher income than those who did not go abroad, other things equal. In terms of occupational mobility, above and beyond the

effects of age, gender, and education, having international experience boosts the odds of becoming an employer or entrepreneur.

The second major phenomenon, strongly connected with the first one, is **precarity**. Precarious work, according to Arne Kalleberg (2009: 2), is “employment that is uncertain, unpredictable, and risky from the point of view of the worker”. Empirical research has shown that the state of precarity characterizes Western labor markets since the 1970s (see also Standing 2011). The three chapters in this section demonstrate that precarity has come to characterize Poland since the 1990s, when the Communist Party’s policies of full-employment and state-centralized economy came to a sudden end.

In “The Transition to Insecurity: Employment Dynamics and Its Socio-Demographic Differentiation,” Mikucka describes the dynamics of interrupting and resuming employment in Poland from 1988 to 2008. Mikucka focuses on the sharp drop in employment stability following the end of communism, and explores gender differences and differences between age and educational groups in employment stability and in returning to the labor market after job interruption. She finds that the post-communist transformation brought unprecedented employment instability; after the systemic change the risk of interrupting paid work grew about tenfold. While women in Poland do not suffer from a higher risk of interrupting work than men, once women do interrupt their work, it is more difficult for them to resume employment.

In “Employment Instability Revisited: Are ‘Trash Contracts’ Affecting Long-Term Career Trajectories?,” Kiersztyn uses a novel instability indicator that takes into account the length of workers’ consecutive employment spells: respondents are considered to be in unstable employment if they had not held a single regular job lasting three years or longer within a ten-year period. The findings suggest that employment relations in Poland are generally stable and a comparison of instability rates between ten-year periods (1993–2003, 1998–2008, and 2003–2013) shows that there was no substantive growth in the incidence of employment instability. As Mikucka found, precarity is an employment condition that is unequally distributed across the population. Kiersztyn showed that unstable work histories are more frequent among individuals with the weakest position on the labor market: the least educated, in low-level occupations, and in secondary-sector industries (trade and personal services, unskilled manual jobs, and skilled manual labor in the construction and manufacturing industries).

After examining long-term employment instability, Kiersztyn then addressed the precarity-related problem of low wages. In “Staying at the Bottom: Low Pay Persistence during the Post-Communist Transition,” Kiersztyn analyzes changes in the persistence of low wages in Poland over 25 years. Being in a low paid job increases the odds of being in the same situation five years later. While upward mobility rates among initially low paid workers were higher during periods of economic prosperity, the persistence of low pay remained substantial.

Labor markets and precarity are two major forces, but there are other processes and mechanisms that stratify the social structure. The third major phenomenon of this book concerns **processes and mechanisms of inequality**. In the chapter, “Friendship Patterns and Social Inequality,” Domański and Przybysz explore whether significant changes in friendship patterns took place over time and to what extent they were followed by social openness in marital choices. Among other questions, the authors wanted to know whether there is variation in homogamy for acquaintances with the same education and occupational category. They found that in 2008, the strength of the association between respondents’ occupational categories and their friends was lower than in 1988. Even lower was the association between occupational categories of husbands and wives. A decline in the strength of the association was paralleled by decrease in both friendship and marital homogamy, with the most remarkable decline taking place in the category of higher managers and professionals.

Computing and internet technology are rapidly reshaping society, and one way it does so is through occupations and the labor market. In “Diminishing Returns: The Decreasing Relevance of the Digital Divide in the Context of Occupational Differentiation,” Green and Kryszczuk analyze correlates of access to, use of, and skills with, personal computers (PC) and internet tools by employment status (employed vs. unemployed) and occupational category. They find a narrowing digital divide in that all categories of the social structure increasingly adopt PC and internet technologies. In 1988, the percent of PC owners was close to zero; twenty-five years later, 83.4 percent of POLPAN respondents reported owning a PC. However, the divide still exists, as there are small but lingering disparities by employment status and occupational category. The unemployed are slightly less likely than the employed to own a PC. Moreover, internet use at work has yet to diffuse across all occupational classes. Over 85 percent of managers, professionals, technicians and clerks, and owners

used the internet for work, while slightly over half of service workers, manual workers and farmers did so. The digital revolution is shaping Polish society, but it is, as of yet, an unfinished revolution.

The fourth major phenomenon concerns the **perceptions of allocation, attainment, and inequality**. In “Popular Assessments of Earnings in Various Occupations: Images of Justice and Trends in Consensus,” Karpiński examines trends in consensus in the evaluation of fairness of earnings. He finds that individual assessments turn out to be fairly consistent with one another, though, surprisingly, consensus is greater in assessments of occupational earnings than in that of occupational prestige. Consistency in earnings evaluation increased from 1988 to 2003. With respect to fairness, low-status occupations are more likely to be perceived as increasingly under-rewarded and high-status occupations as increasingly over-rewarded.

The next chapter complements this study by centering on the acceptance of income inequality. “Preferred Levels of Income Inequality in a Period of Systemic Change,” by Kołczyńska and Merry, is in the context of growing economic inequality in Poland and abroad. Poles tend to accept higher levels of income inequality over time, and this rise changes in accordance with actual and perceived dynamics in the earnings distribution. In line with previous studies, higher preferred levels of inequality are reported by men, those with more education, and those with higher incomes.

As is evident from the previous chapters, social groups vary in their assessment of what occupations earn and of preferred levels of inequality. In this sequence of studies, Kunovich’s “Perceived Unemployment: The Sources and Consequences of Misperception” deals with how groups assess – or, rather, misperceive – the level of unemployment. Kunovich finds that, on average, people overestimate the extent of local unemployment. These misperceptions are related to personal resources, cognitive ability, and a heightened awareness of unemployment. Regional economic conditions influence people’s perceptions. On average, perception errors are smaller in regions with higher unemployment. Misperceptions of unemployment levels are consequential as they lead to changes in people’s economic and political attitudes.

If success is a structural condition – one can be successful on the labor market, in income attainment, and other realms of social and economic life – social groups differ in how they perceive the causes of success. In the chapter, “Perceived Determinants of Success: Factors and Dynamics of Change,” Baczko-Dombi and Wyszumłek use POLPAN to understand

the social bases of perception of success over the last 25 years. In this timeframe, POLPAN asked respondents to state their opinions about the role of such factors as: ambition, knowing the right people, hard work, good education, good luck, innate abilities and talents, political influence, and coming from a rich family. From a battery of POLPAN items, the authors created two different sets of characteristics that influence success: (1) a meritocratic dimension (meaning that success in life is connected with hard work and good education, together with ambition and innate abilities and talents); and (2) a dimension associated with the family and friends (family, acquaintances, people with influence), supported by a “good luck” factor. The authors find that the endorsement of both dimensions of success vary between social groups. Support for the meritocratic dimension increases with education level. Support for the “family and friends” dimension decreases with higher social status and income, although it increases with the age of respondents. Belief in the meritocratic dimension of achieving success is the highest among groups that benefited the most from Poland’s transformation, particularly among the expert and managerial classes. Social groups that “lost” during the transformation, such as skilled and unskilled workers, were less likely to believe success is meritocratic.

Conclusion

This book brings together different perspectives on how key social and economic phenomena – specifically labor market processes, job precarity, mechanisms of inequality, and perceptions of allocation, attainment, and inequality – have unlocked societal transformation in Poland after 1989. While each chapter deals with its own well-defined research problem, they share a common theoretical premise, namely that the structural location of an individual impacts their participation in the distribution of “rewards” or, in other words, the stratification position of the individual. In studying the factors that shape the social strata, all authors give due attention to the role of family background, the course of education, one’s position on the career ladder, the place in a hierarchical system of jobs, and the rules governing the distribution of goods and values. They all rely on the Polish Panel Survey POLPAN for empirical analyses.

Generally, all indicators of allocative effectiveness deal with lowering the level of ascription – that is with lowering the impact of demographic

and social-origin characteristics. In analyzing research issues about old and new elements of social structure, one can focus on the impact of ascription. Indicators of distributional effectiveness refer to the relationships between individual investments and rewards. Chapters in this book suggest that during the post-communist transition, the level of meritocracy increased. Interestingly, this is not what many Poles themselves believe, especially those who, as a result of radical social change, lost the benefits that they received from their communist-era structural location. The value of analyzing attitudes stems from objective indicators of social structure that do not necessarily match the perceptions of common people. POLPAN allows for both kinds of analyses, and the integration of the two.

The work presented in this book stands on the shoulders of the international social science community. It builds on the previous research on social structure, and on the articles and books that feature analyses of the Polish Panel Survey POLPAN. A number of books using POLPAN data were published in Polish in the 1990s during the height of the post-communist transformation. Since 2000, there began a line of English language POLPAN publications that includes *Social Patterns of Being Political: The Initial Phase of the Post-Communist Transition in Poland* (2000), *Social Structure: Changes and Linkages: The Advanced Phase of the Post-Communist Transition in Poland* (2002), and *Continuity and Change in Social Life: Structural and Psychological Adjustment in Poland* (2007). These books showcase the great variety of topics that researchers can delve into using POLPAN, such as political attitudes and behaviors, social conflicts, religion, and health, among others (for a longer list of topics, see Slomczynski et al. 2015).

This volume also connects directly to those books featuring POLPAN data that focus specifically on social and economic phenomena of the social structure – labor markets, occupational careers and mobility, economic and educational attainment, economic inequality, and social class. Among them is *Sociological Tools Measuring Occupations: New Classifications and Scales* (2009), on the measurement of social class, occupational standing, status, and position within the stratification system. This book provides quantitative scales of occupational prestige and socio-economic status as well as scales of skill requirements and work complexity. Two substantive works also belong to this line. One is *Open for Business: The Persistent Entrepreneurial Class in Poland* (2005), which documents and explains the endurance, development, and

patterns of recruitment into Poland's entrepreneurial class from state socialism to the post-communist era. The other, *Dynamic Class and Stratification in Poland* (forthcoming, CEU Press), is about long-term changes to the social structure and presents the thesis that class and stratification should be always treated as analytically distinct, though related, phenomena. The book you are now holding contains further explorations of this rich line of research on socio-economic phenomena of the social structure in Poland.

I.

Labor Market Processes

CHAPTER 1.

KAZIMIERZ M. SŁOMCZYNSKI,
ZBIGNIEW SAWIŃSKI,
AND IRINA TOMESCU-DUBROW

OCCUPATIONAL CAREERS: FROM SIMPLE TO COMPLEX APPROACHES*

Introduction

In this chapter we study dynamics of individuals' jobs in Poland, focusing on both structural opportunities and individual determinants. We build on the technical definition of trajectory as a time-ordered set of states (values) of a dynamic system to define an occupational trajectory to be a set of values of status (S) as a function (dependent) of time: $S = f(t)$. Occupational trajectories characterize social inequality in a dynamic manner.

In sociology, the measures of status for individuals are derived from classifications of jobs/occupations: each person's job receives a score according to a given scale, such as occupational prestige, complexity of work, or socio-economic index. We focus on predicting mean values of the socio-economic index (SEI) for each point of the trajectories of selected groups of people using panel data on Poland. The scales are described in Domański, Sawiński, and Słomczynski 2009.¹ In this chapter

* In this chapter we use our previous work (Słomczynski, Tomescu-Dubrow, and Sawiński 2013); cf. www.tandfonline.com/doi/pdf/10.2753/IJS0020-7659420403.

¹ This scale is constructed in accordance with Duncan's (1961) tradition in which SEI is a linear function of education and earnings aggregated to the occupational level. Originally, occupational prestige was regressed on these two variables for a limited number of occupations and then the coefficients from regression equation were used to estimate the SEI scores for the complete set of occupations. The Polish SEI was constructed in 1979 in a similar way. We use this version of SEI because it strongly correlates with other occupational scales and is stable in time. In particular,

we visualize occupational trajectories and analyze them by means of regression and simulation analysis.

Most analyses of occupational trajectories were performed for developed *stable* economies. Our analysis deals with a *turbulent* economy, that is, an economy of transition from orthodox central planning and state control (socialist-type) to a free market (capitalist-type) economy. We demonstrate that occupational trajectories can be analyzed by traditional techniques, but we go beyond them. In the research tradition of Sørensen (1974), Tachibanaki (1979), and Rosenfeld (1980), we develop and test a model of career trajectories that overcomes some major shortcomings of earlier studies. In particular, previous models were based on the assumptions that there is no decrease in occupational status, and that education – on which the jobs strongly depend statistically – is constant through individuals' careers. Our model relaxes both assumptions.

Analyzing Occupational Trajectories

Form and Miller (1949) coined the term *occupational career pattern* to denote the sequence and duration of work positions (for a classical statement, see also Slocum 1974). Occupational trajectories are specific occupational career patterns, since they represent the sequence and duration of work positions expressed on a numerical scale on the timeline (Spilerman 1977). Approaches to studying occupational trajectories have been diverse, with two gaining prominence in recent years:

1. Optimal matching analysis. This approach uses an iterative minimization procedure to find the distance between every pair of sequences in a sample, and then applies cluster analysis to ascertain whether the sequences belong to distinct types drawn from a typology (for original formulations, see Jovanovic 1979; McCall 1990; for extended applications, see Abbot and Tsay 2000).
2. Event history analysis. The purpose of this approach is to explain when and why individuals are moving from one job to another, using special types of techniques called failure-time models,

the correlations of this scale with the 2009 scales of educational requirements and material remuneration are above 0.9. (Domański et al. 2009). In Poland, the socioeconomic index is the most suitable scale for analysis of occupational status of individuals in a historical perspective.

life-time models, survival models, transition-rate models, response-time models, event history models, duration models, or hazard models. Usually the “risk” of changing jobs at a certain time point is predicated with a set of covariates. These techniques make it possible to deal with time-varying covariates and with censored data (Blossfeld 1986; Hamerle, and Mayer 1989; Li et al. 1998).

Both approaches are compatible. Laura Arosio summarizes and compares various techniques related to them, concluding that they are “useful and complementary tools that can offer a best understanding of the career systems of contemporary societies” (Arosio 2004: 454). However, they all deal with jobs *classified in different categories*. For analyzing occupational trajectories understood as a sequence of *numerical values on the timeline*, the methodology is less developed.

In this chapter, we apply simple tools including regression analysis, and dynamic modeling based on differential equations to examine occupational trajectories. In its original formulation (Sørensen 1974; see also Brüderl 1992; Rosenfeld 1980; Tachibanaki 1979), the career-trajectory model describes the convergence of status to recalibrated education into a status metric. If other characteristics are disregarded, the equation can be written as:

$$d(S - M)/dt = -\gamma(S - M),$$

where γ is positive and S and M stand for status and recalibrated education, respectively. However, if we consider the cases when both S and M change over time, then the above equation may be inadequate. One could expect that, if for some cases M suddenly changes, then S would lag behind. The lag is contrary to the above equation. In general terms, this type of equation does not account for decreasing status during the career. Since downward intragenerational mobility is a reality, there is a need for new models based on differential equations.

When representing trajectories, one should consider that for individuals SEI is stable for a given job but can change with each new job. For sets of individuals, we consider mean values of SEI for their entire careers. The model that we apply, proposed by Slomczynski, Krauze, and Peradzynski (1986), is given by the following equation:

$$d(S - M)/dt = -\alpha(S - M) + \sigma dM/dt,$$

where the parameter α can be interpreted as the rate of convergence of actual status S to an equilibrium enforced by the recalibrated education, and

parameter σ is a correction factor, which increases or decreases the impact of changes in the recalibrated education. The presence of $\sigma dM/dt$ makes the model flexible, allowing for decrease in status at the end of career. This model is in agreement with the econometric model of occupational career proposed by Sicherman and Galor (1990), in which the link between occupational statuses with recalibrated education changes in time.

The theoretical model provides an ambiguous prediction concerning the unconditional effect of schooling on career mobility. On the one hand, highly educated individuals are able to start their working careers in a higher-level occupation (higher step on the ladder). Their careers, therefore, might involve fewer occupations. On the other hand, highly educated individuals face greater opportunities (longer ladders). The model suggests, therefore, that given an occupation of origin, more educated individuals are more likely to move to a higher level occupation (Sicherman 1990: 178).

One of the main issues is how education is recalibrated in the occupational status metrics. A straightforward way is to assume that the value of each educational level corresponds to the mean value of SEI scores for this level. However, as we emphasize in a later section, the mean value of SEI for different educational levels depends on both cohorts and career stages.

Data

Data for most analyses come from POLPAN 1988–2013. POLPAN provides respondents' full employment history. During interviews, all jobs in consecutive intervals, 1988–1993, 1993–1998, 1998–2003, 2003–2008, and 2008–2013 were recoded. The description of all jobs contains a great deal of information, including:

- year and month when the respondent started their job;
- job characteristics coded with the Polish Social Classification of Occupations, SKZ (Domański et al. 2009; Pohoski and Słomczynski 1978), and with SEI (Słomczynski and Kacprowicz 1979; Domański et al. 2009); and
- year and month when the respondent left the job.

Originally, the data on jobs are recorded in a floating format, that is, the information on a given job in a given time point – whether in term of calendar year or number of years in the labor force – could appear in

different parts of the record of respondent's answers. Some respondents have a short record (one or two jobs) while others have a long record (several jobs). Thus, information on jobs in a given calendar year appear in different places of the record for different respondents. The floating format optimizes coding procedures and data size, but it is very difficult to manage for any kind of data analysis that deals with occupational careers expressed in time units.

CONVERTER is a special software that enables researchers to compensate for this shortcoming by transforming records of jobs a particular person holds over the years from a *floating time format* (consecutive jobs) into *fixed time points* (calendar years). This program was developed especially for POLPAN to transform the data collected in subsequent POLPAN waves into coherent occupational careers. Each job is described by SKZ four-digit category, SEI, and other scales.²

In POLPAN the first recorded entry into the labor force took place at the beginning of 1934, when a respondent born in 1920 turned fourteen years old. CONVERTER records all jobs for all respondents from this date until 2013, for every year interval. Thus, for each respondent and each job characteristic of the occupational career, such as socio-economic scale (SEI), or detailed occupational code, CONVERTER introduces a set of auxiliary variables. For each year prior to the year of respondents' first job, the auxiliary variables have missing values. Interruptions in career (due to parental leave, unemployment, or other reasons) are coded and can be used in the same way as other variables.

CONVERTER provides data not only for calendar years but also for age: job K at $G = Y(\text{birth}) - Y(K)$, where G refers to age in years, $Y(\text{birth})$ denotes year of birth, $Y(K)$ is calendar year of job K . Theoretically, the grid for age runs from 14 to 91 years, but practically the lower boundary is 14 and the upper boundary is 70 years. Another transformation that can be applied: job K at $L = Y(K) - Y(E)$, where L refers to number of years in the labor force, $Y(K)$ denotes calendar year of job K , and $Y(E)$ is the year of entry into the labor force.

Figures 1.1–1.3 provide examples of status trajectories, expressed in SEI, on calendar years, age, and years in the labor force, respectively. For these figures we selected three individual trajectories that represent very different patterns of mobility: varied direction of changes in

² Scales not used in this chapter refer to skill requirements, complexity of work, material remuneration, and occupational prestige (Domański et al. 2009).

SEI (respondent A), clear upward mobility (respondent B), and clear downward mobility (respondent C).

Respondent A, born in 1935, began his occupational career in 1951 (Figure 1.1) when he was sixteen years old (Figure 1.2) and ended his career after working for fifty years (Figure 1.3). Note that respondent B (born in 1945) and respondent C (born in 1955) started their careers at the beginning of the 1970s (Figure 1.1), although at different ages: twenty-five and eighteen, respectively (Figure 1.2), and with different numbers of years in the labor force (Figure 1.3). Careers of respondents B and C are censored on the age line (for B at 58 years and for C at 48; Figure 1.2) and on the line of years in the labor force (for B at thirty-four and for C at thirty-one; Figure 1.3).

Changes in SEI according to calendar years reflect the economic situation in Poland. Consider respondent A: in the 1950s and 1960s the values of SEI for A are stable and relatively low, typical for unskilled manual workers; in the 1970s, in the economic boom of the Edward Gierek era, the SEI value increases; later, during the crisis of the 1980s, we see downward mobility, followed by an increase in SEI after the mid-1980s thanks to the economic reforms of the final years of state socialism; finally, for person A, the beginning of the post-communist transition, which saw increased unemployment and competition for jobs,

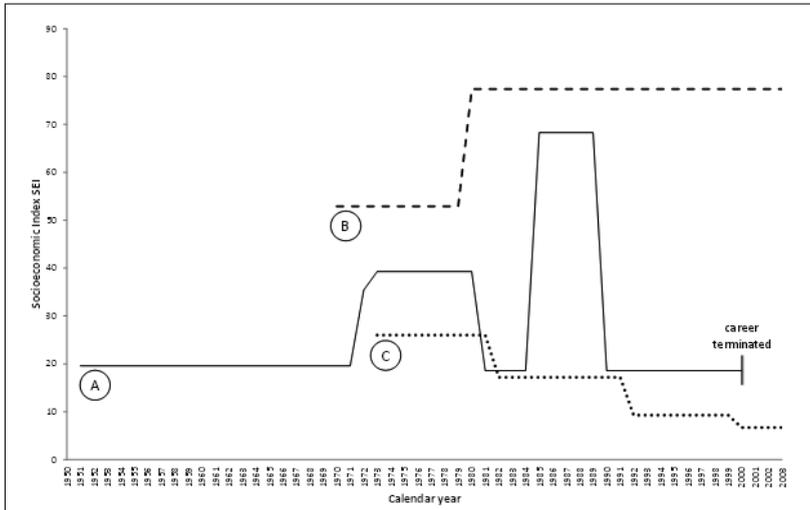


Figure 1.1. Example of Individual Occupational Trajectories for Calendar Years

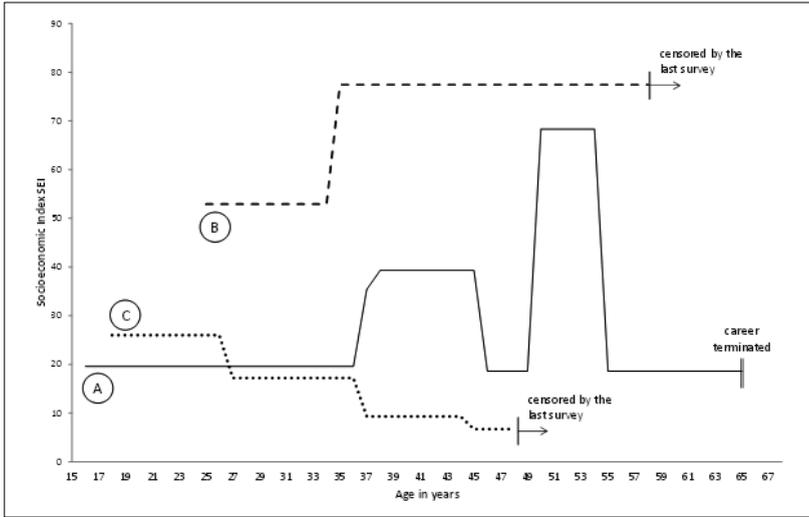


Figure 1.2. Example of Individual Occupational Trajectories for Age

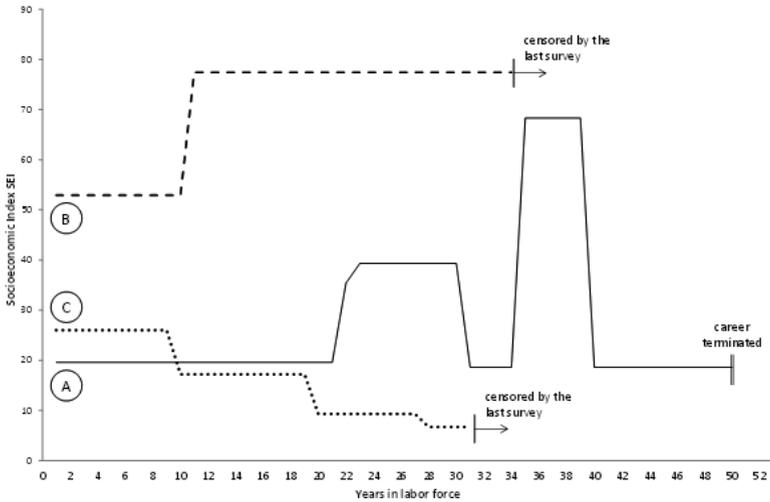


Figure 1.3. Example of Individual Occupational Trajectories for Years in the Labor Force

meant a sharp decrease in SEI. The trajectory of respondent B, typical for semiprofessionals, rises at the same time as the trajectory of respondent A falls. What is important here is that the same events – in this case, the establishment of the Solidarity movement – produce different effects for particular categories of people. It is also illustrative that the trajectory of respondent C, typical for skilled workers in heavy industry, presents a decline in SEI that parallels the deindustrialization process in Poland.

Although in Figures 1.1–1.3 the shape of trajectories is preserved, their location varies depending on the type of lifetime. For example, the opposite changes in SEI values for respondents A and B occurred at the beginning of the 1980s. However, at that time respondent A was forty-five years old while respondent B was almost a decade younger. At the beginning of 1980 respondent A had already been working for more than thirty years, while respondent B had worked for around ten years. The dramatic change in status of respondent B and C occurred in similar calendar time and both individuals had a similar number of years in the labor force, but at very different ages. Thus, all three metrics – calendar time, age, and number of years in the labor force – provide complementary information that could be used to study occupational careers.

Structural Constraints for Occupational Careers

CONVERTER allows researchers to reconstruct the structure of the labor market in different periods of time, providing a framework for occupational careers. Figure 1.4 presents such a picture for 1945–2013. For the purposes of this analysis, occupations are classified into five broad segments: farm, unskilled manual, skilled manual, sales and services, and non-manual. In the late 1940s, the job market in Poland was dominated by jobs in agriculture (64%) as well as by manual jobs: unskilled manual (15%) and skilled manual workers (10%); sales and service workers constituted the same proportion as non-manual workers (5%). In 2013, non-manual jobs dominated (36%), and only 9% of the labor force worked in agriculture. The sharp decrease of farmers and farm laborers and accompanying increase of manual workers in the 1950s reflects the period of the “forced industrialization” of Poland at that time (Szczepański 1978).

Two additional issues that shape occupational careers in Poland should be emphasized. First, the share of manual jobs was relatively constant over the period from the late 1950s, despite the fact that in modern

economies this share should gradually decrease. The development of heavy industry, typical of the communist era, is subjected to restructuring but only gradually. The second issue lies in the rapid decrease of the share of agricultural jobs at the beginning of the 1990s. Under communism, Polish agriculture was based on small, labor-intensive farms. They did not prevail in the growing competition of the post-1989 market economy.

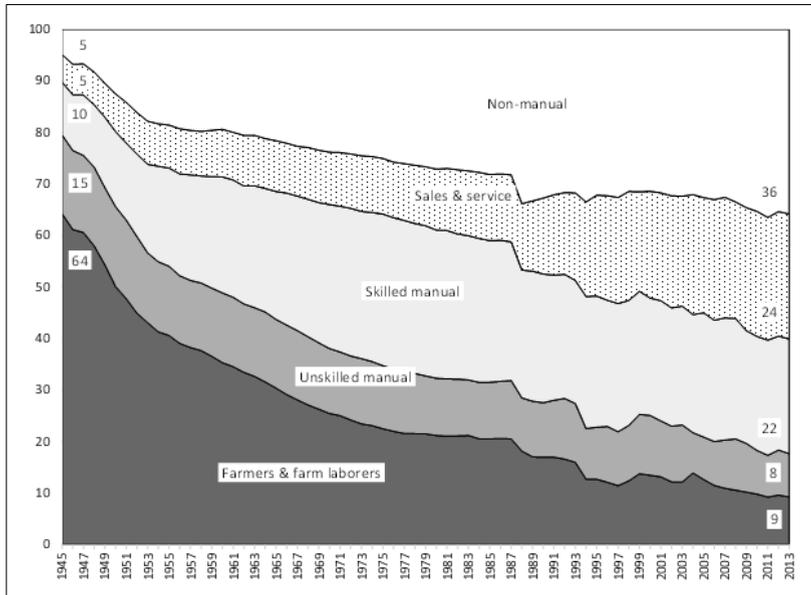


Figure 1.4. Shares of Farmers and Farm Laborers, Unskilled and Skilled Manual Workers, Sales and Service Workers, and Non-Manual Workers Jobs in the Labor Market in Poland, 1945–2013

Figure 1.4 depicts the transformation of the occupational structure in Poland, with clearly marked periods of different rate of change for different occupational categories. However, it should be noted that our data are not based on representative samples of employed people in particular years. For the period 1945–1987 these are retrospective data pertaining to POLPAN respondents’ occupational careers obtained during the 1987/1988 interviews.

Mean SEI for Calendar Years: A Simple Analysis of Cohorts Entering the Labor Market in Different Periods

Figure 1.5 presents the occupational trajectories for two groups of POLPAN respondents: the first group is composed of Poles who entered the labor force in 1945–1950; the second group captures respondents who started their first job between 1951–1960. We chose these periods because they correspond to different phases of economic development in Poland, from the period of the nationalization of the economy, land reform, and relocation of the labor force to different territories of Poland, to the period of “forced” industrialization mentioned before. These two cohorts differ with respect to the increase of the average SEI. The first group has relatively stable average SEI value through time, and this value is relatively low. The other cohort starts on higher average SEI value and enjoys a small increase in socio-economic status over time.

The next two cohorts, presented in Figure 1.6, correspond to the periods of *mala stabilizacya* (small stabilization) through the economic

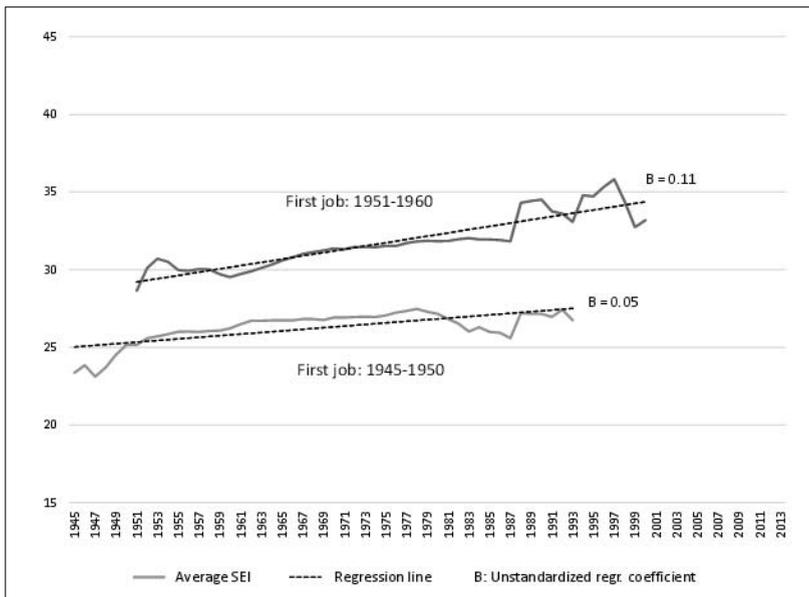


Figure 1.5. Occupational Trajectories for Entering the Labor Force in 1945–1950 and 1951–1960

crisis of the late 1960s and early 1970s, to Gierek’s reforms. They are of special interest because of the shape of the trajectory – increasing at the beginning of the career, and then decreasing. Note that the regression coefficients for the trajectory to 1993 are positive (higher for the younger cohort), then, after 1993 coefficients are negative. The position, instead of maintaining the status quo, tends to decrease during the life cycle. This is the opposite effect than that predicted by Sørensen’s (1974) model.

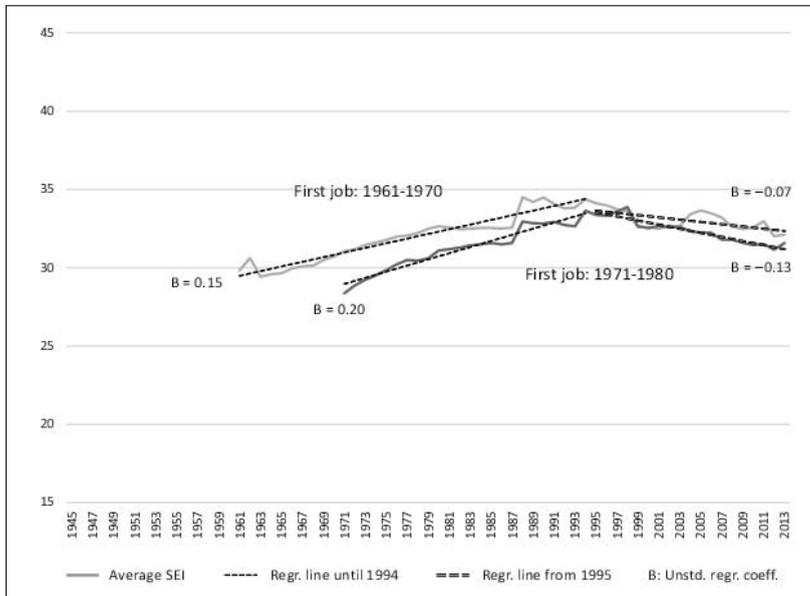


Figure 1.6. Occupational Trajectories for Entering the Labor Force in 1961–1970 and 1971–1980

Figure 1.7 depicts three cohorts: (1) entering the labor force at the end of the communist regime, (2) entering the labor force at the beginning of the transition but before Poland’s accession to the European Union (EU), and (3) entering the labor force after the EU accession. The later people enter the labor force the more steady the increase of SEI. The difference in metric regression coefficients is large. For the first cohort the increase in SEI for one year is 0.14, for the second cohort it is 0.41, while for the third one it is 1.06. It should be noted that these groups start, on the average, at different levels: the first cohort has the highest starting level, and the third one, the lowest.

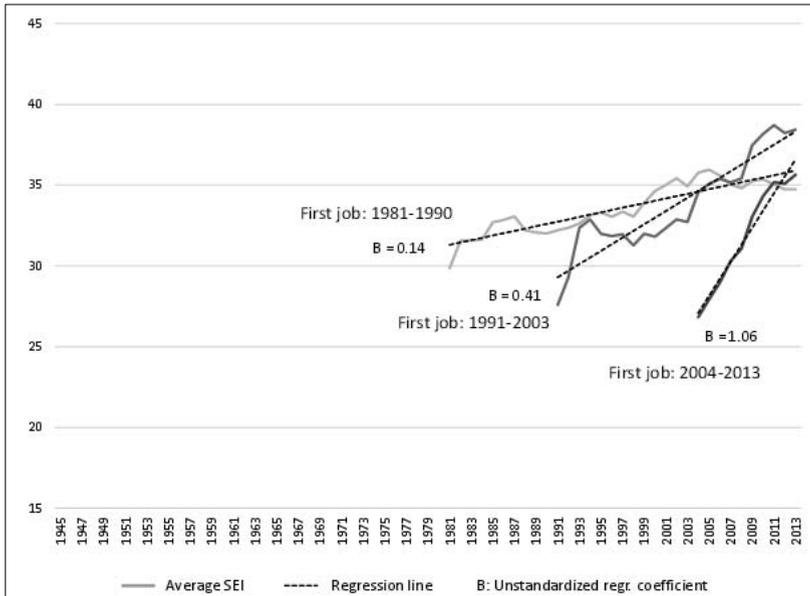


Figure 1.7. Occupational Trajectories for Entering the Labor Force in 1981–1990, 1991–2003, and 2004–2013

Mean SEI for Career Time: A Simulation Model for Cohorts Entering the Labor Market at Different Periods

Here we refer to the model $d(S - M)/dt = -\alpha(S - M) + \sigma dM/dt$. Under interpolation of M for time intervals (t_i, t_{i+1}) , the solution for the proposed equation is given by:

$$S(t) = e^{-\alpha(t-t_i)} [S(t_i) - M(t_i) - (\sigma/\alpha) k_i] + k_i(t - t_i) + M(t_i) + (\sigma/\alpha) k_i,$$

where $k_i = [M(t_{i+1}) - M(t_i)]/(t_{i+1} - t_i)$.

Recalibration of education into SEI units is usually an expression of how much education is worth in terms of SEI. The value of education in terms of SEI changes across time due to two processes:

1. Cohort-dependent devaluation: people from successive cohorts attempt to obtain more education to increase their *intercohort* competitiveness.

2. Career-dependent devaluation: after entering the labor force some people continue to receive more schooling to increase their *intracohort* competitiveness.

We achieve the recalibration of education into status through a two-step procedure that takes into account, for a selected calendar period, distributions of years of schooling (E) and scores of the socio-economic index. First, we construct the joint distribution maximizing the relationship between E and SEI. In the second step, we compute for each value of E the mean value of SEI. These averages become the values of M that can be assigned to each respondent for his or her education in time t_i . Since for the same periods we have the values of S , the problem is to find parameters α and σ .

Table 1.1 compares the predicted values of SEI to the observed mean values in the data, for respondents who assumed their first job between 1964 and 1978. In this analysis we include cohorts that entered the labor force in 1964–67, 1968–72, and 1973–78, but restrict them to respondents who worked without major interruptions, to avoid missing data on SEI. We consider the occupational trajectory lengths of thirty-five, thirty, and twenty-five years, respectively.

Generally, the predictions with optimal parameters α and σ come very close to the observed means. In our model the parameter α refers to a half-life parameter of reaching the maximum of SEI – that is, reflecting the total number of years so that 50% of a group of people with the same SEI starting period reach their status peak. The parameter σ was obtained through minimization of squared differences between actual and predicted values of SEI. The data fit our model relatively well: the difference between actual and predicted values of SEI usually does not exceed two points.

We should note that the theoretical model predicts a decline in SEI, while in reality the decline is only modest. Table 1.1 shows that it is more difficult to model shorter careers than longer ones due to the restricted number of career points. In addition, the changes in the value of education for the younger cohorts become chaotic since the labor market reacts to the expansion of education – in which a sizable proportion of employees participate – unevenly over time. The rules of meritocracy which the theoretical model implies operate with differing accuracy in time.

Table 1.1. Actual and Predicted SEI for Individuals with Full Careers in Cohorts Entering the Labor Force in 1963–1968, 1969–1973, and 1973–1978

Years in the labor force	Mean actual SEI (A)	Predicted SEI (B)	Difference (A–B)
Cohort entering the labor force in 1963–1968			
Beginning, 0	30.60	29.65	0.95
5	31.88	32.05	-0.17
10	33.22	33.14	0.08
15	32.74	33.60	-0.86
20	31.55	33.85	-1.30
25	31.27	32.02	-0.75
30	32.11	31.40	0.71
35	30.56	28.65	1.91
Cohort entering the labor force in 1969–1972			
Beginning, 0	31.55	30.15	1.40
5	32.11	31.64	0.47
10	34.93	33.81	1.11
15	33.54	34.45	-1.01
20	33.52	34.35	-0.83
25	32.19	33.26	-1.07
30	32.12	29.68	2.44
Cohort entering the labor force in 1973–1978			
Beginning, 0	28.46	26.00	2.46
5	30.76	29.51	1.25
10	30.55	31.27	-0.72
15	29.13	31.48	-2.35
20	28.35	30.84	2.49
25	27.57	26.68	0.89

Conclusion and Discussion

This chapter focused on two interrelated issues: representing occupational trajectories using the CONVERTER program and analyzing them in various ways, including computer simulations based on a differential equation model. In presenting our results we referred to the Polish economy, that is, an economy of transition from central planning and state control under the socialist period, to the post-1989 free market environment. We found substantial change in the structure of the labor market. Just after World War II farmers and farm laborers were the dominating category. Afterward, the process of industrialization stimulated the growth of manual worker positions who, together with sales and service workers reached around 50% of the labor force in the late 1970s. At that time non-manual workers constituted over 20%. This category continued to slowly increase in later years. After 1989 sales and service workers became the most expanding category, reaching 24% of the labor force in 2013.

Cohort analysis reveals important differences between occupational trajectories of persons entering the labor force in different periods of economic development in Poland. Although consecutive cohorts enter the labor market at similar or lower levels of SEI, the rise in the average SEI at the beginning of an occupational career varies. For those who enter the labor market in 1945–1950 the average SEI does not rise much. This can be contrasted with those who enter the labor force after Poland's accession to the European Union. For them the slope of SEI is very steep. We also showed that the cohorts entering the labor force in 1960–1970 and 1971–1980 experienced a decline in average SEI during the post-communist transformation period, specifically after 1992.

In this chapter we also presented the model in which SEI depends on recalibrated education. The model provides relatively good estimates of respondents' actual trajectories, although we discovered that the optimization process is very sensitive and parameters α and σ are not stable. In further research these parameters should be based on independent analyses of career properties. Currently, we provided the model for illustrative purposes: how the data obtained with CONVERTER can be modeled together with external information about the recalibrated education.

For further discussion, we pose three problems that stem from the empirical analysis using CONVERTER:

1. Occupation trajectories are not smooth. A sizable proportion of trajectories is characterized by unexpected jumps. In some cases, status changes are dramatic due to shifts to new jobs across the line of private-public firms.
2. Occupational careers are interrupted due to unemployment, illness, parental leaves, care of adult family members, full-time household duties, military service, imprisonment, or other reasons. How can job interruptions be accounted for when analyzing occupational trajectories?
3. Trajectories are subject to branching. At some points in their career people hold more than one job. How can this situation be accounted for? To average the status for all jobs an individual holds is one possibility, while the other is to treat all jobs as separate careers.

We invite scholars to use POLPAN, which is available free of charge from the survey administrators (polpan.org) to take up these points in further research on occupational trajectories.

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INTERNATIONAL EXPERIENCE AND LABOR MARKET SUCCESS*

Introduction

In our era of rapid globalization, labor market success depends more and more on transportable skills, global proficiency and personal and professional connections that extend beyond national borders. Building on Becker's insights that one's knowledge, which contributes to substantially differentiating people in their economic well-being, stems from various types of investments in human capital (Becker 1962: 9-10), researchers speak of transnational human capital as the "stocks of knowledge and personal skills that enable a person to operate in different fields beyond the individual nation-state" (Gerhards and Hans 2013: 102). Indeed, academia and the private sector increasingly seek out personnel who can perform well in multi-national, multi-cultural environments. As universities push for international research and training collaborations, corporations are sending their employees outside headquarters to do business in established and emerging economies.

Everyone on the labor market should benefit from richer skills, according to theory, and anecdotal evidence points to people of various social backgrounds seeking out international experience. The view that some level of familiarity with other countries is a worthwhile pursuit runs deep in Central and Eastern Europe (CEE). During state socialism,

* In this chapter I use my previous work (Tomescu-Dubrow 2015); cf. <http://polish-sociological-review.eu/index.php/psr31912015/>

parents went to great financial lengths to enable their children to learn foreign languages, and where possible, to visit abroad – pursuits that still continue.

In theory, international experience represents a good investment, but to date empirical studies examining its effects on stratification outcomes are scant. We know about inequalities in acquiring experience abroad, especially in the form of studying abroad (see Li and Bray 2006; Gerhards and Hans 2013), but have little insights about the returns international experience brings. An exception is Parey's and Waldinger's examination of the effects of studying abroad on international labor market mobility (2011). Using data from Germany, the authors find that, net of other factors, participation in the ERASMUS student exchange program increases one's probability of working in a foreign country by about 15 percentage points (Parey and Waldinger 2011: 195).

In this chapter I use the 1988–2008 waves of the Polish Panel Survey POLPAN to analyze the following research hypothesis: the experience that people gain by living abroad, because of the human capital and economic resources that accrue, enhances their success on the labor market above and beyond traditional determinants of achievement. If so, we should observe positive effects on relative income gains and entrepreneurship, which are two common ways to operationalize individual economic success.

Poland represents a strong case for assessing the impact of international experience in transforming societies for several reasons. The scale of temporary migration (i.e. going abroad for a limited time period, usually to work) relative to the entire labor force is particularly large, and the process began before the change of the system (Iglicka 2002; Wallace and Stola 2001). The 1989 systemic change and the rise of the European Union era offered Poles a new way to manage the labor market: moving abroad to find a job, even if temporarily (Okólski 2001; Fihel and Grabowska-Lusinska 2014). Migration patterns in Poland differed “as circumstances changed over three distinct periods: 1999–2004 (immediate pre-accession), 2004–2007 (early post-accession) and 2008–2011 (economic recession)” (Okólski and Salt 2014: 19). Early Polish migration has been characterized as an “incomplete migration” (Okólski 2001), when migrants go back and forth repeatedly. Though difficult to count, this process involved perhaps hundreds of thousands of people (Fihel and Grabowska-Lusinska 2014: 22; see also Kaczmarczyk and Okólski 2008: 602-605). After Poland's EU accession in 2004 that lifted many legal and

bureaucratic constraints of the movement of Poles across EU countries, Polish migration became, as Kaczmarczyk and Okólski (2008: 600) aptly noted, “one of the most spectacular population movements in contemporary European history.”

In 2007, Polish migration that lasted for at least three months reached a peak of over 2.27 million Poles (Fihel and Grabowska-Lusinska 2014: 23). This incomplete migration is still relevant, as many of the Poles who left came back, and then left again (Fihel and Grabowska-Lusinska 2014). As with all inflow/outflow processes that entail large personal costs, there is a selection effect. As Kaczmarczyk and Okólski (2008: 607) summarize, in Poland the key selection factors are access to migrant networks within the host country, the region of the sending country, and human capital (e.g. level of education, prior work experience).

The economic restructuring following the end of state socialism saw social inequality, income inequality in particular, rise sharply; capitalist-style competition brought new dynamics into the processes of job mobility (Heyns 2005; Slomczynski et al. 2007; Bandelj and Mahutga 2010; Domański 2011). These developments, backed by a growing multinational business environment, have placed new pressures on people to enrich their human, social and/or economic capital. Like in all other former communist countries of Europe, the 1989 systemic change altered Poland’s stratification structure significantly: new classes emerged, in particular, employers. This social group is one of the greatest “winners” of the economic transition (Slomczynski and Shabad 1997; Slomczynski, Janicka, Shabad, and Tomescu-Dubrow 2007).

As Poland takes its place among the biggest economies of Europe, Poles’ labor market fate increasingly calls for a rigorous analysis of the benefits of international experience. The insights from such a study will be informative for the larger European context, since Poland’s socio-economic developments over the past decades have occurred with exceptional intensity but are emblematic for globalization processes taking place in the region. Temporal migration within the European Union is a big part of these processes (Castles and Miller 2009: Ch. 5; Ruspini and Eade 2014; Triandafyllidou 2006: Ch. 10).

International Experience and Success: Theoretical Arguments

I argue that international experience, operationalized in this chapter as living abroad for minimum two months, should have a positive impact on peoples' economic well-being, other things equal, because it enriches their human capital, and, possibly, their economic capital. I use the framework of the human capital effects in accordance with a classic Mincerian formulation (Mincer 1958), developed further by Schulz (1963) and Becker (1964). It is assumed that additional investment in human capital has similar effects to additional investment in "physical means of production" in a sense of yielding additional output.

Living abroad for a substantive period adds to people's existing human capital built through education and in-country work experience. During their unmediated experience of foreign countries and cultures, people encounter a range of values and expectations, and of labor market conditions, that can become part of their personal repertoire. They gain transnational human capital – knowledge of foreign labor markets, institutions and legal systems (Gerhards and Hans 2013: 100–101 for example), cultural adaptability – that make them more attractive on the job market. It follows that:

H1: People who at time t gathered international experience, defined as living abroad for at least two months, should, at time $t+1$, have higher income compared to people without this resource, *ceteris paribus*.

Entrepreneurial behavior is another sphere where international experience should have a measurable positive impact. The human capital perspective lets us infer that part of the knowledge accumulated abroad should aid entrepreneurship.¹ Greater inter-personal skills is one example of such knowledge. Business know-how, including awareness of market needs and business niches in the country of origin is another: when abroad, people come across a variety of business types, which they can use as reference frame for possible investment options at home. At the same time, research shows that people put aside money from their overseas earnings,

¹ In the human capital approach it is conceived that "entrepreneurial ability" is a form of human capital. Like other forms of human capital, this ability can be increased by experience, including international experience (Klein and Cook 2006).

at least part of which could be used toward starting a business in the home country (Durand et al. 1996; Grieco 2004; Cohen and Rodriguez 2005; Cuc, Lundbäck, and Ruggiero 2006). Ma (2002) shows that in China, rural-to-urban migrants who return to their rural-area home tend to become entrepreneurs, and that migration brings more than just financial gains, as it enhances migrants' skills. Clearly, traditional determinants of stratification, in particular education, shape people's chances to succeed economically, but my hypothesis is that international experience will exert a significant influence net of their impact.

Empirical research on labor market returns to temporary migration supports the expectation that living and working in another country can be a valuable monetary and human capital resource (see Arif and Irfan 1997; Ilahi 1999; McCormick and Wahba 2003; Dustmann and Kirschkamp 2002; Ma 2002; Carletto and Kilic 2009), although there are also problematic outcomes of migration, such as dependency relations (Reichert 1981), or the inability of return migrants to find work in countries such as India, Pakistan, Bangladesh, the Philippines and Sri-Lanka (Stahl 2003). Cohen (2005) provides a comprehensive discussion of positive and negative remittance outcomes and migration.

Some studies point to gender specific effects of returns to migration: in Ireland, male temporary workers enjoy wage benefits after returning, but women not necessarily so (Barrett and O'Connell 2000), while the opposite emerges in Hungary (Co, Gang, and Yun 2000). Qualitative and case studies on Albanian migrants show that return migrants use savings earned abroad to finance micro-enterprises and buy equipment for enhancing the productivity in activities that already existed. Also, return migrants appear to use the experience abroad as a learning opportunity, to enhance the skills that will allow them to replicate in Albania the businesses in which they worked when in a different country (Nicholson 2001 and 2002; Labrianidis and Hatziprokopiou 2006 as cited by Carletto and Kilic 2009: 3).

Carletto and Kilic (2009) use the 2005 Albanian Living Standards Measurement Study Survey and ordered probit regression to estimate the impact of international migration experience on the occupational mobility of return migrants compared to working-age Albanian residents that never migrated. The degree of occupational mobility is calculated as the difference between occupational ranking in 2005 minus the initial occupational ranking (Carletto and Kilic 2009: 12). After controlling for selectivity into international migration and return, the authors find that

past migration experience increases the likelihood of upward occupational mobility. Since such impact is likely to depend on differences in earning potentials and opportunities for skill acquisition across destination countries, the authors explore the heterogeneity of impact by host country: Greece on one hand, vs. Italy and other countries on the other. They find that the positive effect of past migration experience on upward occupational mobility is driven by past migration experience in Italy and countries further afield, while past migration experience in Greece does not exert any significant impact on mobility outcomes.

Studies of the consequences of the 1989 systemic change in CEE, Poland included, demonstrate that the costs and benefits of the socio-economic and political restructuring have been distributed differently across social classes, justifying the distinction between “winners” and “losers.” Managers, experts, and the new class of employers especially, have taken advantage of the business opportunities that the post-1989 environment opened. In contrast, manual workers and farmers are social classes that found themselves disproportionately among the “losers.” Supervisors, the self-employed, office workers, and sales and service workers occupy the middle of the social hierarchy with respect to benefits and costs of the restructuring that followed 1989 (Slomczynski, Janicka, Shabad, and Tomescu-Dubrow 2007; Heyns 2005; Slomczynski 2002). With these findings in mind, I analyze the odds of achieving the status of employer after the end of communism, dependent on international experience and control variables. Specifically,

H2: International experience has a positive effect on the odds of moving into the category of employers, *ceteris paribus*.

Data and Measurement

Data

Over-time changes in individuals’ characteristics, their socio-economic standing especially, are key to this chapter arguments. Hence, I conduct my analyses on the 1988–2008 POLPAN panel subsample, that is, Poles interviewed in each of the five survey waves (N = 933).

Measurement

Availability of respondents' history of employment allows me to model the expected effects of international experience on both relative income gains and entrepreneurship. In the first instance, the dependent variable is constructed as (a) the difference in income earnings between 2008 and 1988 when OLS regression is employed; and (b) time-varying income over the 1993–2008 period, in the panel regression procedure.²

For entrepreneurship, success is present if at time t people are employers, knowing that at $t - 1$ this was not the case. Employers are owners who employ four or more non-family members. In Poland, they form a full-fledged social class that is distinct from the self-employed only after 1989.^{3,4} The dependent variable under this specification is dichotomous, with employer status in a given wave from 1993 to 2008 = 1; otherwise = 0.

POLPAN contains items that facilitate the measurement of international experience as time spent outside Poland. In the 1988 and 1993 waves, respondents were asked how often they travelled abroad during the past five years, and how long the trip lasted.⁵ For this group, I assume

² In all instances, I use the log form of income. This is a common procedure of expressing income in standard units over time; see Atkinson and Bourguignon (2000), especially introduction and the chapter by Derek Neal and Sherwin Rosen, for various forms of income transformation. I have also experimented with other transformation forms suggested in the literature, with very similar results to those performed on the logarithms of income.

³ In Poland, in the 1980s “employers” existed in the second economy, or in special cases of so-called “Polonia enterprises,” legalized in 1976. The term “Polonia enterprises” refers to the firms owned by Polish expatriates or foreigners of Polish background. Most of these firms were small limited crafts, domestic trade, restaurants, hotels, and other services (Maciejko 1991).

⁴ The theoretical reason for measuring entrepreneurial success in terms of firms that employ four or more people outside of family members is the following: the social class of employers is, in terms of economic success (the outcome of interest in this study), significantly better off than the self-employed (see for e.g. Slomczynski and Shabad 1997). In a certain sense, once start-ups are successful, they turn into firms that hire more than family members. In the future, I intend to extend the analyses to family-operated business, too.

⁵ In 1988 and 1993 POLPAN respondents were not asked directly whether they worked while outside Poland since “working abroad” was a sensitive issue. While one cannot reject the possibility that some respondents who declared being abroad for two or more months do not fit to the category of “working abroad,” all research indicates that these would constitute a small number (Stola 2001a; Stola 2001b;

that being abroad for at least two months gives a reasonable probability that the respondent has acquired transnational human capital (Gerhards and Hans 2013). The 2008 wave of POLPAN provides respondents' retrospective accounts of whether they worked abroad for at least three months, and, if yes, the year their job abroad ended. For the OLS regression of income changes 2008–1988, I combine these two types of information – living abroad and working abroad – into the variable “international experience,” which is coded 1 if between 1983 and 2008 respondents have been in another country for two or more months, and 0 otherwise.⁶ In the panel regression procedure (applied to both income and entrepreneurship), experience abroad is constructed as cumulative time-varying variable.

One issue related to the international experience variable warrants a comment. I combine two different lengths of time outside Poland: two or more months for the period 1983–1993, and three or more months for the 2008 retrospective question on working abroad. This is justified also by migration patterns of people from Poland: in the earlier time period, Poles used to go abroad for shorter intervals (Stola 2001b).

Respondents' years of education, gender and age constitute control variables.⁷ The positive effect of education, as key human capital component, for stratification outcomes is extensively discussed in the literature (for an example of classic formulation, Blau and Duncan 1967).

Kaczmarczyk 2005; Kaczmarczyk and Okólski 2008). Analysis of job sequencing in the POLPAN data support the assumption that people, who in the period 1983–1993 went for at least two months to a different country, worked while abroad. Research claims that at least 80% of Polish migrants (staying abroad more than two months but shorter than one year) had some formal or informal jobs defined as a regular activity performed in exchange for payment (Kaczmarczyk 2005; Kaczmarczyk and Okólski 2008), while some additional per cents were engaged in income generating activities that do not qualify as “normal” jobs but involve work – betting on rare goods, occasional personal services, and financial dealings (Stola 2001b).

⁶ It is possible to go back to 1983, since the 1988 questionnaire asked for retrospective information for the past five years.

⁷ With multi-cohort panels, as is the case of the POLPAN study, one can investigate the effect of more than one time scale such as age. One could analyze age, cohort or period, or any of the two. For the purposes of this chapter, the substantive considerations for accounting for the effects of aging are strongly justified. Panel regression, in which income in time $t+1$ is considered as dependent on variables in time t , implicitly controls for periods. In this situation, an independent cohort variable would lead to co-linearity and provide biased estimates for age.

Regarding gender, it would be consistent with extant research that women earn less than men, and also have lower propensity to open a business (Osborn and Slomczynski 2005). With respect to age one could expect an inverted U-shape relation with income, and declining probability of opening a business. In addition, I also control for knowledge of foreign language, since this is an important variable from the point of view of human capital theory (Gerhards and Hans 2013; Byram 2008: 5–42). In 1993, POLPAN respondents were asked about their ability to communicate in foreign languages. The variable is coded 1 if respondent knows at least one foreign language, 0 otherwise.

Statistical Approach

There is a fundamental difference between estimating the impact of international experience in a given time point (when data are treated cross-sectional) and as a process in time (in the framework of panel regression). In the former we gain knowledge about effects in specific times and compare results for different periods. In the later, we consider a uniform effect through time with given time intervals. It is important to see if the effects of international experience are present in both time perspectives.

To deal with time explicitly, in part of the analysis (when the DV = change in income) I use lagged variables to capture the variables of interest at different states, while treating POLPAN as cross-sectional. OLS estimates for particular time-points, with correction for possible intra-group correlation, are the method of choice in this instance.

Panel data have multilevel structure. Each time point (wave) is nested within respondents ($i = 1, 2, \dots, n$). From the hierarchical nature of the data we may expect that the measurements for the same respondents will be more similar to each other than across respondents, involving case-dependency (see Rabe-Hesketh and Skrondal 2008; Hox 2010: ch. 5). Two-level analyses enable estimating regression-like models that take this phenomenon into account.

The covariates that vary between clusters (i.e. panel respondents) only, such as education, foreign languages proficiency, belonging to the social class of self-employed in 1988, are very important for explaining people's economic well-being. Hence, I choose the random effects model specification rather than fixed effects models, which preclude estimation of between-coefficients. For the linear regression on time-varying income

over 1993–2008, I first checked if international experience has the same within- and between-effects following Rabe-Hesketh's and Skrondal's approach (2008: 117–118). I fitted a random-intercept model with the cluster mean of international experience, as well as the unit-specific deviation from the cluster mean of international experience and tested the null hypothesis that the estimated between effect of international experience (coefficient of the cluster mean term) equals the estimated within effect of international experience (coefficient of the deviation term). Since the difference between the two coefficients was not significantly different from zero (results available upon request), I use a random intercept model as specified in the panel regression procedure of Stata in the average population form.⁸ I also introduce an autocorrelation component – the correlation of income with its value in the previous period; methodologically, the model fits a first-order autocorrelation function to regression residuals. This corresponds to an AR(1) process according to the time series analysis framework formulated by Box and Jenkins (1970).

The second hypothesis postulates that people who have at least two months of international experience have greater odds of achieving status of employer, compared to Poles without such experience, other things equal. I use the population averaged logit model in Stata, with standard errors corrected for possible intra-group correlation and with within-group correlation structure specified as unstructured, to examine it.

Results

Descriptive information on international experience shows that relatively few respondents have this kind of experience. By 2008, of the 933 Poles interviewed in each of the five surveys, 147 (16%) had worked or lived abroad anytime between 1983 and 2008.⁹ Most went to foreign countries after the end of state socialism, yet a sizable group, namely 36% of the 147 respondents, did so prior to 1989. An additional 19 persons, that is 2% of the full panel sample, were abroad at the time of the 2008 survey, and are not included in these analyses.

Knowing foreign languages is an important human capital resource and an investment which parents, the educational system and many

⁸ For linear regression, this is the same as a random-effects estimator.

⁹ See note 6.

workplaces encourage (Byram 2008). Increasingly, not only high-skills occupations, but middle and low-skilled service positions too, demand foreign language proficiency (see Gerhards and Hans 2013: 100). The data show that by 1993, 42% (392 people) of the Polish panel respondents knew at least one foreign language.¹⁰ As expected, there is a positive and significant correlation between experience abroad and foreign languages ($r = 0.288, p < 0.001$), but this relation is not strong.

International Experience and Income Gains

Preliminary analyses using a continuous variable for experience abroad show a substantive and statistically significant impact of length of time spent out of Poland on later income (Figure 2.1).¹¹

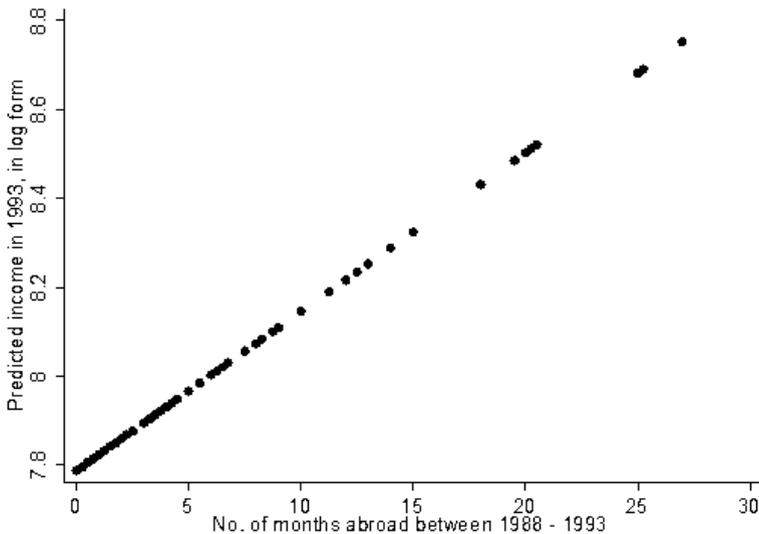


Figure 2.1. Impact of the Number of Months Abroad between 1988 and 1993 on Income in 1993

¹⁰ Given the increased prominence, in the last decade, of international labor relations and of English as the *lingua franca* in business and academia, it is likely that by 2008 the percentage would be higher. Unfortunately, the question on foreign languages was not asked after 1993.

¹¹ Predicted income in 1993 (in log form) = $7.787 + 0.036 * \text{Months of Travel Abroad}$; $N = 705$.

This finding is strengthened by results in Table 2.1.¹² Differences in earnings between 2008 and 1988 are regressed on the two indicators of human capital – international experience and foreign language proficiency – controlling for basic demographics. The unstandardized regression coefficients are estimated using the `vce(cluster)` option in Stata, which specifies that the standard errors allow for intra-group correlation.¹³ Controlling for education and net of foreign language proficiency, international experience has a substantive and statistically significant effect on peoples' income gains, other things equal.

Table 2.1. OLS Regression of the Difference in Earnings 2008–1988 on International Experience, Foreign Language Proficiency, and Control Variables

Independent Variables	Model 1		
	Unstandardized Coefficients	Robust S.E.	Standardized Coefficients
Gender (male = 1)	0.100	0.108	0.055
Age 1988	-0.057**	0.008	-0.340
Age ² 1988	-0.002**	0.001	-0.208
Education (years), 1988	0.103**	0.015	0.367
International experience between 1983–2008 (yes = 1)	0.260*	0.111	0.117
Foreign Language(s) (yes = 1)	0.150+	0.087	0.083
Ln Earnings 1988	-0.786**	0.099	-0.458
Constant	4.592	0.510	
Fit Statistics		F = 31.75 (df = 7)	R ² = 0.402

N = 309; ** $p < 0.01$; * $p < 0.05$; + $p < 0.10$

¹² In Table 2.1 data are treated as cross-sectional.

¹³ Estimating the models in Table 2.1 with the option `vce(robust)` as correction for standard error estimates yields identical coefficients and robust standard errors as the `vce(cluster)` option, as well as standardized coefficients. I used the former to obtain the standardized coefficients.

I find no gender differences in income change. Age, on the other hand, consistently matters. In agreement with the earnings function as it is considered in the human capital framework, results indicate an inverted U-shape relation between age and income (for classic formulation, see Mincer 1974).¹⁴ To avoid problems of collinearity due to including age and age squared in the equation, the age variable is centred at the sample mean. The mean for age in 1988 = 40 years (for panel of 933 cases; the values of the centred variable range from -18 to 26).

Since there is less opportunity for large changes in earnings for those who are at the tail ends of the income distribution in the initial stage – that is, either made a lot or made very little money in 1988 – I control for respondents' income in 1988. Indeed, its effect is negative and significant. If the ceiling effect is not accounted for, the coefficient for gender is significant and negative (results available upon request). This shows that increase in income is smaller for men (who on the average earn more than women) than for women.

Figure 2.2 also contributes to the discussion about the economic gains that international experience confers. This graph shows that respondents who speak at least one foreign language are expected to be economically better off than those who do not, whether they had worked or lived abroad or not. It also shows the clear impact of experience in another country on predicted increase in earnings, including its enhancing the positive effect of foreign language proficiency.

¹⁴ In their *Economics of Earnings*, Polachek and Siebert (1993: 16) state: “The relationship between [age and earnings] is depicted by [a] concave graph. Earnings rise quickly at young ages, but growth tapers off so that a peak is reached at about age fifty-five, and then earnings decline.” Although this view has been disputed (Thornton, Rodgers, and Brookshire 1997), still it is reasonable to account for reverse U-shape relations since the results confirming or disconfirming this type of relationship depend on the population studied.

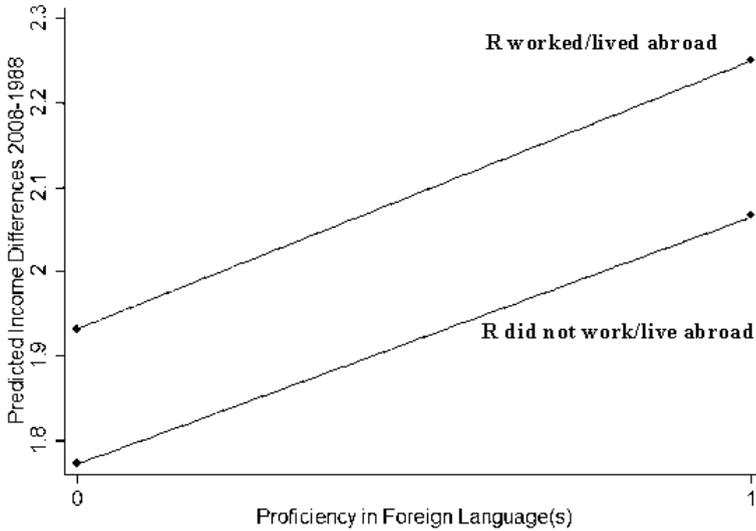


Figure 2.2. Predicted Income Differences 2008-1988 Dependent on Knowledge of Foreign Languages for Respondents Who Have Experience Abroad and Those Who Do Not

Methodologically, it is important that international experience remains statistically significant if the problem is formulated in terms of panel regression. This approach takes into account the hierarchical nature of POLPAN, and accounts for problems of autocorrelation and of multicollinearity. The dependent variable is now time-varying income over the 1993–2008 period, that is, after the fall of communism. International experience is cumulative and time-varying; age also varies over time.¹⁵ Results in Table 2.2 provide clear empirical support for my hypothesis: having lived outside Poland for at least two months has a positive effect on respondents' income, *ceteris paribus*. Under the panel regression specification, the effect of gender is statistically significant. Net of other factors, in Poland men are better off than women, a finding which is recurrent in social stratification research.¹⁶

¹⁵ The age variable is centred at the sample mean.

¹⁶ I have also estimated the model with the interaction of international experience and foreign language proficiency. Its effect is not statistically significant.

Table 2.2. Panel Regression of Income on Working Abroad, Knowing Foreign Languages and other Controls

Independent Variables	Unstandardized Coefficients	Semi-robust S.E.	Standardized Coefficients ^a
Gender (male = 1)	0.093*	0.036	0.038
Age	0.005**	0.001	0.055
Age ²	-0.159**	0.010	-0.245
Education, 1988 (years)	0.037**	0.007	0.107
International experience (yes = 1)	0.127*	0.060	0.038
Foreign language(s) (yes = 1)	0.077+	0.043	0.031
Income, 1988 (ln form)	-0.011	0.163	-0.001
Constant	-0.572	0.672	
Fit Statistics	Wald Chi2 (df = 7) = 344.01		

Number of observations = 2,632; Number of groups = 783

** $p < 0.01$; * $p < 0.05$; + $p < 0.10$

^a Obtained from panel regression with standardized variables

International Experience and Entrepreneurship

Under the second operationalization of success on the labor market – opening a business that employs four or more non-family members – the dependent variable is expressed as the odds that a person becomes an employer anytime after 1993, rather than taking on any other social class position.

Data from POLPAN show that, for studying occupational careers, there is a need to account for the significant structural changes that Poland, like the other countries of CEE, underwent after 1989. Table 2.3 illustrates this problem.¹⁷ Note that at the beginning of the process (1989) there is no category of employers defined by a strict criterion of employing more than four people outside of family members. This is relevant here, since the following analyses include this group. The rationale lies in the fact that employers as a social class did not exist during state socialism, but emerged after its fall, once the private market economy took off.¹⁸ At the same time, one can observe that, compared to members of different social classes,

¹⁷ Source: Slomczynski and Tomescu-Dubrow 2008.

¹⁸ In the 1980s Poland, “employers” existed in the second economy or in special cases of so-called Polonia enterprises (see note 3). However, these heterogeneous groups did not constitute a social class as understood in this chapter.

people who during state socialism were self-employed enjoy high odds of becoming entrepreneurs under the rules of the post-communist regime. I take this into account when analysing the impact of international experience on the odds of moving into the category of employers.

Table 2.3. Independent Rates r_{jk} of Transition from j Social Classes of the Communist Period to k Social Classes

Social Class Schema for Communist Period	Social-Class Schema for the Post-1989 Period								
	Employ- ers	Managers	Experts	Supervi- sors	Self- Employed	Techni- cians & Office workers	Skilled Manual	Unskilled Manual	Farmers
Nomen- klatura	2.96 * (2.18)	4.73 ** (4.39)	1.20 (0.30)	0.37 (-1.48)	1.36 (0.54)	1.00 (0.16)	0.00 (_a)	0.00 (_a)	0.00 (_a)
Non-Manual Employees	0.80 (-0.63)	4.34 ** (4.05)	21.37 ** (5.20)	6.44 ** (6.95)	0.58 + (-1.75)	3.58 ** (5.94)	0.09 ** (-7.33)	0.16 ** (-4.11)	0.08 ** (-5.93)
Core of the Working Class	0.31 * (-1.95)	0.03 ** (-3.43)	0.03 ** (-3.57)	0.51 * (-2.39)	0.66 (-1.21)	0.42 ** (-3.05)	11.34 ** (12.24)	1.90 * (2.18)	0.44 * (-2.52)
Peripheral Working Class	0.24 (-1.45)	0.00 (_a)	0.00 (_a)	0.00 (_a)	0.71 (-0.47)	1.27 (0.62)	1.83 ** (2.49)	10.47 ** (8.81)	0.18 + (-1.76)
Peasantry	0.30 + (-1.91)	0.18 + (-1.73)	0.00 (_a)	0.00 (_a)	0.62 (-1.00)	0.09 ** (-4.31)	0.12 ** (-4.76)	0.48 (-1.62)	17.95 ** (12.67)
Self- employed	8.77 ** (7.03)	0.36 (-1.03)	0.00 (_a)	0.00 (_a)	7.49 ** (6.85)	0.17 ** (-2.56)	0.39 (-1.50)	0.86 (-0.27)	0.34 (-1.40)

_a Not estimated; ** $p < 0.01$; * $p < 0.05$; + $p < 0.10$; Number of observations = 4,323; N clustered = 393

Note: Z-values in parentheses, POLPAN 1988–2003 Panel Sub-sample.

Source: Slomczynski and Tomescu-Dubrow 2008.

I estimate the following population-averaged logit models in Stata: the first assesses the effect of international experience without considering respondents' pre-1989 experience in the private sector (Table 2.4, model 1), while the second extends the analysis to account for the interaction effects of self-employed in 1988, and having worked and/or lived abroad (Table 2.4, model 2).¹⁹

¹⁹ Since there is no theoretical justification as to why foreign languages would matter for entrepreneurship in Poland, in estimating the odds of opening a business I leave this variable out.

Table 2.4. Panel Logistic Regression of Becoming Employer on International Experience and Control Variables

Independent Variables	Model 1		
	Coefficient	Semi-robust S.E.	Exp(B)
Gender (male = 1)	0.455	0.310	1.576
Age	-0.035*	0.015	0.966
Age ²	-0.312**	0.089	0.997
Education 1988 (years)	0.110**	0.039	1.116
International Experience (A)	0.884*	0.371	2.421
Self-employed 1988 (B)	-	-	-
Interaction A*B	-	-	-
Constant	-5.029	0.495	
Fit Statistics	Wald Chi2 (df = 5) = 41.93		

N observations = 3,732; N groups = 933

** $p < 0.01$; * $p < 0.05$

Table 2.4 – continued: Panel Logistic Regression of Becoming Employer on International Experience and Control Variables

Independent Variables	Model 2		
	Coefficient	Semi-robust S.E.	Exp(B)
Gender (male = 1)	0.271	0.313	1.312
Age	-0.036*	0.017	0.965
Age ²	-0.306**	0.101	0.997
Education (years),1988	0.126**	0.042	1.135
International experience (A)	0.196	0.499	1.217
Self-employed 1988 (B)	1.670**	0.524	5.312
Interaction A*B	1.595*	0.786	4.930
Constant	-5.275	0.523	
Fit Statistics	Wald Chi2 (df = 7) = 101.78		

N observations = 3,732; N groups = 933

** $p < 0.01$; * $p < 0.05$

International experience brings clear gains to those who possess it. Compared to Poles who did not work and/or lived abroad, those who did are twice as likely to move into the class of entrepreneurs than to any other social class (Table 2.4, model 1), above and beyond the effect of education and other demographics. This is not to underplay the role of education: one year increase in schooling increases the odds of opening a business by 12%, other things equal. The effect of age is non-linear: it has an accelerating negative effect on entrepreneurship.

In Table 2.4 model 2 I consider the effect of international experience in the context of one's prior experience with entrepreneurial activities. I expect that business-oriented people will especially benefit from the resources embedded in international experience. As shown in Table 2.3, Poles who during state socialism were self-employed enjoy, compared to members of different social classes, high odds of becoming entrepreneurs under the new rules of the game. This makes intuitive sense: in the emerging capitalist environment those who already have business skills and networks should find it easier to operate a business. Since POLPAN contains detailed information on respondents' occupational histories, it is possible to construct the measure for self-employment in 1988. I estimate the combined impact of self-employment and international experience through their interaction term.

It is reassuring that the new model fits the data well (see model 2 in Table 2.4). Everything else equal, Poles who were self-employed in 1988 (but did not live abroad) are five times more likely to open their own business with four or more non-family employees than taking up any other occupation, compared to their peers who were not self-employed. Prior entrepreneurial behavior brings a clear advantage, and this advantage is greatly enhanced by international experience. Respondents who were self-employed before 1989 and who spent at least two months abroad are, compared to self-employed who do not have international experience, twenty six times more likely to achieve entrepreneur status than any other social position, everything else equal.²⁰

²⁰ Both components of the interaction term are dummies, which makes the values of the (exponentiated) coefficients readily interpretable. Respondents who were self-employed in 1988 and were abroad for min. two months receive the odds of $5.31 * 4.93 = 26.18$ in reference to respondents who were self-employed but did not have foreign experience.

Summary and Discussion

Empirical support for the hypothesis that international experience, gained by living in a foreign country for at least two months, aids individual success on the labor market is strong. This holds for both proposed manifestations of success, namely substantial increase in income and achieving the status of employer of four or more non-family members.

In the first case, I assumed that international experience contributes to the intangible pool of knowledge that renders its holders more attractive on the job market independently of other important assets, formal education especially. Results in both OLS and panel regressions show significant positive effects of international experience on success in the income dimension, net of other factors. The important result of this chapter is that the effects of international experience are present in both time perspectives: when the data are treated as cross-sectional and we gain knowledge about effects in specific times, comparing results for different periods, and in the framework of panel regression, when we consider a uniform effect through time with given time intervals.

I have proposed also a second dimension of stratification where positive consequences of international experience could be observed, and this is entrepreneurship. Working and/or living abroad fuels human capital through skills and knowledge relevant for business, recognizing market needs and investment opportunities, as well as economic capital, through savings. Indeed, I find that that the odds of becoming an employer, thus entering one of the economically most successful social classes in post-communist Poland, are significantly higher for people who have international experience than for those who do not, independent of other factors. This resource is especially valuable to Poles who have acquired basic entrepreneurial skills during state socialism, as members of the self-employed. While self-employment itself strongly impacts the odds of moving into the class of employers after the 1989 systemic change, this advantage is significantly larger for the self-employed who also worked and/or lived abroad.

Why do Poles return to Poland? POLPAN does not contain information about these reasons, but it is likely that people who voluntarily return because they perceive opportunities in their country of origin differ systematically from those who are forced back by circumstances out of their control. If so, international experience may bring greater gains to those individuals who return in pursuit of opportunities, and may matter less

for “forced” returners. Since this chapter considers all respondents who worked and/or lived in a different country irrespective of the nature of their return, it provides a conservative test of the impact of international experience.

It would also be interesting to examine how types of international experience play out for individual success back in one’s home country. Does it matter whether people enhance their transnational human capital *via* study abroad versus legal and/or illegal employment spells? Is there a compounded effect of having studied and worked abroad? How relevant is the site where one builds their transnational human capital? POLPAN does not allow for such investigations, but migration data might. Within the framework of migration studies, future research could further analyze how different stages of migration after Poland’s joining the EU relate to Poles’ reasons for migration, as well as the relations of migrants within the host countries.

Since the end of communism, millions of Central and East Europeans have travelled abroad seeking new insights, and oftentimes work and economic resources, that come with international experience. Many of these travellers come back. While the tales of making one’s fortune abroad fill popular culture and the media, there are surprisingly few empirical studies on whether and how being in another country impacts peoples’ social position. Part of the reason is that there are very few longitudinal data sets on representative national samples that document people’s occupational trajectories, including episodes of being abroad. The case of Poland, via its unique panel data of POLPAN, suggests that international experience significantly matters for Central and East Europeans as they navigate the labor market of their home country.

Acknowledgements

I learned, in the most rewarding way, that research is intrinsically a social event. It is my pleasure to acknowledge and thank Joshua K. Dubrow, Tadeusz Krauze, Kazimierz M. Slomczynski, participants of the POLPAN seminars at the Polish Academy of Sciences for their valuable contribution to this chapter. All usual disclaimers apply.

II.

Precurity

CHAPTER 3.

MALGORZATA MIKUCKA

THE TRANSITION TO INSECURITY: EMPLOYMENT DYNAMICS AND ITS SOCIO-DEMOGRAPHIC DIFFERENTIATION*

In Poland, as well as in other countries of Central and Eastern Europe, 1989 was a breakthrough year. Although the political and economic transformation led to introduction of democratic governance and widening personal freedom, the period also brought about dramatic change that was unwanted. Unemployment, officially nonexistent in the communist state, skyrocketed to 16 percent in the early 1990s and reached almost 20 percent after 2000. For the employed, their previous work security ceased.

Longitudinal analyses of changes in employment security are present in the Western sociological literature (Blossfeld and Drobnic 2001; Blossfeld and Hofmeister 2006; Drobnic, Blossfeld, and Rohwer 1999) but rather weakly represented in the scholarship originating in Eastern Europe. Here studies are mostly descriptive and rest mainly on cross-sectional surveys and official statistics (Kotowska and Sztanderska 2007), due to scarcity of panel data. This leads to a serious knowledge gap, since analyses for Western countries do not readily apply to the changes experienced by Central and Eastern Europe, in general, and Poland, in particular, during the social and political transformation following the breakdown of state socialism.

* In this chapter I use my previous work (Mikucka 2013); cf. <http://www.tandfonline.com/doi/abs/10.2753/IJS0020-7659420404>

The goal of this chapter is to supplement existing knowledge by verifying with longitudinal data on individual work histories some of the statements concerning changes in the Polish labor market during and after the post-communist transition. I use the Polish Panel Survey, POLPAN 1988–2008, conducted in Poland between 1988 and 2008, which is a unique source of data, as it tracks individuals from the communist period, through the transformation, to the capitalist economy. The twenty-year time span makes it possible to investigate in detail the dynamics of employment in Poland, its patterns and changes. I focus on two separate, yet related, aspects of job histories: (a) the risk that employed people will experience a work interruption, and (b) the changes of returning to paid work among people with a break in employment. With regard to both, I describe changes in time and differences between sexes and between age and educational groups.

Transformations of Employment Conditions in Poland

The Communist State

For the communist authorities, full employment was an independent political goal. Hence, state companies, which were not constrained by cost effectiveness, maximized rather than optimized the number of employees. Employment levels were high and unemployment basically did not exist (Kotowska and Sztanderska 2007). Working for pay was not only easy, it was compulsory. According to 1982 law (Ustawa 1982), men ages eighteen to forty-five who remained out of the labor market and schooling system for more than three months were suspected of avoiding work and were obliged to explain their status to the local administration unit (Rada Narodowa). Work contracts were long term, and the risk of losing one's job was low (Kotowska and Sztanderska 2007).

Among women the level of paid employment was also high (Kotowska and Sztanderska 2007), although in Poland it was lower than in other communist countries. In 1988, 64 percent of women in Poland participated in the labor market, whereas in East Germany it was 89 percent (Matysiak and Steinmetz 2008). The main reason that women undertook paid work were the low real wages: It took two earners to support the family (Kotowska and Sztanderska 2007).

Earnings inequality was low. Wages depended more on the branch of industry in which a person worked than on personal qualifications (Domański 2002). Because Marxist doctrine prioritized the manufacturing of means of production, the highest wages were reserved for workers in heavy industry. Less important and lower-paid jobs were in the manufacturing of consumption goods (light industry), and the least important, in the service sector, including education and health care (Grajek 2001). Women worked predominantly in light industry and services, and as a consequence, earned systematically less than men. Similar regularities occurred in other communist countries (Orazem and Vodopivec 2000).

For women, who were practically excluded from careers in heavy industry, higher education was the way to improve their employment prospects (Pollert 2003). It was made easier by the policy of promoting girls' education (Kotowska and Sztanderska 2007). Consequently, women's share in specialist occupations (e.g., medicine, law, accountancy, and education) was higher than in the West (Pollert 2003), and the education of women was on average higher than that of men.

The high level of women's labor force participation was possible only due to state support for families. This included nurseries (although in 1973 only between 4 percent and 12 percent of children up to age three attended; see Frątczak et al. 2007; Łobodzińska 1977), and after-school care. Employers organized child care and holidays for their employees' children (Kotowska and Sztanderska 2007). Still, state-provided child-care services for the youngest were rather scarce (and low quality), so three-year-long child-care leaves were introduced.¹

Despite state support for families and the proclaimed goal of universal women's employment, the division of household tasks under communism remained highly traditional (Łobodzińska 1977). Housework was a burden because the necessary equipment and services (such as laundry and household maintenance) – the lowest priority of the communist economy – were hardly available. The problems with procuring everyday necessities combined with the high security of employment

¹ They were introduced in 1968 as twelve-month unpaid leaves and were then used by about 40 percent of blue-collar and 20 percent of white-collar workers; the remaining women returned to work after a four-month fully paid maternity leave (Łobodzińska 1978). The duration of unpaid leaves has been extended to three years in 1972, and an eighteen-month child-care allowance was introduced in 1981 (Frątczak et al. 2007).

often caused women to manage their households during working hours (Kotowska and Sztanderska 2007), prompting literature on the “dual earner – female double burden” employment model (Matysiak and Steinmetz 2008).

The Post-1989 Economic Landscape

For the Polish labor market, two major consequences of the restructuring following the breakdown of state socialism were decreased employment rates and increased unemployment for both sexes (Kotowska and Sztanderska 2007; see also Figure 3.1). In the early stage of the transition to capitalism, privatization of state enterprises and the collapse of production brought about mass layoffs. Initially, unemployment and the fall in levels of earnings affected predominantly men, since the first sectors to be hit, such as heavy industry, agriculture, construction, and transport, were male-dominated (Orazem and Vodopivec 2000). In 1998–2002 a subsequent period of increase in unemployment occurred, when at a time of economic recession, new entrants from the generation of “echo boomers” (i.e., the numerous cohorts born in the 1970s and early 1980s, children of the postwar baby-boom generation) flooded the labor market, while the less numerous generations retired (Kotowska and Sztanderska 2007). The rapid increase in unemployment triggered mass transitions to inactivity, as people decided to take early retirement, preretirement allowances, and disability pensions, which were frequently granted (Kotowska and Sztanderska 2007). The information above, which stems from cross-sectional surveys and official statistics, leads to the following hypotheses that should be examined using longitudinal data:

Hypothesis 1a: Compared to earlier periods, in 1989 the risk of interrupting employment increased and the chance of resuming employment decreased. In the 1988–2008 period, the highest risk of interrupting work and the lowest chance of resuming work after an interruption was in 1988–2002.

Hypothesis 1b: During the economic crisis of 1989 (layoffs in heavy industry), the risk of interrupting employment was higher for men than for women.

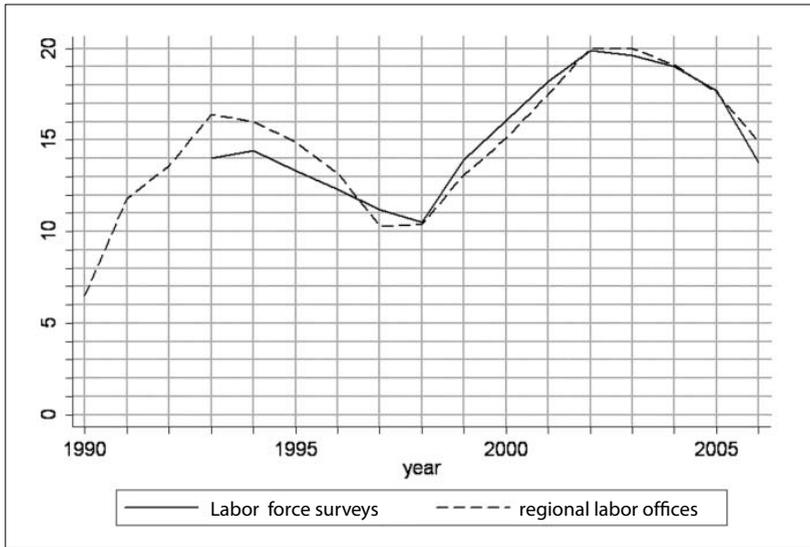


Figure 3.1. Unemployment in Poland, 1990–2006

Source: UN electronic database: <http://data.un.org/>.

With the implementation of capitalist rules of the game, the increased competition in industry and services triggered a striving for economic efficiency. Employment thus started depending more strongly in individuals' qualifications (Kotowska and Sztanderska 2007). As a result, employees with the lowest qualifications left the labor market (Orazem and Vodopivec 2000). The same applied to older people, as they were not prepared for functioning in the market economy (*ibid.*). Indeed, by about 2005, higher education was related to a lower risk of unemployment.

Hypothesis 2: After 1989, the importance of educational level as a factor shaping the risk of interrupting and chances of resuming work gradually increased over time.

Beginning with 1992, women were disproportionately more often laid off than men, due to cuts in public services (Pollert 2003). With registered unemployment often exceeding 10 percent, women also had more difficulties than men in returning to employment, mainly due to their household duties (Kotowska and Sztanderska 2007; Orazem and Vodopivec 2000). After the systemic change, the drop in real wages

and the loss of social benefits associated with employment in the communist economy forced many women, especially those with less education, to leave the labor market. In other words, the employment gender gap grew mainly at lower educational levels. Currently in Poland, women with tertiary education have the highest employment opportunities compared to other groups of women, and the market activities of this group are not lower than those of men (Kotowska and Sztanderska 2007).

Hypothesis 3a: After 1992, women's risk of interrupting employment was higher, and their probability of resuming employment was lower than that of men.

Hypothesis 3b: Men's advantage over women in chances of interrupting and resuming employment is greater at lower educational levels.

The level of economic development differs across the regions of Poland and between urban and rural areas, which may affect the chances of interrupting and resuming employment. Hence, in the analysis I also account for regional differences. However, as the issue is not well explored in the literature, I do not formulate any hypotheses and treat this part of the analysis as exploratory.

Data and Method

Data

I use data from the 1988–2008 waves of the Polish Panel Survey POLPAN. Of special interest for the current analysis is the record of respondents' occupational histories beginning with 1988. In each wave since 1993, the respondents provided information on each of the jobs performed during the previous five years (or from the beginning of their employment, if this occurred more recently than five years). We know the beginning and ending date (month) of each job, and the job's short description. While such data may suffer from errors of memory, they are superior to official records in that they may also account for unofficial (gray zone) employment.

Dependent Variables

I analyze the dynamics of employment using two variables: (1) duration of employment and the chance of interrupting work; and (2) duration of nonemployment and the chance of resuming employment.

A single employment period is defined as the time when the respondent uninterruptedly worked for pay, at least fifteen hours per week, even if during this period he or she changed jobs, undertook additional jobs, or switched between employment and self-employment. The beginning date of the employment period is the date when the respondent started his/her first employment (i.e., month x in year y); the ending date – the date of ending the employment period after which no further job was undertaken. This date is also the beginning of the nonemployment period, while its ending date is the beginning of the next employment period.

It should be emphasized that employment breaks do not include periods between completing education and starting the first job. Because information on the date of finishing schooling is unavailable for the majority of respondents, I limit the analysis to periods of nonemployment that occurred in the case of people already on the labor market. If the employment or nonemployment period was not completed before the last survey (2008), the observation is treated as right-censored.

Overall, the sample includes 3,903 episodes of employment (of which 1,681 are right-censored) and 1,777 episodes of nonemployment (of which 543 are right-censored). Data for employment episodes refer to 2,482, and for employment interruptions – to 996 respondents. The longest employment episode lasted almost twenty-seven years, with the median of about 5.5 years. The longest interruption lasted almost twenty years, with a median of eleven months. Basic characteristics of both dependent variables are shown in Table 3.1. Table 3.2 briefly describes the sample.

Independent Variables Used in the Multivariate Analysis

In the regression model, I account for a set of independent variables: year, region and place of residence (rural/urban area), education and age of the respondent (together with age squared, to account for nonlinear relationships), the age of undertaking/interrupting employment, and a dummy variable signifying the respondent's first job. These variables are characterized in Table 3.3. In addition, Table A.3.1 in the Appendix lists the voivodships included in each region.

Table 3.1. Characteristics of Episodes of Employment and Nonemployment

	Employment episodes	Interruptions
No. of episodes	3,903	1,777
Censored episodes	1,681	543
Longest episode (months)	321	236
Average duration (months)	88	30
Median duration (months)	65	11
Earliest beginning of an episode	March 1937	August 1986
Latest beginning of an episode	May 2008	August 2008
Earliest ending of an episode	August 1986	September 1986
Latest ending of an episode	September 2008	September 2008

Table 3.2. Basic Characteristics of Independent Variables for Employment Periods and Interruptions

	Mean	SD	Minimum	Maximum
Employment periods: <i>n</i> = 3,903				
First job	0.09	0.28	0	1
Age of beginning employment	30.2	11.2	5	72
Year of beginning employment	1988.9	13.6	1937	2008
Sex (1 = women)	0.46	0.50	0	1
Respondents employed at least once: N = 2,482				
Sex (1 = women)	0.48	0.50	0	1
Employment interruptions: N = 1,777				
Age of interrupting employment	36.06	13.09	16	74
Year of interrupting employment	1997.5	5.8	1986	2008
Sex (1 = women)	0.50	0.50	0	1
Respondents who had at least one interruption: N = 996				
Sex (1 = women)	0.50	0.50	0	1

Table 3.3. Characteristics of the Independent Variables for Episodes

Nominal variables				
Variable	Categories			
Year	1986–1988, 1989, 1990–1997, 1998–2002, 2003–2008			
Education	Elementary, vocational, secondary, tertiary			
Region	Central, Wielkopolska, Silesia, Western, Pomerania, Northeast, Eastern, Malopolska			
Quantitative and dummy variables in analysis of employment interruptions ($n = 24,044$ episodes)				
Variable	Mean	SD	Minimum	Maximum
Woman	0.5	0.5	0.0	1.0
First job	0.0	0.2	0.0	1.0
Age of starting employment	29.1	10.3	5.0	72.0
Age of starting employment ^a	953.6	697.0	25.0	5,184.0
Age	40.8	11.3	15.0	79.0
Age ^a	1,790.7	942.3	225.0	6,241.0
Age 55 or older	0.1	0.3	0.0	1.0
Village	0.4	0.5	0.0	1.0
Quantitative and dummy variables in analysis of returning to employment ($n = 5,476$ episodes)				
Woman	0.5	0.5	0.0	1.0
Age of interrupting employment	40.5	14.2	16.0	74.0
Age of interrupting employment ^a	1,844.7	1,185.8	2,56.0	5,476.0
Age	44.0	16.0	16.0	85.0
Age ^a	2,191.2	1,468.9	256.0	7,225.0
Age 55 or older	0.3	0.5	0.0	1.0
Village	0.3	0.5	0.0	1.0

^a This also includes cases where further observation was not possible because of some other event, such as the death of the individual under observation. Left-censoring is not much of an issue for this analysis as during communism unemployment was officially nonexistent, and jobs were stable.

Statistical Model

I use the statistical method of survival analysis (also called duration analysis or time-event analysis) (Blossfeld and Rohwer 2002; Cleves et al. 2004). In this group of models, the dependent variable is “survival time,” that is, the time that passes until a certain event happens. Typical examples of survival analysis in the social sciences are: transitioning between employment and unemployment; changing occupations or hours worked; marrying and divorcing; entering parenthood; achieving educational credentials and interrupting schooling; and committing crimes after release from prison.

Survival analysis takes into account right-censored cases – that is, cases under risk for which the event of interest has not occurred before the observation (i.e., the study) ended (e.g., marriages that did not end with divorce, or criminals who did not commit crimes after their release from prison). It is important to note that survival models do not make an assumption concerning the distribution of the dependent variable. Contrary to the assumption of normal distribution of events in logistic regression, the frequency of events may be higher – for example, at the shortest and at the longest survival times.²

Two functions are crucial in survival analysis: the hazard rate (also called failure rate or transition rate) and the survival function. The hazard rate may be interpreted as the propensity for the event to occur in the moment t , conditional on the fact that the event has not occurred in the past. Formally, the hazard rate is defined in equation (1).

$$r(t) = \lim_{t' \rightarrow t} \frac{P(t \leq T < t' | \leq t)}{t' - t}, \quad (1)$$

where T is the real duration to the event, and t – the moment for which the hazard rate is estimated (Blossfeld and Rohwer 2002; Cleves et al. 2004). According to the equation, the hazard rate $r(t)$ is defined as the probability that the event will occur between moment t and moment t' , on the condition that it did not occur before, in relation to the length of the $t - t'$ period. In practice, for small units of time the hazard risk is equivalent to the conditional probability of the occurrence of the event.

² This is typical for events such as patients' deaths after surgery. It also applies, for example, to the dynamics of employment: interrupting employment is more frequent in the first months and years (due to lack of fit between the person and the job) and a long time after starting employment (due to retirement).

The survival function (also called survivor function) is defined as the probability that the survival time will be longer or equal t . In other words: For each point in time the survival function shows the percentage of the population for whom the event did not yet occur. Formally, the survival function is defined in equation (2) (Blossfeld and Rohwer 2002; Cleves et al. 2004).

$$G(t) = P(T > t) \quad (2)$$

For the descriptive analysis of differences between groups, I use the Kaplan-Meier method (Kaplan and Meier 1958): the product-limit estimator. This is a nonparametric estimation method, especially useful at the first stage of analysis because (contrary to the Cox proportional risk model or the exponential hazard rate model) it does not make assumptions concerning the dynamics of the process (i.e., the shape of the survival function or hazard rate). The Kaplan-Meier method allows us to compare survival functions or hazard rates for individuals belonging to various groups, but – as a nonparametric method – does not allow us to assess the effect of quantitative variables or to account for multiple variables at once. Due to these limitations, I supplement the Kaplan-Meier with an exponential transition rate model (for a comprehensive discussion of the two approaches, see Blossfeld, Golsch, and Rohwer 2007).

The exponential transition rate model is a regression method that – in its simpler version – assumes that the hazard rate is constant, which implies that the dynamics of the process does not change over time (e.g., the divorce risk is the same in the first as in the tenth year of marriage). In this model (see equation [3]), the hazard rate is described as an exponential function of a linear sum of explanatory variables (Blossfeld and Rohwer 2002).

$$r(t) = r = \exp(\alpha_0 + \alpha_1 A_1 + \alpha_2 A_2 + \dots + \alpha_n A_n) \quad (3)$$

In equation (3), elements $A_1 \dots A_n$ indicate the set of explanatory variables, and $\alpha_0 \dots \alpha_n$ – the respective regression coefficients. Equation (4) defines the survival function (see Blossfeld, Golsch, and Rohwer 2007: 88).

$$G(t) = \exp(-rt) \quad (4)$$

As a rule, the exponential transition rate model assumes that values of independent variables are measured at the beginning of each episode and that during the episode they do not change. This poses a limitation because, in reality, the values of independent variables often change;

however, an efficient solution is the episode splitting method (Blossfeld and Rohwer 2002), which also helps in evading the assumption of a constant hazard rate.

In the following analysis I focus on a single-episode model, but I account for all employment (and nonemployment) episodes of each respondent. The beginning of each (non)employment episode is taken as a starting point, regardless of whether or not that particular person had any prior (non)employment period. For this reason, the choice of episodes is not fully random: Episodes of one respondent may be more similar to one another than across respondents. To control for this factor I correct the standard errors of estimation by using the clustering option. The time unit used is a month. The analysis is performed using STATA statistical software.

Descriptive Results

Employment Dynamics

Figure 3.2 shows the survival function and hazard rate of interrupting employment in the past twenty years in Poland. About 50 percent of employment periods were interrupted before seventy-two months (i.e., six years) of employment, 25 percent of employment episodes ended before the first year, and 25 percent took longer than twenty-three years (276 months). The curve of the hazard rate reveals that the risk of employment interruption is highest during the first years of employment, later it drops – if the work is not interrupted – and finally, after twenty-five years of work, it starts growing again (which most likely indicates retirement-related work interruptions).

Figure 3.3 shows the different dynamics of the nonemployment periods. First, they are rarer and shorter than episodes of employment. Only 50 percent of work interruptions exceed one year, and only 25 percent are longer than five years (sixty months). After five years the probability of returning to work drops sharply, and about 15 percent of nonemployment periods do not end with employment. The hazard rate of resuming work is relatively high in the first years of nonemployment, later it decreases with time. In other words, each additional year spent out of employment is associated with lower chances of return. This probably shows a selection effect: the longest work interruptions are most likely experienced by retired or disabled people, who do not return to employment.

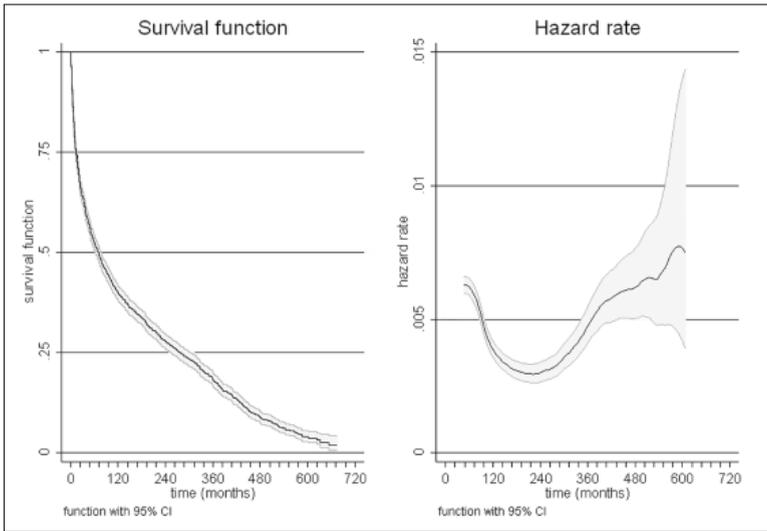


Figure 3.2. Survival Function and Smoothed Hazard Rate for Employment Episodes

Note: Survival function is based on the Kaplan-Meier method; smoothed hazard rate is based on Nelson-Aalen method; POLPAN data, sample: $n = 3,903$ episodes for 2,482 respondents.

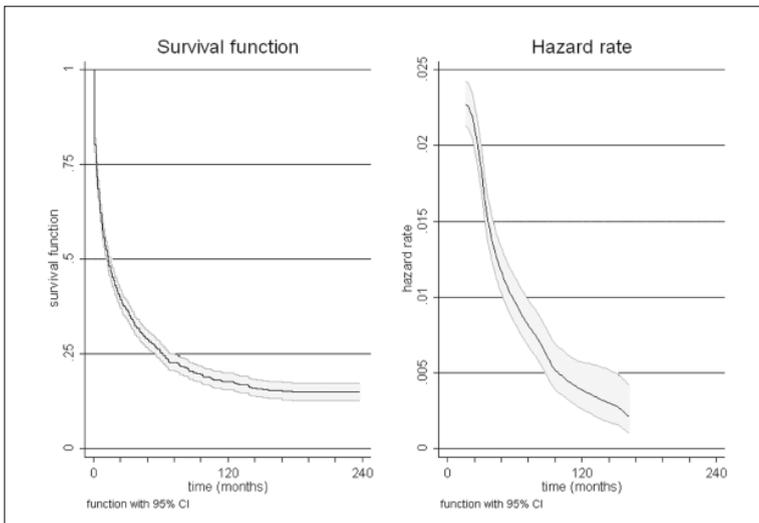


Figure 3.3. Survival Function and Smoothed Hazard Rate for Nonemployment Episodes

Note: Survival function is based on the Kaplan-Meier method; smoothed hazard rate is based on Nelson-Aalen method; POLPAN data, sample: $n = 1,777$ episodes for 996 respondents.

The exponential transition rate model used in the following part of the analysis assumes a time-constant hazard rate. This assumption is obviously false: chances of both interrupting and returning to work depend on the duration of employment or nonemployment, respectively. For this reason, I turn to the piecewise-constant exponential model (Blossfeld and Rohwer 2002), which changes the exponential transition rate model into a very flexible tool, by assuming that the hazard rate is constant but only within certain stretches of time.

To determine the points in time when the (otherwise constant) hazard rate changes, I estimate exponential models including time dummies as independent variables. I start with the “full model” in which the hazard rate is allowed to vary every twelve months and later move to the “simple model,” which distinguishes three or four periods with a slightly changing hazard rate (according to the full model).³ The time points determined in

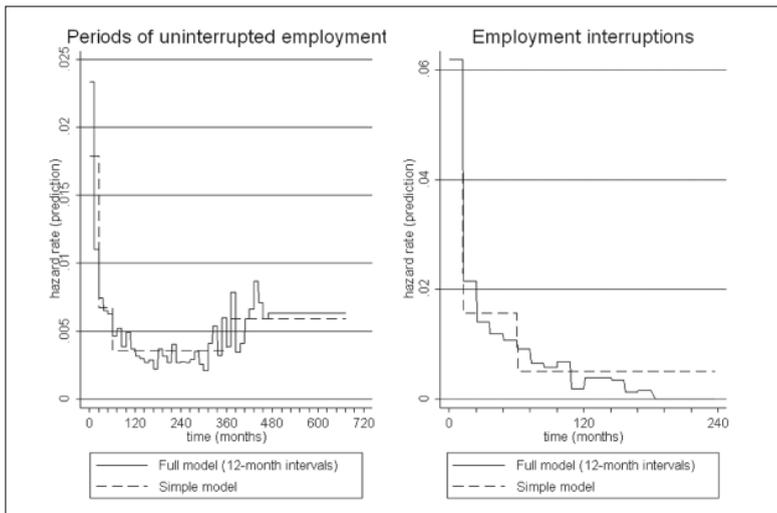


Figure 3.4. Hazard Rate of Work Interruption and Work Undertaking, Estimated with a Piecewise-Constant Exponential Model: Full and Simple Model

Notes: POLPAN data, sample for employment periods: $n = 3,903$ episodes for 2,482 respondents; sample for work interruption periods: $n = 1,777$ episodes for 996 respondents.

³ I code the twelve-month periods as dummy variables and put them into the exponential transition rate regression model as independent variables. Coefficients reveal what the hazard rate was in a given period.

the simple model will be used in further analysis. Predicted hazard rates for both models are shown in Figure 3.4, separately for the employment and work interruption periods.

Table 3.4 (for employment periods) and Table 3.5 (for work interruptions) present coefficients of the simple model. Because regression models did not include the constant term, the values of $\exp(b)$ should be interpreted as the predicted hazard rate for a given period. The hazard rate of work interruption is initially highest and equals 0.018 (which means that the probability of interrupting employment during the first twenty-four months is 43 percent: $0.018 \times 24 = 0.432$; this concerns the hypothetical situation when one job can be interrupted several times). Between two and five years of employment, the hazard rate of work interruption falls to 0.007 (unconditional probability of work interruption: 14 percent). In the period of five to twenty-five years of employment – the hazard rate is lowest and equals 0.004 (unconditional probability of work interruption: 41 percent), and it grows to 0.006 after twenty-five years of uninterrupted employment (unconditional probability of work interruption: 4 percent).

Similarly, returning to employment was most probable during the first year of nonemployment: the hazard rate for this period is 0.06 (which corresponds to the probability of 74 percent). For a period of one to five years of unemployment, the hazard rate drops to 0.016 (unconditional probability of 20 percent), and for the period of five to twenty-five years it drops even lower, to 0.005 (unconditional probability of 5 percent). Coefficients for the full models are presented in Appendix Tables A.3.2 and A.3.3.

Table 3.4. Chances of Work Interruption: Simple Piecewise-Constant Exponential Model

	Hazard rate $\exp(b)$	Coefficient b	t
0–24 months	0.018	-4.025	(-123.59)***
24–60 months	0.007	-4.997	(-97.92)***
60–300 months	0.004	-5.634	(-152.54)***
300–720 months	0.006	-5.135	(-65.36)***
<i>N</i> (no. of episodes)	30,258		
AIC	10,350.2		
BIC	10,383.4		

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Table 3.5. Chances of Returning to Employment: Simple Piecewise-Constant Exponential Model

	Hazard rate exp(b)	Coefficient b	T
0–12 months	0.062	-2.782	(-78.34)***
12–60 months	0.016	-4.160	(-78.27)***
60–240 months	0.005	-5.287	(-49.32)***
N (no. of episodes)	5,391		
AIC	6,171.2		
BIC	6,191.0		

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Gender Differences of Employment Dynamics

According to H3a, women are less tied to the labor market: We expect that they would interrupt employment more often (more rapidly) and return to paid work later (more rarely). I test this hypothesis by comparing the survival functions and hazard rates for men and women separately (Figures 3.5 and 3.6). Figure 3.5 shows the results for employment periods. The curves for men and women are very similar, and the statistical tests (both Wilcoxon and log-rank tests) indicate a lack of statistically significant differences.⁴ This means that – not accounting for other variables – in Poland in 1987–2008, men and women had the same chance and dynamics of interrupting employment.

Figure 3.6 presents the results for the nonemployment episodes and resuming work. Here the gender gap is large: the survival functions indicate that women's nonemployment periods are longer, especially in the initial period. About 20 percent of women's nonemployment episodes do not end with a resumption of work; among men the respective share is 10 percent. Wilcoxon and log-rank tests confirm that the differences are statistically significant.⁵ This leads to the initial conclusion that although women's careers are just as stable as men's, women have less favorable dynamics for returning to employment. They face a higher risk of short

⁴ The difference between the two tests is that Wilcoxon values observations with shorter durations more, and it is the preferred test when differences between hazard rate functions are nonproportional (Cleves et al. 2004: 125). Wilcoxon test: $\chi^2(1) = 0.0$; $p = 0.957$, log-rank test: $\chi^2(1) = 0.1$; $p = 0.753$.

⁵ Wilcoxon: $\chi^2(1) = 21.86$; $p = 0.000$, log-rank: $\chi^2(1) = 31.75$; $p = 0.000$.

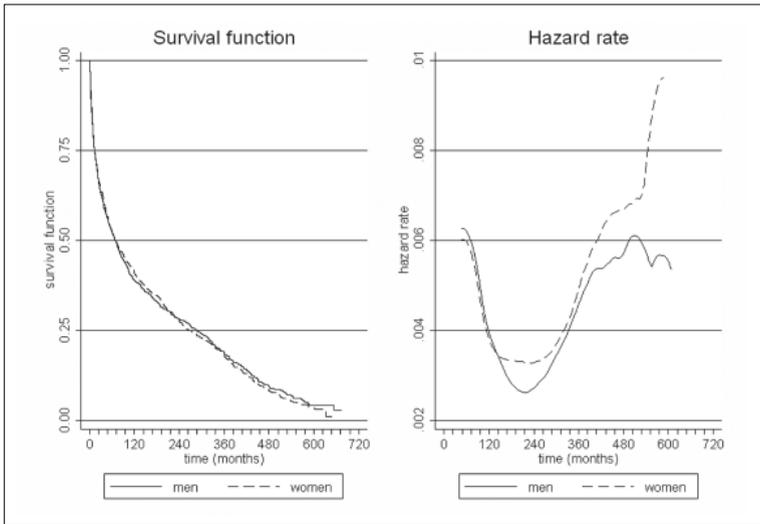


Figure 3.5. Comparison of Duration of Employment Episodes for Men and Women. Survival Function and Smoothed Hazard Rate for Employment Episodes

Notes: Survival Function is based on the Kaplan-Meier method; and Smoothed Hazard Rate is based on the Nelson-Aalen method. POLPAN data, sample: $n = 3,903$ episodes for 2,482 respondents.

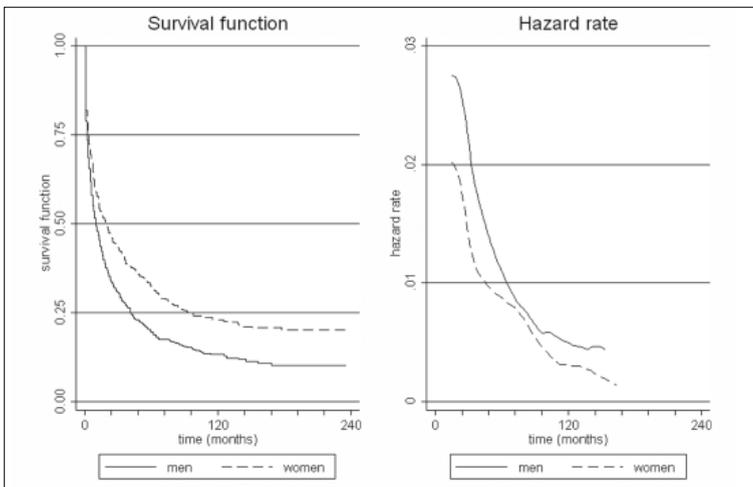


Figure 3.6. Comparison of Duration of Work Interruptions for Men and Women. Survival Function and Smoothed Hazard Rate for Work Interruptions

Notes: Survival Function is based on the Kaplan-Meier method; and Smoothed Hazard Rate is based on the Nelson-Aalen method. POLPAN data, sample: $n = 1,777$ episodes for 996 respondents.

nonemployment periods, and, on average, reentering paid employment takes longer for women than for men.

Multivariate Analysis

The results presented above are based on bivariate analysis. In order to account for the impact of other intervening variables, I estimate subsequent piecewise-constant exponential models. This time, besides the variables accounting for the dynamics of the process (“simple model”; see Tables 3.4–3.5), I also include a set of explanatory variables (in Table 3.3). The results shown in Table 3.6 include two sets of models – with and without interactions – because their strong correlation with other explanatory variables impedes the estimation of significant coefficients. Table 3.6 shows the results of exponential regression; therefore, the value $\exp(b)$ – that is, the exponent of the b coefficient – reveals how many times the base hazard rate increases when the explanatory variable increases one unit. The base hazard rate can be read from the models’ constant.⁶ For quantitative variables, the hazard rate for a particular value can be assessed by elevating the coefficient to the power corresponding to the value of the explanatory variable.⁷

Changes in Time (H1a and H1b)

According to H1a, in 1989 there should have been an increased risk of losing work and a decreased chance of resuming employment. This is partly confirmed: Other things being equal, the risk of interrupting employment compared to 1987–88 increased almost sevenfold; in the following years, this increase was even higher (Model 1a). However, contrary to expectations, the chances of resuming employment did not change over the period.

⁶ For example, in Model 1a, the base risk is 0.0023 per month. The exponent of the coefficient related to the first job is 3.18, which means that, other things equal, the hazard rate of work interruption is more than three times higher for people doing their first job than for those doing their second, or later, job: the hazard rate grows from 0.0023 to 0.007 ($0.0023 \times 3.18 = 0.0073$).

⁷ For example, in Model 1a (interrupting employment, no interactions), if the episode of employment occurred at the age of twenty, the risk coefficient is 1.083^{20} , that is, 4.953, and after accounting for the quadratic term (0.999^{400}), it is about 3.5 ($1.083^{20} \times 0.999^{400} = 4.953 \times 0.70 = 3.488$).

Consistently with the hypothesis, 1998–2002 were indeed associated with the highest risk of moving to nonemployment: the chances were about eight times higher than in 1987–88 (the reference category). However, the hazard rate of returning to employment did not change over time.

I also expected that the nature of layoffs changed over time, in particular, that the crisis of 1989 concerned mainly men (H1b). This finds no support in the data: the respective coefficient (“woman \times year 1989”) in Model 1b is statistically insignificant. This may indicate a lack of differences between sexes in layoffs in the initial year of transformation, but may also mean that men more easily found jobs and, consequently, did not interrupt employment more often than women.

Education (H2)

As expected, for both sexes, higher education decreases the risk of interrupting employment: other things equal, people with secondary education have an 18 percent lower risk of interruption, compared to people who have only elementary education. The effect is much more striking for tertiary education, where the risk decreases by 42 percent, compared to elementary education (see Model 1a in Table 3.6). At the same time, education improves the chances of returning to paid work: those with tertiary education are almost twice as likely to resume employment than are people with elementary education ($\exp(b) = 1.84$, Model 2a in Table 3.6). Statistically insignificant coefficients of interactions of sex and educational level (Models 1b and 2b) show that the differences between educational groups are the same for men and women.

Interactions of year and educational level are included in Models 1b and 2b to test H2 that the advantage from higher education grew over time. This hypothesis finds no support in the data. However, inspecting the interactions adds a new dimension to the story. In the period 1989–97 the risk of interrupting employment for people with vocational education was almost 50 percent lower than expected. In other words, after 1989 people with vocational education (mainly qualified blue-collar workers) were protected from losing their jobs, compared to people with elementary education. Their risk of interrupting employment in 1989–97 increased five- to sixfold over 1987–88, whereas for elementary, secondary, and tertiary education it increased about ten- to elevenfold (the difference between secondary and tertiary, and elementary education are not

statistically significant).⁸ These differences concerned interrupting, but not returning to work.

Gender Differences (H3a and H3b)

The results of the Kaplan-Meier method analysis are confirmed in the multivariate model. Employed women do not face a higher chance of interrupting employment than employed men (insignificant coefficient in Models 1a and 1b). However (Model 2a), their chances of returning to paid work are approximately 35 percent lower than those of men, which partly supports H3a. Moreover (Model 2b), this concerns mainly women over the age of fifty-five (the hazard rate of returning to work is 65 percent lower).

I also expected that the gender gap in interrupting and undertaking employment should be larger at low educational levels (H3b). The results do not support this prediction: the respective coefficients in Models 1b and 2b are statistically insignificant.

In addition to testing the above-mentioned hypotheses, my results show the lower stability of both early and late careers. Being employed in the “first job,” compared to subsequent jobs, increases the hazard rate of interrupting employment more than threefold. This may signify the temporary character of first jobs, but it may also indicate the difficulties that young people have in entering the labor market. Similarly, for those older than fifty-five, the chances of interrupting employment grow about twofold (Models 1a and 1b). In terms of undertaking employment, older people are also disadvantaged, but this concerns only women (65 percent lower chances).

The results also provide insights on geographic variation in regard to interruptions and undertaking of employment, which is a largely unexplored area. Independently of other factors, living in a village increases the stability of both employment and nonemployment: the risk of interrupting employment is 35 percent lower there than in towns and cities. At the same time, the periods of remaining out of work are longer than in towns and cities. Both these characteristics may reflect the large percentage of more stable agriculture jobs in rural areas and the overall smaller pool of jobs and employees.

⁸ From Model 1b: overall in 1990–97 (compared to 1987–88), the risk of work interruption increased by a factor of 11.36. The coefficient for the interaction with vocational education (0.55) reveals that the risk increased by only a factor of 6.2 for people with vocational education. The respective increases for 1989 are factors of 9.9 and 5.4 (0.55×9.9).

Table 3.6. Regression of Hazard Rate of Interruption Employment (Models 1a and 1b) and Returning to Employment (Models 2a and 2b)

	Model 1a			Model 1b			Model 2a			Model 2b		
	Employment periods with interactions			Employment periods with interactions			Nonemployment periods without interactions			Nonemployment periods without interactions		
	exp(b)	b	t	exp(b)	b	t	exp(b)	b	t	exp(b)	b	t
1986-1988	reference category			reference category			reference category			reference category		
1989	6.75	1.91	(14.21)***	9.93	2.30	(8.79)***	1.05	0.05	(0.17)	1.11	0.11	(0.15)
1990-1997	7.48	2.01	(18.53)***	11.36	2.43	(10.62)***	0.89	-0.12	(-0.47)	0.83	-0.18	(-0.25)
1998-2002	8.17	2.10	(18.13)***	10.84	2.38	(9.66)***	0.84	-0.18	(-0.68)	0.75	-0.29	(-0.38)
2003-2008	7.16	1.97	(16.47)***	9.49	2.25	(8.96)***	1.54	-0.43	(1.68)	1.37	0.32	(0.42)
Woman	1.08	0.08	(1.47)	1.05	0.05	(0.37)***	0.63	-0.46	(-6.61)***	0.65	-0.43	(-1.74)
First job	3.18	1.16	(12.88)***	3.21	1.17	(12.97)***	-			-		
Age of undertaking employment	1.08	0.08	(5.44)***	1.08	0.08	(5.41)***	-			-		
Age of undertaking employment (squared)	1.00	0.00	(-4.44)	1.00	0.00	(-4.44)***	-			-		
Age of interrupting employment				-			1.03	0.03	(0.44)	1.05	0.05	(0.66)
Age of interrupting employment (squared)				-			1.00	0.00	(1.61)	1.00	0.00	(1.34)
Age	0.90	-0.11	(-5.69)***	0.90	-0.11	(-5.69)***	1.14	0.13	(1.89)*	1.13	0.12	(1.69)
Age (squared)	1.00	0.00	(4.54)***	1.00	0.00	(4.58)***	1.00	0.00	(-4.84)***	1.00	0.00	(-4.58)***
Age 55 or older	2.09	0.74	(5.83)***	1.95	0.67	(4.87)***	0.79	-0.23	(-1.05)	1.16	0.15	(0.64)

	Model 1a			Model 1b			Model 2a			Model 2b		
	Employment periods with interactions			Employment periods with interactions			Nonemployment periods without interactions			Nonemployment periods without interactions		
	exp(b)	b	t	exp(b)	b	t	exp(b)	b	t	exp(b)	b	t
Woman x year 1989	-			1.05	0.05	(0.29)	-			0.73	-0.31	(-0.68)
Sex x age												
Woman x age 55 or older	-			1.16	0.15	(1.11)	-			0.35	-1.06	(-3.21)**
Year x education												
1989-1997 x vocational	-			0.55	-0.60	(-2.10)*	-			1.13	0.12	(0.15)
1989-1997 x secondary	-			0.63	-0.46	(-1.54)	-			1.56	0.44	(0.48)
1989-1997 x tertiary	-			0.53	-0.63	(-1.68)	-			0.87	-0.14	(-0.15)
1998-2008 x vocational	-			0.62	-0.49	(-1.59)	-			1.20	0.18	(0.21)
1998-2008 x secondary	-			0.76	-0.28	(-0.88)	-			1.70	0.53	(0.56)
1998-2008 x tertiary	-			0.66	-0.42	(-1.10)	-			0.84	-0.17	(-0.19)
Sex x education												
Woman x vocational	-			1.00	0.00	(0.01)	-			0.83	-0.19	(-0.69)
Woman x secondary	-			1.00	0.00	(0.00)	-			1.14	0.13	(0.48)
Woman x tertiary	-			0.99	-0.01	(-0.05)	-			1.31	0.27	(0.83)
Dynamics of the process												
0-24 months	2.94	1.08	(11.85)***	2.96	1.08	(11.85)***	-			-		
24-60 months	1.36	0.31	(3.51)***	1.37	0.31	(3.54)***	-			-		

	Model 1a			Model 1b			Model 2a			Model 2b		
	Employment periods with interactions			Employment periods with interactions			Nonemployment periods without interactions			Nonemployment periods without interactions		
	exp(b)	b	t	exp(b)	b	t	exp(b)	b	t	exp(b)	b	t
60-300 months	reference category			reference category			reference category			reference category		
300-720 months	1.64	0.50	(3.14)**	1.63	0.49	(3.12)**	-	-	-	-	-	-
0-12 months	-	-	-	-	-	-	2.30	0.83	(3.01)**	2.28	0.82	(2.96)**
12-60 months	-	-	-	-	-	-	0.94	-0.06	(-0.27)	0.93	-0.07	(-0.32)
60-240 months	reference category			reference category			reference category			reference category		
Constant	0.00	-6.08	(-16.46)***	0.00	-6.44	(-15.09)***	0.00	-5.89	(-9.49)***	0.00	-5.84	(-6.42)***
Number of episodes	2,3796			2,3796			5,419			5,419		
AIC	8,347.7			8,361.1			5,479.1			5,478.9		
BIC	8,557.8			8,660.0			5,637.4			5,709.8		

* $p < 0.05$; ** $p < 0.001$; *** $p < 0.0001$

Among the regions, only western Poland stands out as especially vulnerable. In this region, the risk of interrupting employment was 35 percent higher and the chance of undertaking employment was 30 percent lower than in the reference (central) region. This may reflect the region's particularly high (compared to other regions of Poland) share of small enterprises and the high unemployment rate.

Robustness Checks

Table 3.6 shows the results for the entire sample. To check the robustness of the results, I repeated the analysis for people under the age of fifty-five years, in order to exclude the interruptions and undertaking employment by people eligible for retirement. The results (not shown, but available upon request) do not change significantly.

Summary and Discussion of Results

The goal of the study was to describe the dynamics of employment in Poland in 1988-2008, verifying hypotheses emerging from the literature on the topic. Using data covering twenty years of work histories as recorded by the POLPAN panel survey, I presented the changes that took place after 1989, differences in work interruptions and resuming employment after an interruption between men and women, between educational groups, and between regions.

The basic and surprising conclusion from the analysis is that women in Poland – contrary to expectations and in contrast to Western European countries – experience stable employment periods comparable to those of men. However, it should be stressed that the wording of the questions in POLPAN does not allow us to account for work interruptions related to childbearing, such as maternity and parental leaves. The results presented do not preclude that these kinds of interruptions are more frequent among women than among men.

Even though there is no statistically significant gender difference in career interruptions, the nonemployment periods of women are on average longer than those of men, and their chances of returning to paid work are lower. Women less often than men resume employment after a long (fifteen- to twenty-year) break, which may partly result from their longer life expectancy and their higher prevalence in the oldest age groups and

among retired persons. However, the evidence concerning shorter non-employment periods also suggests that women have more problems than men with reentering employment after a break.

The next important conclusion concerns the dramatic decrease in the stability of paid employment after 1989. The large increase in the chance of losing a job suggests that the restructuring of the labor market was dramatic, and no group managed to protect against this loss of stability: Among people with vocational education the risk of interrupting work increased more than fivefold; among people with elementary, secondary, and tertiary education – more than tenfold. In the same period, the chances of returning to work did not grow.

Besides the aforementioned, the analysis adds new points to the description of the Polish labor market during and after the transformation. First, although the chances of interrupting or resuming work depend on educational level, the discriminating power of education with regard to access to the labor market did not grow after the transformation.

Second, the results indicate that people with vocational education, who formed the relatively privileged segment of the working class in large state enterprises in the communist economy, remained relatively protected from interrupting employment after the transformation as well. Both of these results suggest that in some respects the labor market underwent changes smaller than what is sometimes declared.

Appendix

Table A.3.1. Regions Included in the Analysis

Region	Voivodships (16)
Central	Łódzkie, Mazowieckie, Małopolskie
Małopolska	Podkarpackie, Świętokrzyskie, Pomorskie
Pomerania	Warmińsko-Mazurskie, Zachodnio-Pomorskie, Podlaskie
Northeast	Warmińsko-Mazurskie, Opolskie
Silesia	Śląskie, Kujawsko-Pomorskie
Wielkopolska	Wielkopolskie, Lubelskie
East	Mazowieckie, Dolnośląskie
West	Lubuskie, Wielkopolskie, Zachodnio-Pomorskie

Table A.3.2. Chances of Resuming Work: Full Piecewise-Constant Exponential Model

	Hazard rate $\exp(b)$	Coefficient b	t	Conditional probability of resuming work (%)
0–12 months	0.062	-2.782	(-78.34)***	74
12–24 months	0.021	-3.840	(-50.22)***	25
24–36 months	0.014	-4.266	(-39.10)***	17
36–48 months	0.012	-4.435	(-33.48)***	14
48–60 months	0.011	-4.540	(-29.43)***	13
60–72 months	0.009	-4.702	(-24.88)***	11
72–84 months	0.006	-5.038	(-20.77)***	7
84–96 months	0.006	-5.143	(-18.54)***	7
96–108 months	0.007	-5.003	(-17.33)***	8
108–120 months	0.002	-6.262	(-10.85)***	2
120–132 months	0.004	-5.545	(-12.40)***	5
132–144 months	0.004	-5.569	(-11.14)***	5
144–156 months	0.004	-5.653	(-9.79)***	5
156–168 months	0.001	-6.645	(-6.65)***	1
168–180 months	0.002	-6.466	(-6.47)***	2
180–240 months	0.000	-20.750	(-0.02)	0
N	5,391			
AIC	6,134.9			
BIC	6,240.4			

Table A.3.3. Chances of Interrupting Employment: Full Piecewise-Constant Exponential Model

	Hazard rate $\exp(b)$	Coefficient b	t	Conditional probability of work interruption (%)
0–12 months	0.023	-3.758	(-98.43)***	28
12–24 months	0.011	-4.510	(-72.30)***	13
24–36 months	0.007	-4.904	(-60.66)***	8
36–48 months	0.006	-5.038	(-55.88)***	7
48–60 months	0.006	-5.072	(-52.71)***	7
60–72 months	0.005	-5.372	(-45.90)***	6
72–84 months	0.005	-5.256	(-45.52)***	6
84–96 months	0.004	-5.560	(-39.71)***	5

	Hazard rate $\exp(b)$	Coefficient b	t	Conditional probability of work interruption (%)
96–108 months	0.005	-5.320	(-41.21)***	6
108–120 months	0.004	-5.599	(-36.71)***	5
120–132 months	0.003	-5.756	(-34.05)***	4
132–144 months	0.003	-5.823	(-32.42)***	4
144–156 months	0.003	-5.910	(-30.71)***	4
156–168 months	0.003	-5.862	(-30.46)***	4
168–180 months	0.002	-6.119	(-27.37)***	2
180–192 months	0.004	-5.611	(-31.74)***	5
192–204 months	0.003	-5.757	(-29.35)***	4
204–216 months	0.003	-5.912	(-27.09)***	4
216–228 months	0.004	-5.520	(-29.72)***	5
228–240 months	0.003	-5.923	(-25.13)***	4
240–252 months	0.003	-5.907	(-24.35)***	4
252–264 months	0.003	-5.929	(-23.72)***	4
264–276 months	0.003	-5.828	(-24.03)***	4
276–288 months	0.003	-5.657	(-24.66)***	4
288–300 months	0.003	-5.971	(-21.53)***	4
300–312 months	0.002	-6.173	(-19.52)***	2
312–324 months	0.004	-5.505	(-23.35)***	5
324–336 months	0.005	-5.221	(-24.49)***	6
336–348 months	0.003	-5.741	(-19.89)***	4
348–360 months	0.006	-5.118	(-23.45)***	7
360–372 months	0.004	-5.552	(-19.23)***	5
372–384 months	0.008	-4.847	(-22.73)***	10
384–396 months	0.003	-5.670	(-17.01)***	4
396–408 months	0.004	-5.500	(-17.39)***	5
408–420 months	0.006	-5.132	(-18.50)***	7
420–432 months	0.007	-5.017	(-18.09)***	8
432–444 months	0.009	-4.749	(-18.39)***	11
444–456 months	0.007	-4.947	(-16.41)***	8
456–468 months	0.006	-5.129	(-14.51)***	7
468–720 months	0.006	-5.066	(-35.46)***	7
N	30,258			
AIC	10,240.0			
BIC	10,572.7			

CHAPTER 4.

ANNA KIERSZTYN

EMPLOYMENT INSTABILITY REVISITED: ARE “TRASH CONTRACTS” AFFECTING LONG-TERM CAREER TRAJECTORIES?*

Over the past few decades, many countries have experienced a growth in the incidence of various forms of temporary employment arrangements, such as those associated with fixed-term or civil agreements, or temporary help agencies. The consequences of this change are often a subject of concern among scholars and policymakers. First, many studies show temporary employment to be linked to substandard work conditions, such as low pay or short career ladders (e.g., Booth, Francesconi, and Frank 2002; Comi and Grasseni 2012; McGovern, Smeaton, and Hill 2004; OECD 2014). Second, the move toward alternative work arrangements and corporate downsizing has raised questions concerning the sustainability of stable, long-term employment relations (Beck 2000; Cappelli 1999; Kalleberg 2009; Thurow, 1999). Life-long employment is thought by many to be a thing of the past (Neumark 2000), a relic of the Fordist era, gradually giving way to a different type of career: movement from one short-term job to another. This popular view, reflected in the results of public opinion surveys regarding perceived job security (see Chung and Mau 2014; OECD 1997), was strengthened by extensive media coverage

* In this chapter I use my previous work (Kiersztyn 2012b); cf.
<http://www.tandfonline.com/doi/abs/10.2753/IJS0020-7659420101>

of layoffs and downsizing in major corporations.¹ In this context, it is worth mentioning that in Poland as well, survey data strongly indicate that, apart from adequate wages, employment stability is regarded by workers as the most important aspect of job quality, and the fear of losing one's job is substantial (e.g., CBOS 2004; 2016). Under such conditions, the issue of whether the nature of the employment relationship is indeed changing and what may be the actual scale and scope of this shift, became important subjects of inquiry.

In the debate concerning the consequences of labor market flexibility, atypical work arrangements are regarded as a main cause and indicator of increased instability. Implicit here is the assumption that certain types of employment contracts are, by definition, associated with short tenure and a lack of attachment between workers and their employers (Auer and Cazes 2003a; Standing 2011). This is well illustrated by the phrases that have been used to denote such arrangements: precarious, vagrant peripheral employment; disposable or vulnerable work (see Kalleberg 2000). Such an assumption is consistent with the evidence suggesting that workers in alternative and contingent employment have, on average, lower tenure and higher separation probabilities (Houseman and Polivka 2000; see also various other contributions in Neumark 2000).² However, this relationship is still far from obvious and may be much more complex than is often believed.

¹ A good illustration is offered by the following quotes from newspaper articles published in the mid-1990s: One of them suggested that workers should “forget any idea of career-long employment with a big company” (Church 1993: 97). Another claimed that “the notion of lifetime employment has come to seem as dated as soda jerks, or tail fins” (Kolbert and Clymer 1996: A22). For more systematic data on media coverage of issues related to employment security in countries other than the U.S. see OECD (1997).

² The U.S. Bureau of Labor Statistics (BLS) defines contingent works as “any job in which an individual does not have an explicit or implicit contract for long-term employment or one in which the minimum hours worked can vary in a nonsystematic manner” (Polivka and Nardone 1989). In BLS analyses, apart from short tenure, two other indicators of contingent work arrangements are used: workers whose reported jobs were temporary or not expected to continue for other than personal reasons, and the respondents' perception of being able to hold their current jobs for less than a year. Jobs were defined as being short term or temporary if the worker was working only until the completion of a specific project, was temporarily replacing another worker, was hired for a fixed time period, or was performing a seasonal job only during certain times of the year (Polivka 1996).

Some studies suggest that employment arrangements that can be considered precarious from a formal-legal point of view do not necessarily imply employment instability. For example, several years ago a study of unregistered workers in Poland revealed that many of them were in long-term employment relationships, with even several years of tenure with their current employers. The evidence from qualitative interviews also points to high levels of attachment between both sides of these informal relationships (Millward-Brown SMG/KRC and CASE 2008). Another example is offered by case studies describing changes in the employment relations in different firms. These studies found that although the internal labor markets that existed in those corporations prior to restructuring were destroyed as companies downsized, switched to outsourcing, or increased the share of temporary workers, certain policies to enhance worker security and career ladders were subsequently restored (Moss, Salzman, and Tilly 2000).

Such results are understandable in the light of theoretical considerations, based on the human capital theory, which implies that firms profit from retaining more experienced workers (see Auer and Cazes 2003a). Further, as suggested by the efficiency-wage literature, internal labor markets may also allow for reductions in the costs of performance monitoring (e.g., Bulow and Summers 1986). This is why certain, even informal, guarantees of employment stability, especially for higher-skilled workers in jobs where commitment and innovativeness are crucial, are also important for employers. Therefore, regardless of the incidence of temporary work arrangements, such as fixed-term contracts or civil-law agreements, the question concerning the actual stability of employment is important on its own right (Kiersztyn 2016).

In this chapter, I return to my previous analyses of employment instability in Poland, which were based on data covering the period from 1993 to 2008. Contrary to the expectations driven by the fact that Poland is characterized by the highest rate of fixed-term employment among EU countries (see, e.g., European Commission [EC] 2016), the previous findings revealed no signs of increasing career instability. However, in the last few years, this issue has gained in importance and public visibility, due to extensive media coverage of the problem of overutilization of civil law agreements (contracts for a specific task, contracts of mandate – commonly referred to as “trash contracts”) on the Polish labor market. Indeed, it appears that many employers reacted to the economic crisis by attempting to gain even more numerical and wage flexibility than offered

by the standard fixed-term contracts through increasing (in some cases unlawfully) the share of workers hired on the basis of civil-law contracts. Such types of employment arrangements, as opposed to standard fixed-term contracts, are not governed by the Labor Code and offer minimal social protection. This change is reflected in data from various sources. For example, according to estimates published by the Central Statistical Office, the number of workers on civil-law agreements without an employment contract (either open-ended or fixed-term), increased dramatically from 547 thousand in 2010 to around 1.4 million in 2013. The actual number is likely to be even higher, as the data do not cover individuals working in firms hiring less than ten workers (more than one third of the workforce). In light of these recent developments, it is important to see whether there have been any corresponding changes in general employment stability after 2008.

This chapter presents the results of an analysis of the incidence and correlates of unstable employment in Poland during three overlapping ten-year periods, covering most of the post-communist transition: 1993–2003, 1998–2008, and 2003–2013.

Unstable Employment in Light of Previous Studies

Empirical analyses of employment instability use various methodological approaches to the measurement of turnover. Some of them focus on tenure, assuming the trends in average tenure among various groups of workers (or a raise in the percentage of short-tenure workers) reflect changes in employment stability (Auer and Cazes 2003b; Jaeger and Huff Stevens 1999; OECD 1997). However, this assumption is to some extent problematic because employment duration is strongly related to changes in the flows of workers into employment from unemployment or inactivity (Jaeger and Huff Stevens 1999). First, the higher inflow of newly hired employees during economic prosperity decreases average tenure, even while the actual employment stability of other workers remains unchanged or even increases (because of fewer layoffs). Second, shifts in employment duration are dependent on changes in the age distribution, as older workers are able to accumulate more years of tenure (Auer and Cazes 2003b). Further, studies focused on trends in tenure do not include those who were not employed at the time the data were gathered. This might cause an underestimation of employment instability, as those who frequently change employers are

more likely, compared to those in stable jobs, to be out of work at any given moment (see Gottschalk and Moffitt 1999).

Other studies attempt to overcome these limitations by using more direct measures of job stability, such as worker separation or retention rates. Separation rates capture the risk that initially employed individuals will lose their jobs, becoming unemployed or moving to a new employer. Conversely, retention rates refer to the probability of remaining in the current employment relation for a given period of time. These indicators have been estimated on the basis of either cross-sectional (e.g., Neumark, Polsky, and Hansen 1999; OECD 1997) or panel data (e.g., Bernhardt et al. 1999; Gottschalk and Moffitt 1999; Valetta 1999). It is assumed that a fall in the retention rate over time (or a raise in the rate of job separation) reflects a rise in employment instability.

Setting aside the specific measurement and data comparability problems associated with the use of varying data sets (for a discussion of the latter, see e.g., Brown and Light 1992; Gottschalk and Moffitt 1999, and various contributions in Neumark 2000), the degree to which retention or separation rates are able to capture actual changes in the nature of employment is, to some extent, questionable. Both measures can be used to analyze trends in the overall incidence of short-term jobs. However, they do not tell us whether a rise in unstable employment relations results from a higher number of workers becoming trapped in a series of short-term jobs or, rather, reflects the increased number of options available to employers and workers in their search for an adequate job match. In the latter case, temporary jobs may not have a negative impact on the individual's chances to gain stable employment in the long run. In fact, the opposite could turn out to be true. First, short-term employment can be used by workers who had lost their jobs as a bridge to help them re-enter the labor market. For example, Farber has found that: "the likelihood of temporary and involuntary part-time employment falls with time since job loss. Thus, it appears that these alternative employment arrangements are often part of a transitional process subsequent to job loss leading to regular full-time permanent employment" (1999: S167). Second, there is evidence suggesting that in some cases, firms searching for long-term employees may use temporary work as a screening device (Boockmann and Hagen 2008; Wang and Weiss 1998).

In general, it can be argued that as long as short-term job spells occur mostly during relatively short, transitional periods of an individual's career, and ease the transition into long-term employment, a fall in the

aggregate retention rate (or a rise in job separation rates) does not necessarily mean a loss in job stability for individual workers, at least in the long run. To analyze true changes in stability we need to determine the extent to which short-tenure work spells tend to accumulate among certain individuals over longer periods of time. This requires detailed individual-level career data. In other words, besides analyzing the aggregate incidence of short-term employment spells, studies need to focus on the percentage of workers with long-term unstable employment records.

Over the last years, there has been an increasing interest in labor market research based on panel data, though mainly with respect to cross-country variations in the youth school-to-work transition process. Such studies utilize various approaches analyzing patterns of career sequences, such as survival analyses (e.g., Baranowska, Gebel, and Kotowska 2011; Gash 2008; Göbel and Verhofstadt 2008) or optimal matching techniques (e.g., Brzinsky-Fay 2007; Quintini and Manfredi 2009; Scherer 2001). However, their main focus is on changes in the labor market status of individual workers (employment vs unemployment and inactivity, the latter also due to education); more recently also on contractual arrangements. As such, they do not capture the stability of the employment relationship, especially among those who experience multiple changes of employer, but without periods of joblessness between consecutive hires. Fewer studies use data on individual job spells, focusing directly on career instability and movement between employers (Barbieri and Scherer 2009; Cockx and Picchio 2012; Gagliarducci 2005; Garcia-Perez, Marinescu, and Vall Castello 2014; Kiersztyn 2015a). The main goal of such studies is to analyze the career consequences of various modes of labor market entry or re-entry, rather than overall trends in employment instability.

The present analysis adds to this literature in two ways. First, by its focus on the general stability in employment relations. Second, by using a different measure of job instability, one that focuses on the duration of workers' consecutive job spells rather than just their number. Specifically, an individual employment record is considered unstable if this person has not experienced a single employment spell lasting at least three years within a ten-year period. Such an indicator allows avoidance of the problem posed by the uneven distribution of the consecutive employment spells, which has not been taken into account in previous studies based on panel data. The latter primarily used measures such as the number of employers or the number of job separations within a given period (Kiersztyn 2007; see also Schmidt and Svorny 1998) – as a result, workers who pass

through a series of multiple odd jobs, each lasting for several months, but eventually attain stable employment, could be mistakenly included among those with unstable work records.

Drawing on the results of research on employment instability and labor turnover, conducted throughout the past two decades in different countries, I adopt the following hypotheses. First, numerous studies suggest that, generally, employment in developed countries remains relatively stable, despite a growing incidence of temporary and fixed-term jobs (Auer and Cazes 2003b; Cazes and Tonin 2010; Neumark 2000; OECD 1997; Schmidt and Svorny 1998). I expect the same to be true in Poland. Such an assumption is strengthened by the fact that data on worker tenure in the 1990s suggest higher stability than in many developed countries (Cazes and Nesporova 2001). According to more recent Labor Force Survey data, the job turnover rate in Poland does not differ from the European Union (EU) average (EC 2009; OECD 2010) and average tenure is relatively long (Cazes and Tonin 2010).

Second, a majority of analyses has failed to find strong evidence pointing to a large and systematic growth in aggregate employment mobility over recent decades (and those that did find such evidence, were criticized for various methodological weaknesses; see Diebold, Neumark, and Polsky 1996; Jaeger and Huff Stevens 1999; Schmidt and Svorny 1998; Swinnerton and Wial 1995, 1996). Similarly, Polish data from repeated cross-sectional Public Opinion Research Center surveys does not support the claim of increasing job mobility. Although the proportion of respondents who declared a change in their employer at least once during the past five years increased from 22 percent in 1998 to 35 percent in 2009, over the next years this trend was reversed, and in 2014 the self-reported mobility rates were back at the 1998 level (CBOS 2014). Looking more directly at the proportion of employees who worked for three or more separate employers during a period of five years, Kiersztyn (2007) observed a slight growth in the incidence of unstable employment between 1998 and 2003; however, this result was not statistically significant.

Third, although the results of research point to substantial employment stability, certain categories of workers face a relatively high risk of unstable jobs. These are, first, women (Auer and Cazes 2003b; EC 2009; Frederiksen 2008; Neumark 1999; OECD 1997). I expect similar gender differences to exist in Poland. In particular, the instability indicator used in this analysis is likely to capture cases in which the lack of

longer-lasting employment spells may result from multiple career interruptions due to maternity leave (see also the more detailed sample and variable description below). Other groups that, according to the literature, are likely to experience more instability include younger and less-educated workers (Auer and Cazes 2003b; Diebold, Neumark, and Polsky 1997; EC 2009; Neumark et al. 1999; OECD 1997); I expect similar relationships among Polish workers (see also Cazes and Nesporova 2001; CBOS 2014). However, the effect of schooling may turn out to be more complex in Poland, where students choose between two types of secondary education: in general high schools whose main task is to prepare graduates for college, and vocational high schools, which, in addition, provide the practical skills necessary for the performance of a specific job. Analysis of 2003 survey data suggest that, even on the basic level, vocational training lowers the risk of unstable work relations, due to the high demand for workers with job-specific skills on the Polish labor market (Kiersztyn 2007). Under such conditions, I expect that vocational high school graduates are more likely to attain stable employment, compared to workers with only general high school education and no college.

The fourth hypothesis assumes that unstable employment records are more common among workers in less complex jobs, as employers have a stronger motivation to retain workers who are more difficult to replace, that is, workers in occupations requiring more education or job-specific skills (Doeringer and Piore 1971). This assumption is consistent with the observation that separation probabilities generally decline with tenure (Farber 1998), and that individuals in high skilled jobs, working as managers or professionals have the highest retention rates (Neumark, Polsky, and Hansen 1999). In general, skilled white-collar occupations (e.g., managers, professionals, and technicians) tend to have longer tenures, compared to semiskilled and unskilled manual and lower-level white-collar jobs, a pattern that was similar across countries (Auer and Cazes 2003b; Cazes and Nesporova 2001). Finally, based on instability research and the dual labor market literature, I expect unstable work histories to be more prevalent among workers in the broadly defined secondary sector. The latter includes trade and personal services, which are characterized by relatively low retention rates (Auer and Cazes 2003a; Neumark, Polsky, and Hansen 1999), unskilled manual jobs, and skilled manual labor in industries such as construction, manufacture of furniture, garments, leather or wood products, as well as in the food and beverage industry. These industries offer the lowest-quality, secondary

labor market jobs, and are thus most likely to be characterized by high instability (see Kiersztyn 2015b).

Data and Variables

In each wave of POLPAN, the respondents were asked for detailed information concerning their current and past employment, including the month and year each job spell started and ended.³ In addition, the 1998 and later POLPAN questionnaires included questions that allow us to distinguish changes of employer from changes of the occupational position within the same company (specifically, for each job held during the past five years, respondents were asked whether they had been working for the same employer before). Using employment history data from the 1998, 2003, 2008, and 2013 surveys, it was possible to determine the duration of each employment spell for all panel respondents during three ten-year periods: 1993–2003, 1998–2008, and 2003–2013.

The samples consisted of respondents who participated in the survey at the end of each ten-year period (2003, 2008, and 2013, respectively) and provided full employment histories covering at least ten years before each survey. For each period, I chose respondents who have not reached retirement age (sixty-five for men and sixty for women) in the final year. I excluded all respondents who were not economically active (employed or searching for a job) before or during the beginning year, and who were both economically inactive and receiving pension or disability benefits in the final year. This left a sample of working-age respondents who, at the beginning of the ten-year period, had already entered the labor market and who had not exited it permanently before the end of this period. Finally, respondents who had not experienced a single job spell during the entire ten-year period were also excluded from the sample. The final sample sizes were 753 in 1993–2003, 616 in 1998–2008, and 824 in 2003–2013.

³ The latter is important, as there are studies based on data from some U.S. surveys (the supplements to the Current Population Survey or the Panel Study of Income Dynamics [PSID]) that asked the respondents only for information on years of tenure. Such data are significantly less accurate as they group together respondents with slightly less and slightly more than a given year of tenure (the so-called heaping effect). Thus, it is impossible to distinguish between respondents who have been working for their employers for, say, seven and seventeen months, as in both cases they would say that they have one year of tenure (see Gottschalk and Moffitt 1999).

It should be noted that survey participants who were temporarily out of the labor market (not employed and not looking for work) for some time during each ten-year period were kept in the sample. Their inclusion was motivated by the premise that economic inactivity may often be a sign of labor-market difficulties. This is most obviously the case when, for example, jobless workers give up searching for employment, assuming that their efforts will prove unsuccessful. However, a similar point could be made concerning individuals who declare their absence from the labor market for other reasons: prolonged maternity leave, other family obligations, education, or poor health. Their decision to exit the labor market may be a strategy for coping with the actual or perceived lack of chances of finding adequate employment. Under such conditions, what appears to be an individual choice may, in fact, be a product of economic constraints. We cannot rule out the possibility that many of those individuals would prefer to be in employment, if they had a more favorable perception of their labor market opportunities. From a career perspective, periods of inactivity may be regarded as part of a vicious circle, quite likely being both a result of and a factor contributing to unstable employment and insecurity. Therefore, the noninclusion of discouraged workers could bias the results of this study. It is worth noting that a similar point was made explicit in the underemployment literature (see Jensen and Slack 2003). The concept of underemployment, understood in terms of the degree of human capital utilization, was put forward by economists, who acknowledged the limitations associated with treating traditionally defined unemployment (being jobless and actively searching for work) as the only indicator of unfavorable economic conditions. The Labor Utilization Framework also includes the economically inactive (referred to as the “subunemployed”) among those in underemployment.

According to the definition adopted in this study, a respondent is considered to be in unstable employment if he or she had not experienced a single regular employment spell lasting three years or longer during a period of ten years. In POLPAN, the term “regular” refers to full-time, salaried employment or any job (including self-employment) with at least three months of tenure, on which the respondent spends at least fifteen hours per week.⁴ Spells of self-employment are also taken into account,

⁴ According to the criterion adopted in this study, a respondent may be included among those in unstable employment even if he or she had a job lasting more than three years, provided this job was irregular, according to the definition used in

based on the assumption that it is possible to achieve stability working as the proprietor of a company or an independent farmer.

It is worth noting that in POLPAN, questions concerning the beginning and end dates for consecutive jobs refer generally to continuous spells with a single employer (rather than repeated periods of work at the same company). This kind of detailed information is the most appropriate for the study of employment instability, as it allows us to make the important distinction between continuous and cumulative tenure. It seems reasonable, for example, to include individuals working for a few months every year (as in a seasonal job) among those with unstable employment, even if their cumulative tenure with their employers is relatively long.⁵ Accordingly, cases in which a respondent returned to work at the same company (or re-entered in self-employment) after an interruption that lasted longer than one month are treated as separate employment spells.⁶ One possible consequence of adopting such a criterion should be kept in mind: It may lower employment stability for women, who are more likely than men to experience career interruptions due to family and child-care obligations (e.g., Lovell 2007). The incidence of unstable employment among young women is most likely to be affected by paid and unpaid maternity leave.⁷

POLPAN. In such a case, irregular would mean less than fifteen hours of work per week. Having even a stable job of this sort is unlikely to ensure economic security. Nevertheless, such cases are relatively uncommon.

⁵ The lack of a clear distinction between continuous and cumulative tenure in the PSID data is considered a serious methodological limitation of the many U.S. employment stability studies that use these data (see Gottschalk and Moffitt 1999).

⁶ Such an analysis is enabled by the fact that, starting from the 2003 POLPAN survey, additional questions concerning career interruptions, both in the same job and between jobs, were introduced. In addition, the retrospective career data gathered in 2013 allows the distinction between continuous and periodic (e.g., seasonal) employment, by including appropriate questionnaire items. The inclusion of these questionnaire items may explain the larger number of job spells among those with unstable trajectories in the most recent period, 2003–2013.

⁷ However, some observations suggest that the relationship between gender and employment instability might not be as strong as the above reasoning implies. Additional analyses of length of intervals between consecutive employment spells at the same company suggest that in many cases, the respondents themselves may have interpreted work before and after maternity leave as parts of the same continuous job spell. It should also be remembered that the birthrate in Poland is among the lowest in Europe (e.g., the total fertility rate in 2000 was only 1.37; see GUS 2010a), so although many women experience career interruptions as a result of childbearing, in

It should also be remembered that the definition of employment instability proposed in this chapter does not impose any restrictions on the number of jobs held by each respondent. Most important, it does not exclude cases in which a respondent experiences one short employment spell and is unemployed or economically inactive during the rest of the ten-year period. If such respondents were the majority of those who meet the instability criterion, the validity of the definition adopted here would become questionable. Under such conditions, the criterion would not differentiate between stable and unstable employment, but rather capture the lack of access to any kind of job.

Table 4.1. Respondents with Unstable Employment Histories, 1993–2003, 1998–2008, and 2003–2013 by the Total Number of Employment Spells During Each Ten-Year Period

	1993–2003		1998–2008		2003–2013	
	Number	Percent	Number	Percent	Number	Percent
Unstable work histories:	81	100.0	69	100.0	66	100.0
1 employment spell	23	28.4	25	36.2	22	33.3
2 employment spells	18	22.2	22	31.9	12	18.2
3 employment spells	17	21.0	14	20.3	7	10.6
4 employment spells	12	14.8	2	2.9	7	10.6
5 employment spells	5	6.2	3	4.3	5	7.6
6 and more employment spells	6	7.4	3	4.3	13	16.7
Valid N	750		615		824	

Note: Missing cases: three in 1993–2003, one in 1998–2008, one in 2003–2013.

Data on the total number of employment spells among respondents with unstable employment histories in the two ten-year periods are presented in Table 4.1. Overall, 81 respondents met the instability criterion in 1993–2003, 69 in 1998–2008, and 66 in 2003–2013.⁸ This group is very heterogeneous with respect to the number of job experiences. A large

most cases it is unlikely that these interruptions would be frequent enough to satisfy the instability criterion.

⁸ Due to the lack of data on the length of employment spells for five respondents (three in 1993–2003, one in 1998–2008, and one in 2003–2013), it was impossible to determine whether these individuals experienced a spell lasting three or more years. These respondents were excluded from the respective samples.

share had only a single short employment spell, and a slightly smaller percentage were in an employment relationship twice during the studied period. However, a large share of respondents had three or more jobs during each ten-year period: 49.4 percent in 1993–2003, 31.8 percent in 1998–2008, and 48.5 percent in the most recent period. The average number of employment spells in the respective periods was 2.73, 2.23, and 3.39. Although the number of individuals who experienced multiple spells in short-term jobs is not as large as might have been expected, Table 4.1 offers no reason to doubt the validity of the instability indicator.

Among the independent variables, I included gender, age category, educational level, job complexity, and secondary sector occupation. Age category, calculated on the basis of the respondents' year of birth, divides them into five groups according to their age at the beginning of each ten-year period: 16–24, 25–34, 35–44, and 45–54. Education has five categories, based on the kind of school completed by the respondent: elementary (together with incomplete elementary), basic vocational, general secondary school, vocational secondary school, and college. It should be remembered that the two types of high school listed above are generally treated as offering a comparable level of education (and are therefore often grouped together in the standard educational classifications for Poland). I consider them separately, as vocational high school graduates receive additional credentials and work-related experience, which may decrease their risk of unstable employment. Values of the job complexity scale for specific occupations (classified according to the four-digit Polish Social Classification of Occupations [SKZ]) were assigned following Slomczynski (2007). The values of this variable range from 15.1 to 87. Secondary-sector occupation is a categorical variable, based on the SKZ code describing the first job the respondent has held since the start of each ten-year period. It divides the respondents into four categories: workers in retail trade and personal services and unskilled manual workers; these two categories were created by aggregating the SKZ code at the one-digit level. The third category, skilled manual workers in industries that are likely to offer lower employment stability (construction, agriculture, manufacture of textiles, furniture, food and beverages), was identified on the basis of four-digit SKZ codes. The remaining respondents are the reference category. The frequencies for all the categorical variables listed above are shown in Table 4.2. The remaining respondents (managers and professionals, technicians, low-level white collar, skilled manual-primary sector, farmers, and proprietors) are the reference category.

Research Findings

Data on the incidence of unstable work histories in 1993–2003, 1998–2008, and 2003–2008, presented in Table 4.2, are consistent with the expectation that employment in Poland is not characterized by a high level of instability: Only around one out of ten respondents met the short-tenure criterion. Further, there is no evidence of a sudden fall in stability over the past twenty years. On the contrary, in 2003–2013, the unstable employment rate dropped to only 8 percent from around 11 percent in the preceding periods. This finding, though it may seem surprising, is consistent with the results of studies using data on tenure and labor flows as well as Polish analyses of the frequencies of employer change (CBOS 2014).

The preliminary results in Table 4.2 also point to important variations in instability rates across socio-demographic categories, similar to those observed in analyses of worker tenure and retention rates in other countries. Such descriptive results should be approached with caution due to rather small sample sizes; however, there are certain tendencies in the data which are consistent through time and may thus offer some first insights regarding the categories most affected by instability. Generally, women appear to be more affected by instability than men, though this relationship is not as strong as might have been expected, and does not occur at all in the period 2003–2008. The relationships may be masked by the fact that in Poland, women are generally more educated than men, and they are less often employed in occupations characterized by higher instability.

Consistent with expectations, unstable employment is concentrated in the youngest category. The percentage of individuals whose work histories consisted only of short-term job spells was highest among individuals between sixteen and twenty-four years old at the beginning of each ten-year period. It should be noted that this relationship appears to have grown somewhat stronger in recent years, which may be explained by an increase in the labor market activity of individuals who continue their education, found in other studies based on POLPAN data (Kiersztyn 2015c).

Another factor consistently affecting the chances of employment instability is the level of schooling. The hypothesis that individuals with low educational attainment experience more difficulties in finding long-term employment, even over longer periods of time, is generally confirmed, as the percentage of respondents meeting the instability criterion is highest

Table 4.2. Frequency of the Independent Variables, Incidence of Unstable Employment by Gender, Age, Education, and Initial Occupational Category, 1993–2003 and 1998–2008 (in %)

	Frequencies			Incidence of unstable employment histories		
	1993–2003	1998–2008	2003–2013	1993–2003	1998–2008	2003–2013
Total	100.0	100.0	100.0	10.8	11.2	8.0
Gender						
Male	56.2	55.7	53.4	9.7	11.4	6.6
Female	43.8	44.3	46.6	12.2	11.0	9.6
Age at the beginning year (categories)						
16–24 years old	12.7	14.3	15.7	15.8	19.3	14.0
25–34 years old	34.8	25.5	20.0	11.1	8.3	5.5
35–44 years old	39.9	36.9	31.2	9.7	10.6	7.4
45–55 years old	12.7	23.4	33.1	8.4	10.4	7.4
Level of education						
Elementary	13.5	13.8	8.7	10.9	17.6	17.1
Basic vocational	36.7	34.1	38.5	15.3	12.9	10.0
Secondary general	13.6	16.4	5.6	12.7	13.9	8.9
Secondary vocational	21.7	22.3	28.7	7.4	7.3	5.6
Tertiary	14.5	13.3	18.6	2.8	3.7	2.7
Beginning occupational category						
Managers and professionals	11.1	10.9	16.2	2.4	4.5	2.3
Technicians	7.8	8.1	5.0	5.2	6.0	9.8
Low-level white collar	11.3	9.4	12.2	11.9	5.2	7.0
Services and trade	7.0	9.9	9.7	15.4	9.8	12.5
Skilled manual – primary	17.6	16.3	15.7	9.9	12.0	9.4
Skilled manual – secondary	8.5	8.5	7.5	19.0	21.2	17.7
Unskilled manual	12.6	12.5	11.8	17.0	27.3	15.5
Farmers	13.3	15.0	13.2	7.1	6.5	1.8
Proprietors	10.9	9.4	8.7	12.3	6.9	2.8

among those who completed only elementary or basic vocational school, and lowest among university graduates. Also as expected, a vocational high school diploma decreases the chances of unstable employment relative to general high school education in all the three periods. Finally, respondents meeting the low tenure criterion are concentrated in occupations associated with low-quality, secondary labor market employment: unskilled manual work, skilled manual work in secondary sector industries, retail trade, and personal services. These findings are consistent with the results of other Polish studies showing that working in any of the above categories increases the risk of holding a fixed-term contract (e.g., Kiersztyn and Dzierzgowski 2012). Although the descriptive results from Table 4.2 do not point to any clear-cut trends with respect to the latter relationships, there may be some interesting changes occurring in other segments of the occupational structure. Specifically, it appears that while lower-level professionals and technicians tend to become more affected by employment instability, the opposite is occurring among entrepreneurs: independent farmers and owners of firms. This result is surprising and merits further research, but should be approached with caution due to the small sample sizes.

A more detailed examination of the relationships between occupational position and unstable trajectories is provided in Figure 4.1, which presents the average occupational complexity score among stable and unstable workers in the consecutive years of two ten-year periods: 1993–2003 and 1998–2008. The difference in job complexity was visibly more pronounced in 1998–2008 than in 1993–2003. In the earlier period, the occupational complexity score of working respondents with unstable employment histories was, on average, 13.4 percent lower than that of respondents who did not meet the instability criterion. In 1998–2008, this difference increased to 18.6 percent.⁹ Figure 4.2 presents similar comparisons for the most recent period, but using a slightly different methodological approach, focusing on the first job held after January 2003 and the last job recorded in the 2013 wave of POLPAN. Such an approach offers an additional check of the robustness of the results with respect to missing data for individuals who are jobless in a given period (especially within the unstable worker category). These additional findings also

⁹ This result was not affected by the change in occupational complexity scale from 2004 onward, as it remained almost unchanged when only the 1998–2003 complexity scores were taken into account.

point to a persistent difference between the two groups of workers: the average complexity score in the initial occupation was 21.6 percent lower for workers whose subsequent trajectories did not include longer lasting employment spells compared to other respondents; and if we compare the scores for the final occupation, we still observe a gap of 17.3 percent. Taken together, these observations suggest that the chances for securing long-term employment relationships among the lowest segments of the labor market may have been reduced over the last years.

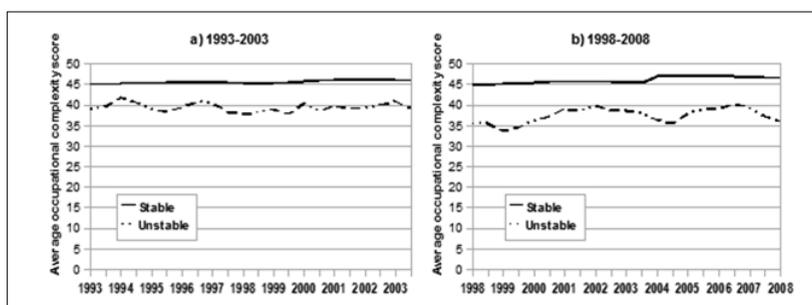


Figure 4.1. Average Occupational Complexity Score Among Workers with Stable and Unstable Employment Histories, 1993–2003 (a) and 1998–2008 (b)

Note: The occupational complexity scores refer only to work actually performed for a period of at least one month during each period. Missing values of the occupational complexity scale were assigned to respondents who were not employed at any time during a given period. Starting with 2004 data, a new, updated occupational complexity scale was used (see Slomczynski 2007).

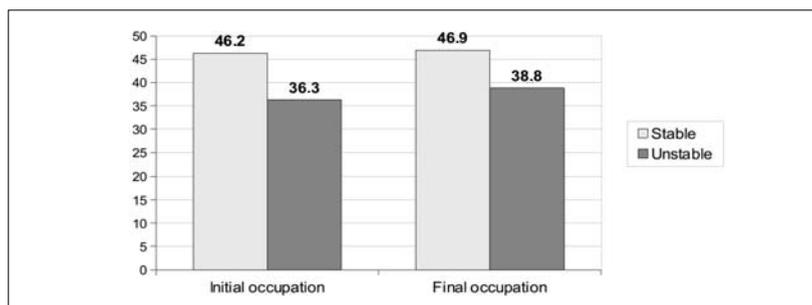


Figure 4.2. Average Occupational Complexity Scores Among Workers with Stable and Unstable Employment Histories, 2003–2008, in the Initial and Final Job

The final part of the analysis attempts to explain the likelihood of employment instability in 1993–2003, 1998–2008, and 2003–2013 by means of logistic regression equations. Apart from gender, the models include only the variables that, according to the results described above, can be expected to affect access to long-term employment opportunities. Several conclusions can be drawn from the regression coefficients presented in Tables 4.3 to 4.5. First, although the variables in all the models for both periods leave a large part of the variation in unstable employment unexplained, the 1998–2008 and 2003–2013 models are generally better fitted to the data than those for 1993–2003 (as demonstrated by the higher R^2 values for Models 5 and 6 in Table 4.4, and Models 8 and 9 in Table 4.5). In other words, it appears that structural factors have gained some explanatory power over the last decade. Second, contrary to expectation, the risk of unstable employment was generally not found to be higher among women, even when controlling for education and occupational position. It should be noted, however, that in 2003–2013, the coefficients for gender are higher than in the earlier years; their lack of significance is most likely due to the small sample size. The positive effect of career interruptions on the risk of instability among female workers may be offset by their stronger attachment to their employers. Women may be unwilling to change jobs, fearing difficulty in finding new employment. There are also concentrated in the public sector, which is more likely to offer stable employment (Cazes and Nesporova 2001; Kiersztyn 2007).

Third, the regression coefficient for the age variable in 1993–2003 drops below significance levels when educational attainment is included in the model. This finding is surprising, insofar as due to the “educational boom” which occurred in Poland throughout the last two decades (see, e.g., Kiersztyn 2013), the youngest cohorts entering the labor market are, on average, more educated than older workers. One possible explanation is that the youngest workers, who are still in school, are characterized by relatively low formal educational credentials (e.g., sixteen- to eighteen-year-old respondents, who were still attending high school at the beginning of the ten-year period, are classified as having completed only elementary education, even if by the end of this period they acquire a college diploma). This would imply that the higher incidence of unstable employment among the youngest respondents in 1993–2003, observed when education is not controlled for (Table 4.2), may have resulted from the fact that many of them still attended schools. If this is the case, unstable work histories may not be considered a negative

experience, as individuals who are still in school usually do not seek the commitments associated with long-term work and seldom need the sense of security it offers.

Table 4.3. Logistic Regression Coefficients for Employment Instability, 1993–2003

	Model 1			Model 2			Model 3		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
Gender (female)	0.307	0.248	1.359	0.258	0.248	1.294	0.249	0.248	1.283
Aged 16–24 in 1993	0.329	0.316	1.390	0.241	0.320	1.272	0.297	0.325	1.346
Education:									
Elementary (or less)	1.462	0.668	4.314*	0.837	0.740	2.310			
Basic vocational	1.819	0.612	6.165**	1.295	0.666	3.650 ⁺			
Secondary general	1.496	0.663	4.464*	1.251	0.676	3.494 ⁺			
Secondary vocational	0.978	0.659	2.658	0.582	0.691	1.789			
Job complexity				-0.020	0.011	0.980 ⁺	-0.024	0.012	0.977*
Occupation:									
Services and trade							0.191	0.460	1.210
Skilled manual – secondary							0.615	0.382	1.850
Unskilled manual							0.114	0.441	1.121
Constant	-3.710	0.597	0.024	-2.440	0.886	0.087	-1.386	0.576	0.250
χ^2 (df)		20.473	(6)		23.943	(7)		17.836	(6)
Log-likelihood		-246.4985			-244.7635			-247.2435	
Cox and Snell R^2		0.027			0.031			0.024	
Nagelkerke R^2		0.054			0.063			0.048	
p		0.002			0.001			0.007	

Notes: Dependent variable: unstable work histories, $n = 750$. Reference categories are: for education – college; for occupation – all occupations other than services and trade, unskilled manual work and skilled manual work in construction, agriculture, manufacture of textiles, furniture, food and beverages.

** $p < 0.01$ level; * $p < 0.05$; ⁺ $p < 0.1$ (two-tailed).

However, the 1998–2008 and 2003–2013 models consistently suggest a significant relationship between youth and instability: Regardless of the respondent's education or occupational position, being in the sixteen to twenty-four-year-old age group around the turn of the century almost doubled the risk of never entering a longer-lasting job spell during the subsequent ten years. This suggests that employment stability among the youngest respondents is lower than for older workers, regardless of whether they are still in schools. Taken together, the results in Tables 4.4 and 4.5 suggest that in recent years, the prospects of young workers for finding long-term employment have deteriorated to some extent, and instability is more likely to be involuntary.

Fourth, although the relationships between education, occupational position, and the likelihood of employment instability are significant in all the three time periods, there seem to have been some interesting changes in the patterns of these relationships. Specifically, it appears that in 1993–2003 the individual's chances of experiencing longer-lasting job spells were determined to some extent by their schooling levels, suggesting that regardless of their initial occupational position, secondary and tertiary graduates performed better in terms of job stability. In the more recent years, the risk of unstable trajectories is better explained by the starting occupational position and secondary sector employment. Specifically, in both 1998–2008 and 2003–2013, having a college diploma no longer seemed to improve labor market opportunities relative to secondary or vocational education, once the occupational variables are included in the model.

The data for 1988–2008 (Model 6 in Table 4.4) point to a particularly strong relationship between unskilled manual labor or skilled work in the secondary-sector industries and instability. This result can be largely explained by the low skill requirements for these occupations, which makes employees more easily replaceable and decreases the employers' motivation to retain such workers. However, such differences do not fully account for the instability of skilled manual workers in secondary sector industries, many of whom perform tasks that are not less complex than those of the more stable, primary sector blue-collar workers. It is worth noting that in 2003–2013, despite the stronger association between the complexity variable and instability, a significant, though weaker, relationship between secondary-sector employment and the dependent variable was still observed net of other variables, in accordance with the dual labor market literature (Model 9 in Table 4.5).

Table 4.4. Logistic Regression Coefficients for Employment Instability, 1998–2008

	Model 4			Model 5			Model 6		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
Gender (female)	-0.038	0.274	0.962	-0.185	0.279	0.831	-0.018	0.274	0.982
Aged 16–24 in 1998	0.675	0.315	1.964*	0.592	0.321	1.808 ⁺	0.616	0.324	1.852 ⁺
Education:									
Elementary (or less)	1.652	0.655	5.217*	0.586	0.716	1.797			
Basic vocational	1.199	0.630	3.318 ⁺	0.294	0.674	1.342			
Secondary general	1.270	0.668	3.562 ⁺	0.828	0.684	2.288			
Secondary vocational	0.615	0.677	1.849	-0.087	0.705	0.917			
Job complexity				-0.037	0.011	0.964**	-0.016	0.014	0.984
Occupation:									
Services and trade							-0.038	0.524	0.963
Skilled manual – secondary							0.947	0.419	2.577*
Unskilled manual							1.051	0.487	2.860*
Constant	-3.253	0.601	0.039	-0.966	0.870	0.381	-1.826	0.680	0.161
χ^2 (df)		17.11	(6)		28.456	(7)		31.813	(6)
Log-likelihood		-207.344			-201.686			-200.008	
Cox and Snell R^2		0.027			0.045			0.050	
Nagelkerke R^2		0.054			0.090			0.100	
p		0.009			0.000			0.000	

Notes: Dependent variable: unstable work histories, $n = 615$. Reference categories are: for education – college; for occupation – all occupations other than services and trade, unskilled manual work and skilled manual work in construction, agriculture, manufacture of textiles, furniture, food and beverages.

** $p < 0.01$ level; * $p < 0.05$; ⁺ $p < 0.1$ (two-tailed).

Table 4.5. Logistic Regression Coefficients for Employment Instability, 2003–2013

	Model 7			Model 8			Model 9		
	B	S.E.	Exp(B)	B	S.E.	Exp(B)	B	S.E.	Exp(B)
Gender (female)	0.642	0.275	1.900*	0.448	0.283	1.566	0.359	0.275	1.432
Aged 16–24 in 2003	0.751	0.322	2.118*	0.633	0.326	1.884 ⁺	0.611	0.309	1.842*
Education:									
Elementary (or less)	2.173	0.606	8.782**	1.159	0.699	3.187 ⁺			
Basic vocational	1.605	0.549	4.977**	0.709	0.627	2.032			
Secondary general	1.051	0.740	2.860	0.509	0.764	1.664			
Secondary vocational	0.809	0.584	2.246	0.159	0.629	1.172			
Job complexity				-0.032	0.012	0.968**	-0.046	0.017	0.955**
Occupation:									
Services and trade							-0.116	0.481	0.891
Skilled manual – secondary							0.796	0.423	2.216 ⁺
Unskilled manual							-0.167	0.559	0.846
Constant	-4.166	0.552	0.016	-2.013	0.938	0.134	-0.916	0.819	0.400
χ^2 (df)		28.564	(6)		35.708	(7)		35.660	(6)
Log-likelihood		-209.145			-205.495			-211.905	
Cox and Snell R^2		0.035			0.043			0.042	
Nagelkerke R^2		0.082			0.102			0.099	
p		0.000			0.000			0.000	

Notes: Dependent variable: unstable work histories, $n = 824$. Reference categories are: for education – college; for occupation – all occupations other than services and trade, unskilled manual work and skilled manual work in construction, agriculture, manufacture of textiles, furniture, food and beverages.

** $p < 0.01$ level; * $p < 0.05$; ⁺ $p < 0.1$ (two-tailed).

Although firm-specific human capital still counts as a factor lowering the risk of instability, other, institutional and organizational mechanisms seem to be at work as well. In order to gain more detailed knowledge concerning these mechanisms, we need additional research at the establishment level. Nonetheless, the changes in regression coefficients between 1993–2003 and 2003–2013 may be interpreted as pointing to an increased labor market divide in Poland. In other words, it appears that “getting off to a good start” is increasing in importance, and negative trajectories may have become harder to reverse through human capital investments.

Discussion and Conclusion

This chapter analyzed employment stability on the Polish labor market, using a new instability indicator, which takes into account the detailed employment histories of working-age individuals over ten years. Unlike measures used in earlier studies in this field, such as length of tenure or worker retention (or separation) rates, which focused on aggregate mobility, the criterion proposed here captures long-term instability, which results from a concentration of short-term employment spells among certain categories of workers. The findings presented above suggest that in Poland, career patterns have remained relatively stable, at least when looked at in terms of the presence of job spells of considerable duration. This observation is consistent with the results of earlier analyses of overall worker mobility. Further, a comparison of instability rates during three ten-year periods (1993–2003, 1998–2008, and 2003–2013) did not confirm the expected growth in the percentage of workers whose employment records include only short-term jobs. This result is also consistent with earlier studies. However, in the Polish case, such findings may seem particularly surprising given the high incidence of temporary employment arrangements compared to other European countries. Overall, relatively stable (though perhaps not life-long) employment relationships still appear to be the norm in Poland, as they do in other industrialized countries.

Although contrary to popular views that “most of today’s employment relationships are of a temporary nature and that long-term employment relationships are a thing of the past” (Auer and Cazes 2003b: 55), such results are understandable in light of the human capital literature, which suggests that retaining experienced workers is generally beneficial for

employers. This is especially true in the case of more qualified workers in jobs involving more complex tasks, which was also confirmed by the results of regression analyses discussed above. Unstable work histories were found to be more frequent among individuals with the weakest position on the labor market: the least educated, in low-level occupations, in industries offering the lowest quality of employment. These results are to some extent consistent with the dual labor market literature, which portrays the secondary sector as offering mostly short-term jobs and minimizing the commitments between both sides of the employment relationship. At the same time, it should be remembered that even among the least-qualified, secondary-sector workers, the instability rate was not as high as might have been expected: A majority still managed to find at least one job that lasted for a minimum of three years during a ten-year period.

However, one should not be overly optimistic about the situation of workers on contemporary labor markets on the basis of such results. Although the widespread opinion predicting the ultimate end of long-term employment relations is not supported by data on worker tenure and employment histories, the former cannot be ignored by scholars and policymakers. Perceived employment instability is an important social fact, and research based demonstrates that it has a stronger impact on job satisfaction than the type of contractual arrangement (Origo and Pagani 2009; Chung and Mau 2014). Studies attempting to explain the paradox of subjective insecurity coexisting with objective stability draw attention to three issues that should be taken into account in attempts to assess the social significance of labor market trends. All the issues warrant additional research in Poland, as in other countries.

First, an important point that has been made in the debate on changes in the nature of work is that relatively high employment stability, understood in terms of job duration, does not automatically translate into employment security (Valetta 1996). On the contrary, studies focused on employment security, using data on reasons for job separations, suggest that the popular anxiety is not wholly unfounded. Although there is no doubt that, to some extent, the perceptions of growing instability are related to the business cycle, and strengthened by media stories of mass layoffs, they also appear to reflect actual, long-term labor market changes. Specifically, some researchers argue that the last decades of the twentieth century brought about an increase in the rates of involuntary job loss, accompanied by a fall in the incidence of voluntary resignations (Aaronson and Sullivan 1998; OECD 1997; Schmidt 1999; Valetta 1996, 1999).

Second, public anxiety may stem not only from an increased likelihood of job loss but also from a fear of the negative consequences of losing a job. Although it is commonly believed that changing jobs is usually associated with an increase in wages (see, e.g., Topel and Ward 1992), there are studies suggesting that the economic prospects of unstable workers have become worse than in the past. For example, Bernhardt et al. (1999) found that the average wage returns to job changing among young adult men in 1979–95 were lower than in 1966–81. At the same time, these returns became more unequal – although some individuals experienced large wage gains as a result of moving to a new employer, the proportion whose wages remained unchanged or actually declined was much higher in the more recent period. It has also been shown that involuntary job losers suffer relatively higher wage penalties, and are less likely to be reemployed in full-time jobs, compared to those who quit (OECD 1997).

Third, the point has been made that measures of aggregate job stability are endogenous, as feelings of insecurity are likely to affect workers' decisions to stay with their current employers. Paradoxically, widespread anxiety may even lead to an increase in observable stability on the labor market, as individuals may be unwilling to leave their jobs even if they experience poor working conditions, fearing that they would be unable to find another job (Aaronson and Sullivan 1998). If this is the case, relatively high levels of stability may mask a deterioration in the quality of employment.

All the above observations are consistent with Polish data on the correlates of unstable employment histories and public perceptions of the situation on the labor market. Although, in the aggregate, there seem to have been no large changes in the likelihood of long-term employment instability, the results presented above strongly suggest that unstable work relationships are becoming increasingly concentrated among specific categories of workers: the young, least educated, in unskilled manual jobs. Since all the above categories, except for young workers, have the worst labor market prospects, it is likely that their higher turnover results from dismissals rather than voluntary resignations. Such an interpretation is indirectly supported by data from public opinion surveys, according to which only 5 percent of respondents agreed that “one could find an adequate job without any problem” on the local labor market (even in the most optimistic period, spring of 2008, only 10 percent shared such an opinion). Forty-six percent declared that “it was possible to find any job, but difficult to find an adequate one”, and an equally high percentage

thought that finding a job in their town or city of residence was difficult or impossible (CBOS 2016). Under such conditions, employment mobility resulting from voluntary resignations is unlikely. Although additional studies of actual (not only perceived) worker security need to be carried out, the analyses presented here suggest that the recent changes on the Polish labor market lead to higher levels of insecurity, exacerbating labor market inequalities by worsening the situation of those who already have the weakest bargaining position.

ANNA KIERSZTYN

STAYING AT THE BOTTOM: LOW PAY PERSISTENCE DURING THE POST-COMMUNIST TRANSITION*

Labor market inequality has long been a topic of concern among scholars and policy makers. Currently, debate on this issue is spurred by the growth in various forms of non-standard employment, often associated with negative work characteristics (Giesecke 2009; McGovern, Smeaton, and Hill 2004). As employment relations become less stable, a dynamic, life-cycle perspective becomes more important as a basis of job quality assessment (European Commission [EC] 2008). In particular, an important and policy relevant question is whether “bad” jobs are temporary, acting as stepping stones to better employment, or trap workers for prolonged periods of time.

This chapter analyzes the persistence of low wages, which are commonly considered one of the most important aspects of poor job quality. The question whether low paid employment is transitory or long-lasting is particularly important given the growth in earnings inequality in many industrialized nations. The consequences of this change are a subject of controversy among researchers. Some argue that increasing earnings inequality might not be a serious problem if accompanied by high wage mobility. If workers have many opportunities to escape low-paid employment, inequality in life-long earnings is not as large as cross-sectional analyses suggest (Dickens 2000; OECD 1997). Conversely, if low wage

* In this chapter I use my previous work (Kiersztyn 2015b); cf. <http://polish-sociological-review.eu/index.php/polish-sociological-review-41922015/>

jobs are traps for some workers, the resulting social cleavages and disparities in the quality of life cannot be overlooked by policy makers.

Studies of the wage mobility of low paid workers from different countries suggest that the latter is closer to the truth. Throughout the second half of the 1990s, on average, around 50 percent of low paid individuals in the EU remained low paid after one year (Clark and Kanellopoulos 2009; EC 2004). Although the probability of exiting low wages increases with time, the percentage of low paid workers whose wages remained low after several years appears significant in EU countries: 40 percent for three-year pay transitions, 30 for five-year transitions, and 26 for seven-year transitions. When those who exited employment were excluded, the respective percentages were: 55, 41, and 37 (EC 2004). Other research results suggest that even if individuals manage to find better paying employment, they face a high probability of slipping back into low wages, and the longer they remain in low wages, the less likely their transition to better pay (OECD 1997; Rutkowski 2001).

However, much less is known about the long-term trends in low pay persistence. Although there are many studies of long-term changes in wage inequality and wage mobility across the whole earnings distribution (e.g., Dickens 2000; Gernandt 2009; Kopczuk, Saez, and Song 2010; Lucifora, McKnight, and Salverda 2005), analyses which focus directly on low pay transitions usually cover a relatively short time-span (typically around five years). This makes them unable to systematically control for the influence of business cycles on the persistence of low earnings. To my knowledge, the only analysis covering a longer period (1984–2004) and taking into account the relationship between the general economic situation and chances of individual mobility out of low wages is a recent study by Aretz and Gørtzgen (2012). Further, there are practically no detailed analyses of low pay transitions in post-communist societies. We do not know the extent to which research findings from other countries are generalizable to transition economies. In this context, Poland seems an especially interesting case. Earnings disparities on the Polish labor market, particularly in the lower half of the wage distribution, are among the highest in the EU. The share of low paid workers is also relatively high (Bachmann, Bechara, and Schaffner 2012; Magda and Szydłowski 2007).

The present analysis attempts to fill the gaps in the existing literature by focusing on long-term changes in the persistence of low wage employment in Poland and the relationship between the rate of those changes

and the general economic situation throughout the post-communist transition period. It also extends the literature by adopting a measure of low earnings that is different from the one used by Aretz and Gørtzen (2012) and in other studies of low pay transitions, but can be considered more appropriate for the study of wage mobility independent of the effect of business cycles.

The analyses presented below are based on data from the Polish Panel Survey POLPAN. POLPAN is well suited for the analysis of low pay persistence due to its length: the study consisted of five waves, conducted every five years since 1988 on a random sample of the Polish adult population. As such, it allows for the analysis of long-term labor market trends, not just changes which could result from short-term shifts in the economic situation. Another important point about POLPAN is that it covers the whole post-communist transition, a time of profound social, institutional and economic change, making it possible to analyze the dynamics of low pay persistence under very diverse economic conditions.

Low Pay Persistence in Poland: Hypotheses

Drawing on empirical studies from other countries, and taking into account the specific social and economic factors influencing wages and labor mobility in Poland, I adopt three research hypotheses concerning the persistence of low earnings on the Polish labor market.

***Hypothesis 1:** Low wage work in post-communist Poland is characterized by high and increasing persistence.* Apart from the evidence pointing to substantial low pay persistence in other countries, there are two additional factors which may exacerbate this problem in Poland. First, the collapse of many large, state-owned companies, unable to adapt to market conditions, during the first years of the transition. This caused a fall in employment levels, mostly in industry branches and types of companies which, according to the labor market segmentation literature, are more likely to create internal labor markets (UNDP 2004). As a result, better paid primary sector jobs became less available to many groups of workers. Second, the low spatial and occupational mobility of the Polish labor force: only one out of four survey respondents expressed the willingness to change their place of residence in order to find a better job, or any job at all (CBOS 2008). Apart from cultural factors, such results

can be explained by the limited access to affordable housing, especially in major cities, where wages are higher and work is easiest to find (Baranowska, Bober, Bukowski 2007; it should be noted, however, that in Poland commuting to a job is a popular alternative to internal migration). Under these circumstances, low wage employment spells are likely to last for prolonged periods of time. The expectation regarding the long-term increase in low pay persistence is based on studies which point to a fall in the overall wage mobility of workers over the last decades (Dickens 2000; Gernandt 2009; Luciflora, McKnight, and Salverda 2005; see also Aretz and Gørtzen 2012).

Hypothesis 2: *The persistence of low wages relative to higher pay is more pronounced during economic downturn.* This hypothesis is based on the premise, commonly suggested in the literature, that wages are pro-cyclical. For example, Dickens (2000) showed that in Great Britain one-year wage mobility rates fell in periods of unemployment growth. Pavlopoulos, Muffels, and Vermunt (2010) found that macroeconomic conditions explained a significant part of cross-country variation in wage mobility levels in the second half of the 1990s, even when controlling for institutional factors. In an analysis of 1995–2006 data on Polish workers, Magda (2008) noted that the highest fall in earnings mobility occurred during economic slowdown. During economic downturn, individuals may be more inclined to accept low pay. Workers may also find it more difficult to bargain for improved work conditions or look for better paid employment. Under such conditions, they are more likely to remain low paid (Aretz and Gørtzen 2012). Among higher earners, the fall in the overall wage mobility simply keeps them in the higher-earning category. Thus, in a sense, economic slowdown widens the gap between the low earners and other workers. The opposite is expected during periods of economic growth, as wage procyclicality has been shown to be stronger for low-wage earners compared to median earners (Robin 2011).

Figure 5.1 presents data on the unemployment rate and GDP growth in post-communist Poland. These data suggest that the increase in low pay persistence should be largest in 1988–1993 and 1998–2003. The former were the first years of the post-communist transition, marked by economic instability, the collapse of many state-owned companies, the appearance and fast rise of joblessness. The latter was a time of economic slowdown, during which the unemployment rate increased by ten percentage points, reaching a record value of 20 percent in 2002. In the relatively prosperous years 1994–1997 and especially 2004–2008, the situation on

the labor markets improved. This is illustrated by a systematic fall in the unemployment rate, by 3.3 and 12.5 percentage points, respectively. In 2008–2013, during the economic crisis, unemployment again increased, but not to the extent observed during earlier slowdowns.

Hypothesis 3: *Being in a low paid job increases the likelihood of experiencing low earnings in the future, even when individual characteristics affecting the likelihood of poor wages (such as gender, age, or educational attainment) are controlled for.* The third hypothesis implies that the persistence of low wage employment in Poland can be at least partially explained by scarring effects, as opposed to a selection process. Although it is difficult to empirically distinguish these phenomena, there is evidence suggesting that both are important. The results of various analyses which attempt to control for individual low pay propensity indicate that there exists significant true state dependence in low wages (e.g., Aretz and Gørtzen 2012; Cappellari 2007; Clark and Kanellopoulos 2009; Sloane and Theodossiou 2000).

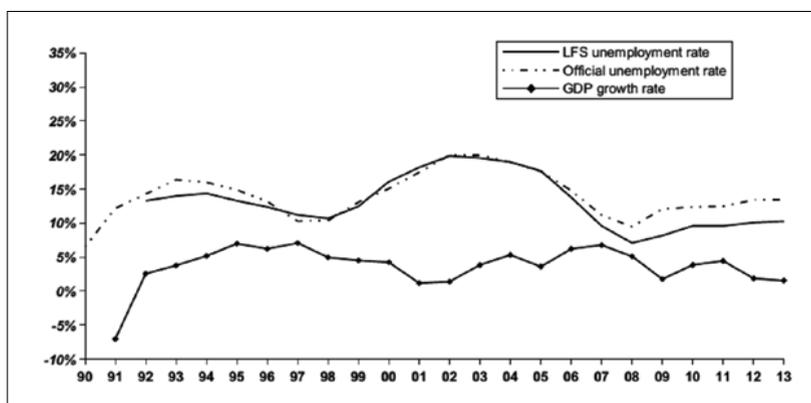


Figure 5.1. The Unemployment Rate According to Labor Force Surveys, the Registered (Official) Unemployment Rate, and the GDP Growth Rate, Poland, 1990–2013

Note: LFS unemployment rate among economically active individuals aged 15+ (in 1992–1999 calculated as the average of quarterly estimates). GDP growth rate: annual percentage growth rate of GDP per capita based on constant 2002 prices (in Polish zloty). Data sources: LFS unemployment rate 1992–2012 and the GDP growth rate: the World Bank. 2013 LFS unemployment rate: EUROSTAT. Registered unemployment: Central Statistical Office (GUS).

Data and Variables

Data for the analysis are taken from the Polish Panel Survey POLPAN 1988–2013.¹ Low wage employment is considered persistent if it is experienced by a respondent during at least two consecutive waves of the panel. Five years is a longer interval than the one adopted in many labor market studies. However, focusing only on short-term mobility might cause an upward bias of low pay persistence. It seems reasonable to assume that five years is long enough for those who are truly upwardly mobile to exit low wage employment definitively – by that time, they should have made it to better paying jobs. Such a longer period is also better suited for analyses of the effects of macroeconomic conditions on wage transition rates.

The measurement of low pay persistence is based on transition matrices. The unit of analysis is a respondent during the time of two consecutive panel waves (henceforth, t_n and t_{n+1} , where n is the number of the first of the two waves). Thus, the study covers five periods of transition: 1988–1993, 1993–1998, 1998–2003, 2003–2008, and 2008–2013. I selected from the POLPAN sample respondents who were below retirement age (which, at the time of the study, was 65 for men and 60 for women) and working for an income at both t_n and t_{n+1} .² I excluded independent farmers, employers, and helping family members from the sample – as low wages do not apply to people who are not employed by anyone. However, I did not exclude the self-employed (sole proprietors), since many of them could be considered as hired persons with stable salaries or as employees forced into independent contracting by employers who seek to avoid the commitments associated with regular employment (see OECD 2014; Osborn and Slomczynski 2005). The final sample size was $N = 2,585$ cases (the number of panel respondents in the consecutive five-year periods was: 803, 526, 459, 376, and 421).

¹ See Introduction, for general information on the POLPAN survey and samples in the consecutive waves. Additional information on the survey methodology, data availability, and a list of related publications are provided on the project website (polpan.org).

² In POLPAN 1988, data on wages were not collected for respondents working less than 15 hours per week or for less than three months; this category was excluded from the sample ($N = 84$). The 1993 data on wages concern not only the respondent's main job, but also additional non-farming jobs. Respondents holding more than one non-farming job in 1993 were excluded from the sample ($N = 107$).

In studies based on panel data, especially collected over long periods of time, selectivity problems arise. Out of all the respondents aged 21–60 who were employed at t_n , a large percentage could not be included in the dynamic analyses, either because they were not working at t_{n+1} , or due to panel attrition. The percentage of respondents who dropped out from POLPAN was particularly high in 1993 (54.2 percent of those aged 21–60 and working in 1988). This is explained by the fact that the 1993 wave was conducted on a random subsample of the original 1988 sample. However, in the later waves these percentages were also quite high (23.3, 29.3, 27.8, and 32.2 in 1998, 2003, 2008, and 2013, respectively). The issue of selectivity bias is taken into account in the interpretation of my results.

Low Wages

In many studies of earnings mobility, low pay is defined as below two-thirds median wage. However, in Poland the real net median wage underwent considerable changes throughout the studied period, and the rate of these changes was related to the economic context. In 1988–1993, the median wage fell by 13.9 percent; in the subsequent five year period, it grew by 20.5 percent; in the 1998–2002 period of economic slowdown, the real median wage also increased, but only by 7.5 percent; in the subsequent prosperous years until 2008, the increase was by as much as 30.3 percent, while the economic crisis of 2008–2012 lowered the rate of real wage growth to 3.2 percent.³ In the light of these data, I consider a relative, median-based low wage criterion inappropriate for an analysis of the long-term dynamics of low pay persistence under varying economic conditions. Adopting such a criterion could bias the results: upward earnings mobility would be underestimated during periods of economic upswing (when a number of individuals whose wages improve could still end up below the threshold level), but not during periods of slowdown. Instead, I use an absolute measure, which defines low pay as net monthly earnings from the respondent's main job below the social minimum poverty line for an individual living alone. The main job is the one on which the most time is spent. The social minimum is the current price of a minimal amount of goods and services that enables household

³ Net median wages expressed in constant Polish zloty (base year: 2013), calculated on the basis of the Structure of Earnings Survey data. Source: Central Statistical Office (GUS).

members to participate in social life. The list of such goods and services was created in the 1980s by experts from the Polish Institute of Labor and Social Affairs, with the participation of physicians, social workers, and consumption researchers, and underwent only minor changes over the last decades. Therefore, the value of the social minimum criterion is independent of the changes in the economic situation and political influences during the period under study. It is also worth noting that, in absolute terms, this threshold is relatively low, compared to the two-thirds median criterion in other developed countries. For example, in 2008 and 2013 the value of the social minimum for a one-person household was equivalent to around 250 Euro per month (1,061.3 Polish zloty, in 2013).

I focus on the respondents' monthly earnings from their main job, regardless of the number of hours worked. Such an approach is different from the one adopted in many studies of wage mobility, which use indicators based on hourly wages or restrict their samples to full-time workers. Both approaches have their drawbacks. The one adopted here may to some extent bias the analyses by including voluntary part-time workers with relatively high earnings potential among the low paid. On the other hand, controlling for the number of working hours is likely to exclude from the poorly paid group involuntary part-time workers (particularly women), who – as a result of their part-time status – receive low wages (see Gash 2008). In POLPAN, data on the formal full- or part-time status is not available for all waves. The number of hours of work per week reported by the respondents in all waves of the study is not a reliable measure, as it may falsely suggest part-time employment among some groups of professionals who actually hold full-time employment contracts (e.g., teachers).

The percentage of respondents paid below the social minimum in each POLPAN wave was: 20.3 in 1988, 33.5 in 1993, 21.0 in 1998, 28.5 in 2003, 11.3 in 2008, and 7.7 in 2013 (2008 and 2013 data are weighted to account for the oversampling of younger respondents). The wage non-response rates in each panel wave ranged from 0.8 to 6.6 percent⁴; cases with missing data on wages were deleted from the sample. It should be noted that the detailed information on the earnings distribution based on POLPAN data should be treated with some caution – especially given the relatively small sample sizes. Still, POLPAN remains the best source of data available in Poland for the study of the long-term dynamics of

⁴ Data for all production age (21–65), employed respondents, including those who did not participate or were not working in other waves of the panel.

individual transitions into and out of low pay.⁵ Further, it can be argued that minor biases in the earnings distribution should not seriously affect the results of analyses comparing the percentage receiving low wages among those who were low paid five years earlier and those who were not. In such a case, an overrepresentation of respondents at the lower end of the earnings distribution (a common bias in earnings surveys) may actually be desirable, as it strengthens the statistical results of such comparisons, especially given the low rates of low wage employment.

Independent Variables

To capture differences in the economic context of the consecutive 5-year intervals, I use dummy variables which inform about the number of each period of transition between t_n and t_{n+1} : *period 1*, *period 2*, *period 3*, *period 4*, and *period 5*. *Age category at t_n* identifies the youngest (aged 21–25, 26–30, and 31–35 at t_n) and oldest (aged 41–45, 46–50, and 51–60 at t_n) groups of respondents. 36–40-year-olds are the reference category. Among the remaining control variables, I included *gender*, with men as the reference category, and *education at t_n* , which informs about the type of school completed by the respondent: elementary (including incomplete elementary), basic vocational, high school (including post-secondary vocational), and university (the reference category). Finally, *occupation at t_n* is a categorical variable based on the Polish Social Classification of Occupations (SKZ, see Domański, Sawiński, and Slomczynski 2009). It identifies respondents in occupations which, according to the literature and statistical data, are most likely to offer low wage employment. The latter include, first of all, unskilled manual labor, retail trade, and personal services, where earnings, on average, are among the lowest in Poland (GUS 2009; Kiersztyn 2007). Another important group are sole proprietors (SKZ, as opposed to the International Social Classification

⁵ The other major sources of wage data in Poland are surveys conducted on large representative samples, such as the entity-based Structure of Earnings Survey (SES), the Labor Force Survey (BAEL – LFS), and the European Survey of Income and Living Conditions (EU-SILC). The SES provides only cross-sectional data, and the remaining two surveys are conducted on rotating panel samples. The Polish LFS covers a longer period (it started in the early 1990s), but does not allow the study of long-term wage transitions, since each respondent is present in the survey for no longer than a year and a half. The EU-SILC, on the other hand, tracks individuals over a period of four years, but covers only a short time-span (since 2005).

of Occupations, treats proprietors as a separate occupational category). In Poland, many sole proprietors are former employees who continue working for their companies as independent contractors. Since contracting out is usually treated by employers as a way of avoiding the costs associated with hiring workers, it seems likely that independent contractors are often in a worse position than regular employees (Kiersztyn 2007). Skilled manual laborers were divided into two categories, in order to control for the heterogeneity between various industrial branches: those working in the lowest-paying industries (construction, agriculture, manufacture of textiles, furniture, food and beverages) and other skilled manual workers.⁶ Lower level office workers were also divided, in an attempt to account for differences in complexity, wages, and prestige between various white-collar jobs. The first, lowest-status group includes occupations such as cashiers, secretaries, typists, or receptionists, as well as sales agents.⁷ The remaining office workers were included in the second group.

Summing up, *occupation at t_n* identifies respondents according to the following categories: 1. unskilled manual labor; 2. trade and services; 3. sole proprietors; 4. skilled manual workers in low paying industries; 5. other skilled manual workers; 6. lowest status office workers; 7. other office workers; and 8. managerial, professional, and technical employees – the reference category.

Empirical Results

The state dependence in low wage employment can be looked at from two points of view. The first is focused only on the chances of exit from low wages. Here, the question is whether having a poorly paid job is associated with a high or low probability of experiencing analogous employment

⁶Although officially, the average earnings of skilled construction workers are not as low as in the typical secondary labor market industries, this type of work is done by the largest share of unregistered employees, which may increase the incidence of low pay (GUS 2005).

⁷The values of the occupational prestige scale for these occupations ranged from 16.7 to 37.8, while the average for all office workers was 47.3 (Słomczynski 2009). The low prestige rating of the sales agents category (only 32.9), despite relatively high average wages and job complexity, may be explained by its heterogeneity: it includes higher-level sales representatives, but also a large group of petty salesmen, whose earnings largely depend on how much they manage to sell.

inadequacies five years later. The second compares the transition rates into low paid work between initially low wage and higher wage workers. In the latter case, the persistence of low wages is evaluated relative to the prospects of those who are not in low pay. Both points of view are important in their own right, and both are taken into account in the present analysis.

The first conclusion to be drawn from a descriptive analysis of 1988–2013 POLPAN data is that, consistent with hypothesis 1, the overall rate of persistent low wage employment in Poland throughout the study period is quite substantial. In 237 out of 2,585 cases (9.2 percent) low paid work is observed during at least two consecutive panel waves. In general, poorly paid workers had a 45.5 percent chance to be in the same situation five years later, over 3.5 times more than other working respondents (12.7 percent). The results concerning changes in the persistence of low wage employment over consecutive POLPAN waves are shown in Table 5.1. They suggest, unsurprisingly, that the transition probabilities into low pay change counter-cyclically (values A and B). During the economic slowdowns of 1988–1993 and 1998–2003, the risk of low wage employment at t_{n+1} was higher than in times of prosperity, regardless of whether a respondent was low paid at t_n or not. The risk of remaining low paid for those who were in the low wage group five years earlier was particularly high in 2003: 63.2 percent. The probabilities of transition into low pay in the most recent period were similar to those observed during the period of growth following the Poland's accession to the EU.

Table 5.1. Low Pay Persistence, POLPAN 1988–2013: The Incidence of Low Wage Employment at t_{n+1} by Low Wage Employment at t_n (A, B) and the Persistence of Low Wage Employment Based on Transition Matrices (A/B)

Years ($t_n - t_{n+1}$)	1988–1993	1993–1998	1998–2003	2003–2008	2008–2013
Percentage low wage at t_{n+1} of low wage at t_n (A)	61.4	39.4	63.2	30.1	28.3
95% confidence interval	(53.3–69.6)	(31.8–47.0)	(51.5–75.0)	(20.6–39.6)	(16.6–40.1)
Percentage low wage at t_{n+1} of not low wage at t_n (B)	25.5	6.6	13.8	2.1	2.8
95% confidence interval	(22.2–28.8)	(4.0–9.1)	(10.4–17.2)	(0.4–3.8)	(1.1–4.5)
Ratio of A to B (A/B)	2.4	6.0	4.6	14.3	10.1
95% confidence interval	(1.8–3.1)	(3.6–11.7)	(3.0–7.2)	(5.4–91.8)	(3.7–37.5)

Source: Own calculations based on POLPAN data, 1988–2013. Sample sizes in the consecutive periods were: 803, 526, 459, 376, and 421.

However, when we look at the persistence of low wage employment relative to the transition probabilities of workers who were not low paid at t_n (the A/B ratios in Table 5.1), a different picture emerges. Contrary to hypothesis 2, the distance between the low paid and other workers increased during periods of prosperity. This is due to the very low risk of entering low pay among previously higher paid workers in the 1993–1998 and 2003–2008 periods. In other words, although economic upturn improves the prospects of all workers, the proportion of low paid individuals who remain low paid after five prosperous years is still relatively high. This result is surprising; however, given the wide confidence intervals of the estimated percentages (Table 5.1), it should be treated with caution.

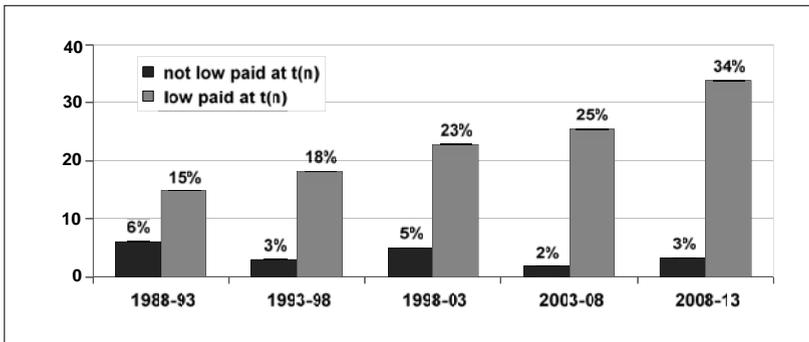


Figure 5.2. Adjusted Percentage of Workers in Low Wages at t_{n+1} by Low Wages at t_n , When the Overall Rate of Low Paid Employment is Held Constant at the 2013 Level

Note: the percentages were weighted by the ratio of the overall percentage of low wage workers in 2013 (7.7%, $N = 1,072$) to the percentage of low wage workers at t_{n+1} , to control for the variation in the rate of low wage employment across subsequent POLPAN waves. The values of weights for the consecutive five-year periods were: 0.241, 0.463, 0.362, 0.847, and 1.194. The weight for the 2008–2013 period differs from 1, because the percentage of low wage workers at t_{n+1} was calculated on a subsample of respondents for whom wage data was available at both t_n and t_{n+1} (in 2013, this percentage was 6.4%, $N = 421$).

At the same time, the descriptive findings presented in Table 5.1 offer no direct evidence of the systematic, long-term growth in the overall level of low pay persistence, predicted by hypothesis 1. Although for low-wage workers, the likelihood of remaining low paid after five years has not increased during the studied period, the question remains whether there were any secular changes in the persistence of low wage employment.

Such long term labor market trends may be difficult to notice at first glance, given the fact that the transition probabilities into and out of low wages are strongly influenced by economic cycles. One simple way to control for this is to weight the low pay transition probabilities in order to eliminate the temporal variation in the incidence of low wage employment. Specifically, for each transition period between t_n and t_{n+1} , the cases were weighted by the ratio of the total percentage of low wage workers in the year 2013 (7.7 percent) to the percentage of low wage workers at t_{n+1} . The adjusted transition probabilities, presented in figure 5.2, clearly show that once the overall incidence of low paid employment in the subsequent POLPAN waves is held constant at the 2013 level, an increase in the persistence of low wage work can be observed. The weighted percentage of low paid respondents at t_{n+1} among those who were also low paid five years earlier grew systematically from 15 to 34. No such trend was visible among those who were not in the low wage group at t_n . This finding is consistent with hypothesis 1.

The aim of the second step of the analysis is to see whether, controlling for important worker characteristics (gender, age, education, and occupational group) and the period under study, having a poorly paid job is associated with analogous employment inadequacies five years later. To check whether this relationship is becoming stronger over time (as suggested in figure 5.2), interaction effects are also examined. To account for repeated observations, I use population-averaged generalized estimating equations (GEE) models with logit link for binary outcomes, estimated using SPSS Software. *Low wages at t_{n+1}* is the dependent variable and *low wages at t_n* is included among the independent variables. This approach is similar to the one adopted in recent analyses of state dependence in temporary employment and unemployment (Giesecke and Groß 2003; Luijkx and Wolbers 2009). Interaction effects are taken into account by adding to the regression models the sum of products of the *period* variables and *low wages at t_n* , weighted by the number of each consecutive transition period (from 1 to 4).

Regression coefficients, presented in Table 5.2, are consistent with hypothesis 3: even after controlling for the basic variables which, according to the literature, influence the likelihood of low pay, the odds ratios for low wage employment remain highly significant. Throughout the study period, low earners at t_n were almost four times more likely to hold low paying jobs five years later, compared to other workers (Models 1a and 1b). In addition, regression models point to significant positive interaction effects between *low wage at t_n* and *period* (Models 2a and 2b),

implying that the state-dependence in low wages grew stronger in the later years of the transition.

It should be kept in mind that the findings described above may have been influenced by the fact that some of the respondents employed at t_n were not included in the analysis either since they were not working at t_{n+1} or due to panel attrition. There are reasons to expect that the probability of non-inclusion is related to the chances of upward mobility. First, low-wage workers have been shown to be more likely, compared to those holding better paying jobs, to become unemployed or exit the labor market, either permanently or as a part of the “low-pay-no-pay” cycle (OECD 2003; Sloane and Theodossiou 2000). Additional analyses of POLPAN data point to a similar tendency: the percentage of low wage workers at t_n among those who were not working five years later was higher than among those who remained in employment. Arguably, a significant share of the intermittently employed may be seen as trapped in substandard work. There are also studies which suggest that those with the worst labor market position at one wave of a panel study are less likely to participate in subsequent waves (Cappellari 2007). This finding is partially supported by POLPAN data: unskilled manual workers were over-represented among the ones who later dropped out of the panel. As this characteristic increases the chances of long-term low paid employment, it is likely that had these respondents remained in the sample, the overall persistence of low wages might have turned out to be even higher than suggested in this study.

A second issue with regards to panel attrition is associated with the difficulties involved in tracking those who change their place of residence. Although in POLPAN many measures were taken to achieve as high a response rate as possible, the study did not track those who emigrated out of Poland. Hence, foreign migration is an important factor contributing to panel attrition in Poland, especially in the years following the EU accession in 2004. Since this chapter examines the opportunities for upward mobility on the Polish labor market, the consequences of not including workers who left the country are only important insofar that they affect the labor market outcomes of those who stayed. According to one interpretation, foreign migration might lead to an underestimation of upward wage mobility, as it may cause a “brain drain” of the labor force. However, in the Polish case it is more likely that emigration may have, in fact, lowered low pay persistence among those left behind, due to the lower number of candidates competing for better-paid jobs.

Table 5.2. Factors Explaining the Likelihood of Low Wage Employment at t_{n+1} : Odds Ratio Estimates (OR) and Standard Errors (SE) from Generalized Estimating Equations (GEE) Models

Independent variables:	Model 1a		Model 1b		Model 2a		Model 2b
	OR	SE	OR	SE	OR	SE	OR
Low wage at t_n	3.74***	0.142	3.68***	0.146	1.83*	0.262	1.71 ⁺
Low wage at t_n * period					1.45***	0.097	1.44***
Gender (1=female)	3.01***	0.140	2.58***	0.152	2.93***	0.139	2.56***
Period 1988–1993	9.27***	0.245	16.18***	0.255	16.35***	0.321	28.37***
Period 1993–1998	2.50***	0.266	3.79***	0.272	4.01***	0.323	6.24***
Period 1998–2003	5.92***	0.243	7.69***	0.250	8.53***	0.304	11.39***
Period 2003–2008	1.23	0.278	1.40	0.285	1.27	0.318	1.47
Age category at t_n							
21–25 years	1.76**	0.218	1.48 ⁺	0.226	1.73*	0.220	1.47 ⁺
26–30 years	0.94	0.200	0.83	0.212	0.98	0.201	0.84
31–35 years	1.10	0.185	1.01	0.197	1.13	0.186	1.02
41–45 years	1.45*	0.180	1.56*	0.190	1.53*	0.184	1.61*
46–50 years	1.39 ⁺	0.195	1.50 ⁺	0.211	1.47 ⁺	0.202	1.53*
51–60 years	2.88***	0.257	3.09***	0.274	3.20***	0.253	3.25***
Education at t_n							
Elementary	8.42***	0.273			8.57***	0.271	
Vocational	5.71***	0.237			5.84***	0.236	
High school	2.44***	0.228			2.48***	0.227	
Occupation at t_n							
Cashiers, secretaries			5.38***	0.380			5.46***
Other clerks			2.62***	0.237			2.69***
Service work			9.66***	0.232			9.45***
Skilled manual work, low paying industries			9.28***	0.268			9.02***
Other skilled manual			3.99***	0.223			3.95***
Unskilled manual			10.51***	0.217			10.44***
Sole proprietors			4.14***	0.355			4.23***

Source: Own calculations based on POLPAN data, 1988–2013. Reference categories are: 36–40 for *Age category at t_n* ; university for *Education at t_n* ; managerial, professional, and technical occupations for *Occupational group at t_n* . Employers, farmers and helping family members are excluded, sample sizes are: N = 2,571 for Model 1a and 2a, and N = 2,582 for Model 1b and 2b.

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; ⁺ $p < 0.10$ (2-tailed).

Discussion and Conclusions

The results presented above suggest that low paid employment in Poland is characterized by significant persistence: throughout the studied period, having a low wage job raised the probability of experiencing the same situation five years later. Since five years can be considered sufficient time to exit poverty-level wages, this study is likely to offer rather conservative estimates of low pay persistence. A direct comparison of these findings with the results of studies from other countries is not possible, as the latter use a different low wage criterion. However, there are reasons to expect that low pay persistence in Poland is more acute than in most of the pre-enlargement EU. The low pay threshold adopted here is significantly lower, in absolute terms, than the two-thirds median criterion used in other studies (particularly in the more affluent, Western European societies). Despite this, the overall percentage of Polish workers paid below the social minimum who remained low paid after five years throughout the studied period, 45.5, was slightly higher than an analogous percentage of EU workers earning less than two-thirds median wage who did not make the transition to higher earnings in the period 1994–2001 (41 percent, excluding workers who left employment; EC 2004).

Low pay during one wave of the panel study was found to be strongly related to poverty-level earnings five years later even after including the time variable, and controlling for the respondents' demographic and economic characteristics affecting the likelihood of low wage employment. To some extent, this finding may have been affected by changes in the composition of the sample resulting from panel or employment drop-out. This, however, is unlikely to result in a significant upward bias in low pay persistence, given the typical characteristics of the panel and employment drop-outs. In fact, there is literature suggesting that although endogenous selection significantly affects low pay transition models, leaving such selection mechanisms out of the models does not lead to large biases in the model coefficients (Cappellari and Jenkins 2008). On the basis of the present findings, it thus seems reasonable to conclude that low paid employment in Poland is a trap rather than a stepping-stone for workers. This result is consistent with studies pointing to significant scarring effects of low paid work in other countries.

Regarding changes in low pay persistence over time, upward mobility rates among initially low earners were significantly higher during periods of economic upswing; however, the proportion of low paid individuals who remained low paid after five economically prosperous years was

higher than might have been expected. In fact, the chances of staying in low wage employment, relative to the risk of entering low pay among those whose initial wages were above the social minimum appear to have increased during periods of economic prosperity. This counter-intuitive finding should be approached with caution, but may mean that there exists a divide between those in low paid jobs, who do not enjoy the full benefit of economic growth, and other workers, who seem well protected from slipping into low wages as the economy improves. Taken together, these findings suggest that although the tide of economic growth indeed appears to “raise all boats” to some extent, the magnitude of this rise may be very unevenly distributed. In this context, the systematic, secular growth in the persistence of poverty-level wages over the past two decades, gives rise to particular concern.

There may be various explanations of these findings, each of which warrants additional research. One explanation points to a sorting mechanism, generated by the specific context of the socio-economic transition in Poland – particularly, the increase in earnings inequality driven by rapidly increasing returns to education. In the initial phase of the transition, this was accompanied by a fall in real wages, especially among the lowest earners (Rutkowski 1996, 2001), which was also reflected in the growth of the percentage of low-paid workers in the POLPAN sample (from one fifth in 1988 to one third in 1993). This explains the very high rate of initially low-paid workers staying low-paid in the second POLPAN wave, but also the relatively bad prospects of higher earners during that period: more than one out of four workers earning above the social minimum in 1988 moved into poverty-level wages five years later. Under such conditions, and given the relatively low earnings of higher educated workers before the transition (Rutkowski 1997, 2001), it is likely that the low-wage category in the early 1990s was more heterogenous with respect to the level of human capital than in the later years. In the subsequent phases of the transition, the negative trend with respect to the median real wage was reversed, and since 2003, the overall percentage of low-paid workers (as defined by the social minimum criterion) fell systematically. However, given the increasing returns to human capital, it is likely that the initially low paid individuals who took advantage of the opportunities brought about by economic development were mainly those with higher skills and abilities. If this was the case, the increase in low-pay persistence may be explained by negative changes in the composition of low-paid workers: an increasing percentage of marginalized individuals with unfavorable characteristics not captured by the control variables included in

the regression models. The increasing wage gap between the low earners and other workers described in the literature is also consistent with such an interpretation (Magda and Szydłowski 2007).

Another factor which could contribute to the growth in low-pay persistence in the last years is the prevalence of non-standard employment on the Polish labor market, including both fixed-term contracts and – to an increasing extent – other contractual arrangements not protected by the Labor Code (Kiersztyn 2014). It has been shown in many studies, both in Poland and abroad, that non-standard employment is associated with significantly lower wages (Kiersztyn 2012a; Comi and Grasseni 2012; OECD 2014). There are also reasons to believe that, given the Polish institutional context, the chances of non-standard employees receiving a permanent contract are limited, and have fallen over the last years, resulting in labor market dualization (Kiersztyn 2014; Kiersztyn 2015a). Non-standard employees, whose status in the firm is often low and who are more at-risk of losing their jobs, are not in the position to bargain for higher wages, even at times of economic prosperity. Their bargaining position is further weakened by the restricted access to unemployment and welfare benefits in Poland. Employees who remain in non-standard forms of employment for prolonged periods of time are thus likely to experience persistent poverty-level wages.

In conclusion, it should be noted that the results presented in this chapter have important policy implications. Low paid employment, especially lasting for prolonged periods of time, may worsen the economic situation of households. Indeed, the rate of in-work poverty in Poland, although lower than several years ago, is still among the highest in the EU (the only countries with even higher rates were Romania, Greece, Spain, and Italy). In 2012, 10.4 percent of Polish workers aged 18–64 lived in households whose income was below the at risk of poverty threshold (defined as 60 percent of the median), while the EU average was slightly above 9 percent (EC 2014). One important attempt to narrow the wage distribution is through the statutory minimum wage, which has steadily increased over the last years and is now one of the highest among post-communist countries; since 2009, the net minimum wage is slightly above the social minimum level. However, it is now widely believed that the minimum wage by itself is not the best way to improve the situation of the working poor or low productivity workers (OECD 2009). One possible solution is offered by in-work benefits policies, targeted towards the low paid, and withdrawn gradually as wage levels increase, to avoid further exacerbating the risk of low pay traps (see, e.g., Immervoll and Pearson 2009). A detailed discussion of policy interventions is, however, beyond the scope of this analysis.

III.

Processes and Mechanisms
of Inequality

CHAPTER 6.

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FRIENDSHIP PATTERNS AND SOCIAL INEQUALITY*

Introduction

Social stratification is hierarchical ordering of groups created by social relations. Groups, in turn, emerge out of recurrent interaction, and those we interact with have a great impact on our lives. The most unifying patterns of social interaction are based on marital choices and friendship. We will analyze them for 1988–2008 to determine whether social stratification, defined in terms of interaction patterns, became more open, closed, or basically unchanged.

Like social mobility, interaction patterns are in themselves an important indicator of “class” structuration. We know a great deal about mobility barriers (Morgan 2006) and less about marriage patterns (Blossfeld 2009), and very few studies on social stratification are explicitly concerned with friendship. Those who study friendship often comment on the paucity of contemporary research. We extend previous analyses to an examination of longitudinal data, focusing on this relatively least-known dimension of social openness (or closure). Social barriers in friendship will be identified in tables cross-classifying respondents and their best acquaintances’ occupational categories and educational attainment. Our intention is to report evidence relating to the dynamics of this aspect of social stratification in Poland.

* In this chapter we use our previous work (Domański and Przybysz 2012); cf. <http://www.tandfonline.com/doi/abs/10.2753/IJS0020-7659420102>

To examine trends in assortative mating we use the POLPAN data from 1988, 2003, and 2008.

The Problem

People meet one another at school, in the workplace, in the neighborhood, and at recreational facilities. These bonds forge communal groups, whereas weak interaction creates social distances. It is commonly held that intimate kinds of sociability belong to constituent factors of social stratification. What is commonly referred to as “class distinctions” relates, among other things, to exclusiveness based on friendship patterns. People gravitate to others who are similar in class terms. In his historical analyses on estate Europe, Max Weber (1968), spoke about *connubium* and commensality as one of the most developed forms of clear-cut divisions, grounded – at the time – through legislation. Although in modern society class homogeneity of friendship is maintained only informally, people spend a large part of their lifetime with peer groups. The pervasive fact of homogeneity implies that distance in terms of social characteristics translates into network distance (Simmel 1971; Weber 1968).

The answer to the question of who associates with whom is therefore central for understanding the reproduction of social inequality. The earliest studies on homogeneity of friendship, coming from school children, college students, and small urban neighborhoods, showed a strong association between individual characteristics and the corresponding characteristics of those individual friends by age, sex, and social origin (Loomis 1946). The first studies on social stratification, carried out in local American communities in the 1930s, found significant homophily in achieved characteristics, such as education and occupation (Hollingshead 1949; Warner, Meeker, and Eels 1949). The intimate anchors of class were generally confirmed by later research. Using data from the 1966 Detroit Area Study, Laumann (1973) reported that respondents were generally more likely to choose friends from their own occupational group and that distances between the occupational groups (managers, professionals, skilled workers, farmers, etc.) were dominated by gradations of socioeconomic status (see also Chan and Goldthorpe 2004; Coxon and Jones 1978; Prandy and Lambert 2003). The overall result of previous studies, carried out in various populations, is that those at the very top (higher executives, managers, officials, professionals) are mostly contrasted

with those near the very bottom (laborers and farmers), and, respectively, lower barriers of friendship are revealed between professionals and clerical workers and between skilled workers and laborers.

It means that people are more likely to confide in others who share the same social position and less likely to form such a ties as their difference from the position of others increases. This conclusion also aptly describes marital patterns (Blossfeld 2009; Domański and Przybysz 2007; McPherson, Smith-Lovin, and Cook 2001; Wright 1997). That is, starting from a relationship implying equality, a structure of inequality may be inferred.

Theories of assortative mating describe friend choices, based on similarity of status, as the result of several factors. Perhaps the most basic source of homogamy is proximity in values, interests, and personal traits. Friendship, whatever form it takes, is defined as a relationship between equals. We are more likely to have contact with those who resemble us in intelligence, ways of spending leisure time, morals, and political views. Ties between people of the same social position are more likely to be close ties of giving emergency help, lending money, giving trusted advice, counseling, and assisting emotionally with personal problems. Common expectations, needs and demands are basically related to similarity of education, occupational position, and, generally, placement on the stratification ladder. Homophilous ties residing in similarity of values may be reinforced by social institutions. Underlying the upper class is involvement in exclusive private schools, elite universities, gentlemen's clubs, summer resorts, charitable and cultural organizations that create strong feeling of "we". These institutions provide a social setting within which members can share their ideas and maintain social and business ties (Kerbo 2000: 161).

The literature is consistent on the point that patterns of friendship influence social stratification in a way similar to mobility barriers and patterns of marital choices. Homogeneity of social status tends to reproduce social order and, like all kinds of self-recruitment and closure, maintains social inequality. Homophily-produced choices can also delay the adaptation of people originating in lower classes to higher steps on the stratification ladder. For example, a lawyer from the working class may find it difficult to associate with workmate lawyers who inherit the family firm.

There is no reason to suspect that reality of structurations induced by friendship is more elusive in Poland. In national sample from 1988,

Domański and Sawiński (1992) found the most ridged boundaries to friendship across socio-economic status, with the most visible contrast existing between categories of higher managers/professionals and farmers. This paralleled Domański's (2007a) results one decade later, showing strong educational homogamy in friendship patterns for 1988 and 2003. The categories of very high and very low education displayed the greatest inbreed tendency with the most socially significant divide between them.

Hypotheses

The general objective of our analysis is to determine whether openness, displayed in friendship choices, declined or increased. According to long-term studies on intergenerational mobility – the most-researched area of social openness – the degree of fluidity has not changed in Poland since 1970s (Domański, Mach, and Przybysz 2016; Mach 2004). Similarly, there was no real change in the educational and occupational resemblance of spouses – marital homogamy and intermarriage rates fluctuated, but without any trend (Domański and Przybysz 2007), although analysis of wedding registries of newly marriage couples indicated that openness in marital choices increased after 1990 (Domański and Przybysz 2009). These findings are consistent with the lack of unidirectional changes in social fluctuation in most contemporary societies (Breen 2004; Domański and Przybysz 2007; Halpin and Chan 2003; Raymo and Xie 2000), although, given the deep transformations in the political and economic system in Poland, it would not be surprising if some significant tendencies occurred.

While pervasive stability in social closure might also be seen in barriers to friendship, one can also indicate new phenomena consolidating the contours of social stratification over recent decades. The primary reason for this would be growing inequality of material position. Inequality of incomes in Poland substantially increased (Domański 2011), which might be paralleled by both growing homophily and rigidity of social distances between basic socio-occupational categories and “classes.”¹ Homophily in material characteristics translates into homophily induced

¹ In 1982–2005, the Gini coefficient for family incomes increased from 0.212 to 0.402.

by segregation of place of residence, dividing urban districts into more prestigious and “better” ones inhabited by a prosperous middle class, and “worse” ones overpopulated by poor people. Geographical segregation could lead to greater homogamy because of a decreased number of intimate contacts between people from different classes and educational levels. A growing number of Poland’s “service class” and owners formerly lived in closed areas, in convenient housing, and an attractive environment, in contrast to the working class residing in areas with less favorable conditions.

The consolidation of social barriers in friendship may also be driven by people’s growing propensity of participate in civic organizations. According to analyses based on European Social Survey data, representatives of the service class are most likely to participate in civic organizations. They are followed by lower nonmanual categories and owners, while those who are most disengaged from formal participation are working class people and agricultural categories (Domański 2008). This suggests that there are class barriers in access to associational membership. Civic organizations appear to be the preservers of advantaged categories (i.e., higher professionals and managers), while categories located near the bottom of socio-economic ladder are deprived of access to them. This pattern also holds in Poland: these tendencies should support the idea that association membership decreases the number of contacts between representatives of different classes and increases exclusive friendships.

Under these circumstances, it is reasonable to expect – at best – stability in patterns of friendship in 1988–2008, rather than their decline. We will test this hypothesis in three major respects. First, we perform a cross-temporal analysis of the association between respondents and their best friends, indicated by similarity of socio-occupational categories and, separately, by educational levels. Second, we assess the degree of homogamy in categories of higher managers and professionals, lower nonmanual workers, owners, manual workers, and farmers, all of them regarded as basic segments of social stratification.

Our third aim is to determine the strength of barriers to friendship between these categories, and, in the next step, between educational levels. To ascertain the relative importance of social structuration induced by patterns of friendship we will analyze them against the background of marital patterns, regarded as a referential frame in seeking for general tendencies in social stratification formed by assortative mating.

Data and Variables

Longitudinal information on respondent's best acquaintance are scarce. Fortunately, the Polish Panel Survey POLPAN collected information on the occupational status and educational level of respondents, respondents' best friend, and their spouses.² We use data from its 1988, 2003, and 2008 waves. Since the 1988 national sample from covered men and women twenty-one to sixty-five years old, we restricted our analysis to the population with this age limit for 2003 and 2008 as well.

Information on the occupational categories of respondents and respondents' best acquaintance was used to construct a series of tables in which their occupational categories were cross-classified. The analysis is based on the Social Classification of Occupations (SCO), which is most frequently used in social-stratification research in Poland (Domański, Sawiński, and Slomczynski 2009). A distinction is made between: (1) senior managers and specialists, referred to as "intelligentsia", (2) other nonmanual workers, (3) business owners, (4) skilled workers, (5) unskilled workers, and (6) farmers – both farm owners and farm laborers. The number of categories was set to six for statistical reasons, to overcome problems in estimating parameters in multivariable distributions. In analyzing educational homogamy we used a four-category classification distinguishing between: (1) elementary school and uncompleted elementary, (2) basic vocational and uncompleted secondary school, (3) secondary school, (4) postsecondary, some college, and completed college. The same set of occupational and educational categories was used to construct marriage tables. Both SCO and educational classification were slightly changed in consecutive waves of the POLPAN survey, but in collapsed versions they are strictly comparable in time and we feel confident that no systematic bias was introduced into our results.³

In 1988, a question concerning a best friend asked about "a person whom you are linked in the closest friendship, aside from close relatives"; in 2003, it asked about a "closest acquaintance"; and in 2008 – about the

² More detailed information may be found in Slomczynski et al. (1989) and at ads.org.pl.

³ Occupational information in POLPAN 1988 was coded according to the first version of the Social Classification of Occupations from 1978 (Pohoski and Slomczynski 1978). For the 2008, we applied SCO 2007 (Domański, Sawiński, and Slomczynski 2009).

“closest friend aside from the family”. Information on educational levels of the best friend are in the 1988 and 2003 data, and on his/her occupational category in 1988 and 2008. A question concerning education and occupation of the spouse was included in all waves. In Appendix Tables A.6.1 and A.6.2, we present two-way raw distributions for these categories. It should be noted that occupational category of the respondent identifies the current or last job, whereas occupation of the spouse refers only to the current occupation. To test whether these differences affected our results, we compared the association between the occupational level of spouses based on the current occupations with the association based on the occupational variables including the information for both.⁴ The association did not change substantially in any of these tests.

Analysis

The most general measure to describe friendship patterns is the percentage distribution in two-way tables that cross-classify categories of respondents with the same categories of the best friend. The raw distributions are presented for 1988, 2003, and 2008 in Appendix Tables A.6.1.a, A.6.1.b, A.6.2.a, and A.6.2.b. Accordingly, raw distributions for marriage patterns for 1988 and 2008 are presented in Appendix Tables A.6.1.c, A.6.1.d, A.6.2.c, and A.6.2.d.

Homogamy of friendship (and marital choices) is located on the main diagonal – for example, in the 1988 sample, 204 “higher managers and professionals” had a best friend in the same category (Appendix Table A.6.1.a). The overall homogamy rate in friendship (in 6×6 tables) was 60.3 percent. It was more than half of all cases in 1988, which suggests that people may prefer similarity to dissimilarity in socio-economic status.

Descriptive statistics, showing incidence of homogamy in 1988–2008, are presented in Tables 6.1 and 6.2. Table 6.1 contains total rates of occupational homogamy in friendship and marital patterns in 1988 and 2008, and Table 6.2 lists total rates of educational homogamy.

It can be cautiously argued that occupational divisions reflect most of the relevant class barriers. Table 6.1 reports that although there are only six cells on the main diagonal out of thirty-six cells in each two-way distribution, they include 49.9–60.3 percent of cases of friendship and

⁴ These analyses are available on request.

35.6–40.4 percent of all marriages. In the analyzed period, homogamy in friendship decreased by 10.4 percent and in marital patterns by 4.8 percent.

Table 6.1. Descriptive Statistics for 6 * 6 Occupational Cross-Classifications for Friendship and Marriages in 1988 and 2008

	Occupational categories of respondents and			
	Best friend		Spouse	
	1988	2008	1988	2008
Homogamy rates in percent	60.3	49.9	40.4	35.6
Dissimilarity index	4.8	10.5	40.2	35.8

Table 6.2. Descriptive Statistics for 4 * 4 Educational Cross-Classifications for Friendship and Marriages in 1988 and 2003/2008

	Educational categories of respondent and			
	Best friend		Spouse	
	1988	2003	1988	2008
Homogamy rates in %	57.5	56.0	54.6	52.4
Best friend (wife) with higher education in %	23.5	29.6	23.0	31.6
Best friend (wife) with lower education in %	19.0	14.3	22.4	15.9
Dissimilarity index	15.2	19.2	22.2	23.7
Index of net difference	5.0	11.0	0.0	12.6

While percentages are simple and informative measures to describe assortative mating, they provide little information on the strength of social association between close friends/spouses. Declining percentage rates hardly inform about the growing openness of social stratification since they are affected by distributions of categories of respondents and friends/spouses. In interpreting marriage patterns, sociologists point out that percentages result, to some extent, from disparity in the size of the respective educational and occupational categories of women and men. This structural factor tends to “enforce” some intermarriages between, for example, the middle and working class, which does not

have to produce a greater equality of chances, identified by relative rates. One can easily imagine that, in spite of a high incidence of cross-class marriages between lower nonmanuals and skilled workers, the relative homogamy of the latter remains unchanged.⁵ Note that the total share of couples who marry within their class can be 100 percent only in the case of identical margins of spouses in a two-way table – however, it does not occur. Husbands prevailed over wives (especially in 1988) among higher managers/professionals and skilled workers, whereas wives dominated in lower nonmanual categories.

Thus, depending on structural constraints, it is more or less easy to marry in. A somewhat different interpretation applies to the sociological meaning of marginal disparity in distributions of occupational categories of respondents and their best friends. In that case, one is hardly confronted with structural constraints in choosing friends since people are not “forced” to maintain close personal relationships regarded as a norm, comparable to marriage. True, there may be situations when class like patterns of friendships are structurally enforced in that they are circumscribed to place of residence, for example, in the case of living in isolated communities where the working class or farm categories are overrepresented.⁶ However, such constraints are local, and not universal in kind, and, generally, different “marginal” distributions can be considered as “outcome” rather than a “cause” of friendship choices. Such structural constraints imposed on friendships are also weaker because people can have more than one “close acquaintance” at the same time – unlike in marital relations.

In the bottom row of Table 6.1 we report values of dissimilarity index which is a summary measure of the difference in distributions of friends/spouse (determined as the sum of absolute values of differences between the frequencies of origin–destination distributions divided by 2). In our case, the value of the dissimilarity index indicates what percentage of respondents would have to change their occupational category to make

⁵This interpretation – that the analysis of “social openness” in terms of absolute rates is misleading – is commonly held in studies on social stratification, especially in studies of social mobility (see Erikson and Goldthorpe 1992).

⁶This could take place when, for example, a medical doctor is “forced” to make friends with a mason, instead of (let us say) his workmate since no other professionals live in the neighborhood. Certainly, a lack of “appropriate” candidates may result in choosing anybody, without friendship at all, as in the case of marital choices when one can remain single if he/she has not succeeded in meeting someone “equal”.

the best friends/spouse distribution identical to the respondents' distribution. The higher its value, the greater the occurrence of dissimilarity. The table shows that the value of dissimilarity index for friendship rose in 1988–2008 from 4.8 percent to 10.5 percent, which can partially explain declining homogeneity in friendship choices.

The increase in the total heterogeneity of friendship is paralleled by asymmetry of these relationships, which is seen people's tendency to choose their best friends from occupational categories of higher rather than lower socio-economic status. In 2008, sixty lower-nonmanual workers had their best friend in the category of higher managers and professionals, whereas only twenty-five representatives of the latter declared having a best friend in the lower-nonmanual category (Appendix Table A.6.1.b). The same asymmetry is revealed between other pairs of categories. For example, in 2008, sixteen skilled workers had best friends among owners whereas only ten owners counted skilled workers among their best friends. It shows that patterns of friendship are by no means reciprocal, and it is possible that the best friend of a sales clerk may be some university professor living in neighborhood who, in turn, regards some other professor or lawyer as his best friend. Such asymmetry may reflect a general willingness to improve one's own social status, which does not necessarily correspond to the "objective" facts of cross-class relations. This also confirms that people are sensitive to symbols of higher status, reflected in assortative mating, and they apply various strategies for betterment. In 2008, this asymmetry seemed to be more clearly revealed.

Table 6.2 provides some of the basic data on changes in assortative educational mating. Was a decline in the occupational homogeneity rate paralleled by a decline in the educational resemblance of spouses and friends? The analysis shows that the proportion of educational homogeneity in friendship was rather stable, and in 1988–2003, it decreased only slightly from 57.5 percent to 56 percent. The proportion of respondents belonging to the same category as their spouses was also much the same, with a modest decline – from 54.6 to 52.4 percent.

More changes are seen in patterns of heterogamous selection. Following some rise in the proportion of respondents having friends in an occupational category of a higher position, the share of those having relations with friends of higher educational level increased from 23.5 percent to 29.6 percent, and the proportion of friendships with those of lower education relatively declined. An even greater change occurred in the case of intermarriage patterns. In 2008, the proportion of marriages with a higher

educational level of the wife was almost twice higher than marriages with higher education of the husband (31.6 percent vs. 15.9 percent), whereas in 1988 these rates were almost the same (23.0 percent vs. 22.4 percent).

This increase may be regarded as a clear illustration of change in “marginal distributions” of schooling for each sex. In 1988–2008, the educational level of wives increased much more than that of husbands. In 2008, men were less educated than women, which led to a deficit of candidates for husbands in the same educational category and forced cross-educational marriages. The growing dissimilarity of educational distributions of husbands and wives is revealed in the values of *index of net difference* (ND). In general, the ND index (Liebersson 1976) gives information about probability for the values of one variable to be higher than another variable – or on the contrary – about the assumption of their independence.⁷ In the case of educational level of spouses, ND values higher than zero give information about the higher likelihood of marriage with a higher educational level of the wife, and values of ND below zero point to a higher likelihood of marriages with a relatively higher educational level of the husband. In 1988–2008, the ND index increased from 0 to 12.6, which may suggest that a growing proportion of couples with an educationally dominant position of the wives resulted, in part, from a more rapid increase in women’s education. In the case friendship patterns, values of the ND index increased from 5 percent to 11 percent, which indicates that the educational level of respondents increased at a slower pace than that of their best friend.

Before we go to openness defined in terms of assortative mating, let us determine to extent to which choices of friends and spouses overlap. We establish this in the cross-classification of two contrasting dichotomous variables: (1) respondents with a best friend in the same occupational category with who had a best friend in an outside category, and, similarly, in the case of marital choices; and (2) spouses intermarrying in the same occupational category. Table 6.3 presents these distributions for 1988 and

⁷ In the case of independent variables, the distribution of probability for particular cells in a two-way cross-classification are product of the marginal distributions. Values of the ND index for such cross-classification are determined as the difference between cells above and below the main diagonal. Formally:

$$ND = \sum_{i=2}^k P(W = w_i)P(H < h_i) - \sum_{j=2}^k P(H = h_j)P(W < w_j),$$

where H and W refer to the education of the husband (respondent) and wife (friend).

2008. They depict the extent to which occupational homogamy in friendship is paralleled by marital homogamy and to what extent marital and friendship choices resemble each other.

Table 6.3. Distributions of Occupational Heterogamy/Homogamy by Friendship and Marriages in 1988 and 2008

Friendship: respondent and respondent's best friend in the same category	Marriage: respondent and respondent's spouse in the same category	
	No (heterogamy)	Yes (homogamy)
	1988	
No (heterogamy)	995	533
Yes (homogamy)	1,330	950
	2008	
No (heterogamy)	160	71
Yes (homogamy)	140	93

It turns out that the degree of correspondence between friendship and marital choices is low. In 1988, the correlation between these variables – defined in terms of the uncertainty coefficient – stood at 0.004 ($\chi^2 = 18.0$, $df = 1$, $p < 0.0001$). It remained at almost the same level, although not statistically significant, for 2008.⁸ This crude measure is an extreme simplification of assortative mating, and the “yes-no” dichotomy evidently lowers the correlation between patterns of friendship and marital choices. Nevertheless, it illustrates that marital homogamy does not need to be strongly related to homogamy in friendship – having a best friend in the same occupational category may parallel heterogamous marriage. In that case, however, marital and friendship patterns generate similar social distances, so one should take both of them into account in a description of social stratification.

⁸ The uncertainty coefficient is applied to the measurement of directional associations – that is, between independent and dependent variables. In our analysis, dependent variable refers to patterns of friendship, but almost the same result is obtained with the dependent variable referring to marital patterns.

Association

To analyze trends in assortative mating, we use log-linear models that allow us to distinguish patterns resulting from changes in marginal distributions of respondent's (R), friends' (F) and spouses' [H], [W] education and occupational category from association between these traits – [$R F$] and [$H W$]. The modeling of friendship and marriage tables is held to be analogous to the modeling of mobility tables. We estimated a series of nested multivariate log-linear models for the pooled sample of 1988 and 2008 two-way associations – [$R F$] and [$H W$] – taking into account time variable (T). To select a model that adequately describes the pattern of relative homogamy, we use a stepwise procedure.

We begin with a conditional independence model that should serve as the baseline for evaluating the extent of assortative mating and its variation by time. Certainly, the conditional independence model, while assuming no association between respondents and friends, does not fit the data by both χ^2 (5323.0, $p < 0.0001$) and L^2 (4068.4, $p < 0.0001$) for $df = 50$. It also does not fit for cross-classifications of occupational category of husbands and wives: $\chi^2 = 4035.1$, $p < 0.0001$ and $L^2 = 3060.3$, $p < 0.0001$.

Since this model cannot be accepted we can drop the unrealistic assumption about independence, which would indicate lack of homogamy and social distances in assortative mating. Some relative associations exist. Our second model focuses on change. To investigate the possibility that associations in 1988 and 2008 differed we test a *constant fluidity model* (CnSF) that restricts the [$R F$] and [$H W$] associations to be exactly the same for both periods of time. If this model does not fit the data well, we can drop the assumption that both marital and friendship patterns remained basically intact. According to goodness-of-fit statistics, the CnSF model for friendship patterns does not fit the data well enough to be accepted for $p < 0.01$. It should be rejected at the 0.01 significance level: $\chi^2 = 46.2$, $df = 25$, $p = 0.0062$ (although $L^2 = 40.85$, $p = 0.0238$, show that it could be accepted). Our general conclusion could be that the basic pattern of friendships changed, as long as we compare 1988 data with 2008 data. This is even more relevant for marital choices – the CnSF model for marriage selection fails to fit, which suggests that the assumption about stability in these patterns does not hold true ($\chi^2 = 57.3$, $p = 0.0002$) and ($L^2 = 54.7$, $p = 0.0005$).

Taken together, this demonstrates that, on the whole, homogamy has changed significantly between 1988 and 2008.⁹ To understand the changing pattern, we used a *uniform difference model* (UD) – also called a log-multiplicative layer model (Xie 1992) – which postulates that 1988 and 2008 shared common patterns of associations $[R F]$ and $[H W]$, but the strength of these associations differed by a multiplicative factor β_{ijk} . It shows that the UD model actually gives a satisfactory fit to our data at the conventional 1 percent level. In the case of friendship patterns, $\chi^2 = 38.4$, $p = 0.0319$, and $L^2 = 37.6$, $p = 0.0378$ for $df = 24$. Respectively, in the case of marital patterns, goodness-of-fit statistics amount to $\chi^2 = 40.1$, $p = 0.0206$, and $L^2 = 42.0$, $p = 0.0131$.

To capture the size and direction of change between two times points, we use the uniform difference parameters β_{ijk} . Inspecting their values (first column of Table 6.4), we see that the strength of the associations between occupational categories of friends decreased by a factor of 0.906 – we applied a conventional solution of setting the β_{ijk} (1988) parameter to 1. The downward trend was even more visible in the association between the occupational categories of spouses with a decrease by 0.817. It would be appropriate to say that Poland was a more open society in 2008 than in 1988, in both these respects, although our analysis is restricted to two points in time, and it is difficult to give substantive interpretation to this decrease with respect to long-term tendencies. Let us note that our findings are inconsistent with the results for a time path of change in 1988–2004, showing a lack of significant changes in marital homogamy (Domański and Przybysz 2007). A significant decrease in the associations from 1988 to 2008 may be accidental, although it is also plausible that social openness increased after 2004.

⁹ In case of our analysis, panel data are not especially suitable for testing the hypothesis concerning changes over time, since some of the respondents participated in both the 1988 and 2008 waves. Thus, we do not analyze two independent populations, which may make it difficult to reject the null hypothesis on the lack of substantial changes in 1988–2008. Duncan (1981) applies a more adequate test, but the POLPAN data do not allow us to use it due to relatively small samples.

Table 6.4. Parameters for Strength of Association Between Occupational Categories of Respondents and Best Friend/Spouse

Strength of association	Year	Uniform difference	RC(a)	RC(b)
Respondent and best friend	1988	1.000	6.92	7.61
	2008	0.906	6.28	4.14
Respondent and spouse	1988	1.000	4.17	3.74
	2008	0.817	3.14	3.57

Seen in this light, our results are further confirmed by parameters of the *row-column* models (Table 6.4). Models RC belong to a class of models in which the association is modeled by the product of the scores for categories of respondents and best friend (or husbands and wives) and a measure of strength of the association (Clogg 1982; Goodman 1979). An important feature of the RC model is that category scores provide a simple way to identify patterns of assortative mating that can be used to assess the permeability of occupational categories. One way to reveal these patterns is under the “homogenous” RC model in which parameters for friends’ (and separately for spouses’) categories in each point of time are assumed to be equal – although the association parameter is allowed to vary (see Clogg 1982).¹⁰ We fitted this version of the RC model – labeled RC(a) – controlling for the effect of homogamy by adding one parameter for each main diagonal cell of the two-way distributions of friendship and marital choices. The two additional restrictions are that: (1) parameters for friends’ categories across time are assumed to be equal – the same restriction was placed on parameters for categories of spouses, and similarly (2) the main diagonal cells are constrained to be equal for 1988 and 2008.

It turns out that the RC(a) model is acceptable for friendship patterns ($\chi^2 = 56.0$, $p = 0.0302$ and $L^2 = 59.4$, $p = 0.0149$, $df = 38$), but it is not an adequate representation of the marital choices ($\chi^2 = 82.3$, $p < 0.0001$ and $L^2 = 78.4$, $p = 0.0001$). Concerning the strength of the association we

¹⁰ We employed the RC model based on the assumption of equal parameters for respondents and their friends’ (wives and husbands’) categories in each year, since it is simpler and fits the data no less than the more complex version of RC, a “simple heterogeneous” model that relaxes the quality assumption, allowing parameters for the categories to differ.

see that – consistently with the UD parameters – it declined in the case of friendship relations from 6.92 to 6.28, and in the case of husbands and wives from 4.18 to 3.14. The $[R F]$ association is stronger than $[H W]$, which corroborates the thesis that social barriers induced by friendship are more rigid than those created by marital choices.¹¹

The same patterns are revealed under the RC(b) model, which drops the rather unrealistic assumption of the RC(a) model on the lack of significant changes in friendship and marital relations. In RC(b) model, the parameters for categories of respondents and friends (and separately for spouses) are allowed to vary in temporal dimension. We also did not place restrictions on homogamy, allowing parameters for the main diagonal cells to differ in 1988 and 2008. It turns out that the RC(b) model fits both friendship ($\chi^2 = 33.9$, $p = 0.2057$ and $L^2 = 36.7$, $p = 0.1253$, for $df = 28$), and marital patterns ($\chi^2 = 45.6$, $p = 0.0190$ and $L^2 = 46.5$, $p = 0.0155$). The estimated parameters of associations, reported in the last column of Table 6.4, reveal that the strength of the $[R F]$ declined from 7.61 to 4.14, and of the $[H W]$ from 3.74 to 3.57.

While by all statistical measures, the openness in occupational assortative mating increased, it might not occur for educational levels. Growing openness is a rather unexpected result bearing in mind basically unchanging patterns of intergenerational fluidity in Poland (Domański, Mach, and Przybysz 2016). However, a decrease in association between educational levels of friends and education of husbands and wives would not be unexpected result bearing in mind the strong correlation between education and occupational position. Since education is a basic prerequisite of recruitment to occupational roles, occupational resemblance in assortative mating may be paralleled by similarity of educational levels.

To examine this possibility we estimated associations between educational levels for $[R F]$ and $[H W]$ in a *uniform difference model* (Table 6.5). By χ^2 and L^2 criteria, the UD model fits data well for two-way

¹¹ To gain deeper insight into the relative weight of social structuration generated by friendship and marital choices, we tested yet another RC model that allows equal homogamy in friendship and marital patterns. In other words, we constrain parameters for the diagonal cells in the cross-classifications $[R F]$ and $[H W]$ to be the same. An additional constraint was the assumption of a lack changes in 1988–2008. Under these specifications, the strength $[R F]$ decreased from 4.49 to 3.53, and of $[H W]$ from 4.12 to 2.79. In fact, goodness-of-fit statistics indicate this model is not acceptable for friends ($\chi^2 = 141.3$, $p < 0.0001$, $L^2 = 143.12$, $p < 0.0001$ for $df = 38$) or for marriage tables ($\chi^2 = 221.7$, $p < 0.0001$, $L^2 = 198.7$, $p < 0.0001$).

distributions of friends' education ($\chi^2 = 18.4$, $p = 0.0181$, for $df = 8$, and $L^2 = 18.9$, $p = 0.0153$). In Table 6.5 we report association parameters for the educational level of spouses estimated in the UD model, which also fits well enough ($\chi^2 = 5.6$, $p = 0.6901$, $df = 8$ and $L^2 = 5.5$, $p = 0.6985$).

The parameter estimates show a rather different pattern. In contrast to the occupational domain, the association between educational levels of friends remain basically unchanged. β_{ijk} stood at 1.00 for 1988 and at 1.02 for 2003. The opposite occurs for marriage patterns – the change parameter in Table 6.5 shows some decrease (from 1 do 0.966) in the educational resemblance of spouses. Hence, our results are ambiguous enough to prevent us from concurring that educational homogamy became stronger or weaker. The boundaries between educational groups were more persistent in time, which suggest that, in comparison with boundaries between socio-occupational groups, they contribute more to social divisions. In part, this matching pattern can be explained by people's preferences for similar values, norms, styles of speech, and leisure activities that are believed to be mutually rewarding and that are more strongly determined by education than socio-occupational category. Taken together, preferences concerning the educational level of a friend or marriage partner seem more embedded in social stratification, and, at the same time, a higher permeability of socio-occupational boundaries may result from higher occupational mobility as compared with the educational dimension.

Table 6.5. Parameters for Strength of Association Between Educational Categories of Respondents and Best Friend/Spouse

Strength of association	Year	Uniform difference	Step 1	Step 2
Respondent and best friend	1988	1	0.330	0.322
	2003	1.0200	0.320	0.306
Respondent and spouse	1988	1	0.326	0.337
	2008	0.9663	0.330	0.351

The last two columns in Table 6.5 report the parameters for these associations fitted in the distance models. In this class of models, the association between educational levels of friends (or spouses) is described by the step parameter, indicating the extent to which friendship/marriage

chances decrease when the distance between the educational levels increases by one step (educational level). The value of step equals 1 if both friends/spouses have the same education, and with increasing differences between educational levels, the step parameter decreases accordingly. In 1988, its value for association between educational categories of friends stood at 0.33, which would imply that close acquaintance between people differing in education by one level is 3.03 less likely ($3.03 = 1/.33$) than between people with the same education. For people differing by two educational levels this likelihood increases to 9.18 ($1/.33^2$), and so on. In model Step 1 we use an additional specification allowing the strength of homogamy to vary by educational categories. Furthermore, Step 1 fits identical parameters for 1988 and (2003 for friendship data) for each cell of the main diagonal in associations between friends (and between spouses), which provides direct comparability of these results for both periods of time.

Model Step 1 yields satisfactory goodness-of-fit statistics for barriers to friendship ($\chi^2 = 24.7$, $p = 0.0161$ and $L^2 = 25.5$, $p = 0.0128$, $df = 12$) and marriages ($\chi^2 = 19.7$, $p = 0.0193$ and $L^2 = 19.9$, $p = 0.0690$). The step parameters, reported in the last two columns of Table 6.5, reveal that the strength of educational associations remained stable, which, consistent with the UD model, confirms a lack of significant changes from 1988 to 2008 (2003 for friendship). The same, unchanging pattern is seen for the step parameters in model Step 2, which is the more restrictive of the two, because it sets parameters for the main diagonal to be the same for two-way associations of both friends and spouses.¹² Placing this constraint makes the strength of these associations directly comparable. As shown, the magnitude of step parameters for friendship associations in the model Step 2 is clearly greater relative to associations for spouses. Once again, it suggests – as in the association between occupational categories – the patterns of friendship create more rigid social distances and barriers.

¹² In model Step 2, first, we estimate parameters for the main diagonal within one, common model. Next we fit them separately to two-way educational distributions of friend ($\chi^2 = 37.6$, $p = .0017$, $L^2 = 38.2$, $p = 0.0014$, $df = 12$) and of husbands and wives ($\chi^2 = 33.6$, $p = 0.0060$, $L^2 = 34.6$, $p = 0.0045$). This strategy allows us to compare “step” values for both associations.

Strength of Homogamy

While the analysis of associations informed about changes in the general openness of the social structure, the analysis of homogamy informs about the internal cohesiveness of social groups, as defined in terms of assortative mating. In 1988–2008, we found some decrease in the homogamy rate, measured by the percentage of friends/spouses belonging to the same socio-occupational group. To determine whether these categories became more open, we refer to parameters of the quasi-symmetry model (QS), which seems more suitable for searching for homogamy than other models. The quasi-symmetry model postulates a symmetrical pattern of associations $[R F]$ and $[H W]$ insofar as the margins allow. For example, in cross-classifications of occupational categories of respondent and their best friends, the tendency for matches between R_i and F_j is equal to that of matches between R_j and F_i , controlling for marginal distributions of R and F . That is, professionals had the same chances to associate with farmers, as farmers with professionals, and if these frequencies are different they arise from different marginal distributions. The quasi-symmetry model turns out to be acceptable at the conventional 1 percent level in the case of associations between occupational categories of both friends ($p = 0.1880$) and spouses ($p = 0.0260$).¹³

Table 6.6. Parameters for Homogamy in Occupational Categories in Quasi-Symmetry Model

Occupational categories	Homogamy in			
	Friendship		Marriages	
	1988	2008	1988	2008
Higher managers and professionals	11.25	7.02	11.08	6.06
Other nonmanual workers	2.78	2.43	1.46	1.51
Owners	4.00	3.92	13.17	4.51
Skilled workers	3.12	2.61	2.12	1.33
Unskilled workers	6.05	2.58	3.09	2.39
Farmers and farm laborers	12.23	12.73	16.88	11.91

¹³ The goodness-of-fit statistics for friendship were $\chi^2 = 23.8$, $L^2 = 22.1$; and for marriage patterns – $\chi^2 = 32.3$, $L^2 = 34.0$, with $df = 20$.

Table 6.6 reveals large differences in homogamy across basic segments of social stratification. The parameters above 1, estimated in the QS model, indicate that people have a tendency to associate (marry) someone from their own category – the higher value of the parameter, the more likely the friendship/marriage with somebody inside – relative to the hypothetical situation of complete openness, that is the lack of homogamy, indicated by 1. Respectively, parameters below 1 would indicate that homogamous friendships/marriages are less likely than in a situation of complete openness. Inspecting these parameters it becomes clear, that a tendency to prefer friends and spouses who belong to the same category prevails – all parameters are above 1. The highest homogamy is seen among agricultural categories and broadly understood intelligentsia, including higher managers and professionals.

The highest homogamy of farmers and agricultural laborers seems rather obvious, and may be explained in terms of the social and geographic isolation of the rural population, which prevents close associations with nonagricultural categories. This natural barrier is associated with isolation of the workplace and a distinct lifestyle. Living in a small circle of neighbors in the countryside, farmers had limited opportunity to maintain contacts with intelligentsia, lower nonmanual workers, and the working class. This homogamy illustrates their distinct position, which according to earlier research, is also reflected in the lowest mobility, highest inheritance, and marrying outside (Domański and Przybysz 2007; Sawiński and Domański 1989).

The impediment to cross-class friendship in the case of higher managers and professionals is determined by their distinct values and orientations. Friends of intelligentsia recruit themselves from the same cultural background consisting of people who are more likely to confirm one another's leisure-time behavior and worldviews and who regard themselves as "better". These exclusive social circles are maintained by socializing, drinking, sporting, and participating in other recreational activities. Some of them may even be proud of their exclusivity. The intelligentsia experience social and formal institutions throughout the life cycle from childhood to adulthood, including good schools and elite universities, which helps to promote unity. The most heterogeneous network of close ties, though, is seen in lower non-manual workers. According to previous findings, they are the most differentiated category not only in friendships patterns but also with respect to marital choices and inheritance of family position (Domański and Przybysz 2007).

Despite high cohesiveness, the homogamy of higher managers and professionals decreased from 11.25 to 7.02 in 1988–2008. It also declined in other categories (with the only exception of agricultural workers and farmers) pointing to the overwhelming tendency of cross class lines. It should be remembered that the same downward trend – toward an increase in the openness of social stratification – was revealed in the drop in general $[R F]$ association. The decrease in homogamy of higher managers and professionals is meaningful in that it indicates growing permeability of the cultural elite in Poland. Its growing openness might be a result of increasing inflows to the intelligentsia from the lower strata, among other reasons. The new entrants are likely to maintain old friendship ties, less often making ties with old intelligentsia. Another, perhaps more important, source of heterogeneity of the intelligentsia in terms of friendship patterns may be the growing size of the category of people graduating from universities who fail to become higher managers and professionals. Although in 1988–2008, the number of university graduates rapidly increased, the percentage of higher managers and professionals remained basically unchanged (Domański 2007b). The supply of professionals and managers was restricted and university graduates were forced to take lower positions – however, fostering close ties with former colleagues who succeeded in becoming directors, lawyers, engineers, and so on.

It shows that patterns of marriage homogamy are roughly the same. The strongest tendency for people to marry within their own category is among people belonging to agricultural categories and the intelligentsia, although in 1988 equally high homogamy was seen among owners. This is not an unexpected result, bearing in mind that in the centrally planned economy small proprietors were regarded by the communist rulers as an “alien” factor. Ideologically inappropriate and politically uncertain, owners occupied shaky positions, which could to some extent badly affect their relationships with other categories. Ownership was not esteemed and rather distrusted, and owners themselves were avoided and often ridiculed, which applied to the whole private sector (apart from private farming). Living under permanent threat might intensify the need for security, which was fulfilled at least in part by narrowing of marital choices (it also helped in the accumulation of resources and wealth, although not guaranteed property rights). This interpretation is cautionary, given the small size of the category of owners in the 1988 sample, which could artificially inflate homogamy parameters for this category.

In line with patterns of friendship, occupational homogamy in marital choices also declined. Note that the parameters for marital homogamy are consistently lower than parameters for friendship in almost all occupational categories (except owners), which provides ongoing support for the thesis on the greater role of selection of friends for understanding social stratification.

Table 6.7. Parameters for Homogamy in Educational Categories in a Quasi-Symmetry Model

Educational categories	Homogamy in			
	Friendship		Marriage	
	1988	2003	1988	2008
Elementary	5.30	7.37	6.50	6.17
Uncompleted secondary	2.56	2.08	1.89	1.94
Secondary	1.66	1.95	1.43	1.45
Postsecondary	7.02	7.11	7.17	6.76

Turning to educational homogamy, we see that, in line with a hierarchy-like pattern, it is highest at the extremes (Table 6.7). To understand the difference between 1988 and 2008 (2003 for friendship data), we use parameters for diagonal cells of the $[R F]$ and $[H W]$ tables in the quasi-symmetry model.¹⁴ As shown, homogamy is most pronounced among people with the highest (university and postsecondary) and the lowest (elementary) educational levels. Regarding changes, they are small and partially offset each other. In 1988–2003 there was some decline in friendship homogamy among people with incomplete secondary education, paralleled by some increase in the other three categories. Looking at differences between parameters for friendship and marital choices, we see that the latter are weaker but only for the second point in time.

¹⁴ The quasi-symmetry models for cross-classifications $[R F]$ and $[H W]$ are statistically significant at the conventional 1 percent level. In the case of $[R F]$, goodness-of-fit statistics were $\chi^2 = 15.7$, and $L^2 = 15.6$, for $df = 6$, and in the case of marital choices – $\chi^2 = 15.4$ and $L^2 = 15.4$.

Barriers

Once homogamy sheds some light on the cohesiveness and internal unity of social categories, barriers of assortative mating may be depicted by the metaphor of “distances”. To capture the strength of barriers to friendship between occupational categories, we refer to parameters estimated in the same row-column model that we used to establish size of the association $[R F]$. The RC model fits parameters for occupational categories of respondents who identify their location in network of friendship, and may be interpreted as representing a hierarchy of barriers (Table 6.8). The greater the difference between these values, the greater the magnitude of distances between them, which means that barriers to close friendship are more rigid.¹⁵

In Table 6.8, we present the parameters for some version of the RC model, namely, one that allows different parameters for categories in 1988 and 2008. Of various variants of the RC model, this one appeared to be the relatively best fitting. It also includes diagonal parameters to represent differences between homogamous and heterogamous associations, which vastly improves the fit.¹⁶

Bearing in mind earlier findings, one might expect that barriers of friendship correspond to socio-economic position where the most salient

¹⁵ The same set of parameters is generated for the respective categories of “best” friend. We do not present them here since they provide roughly the same map of relations as parameters for the respondent categories. It is important to emphasize that the parameters presented in Table 6.8 capture only first, the most important, dimension of the multidimensional structure of friendship relations. Using log-linear modeling, one can decompose the two-way $[R F]$ distribution into $n - 1$ dimensions (where n stands for the number of categories), although for the sake of clarification and brevity, the one-dimensional solution is generally preferred. Parameters for the first dimension have the largest explanatory power, which translates into the highest differentiation between categories, and subsequent dimensions add respectively less. In the two-dimensional solution (not presented here), “distances” socio-occupational categories for the first dimension correspond closely to those presented in Table 6.8 for the one-dimensional solution. The second dimension contrasts owners with the other five categories. In the case of the marriage table, the two-dimensional solution is more equivocal and not easy to interpret – in the second dimension, the sharpest barrier to intermarriage is seen between skilled and unskilled workers.

¹⁶ For the friendship tables, the goodness-of-fit statistics for this model are $\chi^2 = 33.8$, $p = 0.2057$ and $L^2 = 36.7$, $p = 0.1253$, for $df = 28$, and for the marriages, $\chi^2 = 45.6$, $p = 0.0190$, and $L^2 = 46.5$, $p = 0.0155$, $df = 20$.

distances occur between higher managers and professionals at the top and manual workers and agricultural categories at the bottom. The “rule”, the greater the difference in socio-economic status, the less likely the friendship, follows universal patterns of social structuration displayed in social mobility, selection of spouses, inequalities of material position and the lifestyle (Domański and Sawiński 1992). As readers can see in Table 6.8, indeed, the barriers to cross-class friendship are shaped by typical hierarchy. In 1988, the biggest contrast was observed between higher managers and professionals, and unskilled workers (−0.878 and 0.350). A slightly smaller barrier was seen between the top category and farmers and agricultural laborers (−0.878 and 0.274), then skilled workers, and the least distant to higher managers and professionals were nonmanual workers (0.039). In 2008 this hierarchy was generally similar, the only exception being that unskilled workers at the bottom were replaced by agricultural categories.

Our findings are consistent with the well-known tendency that patterns of friendship are dictated by social position. It is a strong correlate of lifestyle, political orientations, and cultural tastes. Furthermore, workplace and neighborhoods provide a context in which people meet one other. Regarding the latter, it is always easiest to accept one another’s behavior and share worldviews among farmers or between farmers and unskilled workers than to associate farmers with the Polish intelligentsia. Individuals at a lower position are more likely to be religious, authoritarian, prejudiced against sexual minorities, critical of the European Union, and demanding of help and social security measures from the state. The intelligentsia is less religious, more tolerant of lesbians and gays, unwilling to increase the role of government in the economy, and interested in more inequality of income. Note that higher managers and professionals are mostly separated from the other categories, and in 1988 the barrier to friendship between them and lower nonmanual workers exceed other distances between neighboring categories (Domański 2015) This result is consistent with the social exclusiveness of the intelligentsia as reflected in its high homogamy in friendship. In contrast was a lack of friendship boundaries between lower nonmanuals (0.039) and owners (0.053).

Table 6.8. Parameters for Occupational Categories in Row-Column Model

Occupational categories	Parameters for			
	Friendship		Marriage	
	1988	2008	1988	2008
Higher managers and professionals	-0.878	-0.732	-0.558	-0.620
Other nonmanual workers	0.039	-0.192	-0.336	-0.214
Owners	0.053	-0.165	-0.157	-0.212
Skilled workers	0.163	0.323	0.097	0.291
Unskilled workers	0.350	0.354	0.685	0.656
Farmers and farm laborers	0.274	0.412	0.270	0.099

Turning to 2008, we see that some of these barriers declined while other increased. The most visible change was a growing gap between the manual and nonmanual categories. Thus, on the one hand, there was a decline in the incidence of friendship between the working class and all nonmanual categories taken together with owners. On the other hand, “internal barriers” within both these segments weakened. In 2008, higher managers and professionals appeared less distinct from lower nonmanuals and owners. A similar tendency toward more interclass friendship is seen between skilled and unskilled workers. In 2008, both categories had more common friends than in 1988. One can assume that structural constraints, that is, lower access to people from nonmanual occupational categories, fueled this growing demand for closer friendship relations between skilled and unskilled workers.

The RC model yields roughly similar quantities for categories in marriage selection. The strongest barrier to intermarriage is between higher managers and professionals at the upper end of the occupational distribution and unskilled workers located at the bottom. Barriers to marriage between people with different socio-economic positions remained basically the same, although, in comparison with friendship, higher managers and professionals became less distant from the categories “below” them. This suggests that the intelligentsia is less exclusive in marital than in friendship choices. In 1988–2008 these patterns remained practically unchanged, except for a narrowing gap in parameter values between agricultural categories, on the one hand, and lower nonmanual categories and owners, on the other. In 2008, there were fewer

impediments to marry farmers and farm laborers for representatives of some nonagricultural categories, although we would hesitate to regard this decline as evidence of a the long-term trend.

Table 6.9. Parameters for Educational Categories in Row-Column Model

Educational categories	Parameters for			
	Friendship		Marriage	
	1988	2003	1988	2008
Elementary	-0.449	-0.618	-0.577	-0.685
Uncompleted secondary	-0.532	-0.361	-0.404	-0.224
Secondary	0.360	0.426	0.385	0.270
Postsecondary	0.621	0.553	0.596	0.638

Given that educational level is an “ordered” variable, and, hence, less equivocal in determining people’s social position, one could expect that educational barriers in assortative mating would be stronger. To investigate this possibility, we estimated parameter values for educational categories using row – column model, which allows these parameters to vary across 1988–2008 (1998–2003 in case of friendship), and fits an additional parameter for the main diagonal to emphasize the distinction between homogamy and heterogamy (Table 6.9).¹⁷ In line with the conjectures presented above, the patterns of associations result from a tendency to prefer friends and spouses who are near in educational status to those who are distant. In the case of friendship patterns, inconsistent with this underlying tendency is a higher similarity between people with elementary and secondary education than between adjacent categories of secondary and uncompleted secondary in 1988 – as if incomplete education hindered close relations with the higher educational strata. More interesting, perhaps, is that educational barriers were more persistent in time than barriers between occupational categories, which would substantiate the thesis about their greater role in social structuration.

¹⁷ In the case of 4×4 cross-classification (and smaller) that we employed for educational patterns, this model is purely descriptive; thus, we do not give goodness-of-fit statistics for it.

Summary and Conclusion

Like patterns of intergenerational mobility, patterns of assortative mating are assumed to indicate the ease or difficulty with which individuals are able to cross social strata. Our aim was to explore whether some significant changes in friendship patterns took place and to what extent they were followed by social openness in marital choices. We found that the strength of the association between occupational categories of respondents and their friends was lower 2008 than in 1988. Still lower was the association between the occupational categories of husbands and wives. These findings suggest that over twenty years societal openness increased or at least that, in 2008, social stratification was more open than it was just before the collapse of the communist system. A decline in the strength of the association was paralleled by a decrease in both friendship and marital homogamy, with the most remarkable decline taking place in the category of higher managers and professionals, which suggests that the intelligentsia was more open in 2008.

Higher permeability of occupational barriers might be partially offset by the lack of significant changes in educational choices. Patterns of educational selection in friendship and in marriages were stable over time, which would lead to the general conclusion that they lay more solid foundations for social boundaries. People realize their preferences by making matches on the basis of inherently persistent values and attitudes, which are more related to education than to occupational attainment.

A second conclusion concerns the relative impact of marital homogamy and friendship on social stratification. According to our results, friendship patterns seem to be more important than patterns of marriage selection in terms of both strength of the associations and degree of homogamy. It is plausible that friendship choices create a more substantial foundation of social distinctions due to selection patterns. In finding friends, individuals are given more freedom to make a purely personal choice, while marital selection is more structured by social forces and macro factors such as relative group size. More important, in the case of a change in preferences, it is easier to replace an acquaintance than a spouse, since marital relations are institutionalized by law. Thus, people are more likely to stay in a heterogamous marriage than a friendship.

Concerning the central issue of whether social stratification open or closed, our analyses yield contradictory results. In 1988–2008 some social boundaries dictated by intimate relations decreased, and others

remained intact. For the most part, these findings are consistent with the results of numerous empirical studies, not only in Poland, demonstrating a lack of unidirectional tendencies. Given that we based our analyses on data from only two points in time, these conclusions are susceptible to a potential bias. New research is needed to determine whether the trend toward greater occupational heterogamy will continue in the 2020s. Further research could also be undertaken to ascertain whether the same transition has taken place in relation to other dimensions such as national origins or religious socialization.

Appendix

Table A.6.1. Distributions of Occupational Categories for Friendship and Marriages in 1988 and 2008

a. 1988

Respondent	Best friend						Total
	1.	2.	3.	4.	5.	6.	
1. Higher managers and professionals	204	105	13	29	2	5	358
2. Other nonmanual workers	153	946	33	179	70	45	1,426
3. Owners	18	31	27	31	8	8	123
4. Skilled workers	64	209	38	749	83	72	1,215
5. Unskilled workers	10	137	10	118	197	58	530
6. Farmers and farm laborers	14	99	13	93	45	599	863
Total	463	1,527	134	1,199	405	787	4,515

b. 2008

1. Higher managers and professionals	45	25	11	1	1	0	83
2. Other nonmanual workers	60	162	22	24	1	4	273
3. Owners	14	18	28	10	2	0	72
4. Skilled workers	15	36	16	92	4	10	173
5. Unskilled workers	4	26	2	25	3	3	63
6. Farmers and farm laborers	4	12	7	18	3	47	91
Total	142	279	86	170	14	64	755

c. 1988

Husband	Wife						Total
	1.	2.	3.	4.	5.	6.	
1. Higher managers and professionals	138	296	5	13	13	12	477
2. Other nonmanual workers	50	510	5	78	94	45	782
3. Owners	10	114	49	15	24	9	221
4. Skilled workers	37	978	16	346	483	164	2,024
5. Unskilled workers	3	81	2	48	134	80	348
6. Farmers and farm laborers	7	80	2	22	59	649	819
Total	245	2,059	79	522	807	959	4,671

d. 2008

1. Higher managers and professionals	18	28	2	2	1	1	52
2. Other nonmanual workers	18	78	9	4	7	4	120
3. Owners	10	30	21	6	3	7	77
4. Skilled workers	13	93	7	21	45	20	199
5. Unskilled workers	1	13		7	5	3	29
6. Farmers and farm laborers	1	14	1		3	52	71
Total	61	256	40	40	64	87	548

Table A.6.2. Distributions of Education Respondent and His Best Friend and Distributions of Education Husband and Wife in 1988, 2003, and 2008

a. 1988

Respondent	Best friend				Total
	1.	2.	3.	4.	
1. Elementary or incomplete elementary	1,035	316	227	42	1,620
2. Incomplete secondary	302	733	349	69	1,453
3. Secondary	94	213	653	173	1,133
4. Postsecondary	20	35	286	459	800
Total	1,452	1,299	1,518	747	5,006

b. 2003

1. Elementary or incomplete elementary	70	83	26	8	187
2. Incomplete secondary	30	256	128	40	454
3. Secondary	9	53	193	93	348
4. Postsecondary	2	15	74	197	288
Total	112	409	424	342	1,277

c. 1988

	Wife				Total
	1.	2.	3.	4.	
Husband					
1. Elementary or incomplete elementary	1,109	239	106	20	1,474
2. Incomplete secondary	449	623	460	83	1,615
3. Secondary	145	205	499	171	1,020
4. Postsecondary	19	28	204	329	580
Total	1,723	1,097	1,272	607	4,689

d. 2008

1. Elementary or incomplete elementary	40	32	15	3	90
2. Incomplete secondary	39	187	87	43	356
3. Secondary	8	39	83	68	198
4. Postsecondary	2	6	31	101	140
Total	90	266	219	219	784

CHAPTER 7.

BRIAN E. GREEN
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DIMINISHING RETURNS: THE DECREASING RELEVANCE OF THE DIGITAL DIVIDE IN THE CONTEXT OF OCCUPATIONAL DIFFERENTIATION*

Introduction

For decades, scholars, politicians and others have debated the existence and potential impacts of a digital divide. The digital divide refers to the different extents to which individuals and groups have access to and skills with digital tools that are critical to work and life in the information age (ITU 2009; Notten, Peter, Kraykaamp, and Valkenburg 2009; Van Dijk 2013). An early assumption was that higher status members of society would have more and better access to digital tools which would enable them to keep up with societal changes or have opportunities for social advancement that would be denied to marginalized groups, who either lacked digital tools altogether or had inferior, outdated tools (Hoffman and Novak 1998; Fairlie 2004; Ono and Zavodny 2008). Policymakers and scholars advocated for providing personal computers (PCs) and

* This chapter is an updated version of our recently published paper (Kryszczuk and Green 2015); cf. <http://www.degruyter.com/view/j/mbace.2015.23.issue-3/mba.ce.2084-3356.147/mba.ce.2084>. In its present form it compiles results from several studies conducted on POLPAN data.

internet connections in schools, libraries and other places that would offer those without opportunities for using digital tools chances to learn to use them and access their benefits. There was a well-known program called the “one laptop per child” initiative that sought to achieve the same ends.

As research on the digital divide developed, scholars appropriately asked questions that were intended to accurately assess the existence of a digital divide and to clarify precisely how the divide impacted people (DiMaggio and Bonikowski 2008; Hargittai 2010; Hunter and Lafkas 2003; Selhofer and Hüsing 2002). The questions asked included: How does having access to digital tools like computers help people advance in society? Who exactly benefits from access to digital tools? How do businesses use digital tools to become more profitable (Gimlin, Rule, and Sievers 2000; Horowitz 1994)? Which types of tools are more beneficial and which types of information technology (IT) uses lead to concrete benefits? Decades of research exploring these issues have shown that there are many contextual factors and mitigating circumstances that impact whether or not an individual is negatively affected by lack of access or lack of proficiency with digital tools.

This chapter continues to explore this path of research by considering the following questions. In the roughly twenty-five years of the POLPAN study, which coincides with the beginning of the period of rapid expansion of PC ownership and the proliferation of web-based telecommunication made possible by the internet revolution, does the digital divide continue to have relevance or not? Considering that in Poland and the most developed countries of the world internet access is widespread and PC ownership is pervasive, is there still any meaningful social disparity based on access and use of PCs and the internet? With these concerns in mind, this study posed the following research questions:

- 1) Are there ongoing gaps in IT access, use and skills between social groups?
- 2) To what extent do gaps in access to, use of and skills with PCs and the internet between social groups resemble the economic, social and political resource gaps between social groups?
- 3) Do those who have access to and use PCs and the internet achieve substantial social benefits that the “non-wired” do not achieve?

Background

Prognostications in the 1990s suggested that having an internet-connected PC at home would lead to a wide range of benefits for individuals and families. For example, a speech given by Eckhard Pfeiffer (1996), who was at the time president of Compaq Computer Corporation, described how the home PC would be a “magnet of functionality” for enhancing our health, our education, our work, our entertainment, our security and so on. The benefits of personal computing through the internet were projected to be so far reaching that it is hard to imagine after twenty years that anyone who does not have a PC or use the internet could “keep up with the Joneses” – their neighbors who have been reaping the expected benefits of computers for decades.

In several previous research papers we have explored the development of ownership of PCs and use of the internet in Poland over the past 25 years (Green and Kryszczuk 2006; Kryszczuk and Green 2007; Kryszczuk and Green 2009; Kryszczuk and Green 2015). The first three waves of POLPAN (1988, 1993, and 1998) asked respondents whether they possessed a PC in their home. In later waves, 2003, 2008, and 2013, respondents were also asked about their use of the internet. And in 2008 and 2013 respondents were asked about their proficiency with PCs, specifically in regards to whether or not they could complete particular tasks on a PC that require various levels of skill. In each paper we tested the extent to which these variables were related to socio-economic predictors and outcomes. The results of our earlier analyses reveal a history typical of the evolution of PC and internet use in post-communist states.

From 1988 till 1998 ownership of a PC at home went from nearly zero to a small but meaningful proportion of respondents, around 14%. By 2003 more than a third of respondents possessed a PC and by 2008 more than two-thirds did. In 2003, 28% of respondents claimed to have used the internet recently and by 2008 the proportion of respondents who used the internet increased to 53%. In each of our previous studies we compared PC possession, internet use and PC proficiency according to various dimensions of demographics and social structure, such as gender, educational attainment, rural/urban residence, occupational status and employment status. Our earlier studies revealed statistically significant and meaningful differences among socio-economic categories that would be consistent with a digital divide. Those results were consistent with what other researchers found when examining data from the same timeframe

(Selwyn 2013). However, our more recent studies show a declining impact of socio-economic status on access to and proficiency with digital tools. Results that explored data from the 2008 wave of POLPAN showed that all studied categories of people – rural and urban, the employed and the unemployed, the more and less educated, males and females, and all occupational categories – were more likely to possess a PC and use the internet at higher rates than in previous waves of the data.

The more important theoretical question, which is central to the whole digital divide debate, is whether having access to digital tools and having PC proficiency leads to real socio-economic benefits, such as higher income. This question was explored in our most recent paper (Kryszczuk and Green 2015). In that paper we studied whether those who claimed to have a PC and to use the internet, and who were PC proficient in terms of skills in 2003, had higher incomes in 2008, as compared to those who did not. The results were mixed, but the main finding was that there is not a large impact on income due to access and proficiency with digital tools. When controlling for age, sex, educational attainment, and occupational category, use of the internet and PC proficiency had no statistically significant association with later income. Only possession of a PC had a positive association with later income, though the effect size was small.

Data

We use data from POLPAN 1988–2013 to carry out this research. The 2013 POLPAN wave provides a valuable opportunity to assess the long-term impacts of the digital divide after more than twenty years of computerization of society in Poland. In this chapter we reanalyze the long term trends in PC possession, use of the internet and PC proficiency and repeat previous analyses that explore the association of digital tools with income growth over time. Our results indicate a declining relevance for the digital divide, providing evidence that there are now diminishing returns from being computer literate. We speculate on the reasons for this and the implications in our conclusion.

Analysis and Results

In 2013, 83.4% of POLPAN respondents claimed to possess a PC in their household. If this proportion is precisely reflective of Polish society, then more than 16% of Poles still do not have a PC at home. It is possible that these people form an underclass of “digital exiles” – people who have been unable, for assorted reasons likely related to financial means, to join in to the digital revolution. However there are other logical explanations. A study by the Pew Internet and American Life project found in 2006 that many people expected that by 2020 the only “unwired” people would be anti-social members of society, such as terrorists, and “technology refuseniks,” who voluntarily choose to be disconnected (Anderson and Rainey 2006). This suggestion implies that today those who do not have a PC in their home may do so by choice, rather than due to some systematic and structural process of exclusion. This would be a similar explanation for why some people do not have a television at home: it is not that they could not have one; it is that they do not want one. So we may speculate that 83.4% PC possession among Poles represents near saturation.

Until 2003, each wave of POLPAN data showed that the employed were more than twice as likely to possess a PC at home compared to the unemployed. In 2008 the gap in PC possession between the employed and unemployed had diminished, but still 30% more of employed respondents possessed a PC than among the unemployed. In 2013, 86.6% of employed respondents had a PC compared to 67.4% of the unemployed, a percentage difference of just about nineteen percent. A sizeable majority, more than two-thirds, of the unemployed have a PC at home, indicating that lack of employment does not mean lack of access to a PC for most Poles. Another fact worthy of consideration is that young people in Poland are more likely to be unemployed and in today’s context young people are also highly likely to have a smartphone or other device besides a PC. So the fact that they may not have a PC at home does not mean that they are not using digital tools on a regular basis. Figure 7.1 shows the trends in PC possession for employed and unemployed Poles from 1988 to 2013.

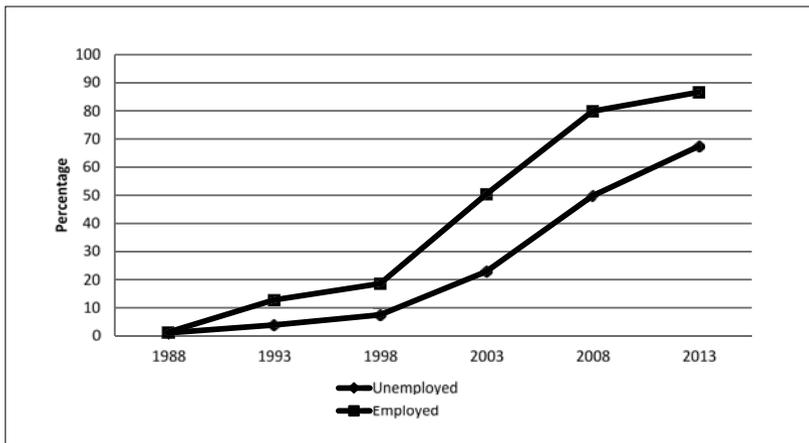


Figure 7.1. Percentage of Poles who Possess a PC in their Household, Unemployed and Currently Employed, 1988 to 2013

Analyzing the 2008 POLPAN data we observed that a majority of respondents in each occupational category reported possession of a PC.¹ Still, some categories did not have large majorities, especially farmers and semi-skilled manual workers, at 62.5% and 64.7% respectively. In 2013 we found that large majorities of respondents in every occupational category reported possession of a PC (Table 7.1). Only the category of farmers was at less than 80% possession, with 77% ownership. Six out of nine occupational categories were at 95% or greater PC possession: legislators/managers 100%; professionals 97.9%; technicians and qualified clerks 97.8%; mid-level clerks 98.3%; service workers 95.8%; and owners 96.6%. So again we see near saturation of PC possession among all occupational categories. And among those categories with lower rates of PC possession, the explanation may include the fact that people in those categories do not need PCs for their work.

¹ The occupational categories measured were as follows: legislators and managers, professionals, technicians and qualified clerks, clerks at medium administrative levels, service workers, skilled manual workers, semi-skilled manual workers, farmers, and business owners. This categorization of occupations followed work by Pohoski and Slomczynski (1978) and Domański, Sawiński and Slomczynski (2006), who developed the system based on official work classifications in Poland and determined that it is an appropriate schema for grouping workers in the Polish job market.

Table 7.1. Percentage of Poles Who Possessed a PC over the Twenty-Five Year Time Span of the POLPAN Study, by Occupational Categories

Year	Legislators and Managers	Professionals	Technicians and Qualified Clerks	Clerks at Medium Level	Service Workers	Skilled Manual Workers	Semi-skilled Manual Workers	Farmers	Owners
1988	3.05	3.88	3.68	1.85	1.55	0.31	0.00	0.45	2.59
1993	16.78	24.52	18.12	18.23	10.00	8.74	8.43	3.30	28.66
1998	31.93	37.17	23.60	24.03	10.67	7.98	3.03	2.38	41.73
2003	72.58	75.00	66.67	63.54	49.23	40.22	40.63	26.32	57.89
2008	96.00	95.70	93.18	90.00	77.69	73.22	64.71	62.50	92.68
2013	100.00	97.90	97.80	98.30	95.80	88.40	82.30	77.00	96.60

The 2013 POLPAN data show that there is somewhat of an ongoing disparity in internet use depending on employment status, though the disparity is decreasing over time. Internet use among the employed increased from 41.3% in 2003 to 80.9% in 2013, while among the unemployed internet use went from 14.8% to 53.4% of respondents. So in 2013 employed workers have a rate of internet use 27.5% higher than the unemployed, but the results show that a small majority of the unemployed are using the internet. Considering that many people use the internet in direct connection with their work, we needn't be surprised at a lower rate of use among the unemployed, however the key question of the digital divide argument is whether less use of digital tools results in negative outcomes. We try to answer this particular question with analyses presented below.

While access to a PC and use of the internet indicate basic components of the digital divide, the more critical issue is whether individuals make use of digital tools in ways that can positively affect their lives. IT tools, particularly PCs, can be used in many ways, some of which can be considered beneficial, some effectively neutral, and some perhaps negative, such as time wasting activities versus professional development. To assess these concerns, we gathered data about uses of the internet and PC proficiency. Our research on the 2008 POLPAN data shows that in terms of internet uses and PC proficiency, there was significant variation among respondents in different occupational categories.

Table 7.2 below shows the distribution of types of internet use respondents reported in 2008, broken down by occupational category.² It is quite clear that respondents in the professional, technical, administrative and owner categories are much more likely use the internet for certain purposes. The biggest disparities are in the number of respondents who use the internet for working. More than 86% of legislator/managers, professionals, technicians and clerks, and owners used the internet for work, while no more than 51% of service workers, manual workers and farmers used the internet for work. On the other end, we see that service workers, manual workers and farmers are nearly equally or more likely to use the internet for entertainment as compared to workers in the professional, managerial, and owner categories. While we cannot make any strong conclusions about the digital divide from these data, we can speculate that respondents in certain occupational categories use the internet in ways that could lead to accumulation of resources through work, saving money by online shopping, and building social and human capital.

Table 7.2. Types of Internet Usage by Occupational Groups

Occupational Category	Working	Shopping, paying bills	Contact with friends, family	Information searching	Entertainment
Legislators and managers	95.8	56.4	79.9	83.0	57.2
Professionals	87.2	50.0	91.0	98.8	64.8
Technicians and qualified clerks	87.5	57.5	83.4	97.5	69.1
Clerks at medium administrative level	86.6	43.7	91.6	97.5	79.3
Services workers	50.8	27.2	87.2	89.4	82.1
Skilled manual workers	44.3	26.1	69.8	83.6	77.7
Semi-skilled manual workers	37.4	26.4	74.9	74.1	66.7
Farmers	35.5	19.2	48.1	79.2	44.4
Owners	89.3	54.8	72.5	83.6	47.9
Total	68.7	39.9	80.0	88.7	69.1

Notes: Values Represent the Cumulative Percentage of Respondents Who Used the Internet for Each Purpose Several Times per Month or More. Data from 2008

² We were not able to replicate this analysis for the 2013 POLPAN data, as these questions were omitted from the survey.

Analysis of data on the subjects' ability to complete certain tasks, such as receive an e-mail, create a folder on the desktop, save data onto a CD-ROM, create a ".doc" file, use an internet browser, compress a graphics file, use several applications at once, and write a macro, revealed that while a large majority of all respondents could use an internet browser, there were still many disparities in PC proficiency across occupational groups in 2008 (Table 7.3). For example, though respondents from the professionally oriented occupational groups were almost entirely able to receive email, create a folder on the desktop, save data to a CD-ROM, create a document file and use several applications at once, respondents in the semi-skilled laborer and farmer groups were significantly less likely to express an ability to complete these tasks. Farmers were the group least likely to be able to do these tasks. Approximately half of farmers declared being able to receive an email, 36.4% could create a folder, and only 30.3% could use several applications at once. In spite of the growing parity observed in digital proficiency in general, based on these results, there was agreement with Hargittai (2010) that socio-economic status, as indicated by occupational category, was still connected with PC proficiency and digital skills.

Table 7.3. Percentage of Respondents Who are Able to Complete Certain Tasks on the Computer. Average PC Proficiency Scale Score also Shown by Occupational Category. Data from 2008

Occupational Categories	Receive e-mail	Create folder on desktop	Save data on CD-ROM	Create a ".doc" file	Browser use	Compress graphic file	Use several applications	Write macro	Average PC Proficiency Scale Score
Legislators and managers	93.2	84.7	90.4	90.4	93.2	81.9	88.9	55.4	0.15
Professionals	100.0	93.3	97.8	97.8	98.9	81.1	88.9	63.6	0.31
Technicians and qualified clerks	95.3	88.4	95.2	97.7	95.3	81.0	95.3	63.4	0.35
Clerks at medium administrative level	95.1	90.9	91.8	92.6	95.9	77.7	87.6	46.1	0.05
Services workers	90.2	86.0	90.2	93.1	95.1	75.8	80.0	37.6	-0.03
Skilled manual workers	77.6	77.3	82.9	84.8	91.4	74.8	67.6	37.5	-0.27
Semi-skilled manual workers	81.5	71.9	78.1	74.2	92.4	66.7	56.1	30.2	-0.37
Farmers	51.5	36.4	48.5	60.6	75.8	45.5	30.3	18.2	-0.95
Owners	91.8	74.6	83.3	87.5	93.1	69.0	74.6	37.5	-0.17
Total	87.9	81.5	86.7	88.3	93.5	74.7	76.8	43.8	-0.07

Using the respondents' answers to the PC proficiency questions, a scale of proficiency was created. On the scale, a negative score indicated less computer proficiency while a positive score indicated more proficiency. The proficiency score was constructed as a Rasch scale based on item response modeling, using a two parametric logistic model (DeMars 2010). Construction of the scale was preceded by item analysis and dimensionality assessment. The scale had better psychometric characteristics than a scale based on simple addition of positive response categories of respondents, both in terms of distribution shape and reliability (Pokropek 2009). The average scores on the proficiency scale for each occupational category of respondents is shown in the last column of Table 7.3. Technicians and qualified clerks had the highest overall average PC proficiency and farmers had the lowest overall proficiency. We used the PC proficiency scale, along with PC possession and internet use, to examine the relations of access to, use of and skills with digital tools and income in 2013.

Table 7.4 below shows the results of a series of regressions that replicate analyses we conducted on the 2008 POLPAN data but using the 2013 data. The objective of the regression analysis was to determine if indicators of the digital divide – possession of a PC, use of the internet, and PC proficiency – are associated with later income. The first model includes only predictor variables that are ordinarily associated with income: sex, age, educational attainment, and occupational category, with a control for prior income. Controlling for income five years prior, which is the strongest predictor of current income, sex is the only demographic factor that is associated with current income. Women earn 604 zloty less than men on average. Each occupational category was compared to farmers as a reference group, and only owners had a statistically significant difference in income, controlling for other factors. On average, owners earned 1217 zloty more than farmers.

The second, third, and fourth models in Table 7.4 add each indicator of the digital divide into the regression equation presented in Model 1. While PC owners and net users did have higher average incomes than non-owners/users, the coefficients were not statistically significant and the effect sizes were essentially zero. These findings are different from the results of our analysis of the 2008 POLPAN data. There we also found no association between internet use and later income, but in 2008 PC possession was statistically associated with later income. Interestingly, the PC proficiency scale variable yielded a negative coefficient

Table 7.4. Regression Analysis of 2013 Income on Basic Demographic Factors, Occupational Category, 2008 Income, and Indicators of the Digital Divide

Predictors	Model 1	Model 2	Model 3	Model 4
Sex (female = 1)	-604.44 *	-597.84 *	-593.22 *	-703.62 *
	(-0.10)	(-0.10)	(-0.10)	(-0.11)
Age	-7.01	-7.05	-5.30	-5.98
	(-0.03)	(-0.03)	(-0.02)	(-0.02)
Years of Schooling	48.03	44.23	31.20	15.22
	(0.05)	(0.04)	(0.03)	(0.01)
Occupational Category ^a				
legislators & managers	-52.09	-47.20	-121.11	96.91
	(-0.00)	(-0.00)	(-0.01)	(0.00)
professionals	-62.55	-89.31	-156.00	288.19
	(-0.01)	(-0.01)	(-0.02)	(0.03)
technicians & qualified clerks	-247.71	-285.67	-360.07	-4.88
	(-0.03)	(-0.04)	(-0.05)	(-0.00)
clerks at a medium level	-331.89	-371.83	-487.24	-4.20
	(-0.02)	(-0.02)	(-0.02)	(-0.00)
service workers	-257.96	-292.02	-374.10	-253.73
	(-0.03)	(-0.03)	(-0.04)	(-0.03)
skilled manual workers	-497.58	-524.54	-575.03	-351.68
	(-0.07)	(0.07)	(-0.08)	(-0.04)
semi-skilled manual workers	-471.68	-491.90	-541.08	-576.09
	(-0.05)	(-0.05)	(-0.06)	(-0.05)
owners	1317.15 *	1284.76 *	1177.24 *	1488.39 *
	(0.11)	(0.11)	(0.10)	(0.13)
Income in 2008	0.83 ***	0.83 ***	0.83 ***	0.87 ***
	(0.48)	(0.47)	(0.47)	(0.50)
PC Ownership in 2008 (1 = yes)		161.18 (0.02)		
Internet Use in 2008 (1 = yes)			308.74 (0.04)	
PC Proficiency Scale 2008				-178.53 (-0.04)
Constant	1050.65	997.01	909.98	1245.19
Adjusted R ²	0.30	0.30	0.30	0.30
Std. Error of Estimate	2603.31	2608.01	2603.70	2793.27

^a Occupational categories compared to farmers as a reference group.

Notes: Unstandardized coefficients shown with standardized coefficients in parentheses. Dependent variable measured in Polish zlotys.

* $p < 0.05$; *** $p < 0.001$.

in the current model, indicating that those in the sample with more proficiency had *lower* incomes, though again the coefficient was not statistically significant and therefore ungeneralizable. These results indicate that net of previous income, basic demographics, and occupational category, indicators of the digital divide do not have a large or meaningful association with future income, as the digital divide theory would predict.

Conclusions

The analyses presented in this chapter represent a summary of findings made over the course of the POLPAN research period. Our trend analyses reveal that in the earlier waves of POLPAN there were significant differences in PC possession and internet use between the employed versus the unemployed and between various occupational categories. In more recent waves the magnitude of these differences has decreased or disappeared. In results not shown in this chapter, we formerly found a sizeable difference between urban and rural Poles in PC possession and internet use, but those differences have also become less meaningful. We did find that in 2008 there were sizeable differences among people in different occupational categories in terms of how they used the internet. Such differences justified a hypothesis that we may find differences in income depending on whether respondents had a PC, used the internet, and were PC proficient net of their occupation, however no evidence was found to support this hypothesis.

Based on the findings presented herein and others presented elsewhere, we conclude that there are diminishing returns for the average Polish citizen to investing in digital tools. Though it may appear on the surface preposterous that anyone not using a PC or the internet, or who lacks PC proficiency, would fare equally well economically in the “digital age”, our data do not support the opposite conclusion. In fact, we see that in the period from 2008 to 2013, controlling for sex, age, educational attainment, occupational category and previous income, farmers had higher net incomes in comparison to all groups except owners. And interestingly, farmers are the least likely to possess a PC or use the internet, they have the lowest overall PC proficiency, and they are less likely to use the internet for reasons that would normally be connected with personal and professional growth.

There may be historical reasons to explain why Polish farmers have higher incomes than others in 2013 when controlling for the other predictor variables. In our models we regressed 2013 income on current demographics and current occupational category, but we controlled for income in 2008 and tested the impact of digital divide indicators measured in 2008. The Polish farming sector was experiencing dramatic and negative effects in 2008 due to European Union (EU) accession. The New York Times reported on April 4, 2008 that “European Union laws are intended for another universe of farming, and Polish farmers say they have left them at a steep disadvantage.” The report continued that increasingly in Poland “(s)mall family farming is impossible” (Rosenthal 2008). The declining incomes and other difficulties experienced by farmers in 2008 could have been interpreted as the inevitable result of their intentional or unintentional exclusion from the information society. Of course the world was going through a global recession in 2008 and apparently farmers were the victims of that and EU policies that favored other places and other sectors at that time.

Interestingly, the circumstances of Polish farmers have improved, as indicated by the results shown in Table 7.4. After the New York Times spelled out the doom of Polish farmers in its 2008 article, in 2014 *The Economist* reported on “A Golden Age for Polish Farming” (*The Economist* 2014). According to the article “farm incomes have tripled in the last ten years.” This growth is attributed to many reasons, including access to EU funds, increased domestic spending, state support, and growing exports. What makes these events interesting for our current study is the fact that farmers have been and remain the least “wired” members of Polish society, and yet their income has grown more relative to other occupational categories in recent years, controlling for other factors. This provides evidence for the argument that penetration of digital tools more deeply into society does not always imply profit for those who adopt them.

The results presented in this report could also provide evidence for the “deskilling” of contemporary work. Hunter and Lafkas (2003: 225) discuss this topic, pointing out that while “advances in technology have been, on average, associated with higher wages and more skilled work forces”, “‘deskilling’ theorists ... show how managers use technology to extend control over the workplace and decrease workers’ skill, autonomy, and wages.” Along with this point are the issues of wage stagnation and increasing economic inequality found in many societies today. Most

workers in Western capitalist societies have readily adopted the technological tools of the digital age, often with the expectation that mastering those tools will lead to enjoyable, well-paying jobs. And while certainly some people have benefited in their work status from ICTs and assorted digital tools, for a great number of people the last ten years have resulted in little or no real wage growth.

Some critical scholars, such as Graeme Kirkpatrick (2008) have argued that the “technical standpoint” – the argument that advanced technologies are afforded a privileged position because of their uniqueness and sophisticated engineering – is supported by the most powerful groups in society, because technology serves well as a method of controlling people through quantification, surveillance, control of information and other techniques. The ability of technology to enhance social control may contribute to its pervasiveness in contemporary society, as elites promote it in order to ensure their economic hegemony and third-dimension power. Seen from this perspective, information technology today may not be the path to climbing the social ladder as it perhaps was at the beginning of the information age. For today’s average worker, in Poland and elsewhere, ICTs and other digital tools may be not much more than necessary items that offer certain advantages but yield little in the way of concrete economic gain.

IV.

Perceptions of Allocation, Attainment, and Inequality

ZBIGNIEW KARPIŃSKI

POPULAR ASSESSMENTS OF EARNINGS IN VARIOUS OCCUPATIONS: IMAGES OF JUSTICE AND TRENDS IN CONSENSUS*

Introduction

An important part of research on social stratification deals with popular beliefs concerning what is, and what is not, fair. The problem can be approached in several ways, one of which is to ask participants in a survey to express their opinion on such issues as income differences, minimum wage, welfare, or taxes. Typically, the respondent's task is to indicate how much he or she agrees with some statements read out by an interviewer, such as "Income differences are too large" or "Inequality continues to exist because it benefits the rich and powerful". The answers to such questions can then be combined to obtain some summary measure of fairness in the minds of the respondents. The underlying assumption here is that the subjects have their own concepts of *justice*, or fairness, which are "activated" when they are faced with questions regarding the aforementioned issues. Therefore, it is believed that answers to such questions reflect peoples' perceptions of justice.

In the present chapter, I take another approach, however, which consists of looking closely at popular perceptions of earnings in a number of occupational groups, as reported by subjects in a survey study. The

* In this chapter I use my previous work (Karpinski 2012); cf.
<http://www.tandfonline.com/doi/abs/10.2753/IJS0020-7659420105>

subjects were asked what they think members of certain occupations *do earn* and what they think people in these occupations *should earn*. Responses to the former question provide a researcher with individual estimates of *perceived actual earnings*, whereas the responses to the latter item constitute individual assessment of *fair earnings*, also called “just” or “deserved” earnings (see, e.g., Jasso 2007).

These assessments figure prominently in sociological and socio-psychological studies on distributive justice, or investigations of outcomes of the process by which rewards and burdens are distributed among members of a group.¹ To be able to retrieve norms underlying these assessments from the survey responses, one usually makes, implicitly or explicitly, a number of assumptions (Osberg and Smeeding 2006). First, one tends to assume that each subject has a “representation” of a typical member of the occupations under study in terms of socially meaningful categories, such as those based on differences in formal education, skills, gender, age, and the like. Second, the assumption that with each such *dimension of differentiation* are associated *socially validated* and *socially shared* beliefs that “describe what is thought to be the usual association between a valued characteristic and levels of rewards ... the source of such beliefs is the culture that is part of the larger collectivity of which interactants are part, such as an organization, a subculture, or the larger society” (Berger and Webster 2006: 272). These beliefs are called *referential structures*.²

Three types of referential structures can be distinguished: (a) categorical structures, (b) structures based on ability, and (c) structures based on accomplishments. What differentiates one type of structure from another is the type of characteristic, or „quality”, that is associated with levels of rewards. In categorical referential structures, the quality in question is membership in a broad social category; in the case of ability referential structures, it is the amount of skills or competence for dealing with tasks of a certain kind. Finally, in referential structures based on accomplishments, the relevant characteristic is the level of achievement.

The basic theoretical argument is that once these various referential structures are activated in a social situation, subjects combine these

¹ For a general overview of sociological theory and research on distributive justice, see Cook and Hegtvædt (1983), Hegtvædt (1994, 2006), Hegtvædt and Johnson (2000), and Hegtvædt and Markovsky (1995).

² Readers interested in a more detailed account of the notion of referential structures are encouraged to consult Berger et al. (1985, 1998).

structures to arrive at *reward expectations* for themselves and for others (Berger et al. 1985); and this is still another assumption required for interpretation of the responses to the “do-earn” and “should-earn” questions. The reward expectations are important because they affect the actual distribution of rewards. In turn, the distribution is likely to lead to differential *performance expectations*, which, in turn, translate into behavior. In other words, the distribution of rewards among members of a group affects expectations regarding performance such that those with high levels of rewards are expected to do well, while those with low levels are expected to do poorly.

Thus, in order to be able to fully investigate implications of these assumptions, one requires information on the individual representations of the occupations. In studies that make use of “vignettes” (Jasso 2006a), this information is explicitly “manipulated” by a researcher who provides respondents with a series of descriptions of fictitious persons. The descriptions are in terms of gender, age, occupation, years of schooling, and earnings and the subjects’ task is to rate the extent to which these earnings are fair given the other characteristics. Then, using certain theoretical arguments from comparison theory (Jasso 2006b), just earnings are estimated for each of the fictitious persons and linear models are used to study the effects of the above-mentioned variables on the estimated just earnings (see, e.g., Jasso and Webster 1999).

Unfortunately, general social surveys, which often ask respondents the “do-earn” and “should-earn” questions, do not follow the vignettes-study design and they also fail to make an effort to elicit the information on the individual representations of typical members of the given occupations by other means. Hence, these social-survey data on those occupations, even if they contain subjects’ estimates of earnings, both perceived and fair, allow for only limited analyses of patterns, if any, in these estimates.

But even if they are only limited, such analyses can still provide important insights into popular beliefs about inequality and justice of earnings. First, by studying the properties of distributions of these estimates one can ask about how consensual these beliefs are. Arguably, the more variation there is, the less consensual they are. Note that it is possible to ask two types of questions in regard to the consensus:

1. Given the estimates of earnings in a particular occupation, is there more consensus in regard to perceived or just earnings?
2. And, given the estimates of a particular type of earnings, which occupation receives the most consensual estimates?

Second, by correlating estimates provided by individual respondents, one can ask about the degree to which these estimates agree, which is another way of looking at consensus in the perceptions of earnings. The degree of agreement in the individual assessments of earnings can be expected to differ depending on the type of earnings to estimate. Arguably, perceived earnings are likely to be shaped by social interaction with members of the occupations of interest. Clearly, this experience is likely to be dependent upon the social-occupational categories of the respondents themselves in the sense that social interaction is subject to the effect of homophily (McPherson, Smith-Lovin, and Cook 2001). But this is not the issue. Even if social interaction is concentrated within occupations, it is still possible that respondents' perceptions will agree in terms of ordering of the occupations in regard to earned income. In turn, the fair earnings can be said to be "generated" by norms of justice and, because there is a variety of such norms, one can expect less agreement on estimates of just earnings than perceived earnings.

To be sure, this conjecture is an oversimplification, as there are other important factors that can be hypothesized to influence responses to the "do-earn" and "should-earn" questions and these factors include the situation of the survey interview itself. The respondents are asked the "do-earn" questions first, and the "should-earn" questions later. Responses to the latter items may anchor on responses to the former, an illustration of the familiar "primacy effect" (Sudman, Bradburn, and Schwartz 1996). Further, the assessments of the perceived earnings depend not only on patterns of social interaction but also on more general knowledge about the society, which derives from formal education and probability of exposure to information about the structure of earnings, as distributed by the authorities or the media. Finally, some respondents are likely to base their judgements regarding average incomes in various occupations *on what they themselves earn*. That is, the subjects are likely to anchor their judgements on their own income, so that estimates for particular occupations will be focused around their average monthly wage. I explore some of these possibilities below.

Third, it is important to compare assessments of the perceived and deserved earnings because such comparisons result in evaluations of *the justice of earnings*. A natural question to ask is, "Which of the occupations under study are seen to be justly rewarded and which are seen to be unjustly rewarded?" And, with regard to the former, "Which

are underrewarded and which are overrewarded?” Investigation of the assessment of fairness of earnings can be used to speculate on the types of qualities that are valued in the society that the respondents represent.

Concepts and Measures

Variability and Consensus

Intuitively, consensus is about agreement. More specifically, a group can be said to be consensual in regard to norms, values, beliefs, practices or procedures to the extent that its members agree on a particular norm, value, belief, practice, or procedure. But beyond that common-sense understanding, the concept of consensus is somewhat problematic. As Zelditch and Floyd put it, “If it means the number who agree, then it is unclear how many must agree. If it also means the number of norms, values, beliefs, practices or procedures it is unclear with how many of them the population must agree” (1998: 339). Accordingly, there has been much debate lately concerning the foundations and consequences of consensus for social order (for an overview, see Zelditch and Floyd 1998; and Zelditch and Walker 2003). A major postulate in this discussion has been that consensus is a condition of the legitimacy of social systems (Zelditch 2001). In particular, it is claimed that if an element of a social system is consensually accepted as valid, it induces compliance in the members of the social system, and their compliant behavior contributes to the stability of the system (Thomas, Walker, and Zelditch 1986; Walker et al. 1991; Walker, Rogers, and Zelditch 1988; Walker, Thomas, and Zelditch 1986; Zelditch and Walker 1984).

In the present chapter, my concern is less a detailed study of the process than the properties of popular perceptions of social inequality. Therefore, I will not elaborate on the issue of the meaning of consensus for the stability of reward distributions until later. For now, I focus on how to capture the degree of consensus empirically. If, as suggested above, the meaning of consensus is that members of a group agree on an issue, then one can take at least two different approaches to measuring consensus in the popular assessments of earnings in various groups. First, one can ask about the extent to which *assessments of earnings in a particular group* agree with one another. Second, one can ask about the extent to which

the structures of earnings, as estimated by individual subjects, agree with one another. In the former case, one is essentially asking about *variability in the assessments* as the inverse measure of consensus. In the latter, one is asking about the degree to which *assessments of various subjects are associated*.

Many different measures of variability can be used in the present context, but not all of them are equally suited for this purpose. In order to be able to measure the amount of variability in the individual perceptions of earnings in an occupational group at various points in time, one needs an index that is insensitive to the unit of measurement. Most indexes of inequality, which can be said to measure variability as well, satisfy this requirement, but they are based on the assumption that what is estimated is inequality in some resource whose *fixed amount* is being distributed among members of some group. But when estimating the variability in individual perceptions of earnings in an occupational group, one is obviously not considering inequality in a good that is distributed among members of that group; rather, one is estimating the extent to which the perceptions depart, on average, from some “central tendency”. For this reason, I employ the familiar *coefficient of variation* as the inverse measure of consensus. The coefficient is defined by the following equation:

$$cv = \frac{D(X)}{E(X)} \quad (1)$$

where the term in the numerator denotes the standard deviation of the variable X , while the term in the denominator denotes its mathematical expectation.

However, as indicated above, another approach can be taken to measuring consensus. The alternative approach consists in choosing two subjects, i and j , computing the correlation between the estimates of earnings provided by these subjects, repeating this operation for all possible pairs of individuals in the group, and the averaging the results. This approach builds on work by James Balkwell et al., who wrote:³

Imagine ... a society with N members. Suppose that two individuals, A and B , were selected at random from the society, and the each was asked to evaluate [earnings in] of a representative set of occupations

³Note, however, that the work of Balkwell et al. (1980) is concerned with evaluations of occupational status rather than earnings.

found in the society. The question is: Would the evaluations of A and B agree? Let us rephrase the question so as to make it more amenable to a quantified answer: Would a measure of agreement have a relatively high value or a relatively low value? Let Ψ be an appropriate measure of agreement, and suppose it is calibrated so that perfect agreement is signified by $\Psi = +1$, chance agreement by $\Psi = 0$, and perfect disagreement by $\Psi = -1$. Then, were there no collective (or shared) consciousness of occupational evaluations, the expected value of Ψ would be zero. That is, if A and B used wholly unrelated sets of criteria – truly idiosyncratic criteria – then their evaluations would be neither positively nor negatively related. On the other hand, if they employed identical – or empirically interchangeable – sets of criteria, then their evaluations would be highly, perhaps even perfectly, correlated.

Since Ψ pertains to a random pair of individuals, it is a random variable; thus, it has an expectation (in the mathematical sense). What we wish to suggest is that $E[\Psi]$ provides a reasonable formalization of the intersubjectivity of [earnings] evaluations. It indicates the extent to which evaluations are shared rather than unique ... In a social system perfectly integrated with respect to [these] evaluations, one would find $E[\Psi] = 1$. In a social system wholly unintegrated with respect to [the] evaluations, one would find $E[\Psi] = 0$. Given that individuals A and B are equally likely to be any pair of individuals from the society, $E[\Psi]$ is simply the arithmetic mean of the $N(N - 1)/2$ Ψ -values associated with the $N(N - 1)/2$ distinct pairs of individuals (1980: 869).

Subsequently, the authors go on to propose Pearson's product-moment correlation as the measure of association (Balkwell et al. 1980: 870), so that

$$E[\Psi] = \frac{2}{N(N - 1)} \sum_{i=1}^N \sum_{j \neq i}^N \Psi_{ij} \quad (2)$$

where Ψ_{ij} denotes Pearson's correlation between estimates of earnings provided by subjects i and j .

Justice-Evaluation Function

In the study of popular "images" of distributive justice, the crucial question is one about how to translate the responses to the "do-earn" and "should-earn" questions into a quantity denoting the assessment of justice of income received by members of some social group. Many solutions to the problem can be found in the literature, but in the present chapter I employ only one of them, namely, the justice-evaluation

function proposed by Guillermina Jasso.⁴ The function is written as follows:

$$J = \theta \ln\left(\frac{A}{C}\right) \quad (3)$$

where J means justice evaluation, A denotes actual (or more precisely, perceived) reward, C denotes the level of the reward believed to be fair, whereas θ is a certain parameter relating to characteristics of the actor making justice evaluation, which is ignored in the remaining discussion, since, from the point of view of the current study, the parameter is of little importance.⁵

The justice-evaluation function, as defined by the above formula, has a number of interesting and desirable properties.⁶ First, it is scale-invariant. Second, the function is easy to interpret – it assumes the value of zero in the case of perfect justice, that is, when income actually received by a person is equal to what is believed to be just income for that person. Negative values of that function indicate the case of underreward, that is, the situation in which a given person obtains less than he or she deserves. And finally, positive values of J indicate the case of overreward. Third, as Jasso puts it, the function quantifies “the common human experience that deficiency is felt more keenly than comparable excess” (2005: 20). In other words, the fact that I earn 1,000 PLN more than I believe I deserve makes me feel inconvenient, but this inconvenience is not as great as it would be if I earned 1,000 PLN less than I think I should.

When a subject makes judgements concerning rewards received by a group of people, the subjects’ overall justice evaluation (which I denote by JI) can be obtained by averaging the evaluations for each group member (Jasso 1999):

⁴The justice-evaluation function is one of the postulates of the theory of distributive justice developed by Jasso. Combined with other postulates of the theory, the function can be used to predict emotion and behavior. The literature on Jasso’s theory of distributive justice comprises a rather large number of publications. For recent overviews of the implications derived from the justice-evaluation function, see Jasso (2006b) and Whitmeyer (2004).

⁵In Jasso’s (1999, 2006b) terminology, by removing the parameter θ from further discussion, I limit our attention here to what is termed “disclosed” or “expressed” justice evaluation, which is not necessarily the same as “true” justice evaluation.

⁶Jasso (2006a) lists as many as nine different properties of her justice-evaluation function.

$$JI = E(J) \quad (4)$$

This summary index can be then decomposed into two components: (a) justice evaluation based on the comparison of the actual mean of the reward distribution with its just mean, JI_{mean} and (b) justice evaluation based on comparison of the actual inequality in the reward distribution with a just inequality, JI_{ineq} :

$$JI = JI_{mean} + JI_{ineq} = \ln \left[\frac{E(A)}{E(C)} \right] + \ln \left[\frac{1 - I(A)}{1 - I(C)} \right] \quad (5)$$

where $I(A)$ and $I(C)$ are measures of inequality in the actual and just distributions, respectively. The particular measure used in the above formula is a special case of the familiar Atkinson index of inequality (see Jasso 1982 for a discussion). This measure is expressed as one minus the ratio of geometric mean to arithmetic mean:

$$I(X) = 1 - \frac{E_G(X)}{E(X)} \quad (6)$$

where $E_G(X)$ denotes the geometric mean. This decomposition is designed to answer the questions as which contributes more to the subject's overall perception of injustice: the fact that the actual mean is below the fair one or the fact that the actual inequality is above the fair one. An interesting property of the decomposition is that a perception of perfect justice may in fact be produced by two types of injustice which cancel each other. Consider, for instance, a group whose members make unequal contributions to the solution of a task the group is working on and yet everyone is rewarded equally for their contributions. In that group, the average reward may be fairly large with no dispersion in the reward distribution. As a result, an observer may conclude that the average reward exceeds what it should be because some of the group's members receive too much relative to what they deserve for their contributions and, for the same reason, the actual inequality in the group does not reflect adequately, the fair inequality. If, additionally, departures from the point of perfect justice are of equal magnitude in both cases, they will balance one another, so that the overall justice evaluation, as captured by JI , will be equal zero, the point of perfect justice.

Data and Analysis

The data used in this analysis are taken from the POLPAN panel study. Respondents in the study are asked what they think people in various occupations do earn and what they think people in this occupations ought to earn. The “do-earn” and “should-earn” questions were repeated in the 1988–2003 POLPAN waves, but not in 2008. Hence, I analyze how individual assessments of earnings changed over the period 1988–2003. Also, the list of occupations whose earnings were assessed by the respondents changed from one wave to another – not only in regard to which occupations were included on the list but also in regard to how many of them were included. In the first wave of the panel, the list comprised eleven distinct occupational titles, but in 2003, there were only six titles on the list. Overall, there are five occupations whose earnings – both perceived and postulated – were assessed by the respondents in all waves of POLPAN between 1988 and 2003. The five occupations are medical doctor in general practice, owner of a small shop, manager (director) in a large enterprise (or factory), unskilled worker, and minister in a national government ministry. The data analysis was carried out using the R Environment for Statistical Computing (R Core Development Team 2015).

Proportions of Don't Knows

Table 8.1 lists all of the occupational titles that were contained in the “do-earn” and “should-earn” questions in consecutive waves of the POLPAN study. The table also reports the proportions of respondents who were not able to provide their estimates of earnings in the listed occupations (“Don’t know,” abbreviated “DK,” responses). The proportions were computed after missing data (resulting from, for instance, refusals or study design⁷) had been excluded. Because in 1998 the DK responses to the “do-earn” and “should-earn” questions were coded the same way as missing data, providing the appropriate figures for 1998 was not possible. Note, however, that the 1998 and 2003 questionnaires used the same list of occupations.

⁷ By missing data resulting from the study design I mean that in the first two waves of the POLPAN study, the items concerning perceived and postulated earnings were not asked of all respondents, but of randomly selected sub-samples, because questionnaires in these two waves varied some of the modules; see survey documentation available through the Polish Social Data at ads.org.pl.

Table 8.1. Proportions of “Don’t Know” Responses to Do-Earn and Should-Earn Questions for Consecutive Waves of POLPAN

Occupation	1988		1993		2003	
	DE	SE	DE	SE	DE	SE
Bank clerk	0.24	0.19	n. a.	n. a.	n. a.	n. a.
Bricklayer	0.18	0.16	n. a.	n. a.	n. a.	n. a.
Bus driver	0.21	0.17	0.14	0.09	n. a.	n. a.
Director in a large enterprise	0.19	0.18	0.13	0.11	0.03	0.03
Doctor	0.22	0.16	0.12	0.07	0.02	0.02
Factory owner	n. a.	n. a.	0.24	0.22	0.04	0.05
Farm worker	0.25	0.23	n. a.	n. a.	n. a.	n. a.
Minister in a national government	0.28	0.23	0.12	0.09	0.03	0.02
Secretary	0.20	0.18	n. a.	n. a.	n. a.	n. a.
Secretary in a private firm	n. a.	n. a.	0.13	0.10	n. a.	n. a.
Secretary in a state firm	n. a.	n. a.	0.17	0.13	n. a.	n. a.
Shop assistant	n. a.	n. a.	0.11	0.09	n. a.	n. a.
Shop owner	0.26	0.22	0.17	0.13	0.03	0.03
Skilled worker	0.15	0.14	0.08	0.06	n. a.	n. a.
Unskilled worker	0.18	0.16	0.10	0.07	0.03	0.02

Notes: n.a. – not available for the given wave of POLPAN; DE – “does earn” – pertains to perceived earnings; SE – “should earn” – pertains to just earnings.

As Table 8.1 shows, the proportions of DK responses tend to get smaller with each wave of POLPAN. To the extent that these proportions can be interpreted as reflecting “difficulty” of the survey items, the numbers in Table 8.1 suggest that the “do-earn” and “should-earn” questions were becoming easier for respondents with each repetition of the study. This finding may not be very surprising, at least as far as the former questions are concerned. After all, information about average monthly wages in various occupations became more readily available for everyone after 1989, as it was distributed by the media and Central Statistical Office. My argument is not that the subjects have complete knowledge of the amounts earned in various occupations, but that they are aware that this information is not hidden from them and if it is not hidden from them, then the task of estimating the earnings cannot be all that difficult. Therefore, the questions asking respondents to estimate actual and just earnings in

some occupations might have come to be seen as easier than they had been before. To be sure, the fact that information on the structure of earnings by occupation has become available for everyone does not necessarily mean that subjects' perceptions of the earnings are accurate.

The decreasing trend in the proportions of the DK responses applies to the "should-earn" questions as well, which, however, cannot be explained by greater availability of information on actual earnings in various occupations. This is because, as explained earlier, the assessments of just earnings are based on private conceptions of justice rather than precise knowledge of the actual wages. Another process could have come into play, however. Substantial empirical evidence shows an increase in the relationship between occupation and education as well as earnings and education since 1989 in Poland (for empirical evidence, see Domański 2011). In other words, it has become easier to "predict" what kind of job individuals do and how much they earn, given information about their education. To the extent that Polish citizens were aware of this increasing association, they could have used it a basis for inference regarding deserved earnings. That is, by observing that people with higher degrees of education end up performing more respected and better-paid jobs than people with poorer education, citizens may have concluded that this is the way things ought to be and based their estimates of deserved earnings in the occupations under study on precisely this judgement.

Variability and Consensus

If this conjecture is correct, then some implications follow regarding the degree of consensus in these estimates. To the extent that the information distributed by the media regarding earned income in various occupational groups is seen as accurate and the increase in the strength of association between occupation, education, and income is believed to be a matter of objective fact, the assessments of both perceived and just earnings can be expected to have become more and more consensual. In Figure 8.1, the values of the coefficient of variation are plotted for each of the five occupations under study, and for each wave of POLPAN, to determine whether this conjecture has any merit. At first sight, the patterns in Figure 8.1 seem to contradict it. Let us start with variation in the perceived earnings. As regards factory director and minister, the variation goes up steeply with each POLPAN wave; in the case of the other three occupations, it grows initially, but then starts to decline somewhat. As for

the just earnings, the general picture is much the same, although there are more irregularities in the patterns displayed by the data. Nevertheless, there seems to be nothing in the data to suggest that the assessments of earnings were becoming more and more consensual.

However, before the above conjecture is discarded, let us consider the following interpretation. A well-established fact concerning the structure of incomes in Poland after 1989 is a continuous increase in inequality (see, e.g., Kumor 2009). That is, the average difference in earned income has become wider since the demise of communism. When people face the task of estimating earnings in a number of occupations, they can base their judgements on various sources, including, as indicated, information distributed by the media or the authorities, information obtained in the course of social interaction, and their own job or household income.

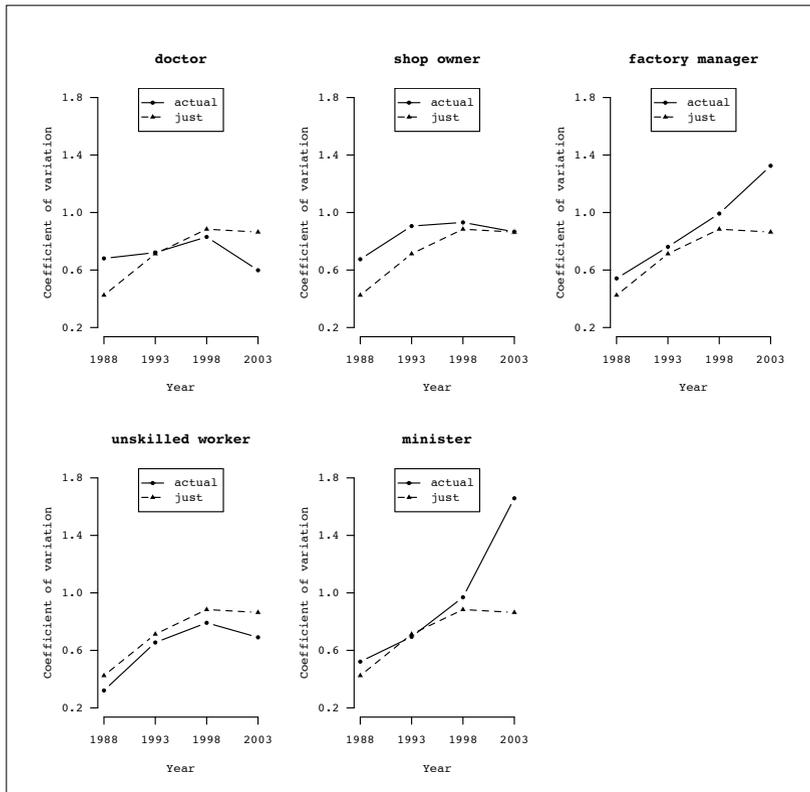


Figure 8.1. Variations in the Assessments of Earnings

In the latter case, the estimates provided by low earners are likely to be anchored on smaller amounts and the estimates provided by high earners are likely to be anchored on larger amounts. If the average difference in earnings is widening, it may account for why the variation in the subjects' assessments of perceived and postulated earnings is becoming greater, at least in the case of some of the occupations under study. Thus, by dividing the subjects according to their income, we can expect the variation in the assessments to be smaller (and thus the consensus to be greater) within particular classes, or strata, than in the whole sample.

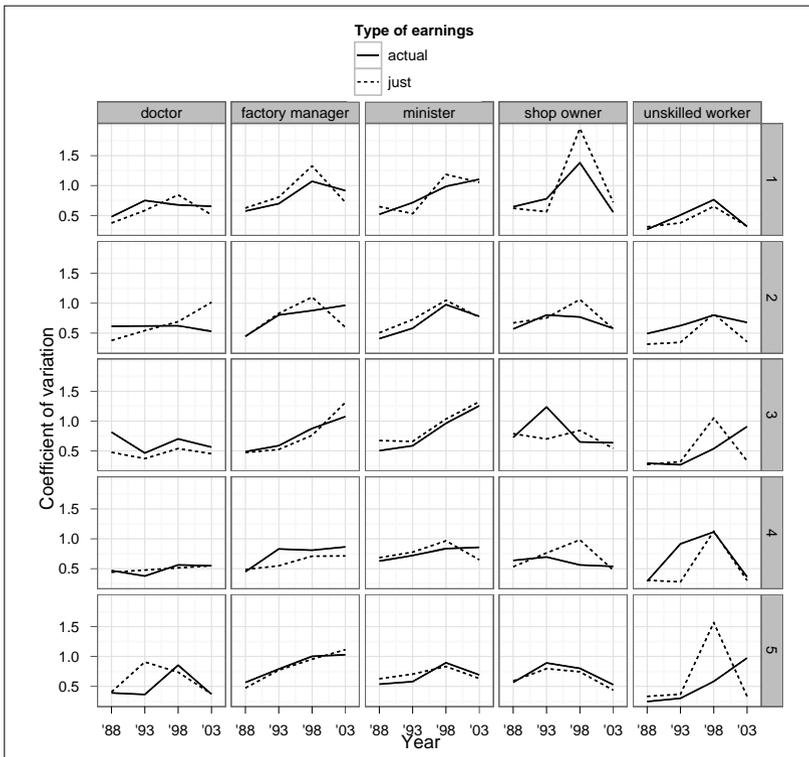


Figure 8.2. Variations in Assessments of Earnings by Quintile of Income

Visual inspection of Figure 8.2 suggests, however, that this refined conjecture has little merit. This figure shows how the variation in the assessments of earnings changed over time within quintiles of earned

income. The graphs in Figure 8.2 are arranged in a 5×5 matrix, so that rows of the matrix pertain to the quintile groups and columns to occupations whose earnings are evaluated by the survey participants. As one can see, there is no regular trend in the data. Importantly, it cannot be concluded from the patterns displayed in Figure 8.2 that variation in the amount of variation in the assessment of earnings decreased over time. In general, to the extent that the coefficient of variation does measure the consensus (or rather dissensus) in a valid manner, we are led to conclude that, in the period under study, the consensus in the individual evaluations of earnings did not follow a declining trend.

I now turn to the other measure of consensus, the average value of the correlation coefficient between individual estimates of earnings in the five occupational groups under study, denoted by $E[\Psi]$ above. Table 8.2 summarizes the results of the analysis. For each pair of respondents, their estimates of earnings were correlated and then averaged. Because some respondents failed to estimate the earnings in at least some occupations, the data set contains a number of missing cases, as explained above. In order to deal with the missing cases, pair-wise deletion was applied.

The figures in Table 8.2 essentially speak for themselves and I do not think it is necessary to elaborate on them here. Wave by wave, a systematic increase in the consensus can be observed in the assessments of both the perceived and just earnings. That is, the participants in the POLPAN study come to agree more and more in regard to ordering of the occupations with respect to how much their members actually earn as well as how much they ought to be paid. This is in line with the conjecture formulated above.

Table 8.2. Mean Values of Pearson's Correlation Coefficient Between Individual Assessments of Earnings

	Perceived earnings	Fair earnings
1988	0.737	0.607
1993	0.766	0.679
1998	0.806	0.710
2003	0.816	0.731

Note: Missing values were removed by means of pair-wise deletion.

That the measures covary says nothing about the causal relationships between them, so we cannot infer from the contents of Table 8.2 whether it is the increase in agreement concerning the perceived earnings that affected agreement on the just earnings, or vice versa. This problem could be investigated more closely in a separate study. But another finding is worth mentioning here. The values of $E[\Psi]$ for the estimates of perceived earnings exceed the values of $E[\Psi]$ for fair earnings in each wave of the panel study. In other words, individual perceptions of “what is” agree more than individual beliefs in “what ought to be”. A possible interpretation of this finding is that the perceptions are based on more-or-less similar sources of information, but the beliefs are rooted in individual conceptions of justice, that is, conceptions relating qualities perceived in the occupations whose earnings are being evaluated with deserved levels of rewards. If there are smaller differences among individuals regarding the sources of information on which to base the perceptions of actual earnings than regarding the conceptions of justice producing the estimates of the just earnings, then it is natural to expect that the consensus with respect to the former variable is greater.

Even if there are differences among the subjects concerning the norms of justice they employ in making the evaluations, it is interesting to note that agreement on these evaluations increases over time, suggesting that society is becoming increasingly integrated as to the understanding of justice in the distribution of occupational rewards.

Note that this finding is at odds with results of a study by Henryk Domański, Zbigniew Sawiński, and Kazimierz M. Slomczynski (2010) who found that consensus in the individual evaluations of occupational prestige is declining. These strikingly contradictory patterns of findings suggest that perceptions of prestige and perceptions of earnings have different bases and involve different processes, even if this conflicts with the intuition that both prestige and earnings are socially valued rewards, so that changes in both should follow similar trends. But one should be very careful here. Studies of occupational prestige usually employ larger “samples” of occupational titles than studies of occupational earnings. For instance, in the Polish edition of the fourth round of the European Social Survey a block of questions was added concerning evaluations of occupational prestige with the list of occupations containing as many as twenty-two items. In turn, the longest list of occupational titles used in the “do-earn” and “should-earn” questions in the POLPAN study contained eleven positions. Furthermore, the subjects are free to give

any nonnegative number they please in response to the “do-earn” and “should-earn” questions, but they are forced to choose a number from 1 to 5 when replying to the prestige items. These differences in the methods of measurement may account for some of the observed differences in the degrees of consensus. A test of this conjecture is left for another study.

The conclusion that can be drawn from the above results is that the subjects’ perceptions of the actual and just earnings differ widely as to amount, but they are quite similar in regard to the structure, or hierarchy. At this point, I should clarify why it is important that so much attention be paid to the issue of consensus and agreement in the popular estimates of earnings. If perceptions of earnings in various occupations are consensual *and subjects are aware of this fact*, then these earnings become legitimate, or “valid,” in the eyes of the subjects. This hypothesis is based on legitimacy theory, which has long recognized that consensus is a condition of legitimacy (see Zelditch 2001; Zelditch and Floyd 1998; Zelditch and Walker 2003). In other words, if peoples’ judgments concerning earnings in a number of occupations are consensual – and if people are aware that their judgments are consensual – they are likely to come to view the earnings, and, importantly, the differences between the earnings, as legitimate, justifiable, in accord with what the earnings ought to be, and if people perceive the earnings to be legitimate, they are likely to refrain from any action or movement aimed at changing these earnings, and to discourage others from taking part in any such action. Further, because consensus is characteristic of collectivity rather than individuals, it is conducive to legitimacy *at the collective level*. That is, people come to see the distribution of earnings as legitimate not because they find the distribution to fit their own personal and idiosyncratic conceptions of what ought to be, but because they take into account what others think and anticipate others’ reactions. Under such conditions, it is even possible that they come to accept a distribution they personally disapprove of, because collectively established legitimacy is more important for stability than individual-level legitimacy. Experiments have shown that individual legitimacy (one’s own beliefs concerning the appropriateness of distribution) is neither necessary nor sufficient for the stability of income distribution. Detailed investigation of consensus on popular estimates of earnings in various occupations may therefore contribute to our understanding of reactions to inequality and injustice.

Justice Evaluations

Figure 8.3 graphs curves representing “trends” in evaluations of the justice of earnings in the five occupations under study. An interesting feature of the graph is a similarity in the trends for minister and manager, on the one hand, and shop owner and unskilled worker, on the other.

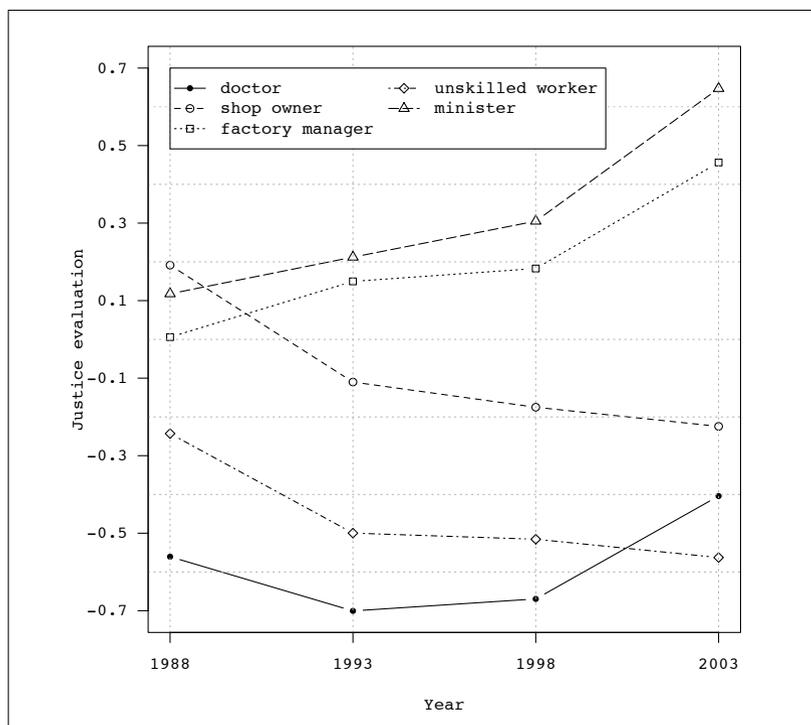


Figure 8.3. Average Evaluations of the Justice of Earnings

In the case of the former pair, the trends are roughly parallel and fairly close to one another. The trends in the latter pair are parallel as well, but there appear to be greater differences in terms of the average justice evaluation between the two occupations. Further, the trends within each pair are also similar in a different sense: the average justice evaluations of earnings of minister and manager are increasing, whereas the evaluations for shop owner and unskilled worker are decreasing with each wave of POLPAN. That is, minister and manager are seen, on average, as more

and more overrewarded, while unskilled worker and shop owner are perceived to be more and more underrewarded. If we were to classify the former two occupations as well-paid jobs and the other two as poorly paid, then the patterns in Figure 8.3 suggest that earnings in the well-paid jobs are assessed as increasingly departing from the point of perfect justice in the direction of overreward, while earnings in the poorly paid occupations are viewed by the average respondent as departing more and more in the direction of underreward.

When it comes to assessments of the justice of income earned by doctors (general practitioners), the trend in these assessments seems to be a kind of “combination” of trends in evaluations of the justice of earnings in the two groups of occupations distinguished above. That is, the trend regarding earnings of doctors somewhat resembles the trend for poorly paid jobs in the initial phase of the panel study. Then, after 1993, it starts to follow trends characteristic of the well-paid occupations. With only four measurements for each occupation, it is unwise to come up with any general claims concerning these trends, but if this conjecture is correct, it suggests that, around 1993, a change might have occurred in the way doctors are perceived or, more precisely, in the way the qualities or characteristics associated with the job of a general practitioner are perceived.

I now shift my focus from assessments of justice of earnings within particular occupations to assessments of how much injustice there is in general in the eyes of respondents. This can be done by applying equations (3) and (4) to the individual evaluations of both perceived and just earnings submitted by the respondents. In this way, we obtain a value of the summary justice index, which can then be decomposed into two components specified in the “Concepts and Measures” section above. Note, however, that the interpretation of the summary index and its components is limited to the amount of injustice experienced when estimating earnings in the occupations under study and should not be mistaken for a measure of perception of the amount of injustice in the whole society. In other words, it would be unwise to make definite conclusions about individual beliefs concerning the fairness of earnings distribution in Poland based on the limited design used in POLPAN. Nevertheless, even this limited design provides us with important insights whose validity may be investigated more closely in a study with a more sophisticated design.

First, changes in the average value of index JI follow a U-shaped pattern. This is clearly visible in Figure 8.4 in which the changes were graphed using a solid line. Note that there is some correspondence between these results

and those discussed in the preceding paragraphs. Perceptions of the justice of earnings are relatively stable between 1993 and 1998 with some significant changes taking place in the periods 1988–1993 and 1998–2003.

Second, even if changes in the overall justice perception suggest that, after an initial decline, perceptions of justice of earnings were coming closer and closer to the point of perfect justice, the results of the decomposition given by equation (5) reveal a surprising finding – an increasing discrepancy between mean-based injustice and inequality-based injustice. As regards the former, the respondents tend to believe that the mean earnings exceed what would be the fair mean level of earnings, so that, on average, the members of the five occupations are perceived to be over-rewarded. This observation holds for all waves of POLPAN except for the first one, when the mean value of JI_{mean} is marginally below the point of perfect justice. Thereafter, the value rises quite rapidly. As regards inequality-based injustice, the inequality in earnings of the typical members of the five occupations is seen as exceeding the acceptable level.

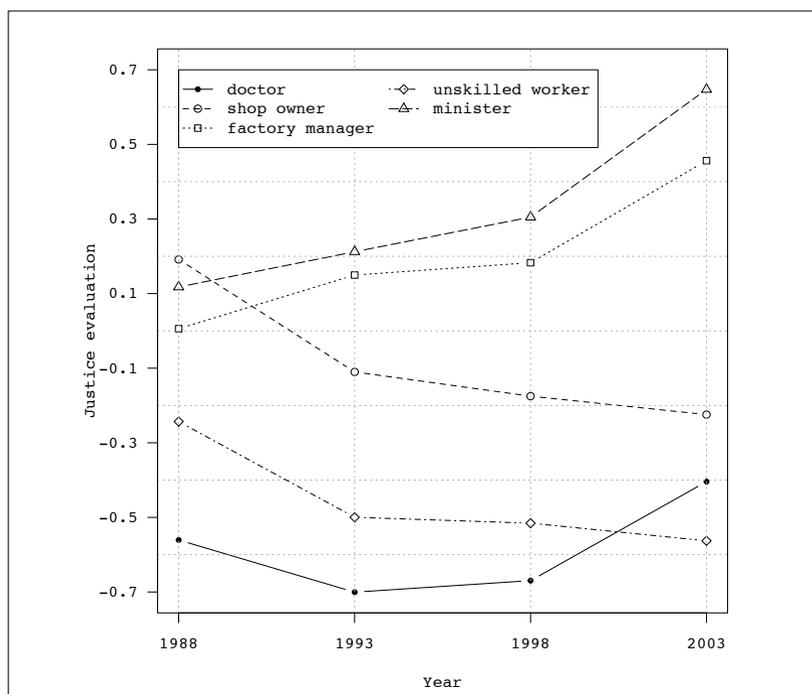


Figure 8.4. Average Evaluations of Injustice by the Type of the Injustice

Third, at the first three time points it is the inequality-based injustice that appears to account for most of the overall feeling of injustice: the mean value of JI_{ineq} is much closer to the mean value of JI than is JI_{mean} . But in 2003 this changes – the impact of both components on the overall index is of nearly equal strength, so that inequality-based injustice no longer dominates mean-based injustice.

The finding seems intriguing, but, once again, much caution is required before making any generalizations, because the structure of occupations whose earnings are rated by the respondents differs considerably from the actual structure of occupations in Poland. In other words, it is conjectured that if the sample of occupational titles used in the study were more representative of the actual occupational structure of the Polish society, the discrepancy between mean-based and the inequality-based injustice would be much smaller. To see this, note that the occupations that “elevate” the average perceived earnings to such a high level (minister and factory manager) constitute 40 percent of the sample of occupational titles, but they account for less than 5 percent in the actual occupational structure. If the former were more differentiated, the discrepancy between perceived and postulated earnings – and, consequently, the discrepancy between the two types of injustice depicted in Figure 8.4 – might be smaller. In order to check this conjecture, one would require a study using a longer and more diversified list of occupational titles whose earnings are to be rated.

Conclusion

This chapter reported on an analysis of data concerning popular perceptions of earnings in a number of occupations. The data are taken from the POLPAN panel study, which covers the period 1988–2008. However, because the relevant items were not included in the 2008 wave of the survey, the analysis is limited to the period 1988–2003. The analysis is exploratory rather than explanatory in that the focus has been to point out some patterns in the data and possible future elaborations rather than to propose a model explaining the patterns. The elaborations deal mostly with the design of the study. It is argued that if the propositions put forward in this analysis are followed, then more substantive hypotheses can be investigated and tested. Briefly summarizing the relevant propositions:

1. According to reward expectations theory, expectations as to the fair levels of reward are shaped by so-called referential structures,

or generalized, and shared, beliefs linking the states of some salient characteristics, such as gender and education, with reward levels, such as income or prestige (Berger et al. 1985, 1998). Therefore, in order to be able to formulate any hypotheses regarding popular perceptions of “just” earnings, one needs to know which characteristics are salient for respondents when they estimate the earnings. One way to manipulate these characteristics explicitly is to use the factorial-survey design, as presented by Jasso (2006a).

2. In POLPAN, respondents estimated actual and just earnings in a number of occupations, but the lists of occupational titles were different in successive waves of the panel, and only five titles were used in all waves between 1988 and 2003. This seriously limits inferences than can be drawn from the analysis. Future studies should therefore make use of longer lists of occupational titles that are more “representative” of the occupational structure of the society under study.
3. Given that analyses of the perceptions of earnings and perceptions of prestige led to contradictory conclusions, it would be interesting to combine the measurement of the former with the measurement of the latter within one design and use the same methodology, so as to be able to answer how much of the contradiction is accounted for by differences in the method of measurement.
4. Because the quantitative description of the perceptions of inequality and injustice are only interesting to the extent they can be used to explain the dynamics of some social process, such as emotional and behavioral reactions to income inequality, relevant items should be added to the questionnaire as well. Research on distributive justice has shown that the assessments of justice are shaped by normative considerations (what individuals and groups think is just, and why) as well as perceptual biases, self-interest, and attributions of the experienced injustice to a particular source. That is, reactions to injustice differ depending on whether the source of the injustice is someone’s deliberate action or an extra-individual mechanism.

I recommend that future studies in the area of distributive justice and perceptions of inequality follow the guidelines outlined in this chapter. Hopefully, such studies will provide sociologists with high-quality data with which to test complex theoretical hypotheses that would contribute to our understanding of the stability of inequality.

MARTA KOŁCZYŃSKA AND JOSEPH J. MERRY

PREFERRED LEVELS OF INCOME INEQUALITY IN A PERIOD OF SYSTEMIC CHANGE*

Introduction

Researchers have documented a substantial rise in income inequality across a number of diverse nations during the past half century (Gornick and Jantti 2013; Piketty 2014). Within the past decade, social scientists have produced a significant amount of research documenting the causal mechanisms (Piketty and Saez 2003) and social outcomes (Esping-Anderson 2007) involved in this escalation of economic inequality. Much less is known however about attitudes toward income inequality. While broader research on inequality preferences, redistributive justice, and meritocratic beliefs has a long history (Jasso and Rossi 1977; Rawls 1971), a number of methodological problems have prevented a more comprehensive understanding of attitudes toward inequality in particular. First, operationalizations of attitudes and policy preferences are weakly developed (McCall and Kenworthy 2009). Oftentimes, the kinds of questions available in nationally representative surveys are not sufficient to fully understand the complexity of redistributive attitudes and notions of ideal levels of inequality (McCall 2013). Second, researchers have seldom been able to use panel data to accurately assess the causal ordering of structural change and individuals' preferences. Finally, there

* In this chapter we use our previous work (Kołczyńska and Merry 2016); cf. <http://polish-sociological-review.eu/index.php/>

has not been much research on the effects of contextual change, such as the economic and political transitions in Eastern Europe and Asia of 1989/1990, on individual attitudes (McCall 2013).

In the current study, we seek to address these gaps and methodological challenges. Using the Polish Panel Study (POLPAN), we follow a set of respondents over a period of fifteen years, 1988–2003, during Poland's transition from central planning toward market economy, and track their changes in preferred levels of earnings inequality in society, measured as the ratio of just earnings of the owner of a factory to the just earnings of an unskilled worker.¹ Our goal is to determine how exactly the marked rise in economic inequality in Poland is affecting individuals' attitudes about societal disparities and what is considered just.

Literature Review

Attitudes toward Inequality and Social Psychology

Dramatic rises in income inequality have created much scholarly interest in how populations are adjusting to increasingly unequal settings. For example, in the U.S. the ratio of CEO pay to that of a common laborer increased from 30:1 in the early 1970s to 100:1 in the 2000s (McCall 2013). Recent evidence from Piketty (2014) suggests that this pattern of economic divergence is likely to continue in the coming decades. How then do individuals respond to these substantial changes in the earnings distribution? How do attitudes toward inequality change as inequality itself changes?

Perhaps the most perplexing finding about individuals' preferences about inequality is that studies notoriously refute one of the most straightforward explanations. Tests of the median voter-hypothesis, or the idea that increasing market inequality will produce greater demand for redistributive generosity, have at best revealed mixed evidence (Brzeziński, Jancewicz, and Letki 2013; Kenworthy and McCall 2008). In fact,

¹ We are using the term “preferred inequality” with regard to the differences between respondents' answers to questions about earnings in specific occupations that would be “just and fair”, or that would lead to achieving “some justice”. In POLPAN the wording of these questions remained unchanged throughout the study. In this chapter, for stylistic reasons, the terms preferred inequality, just inequality, or fair inequality will be used interchangeably.

researchers seeking to explain how individuals are adapting to high levels of inequality have come up empty-handed after analyzing levels of well-being, happiness, support for progressive taxes, etc. (McCall 2013). Indeed, McCall and Kenworthy (2009) and McCall (2013) demonstrate the complexity involved in understanding beliefs and preferences concerning inequality, opportunity, and redistribution. The best evidence in the U.S. context suggests that individuals do care about rising income inequality to the extent that inequality can itself be a restriction to opportunity (McCall 2013). Similarly, using data from the International Social Justice Project in Germany, Schneider (2012) emphasizes that what really matters to individuals is not the actual or perceived level of inequality, but rather the “attributed legitimacy” of income inequality, especially as it is connected back to one’s own well-being.

This more nuanced conception of attitudes and changing preferences toward inequality lends itself to a growing literature in the realm of social psychology. Experimental studies indicate that knowledge of greater actual inequality causes respondents to report higher estimates of what they deem as “acceptable” levels of inequality (Trump 2013). According to the “justification principle”, “Even individuals who do not benefit from inequality are more likely to acquiesce in and even prefer unequal distributions, if they perceive that the differential rewards are earned” (Trump 2013: 7). There is some evidence of this relationship specifically within the Polish context. Domański and Sawiński (2012) show that preferred levels of inequality are conditioned by levels of actual inequality. However, the question remains as to whether “actual” inequality is accurately perceived by individuals responding to large-scale surveys or whether structural change is properly accounted for in studies relying on cross-sectional design, keeping in mind that the actual structure of the earnings distribution may be influencing these attitudes in both overt and subtle ways.

Cross-National Evidence

Scholars have also continued to add to our knowledge of inequality attitudes from a comparative and cross-national perspective. The most consistent findings point to the following pattern: (1) across nations there is general agreement on the legitimate pay of low-status occupations, (2) there is agreement that high-status occupations merit higher pay than the minimum, but (3) there is substantial cross-national variation and disagreement over how much more higher-earners should be paid (Hadler

2005; Kelly and Evans 1993). There is also general consensus that higher ratios of inequality are viewed more favorably by men (Kluegel and Smith 1986), individuals with more education and those with higher incomes (Kelly and Evans 1993).² More recently, Tóth and Keller (2013) analyzed beliefs about inequality by creating a “redistributive preference index” from attitudinal measures concerning state involvement in providing jobs, the extent of social expenditures, and the degree to which wealth is distributed in society. After analysis of 17 affluent European countries the authors conclude that support for redistribution varies considerably across nations and that this support corresponds most notably with the extent and depth of relative poverty.

Using ISSP data for 30 nations, Hadler (2005) observes that attitudes toward inequality are less critical in societies in settings where societal inequality is more likely to be interpreted as the result of “just rewards” for one’s effort, rather than an unequal opportunity structure. Results also indicate that the macro-level variable of “communist history” contributes to a more critical view of income inequality. In general, this broad categorization of nations transitioning from planned to market economies has proven especially useful in studies of rising inequality and changing economic preferences (Redmond, Schnepf, and Suhrcke 2002). That said, research has also documented substantial variation in attitudes and preferences within post-socialist transition economies (Bandelji and Mahutga 2010; Hadler 2005). Through a detailed analysis of inequality attitudes in Poland we intend to add to this ongoing discussion with a country-specific approach, but to also frame the results and implications within a broader comparative context.

The Polish Context

The timeframe analyzed in the current study includes the 15 years between 1988 and 2003, a time of rapid systemic change in Poland (for a full description of initial conditions, strategy and implementation of new economic procedures, and outcomes, see Balcerowicz 1994). Inflation peaked in 1990 with the Consumer Price Index close to 700³ while

² Although these demographic patterns are not the main focus of our study, we will nevertheless note the direction and magnitude of these predictors to provide additional evidence.

³ Annual Consumer Price Index. Central Statistical Office of the Republic of Poland. Retrieved September 17, 2016 (<http://stat.gov.pl/en/topics/prices-trade/>)

the registered unemployment rate grew rapidly, reaching 16.5% in 1994,⁴ compared to full-employment in the centrally planned economy pre-1989. By 1998 when the third wave of POLPAN was fielded, Poland was on a relatively stable track of economic growth and nearing North Atlantic (NATO) integration. In 1997 Poland adopted a new Constitution, which confirmed and cemented the principles of market economy and political pluralism. After four years of annual economic growth of around 5–7% accompanied by declining inflation, unemployment dropped to below 10%, unseen since 1991, and GDP per capita exceeded the 1988 level by 50%.⁵ The Polish economy continued to grow, although at a slower pace, throughout the recession in the early 2000s, having received a boost from the European Union's pre-accession support exceeding EUR 7 billion in 1990–2003 (UKIE 2003). Given this tumultuous era, ongoing studies of the changing Polish economy and related social implications have proven valuable.

In both studies of redistributive preferences (Tóth and Keller 2013) and rising economic inequality (Bandelj and Mahutga 2010), Poland often appears in the “middle of the pack”. Among post-socialist countries, economic inequality in Poland has grown considerably faster than in some countries (Czech Republic and Slovenia), yet others (Romania and Lithuania) have experienced much more dramatic increases in inequality than Poland. In terms of overall economic inequality, the Gini Index increased from just above 25 in 1987 to nearly 36 in 2004 (Brzeziński, Jancewicz, and Letki 2013). Below, Figure 9.1 traces the percentage of income held by the top 10% and bottom 10% of earners. World Bank Indicators for Poland⁶ reveal a steady upward trend for the highest earners while the wages for the lower decile remain stagnant.⁷

price-indices/price-indices-of-consumer-goods-and-services/yearly-price-indices-of-consumer-goods-and-services-from-1950/).

⁴ Registered unemployment in Poland. Central Statistical Office of the Republic of Poland. Retrieved September 17, 2016 (<http://stat.gov.pl/en/topics/labour-market/registered-unemployment/unemployment-rate-1990-2016,3,1.html>).

⁵ GDP based on PPP per capita GDP Current international dollars. Retrieved September 17, 2016 (<http://www.econstats.com/weo/CPOL.htm>).

⁶ World Development Indicators: Income share held by highest 10% (SI.DST.10TH.10), and Income share held by lowest 10% (SI.DST.FRST.10). Retrieved September 17, 2016 (<http://data.worldbank.org/country/poland>).

⁷ For an economic analysis of wage inequality in Poland see Newell and Socha 2007.

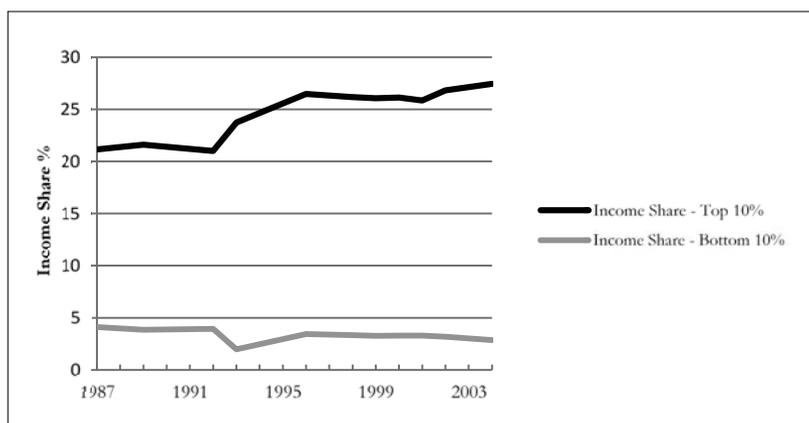


Figure 9.1. Rising Inequality in Poland, 1987–2004

Source: World Bank.

Data from the Polish General Social Survey indicate that Poles are not only aware of increasing income inequalities, but they also feel that the current level of inequality is too high: the percentage of respondents who believe that income inequalities in Poland are too large has increased from 80% in the early 1990s to 91% in 2010 (Brzeziński, Jancewicz, and Letki 2013). These descriptive trends precipitate a number of questions regarding the current literature. On one hand, it appears that Polish citizens are *en route* to confirming the median-voter hypothesis – inequality is on the rise and dissatisfaction with this trend seems to be growing (Kenworthy and McCall 2008). On the other hand, it is possible that rising inequality may be disliked yet simultaneously tolerated as long as economic opportunities are perceived to be accessible (McCall 2013). It is also possible that attitudes toward inequality may be in the process of shifting in accordance with actual changes in the earnings distribution (Trump 2013) – perhaps the rise in dissatisfaction with the current levels of inequality will gradually be tempered with time as individuals become accustomed to higher and higher levels of inequality.

Hypotheses

Change in Levels of Perceived and Preferred Inequality

How did fair inequality between earnings in lowest- and highest-paying occupations change in course of the transition from centrally-planned to market economy? Social psychology has developed many ways of explaining changes in what people perceive as fair, but there seems to be consensus that with changes in real inequality, opinions about fair inequality follow in the same direction (Trump 2013). Equity and status attribution theory explain why the built-in preference of cognitive consistency leads individuals to accept what they observe as normal and appropriate (Della Fave 1980). Similarly, system justification theory and *status quo* bias focus on the motivational and cognitive aspect of the tendency to prefer the known to the unknown (Zajonc 1968), and to believe that the “environment is a just and orderly place where people usually get what they deserve” (Lerner and Miller 1978: 1030). In this way ideas about “what ought to be” follow “what is believed to be”, which in turn are an imperfect reflection of “what objectively exists” (Krauze and Slomczynski 1986).

In the Polish context, the transition from socialist economy with its egalitarian principles and central planning to market economy essentially brought an increase in income inequality from early on in the transition. As shown in Figure 9.1, actual inequality in Poland has been increasing throughout the 15-year period covered by our study. Using survey data from different studies carried out in Poland in 1988 and 2010, Domański (2013) found that preferred inequality is lower than perceived inequality, yet both have increased over time. We expect similar findings in our analysis. One reason that reports of perceived inequality have risen faster could be that the changes in actual inequality were paralleled by the rapid development of free media (private-owned press, radio, and TV) which intensified coverage of both extreme poverty and excessive wealth. This is why we additionally expect the gap between preferred and perceived inequality to grow with time.

Hypothesis 1.1: Perceived and preferred income inequality have increased over time.

Hypothesis 1.2: Additionally, the level of perceived inequality has been growing faster than that of preferred inequality.

Meritocracy and Welfare State Support

Having established general trends in aggregate levels of fair earnings inequality, we turn to individual-level factors that explain the variation in tolerance towards inequality between individuals: meritocratic attitudes and preferences for the welfare state. Meritocracy is a system where individual merit, originally intelligence and effort (Young 1958), now understood more broadly including e.g. education, experience and abilities, is the basis for the distribution of rewards such as income, power and prestige, and thus provides legitimation of social inequality. Research carried out in many Western countries shows that the idea that income should depend on individual merit receives widespread support (Kluegel and Smith 1986), and occupations that require higher levels of skills are placed higher in the hierarchy of fair incomes (Kelly and Evans 1993). In Poland and the rest of the “Eastern Block”, the shift from socialist to market economy meant a change in mechanisms of distribution of surplus, from ideologically-driven preference of industry and production and no clear link between pay and qualifications (Wesołowski and Mach 1986: 177), to a world where earnings are to a large extent determined by productivity, and hence much more closely related to individual merit (Locklear 1998).⁸ In such a system, where income comes to be viewed as an earned reward, individuals who hold meritocratic attitudes should be willing to accept higher income inequality than those who believe in ascription (Kluegel and Smith 1986; Wegener 1992). We expect that meritocratic attitudes are positively associated with fair earnings inequality. However, because in newly post-communist countries meritocracy is less widespread than in traditional market economies (Kunovich and Slomczynski 2007), we expect the positive association between preferred inequality and meritocratic attitudes to emerge only after the new economic system is well established, that is towards the end of our time series.

Hypothesis 2.1: Individuals with stronger meritocratic attitudes tend to tolerate higher levels of earnings inequality, but this association becomes significant only at the end of the period under study.

⁸ Although some researchers have argued that the allocation of individuals to positions occurred based on meritocratic principles in capitalism and state socialism alike and the differential success of this allocation, or to the meritocratic ideal, was a result of external policies under state socialism that limited post-allocation adjustments (Krauze 1998).

A different type of attitude closely related to ideas of fair inequality are attitudes toward state's role in mitigating unjust inequalities. Individuals who support welfare state policies are expected to favor lower levels of inequality, but this can only be true in situations with working markets, market competition and the related risk, and at least potentially responsive authorities. We expect the negative association between welfare state support and preferred earnings inequality to emerge after the collapse of communism, which leads us to the following hypothesis:

Hypothesis 2.2: Strong welfare state support leads to lower levels of accepted earnings inequality, and this association becomes significant after the collapse of the communist system.

Individual Changes over Time

In addition to questions about general societal trends, we are interested in how changes in individual status and attitudes are reflected in levels of preferred inequality. We expect that changes in distributions of preferred earnings inequality are not a consequence of compositional shifts of the sample and population, but that they occur within individuals due to their stable and changing characteristics. Our methodological approach allows us to follow changes in preferred inequality as a result of evolving preferences at the individual level over time. First, we expect our panel model to confirm results obtained in single year models – that is, we expect higher preferred inequality among men than women, as well as among the richer and more educated. Second, we expect to observe an effect of meritocratic attitudes (positive) and welfare state support (negative) as they change within individuals over time. Finally, we expect that not only preferred inequality increases with time, as stated in Hypothesis 1, but that the rate of change depends on the initial level at the beginning of our time series, in 1988. Stated differently, while we expect to document greater tolerance for earnings inequality over time, we also note that the degree of this change will be contingent on respondents' initial reports in the first wave of data collection. Those who reported higher ratios of preferred earnings (more inequality) at the time of the first interview will be more likely to demonstrate continued growth over time – they will tolerate even more inequality with a higher rate of change compared to those who initially preferred lower earnings ratios.

The resulting hypotheses are as follows:

Hypothesis 3.1: Accounting for individual heterogeneity, more meritocratic attitudes are positively associated with levels of preferred earnings inequality.

Hypothesis 3.2: Accounting for individual heterogeneity, more welfare state support is negatively associated with levels of preferred earnings inequality.

Hypothesis 3.3: The rate of increase in preferred levels of earnings inequality depends on the starting level of preferred inequality.

Hypothesis 3.4: Men prefer higher levels of inequality than women, and additionally the level of preferred inequality increases with education and income, both across individuals and over time.

Data and Measurements

Data come from the Polish Panel Survey POLPAN⁹. POLPAN is unique in two ways. First, its panel design allows researchers to investigate individual changes in attitudes and preferences about inequality in the context of changing inequality in the wider society. Secondly, the timing of POLPAN overlaps with major events in Poland's recent history, which makes the data ideally suited to analysis of social consequences of political and economic transformation. In the current study we utilize these methodological advantages to examine change over time in respondents' preferred levels of income inequality.

In our analysis we use the first four waves of POLPAN, from 1988, 1993, 1998, and 2003, that is from the year prior to the collapse of communism in 1989, until just before Poland's accession to the European Union in May 2004. Of the 5,817 respondents born between 1922 and 1966 who were interviewed in 1988, 2,500 were randomly selected to be interviewed again in 1993, which resulted in 2,259 completed interview. The sample of the third wave in 1998 consisted of 1,752 panel respondents and a renewal sample of 383 21–30 year olds (Słomczynski and Marquart-Pyatt eds. 2007). Our sample used in this analysis comprises

⁹ Data and documentation from POLPAN 1988–2003 are available on-line at Zacat-Gesis (zacam.org) and the Polish Social Data Archive (ads.org.pl).

1,241 respondents who participated in all four waves: 1989, 1993, 1998 and 2003.¹⁰ 48.6% of them are women. Their average age in 1988 was 40.6 years, and, accordingly, five years more every next wave.

Dependent Variable: Preferred Earnings Inequality

In the first four waves of POLPAN respondents were asked to estimate current earnings for selected occupations, followed by a question about how much people in these occupations should earn.^{11,12} Sets of occupations differed from wave to wave. In all waves, unskilled workers were on average assigned the lowest fair earnings (details available upon request). At the top of the earnings ladder, and far above anyone else, respondents put the factory owner (“factory directors” in 1988).

To measure fair earnings inequality, we constructed a ratio of just earnings for the owner of a large factory and the unskilled worker in a factory.^{13,14} This Fair Earnings Ratio shows how many times more

¹⁰ We restrict the sample to those interviewed on all four occasions, because of our main interest in changes in attitudes among the cohorts that can remember pre-transition Poland from own adult experience instead of knowing it only from second-hand accounts. However, as a robustness check, we have conducted analyses using the whole sample of 6,425 respondents interviewed in any of the first four POLPAN waves. The results are substantially the same, and are available upon request.

¹¹ In 1988 and 1993 these questions were asked in one version of the questionnaire administered to one subsample; in 1998 and 2003 they were included in all versions of the questionnaire. As a result the number of valid responses to the fair earnings items is 350–365 in 1988, 471–586 in 1993, and 885–1176 and 1169–1208 in 1998 and 2003, respectively. Estimates from modeling samples restricted to respondents who were asked the questions of interest in 1988 were substantively the same as the non-restricted models we present in this chapter. Non-response was clearly higher in items about fair earnings of highest status jobs, such as owner of factory or director of large enterprise.

¹² Karpiński (2015) notes that a possible bias is introduced as a result of which question respondent’s answer first, the “do-earn” or “should-earn” question. However, the ordering of the questions is consistent throughout all waves of POLPAN and we do not expect a systematic bias of this nature.

¹³ Because “the owner of large factory” was alien to the centrally planned, state-owned socialist economy, and was therefore not included in the 1988 wave of POLPAN, for that year we took “the director of a factory”. As a robustness check, we repeated all analyses using “director of factory” for 1988 and “director of state-owned enterprise” for later waves, and substantive results remained the same.

¹⁴ In two of the four survey waves (1993 and 2003), highest earnings estimates were top-coded as “100,000 or more” in 1993 and “1,000,000 or more” in 2003. The

factory owners should be paid than unskilled worker in a fair society. The ratio has a strong positive skew, and in subsequent models it is used in logged form. In initial analyses we also track changes in respondents' *perceptions* of earnings inequality in society, or *perceived inequality*.

Meritocracy

We measure meritocratic attitudes using responses to four standard items in the question about “things important for achieving success in life” asked in all POLPAN waves in the same form.¹⁵ These items are: ambition, hard work, good education, and inherited ability and talent, and to each respondents answered using a five-point Likert scale ranging from “absolutely necessary” to “not at all important”.¹⁶ The measurement model for the resulting factor is presented in Table 9.1. Despite some fluctuation in factor loadings from wave to wave, the factor continues to explain about 40% of common variance of the four indicators.

Table 9.1. Measurement of Meritocratic Attitudes

	1988	1993	1998	2003
Factor loadings				
Ambition	0.635	0.566	0.621	0.591
Hard work	0.509	0.520	0.487	0.407
Good education	0.734	0.721	0.701	0.729
Natural ability	0.719	0.731	0.717	0.737
% of variance	42.978	41.151	40.738	39.722
Eigenvalue	1.719	1.646	1.630	1.589
Cronbach's alpha	0.539	0.501	0.479	0.446

number of cases concerned is 123 and 2 respectively. In order to avoid underestimating the variation in fair earnings, we multiplied the top-coded observations by a factor of 1.3.

¹⁵ The same questions are asked in other surveys, including the International Social Survey Programme or the General Social Surveys.

¹⁶ Similar sets of items have been used to construct meritocracy scales e.g. by Locklear (1998), and Kunovich and Slomczynski (2007).

Welfare State Support

We operationalize welfare state support as a scale consisting of responses to items about responsibilities of the state towards citizens. The question asked respondents about their level of agreement or disagreement (on a 5-point Likert scale) with a number of statements, of which we chose the following three: (E) The state should assist children from poor families in facilitating their access to higher education; (G) The state is responsible for reducing differences in people's incomes; (H) The state should provide jobs for everyone who wants to work. We constructed a standardized scale, where positive values indicate above average support for the welfare state, and negative values indicate below average support (Table 9.2 shows the measurement model).

Table 9.2. Measurement of Welfare State Support

	1988	1993	1998	2003
Factor loadings				
State should help kids from poor families	0.750	0.694	0.621	0.648
State should decrease inequality	0.699	0.761	0.768	0.737
State should provide jobs	0.742	0.775	0.799	0.779
% of variance	53.368	55.329	53.756	52.348
Eigenvalue	1.601	1.660	1.613	1.570
Cronbach's alpha	0.550	0.587	0.562	0.525

Income and Other Independent Variables

Household income *per capita* was constructed by using household income divided by the number of members of the household, logged and standardized, to achieve a common metric across waves. Other independent variables include gender, coded with a binary variable with 1 for male (49% of our sample are women), age measured in years, and education measured in years of schooling.¹⁷

¹⁷Original questionnaires asked respondents about their level of education with categorical responses, which were then assigned numeric values.

Models

To test the first set of hypotheses, 1.1 and 1.2, we analyze medians of perceived and preferred earnings for the owner of a large factory and unskilled worker, and respective earnings ratios. To test the remaining hypotheses, we use two types of models. Hypotheses 2.1 and 2.2 refer to patterns present at each point in time and how these patterns change from wave to wave. We test these hypotheses by examining and comparing regression coefficients from OLS regression models, separate for each survey wave.

Hypotheses 3.1–3.4 have to do with changes in ideas about fair earnings inequality that have occurred within individuals over the 15 years covered by our data, while accounting for individual heterogeneity. In analysis using the whole dataset we use multi-level mixed-effects linear regression models, which take into account the hierarchical structure of the data (see Rabe-Hesketh and Skrondal 2008). We are interested in estimating the effects of both time-variant variables, that is income, meritocratic attitudes and welfare state support, as well as characteristics that are stable within respondents, like gender and education. This is why we chose random effects models over fixed effects models, which are designed to study the causes within persons and do not allow to estimate effects of time-invariant characteristics (Kohler and Kreuter 2009). The random intercept model takes the following form:

$$\ln(\text{fair ratio})_{ij} = \beta_0 + \beta_1 \text{occasion}_i + \beta_2 \text{sex}_j + \beta_3 \text{age}_{ij} + \beta_4 \text{yearsedu}_{ij} + \beta_5 \text{hhincomepc}_{ij} + \beta_6 \text{meritocracy}_{ij} + \beta_7 \text{statepat}_{ij} + u_j + \mathcal{E}_{ij}$$

where $\ln(\text{fair ratio})_{ij}$ is the log transformed fair earnings ratio for the j^{th} individual in the i^{th} measurement occasion, β_0 is the grand intercept, β_1 is the coefficient for the measurement occasion (occasion 0 is the year 1988), β_2 is the coefficient for sex of the j^{th} individual, and $\beta_3, \beta_4, \beta_5, \beta_6$ and β_7 are coefficients for age, years of education, household income per capita, meritocracy and welfare state support of j^{th} individual in the i^{th} measurement occasion respectively. Further, u_j is the random intercept for the j^{th} individual, and \mathcal{E}_{ij} is the random error term corresponding to the deviation of the j^{th} individuals $\ln(\text{fairratio})$ from u_j . The second model includes a random intercept and slope, and is represented by the following equation:

$$\ln(\text{fair ratio})_{ij} = \beta_0 + \beta_1 \text{occasion}_i + \beta_2 \text{sex}_j + \beta_3 \text{age}_{ij} + \beta_4 \text{yearsedu}_{ij} + \beta_5 \text{hhincomepc}_{ij} + \beta_6 \text{meritocracy}_{ij} + \beta_7 \text{statepat}_{ij} + u_{ij} \text{occasion}_j + u_{0j} + \mathcal{E}_{ij}$$

Here u_{ij} is the slope random effect on occasion, so this model frees the slope to allow for differential effect of time across individuals.

Results

Descriptive Results: Change in Levels of Perceived and Preferred Inequality

In order to look at changes in perceived and preferred inequality, we computed medians of two ratios constructed for each individual. The first divides perceived earnings of a factory owner by perceived earnings of an unskilled worker, while the second does the same with preferred earnings. Before we focus on these ratios, we would like to present changes in the underlying measures. Figure 9.2 shows medians of perceived and preferred earnings of the two occupations of interest: the owner of large factory and unskilled worker, expressed as the number of average monthly wage in Poland in the same year.¹⁸

The graph shows that median perceived earnings of a hypothetical factory owner increased 16 fold in the 15 years, from 1.13 of average salary in 1988 to over 16 times the average salary in 2003. The increase in preferred earnings for the same occupation was lower by half: from the same 1.13 monthly salaries in 1988 to about 8 monthly salaries in 2003. The simultaneous change in perceived earnings of unskilled worker was non-linear: it increased from 0.38 of the monthly salary in 1988 to 0.5 in 1993 and 0.56 in 1998, and then dropped back to 0.36 in 2003. Preferred earnings increased by some 40%, from 0.49 to 0.68 of the average monthly salary.

¹⁸ Central Statistical Office. Average monthly gross wage and salary in national economy (1950–2015). Retrieved September 17, 2016 (<http://stat.gov.pl/en/topics/labour-market/working-employed-wages-and-salaries-cost-of-labour/average-monthly-gross-wage-and-salary-in-national-economy-1950-2015,2,1.html>).

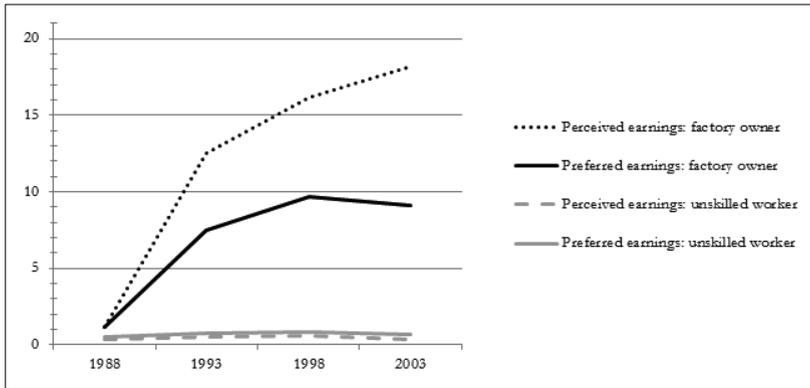


Figure 9.2. Medians of Perceived and Preferred Monthly Earnings of Factory Owner and Unskilled Worker as Number of Mean Monthly Salaries in the Given Year

Median ratios of perceived and preferred earnings shown in Figure 9.3 confirm what could already be inferred from the previous graph: both perceived and preferred earnings inequality increased between 1988 and 2003, and the income gap perceived by individuals has been growing considerably faster than what people would consider just and fair. In 1988, on average, factory owners were perceived to earn 2.8 times more than unskilled workers, while the preferred difference would be slightly smaller, that is 2.4. In 1993 both ratios increased, the preferred ratio to 10, and the perceived to 25, and both remained unchanged in 1998. At the end of our time-series, in 2003, factory owners were believed to earn almost 43 times more than unskilled workers, with the median preferred or fair ratio equal to 12.5. Although compared to the surge in the perceived earnings gap the change in fair earnings ratio may look moderate or even insignificant, it needs to be kept in mind what the numbers represent. The increase in the fair earnings ratio from 2.4 to 12.5 means that in the 15 years 1988–2003 the socially accepted or preferred gap between lowest and highest earnings increased five-fold, which indicates a major shift in normative beliefs about distributive justice.

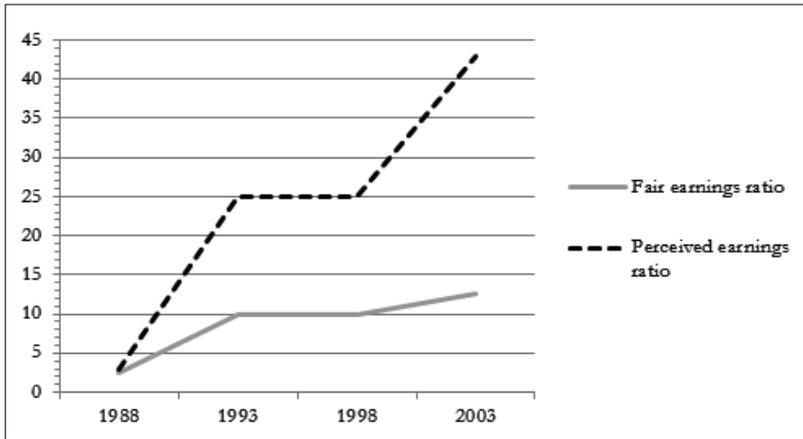


Figure 9.3. Medians of Perceived and Preferred Monthly Earnings Ratios

In general, these findings support Hypotheses 1.1 and 1.2. However, the unequal rate of change in both perceived and preferred inequality, and in particular the stagnation between 1993 and 1998, require more in-depth analysis.

By-Wave Regression Results: Meritocracy and Welfare State Support

The composition and magnitude of determinants of preferred earnings inequality have changed over time, and these changes reveal some interesting patterns. According to single-wave models presented in Table 9.3, in 1988 preferred inequality was significantly associated (positively) only with socio-demographic measures of age, education, and income, but not gender, nor any attitudinal variables. In 1993 support for the welfare state becomes a significant, negative, predictor of preferred inequality, and remains significant despite losing some magnitude in the following waves. Meritocratic attitudes remain insignificant until the last measurement in 2003, when their association emerges as positive, although not particularly strong. These observations support Hypotheses 2.1 and 2.2. Additionally, by-wave models confirm prior findings about preferred inequality increasing with education and income, as well as the higher tolerance of inequality among men, although only after the transition started.

Table 9.3. By-Wave OLS Regression Models of Logged Fair Earnings Ratio on Meritocratic Attitudes and Welfare State Support, and Socio-Demographic Characteristics

ln (fair earnings ratio)	1988		1993		1998		2003	
	B	beta	B	beta	B	beta	B	beta
Constant	0.285*		1.862***		1.791***		1.794***	
Age	0.005*	0.134	-0.009*	-0.099	-0.001	-0.012	0.001	0.008
Gender (1M)	0.059	0.067	0.316***	0.165	0.146*	0.075	0.258***	0.127
Education (years)	0.035***	0.274	0.068***	0.236	0.051***	0.167	0.054***	0.159
Income	0.085**	0.185	0.067	0.068	0.037	0.037	0.108**	0.105
Meritocracy	0.032	0.074	0.065	0.064	-0.033	-0.033	0.077*	0.076
Welfare State Support	-0.008	-0.018	-0.135**	-0.137	-0.131**	-0.130	-0.104**	-0.099
R ²	0.175		0.165		0.071		0.098	
Adj. R ²	0.158		0.153		0.063		0.093	

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Panel Regression Results

The final step of our analysis is modeling our data taking into account their panel structure. According to the empty model (Model 0) in Table 9.4, 9.7% of the total variation in the dependent variable, logged preferred earnings ratio, can be attributed to level-two units, in our case individuals. Model 1 adds the time variable (the occasion of measurement), and socio-demographic characteristics, of which age, education, and income are time-varying, and gender is time-invariant. All these predictors, with the exception of age, are highly statistically significant with coefficients pointing in expected directions. First, estimates show that preferred earnings inequality increased over time, and the increase by 0.418 units of logged preferred ratio from occasion 0 in 1988 to occasion 1 in 1993 is equivalent to the increase in (unlogged) preferred earnings ratio by 2.618, holding all other factors constant. As in earlier by-wave models, the multi-level models also show that on average men prefer higher levels of inequality, and after unlogging the difference in preferred earnings ratio is 1.722. Finally, preferred inequality also increases with education and income.

Table 9.4. Multi-Level Mixed-Effects Linear Regression Models of Logged Fair Earnings Ratio on Meritocratic Attitudes and Welfare State Support, and Sociodemographic Characteristics

ln (fair earnings ratio)	Model 0 (Empty)		Model 1 (Level 1 & 2 Vars)		Model 2 (+ Attitudes)		Model 3 (Random slope)	
	B	S.E.	B	S.E.	B	S.E.	B	S.E.
Fixed Effects								
Intercept	2.269	0.0217	0.623***	0.127	0.761***	0.132	0.760***	0.130
Occasion			0.418***	0.020	0.406***	0.021	0.412***	0.020
Age			-0.001	0.009	-0.001	0.002	-0.001	0.002
Gender (1M)			0.236***	0.040	0.211***	0.041	0.208***	0.041
Education (years)			0.068***	0.007	0.059***	0.007	0.058***	0.007
Income			0.090***	0.022	0.072**	0.023	0.070**	0.023
Meritocracy					0.040*	0.020	0.039*	0.019
Welfare State Support					-0.096***	0.021	-0.093***	0.021
Random Effects								
Level 2 (ind) Var	0.113	0.270	0.090	0.023	0.087	0.024	0.013	0.006
Level 1 Var	1.050	0.036	0.815	0.030	0.808	0.031	0.763	0.029
Slope (occasion)							0.013	0.006
Cov (occ, cons)							0.013	0.004
Fit								
Deviance	8516.447		7299.766		6815.961		6798.347	
AIC	8522.447		7315.766		6835.961		6822.346	
BIC	8540.32		7362.896		6894.225		6892.264	

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Source: POLPAN, waves 1–4.

Model 2 adds attitudinal variables, meritocratic attitudes and welfare state support. Both are statistically significant, and in expected directions. Furthermore, the addition of these attitudinal measures only slightly reduces the magnitude of socio-demographic predictors without replacing their explanatory power. An increase by one standard deviation on the meritocracy scale leads to an increase in preferred earnings ratio by 1.096, while a similar increase on the welfare state scale decreases the preferred ratio by 0.802. These findings support Hypotheses 3.1 and 3.2.

Both previous models, Model 1 and Model 2, were random intercept models, so they allowed different intercepts between individuals. The last model, Model 3, is a respecification of Model 2 with a freed slope, and hence accommodates differences in the rate of change between individuals, in addition to their starting points. A log-likelihood test confirmed that the model with individual-specific regressions better fits the data than the one with only individual-specific shifts. Compared to Model 2, in Model 3 all coefficients remain roughly unchanged, and the positive covariance of occasion and individual mean indicates higher rates of growth among those who preferred higher inequality in occasion 0, which supports Hypothesis 3.3. Estimates in all models confirm association patterns between preferred levels of earnings inequality and gender, education, and income, which were the subject of Hypothesis 3.4.

Conclusion

Using a unique and well-suited dataset, the current study makes a number of contributions to the analysis of inequality attitudes and toward stratification research more broadly. First, the use of panel data from POLPAN enables us to trace individuals' evolving preferences for what inequality in a society ought to look like, which overcomes a major impediment in previous studies. Specifically, preferred levels of income inequality rise in accordance with actual and perceived increases in economic inequality. It follows that inequality attitudes are shaped by what objectively exists and that notions about what "ought to be" will be adjusted to align with the current situation. This finding provides support to social-psychological theories which emphasize the preference for maintaining consistency (Trump 2013) with contextual changes.

Our analyses also confirm earlier results that higher preferred levels of inequality are reported by men, those with more education, and those with higher incomes (Kelly and Evans 1993). Additionally, those who place greater emphasis on meritocracy permit higher ratios of inequality, while those who show stronger support for the welfare state prefer lower ratios. However, we find that attitudinal effects for meritocracy only become significant later in our time series. In other words, it took time and systemic change for meritocratic beliefs to take hold and play a role in individuals' perceptions of "just" inequality. Once established, it is possible that the magnitude of these meritocratic beliefs (initially

spurred on by structural change) will strengthen over time and lay the foundation for continued change in this direction.

A number of questions remain to be answered in future research. Our analysis with panel data is an improvement in many ways, but it comes with its own set of challenges. For example, additional analyses of generational effects and tests using lagged effects for each measurement occasion may provide a more nuanced discussion of both changes over time and across birth cohorts. Furthermore, we argue that levels of preferred inequality rise along with increases in actual or perceived inequality, but it is not clear what constitutes the precise ratio of change (or what circumstances lead to varying ratios of change). Last, future predictions represent a formidable challenge. Assuming economic inequality continues to rise in Poland, will citizens gradually increase their preferred levels of inequality as well? Our hope is that future waves of POLPAN will provide insight to these questions and promote a better understanding of how exactly individuals' inequality attitudes change over time. In the current study we have used the best available data to track these types of changes and to provide a foundation for future studies in this regard.

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ROBERT M. KUNOVICH

PERCEIVED UNEMPLOYMENT: THE SOURCES AND CONSEQUENCES OF MISPERCEPTION*

Introduction

House argues that “all individual psychology and behavior occurs in and is influenced by macrosocial structures and processes” (1995: 387). Researchers frequently combine aggregate data from contextual units, such as countries and neighborhoods, with survey data to explore these macro-micro linkages. The focus of such research is often on the mechanisms through which contextual conditions influence people’s attitudes and behaviors.

A great deal of research, for example, examines the effect of macro-economic conditions on voting behavior (for recent reviews, see Duch and Stevenson 2008; Lewis-Beck and Stegmaier 2007). Regardless of whether they are included in the statistical models, people’s perceptions of macroeconomic conditions are presumed to mediate the relationships between macroeconomic conditions, such as unemployment and inflation, and voting behavior. I demonstrate, for example, that people’s disapproval of social change mediates the relationship between macroeconomic conditions in Polish voivodships and individual occurrences of protest voting (Kunovich 2002).

Relatively few studies, however, have examined the accuracy of people’s economic knowledge – that is, whether people know the

* In this chapter I use my previous work (Kunovich 2013); cf. <http://www.tandfonline.com/doi/abs/10.2753/IJS0020-7659420405>

unemployment rate or the rate of inflation (for exceptions, see Conover, Feldman, and Knight 1986; Holbrook and Garand 1996). Exploring the accuracy of people's perceptions is important for several reasons. First, if people's voting preferences are at least partly determined by the performance of the economy, then it is important for people to have accurate perceptions to send a clear message to their elected representatives – "an electorate that does not accurately perceive recent trends in the economy may not appropriately reward or punish incumbent politicians as accountability demands" (Conover, Feldman, and Knight 1986: 566). Second, if people's perceptions are inaccurate, then omitting perceived measures, as many studies do, may lead us to draw incorrect conclusions about the existence of macro-micro linkages. Non-significant macro variables may simply reflect a mismatch between reality and people's perceptions of it.

The purpose of this chapter is to examine people's perceptions of regional unemployment in Poland. Three questions guide my analyses: (1) How accurate are people's perceptions of regional unemployment? (2) What are the sources of people's misperceptions? and (3) Do misperceptions change people's economic and political attitudes? This study makes several contributions to the literature on economic voting and, more generally, to research in social psychology. First, this chapter is among the first to examine the accuracy of people's knowledge of the local economic context; existing research focuses only on the national context. Second, this chapter is among the first to examine the accuracy of people's economic knowledge using a large and nationally representative sample; existing research is based on several small regional samples. Third, I use multilevel modeling to identify both contextual and individual-level sources of people's unemployment misperceptions. Fourth, using multiple waves of panel data, I examine the impact of unemployment misperceptions on changes in people's economic and political attitudes.

Misperceptions of Context

In this section, I review two literatures that examine people's perceptions of the larger economic and racial contexts within which they live. First, I review research on real and perceived economic conditions and political attitudes and behavior. Second, I review research on inter-group competition and ethnic and racial attitudes. I focus both reviews on the studies

that evaluate people's direct knowledge of the unemployment rate, the rate of inflation, or the size of minority populations.

Real and Perceived Economic Conditions and Political Attitudes and Behavior

There is a long history of research in political science examining the impact of economic conditions on political attitudes and behaviors (for recent reviews, see Duch and Stevenson 2008; Lewis-Beck and Stegmaier 2007). This research – especially that at the aggregate level – suggests that voters hold elected officials accountable for economic conditions. A recent cross-national study of thirty-four elections in ten Central and East European countries, for example, suggests that unemployment leads to decreases in electoral support (Roberts 2008; see also Bell 1997). Although the relationship between economics and elections is consistent and strong at the aggregate level, analyses based on survey data provide less consistent support (see Weatherford 1983). This has led some to question the accuracy of people's perceptions of economic conditions. Despite Monroe's call to "determine if there is a distinct difference between perceptions and more objectively derived measures of economic conditions and which phenomenon is more important politically" (1979: 167), there remains little empirical research (Dolan, Frensdreis, and Tatalovich 2009).

Several studies indirectly examine the relationship between real and perceived economic conditions (see Dolan, Frensdreis, and Tatalovich 2009; Duch and Stevenson 2008; Erikson, MacKuen, and Stimson 2002; Weatherford 1983). Dolan, Frensdreis, and Tatalovich (2009), for example, compute the percentage of survey respondents stating that unemployment, inflation, or the economy is the most important problem facing the country. Correlations between these aggregated data and actual unemployment rates, inflation, and the overall economy are 0.95, 0.39, and 0.83, respectively. Although this provides evidence that people have a sense of whether times are good or bad, it is not possible to evaluate the accuracy of specific knowledge with such analyses.

Two studies from the United States directly evaluate the accuracy of people's economic perceptions. These studies suggest that people are not able to estimate national economic conditions very well at all. Conover, Feldman, and Knight examine the relationship between actual and perceived national rates of unemployment and inflation as well as

their sources using data from a three-wave panel study (April 1982, November 1982, and April 1983) of 426 respondents from Lexington, Kentucky. They state: “our respondents’ estimates varied considerably: Some people were accurate to within a tenth of a percent; others offered wild guesses of inflation and unemployment running at ninety or one hundred percent; still others simply said they did not know” (Conover, Feldman, and Knight 1986: 575). People’s estimates of unemployment were better than their estimates of inflation. The authors suggest that this is the case because unemployment is “concrete and unambiguous” and because it “lends itself more easily [than inflation rates] to the type of media coverage that is conducive to the information being remembered” (Conover, Feldman, and Knight 1986: 569–70). Regarding unemployment, only 28 percent of their respondents estimated the national unemployment rate correctly in all three waves (i.e., within 1 percent of the true rate); 20 percent and 31 percent were correct in one or two waves, respectively; and 21 percent were incorrect in all three waves.

Holbrook and Garand, using cross-sectional data from Milwaukee county, Wisconsin, in 1992, find that “many respondents do not have a clue as to rates of unemployment and inflation” (Holbrook and Garand (1996: 359) – for example, only 36 percent of respondents provided an estimate of the national unemployment rate that was within 2 percent of the correct rate and more than 15 percent of respondents provided an estimate that was more than twice as high as the true rate. The authors find that respondents overestimate national unemployment and inflation rates by about 5 percent, on average.

What are the sources of these perception errors? Conover, Feldman, Knight (1986) argue that people learn about the economy from personal experience and from the media and other opinion leaders. In the absence of specific knowledge of the national unemployment rate and the rate of inflation, they argue that people draw on their own personal experiences – for example, from being unemployed or from information about the local economy – to generate an estimate. The authors also argue that various biases shape these estimates – for example, people may react to “changes that are large enough or dramatic enough to exceed some threshold of perception” (Conover, Feldman, Knight 1986: 567). They find that partisanship and being unemployed are associated with differences in perceived unemployment. Similarly, Holbrook and Garand (1996) argue that personal characteristics influence people’s willingness and ability to develop accurate perceptions. They also point to economic threats, a lack

of interest in politics and economics, and a lack of exposure to the media as possible sources of error. Significant variables in their model include socio-economic status (SES), race, gender, personal economic conditions, interest in politics, and exposure to newspapers.

Of these two studies that directly evaluate the accuracy of people's contextual knowledge, only one explores the consequences of these misperceptions. Holbrook and Garand's (1996) analyses suggest that misperceptions of unemployment and inflation do not have a direct effect on voting behavior, feelings toward candidates, or presidential approval ratings. There is some evidence, however, that they have indirect effects on these outcomes through other variables.

Real and Perceived Intergroup Competition and Ethnic and Racial Attitudes

The research reviewed above focuses on estimates of national unemployment and inflation rates. How accurate are people's perceptions of the local context? There are no studies, to my knowledge, that explore the accuracy of people's perceptions of the local economic context. Several studies in the field of ethnic and racial attitudes, however, evaluate the accuracy of people's perceptions of the relative size of minority populations at both the national and local levels.

One perspective that has been used to explain people's attitudes toward ethnic and racial groups is group threat theory. Group threat theory suggests that increases in intergroup competition increase the dominant group's sense of threat, which leads to negative attitudes toward subordinate groups (see Blalock 1967; Blumer 1958; Quillian 1995). In empirical studies, researchers routinely include contextual variables to measure intergroup competition including the unemployment rate, gross domestic product (GDP) per capita, and relative group size (e.g., the percentage of foreign-born residents). There is some evidence that real economic conditions influence people's ethnic and racial attitudes (see, e.g., Kunovich 2004; Quillian 1995, 1996; Semyonov, Raijman, and Gorodzeisky 2006, 2008). There is also evidence suggesting that the actual size of subordinate populations is related to ethnic and racial attitudes (Coenders, Gijssberts, and Scheepers 2004; Dixon 2006; Quillian 1995, 1996; Semyonov, Raijman, and Gorodzeisky 2006, 2008; Taylor 1998).

Although some scholars include measures of perceived economic conditions, these measures are indirect in the sense that they only capture

the extent to which people think that times are good or bad – that is, they do not directly evaluate the accuracy of perceived unemployment rates or other indicators of economic conditions. A few researchers, however, include measures of perceived group size (see Alba, Rumbaut, and Marotz 2005; Dixon 2006; Nadeau, Niemi, and Levine 1993; Semyonov, Raijman, and Gorodzeisky 2008; Semyonov et al. 2004; Sigelman and Niemi 2001; Wong 2007). These studies suggest several general conclusions. First, people frequently overestimate the size of minority populations – this is true in the United States and in twenty-one European countries including Poland without exception (see Alba, Rumbaut, and Marotz 2005; Semyonov, Raijman, and Gorodzeisky 2008; Wong 2007). Second, members of the dominant group are not the only ones who grossly overestimate group size – in the United States, blacks and Hispanics also overestimate the size of the black, Hispanic, Asian, and American Indian populations (see Alba, Rumbaut, and Marotz 2005; Sigelman and Niemi 2001; Wong 2007). Third, people's estimates are generally better for local regions than they are for the country as a whole (see Alba, Rumbaut, and Marotz 2005; Wong 2007).

Gallagher (2003) argues, based on results from focus group and semi-structured interviews, that misperceptions of the size of the black population among whites in the United States stem from media portrayals of blacks, the prevalence of identity politics, and the sense that demographic changes in the United States have made whites the numerical minority. Others argue that misperceptions of group size result from a lack of political knowledge (Nadeau, Niemi, and Lavine 1993), personal experiences and perceived threat related to intergroup contact and residence in areas with large minority populations (Alba, Rumbaut, and Marotz 2005; Nadeau, Niemi, and Levine 1993; Sigelman and Niemi 2001), and innumeracy (Alba, Rumbaut, and Marotz 2005). Research in the United States and across a number of European countries consistently suggests that overestimates are more likely among women, the young, those with less education, those with greater personal contact with minorities, and those living in areas with larger minority populations. There is also some indication that overestimation is more likely among those not currently married, the unemployed, urban residents, and those with low income (see Semyonov, Raijman, and Gorodzeisky 2008).

Three studies examine the consequences of misperceptions of the size of minority groups. Alba, Rumbaut, and Marotz (2005) demonstrate that perceived group size influences a variety of attitudes toward immigrants

and other ethnic and racial minorities in the United States. This study, however, does not include a measure of actual group size. In Germany, the perceived size of the foreign-born population increases preferences for their exclusion through perceptions of threat, while the actual size of the foreign-born population is unrelated to both perceived threats and exclusionary views (Semyonov et al. 2004). Dixon's (2006) analyses of racial prejudice in the United States, however, suggest that the size of the black population, but not perceived group size, is related to antiblack prejudice.

In sum, existing evidence suggests that people do not possess accurate knowledge of national economic conditions. People are better able to provide accurate estimates of the relative size of minority populations in their local community than in the country as a whole. The major sources of people's misperceptions of their economic and racial contexts are individual-level characteristics related to resources, cognitive ability, and heightened awareness (e.g., based on being unemployed, contact with minorities). People's misperceptions are also influenced by local contextual conditions. Misperceptions of economic conditions have few observable consequences (although these have been explored in only one study), but overestimates of the size of minority populations are often associated with negative attitudes toward minorities.

Unemployment in Poland

Unemployment and regional imbalances in unemployment have been highly visible in Poland for a variety of reasons. First, even though a sizable proportion of workers were "excess workers" or among the "hidden unemployed," the existence of unemployment was not recognized by the communist regime (Brown 2007: 1477). With the economic and political transitions, however, unemployment was officially recognized and rose dramatically. It hovered between 10.6 percent and 13.9 percent between 1995 and 1999 before peaking at 19.9 percent in 2002 (GUS 2010b). Second, unemployment has been much higher in Poland compared to other countries in Central Europe. Registered unemployment rates in the Czech Republic, for example, remained in the single digits until 2004 when they peaked at 10.2 percent (Czech Statistical Office 2010). Third, many have been critical of the Polish government's "passive" attempts to reduce unemployment, which "emphasize benefits to the unemployed

with the implicit assumption that market forces will provide reemployment opportunities in time” (Brown 2007: 1471). Fourth, regional differences in unemployment have persisted from the early 1990s. Newell and Pastore (2006) document consistency in the inequality of unemployment rates across voivodships from 1992 to 1997; correlation coefficients for 1992, 1994, 1995, 1996, and 1997 all exceed 0.7. My own calculations, based on voivodship-level unemployment data from Poland’s Central Statistical Office, yield a correlation of 0.89 for 2000 and 2003.

Research suggests that industry, occupation, and individual characteristics influence the occurrence of unemployment in Poland. Herzog (2000) demonstrates that the odds of unemployment are higher among those working in manufacturing; construction; trade, hotel, and restaurant industries; and also among those working as clerks, in elementary occupations, in sales, and in craft trades. Similarly, Tomescu-Dubrow (2007) demonstrates that the risk of unemployment is lower for those working in occupations previously privileged by the communist regime and higher for those in heavy industry, especially for those who did not move into privately owned firms. Finally, unemployment in Poland disproportionately affects women, the young, those who are not married, and those with less education (see Gregory, Ingham, and Ingham 1998; Herzog 2000; Lovell 2007).

Research Questions and Hypotheses

Three questions guide my analyses. First, how strong is the relationship between the voivodship-level unemployment rate and people’s perceptions of it? Given the “concrete and unambiguous” nature of unemployment (Conover, Feldman, and Knight 1986: 569–570), we might expect people’s estimates to be fairly accurate. Also, research on perceived group size suggests that people’s estimates are better for their own community than for the country as a whole – perhaps people have accurate information on the local economy as well. However, given, the dramatic rise and persistence of unemployment after 1989, the severity of the problem, and large regional imbalances, we might expect considerable inaccuracies including the large-scale overestimation of unemployment.

Second, what individual and regional characteristics are associated with unemployment misperceptions? Some people will undoubtedly be more knowledgeable about the unemployment rate in their region

compared to other people. The literature reviewed above suggests several groups of variables that may be relevant: resources, factors that influence cognition, and a heightened awareness of unemployment from personal experiences, group membership, and economic conditions in the local context. I test the following hypotheses derived from this previous research:

Hypothesis 1. Unemployment misperceptions are greater among those with fewer resources.

Hypothesis 2. Unemployment misperceptions are greater among those with lower cognitive functioning.

Hypothesis 3. Unemployment misperceptions are greater among those with a heightened awareness of unemployment.

Third, to what extent are misperceptions of unemployment associated with changes in attitudes toward the economy and polity? Previous research finds little evidence for a connection between detailed economic knowledge and political attitudes and behavior (Holbrook and Garand 1996). Research on ethnic and racial attitudes, however, suggests that overestimates of relative group size are associated with negative attitudes toward out-groups (Alba, Rumbaut, and Marotz 2005; Semyonov et al. 2004). Research from the latter two studies also suggests that actual unemployment rates may influence people's economic and political attitudes. I test the following hypotheses:

Hypothesis 4. Unemployment misperceptions change people's economic and political attitudes – those who overestimate local unemployment should develop more negative perceptions of the economy and the polity.

Hypothesis 5. Voivodship-level unemployment rates have an independent effect on changes in people's economic and political attitudes.

Data and Measurement

Survey data come from the Polish Panel Study POLPAN. I include only those respondents who participated in both the 2003 and 2008 waves. The maximum sample size in the analyses presented below is 1,224.

Unemployment Perception Errors

Respondents were asked three questions in 2003 about the level of unemployment in their voivodship in the following order:

1. Do you think that in the past three years the level of unemployment in your voivodship increased very much, increased somewhat, remained at the same level, decreased somewhat, or decreased very much?

2. In your opinion, what is the rate of unemployment in your voivodship?

3. In your opinion, what was the rate of unemployment in your voivodship three years ago?

I use all three questions in my analyses, but I focus on perceived unemployment in 2003. I subtract the actual unemployment rate in 2003 from the perceived unemployment rate in 2003 to measure unemployment perception errors in 2003.

Changes in Economic and Political Attitudes

I examine the effect of unemployment misperceptions in 2003 on changes from 2003 to 2008 in people's attitudes toward: the intensity of conflicts between managers and supervisees and between owners and employees, the functioning of the economic system, the necessity of state-provided jobs, and the adequacy of democracy. These items are phrased as follows:

1. Are conflicts between managers and supervisees very weak, somewhat weak, somewhat strong, or very strong?

2. Are conflicts between owners and employees very weak, somewhat weak, somewhat strong, or very strong?

3. Do you think that the current economic system functions in Poland very well, quite well, neither well nor badly, quite badly, or very badly?

4. The state should provide jobs for everyone who wants to work. Do you strongly disagree, somewhat disagree, neither disagree nor agree, somewhat agree, or strongly agree?

5. Do you think that for people like you democracy is always the best form of government, there is no difference between the two, or sometimes a nondemocratic government is better?

A high score on all change variables indicates that a respondent's attitudes have become more negative over time – for example, believing that there are greater conflicts in 2008 compared to 2003 or that the functioning of the economy is worse in 2008 compared to 2003.

I include one additional outcome variable related to the government's ability to influence unemployment:

6. In your opinion, is the influence of the government on unemployment very high, somewhat high, somewhat low, very low, or practically none?

I do not convert this final item into a change score because the number of response categories varies from 2003 to 2008.

Exogenous Variables

Other variables fall into three categories: resources, factors that influence cognition, and a heightened awareness of unemployment. I include two indicators of resources: household income and internet use. I log household income to reduce skew. Internet use is a dummy variable (1 = yes). Two factors that influence cognition are intellectual flexibility and innumeracy. I measure intellectual flexibility with Raven's test scores, which are based on the respondents' evaluations of a series of 10 images. The final score represents the number of correct responses out of ten. I measure innumeracy with an ordinal variable that indicates the respondents' difficulty in processing numbers and dates; scores are based on the interviewers' assessments at the end of the interview. I have divided this variable into a set of dummy variables: decisively disagree (reference), rather disagree, rather agree, and decisively agree. Heightened awareness of unemployment may come from personal experiences, such as living with someone who is unemployed, membership in a group that is disproportionately affected by unemployment, and residence in a region with relatively high unemployment. Residing with someone who is unemployed (1 = yes) and sex (male = 1) are dummy variables. Age is measured in years. Regional unemployment is measured by the 2003 voivodship-level unemployment rate (GUS 2010b).

I included missing data dummy variables in exploratory models; none of these are statistically significant. Missing data in the final models are, therefore, recoded to mean for interval-ratio level variables and to the reference category for dummy variables.

Analytic Technique

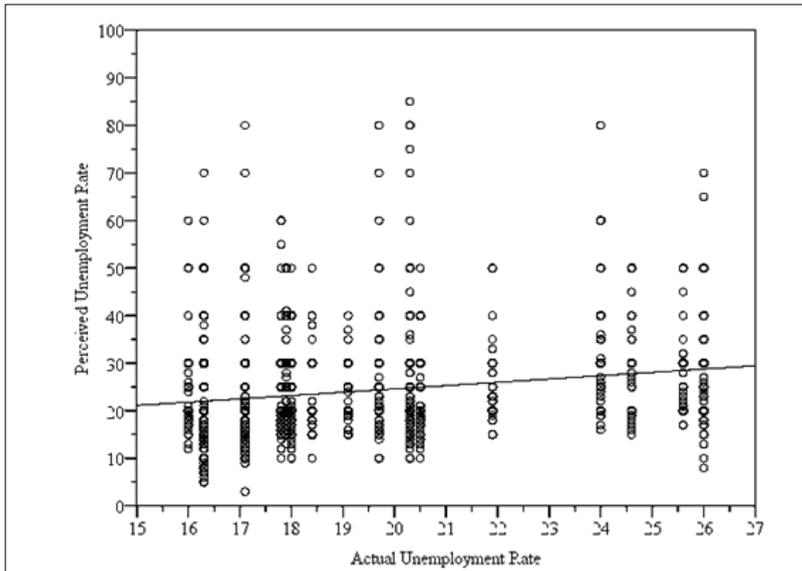
I use multilevel methods (HLM 6.0) because the survey respondents are not independent; they are nested within voivodships. Nonindependence can lead to correlated errors and unequal error variances, which affect standard errors and tests of statistical significance. Unemployment misperceptions are positively skewed. I performed exploratory analyses on both the original and transformed unemployment misperception variables. I present only the results for the original variable because there is no difference in the conclusions and because they are easier to interpret. Most analyses are from multilevel linear models. Results for the influence of the government on unemployment are from a multilevel generalized linear model, which controls for the ordinal nature of the dependent variable.

Results

How accurately do people perceive regional unemployment rates? Results suggest that 17.2 percent, 27.3 percent, and 55.1 percent of respondents provide estimates that are accurate to within 1 percent, 2 percent, and 5 percent of the true regional unemployment rates. Also, 63.5 percent of respondents overestimate unemployment.

I present a scatterplot in Figure 10.1, and below it, a table showing basic descriptive statistics to further examine the relationship between unemployment and perceived unemployment. These suggest that the relationship is positive, but weak (Pearson's correlation = 0.194). Although the median values for unemployment and perceived unemployment are close (19.4 percent and 20 percent, respectively), staggering levels of overestimation by some respondents lead to an average perception error of 4 percent. There is greater variation in perceived unemployment than unemployment – regional unemployment rates range from 16 percent to 26 percent, but perceive rates range from 3 percent to 85 percent. The interquartile range suggests that half the respondents believe that unemployment is between 18 percent and 30 percent while one-quarter each believes that it is below 18 percent or above 30 percent.

Also, most of the overestimates end in zeros and fives (e.g., 30, 35, 40, 45), which suggests that some people are simply guessing. In sum, there is considerable confusion over regional unemployment rates and, on average, people overestimate the level of unemployment in their region.



	(1)	(2)
Actual unemployment rate (1)	1.000	0.194*
Perceived unemployment rate (2)	0.194*	1.000
Median	19.4	20.0
Mean	20.2	24.2
Range	10.0	82.0
Minimum	16.0	3.0
Maximum	26.0	85.0
Interquartile range	5.7	12.0
Lower quartile	17.8	18.0
Upper quartile	23.5	30.0
Standard deviation	3.3	10.8
No.	16 ^a	1,155

Figure 10.1. Perceived Unemployment by Actual Unemployment, 2003:
Descriptive Statistics

* $p < 0.001$ (two-tailed).

^a I disaggregated the actual unemployment rates to the individual level to construct the scatterplot and to compute the bivariate correlation. Each vertical cluster of cases in the scatterplot represents a voivodship. The descriptive statistics for the actual unemployment rate are based on the voivodship-level data.

I present basic descriptive statistics disaggregated by region in Table 10.1. These results suggest that mis-estimation and overestimation are common in all regions, although they are worse in some regions than others. While more than 50 percent of respondents in Kujawsko-Pomorskie and Opolskie provide estimates that are within 2 percent of the true rates, less than 10 percent of respondents provide such accurate estimates in Zachodnio-Pomorskie and Lubuskie. In Śląskie, 38.1 percent of the 147 respondents overestimate the unemployment rate (which is 20.3 percent), while 81.0 percent, 85.1 percent, and 93.4 percent overestimate unemployment in Łódzkie, Podlaskie, and Lubelskie, respectively. Although there are exceptions to this pattern, overestimation appears to occur less frequently in regions with higher unemployment (seen by comparing the actual unemployment rates in the first column of Table 10.1 to the second and third columns of Table 10.1: percentage that overestimate unemployment and the weighted mean unemployment perception errors). One-way analysis of variance results from HLM (not shown), however, suggest that most of the variability in perception errors is *within* regions. The intraclass correlation is 0.013, which suggests that only 1.3 percent of the variance in perception errors is between regions (this estimate should be taken lightly, however, because between-group variability is underestimated when there is a small number of groups).

People clearly do not possess accurate information on current regional unemployment rates in 2003. Are their perceptions of the change in the unemployment rate from 2000 to 2003 any more accurate? The scatterplot in Figure 10.2 suggests that there is no relationship between changes in unemployment and people's perceptions of change (Pearson's correlation = -0.012). In addition to the weak correlation and flat bivariate regression slope, notice that quite a few respondents perceive a drop in unemployment while unemployment has increased in all voivodships.

If people do not possess accurate information on the unemployment rates in 2000 and 2003, do they at least accurately perceive general trends in regional unemployment? To answer this question, I compare respondents' assessments of whether unemployment has decreased very much, decreased somewhat, remained the same, increased somewhat, or increased very much to: (a) the specific amount by which unemployment has actually changed from 2000 to 2003 and (b) the specific amount by which they believe unemployment has changed from 2000 to 2003.

Table 10.1. Unemployment Perception Errors, 2003: Descriptive Statistics by Voivodship

Voivodship	Actual unem- ployment rate (2003)		Percent who are accurate to within 2 percent		Unemployment perception errors									
	Percent who are accurate to within 2 percent	Percent who over estimate unemploy- ment	Mean	Weighted mean ^a	Median	Range	Min.	Max.	IQR	Lower quartile	Upper quartile	St. Dev.	No.	
Dolnośląskie	26.0	10.6	42.4	1.3	3.1	-1.5	62	44.0	10.0	-6.0	4.0	12.0	66	
Zachodnio-Pomorskie	25.6	7.3	48.8	1.9	3.7	-0.6	33	24.4	10.0	-5.6	4.4	8.9	41	
Pomorskie	20.5	32.7	41.8	2.3	3.7	-0.5	40	29.5	12.0	-2.5	9.5	7.8	55	
Kujawsko-Pomorskie	21.9	52.6	52.6	2.8	4.1	0.1	35	28.1	8.5	-1.9	6.6	8.1	38	
Świętokrzyskie	19.1	46.2	76.9	4.0	4.4	0.9	25	20.9	10.0	0.9	10.9	6.0	52	
Śląskie	20.3	34.0	38.1	4.2	4.4	-0.3	75	64.7	7.0	-2.3	4.7	13.2	147	
Lubuskie	24.6	8.8	61.8	4.4	4.6	2.9	35	25.4	15.5	-4.6	10.9	10.8	34	
Podkarpackie	17.8	32.5	76.2	4.9	4.8	2.2	50	42.2	7.0	0.2	7.2	9.5	80	
Małopolskie	18.0	41.0	68.7	5.0	4.8	2.0	40	32.0	12.0	0.0	12.0	7.9	83	
Opolskie	18.4	50.0	62.5	5.0	4.9	1.6	40	31.6	12.8	-1.2	11.6	9.2	32	
Wielkopolskie	17.1	21.1	66.7	5.0	4.9	2.9	77	62.9	8.5	-2.1	6.4	11.5	114	
Mazowieckie	16.3	22.9	62.1	5.1	4.9	3.7	65	53.7	16.0	-2.3	13.7	11.6	153	
Łódzkie	19.7	30.4	81.0	6.2	5.5	5.3	70	60.3	10.0	0.3	10.3	11.7	79	
Warmińsko-Mazurskie	24.0	17.2	74.1	6.9	5.7	6.0	64	56.0	12.3	-1.3	11.0	12.1	58	
Lubelskie	16.0	17.1	93.4	7.2	6.0	4.0	48	44.0	5.0	4.0	9.0	7.9	76	
Podlaskie	17.9	17.0	85.1	8.1	6.0	7.1	37	49.9	10.0	2.1	12.1	9.2	47	

^a The weighted means are empirical Bayes estimates from a one-way analysis of variance model in HLM, which adjust for differences in voivodship-specific sample sizes listed above. I rank the voivodships by the weighted means.

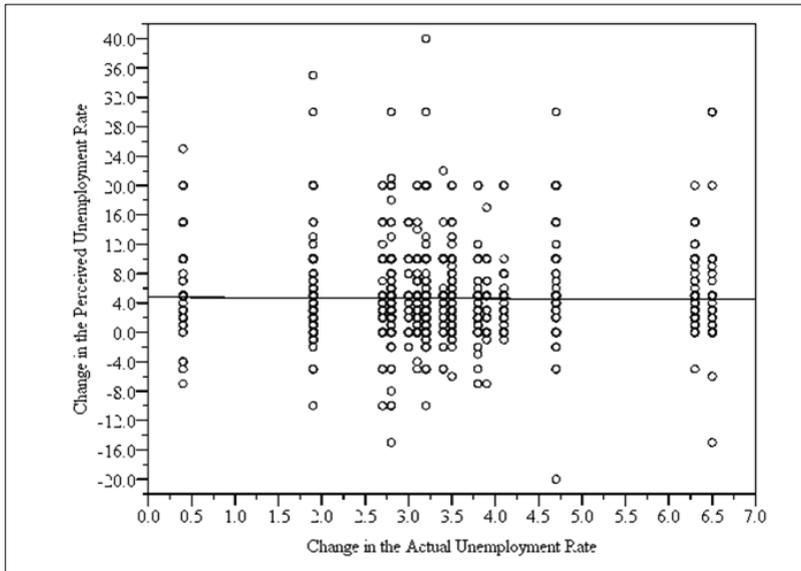


Figure 10.2. Perceived Change in Unemployment by Actual Change in Unemployment, 2000–2003

I present these results in Table 10.2. Notice that there is no relationship between the ordinal perceived change variable and the actual change in unemployment (see Panel A) – the F -statistic is nonsignificant and the mean actual change in unemployment is roughly the same for all respondents. Although people seem to be largely unaware of regional unemployment rates and general trends in them, they at least provide estimates that are consistent with their own prior beliefs (see Panel B). Except for the six respondents who believe that unemployment has decreased a great deal, respondents were generally consistent in their responses across the three questions on unemployment – that is, those who selected “decreased somewhat” provided specific unemployment estimates that match this earlier statement and the mean perceived change becomes positive and increases across the categories of the ordinal variable.

Table 10.2. Perceived Change in Unemployment by Actual Change in Unemployment, 2000-2003: Analysis of Variance Models

Panel A			
The level of unemployment in the past three years has...	Mean actual change, 2000–2003	No.	Std. dev.
Decreased very much	2.6	6	1.4
Somewhat decreased	3.0	48	1.2
Remained at the same level	3.5	189	1.3
Somewhat increased	3.4	484	1.4
Increased very much	3.3	433	1.4
Don't know	3.5	64	1.5
Total	3.4	1,224	1.4
$F = 2.065$ ($df = 5, 1,218$)			
Eta-squared = 0.008			

Panel B			
The level of unemployment in the past three years has...	Mean perceived change, 2000–2003	No.	Std. dev.
Decreased very much	9.8	6	8.8
Somewhat decreased	-1.3	47	6.6
Remained at the same level	1.5	182	3.6
Somewhat increased	4.1	451	3.9
Increased very much	7.2	410	6.2
Don't know	4.8	43	6.1
Total	4.6	1,139	5.6
$F = 51.340$ ($df = 5, 1,133$)			
Eta-squared = 0.185			

What are the sources of people's unemployment perception errors? Misperception of regional unemployment rates are related to seven individual-level variables (see Table 10.3).

Table 10.3. Unemployment Perception Errors: The Best Multilevel Model

	Slope	SE	p	95% CI Lower	95% CI Upper
Intercept	4.960	0.672	0.000	3.518	6.402
Resources					
Household income (logged)	-1.520	0.521	0.004	-2.541	-0.500
Use the internet (1 = yes)	-2.198	0.804	0.007	-3.773	-0.623
Cognition					
Raven's test score	-0.536	0.133	0.000	-0.797	-0.275
Difficulty processing dates and numbers					
Decisively disagree (reference)					
Rather disagree (1 = yes)	0.986	0.697	0.157	-0.379	2.351
Rather agree (1 = yes)	0.413	0.963	0.668	-1.475	2.301
Decisively agree (1 = yes)	5.092	1.731	0.004	1.699	8.485
Heightened awareness					
Unemployed person in household (1 = yes)	1.578	0.748	0.035	0.111	3.045
Age (in years)	-0.117	0.022	0.000	-0.159	-0.074
Sex (male = 1)	-1.637	0.600	0.007	-2.814	-0.461
Actual unemployment rate (2003)	-0.344	0.113	0.009	-0.586	-0.101
No. (individuals)	1,155				
No. (voivodships)	16				
Percent individual-level variance explained	8.1				
Percent voivodship-level variance explained	72.1				
Residual individual-level variance	102.83245				
Residual voivodship-level variance	0.40398				
c ²	18.8				
df	14				
p	0.173				

Note: The following variables are centered around their grand mean: household income, Raven's test score, age, and actual unemployment rate. All other variables are uncentered.

The intercept, 4.96 percent, is the expected prediction error for an individual with zeros on all dummy variables and average scores on all interval-ratio variables (e.g., a woman of average age). Results for the individual-level variables support all three hypotheses. First, prediction errors are smaller among those with higher household incomes and among those who use the internet. Those who use the internet make prediction errors that are 2.2 percent smaller, on average, than those who do not. Second, Raven's test scores and innumeracy are related to unemployment misperceptions. With each additional correct answer to Raven's test, prediction errors decrease by about half of a percentage point. Misperception errors are also larger for those respondents who have difficulty processing numbers and dates – they are more than 5 percent larger for those in the “decisively agree” category. Third, misperceptions are related to factors that may increase awareness of unemployment. Respondents who live in the same household with an individual who is unemployed overestimate the regional unemployment rate by 1.6 percent, on average. Misperception errors are negatively related to age – that is, each additional year of age reduces the error by 0.117%. Men make smaller prediction errors than women do; men's errors are 1.6 percent smaller, on average. Taken together, these individual-level variables explain about 8.1 percent of the variance in people's misperceptions.¹

Preliminary results from Figure 10.1 and Table 10.1 suggested that voivodship-level characteristics might also explain people's misperceptions of unemployment. There was some indication that perception errors were smaller in regions with higher rates of unemployment. Results in Table 10.3 support this idea and contradict H3. Each one-percentage-point increase in unemployment reduces the average perception error by about 0.3 percentage points. Taken together, the individual and voivodship-level variables explain nearly all the regional variation in perception errors. Only 0.4 percent of the residual or unexplained variation is between regions [$0.40398 / (0.40398 + 102.83245)$]. I depict the relationship between unemployment and unemployment perception errors in Figure 10.3.²

¹ Included other variables in exploratory models, none of which are significant: marital status, education, city size, the number of friends, the number of books, having cable television, labor force status (including being unemployed), fear of job loss, self-assessments of mental and physical health, distress, and authoritarian-conservatism.

² I included other voivodship-level variables in exploratory models: the change in unemployment from 2000 to 2003; the ratio of male to female unemployment; age-specific unemployment rates (i.e.; for those ages twenty-five to thirty-four, thirty-five

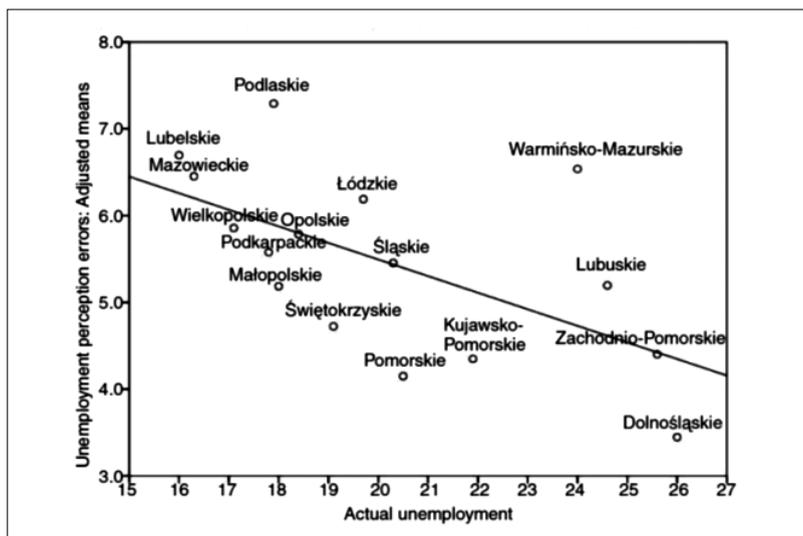


Figure 10.3. The Relationship between Unemployment Perception Errors and Actual Unemployment

Note: The relationship is net of the individual-level variables listed in Table 10.3.

What are the consequences of people's misperceptions of regional unemployment? Can these misperceptions change people's attitudes toward the economy and polity? Table 10.4 includes the results from six multilevel models that contain both the unemployment rate and the perception error as independent variables. The coefficients for these two variables are net of controls including age, sex, education, household income, labor force status, and lagged versions of the dependent variables (i.e., from 2003). Contrary to H5, regional unemployment rates are not associated with any of the outcomes. The unemployment perception error, however, is associated with four outcomes and the direction of the coefficients support H4. Those who overestimate regional unemployment become more negative over time – that is, they increasingly perceive conflicts between owners

to forty-four, forty-five to fifty-four, and fifty-five to fifty-nine for women and fifty-five to sixty-four for men); the duration of unemployment (i.e., the percentage unemployed for less than three months, three to six months, six to twelve months, and twelve or more months); and variability in unemployment rates across powiats (districts) within voivodships. These variables are not related to unemployment perception errors.

and employees, they grow more critical of the functioning of the economic system, they increasingly favor state-provided jobs, and they are more pessimistic about the government's ability to influence unemployment. In sum, only misperceptions about regional unemployment change people's views of social conflicts, the economy, and the polity.

Table 10.4. The Consequences of Unemployment and Unemployment Misperceptions

Dependent variables	Actual unemployment rate (2003)				Unemployment perception error (2003)		
	No.	Slope	SE	p	Slope	SE	p
1. Change from 2003 to 2008 in perceived conflict between managers and supervisees	1,053	-0.005	0.011	0.632	0.003	0.002	0.172
2. Change from 2003 to 2008 in perceived conflict between owners and employees	1,040	-0.000	0.009	0.973	0.005	0.002	0.044
3. Change from 2003 to 2008 in the functioning of the economic system	1,113	-0.015	0.015	0.331	0.007	0.003	0.016
4. Change from 2003 to 2008 in the extent to which the government should provide jobs	1,144	-0.011	0.012	0.355	0.007	0.003	0.008
5. Change from 2003 to 2008 in attitudes toward democracy	1,005	-0.020	0.011	0.087	0.003	0.002	0.165
6. Government's impact on unemployment in 2008	1,086	-0.005	0.027	0.854	-0.012	0.006	0.033

Notes: Results are from six multilevel models. The dependent variables are listed in the first column; high scores reflect "negative" attitudes (e.g., the functioning of the economic system is worse in 2008 compared to 2003). In addition to the actual unemployment rate and the unemployment perception error, I control for the 2003 score on the dependent variable, age, sex, education, household income, and labor force status.

Discussion and Conclusions

Results from these analyses suggest several general conclusions. First, not only do many people lack specific knowledge of regional unemployment rates in 2000, 2003, and the change from 2000 to 2003, but they also do not accurately perceive general trends in regional unemployment from 2000 to 2003 (i.e., that rates have increased). Overestimation is both

the most common and, in absolute terms, the “larger” mistake (probably because actual unemployment rates are closer to 0 than to 100, which limits the absolute size of underestimates as compared to overestimates).

Second, in support of H1 to H3, individual-level characteristics related to resources, cognition, and a heightened awareness of unemployment are associated with unemployment misperceptions. Those who are more likely to overestimate the unemployment rate in their region are those with lower household income and those who do not use the internet; those who are less intellectually flexible and who have difficulty processing dates and numbers; and women, younger respondents, and those who live with someone who is unemployed. Regional economic conditions also influence people’s perceptions. On average, perception errors are smaller in regions with higher unemployment. This result contradicts H3.

Third, people’s misperceptions of regional unemployment rates change their economic and political attitudes, but the actual rates do not. In support of H4, those who overestimate regional unemployment in 2003 become more pessimistic from 2003 to 2008 with respect to the intensity of social conflicts between owners and employees, the functioning of the economy, and, perhaps most alarmingly, the adequacy of democracy. They are also more likely to support state-funded employment in 2008. In opposition to H5, regional unemployment rates are unrelated to all outcomes. They have, at best, small indirect effects on attitude change through perceived unemployment.

In addition to these three general conclusions, the results suggest two implications for future multilevel research in social psychology. First, the regions that serve as political and administrative divisions for states and sampling areas for survey researchers may not be relevant to survey respondents. Unfortunately, it is not possible to determine with certainty if people’s estimates of the national unemployment rate or the unemployment rate in their local labor market are better or worse than those for their voivodship. People’s overestimates, however, are higher in regions with lower unemployment and lower in regions with higher unemployment. This pattern is consistent with the idea that people’s perceptions of unemployment are shaped by national rather than local economic conditions.

The apparent irrelevance of voivodship-level economic conditions in this study may stem partly from a focus on national economic news in the media, but also from recent changes in the definition of the voivodships themselves. Territorial divisions in Poland were reorganized in 1999.

As part of this reorganization, the number of voivodships was reduced from forty-nine to sixteen. The previous categorization system consisting of forty-nine voivodships had been in place from 1975. Results from this study should give pause to researchers who do not find relationships between macro- and individual-level data. Nonsignificant contextual variables may simply reflect the irrelevance of administrative divisions in the minds of the public. Researchers should work to identify which contexts are relevant to people (e.g., counties, and municipalities) and use caution before they declare that any context does not matter – especially when they are lacking data on perceptions of context.

Second, a comparison of the results from this study to similar research on perceived group size suggests that the relevant contextual unit and the processes that generate misperceptions may vary depending on the “thing” that is being perceived. In studies of perceived group size, respondents provide better estimates for the local community than for the country as a whole. Although speculative, the pattern of results from this study suggests that people may be better able to predict national unemployment rates. Moreover, those who live in areas with larger minority populations are prone to overestimating the size of minority populations. By contrast, this study demonstrates that the overestimation of unemployment occurs in regions with lower unemployment rates. Researchers should, therefore, work to identify the most relevant social context for whatever it is that they are studying and to uncover the unique processes that account for misperceptions of it.

CHAPTER 11.

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PERCEIVED DETERMINANTS OF SUCCESS: FACTORS AND DYNAMICS OF CHANGE*

Introduction

The assessment of perceived factors that influence success in life offers researchers rich information about society for a number of reasons. First, they mirror the main features of the political system and the ideology associated with it. They are very sensitive to the economy and its fluctuations, such as during the economic transition or during economic crises. The subjective evaluation of the path to success can also contribute to the debate on personal values and decisions by revealing the active or passive roles that actors take in order to succeed. It reflects the sense of agency and control over one's own position, or disaffection and lack of hope, to influence one's own situation and decisions in life. It relates not only to one's choice of career, but also to decisions about raising children, educational paths, or even about free-time management. In general terms, the determinants that respondents think influence success reveal opinions reflecting broader categories of attitudes, such as those towards meritocracy and ascription.

The main aim of this study is to analyze how subjective determinants of success are perceived, including implicit attitudes towards the idea of meritocracy, and the extent to which they are accepted by individuals belonging to different social groups. We are also interested in the dynamics

* In this chapter we use our previous work (Baczko-Dombi and Wyszulek 2015); cf. <http://polish-sociological-review.eu/index.php/psr31912015/>

of change that have occurred in Poland since the last years preceding the collapse of the state socialist system, through the transformation period, and up to the present. Our analyses are based on data from the Polish Panel Survey POLPAN 1988–2013, and are a continuation of the theoretical and empirical debate on the causal factors of success and their perception.¹ In our research we also pay particular attention to the results from the most recent, previously unanalyzed data from the years 2008 and 2013.

Public Opinion on Success

Success, broadly understood as the realization of an aim or activity directed towards its fulfillment, is a concept that is widely used in public as well as in academic discourse, despite the diversity of meanings that the term conceals. The framing of meanings of success varies greatly, being understood by some as the positive outcome of an undertaking or highly prized achievement, or by others as the experience of happiness and satisfaction from life (Firkowska-Mankiewicz 1997; Wolny-Peirs 2005; Hildebrandt-Wypych 2010). A major contribution to defining and clarifying the areas in which the concept of success is examined in Poland comes from qualitative studies by Firkowska-Mankiewicz (1997), in which she proposed a categorization of definitions of success. Firkowska-Mankiewicz distinguished between: (1) materialistic (measured by income or possessions); (2) stratification-prestigious (defined by level of education or income); (3) emotional-affiliate (such as subjective satisfaction from work and/or private life); and (4) self-realizational (connected with the feeling of fulfillment). Leszkowicz-Baczyński (2007) combined these categories into three broader dimensions: economic, social, and cultural.² Regardless of the differences and imprecise definitions of success for which we may strive, perception plays an important role in the path to achieving success (Ślomiczyski 2007; Gładys-Jakóbk 2005; Byłok 2005).

¹ See in: Baczek-Dombi and Wysmulek 2014; Janicka and Ślomiczyski 2007.

² An important qualitative study on the perception of success in Poland (especially success understood as the carrier growth and economic prosperity) was conducted by Grzeszczyk (2003), where she compared the Polish understanding of success with the USA, underlining the ambivalent meaning of individual success in the perception of Poles, which is loaded with ethical judgments.

The path to success, although seemingly a highly subjective phenomenon, has an undeniable social background. In social research, the diversity of opinions about the main determinants of success is often understood as a kind of litmus test of changes occurring in social structure (Janicka and Slomczynski 2007; Slomczynski and Janicka 2005). The subjective assessment of determinants and mechanisms that may influence individuals' success depends on the broader social, economic and political situation.

Success and Meritocracy

Previous research has shown that responses to the validity of individual determinants of success can be reduced to two main dimensions: “meritocratic” (meaning individual talent supported by good education and hard work), and “family and friends” (meaning social origin and social network) (Janicka and Slomczynski 2007). These dimensions, determined using factor analysis, are also observed by other researchers (Skarżyńska and Chmielewski 1998; Kozłowski and Matczak 2013).³

The idea of rewarding individuals for their merits, talents, and hard work, which underlies basic meritocratic thinking, has existed for a long time. A meritocratic system, in which rewards are granted according to merits (according to the equation: *merit* = *talent* + *effort*), is often considered to be a fair system and thus a panacea to the various ills of society (Wnuk-Lipiński 2005; Sztompka 2003; Giddens 2004). It also has a rather positive connotation in contemporary public and political discourse. However, meritocracy as an idea as well as its foreseeable consequences has often been criticized (see Young 1958; McNamee and Miller 2004; Woźniak 2012). Young (1958), the founder of the concept, underlined the negative implications that meritocracy may have for society, such as the alienation of upper social classes, while Herrnstein and Murray (1994) alerted that together with the separation of the so-called “cognitive elite”, there will be a growing frustration and humiliation among those with “average” or “lower-than-average” intelligence. In response to both critics and supporters of the idea of meritocracy, Domański (2007: 29) underlines that although this notion of meritocracy offers equal opportunities,

³ In some cases, these dimensions are labeled differently, but their composition is functionally or actually equivalent.

this is only a “semblance of equality”, and thus does not eliminate hierarchical social structure or the influence of ascriptive factors.

The concept of meritocracy itself is based on the liberal theory of equal opportunity, in which the aim of the state is to set the procedures that enable fair competition. Thus, this vision of social justice accepts unequal outcomes as a result of lesser effort or merit. By contrast, theoreticians of socialism perceive social justice in a completely different manner. They underline that the fight against social inequality is possible only when the state provides an equitable distribution of goods, regardless of merit (Walzer 2007; Foltyniewicz, 2012).

Taking into consideration the above mentioned differences in approaches to social justice, the case of Poland as a country that underwent a regime change and a change of dominating ideology is particularly interesting. Research on the issue of meritocratic development in Poland has shown increasing interest (e.g. Domański 2011; Kozłowski and Matczak 2013; Cichomski et al. 2013). For instance, Kozłowski and Matczak (2013: 163), summarizing their research on the opinions of parents of primary school children in Poland on the path to success, have written that “respondents reveal the hyper-individualistic stance, characteristic features of which are: orientation of achievements, high aspirations and self-confidence”. However, they underline that their sample is not representative and is dominated by parents with higher education. Nevertheless, these results confirm a number of similar studies made in Poland. According to *Diagnoza Społeczna* (Social Diagnosis, 2009), a majority of Poles believe that success can be achieved through one’s own efforts and abilities. This observation is also supported by the results of the Polish General Social Survey (*Polski Generalny Sondaż Społeczny*), which reveals that in 1999, opinions on the importance of education significantly increased in comparison to levels in 1992, and the importance of origins from rich families decreased (see also Cichomski et al. 2013).

In the following sections of this chapter we will present what can be learned about the determinants of success from the data gathered in the Polish Panel Survey (POLPAN) 1988–2013.⁴ These data offer a unique

⁴ In the panel survey POLPAN the question on main determinants of success appears in each wave of the study – from 1988 until 2013. Respondents are asked: *To what extent – in your opinion – are certain things important for achieving success in life? For achieving success in life [...] is (1) absolutely necessary (2) very important (3) somewhat important (4) somewhat not important (5) not at all important.*

tool to develop our knowledge of the subject for two main reasons. Firstly, the data allow us to track the subjective assessment of the main determinants of success over a broad time frame, from 1988 to 2013, which provides an opportunity to compare attitudes towards success from just before regime transformation and every five years thereafter. Secondly, due to its panel character, the data allow the possibility to conduct deeper analyses of the dynamics of respondents' views across changing political and economic contexts.

Path to Success – Duality of Dynamics

Strong dependencies can be observed in the way respondents evaluate certain determinants of success. It can be said that respondents think about criteria for achieving success categorically through bundles of determinants, and that strategies for answering questions form distinct patterns. Following the results from Janicka and Slomczynski (2007), we reduce the determinants of success to two groups, corresponding with two dimensions of thinking about achieving success in life – that is, two sets of features and actions which, as per Poles' opinions, determine individual prosperity:⁵

1. „Meritocratic” dimension:

This dimension depicts the strategy of achieving success based on the *internal resources* of an individual. In this case, success is connected with the effort put in education and hard work, supported by innate abilities, talents, and ambition.

Respondent is asked one by one about the importance of such determinants as: ambition, knowing the right people, hard work, political influence, coming from a rich family, good education, good luck, innate abilities and talents.

⁵Factor analysis, on which we base this part of the chapter, was conducted separately for two sets of characteristics with the use of principal components method without factors rotation, so as not to force “artificially” the separability of them and to enable comparisons between waves. The analysis and results for data before 2003, together with the detailed methodological description can be found in Janicka and Slomczynski (2007). In this chapter we continue the analysis for 2008–2013 data.

2. „Family and friends” dimension:

This dimension corresponds with the strategy of achieving success based on *external resources*, associated with respondents’ social networks (family, friends, influential acquaintances), and supported by “good luck” (chance happenstance). The possibility to be successful in life is here less dependent on the individual than on circumstance, thus success is beyond personal control (determined by origin, connections, and destiny).

In responses to the questions evaluating the main determinants of success in POLPAN, classification into these two dimensions can be observed in the structure of the data from the very beginning of the panel (see Table 11.1).

Table 11.1. The Results of a Factor Analysis of Determinants that, in Respondents’ Opinions, Influence Success in Life

	Determinant	Factor loadings					
		1988	1993	1998	2003	2008	2013
Meritocratic dimension	Ambition	0.398	0.327	0.365	0.344	0.646	0.642
	Hard work	0.289	0.325	0.328	0.205	0.516	0.623
	Good education	0.555	0.560	0.575	0.592	0.717	0.627
	Innate abilities and talents	0.543	0.549	0.547	0.556	0.688	0.692
	<i>Eigenvalue</i>	1.604	1.676	1.560	1.551	1.672	1.670
	<i>Proportion of explained variance</i>	0.401	0.419	0.390	0.388	0.418	0.418
Family and friends dimension	Knowing the right people	0.532	0.387	0.474	0.479	0.686	0.733
	Political influence	0.631	0.669	0.586	0.607	0.705	0.748
	Coming from a rich family	0.494	0.593	0.551	0.560	0.709	0.752
	Luck	0.176	0.224	0.292	0.344	0.613	0.467
	<i>Eigenvalue</i>	1.657	1.657	1.688	1.684	1.846	1.881
	<i>Proportion of explained variance</i>	0.414	0.419	0.422	0.421	0.461	0.470

Source: POLPAN data, 1988–2013. Analyses on the base of whole data sets for each wave of the study; coefficients for 1988–2003 according to Janicka and Slomczynski 2007.

Although in subsequent years the “meritocracy” and “family and friends” dimensions were based on the same set of variables, there are interesting fluctuations in the degree to which the dimensions are shaped by individual factors. We aim to accompany the changing proportional impact of single determinants of success within each dimension with the

analysis of the changing support for individual determinants, depicted in responses from subsequent years of the panel. There is a need for such two level analyses in situations where some determinants may be perceived as very important to respondents while lacking strong component scores for a given dimension. Similarly, some determinants may generally be considered less important by respondents, but are key constructs of dimensions. Thus, we can speak about dual dynamics – those of the structure of dimensions and those of respondent opinions about certain determinants. The latter are presented in Table 11.2.

Table 11.2. “Absolutely Necessary” and “Very Important” Determinants of Success

Determinants of success	1988	1993	1998	2003	2008	2013
	(%)					
Ambition	70	70	69	74	74	77
Luck	66	66	69	73	76	73
Innate abilities and talents	72	77	74	76	79	73
Good education	61	71	80	84	84	73
Hard work	38	49	45	49	53	71
Knowing the right people	53	58	60	69	65	67
Coming from a rich family	35	34	32	36	34	39
Political influence	26	28	26	30	27	26

Note: The light grey color shows the determinants of success that were chosen as the most important in a given year (two top values); the dark grey color highlights the determinants chosen least often (two bottom values).

Source: POLPAN data, 1988–2013. Analyses on the base of whole data sets for each wave of the study; coefficients for 1988–2003 according to Janicka and Slomczynski 2007.

At present, the meritocratic dimension of success consists primarily of talent, ambition, and hard work. For comparison, in 1988 the strategy based on these internal resources included primarily education and talent. By 2013 the meritocratic factors ambition and hard work gained importance in relation to previous years.

The promotion of hard work deserves special attention. This determinant of success saw the largest change in importance over time. The revolution in attitudes towards the importance of hard work in achieving success can be traced when comparing the distribution of answers to

the question of its role in life of respondents in each wave of the panel survey. Compared to 1988, proportion of respondents that considered this determinant to be very important increased by 33 percentage points by 2013 (from 38% to 71%). It should be underlined that the biggest change has occurred during the last five year period, when the importance of this determinant increased by 18 percentage points. This provides a clear indication of the changes that have occurred in Polish society, showing that Poles began to believe in the causative power of their own actions and in the importance of an active approach to achieving success.

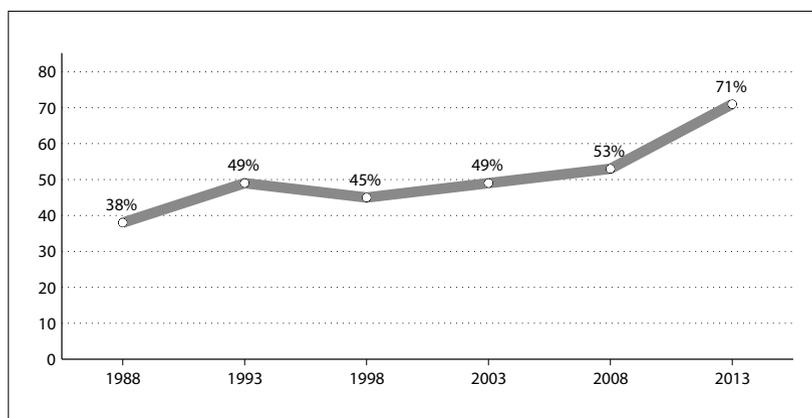


Figure 11.1. The Importance of the “Hard Work” Determinant in 1988–2013

Note: The graph shows the added percentage of answers “absolutely necessary” and “very important.”

Source: POLPAN data, 1988–2013. Analyses on the base of whole data sets for each wave of the study. Results for 1988–2003 according to Janicka and Slomczynski 2007.

Similarly, changes have occurred in opinions about the role of ambition in achieving success. On the level of performance of this indicator in the meritocratic dimension (see Table 11.1), we can see that after some fluctuations in 1988 and 2003 (with lowest factor loading being 0.33 in 1993 and highest -0.4 in 1988) there can be observed remarkable (but not so spectacular as in the case of the “hard work”) growth to 0.65 and 0.64 by 2008 and 2013, respectively.

The dynamics of the “good education” determinant are also worth of special attention across the last five years of POLPAN. As we can see in

the Table 11.1, the role of education in the composition of the meritocratic dimension was already very strong in 1988. Its impact has been constantly growing through 2008, but it decreased by the last panel wave in 2013. This finding is robust when we analyze the distribution of opinions on the importance of good education independently, not only as a component of the meritocratic dimension. In 1988, the first POLPAN wave prior to Polish democratization, 61% of respondents expressed the opinion that a good education is important in order to achieve success in life. Since that time, there is a continuous increase in the role of this determinant – initially, during the first years after the transformation (1993 and 1998 waves), the importance increased by about 9 percentage points, and in successive waves (2003 and 2008), this position was shared by 84% of respondents.

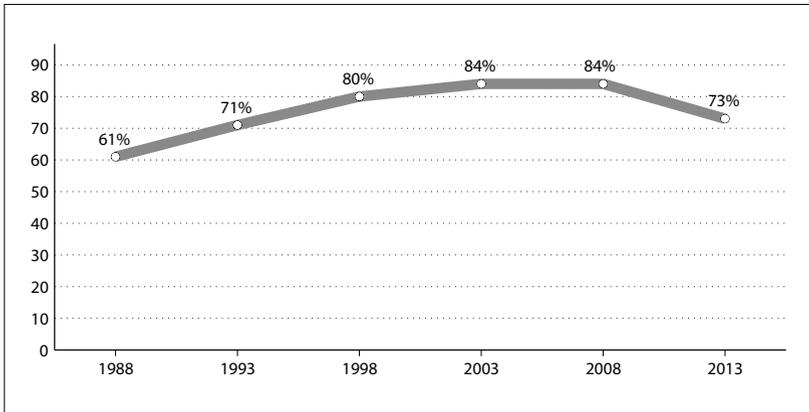


Figure 11.2. The Importance of the “Good Education” Determinant in 1988–2013

Note: The graph shows the added percentage of answers “absolutely necessary” and “very important.”

Source: POLPAN data, 1988–2013. Analyses on the base of whole data sets for each wave of the study. Results for 1988–2003 according to Janicka and Slomczynski 2007.

The data from 2013 signals a change in attitudes towards education: for the first time in 25 years, the percentage of Poles thinking that a good education is important dropped to 73%. The change might have been influenced, among other things, by disappointment from the unfulfilled expectations of the role of higher education, especially visible during times

of crisis. This disappointment was revealed in the results of research on the evaluation of higher education in Poland (CBOS 2013). The educational boom, the proliferation of higher education among today's cohorts of twenty-, thirty-, and forty-year olds, and their painful experience of competing in the labor market probably played a significant role in the gradual depreciation of this factor.

The family and friends dimension also evolved with respect to the impacts of its components. In 1988 the strongest component in this dimension was "knowing the right people" and "political influence" (see Table 11.1). At that time, having "good luck" had the weakest impact. It is worth mentioning, however, that on the factor level (independent of dimensions), the percentage of support for "good luck" as being important has been relatively strong in all waves of POLPAN (fluctuating between 66% and 73%).

In 2013, as compared to previous years, the component strength for the family and friends dimension increased. Particular attention may be paid to the role of the "good luck" determinant. An increase in belief in the driving force of good luck occurred in 2003, with only minor fluctuations until 2013. Janicka and Slomczynski (2007: 251) point out that this tendency is "likely to be the effect of an increasing sense of the unpredictability of the fortunes of life, which is particularly clear around the turn of the century".

The strongest components of the family and friends dimension, "coming from a rich family" and "political influence", were rarely chosen as the most important things for success in comparison to other factors. Since the beginning of panel research until the most recent wave, these determinants "lead the bottom" of the list of important factors, with little fluctuation over time.

Surprisingly, over the last waves we can also observe a general increase in the role of "knowing the right people". Being one of the typical measurements of social capital, the evaluation of this factor underwent fluctuations vis-à-vis historical changes. In 1988, 11% of respondents considered this factor unimportant, while 53% of respondents believed that knowing the right people was very important in order to succeed. The importance of this determinant has increased in subsequent years (up to 69% in 2003), although the data from 2008 and 2013 suggest a relative stabilization of opinion about this factor. The stability of this opinion of Poles is counterintuitive and very interesting, because in public debate on the influence of "knowing the right people" the belief exists that this

factor was essential before transformation, but has been gradually losing its importance since that time. Different picture can be seen when panel respondents from POLPAN are analyzed.

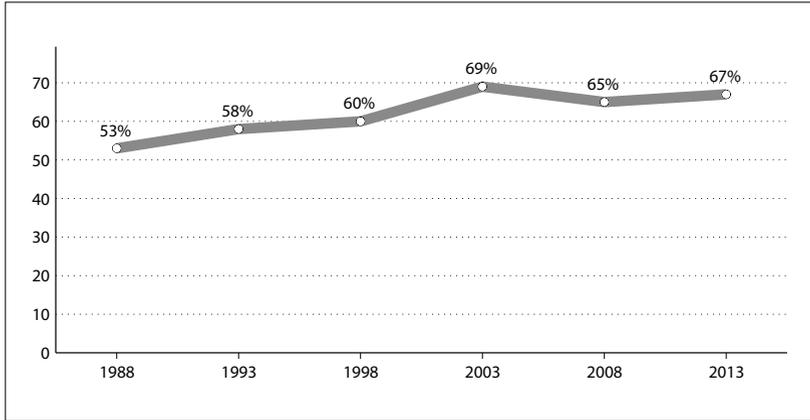


Figure 11.3. The Importance of the “Knowing the Right People” Determinant in 1988–2013

Note: The graph shows the added percentage of answers “absolutely necessary” and “very important.”

Source: POLPAN data, 1988–2013. Analyses on the base of whole data sets for each wave of the study. Results for 1988–2003 according to Janicka and Slomczynski 2007.

Diversification of Success Strategies

On the basis of results from factor analysis, we have prepared two scales for the “meritocratic” and “family and friends” dimensions of opinion about the determinants that influence success in life, based on the two most recent waves of POLPAN (2008 and 2013).⁶ In this section, we investigate how support for these scales is differentiated and influenced by socio-demographic characteristics and social class. It seems that, as before, we can speak in terms of dual dynamics. On the one hand, we

⁶ Scales were constructed analogically to scales for 1988–2003 waves of POLPAN study by Janicka and Slomczynski (2007). Scales are normalized, with mean 0 and standard deviation 1.

still have to deal with changes in the role of individual determinants, which could be a result of the transformation of social realities. On the other hand, changes in support for the “meritocratic” and “family and friends” dimensions may be reflections of more general changes in social structure.

Table 11.3. Regression of “Meritocratic” and “Family and Friends” Dimensions of Opinions on Determinants Influencing Success in Life by Demographic and Stratification Variables, 2013

	B	St. error	β	Significance
Meritocratic dimension				
(intercept)	-0.440	0.174		0.012
sex (female=0, male=1)	0.034	0.057	0.017	0.551
age (in years)	-0.001	0.002	-0.010	0.732
education	0.043	0.012	0.141	0.001
occupation (SRQ)	0.000	0.000	-0.043	0.264
income	0.000	0.000	0.018	0.525
Family and friends dimension				
(intercept)	-0.014	0.172		0.936
sex (female=0, male=1)	0.034	0.057	0.017	0.551
age (in years)	0.006	0.002	0.080	0.006
education	-0.006	0.012	-0.020	0.627
occupation (SRQ)	0.000	0.000	-0.103	0.008
income	-0.000	0.000	-0.077	0.007

Note: Meritocratic dimension: $F = 3.920$, $p < 0.05$, R^2 (adjusted) = 0.011; “Family and friends” dimension: $F = 9.106$, $p < 0.05$, R^2 (adjusted) = 0.030.

Source: POLPAN data, 2013. Analyses on the base of the whole data set.

Previous research by Janicka and Slomczynski (2007) has shown that support for the meritocratic character of determinants of success depends on neither occupation nor income, but rather to some extent on gender and age of respondents. However, support for the family and friends dimension depended on respondents’ socio-occupational position and income. This raises the following questions: do these micro-level determinants remain important differentiators of opinions? What can the newest POLPAN data tell us about the characteristics of the groups that

perceive meritocratic ideas differently? To answer these empirical questions, we have analyzed whether the tendency to adopt one of two paths to success is differentiated by respondents' gender, age, education, income and occupation. For this purpose, independent regression analyses of the meritocratic and family and friends dimensions were performed on the 2013 POLPAN data.

It appears that in the case of the meritocratic dimension, only a level of education had a significant impact. The strength of the role of education did not increase dramatically from 2003 (from 0.12 to 0.14); at the same time, occupational status stopped being a significant differentiating factor in this case.

As for the family and friends dimension, the role of occupational status and income still remain important determinants of support for this approach. Additionally the age of respondents is also significant – older respondents (to a small albeit significant degree) were more likely to express opinions that external factors influence success.

While analyzing the diversification of the medium of the meritocratic and family and friends dimension of opinions on determinants influencing success in life according to different social classes, Janicka and Slomczynski (2007) concluded that in 1988 faith in the power of innate abilities (such as ambition, talent, hard work, and education) was more likely to occur in circles of professionals and entrepreneurs. It seemed to serve the function of rationalization for those occupying privileged positions in society. The meritocratic determinants were to a much lesser degree supported by such occupational groups as technicians, office, and manual workers. Political transformation in Poland, however, disseminated views until that point held by the upper classes of society. As can be seen from the data published by Janicka and Slomczynski (2007), a few years after 1989, the strongest attachment to a meritocratic path to success was also found among the newly formed managerial class. On the other hand, the “losers” of the transformation period – found mostly among manual skilled and unskilled workers – due to their new social position and perception of their chances on success, had lost their faith in the power of meritocratic determinants and individual efforts. Nonetheless, their levels of support for exogenous social determinants did not change significantly. Somewhat different was the case of farmers, who after 1998 stopped being “visible” in the meritocratic dimension, in contrast to the family and friends dimension, which saw stronger support in 1993.

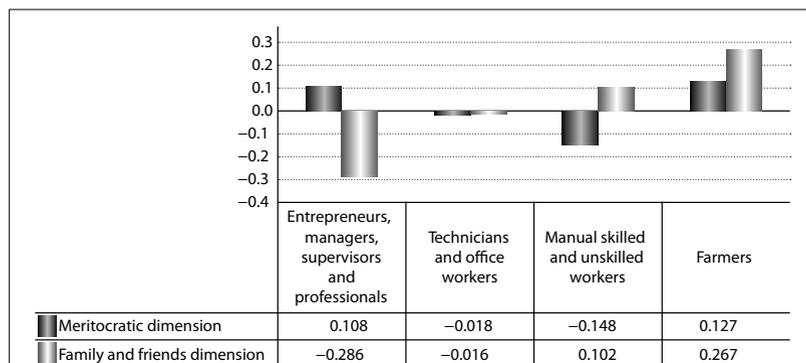


Figure 11.4. Mean Values of “Meritocratic” and “Family and Friends” Dimensions of Determinants of Success According to Social Classes

Note: The values in the table are the standardized averages (from -1 to 1), where negative values indicate the support lower than the average, and positive values show support higher than the average. The value of η coefficient is 0.1 for dependence of meritocratic dimension on social classes and 0.18 for analogical relation of “family and friends” dimension.

Source: POLPAN data, 2013. Analyzes on the base of the whole data set.

How does the structure of support for these two dimensions look like now? Reflecting data from 2013, the “winners” of transformation continue to believe in the meritocratic path to success (see Figure 11.4).

25 years after the regime change, manual skilled and unskilled workers, who were the groups that on average lost the most during the transformation time, consequently are still not in favor of the opinion that individual merits and efforts can bring success. Interestingly, farmers’ attitudes have changed most significantly over time since the transformation: they began to value the meritocratic approach, while at the same time not resigning from the importance of social networks and external circumstance. For comparison, in 2003 the mean of the meritocratic scale for farmers was -0.087 , but in 2013 it was 0.127 . For the social dimension (including family, friends, and good luck determinants), it was respectively 0.192 and 0.297 . The changes in attitudes among farmers might be the consequence of the material support that they gained after the accession of Poland to the European Union.

Dynamics of Opinion Changes in 2008–2013

Panel studies offer a unique opportunity to see how the opinion of the same group of people changes over time. POLPAN as such allows for deeper longitudinal analysis of attitude dynamics that we have presented above. We are interested in tracing changes in opinion in such situations in which respondents endure grand transformations, and in which their opinions change greatly. For example, when a respondent in one panel wave declared that some determinant of success was essential or very important, but then five years later stated that it was somewhat not important or completely unimportant, it raises questions regarding the nature or cause of such a radical change over such a short period of time.⁷ Such radical changes in opinion should be distinguished from lighter changes involving only a marginal strengthening or weakening of opinions (e.g., from “absolutely necessary” to “very important,” or from “somewhat important” to “somewhat not important”). This suggests that respondents’ attitudes are generally stable across time, and such slight changes as minor fluctuations in intensity of support from one wave to the next may come only from the specificity of the scale.

In this chapter we concentrate on the analysis of the dynamics of change in opinion of panel respondents on the time span from 2008 to 2013, which are the two last waves of the POLPAN survey. This gives the possibility to understand how the distribution of opinions about the importance of the determinants of success has been shaped in the last decade. We investigate whether and which opinions seem to be relatively stable and the extent to which radical changes have occurred in the perception of the determinants.

As can be seen in Figure 11.5, the most dynamic changes of opinions in 2013 as compared to 2008 occurred in the case of the evaluation of the “political influence” and “coming from a rich family” determinants of success. Here we can see the highest percentage of panel respondents who have changed their opinions, from thinking that these factors were crucial to then switching to the view that they are not at all important.

In the case of “political influence”, 44% of respondents changed their opinion in a positive direction, and nearly ¼ of them (13% of total) switched their view from extremely negative (saying that political influence is not at all important) to positive (meaning that it is important

⁷ In the analysis we treat the answer “(3) somewhat important” as the middle of the scale, meaning the neutral response.

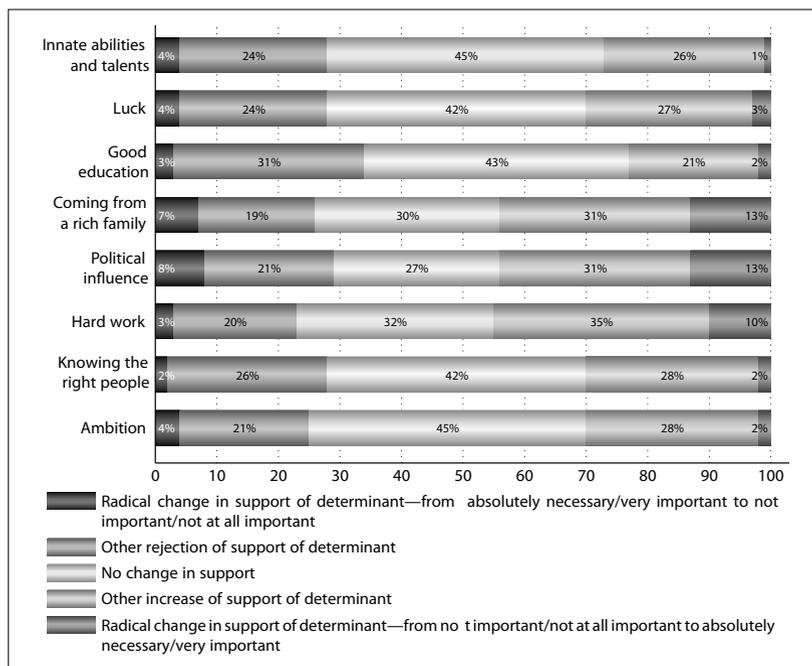


Figure 11.5. Dynamics of Respondents Opinions About Determinants of Success in Years 2008–2013

Note: Comparison of the percentages of respondents who changed their opinion radically (from positive to negative and vice versa), with mild changes (with the division into an increase in support and rejection of each determinant of success), and with the percentage of respondents whose opinion maintained unchanged.

Source: POLPAN data, 2008–2013. In analyzes were took into account those respondents who participated in both waves of the survey.

or essential). Fewer respondents changed their opinion in the opposite direction (29%) as compared to 2008. 8% of respondents changed their opinion radically, from positive to negative: from clear support for the importance of political influence in achieving success to negating that it has any influence. The dynamics of opinion about the role of coming from a rich family is almost identical, with a slight difference in a greater percentage of change towards a negative direction of evaluation.

The factor with the biggest positive balance is “hard work”. Here up to 45% of respondents changed their opinion in a positive direction, and 10% switched from a radical rejection of the importance of this factor to a positive recognition of its role in achieving success. In Figure 11.5 we

can also see how the role of good education weakened over the last five years – although there are relatively few major changes here, a visibly large percentage of panel respondents changed their opinion in a negative direction. As such, it is the factor with the highest negative balance.

We have also investigated the extent to which the pattern of the dynamics of individual success determinants is visible on the aggregate level of the two attitudinal dimensions: meritocratic and family and friends. Such analysis will show us the radicalization of attitudes on a more general level, and will depict the overall increase or decrease of support of meritocracy in Poland. In order to perform such an analysis and to offer comparability on two dimensions of attitudes with individual determinants, we have recoded each factor to a 5-point scale by dividing values into quintiles. Values from 1 to 5 were assigned to those intervals, where 1 is a categorical rejection of the dimension, 2 stands for moderate rejection, 3 is the middle of the scale, 4 represents moderate support, and 5 indicates full support of the factor. Analysis of the two dimensions is conducted analogically to the analysis of individual determinants – meaning that a radical change of opinion is understood as a switch from 1 or 2 to 4 or 5, and vice versa. Other one-point changes in the measure of opinion are treated as non-radical.

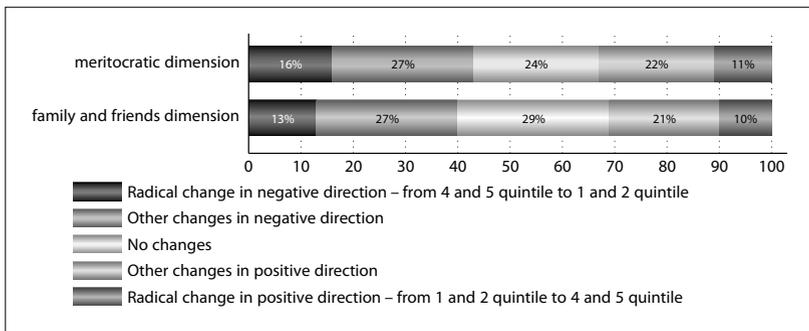


Figure 11.6. Dynamics of Respondents Support for “Meritocratic” and “Family and Friends” Dimension of Success in Years 2008–2013

Note: Comparison of the percentages of respondents who changed their opinion radically (from positive to negative and vice versa), with mild changes (with the division into an increase in support and rejection of each determinant of success) and with the percentage of respondents whose opinion maintained unchanged.

Source: POLPAN data, 2008–2013. In analyzes were took into account those respondents who participated in both waves of the survey.

Figure 11.6, which shows the patterns of the change of opinions of panel respondents on the meritocratic and social dimensions, shows that fluctuations in overall attitudes on the level of individual determinants is mitigating, resembling patterns observed among both dimensions. For the social dimension we can observe the relatively high stability of opinions as compared to the meritocratic dimension: respectively, 29% vs. 23% of respondents maintained the same positions. There is also a slightly higher percentage of radical changes in opinions on meritocratic determinants. The percent of slight changes in either positive or negative directions for both meritocratic and social dimensions are close to identical, which is an interesting pattern in itself.

Summary

An important element of studying individuals' biographies is the analysis of whether they have achieved success in life and what determined their success. In this analysis we show what Poles think about the determinants of success and how these opinions have been changing over the last quarter of a century. We have asked respondents for their opinions about the role of such factors as: ambition, knowing the right people, hard work, good education, good luck, innate abilities and talents, political influence, and coming from a rich family.

A deeper analysis of the determinants of success provides an opportunity to distinguish between two hidden dimensions in the data structure, which describe two different sets of characteristics that influence success: a meritocratic dimension (meaning that success in life is connected with hard work and good education, together with ambition and innate abilities and talents); and a dimension associated with the power of one's social network (family, acquaintances, people with influence), supported by a "good luck" factor. Success in this latter conceptualization is based on external resources. Our analysis shows that the division between these two dimensions has not become obsolete in the last 5 years, and that they are a reflection of the views of Poles.

The opinion that success in life depends on innate talents, developed by a good education and hard work (effort), suggests support for the meritocratic idea of social justice, in which the reward (or in this case broadly defined success) is distributed according to individual merit. Based on observed changing attitudes towards individual determinants of success,

fluctuations in the meritocratic dimension are particularly interesting, specifically regarding attitudes towards good education and hard work. These determinants, in their own way, reflect an effort that should be made on the way to success. Currently, we see that the faith of Poles in hard work has increased significantly, but the belief that a good education is important has comparatively decreased.

Incredibly interesting are the results of the analysis of how the endorsement of both dimensions of success vary between social groups. Analysis shows that support for the meritocratic dimension grows together with the education of respondents. As for the “family and friends” dimension, support decreases with higher social status and income, although it increases together with the age of respondents.

It turns out that belief in the meritocratic dimension of achieving success is highest among groups that benefitted the most from the transformation; the strongest correlation was observed among the expert and managerial classes. On the other hand, the groups that mainly “lost” during the transformation, such as skilled and unskilled workers, were less likely to have faith in the power of meritocracy. Among social classes, the biggest change since the transformation occurred in the attitudes of farmers – they began valuing the meritocratic approach while at the same time not resigning from valuing the importance of social networks and good luck.

The analysis of the dynamics of panel respondents’ opinions on the main determinants of success have revealed the extent to which views and opinions have changed over the last two waves of the POLPAN survey. The relatively largest change in attitudes occurred in the evaluation of such determinants as coming from a rich family and political influence.

What changes in the perception of success we can expect in the future? Many issues cannot be predicted in a rapidly changing reality and with new generations of Poles. However, there is a good chance of maintenance of the growing strength of meritocratic criteria of achieving success in life, meaning the growing positive evaluation of an active path to success, although with the reduced role of higher education.

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REFERENCES

- Aaronson, Daniel and Daniel G. Sullivan. 1998. The Decline of Job Security in the 1990s: Displacement, Anxiety, and Their Effect on Wage Growth. *Economic Perspectives* 22(1): 17–43.
- Abbot, Andrew and Angela Tsay. 2000. Sequence Analysis and Optimal Matching Methods in Sociology: Review and Prospect. *Sociological Methods and Research* 29(1): 3–33.
- Alba, Richard, Ruben G. Rumbaut, and Karen Marotz. 2005. A Distorted Nation: Perceptions of Racial/Ethnic Group Sizes and Attitudes toward Immigrants and Other Minorities. *Social Forces* 84(2): 901–919.
- Anderson, Christopher J. and Yuliya V. Tverdova. 2001. Winners, Losers, and Attitudes Toward Government in Contemporary Democracies. *International Political Science Review* 22(4): 321–338.
- Anderson, Janna Quitney and Lee Rainey. *The Future of the Internet II*. Washington, DC: Pew Internet and American Life Project.
- Aretz, Bodo and Nicole Gürtzgen. 2012. What Explains the Decline in Wage Mobility in the German Low-Wage Sector? ZEW Discussion Papers, No. 12-041.
- Arif, Ghulam M. and Mohammad Irfan. 1997. Population Mobility across the Pakistani Border: Fifty Years' Experience. *The Pakistan Development Review* 36(4): 989–1009.
- Arosio, Laura. 2004. Occupational Careers and Longitudinal Data: Tools and Perspectives of Research. *Quality and Quantity* 38(4): 435–456.
- Auer, Peter and Sandrine Cazes. 2003a. Introduction. Pp. 1–21 in *Employment Stability in an Age of Flexibility. Evidence from Industrialized*

- Countries*, edited by P. Auer and S. Cazes. Geneva, SW: International Labor Office.
- Auer, Peter and Sandrine Cazes. 2003b. The Resilience of the Long-Term Employment Relationship. Pp. 22–58 in *Employment Stability in an Age of Flexibility. Evidence from Industrialized Countries*, edited by P. Auer and S. Cazes. Geneva, SW: International Labor Office.
- Bachmann, Ronald, Peggy Bechara, and Sandra Schaffner. 2012. Wage Inequality and Wage Mobility in Europe. Essen, DE: Ruhr Economic Papers, No. 386.
- Baczko-Dombi, Anna and Ilona Wysmulek. 2014. *Czynniki sukcesu. Ciężka praca i talent czy pochodzenie i szczęście?* [Factors of Success. Hard Work and Ability or Social Origin and Luck?]. Warsaw, PL: Research Group on Comparative Analysis of Social Inequality, Institute of Philosophy and Sociology of the Polish Academy of Sciences (http://polishpanelsurvey.files.wordpress.com/2014/03/polpan_czynniki-sukcesu.pdf).
- Baczko-Dombi, Anna and Ilona Wysmulek. 2015. Determinants of Success in Public Opinion in Poland: Factors, Directions and Dynamics of Change. *Polish Sociological Review* 191(3): 277–293.
- Balcerowicz, Leszek. 1994. Transition to the Market Economy: Poland, 1989–93 in Comparative Perspective. *Economic Policy* 9(19): 71–97.
- Balkwell, James W., Frederick L. Bates, and Albeno P. Garbin. 1980. On the Intersubjectivity of Occupational Status Evaluations: A Test of a Key Assumption Underlying the ‘Wisconsin Model’ of Status Attainment. *Social Forces* 58(3): 865–881.
- Bandelj, Nina and Matthew C. Mahutga. 2010. How Socio-Economic Change Shapes Income Inequality in Post-Socialist Europe. *Social Forces* 88(5): 2133–2162.
- Baranowska, Anna, Magdalena Bober, and Maciej Bukowski. 2007. Spatial Mobility. Pp. 115–162 in *Employment in Poland 2006: Productivity for jobs*, edited by M. Bukowski. Warsaw, PL: Ministerstwo Pracy i Polityki Społecznej (Ministry of Labor and Social Policy).
- Baranowska, Anna, Michael Gebel, and Irena E. Kotowska. 2011. The Role of Fixed-term Contracts at Labour Market Entry in Poland: Stepping Stones, Screening Devices, Traps or Search Subsidies? *Work, Employment and Society* 25(4): 777–793.
- Barbieri, Paolo and Stefani Scherer. 2009. Labour Market Flexibilization and Its Consequences in Italy. *European Sociological Review* 25(6): 677–692.

- Barrett, Alan and Philip J. O'Connell. 2000. Is there a Wage Premium for Returning Irish Migrants? Discussion Paper No. 2508. London, UK: Centre for Economic Policy Research.
- Beck, Ulrich. 2000. *The Brave New World of Work*. Cambridge, UK: Polity Press.
- Becker, Garry S. 1964. *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*. New York: National Bureau of Economic Research.
- Becker, Garry. S. 1962. Investment in Human Capital: A Theoretical Analysis. *Journal of Political Economy* 70(5): 9–49.
- Bell, Janice. 1997. Unemployment Matters: Voting Patterns during the Economic Transition in Poland, 1990–1995. *Europe-Asia Studies* 49(7): 1263–1291.
- Berger, Joseph, M. Hamit Fisek, Robert Z. Norman, and David G. Wagner. 1985. Formation of Reward Expectations in Status Situations. Pp. 215–265 in *Status, Rewards, and Influence*, edited by J. Berger and M. Zelditch, San Francisco, CA: Jossey-Bass.
- Berger, Joseph, Cecilia L. Ridgeway, M. Hamit Fisek, and Robert Z. Norman. 1998. The Legitimation and Delegitimation of Power and Prestige Orders. *American Sociological Review* 63(3): 379–405.
- Berger, Joseph and Murray Webster Jr. 2006. Expectations, Status, and Behaviour. Pp. 268–300 in *Contemporary Social Psychological Theories*, edited by P. J. Burke. Standford, CA: Stanford University Press.
- Bernhardt, Annette D., Martina Morris, Mark S. Handcock, and Marc A. Scott. 1999. Trends in Job Instability and Wages for Young Adult Men. *Journal of Labor Economics* 17(4): S65–S90.
- Blalock, Hubert M. 1967. *Toward a Theory of Minority-Group Relations*. New York: Wiley.
- Blau, Peter M. and Dudley Otis Duncan. 1967. *The American Occupational Structure*. London, UK: The Free Press.
- Blossfeld, Hans-Peter. 1986. Career Opportunities in the Federal Republic of Germany: A Dynamic Approach to the Study of Life-Course, Cohort, and Period Effects. *European Sociological Review* 2(3): 208–225.
- Blossfeld, Hans-Peter and Sonja Drobnic, eds. 2001. *Careers of Couples in Contemporary Societies: From Male Breadwinner to Dual Earner Families*. Oxford, UK: Oxford University Press.
- Blossfeld, Hans-Peter, Katrin Golsch, and Götz Rohwer. 2007. *Event History Analysis with Stata*. Mahwah, NJ: Erlbaum.

- Blossfeld, Hans-Peter, Alfred Hamerle, and Kurt Ulrich Mayer. 1989. *Event History Analysis*. Hillsdale, NJ: Erlbaum.
- Blossfeld, Hans-Peter and Heather Hofmeister, eds. 2006. *Globalization, Uncertainty and Women's Careers: An International Comparison*. Cheltenham, UK: Edward Elgar.
- Blossfeld, Hans-Peter and Götz Rohwer. 2002. *Techniques of Event History Modeling: New Approaches to Causal Analysis*. Hillsdale, NJ: Erlbaum.
- Blumer, Herbert. 1958. Race Prejudice as a Sense of Group Position. *Pacific Sociological Review* 1(1): 3–7.
- Boockmann, Bernard and Tobias Hagen. 2008. Fixed-term Contracts as Sorting Mechanisms: Evidence from Job Durations in West Germany. *Labour Economics* 15(5): 984–1005.
- Booth Alison L., Marco Francesconi, and Jeff Frank. 2002. Temporary Jobs: Stepping Stones or Dead Ends? *Economic Journal* 112(480): 189–213.
- Box-Steffensmeier, Janet M. and Bradford S. Jones. 2006. *Event History Modelling: A Guide for Social Scientists*. Cambridge, UK: Cambridge University Press.
- Breen, Richard, ed. 2004. *Social Mobility in Europe*. Oxford, UK: Oxford University Press.
- Brown, Dana L. 2007. Persistent Unemployment and Passive Policies: Politics and Institutional Change in Post-Communist Poland. *Human Relations* 60(10): 1467–1491.
- Brown, James N. and Audrey Light. 1992. Interpreting Panel Data on Job Tenure. *Journal of Labor Economics* 10(3): 219–257.
- Brüderl, Josef. 1992. Dynamic Career Models and Inequality Research: A Reexamination of the Sørensen Model. *Sociological Methods Research* 21(1): 3–24.
- Brzeziński Michał, Barbara Jancewicz, and Natalia Letki. 2013. Growing Inequalities and Their Impacts in Poland. *GINI Growing Inequalities' Impacts. Country Report: Poland* (http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2385176).
- Brzinsky-Fay, Christian. 2007. Lost in Transition? Labour Market Entry Sequences of School Leavers in Europe. *European Sociological Review* 23(4): 409–422.
- Bullow Jeremy I. and Lawrence H. Summers. 1986. A Theory of Dual Labor Markets with Application to Industrial Policy, and Keynesian Unemployment. *Journal of Labor Economics* 4(3): 376–414.

- Bylok, Felicjan. 2005. Wzór sukcesu w społeczeństwie polskim w okresie transformacji społeczno-ustrojowej [Pattern of Success in Polish Society during Socio-Economic Transformation]. *Annales. Etyka w Życiu Gospodarczym* 8(1): 87–96.
- Byram, Michael. 2008. *From Foreign Language Education to Education for Intercultural Citizenship*. Bristol, UK: Multilingual Matters Publishers.
- Cappellari, Lorenzo. 2007. Earnings Mobility among Italian Low-Paid Workers. *Journal of Population Economics* 20(2): 465–482.
- Cappellari, Lorenzo and Stephen P. Jenkins. 2008. Estimating Low Pay Transition Probabilities Accounting for Endogenous Selection Mechanisms. *Applied Statistics* 57(2): 165–186.
- Cappelli, Peter. 1999. *New Deal at Work. Managing the Market-Driven Workforce*. Boston: Harvard Business School Press.
- Carletto, Calogero and Talip Kilic. 2009. Moving Up the Ladder? The Impact of Migration Experience on Occupational Mobility in Albania. Special Issue *Journal of Development Studies* 47(6): 846–869.
- Castels Stephen and Mark J. Miller. 2009. *The Age of Migration: International Population Movements in the Modern World* (4th edition). New York, NY: Palgrave Macmillan.
- Cazes, Sandrine and Alena Nesporova. 2001. Labour Market Flexibility in the Transition Countries: How Much is Too Much? *International Labor Review* 140(3): 293–325.
- Cazes, Sandrine and Mirco Tonin. 2010. Employment Protection Legislation and Job Stability: A European Cross-country Analysis. *International Labour Review* 149(3): 261–285.
- CBOS (Public Opinion Research Center). 2004. *Praca jako wartość* [Work as a Value]. Research Note No. BS/87/2004, Warsaw, PL: CBOS (<http://www.cbos.pl>).
- CBOS (Public Opinion Research Center). 2008. *Bezrobotni*. [The Unemployed]. Research Note No. BS/37/2008. Warsaw, PL: CBOS (<http://www.cbos.pl>).
- CBOS (Public Opinion Research Center). 2013. *Wykształcenie ma znaczenie?* [Does Education Matter?]. Research Note No. BS/96/2013. Warsaw, PL: CBOS (<http://www.cbos.pl>).
- CBOS (Public Opinion Research Center). 2014. *Polacy w pracy: warunki zatrudnienia, gotowość zmian* [Poles at Work: Employment Conditions, Propensity to Change]. Research Note No. BS/132/2014. Warsaw, PL: CBOS (<http://www.cbos.pl>).

- CBOS (Public Opinion Research Center). 2016. *Oceny sytuacji na rynku pracy i poczucie zagrożenia bezrobociem* [Perception of the Situation on the Labor Market and Fear of Unemployment]. Research Note No. BS/49/2016. Warsaw, PL: CBOS (<http://www.cbos.pl>).
- Cebula, Michał. 2013. Społeczne uwarunkowania gustów i praktyk konsumpcyjnych [Social Determination of Taste and Consumption Practices]. *Studia Socjologiczne* 209(2): 97–125.
- Chan, Tak W. and John H. Goldthorpe. 2004. Is There a Status Order in Contemporary British Society? Evidence from the Occupational Structure of Friendship. *European Sociological Review* 20(5): 383–401.
- Chung, Heejung and Steffen Mau. 2014. Subjective Insecurity and the Role of Institutions. *Journal of European Social Policy* 24(4): 303–318.
- Church, George J. 1993. Jobs in an Age of Insecurity. *Time*, November 22.
- Cichomski, Bogdan, Tomasz Jerzyński, and Marcin Zieliński. 2013. *Percepcja nierówności społecznych w Polsce w latach 1992 i 1999. Polskie Generalne Sondaże Społeczne: struktura skumulowanych wyników badań 1992–2010* [Perception of Social Inequality in Poland in 1992 and 1999. Polish General Public Surveys: Structure of Accumulated Research Results 1992–2010]. Warsaw, PL: University of Warsaw.
- Clark, Ken and Nikolaos C. Kanellopoulos. 2009. Low Pay Persistence in European Countries. IZA Discussion Paper No. 4183. Bonn, DE: Institute for the Study of Labour.
- Cleves, Mario, William W. Gould, Roberto G. Gutierrez, and Yulia Marchenko. 2004. *An Introduction to Survival Analysis Using Stata* (2nd edition). College Station, TX: Stata Press.
- Clogg, Clifford C. 1982. Using Association Models in Sociological Research: Some Examples. *American Journal of Sociology* 88(1): 114–134.
- Co, Catherine Y., Ira N. Gang, and Myeong-Su Yun. 2000. Returns to Returning. *Journal of Population Economics* 13(1): 57–79.
- Cockx, Bart and Matteo Picchio. 2012. Are Short-Lived Jobs Stepping Stones to Long-Lasting Jobs? *Oxford Bulletin of Economics and Statistics* 74(5): 646–675.
- Coenders, Marcel, Merove Gijsberts, and Peer Scheepers. 2004. Resistance to the Presence of Immigrants and Refugees in 22 Countries.

- Pp. 97–120 in *Nationalism and Exclusion of Migrants: Cross-National Comparisons*, edited by M. Gijsberts, L. Hagendoorn, and P. Scheepers. Aldershot, UK: Ashgate.
- Cohen, Jeffrey H. 2005. Remittance Outcomes and Migration: Theoretical Contests, Real Opportunities. *Studies in Comparative International Development* 40(1): 88–112.
- Cohen Jeffrey H. and Leila Rodriguez. 2005. Remittance Outcomes in Rural Oaxaca, Mexico: Challenges, Options and Opportunities for Migrant Households. *Population, Space and Place* 11(1): 49–63.
- Comi, Simona and Mara Grasseni 2012. Are Temporary Workers Discriminated Against? Evidence from Europe. *The Manchester School* 80(1): 28–50.
- Conover, Pamela J., Stanley Feldman, and Kathleen Knight. 1986. Judging Inflation and Unemployment: The Origins of Retrospective Evaluations. *Journal of Politics* 48: 565–588.
- Cook, Karen S. and Karen Hegtvedt. 1983. Distributive Justice, Equity, and Equality. *Annual Review of Sociology* 9: 217–241.
- Coxon, Anthony P.M. and Charles L. Jones. 1978. *The Images of Occupational Prestige*. London, UK: Macmillan.
- Cuc Milan, Erik Lundbäck, and Edgardo Ruggiero. 2006. *Migration and Remittances in Moldova*. Washington DC: International Monetary Fund (<http://www.imf.org/external/pubs/nft/2006/moldova/eng/mrm.pdf>).
- Czech Statistical Office. 2010. *Macroeconomic Indicators*. Prague, CZ: CSO (<http://www.czso.cz/eng/redakce.nsf/i/home/>).
- Della Fave, L. Richard. 1980. The Meek Shall not Inherit the Earth: Self-Evaluations and the Legitimacy of Stratification. *American Sociological Review* 45(6): 955–971.
- DeMars, Christine. 2010. *Item Response Theory*. New York, NY: Oxford University Press.
- Diagnoza Społeczna (Social Diagnosis). 2009. *Warunki i jakość życia Polaków* [Life Conditions and Quality of Life of Poles], edited by J. Czapiński and T. Panek. Warsaw, PL: Rada Monitoringu Społecznego.
- Dickens, Richard. 2000. Caught in a Trap? Wage Mobility in Great Britain: 1975–1994. *Economica, New Series* 67(268): 477–498.
- Diebold, Francis X., David Neumark, and Daniel Polsky. 1996. Comment on Kenneth A. Swinnerton and Howard Wial, ‘Is Job Stability Declining in the U.S. Economy?’ *Industrial and Labor Relations Review* 49(2): 348–352.

- Diebold, Francis X., David Neumark, and Daniel Polsky. 1997. Job Stability in the United States. *Journal of Labor Economics* 15(2): 206–233.
- DiMaggio, Paul and Bart Bonikowski. 2008. Make Money Surfing the Web? The Impact of Internet Use on the Earnings of U.S. Workers. *American Sociological Review* 73(2): 227–250.
- Dixon, Jeffrey C. 2006. The Ties That Bind and Those That Don't: Toward Reconciling Group Threat and Contact Theories of Prejudice. *Social Forces* 84: 2179–2204.
- Doeringer, Peter B. and Michael J. Piore. 1971. *Internal Labor Markets and Manpower Analysis*. Lexington, MA: Heath.
- Dolan, Chris J., John Fren dreis, and Raymond Tatalovich. 2009. A Presidential Economic Scorecard: Performance and Perception. *Political Science and Politics* 42(4): 689–694.
- Domański, Henryk 2002. Główne kierunki zmian w strukturze społecznej [Main Directions of Changes in the Social Structure]. Pp. 69–92 in *Wymiary życia społecznego. Polska na przełomie XX i XXI wieku* [Dimensions of Social Life: Poland at the Turn of the Twentieth and Twenty-First Centuries], edited by M. Marody. Warsaw, PL: Scholar.
- Domański, Henryk. 2007a. Changes in Marital Homogamy and Mate Selection. Pp. 107–135 in *Structural and Psychological Adjustment in Poland*, edited by K. M. Slomczynski and S. T. Marquart-Pyatt. Warsaw, PL: IFiS Publishers.
- Domański, Henryk. 2007b. *Struktura społeczna* [Social Structure]. Warsaw, PL: Scholar.
- Domański, Henryk. 2008. Związek między członkostwem w organizacjach a przynależnością klasową w perspektywie międzynarodowej [Association Between Membership in Organizations and Social Class in Comparative Perspective]. *Kultura i Społeczeństwo* 52(4): 51–76.
- Domański, Henryk. 2011. Rise of Meritocracy in Poland: 1982–2008. *European Sociological Review* 27(3): 400–411.
- Domański, Henryk. 2013. *Sprawiedliwe nierówności zarobków w odczuciu społecznym* [Just Income Inequalities in the Social Consciousness]. Warsaw, PL: Scholar.
- Domański, Henryk. 2015. *Czy są w Polsce klasy społeczne?* [Do Social Classes Exist in Poland?] Warsaw, PL: Krytyka Polityczna.
- Domański, Henryk, Bogdan W. Mach, and Dariusz Przybysz. Forthcoming. Social Mobility in Education and Occupation, 1982–2006. In *Dynamic Class and Stratification in Poland*, edited by I.

- Tomescu-Dubrow, K. M. Slomczynski, H. Domański, J. K. Dubrow, Z. Sawiński, and D. Przybysz. Budapest, HU: CEU Press.
- Domański, Henryk and Dariusz Przybysz. 2007. Educational Homogamy in 22 European Countries. *European Societies* 10(4): 495–527.
- Domański, Henryk and Dariusz Przybysz 2009. Bariery zawierania małżeństw w Polsce w latach 1997–2007 [Barriers in Marriage Patterns in Poland, 1977–2007]. *Studia Socjologiczne* 192(1): 53–85.
- Domański, Henryk and Dariusz Przybysz. 2012. Friendship Patterns and Social Inequality. *International Journal of Sociology* 42(1): 31–59.
- Domański, Henryk and Zbigniew Sawiński. 1992. Koherencja płaszczyzn struktury społecznej [Coherence of Social Stratification]. *Studia Socjologiczne* 3–4: 135–151.
- Domański, Henryk and Zbigniew Sawiński. 1995. Polska Społeczna Klasyfikacja Zawodów. PSKZ – 1995 [Polish Social Classification of Occupations PSKZ – 1995]. *ASK. Społeczeństwo, Badania, Metody* 4: 77–94.
- Domański, Henryk and Zbigniew Sawiński. 2012. Sprawiedliwe nierówności zarobków [Just Earnings Inequalities]. *Studia Socjologiczne* 206(3): 7–28.
- Domański Henryk, Zbigniew Sawiński, and Kazimierz M. Slomczynski. 2009. *Sociological Tools Measuring Occupations. New Classification and Scales*. Warsaw, PL: IFiS Publishers.
- Domański, Henryk, Zbigniew Sawiński, and Kazimierz M. Slomczynski. 2010. Prestiż zawodów w obliczu zmian społecznych: 1958–2008 [Occupational Prestige Facing Social Change, 1958–2008]. *Studia Socjologiczne* 199(4): 79–119.
- Domański, Henryk and Kazimierz M. Slomczynski. 1993 [2003, 2008]. *Dokumentacja badania “Struktura społeczna w Polsce. POLPAN 1993”* [Documentation of the ‘Study Social Structure in Poland. POLPAN 1993’]. Preparation for Archiving M. Zieliński. Warsaw, PL: IFiS PAN and GESIS Data Archive, Cologne, DE. ZA4671 Data file Version 1.0.0, doi:10.4232/1.4671.
- Drobnic, Sonja, Hans-Peter Blossfeld, and Götz Rohwer. 1999. Dynamics of Women’s Employment Patterns over the Family Life Course: A Comparison of the United States and Germany. *Journal of Marriage and Family* 61(1): 133–146.
- Duch, Raymond M. and Randolph T. Stevenson. 2008. *The Economic Vote*. New York: Cambridge University Press.

- Duncan, Otis D. 1961. A Socio-Economic Index for All Occupations. Pp. 109–138 in *Occupations and Social Status*, edited by A. J. Reiss Jr. New York, NY: Free Press.
- Duncan, Otis D. 1981. Two Faces of Panel Analysis: Parallels with Comparative Cross-Sectional Analysis and Time-Lagged Association. *Sociological Methodology* 12: 281–318.
- Durand Jorge, Warren Kandel, Emilio A. Parrado, and Douglas S. Massey. 1996. International Migration and Development in Mexican Communities. *Demography* 33(2): 249–264.
- Dustmann, Christian and Oliver Kirchkamp. 2002. The Optimal Migration Duration and Activity Choice After Remigration. *Journal of Development Economics* 67(2): 351–372.
- Erikson, Robert and John H. Goldthorpe. 1992. *The Constant Flux: A Study of Class Mobility in Industrial Societies*. Oxford: Clarendon Press.
- Erikson, Robert S., Michael B. MacKuen, and James A. Stimson. 2002. *The Macro Polity*. New York: Cambridge University Press.
- Esping-Andersen, Gøsta. 2007. Sociological Explanations of Changing Income Distributions. *American Behavioral Scientist* 50(5): 639–658.
- European Commission (EC). 2004. *Employment in Europe 2004*. Luxembourg: Office for Official Publications of the European Communities.
- European Commission (EC). 2009. *Employment in Europe 2009*. Luxembourg: Office for Official Publications of the European Communities.
- European Commission (EC). 2014. *Employment and Social Developments in Europe 2013*. Luxembourg: Office for Official Publications of the European Communities.
- European Commission (EC). 2016. *Employment and Social Developments in Europe 2015*. Luxembourg: Office for Official Publications of the European Communities.
- Fairlie, Robert W. 2004. Race and the Digital Divide. *Contributions to Economic Analysis & Policy* 3(1): ISSN (Online) 1538-0645, doi: 10.2202/1538-0645.1263.
- Farber, Henry S. 1998. Mobility and Stability: The Dynamics of Job Change in Labor Markets. Working Paper No. 400. Princeton, NJ: Princeton University, Industrial Relations Section.
- Farber, Henry S. 1999. Alternative and Part-Time Employment Arrangements as a Response to Job Loss. *Journal of Labor Economics* 17(4): S142–S169.

- Fihel, Agnieszka and Izabela Grabowska-Lusinska. 2014. Labor Market Behaviors of Back-and-forth Migrants from Poland. *International Migration* 52(1): 22–35.
- Firkowska-Mankiewicz Anna. 1997. Czym jest sukces życiowy dla współczesnego Polaka? Kontekst socjodemograficzny i psychospołeczny [What is the Life Success for Contemporary Pole? Socio-Demographic and Psychosocial Context]. Pp. 304–306 in *Elementy nowego ładu*, edited by H. Domański and A. Rychard. Warsaw, PL: Wydawnictwo IFiS PAN.
- Foltyńiewicz, Aneta. 2012. *Uwarunkowania postaw merytokratycznych. Współczesna Polska w perspektywie porównawczej* [Determinants of Meritocratic Attitudes: Poland in Comparative Perspective]. Warsaw, PL: University of Warsaw [Doctoral Thesis].
- Form, William H. and Delbert C. Miller. 1949. Occupational Career Pattern as a Sociological Instrument. *American Journal of Sociology* 4(54): 317–329.
- Frątczak, Ewa, Margarete Kulik, Marcin Malinowski, and Ewelina Słotwińska-Rosłanowska. 2007. *Regulacje prawne w odniesieniu do zjawisk i procesów demograficznych. Wybrane akty prawne regulujące świadczenia na rzecz dzieci i rodziny – polityka społeczna. Polska, wybrane lata 1945–2006* [Legal Regulations Related to Demographic Phenomena and Processes. Selected Laws Regulating Benefits for Children and Families – Social Policy. Poland. Selected Years 1945–2006]. Warsaw, PL: Section of Demographic Analyzes, Demographic Science Committee PAN.
- Frederiksen, Anders. 2008. Gender Differences in Job Separation Rates and Employment Stability: New Evidence from Employer-Employee Data. *Labour Economics* 15(5): 915–937.
- Gagliarducci, Stefano. 2005. The Dynamics of Repeated Temporary Jobs. *Labour Economics* 12(4): 429–448.
- Gallagher, Charles A. 2003. Miscounting Race: Explaining Whites' Misperceptions of Racial Group Size. *Sociological Perspectives* 46(2): 381–396.
- García-Perez, José Ignacio, Ioana Marinescu, and Judit Vall Castello. 2014. Can Fixed-Term Contracts Put Low Skilled Youth on a Better Career Path? Evidence from Spain. FEDEA Working Paper No. 2014-08. Madrid, ES: FEDEA.
- Gash, Vanessa. 2008a. Bridge or Trap? Temporary Workers' Transitions to Unemployment and to the Standard Employment Contract. *European Sociological Review* 24(5): 651–668.

- Gash, Vanessa. 2008b. Preference or Constraint? Part-Time Workers' Transitions in Denmark, France, and the United Kingdom. *Work, Employment, Society* 22(4): 655–674.
- Gdula, Maciej, and Przemysław Sadura, eds. 2012. *Style życia i porządek klasowy w Polsce* [Life-Styles and Class Order in Poland]. Warsaw, PL: Scholar.
- Gerhards, Jurgen and Hans Silke. 2013. Transnational Human Capital, Education, and Social Inequality. Analyses of International Student Exchange. *Zeitschrift für Soziologie* 42(2): 99–117.
- Gernandt, Johannes. 2009. Decreasing Wage Mobility in Germany. ZEW Discussion Paper No. 09-044. Mannheim, DE: Zentrum für Europäische Wirtschaftsforschung.
- Giesecke, Johannes. 2009. Socio-Economic Risks of Atypical Employment Relationships: Evidence from the German Labour Market. *European Sociological Review* 25(6): 629–646.
- Giesecke, Johannes and Martin Groß. 2003. Temporary Employment: Chance or Risk? *European Sociological Review* 19(2): 161–177.
- Gimlin Debra, James Rule, and Sylvia Sievers. 2000. The Uneconomic Growth of Computing. *Sociological Forum* 15(3): 485–510.
- Gładys-Jakóbiak, Jolanta, ed. 2005. *Różne oblicza i uwarunkowania sukcesu we współczesnej Polsce* [Different Images and Determinants of Success in Contemporary Poland]. Warsaw, PL: SGH.
- GUS (Central Statistical Office). 2005. *Praca nierejestrowana w Polsce w 2004 r.* [Unregistered Work in Poland in 2004]. Warsaw, PL: GUS.
- GUS (Central Statistical Office). 2009. *Labor Force Survey in Poland in the Years 2003–2007. Statistical Information and Elaborations.* Warsaw, PL: GUS.
- GUS (Central Statistical Office). 2010a. *Demographic Yearbook of Poland.* Warsaw, PL: GUS.
- GUS (Central Statistical Office). 2010b. *Regional Data Bank.* Warsaw, PL: GUS (http://www.stat.gov.pl/bdren_n/app/strona.indeks/).
- Göbel, Christian and Elsy Verhofstadt. 2008. Is Temporary Employment a Stepping Stone for Unemployed School Leavers? Discussion Paper No. 08-093. Mannheim, DE: Zentrum für Europäische Wirtschaftsforschung.
- Goodman, Leo. 1979. Multiplicative Models for the Analysis of Occupational Mobility Tables and Other Kinds of Cross-Classification Tables. *American Journal of Sociology* 84(4): 804–819.

- Gornick, Janet C. and Markus Jantti. 2013. Introduction. Pp. 1–50 in *Income Inequality: Economic Disparities and the Middle Class in Affluent Countries*, edited by J. C. Gornick and M. Jantti. Stanford, CA: Stanford University Press.
- Gottschalk, Peter and Robert Moffitt. 1999. Changes in Job Instability and Insecurity Using Monthly Survey Data. *Journal of Labor Economics* 17(4): S91–S126.
- Graham, Carol and Stefano Pettinato. 2002. Frustrated Achievers: Winners, Losers and Subjective Well-Being in New Market Economies. *Journal of Development Studies* 38(4): 100–140.
- Grajek, Michal. 2001. *Gender Pay Gap in Poland*. CIG Working Papers FS IV, Wissenschaftszentrum Berlin (WZB), Research Unit: Competition and Innovation (CIG), 01–13.
- Green, Brian E. and Maciej Kryszczuk. 2006. Stability and Change in Household Computer Possession in Poland: Analysis of Structural Determinants. *Polish Sociological Review* 154(2): 103–115.
- Gregory, Abigail, Mike Ingham, and Hilary Ingham. 1998. Women's Employment in Transition, 1992–4: The Case of Poland. *Gender, Work, and Organization* 5(3–4): 133–147.
- Grieco, Elizabeth M. 2004. Will Migrant Remittances Continue Through Time? A New Answer to an Old Question. *International Journal on Multicultural Societies (IJMS)* 6(2): 243–252 (<http://www.unesco.org/shs/ijms/vol6/issue2/art3> © UNESCO).
- Grzeszczyk, Ewa. 2003. *Sukces: amerykańskie wzory – polskie realia* [Success: American Patterns – Polish Reality]. Warsaw, PL: Wydawnictwo IFiS PAN.
- Hadler, Markus. 2005. Why Do People Accept Different Income Ratios? A Multi-Level Comparison of Thirty Countries. *Acta Sociologica* 48(2): 131–154.
- Halpin, Brendan and Tak W. Chan. 2003. Educational Homogamy in Ireland and Britain: Trends and Patterns. *British Journal of Sociology* 54(4): 473–495.
- Hargittai, Eszter. 2010. Digital Na(t)ives? Variations in Internet Skills and Uses among Members of the 'Net Generation'. *Sociological Inquiry* 80(1): 92–113.
- Hegtvedt, Karen. 1994. Justice. Pp. 177–204 in *Group Processes: Sociological Analyses*, edited by M. Foschi and E. J. Lawler. Chicago, IL: Nelson-Hall.

- Hegtvedt, Karen. 2006. Justice Frameworks. Pp. 46–69 in *Contemporary Social Psychological Theories*, ed. P. J. Burke. Stanford, CA: Stanford University Press.
- Hegtvedt, Karen and Cathryn Johnson. 2000. Justice Beyond the Individual: A Future with Legitimacy. *Social Psychology Quarterly* 63(4): 298–311.
- Hegtvedt, Karen and Barry Markovsky. 1995. Justice and Injustice. Pp. 257–280 in *Sociological Perspectives on Social Psychology*, edited by K. S. Cook, G. A. Fine, and James S. House. Boston, MA: Allyn and Bacon.
- Herrnstein, Richard J. and Charles Murray. 1994. *Bell Curve: Intelligence and Class Structure in America Life*. New York, NY: Free Press.
- Herzog, Henry W. Jr. 2000. Employment Uncertainty and the Incidence of Job Loss in Transition Economies: The Case for Central Europe. *Southern Economic Journal* 66(3): 567–589.
- Heyns, Barbara. 2005. Emerging Inequalities in Central and Eastern Europe. *Annual Review of Sociology* 31: 163–197.
- Hildebrandt-Wypych, Dobrochna. 2010. Sukces życiowy wobec przemian kapitalizmu [Life Success and Capitalism Transformation]. Pp. 17–54 in *Młodzież a sukces życiowy* [Youth and Life Success], edited by D. Hildebrandt-Wypych and K. Kabacińska. Kraków, PL: Impuls.
- Hoffman, Donna L. and Thomas P. Novak. 1998. Bridging the Digital Divide: The Impact of Race on Computer Access and Internet Use. *Science* 280: 390–391.
- Holbrook, Thomas and James C. Garand. 1996. Homo Eonomus? Economic Information and Economic Voting. *Political Research Quarterly* 49(2): 351–375.
- Hollingshead, August B. 1949 [2007]. *Elmtown's Youth*. New York, NY: Wiley.
- Horowitz, Tony. 1994. Mr. Edens Profits from Watching His Workers' Every Move. *The Wall Street Journal*. December 1. Dow Jones and Company, Inc.
- House, James S. 1995. Social Structure, Relationships, and the Individual. Pp. 387–395 in *Sociological Perspectives on Social Psychology*, edited by K. S. Cook, G. A. Fine, and J. S. House. Boston, MA: Allyn and Bacon.
- Houseman, Susan N. and Anne E. Polivka. 2000. The Implications of Flexible Staffing Arrangements for Job Stability. Pp. 427–462 in *On*

- the Job: Is Long-Term Employment a Thing of the Past?*, edited by D. Neumark. New York, NY: Russell Sage Foundation.
- Hox, Joop. 2010. *Multilevel Analysis: Techniques and Applications*. New York, NY and Hove, UK: Routledge.
- Hunter, Larry W. and John J. Lafkas. 2003. Opening the Box: Information Technology, Work Practices and Wages. *ILR Review* 56(2): 224–243.
- Iglicka, Krystyna. 2002. *Poland's Post-War Dynamic of Migration*. Farnham, UK: Ashgate.
- Ilahi, Nadeem. 1999. Return Migration and Occupational Change. *Review of Development Economics* 3(2): 170–186.
- Immervoll, Herwig and Mark Pearson. 2009. A Good Time for Making Work Pay? Taking Stock of In-Work Benefits and Related Measures across the OECD. OECD Social, Employment and Migration Working Papers No. 81, OECD Publishing.
- ITU (International Telecommunication Union). 2009. *Measuring the Information Society: The ICT Development Index*. Geneva: ITU Press.
- Jaeger, David A. and Ann Huff Stevens. 1999. Is Job Stability in the United States Falling? Reconciling Trends in the Current Population Survey and Panel Study of Income Dynamics. *Journal of Labor Economics* 17(4): S1–S28.
- Janicka, Krystyna and Kazimierz M. Ślomeczynski. 2007. Co ludzie myślą o szansach powodzenia w życiu? [What Do People Think About Chances of Life Success?]. Pp. 247–258 in *Kariera i sukces: analizy socjologiczne* [Career and Success: Sociological Analyses], edited by K. M. Ślomeczynski. Zielona Góra, PL: Wydawnictwo Uniwersytetu Zielonogórskiego.
- Jasso, Guillermina. 1982. Measuring Inequality by the Ratio of the Geometric Mean to the Arithmetic Mean. *Sociological Methods and Research* 10(3): 303–326.
- Jasso, Guillermina. 1999. How Much Injustice Is There in the World? Two New Justice Indexes. *American Sociological Review* 64(1): 133–168.
- Jasso, Guillermina. 2005. Culture and the Sense of Justice: A Comprehensive Framework for Analysis. *Journal of Cross Cultural Psychology* 13(1): 14–47.
- Jasso, Guillermina. 2006a. Factorial Survey Methods for Studying Beliefs and Judgements. *Sociological Methods and Research* 34 (3): 334–423.
- Jasso, Guillermina. 2006b. The Theory of Comparison Processes. Pp. 165–193 in *Contemporary Social Psychological Theories*, edited by P. J. Burke. Stanford, CA: Stanford University Press.

- Jasso, Guillermina. 2007. Studying Justice: Measurement, Estimation, and Analysis of the Actual Reward and the Just Reward. Pp. 225–253 in *Distributive and Procedural Justice: Research and Social Applications*, edited by K. Törnblom and R. Vermunt. London, UK: Ashgate.
- Jasso, Guillermina and Peter H. Rossi. 1977. Distributive Justice and Earned Income. *American Sociological Review* 42(4): 639–651.
- Jasso, Guillermina and Murray Webster Jr. 1999. Assessing the Gender Gap in Payment and Its Underlying Mechanisms. *Social Psychology Quarterly* 62(4): 367–380.
- Jensen, Leif and Tim Slack. 2003. Underemployment in America: Measurement and Evidence. *American Journal of Community Psychology* 32(1–2): 210–231.
- Jovanovic, Boyan. 1979. Job Matching and the Theory of Turnover. *Journal of Political Economy* 87(5, part 1): 972–990.
- Kaczmarczyk, Paweł and Marek Okólski. 2008. Demographic and Labour-Market Impacts of Migration on Poland. *Oxford Review of Economic Policy* 24(3): 599–624.
- Kaczmarczyk, Paweł. 2005. *Migracje zarobkowe Polaków w dobie przemian* [Work Migration of Poles in the Era of Change]. Warsaw, PL: University of Warsaw Press.
- Kalleberg, Arne L. 2000. Nonstandard Employment Relations: Part-time, Temporary and Contract Work. *Annual Review of Sociology* 26(1): 341–365.
- Kalleberg, Arne L. 2009. Precarious Work, Insecure Workers: Employment Relations in Transition. *American Sociological Review* 74(1): 1–22.
- Kalleberg, Arne L. and Aage B. Sørensen. 1979. Sociology of Labor Markets. *Annual Review of Sociology* 5(1): 351–379.
- Kaplan, Edward L. and Paul Meier. 1958. Nonparametric Estimation from Incomplete Observations. *Journal of the American Statistical Association* 53: 457–481.
- Karlik, Marcin. 2015. Polish Labour Market – A Summary of 25 Years of Socio-Economic Reforms on the Road from Centrally Planned Economy to the First Decade of the European Union Membership (1989–2015). *Journal of International Studies* 8(3): 224–233.
- Karpiński, Zbigniew. 2012. Popular Assessments of Earnings in Various Occupations. *International Journal of Sociology* 42(1): 87–107.
- Karpiński, Zbigniew. 2015. Popular Perceptions of Actual and Just Earnings: A Questionnaire Experiment. *Ask: Research and Methods* 23(1): 5–34.

- Kelley, Jonathan and M. D. R. Evans. 1993. The Legitimation of Inequality: Occupational Earnings in Nine Nations. *American Journal of Sociology* 99(1): 75–125.
- Kenworthy, Lane and Leslie McCall. 2008. Inequality, Public Opinion and Redistribution. *Socio-Economic Review* 6(1): 35–68.
- Kerbo, Harold R. 2000. *Social Stratification and Inequality*. New York: McGraw-Hill.
- Kiersztyn, Anna. 2007. Who Works for Less? Contingent Work and Underemployment. Pp. 153–180 in *Continuity and Change in Social Life: Structural and Psychological Adjustment in Poland*, edited by K. M. Slomczynski and S. T. Marquart-Pyatt. Warsaw, PL: IFiS Publishers.
- Kiersztyn, Anna. 2012a. Analiza ekonomicznych konsekwencji zatrudnienia na czas określony dla jednostek i gospodarstw domowych [Analysis of Economic Consequences of Fixed-Term Employment for Individuals and Households]. Pp. 93–121 in *Zatrudnienie na czas określony w polskiej gospodarce. Społeczne i ekonomiczne konsekwencje zjawiska* [Fixed-Term Employment in the Polish Economy: Social and Economic Consequences of the Phenomenon], edited by M. Bednarski and K. W. Frieske. Warsaw, PL: IPiSS.
- Kiersztyn, Anna. 2012b. Employment Instability: A Dynamic Perspective. *International Journal of Sociology* 42(1): 6–30.
- Kiersztyn, Anna. 2013. Stuck in a Mismatch? The Persistence of Overeducation During Twenty Years of the Post-communist Transition in Poland. *Economics of Education Review* 32(1): 78–91.
- Kiersztyn, Anna. 2014. *Job Insecurity: Who is Affected? Is it Transitory?* POLPAN Research Report. Warsaw, PL: Research Group on Comparative Analysis of Social Inequality, Institute of Philosophy and Sociology of the Polish Academy of Sciences (<http://www.polpan.org>).
- Kiersztyn, Anna. 2015a. Early Careers on a Segmented Labour Market: Who Can Escape the Precarity Trap? Paper presented at the 12th Conference of the European Sociological Association, Prague, August 25–28.
- Kiersztyn, Anna. 2015b. Solidarity Lost? Low Pay Persistence During the Post-Communist Transition in Poland. *Polish Sociological Review* 192(4): 493–509.
- Kiersztyn, Anna. 2015c. *Niepewne uczestnictwo – młodzi na polskim rynku pracy w latach 2008–2013* [Precarious Participation: the Young on the Polish Labor Market 2008–2013.] POLPAN Research Report.

- Warsaw, PL: Research Group on Comparative Analysis of Social Inequality, Institute of Philosophy and Sociology of the Polish Academy of Sciences (<http://www.polpan.org>).
- Kiersztyn, Anna. 2016. Non-standard Employment and Risk. How Can We Capture Job Precarity Using Survey Data? Paper prepared for the 3rd ISA Forum of Sociology, Vienna, July 10–14.
- Kiersztyn, Anna and Jan Dzierzgowski. 2012. Portret zatrudnionego na czas określony: wyniki analiz ilościowych [Portrait of a Person with Fixed-Term Employment: Findings of Quantitative Analysis]. Pp. 67–92 in *Zatrudnienie na czas określony w polskiej gospodarce. Społeczne i ekonomiczne konsekwencje zjawiska* [Fixed-Term Employment in the Polish Economy: Social and Economic Consequences of the Phenomenon], edited by M. Bednarski and K. W. Frieske. Warsaw, PL: IPiSS.
- Kirkpatrick, Graeme. 2008. *Technology and Social Power*. New York, NY: Palgrave Macmillan.
- Klebaniuk, Jarosław, ed. 2007. *Fenomen nierówności społecznych* [Phenomenon of Social Inequality]. Warsaw, PL: Eneteia.
- Klein, Peter G. and Michael L. Cook. 2006. T.W. Schultz and the Human-Capital Approach to Entrepreneurship. *Review of Agricultural Economics* 28(3): 344–350.
- Kluegel, James R. and Eliot R. Smith. 1986. *Beliefs About Inequality: Americans' Views of What Is and What Ought to Be*. New York, NY: Aldine de Gruyter.
- Kogan, Irena, Teo Matković, and Michael Gebel. 2013. Helpful Friends? Personal Contacts and Job Entry among Youths in Transformation Societies. *International Journal of Comparative Sociology* 54(4): 277–297.
- Kohler, Ulrich and Frauke Kreuter. 2009. *Data Analysis Using Stata* (2nd edition). College Station, TX: Stata Press.
- Kończyńska, Marta and Joseph J. Merry. 2016. Preferred Levels of Income Inequality in a Period of Systemic Change: Analysis of Data from the Polish Panel Survey, POLPAN 1988–2003. *Polish Sociological Review* 194(2): 171–189.
- Kopczuk, Wojciech, Emmanuel Saez, and Jae Song. 2010. Earnings Inequality and Mobility in the United States: Evidence from Social Security Data since 1937. *Quarterly Journal of Economics* 125(1): 91–128.
- Korbet, Elisabeth and Adam Clymer. 1996. The Politics of Layoffs: In Search of a Message. *New York Times*, March 8.

- Kotowska, Irena E. and Urszula Sztanderska. 2007. Zmiany demograficzne a zmiany na rynku pracy w Polsce [Population Changes and Labor Market Developments in Poland]. Pp. 13–46 in *Aktywność zawodowa i edukacyjna a obowiązki rodzinne w Polsce w świetle badań empirycznych* [Economic and Educational Activity Versus Family Obligations], edited by I. E. Kotowska, U. Sztanderska, and I. Wóycicka. Warsaw, PL: Scholar.
- Kozłowski, Waldemar, Matczak, Ewa. 2013. Sukces i merytokracja: stałość i zmienność kryteriów życiowego sukcesu [Success and Meritocracy: Stability and Change of the Life Success Criteria]. *Naukovi zapyski: 'Psychologia i pedagogika'* (<http://bit.ly/1y4MOO7>).
- Krauze, Tadeusz. 1998. Meritocracy and the Transition to the Market Economy. Pp. 70–81 in *Power and Social Structure: Essays in Honor of Włodzimierz Wesółowski*, edited by A. Jasińska-Kania, M. L. Kohn, and K. M. Słomczyński. Warsaw, PL: University of Warsaw Press.
- Krauze, Tadeusz K. and Kazimierz M. Słomczyński. 1986. Social Mobility: Actual, Perceived, and Equitable. *International Journal of Sociology* 16(1–2): 174–189.
- Kryszczuk, Maciej D. and Brian E. Green. 2007. Computerization of Polish Households: An Analysis of Structural Determinants of the Digital Divide. Pp. 217–240 in *Continuity and Change in Social Life*, edited by K. M. Słomczyński and S. T. Marquart-Pyatt. Warsaw, PL: IFiS Publishers.
- Kryszczuk, Maciej D. and Brian E. Green. 2009. Computerization of Polish Households in Social Structural Perspective: A Dynamic Analysis of the Informatization Process over 20 Years. *Polish Sociological Review* 168(4): 595–605.
- Kryszczuk, Maciej D. and Brian E. Green. 2015. Digital Divide in Poland: An Exploration of Some Sociological Impacts of Personal Computer Possession, Internet Use and PC Proficiency. *Journal of Management and Business Administration-Central Europe* 23(3): 2–18.
- Kumor, Paweł. 2009. Współzależność nierówności płac ze wzrostem gospodarczym w Polsce [The Correlation Between Salary Inequalities and the Economic Growth in Poland]. *Wiadomości Statystyczne* 578 (7): 10–28.
- Kunovich, Robert M. 2002. 'Throwing the Rascals Out.' Macroeconomic Conditions, Personal Economic Hardship, and Protest Voting in Poland. Pp. 201–220 in *Social Structure: Changes and Linkages: The*

- Advanced Phase of the Post-Communist Transition in Poland*, edited by K. M. Slomczynski. Warsaw, PL: IFiS Publishers.
- Kunovich, Robert M. 2004. Social Structural Position and Prejudice: An Exploration of Cross-National Differences in Regression Slopes. *Social Science Research* 33(1): 20–44.
- Kunovich, Robert M. 2013. Perceived Unemployment: The Sources and Consequences of Misperception. *International Journal of Sociology* 42(4): 100–123.
- Kunovich, Sheri and Kazimierz M. Slomczynski. 2007. Systems of Distribution and a Sense of Equity: A Multilevel Analysis of Meritocratic Attitudes in Post Industrial Societies. *European Sociological Review* 23(5): 649–663.
- Laumann, Edward O. 1973. *Bonds of Pluralism: The Form and Substance of Urban Social Networks*. New York, NY: Wiley.
- Leiulfstrud, Hakon, Ivano Bison, and Heidi Jensberg. 2005. *Social Class in Europe. European Social Survey 2002/3*. Trondheim, NO: NTNU.
- Lerner, Melvin J. and Dale T. Miller. 1978. Just World Research and the Attribution Process: Looking Back and Ahead. *Psychological Bulletin* 85(5): 1030–1051.
- Leszkowicz-Baczyński, Jerzy. 2007. Koncepcja i przejawy sukcesu w środowiskach klasy średniej [Conception and Manifestations of Success in Middle Class Circle]. Pp. 259–282 in *Kariera i sukces: analizy socjologiczne* [Career and Success: Sociological Analyses], edited by K. M. Slomczynski. Zielona Góra, PL: Wydawnictwo Uniwersytetu Zielonogórskiego.
- Lewis-Beck, Michael S. and Mary Stegmaier. 2007. Economic Models of the Vote. Pp. 518–537 in *The Oxford Handbook of Political Behavior*, edited by R. Dalton and H.-D. Klingemann. Oxford, UK: Oxford University Press.
- Li, Jiang Hong, Marlis Buchmann, Markus König, and Stefan Sacchi. 1981. Patterns of Mobility for Women in Female-Dominated Occupations: An Event-History Analysis of Two Birth Cohorts of Swiss Women. *European Sociological Review* 14(1): 49–67.
- Li, Mei and Mark Bray. 2006. Social Class and Cross-border Higher Education: Mainland Chinese Students in Hong Kong and Macau. *Journal of International Migration and Integration* 7(4): 407–424.
- Lieberson, Stanley. 1976. Rank-Sum Comparisons between Groups. *Sociological Methodology* 7: 276–291.

- Lobodzińska, Barbara. 1977. Married Women's Gainful Employment and Housework in Contemporary Poland. *Journal of Marriage and Family* 39(2): 405–415.
- Lobodzińska, Barbara. 1978. The Education and Employment of Women in Contemporary Poland. *Signs* 3: 688–697.
- Locklear, Sheri. 1998. Meritocratic Image of Success and Its Determinants: A Comparison of Poland and Hungary, 1987–88 and 1992. *International Journal of Sociology* 28(2): 65–90.
- Loomis, Charles F. 1946. Ethnic Cleavages in the Southwest as Reflects in Two High Schools. *Sociometry* 9(4): 7–29.
- Lovell, Rachel E. 2007. Occupational-Career Interruptions: Patterns and Consequences. Pp. 47–59 in *Continuity and Change in Social Life: Structural and Psychological Adjustment in Poland*, edited by K. M. Slomczynski and S. T. Marquart-Pyatt. Warsaw, PL: IFiS Publishers.
- Luciflora, Claudio, Abigail McKnight, and Wiemer Salverda. 2005. Low Wage Employment in Europe: A Review of the Evidence. *Socio-Economic Review* 3(2): 259–292.
- Luijckx, Ruud and Maarten H. Wolbers. 2009. The Effects of Non-Employment in Early Work-Life on Subsequent Employment Chances of Individuals in the Netherlands. *European Sociological Review* 25(6): 647–660.
- Ma, Zhongdong. 2002. Social Capital Mobilization and Income Returns to Entrepreneurship: The Case of Return Migration in Rural China. *Environment and Planning A* 34(10): 1763–1784.
- Mach, Bogdan W. 2004. Intergenerational Mobility in Poland: 1972–1988–1994. Pp. 269–286 in *Social Mobility in Europe*, edited by R. Breen. Oxford, UK: Oxford University Press.
- Maciejko, Robert R. 1991. Joint Ventures in Poland. Pp. 115–140 in *East-West Joint Ventures: The New Business Environment*, edited by E. Razvigorova and G. Wolf-Laudon. Oxford, UK: Blackwell.
- Magda, Iga. 2008. Wage Mobility in Times of Higher Earnings Disparities: Is it Easier to Climb the Ladder? ISER Working Paper Series, No. 2008-10. Colchester, UK: Institute for Social and Economic Research.
- Magda, Iga and Arkadiusz Szydłowski. 2008. Wages in Macro- and Micro-Perspective. Pp. 71–109 in *Employment in Poland 2006: Productivity for Jobs*, edited by M. Bukowski. Warsaw, PL: Ministry of Labor and Social Policy.

- Matejko, Alexander. 1974. *Social Change and Stratification in Eastern Europe: An Interpretive Analysis of Poland and Her Neighbors*. New York, NY: Praeger.
- Matysiak, Anna and Stephanie Steinmetz. 2008. Finding Their Way? Female Employment Patterns in West Germany, East Germany, and Poland. *European Sociological Review* 24(2): 331–345.
- McCall, Brian P. 1990. Occupational Matching: A Test of Sorts. *Journal of Political Economy* 98(1): 45–69.
- McCall, Leslie. 2013. *The Undeserving Rich: American Beliefs about Inequality, Opportunity, and Redistribution*. Cambridge, New York: Cambridge University Press.
- McCall, Leslie and Lane Kenworthy. 2009. Americans' Social Policy Preferences in the Era of Rising Inequality. *Perspectives on Politics* 7(3): 459–484.
- McCormick, Barry and Jackline Wahba. Return International Migration and Geographical Inequality: The Case of Egypt. *Journal of African Economies* 12(4): 500–532.
- McGovern, Patrick, Deborah Smeaton, and Stephen Hill. 2004. Bad Jobs in Britain. Nonstandard Employment and Job Quality. *Work and Occupations* 31(2): 225–249.
- McNamee, Stephen J. and Robert K. Miller Jr. 2004. *The Meritocracy Myth*. Boston, MA: Rowman & Littlefield.
- McPherson, Miller, Lynn Smith-Lovin, and James M. Cook. 2001. Birds of a Feather: Homophily in Social Networks. *Annual Review of Sociology* 27: 415–444.
- Mikucka, Małgorzata. 2013. The Transition to Insecurity: Employment Dynamics and Its Sociodemographic Differentiation. *International Journal of Sociology* 42(4): 71–99.
- Millward-Brown SMG/KRC and Center for Social and Economic Research (CASE). 2008. *Final Report – Unregistered Employment in Poland*. Warsaw, PL: SMG/KRC and CASE.
- Mincer, Jacob. 1958. Investment in Human Capital and Personal Income Distribution. *Journal of Political Economy* 66(4): 281–302.
- Monroe, Kristen R. 1979. Econometric Analyses of Electoral Behavior: A Critical Review. *Political Behavior* 1(1): 137–173.
- Moss, Philip, Harold Salzman, and Chris Tilly. 2000. Limits to Market-Mediated Employment. From Deconstruction to Reconstruction of Internal Labor Markets. Pp. 95–121 in *Nonstandard Work: The Nature and Challenges of Changing Employment Arrangements*, edited by F.

- Carre, M. A. Ferber, L. Golden, and S. Herzenberg. Chicago, IL: Industrial Relations Research Association.
- Nadeau, Richard, Richard G. Niemi, and Jeffrey Levine. 1993. Innumeracy about Minority Populations. *Public Opinion Quarterly* 57(2): 332–347.
- Neumark, David. 2000. Changes in Job Stability and Job Security: A Collective Effort to Untangle, Reconcile, and Interpret the Evidence. Pp. 1–27 in *On The Job: Is Long-Term Employment a Thing of the Past?*, edited by D. Neumark. New York, NY: Russell Sage Foundation.
- Neumark, David, Daniel Polsky, and Daniel Hansen. 1999. Has Job Stability Declined Yet? New Evidence for the 1990s. *Journal of Labor Economics* 17(4): S29–S64.
- Newell, Andrew and Francesco Pastore. 2006. Regional Unemployment and Industrial Restructuring in Poland. *Eastern European Economics* 44(3): 5–28.
- Newell, Andrew and Mieczysław W. Socha. 2007. The Polish Wage Inequality Explosion. *Economics of Transition* 15(4): 733–758.
- Nicholson, Beryl. 2001. From Migrant to Microentrepreneur. *South-East Europe Review* 4(3): 39–41.
- Nicholson, Beryl. 2002. The Wrong End of the Telescope: Economic Migrants, Immigration Policy, and How it Looks from Albania. *Political Quarterly* 73(4): 436–444.
- Notten, Natascha, Jochen Peter, Gerbert Kraykaamp, and Patti M. Valkenburg. 2009. Research Note: Digital Divide across Borders – A Cross-National Study of Adolescents’ Use of Digital Technology. *European Sociological Review* 25(5): 551–560.
- Okólski, Marek. 2001. Incomplete Migration: A New Form of Mobility in Central and Eastern Europe. Pp. 105–128 in *Patterns of Migration in Central Europe*, edited by C. Wallace and D. Stola. London, UK: Palgrave.
- Okólski, Marek and John Salt. 2014. Polish Emigration to the UK after 2004: Why Did So Many Come? *Central and Eastern European Migration Review* 3(2): 11–38.
- Ono, Hiroshi and Madeline Zavodny. 2008. Immigrants, English Ability, and the Digital Divide. *Social Forces* 86(4): 1455–1479.
- Orazem, Peter F. and Milan Vodopivec. 2000. Male-Female Differences in Labor Market Outcomes During the Early Transition to Market: The Cases of Estonia and Slovenia. *Journal of Population Economics* 13(2): 283–303.

- Organization for Economic Cooperation and Development (OECD). 1997. *Employment Outlook 1997*. Paris, FR: OECD.
- Organization for Economic Cooperation and Development (OECD). 2003. *Employment Outlook 2003*. Paris, FR: OECD.
- Organization for Economic Cooperation and Development (OECD). 2009. *Employment Outlook 2009*. Paris, FR: OECD.
- Organization for Economic Cooperation and Development (OECD). 2010. *Employment Outlook 2010*. Paris, FR: OECD.
- Organization for Economic Cooperation and Development (OECD). 2014. *Employment Outlook 2014*. Paris, FR: OECD.
- Organization for Economic Cooperation and Development (OECD). 2014. *Employment Outlook 2014*. Paris, FR: OECD.
- Origo, Federica and Laura Pagani. 2009. Flexicurity and Job Satisfaction in Europe: The Importance of Perceived and Actual Job Stability for Well-Being at Work. *Labor Economics* 16(3): 547–555.
- Osberg, Lars and Timothy Smeeding. 2006. Fair Inequality? Attitudes Towards Pay Differentials: The United States in Comparative Perspective. *American Sociological Review* 71(4): 450–473.
- Osborn, Elisabeth and Kazimierz M. Slomczynski. 2005. *Open for Business: The Persistent Entrepreneurial Class in Poland*. Warsaw, PL: IFiS Publishers.
- Parey, Matthias and Fabian Waldinger. 2011. Studying Abroad and the Effect on International Labour Market Mobility: Evidence from the Introduction of ERASMUS. *Economic Journal* 121(551): 194–222.
- Pavlopoulos, Dimitris, Ruud Muffels, and Jeroen K. Vermunt. 2010. Wage Mobility in Europe. A Comparative Analysis Using Restricted Multinomial Logit Regression. *Quality and Quantity* 44(1): 115–129.
- Pfeffer, Eckhard. 1996. Keynote Address at Winter Consumer Electronics Show, Las Vegas, Nevada. Cited in *Perspectives: Technology and Society*, edited by D. Fallon [1999]. Boulder, CO: Coursewise Publishing.
- Piketty, Thomas. 2014. *Capital in the Twenty-First Century*. Translated by A. Goldhammer. Boston, MA: Belknap Press.
- Piketty, Thomas and Emmanuel Saez. 2003. Income Inequality in the United States, 1913–1998. *The Quarterly Journal of Economics* 118(1): 1–39.
- Pohoski, Michał and Kazimierz M. Slomczynski. 1978. *Spoleczna Klasyfikacja Zawodów* [Social Classification of Occupations]. Warsaw, PL: IFiS PAN.

- Pokropek, Artur. 2009. Skalogram Rasha dla kompetencji komputerowych: Skala na podstawie zmiennych z badań empirycznych POLPAN 2008 [The Rasch Scale for Computer Competency: A Scale Based on the Variables from the POLPAN 2008 Survey]. Unpublished report prepared for POLPAN study.
- Polivka, Anne E. 1996. Contingent and Alternative Work Arrangements, Defined. *Monthly Labor Review* 119(1): 3–9.
- Polivka, Anne E. and Thomas Nardone. 1989. On the Definition of ‘Contingent Work’. *Monthly Labor Review* 112(1): 9–14.
- Pollert, Anna. 2003. Women, Work and Equal Opportunities in Post-Communist Transition. *Work, Employment and Society* 17(2): 331–357.
- Prandy, Kenneth and Paul S. Lambert. 2003. Marriage, Social Distance and the Social Space: An Alternative Derivation and Validation of the Cambridge Scale. *Sociology* 37(3): 397–411.
- Quillian, Lincoln. 1995. Prejudice as a Response to Perceived Group Threat: Population Composition and Anti-Immigrant and Racial Prejudice in Europe. *American Sociological Review* 60(4): 586–611.
- Quillian, Lincoln. 1996. Group Threat and Regional Change in Attitudes toward African-Americans. *American Journal of Sociology* 102(4): 816–860.
- Quintini, Glenda and Thomas Manfredi. 2009. Going Separate Ways? School-to-Work Transitions in the United States and Europe. OECD Social, Employment and Migration Working Papers No. 90, OECD.
- R Development Core Team. 2015. *R: A Language and Environment for Statistical Computing*. Vienna, AU: R Foundation for Statistical Computing.
- Rabe-Hesketh, Sophia and Anders Skrondal. 2008. *Multilevel and Longitudinal Modeling Using Stata* (2nd edition). College Station, TX: Stata Press.
- Rabe-Hesketh, Sophia and Anders Skrondal. 2012. *Multilevel and Longitudinal Modeling Using Stata*. Vol. 1, *Continuous Responses*. College Station, TX: Stata Press.
- Rawls, John. 1971. *A Theory of Justice*. Cambridge, MA: Belknap Press.
- Raymo, James and Yu Xie. 2000. Temporal and Regional Variation in the Strength of Educational Homogamy. *American Sociological Review* 65(5): 773–781.
- Redmond, Gerry, Sylke Viola Schnepf, Marc Suhrcke, and International Child Development Centre. 2002. *Attitudes to Inequality after 10 Years of Transition*. Florence, IT: UNICEF Innocenti Research Centre.

- Reichert, Joshua. 1981. The Migrant Syndrome: Seasonal U.S. Wage Labor and Rural Development in Central Mexico. *Human Organization* 40(1): 56–66.
- Roberts, Andrew. 2008. Hyperaccountability: Economic Voting in Central and Eastern Europe. *Electoral Studies* 27(3): 533–546.
- Robin, Jean-Marc. 2011. On the Dynamics of Unemployment and Wage Distributions. *Econometrica* 79(5): 1327–1355.
- Rosenfeld, Rachel A. 1980. Sex and Race Differences in Career Dynamics. *American Sociological Review* 45(3): 583–609.
- Rosenthal, Elisabeth. 2008. Old Ways, New Pains for Farms in Poland. *The New York Times*. April 4.
- Ruspini, Paolo and John Eade. 2014. A Decade of EU Enlargement: A Changing Framework and Patterns of Migration. *Central and Eastern European Migration Review* 3(2): 5–10.
- Rutkowski, Jan J. 1996. Changes in the Wage Structure during Economic Transition in Central and Eastern Europe, Social Challenges of Transition Series. World Bank Technical Paper No. 340.
- Rutkowski, Jan J. 1997. Low wage Employment in Transitional Economies of Central and Eastern Europe. *MOCT-MOST: Economic Policy in Transitional Economies* 7(1): 105–130.
- Rutkowski, Jan J. 2001. Earnings Inequality in Transition Economies of Central Europe Trends and Patterns during the 1990s. Social Protection Discussion Paper No. 0117, Washington, DC: The World Bank.
- Rutkowski, Jan J. 2001. Earnings Mobility during the Transition: The Case of Hungary. *MOCT-MOST: Economic Policy in Transitional Economies* 11(1): 69–89.
- Rytina, Steven. 1999. Social Structure. Pp. 1802–1809 in *The Encyclopedia of Sociology*. (2nd edition), edited by E. F. Borgatta. New York, NY: Macmillan.
- Sawiński, Zbigniew and Henryk Domański. 1989. Dimensions of Social Stratification: A Comparative Analysis. *International Journal of Sociology* 19(1): 1–102.
- Scherer, Stefani 2001. Early Career Patterns: A Comparison of Great Britain and West Germany. *European Sociological Review* 17(2): 119–144.
- Schmidt, Stefanie R. 1999. Long-Run Trends in Workers' Beliefs about Their Own Job Security: Evidence from the General Social Survey Source. *Journal of Labor Economics* 17(4): S127–S141.
- Schmidt, Stefanie R. and Shirley V. Svorny. 1998. Recent Trends in Job Security and Stability. *Journal of Labor Research* 19(4): 647–668.

- Schneider, Simone M. 2012. Income Inequality and its Consequences for Life Satisfaction: What Role do Social Cognitions Play? *Social Indicators Research* 106: 419–438.
- Schultz, Theodore W. 1963. *The Economic Value of Education*. New York, NY: Columbia University Press.
- Selhofer, Hannes and Tobias Hüsing. 2002. The Digital Divide Index: A Measure of Social Inequalities in the Adoption of ICT. Proceedings of the 10th European Conference on Information Systems and the Future of the Digital Economy. Gdansk, Poland.
- Selwyn, Neil. 2013. Moving On-Line? An Analysis of Patterns of Adult Internet Use in the UK, 2002–2010. *Information, Communication and Society* 16(1): 1–27.
- Semyonov, Moshe, Rebeca Raijman, and Anastasia Gorodzeisky. 2006. The Rise of Anti-Foreigner Sentiment in European Societies, 1988–2000. *American Sociological Review* 71(4): 426–449.
- Semyonov, Moshe, Rebeca Raijman, and Anastasia Gorodzeisky. 2008. Foreigners' Impact on European Societies: Public Views and Perceptions in a Cross-National Comparative Perspective. *International Journal of Comparative Sociology* 49(1): 5–29.
- Semyonov, Moshe, Rebeca Raijman, Anat Yom Tov, and Peter Schmidt. 2004. Population Size, Perceived Threat, and Exclusion: A Multiple Indicators Analysis of Attitudes toward Foreigners in Germany. *Social Science Research* 33(4): 681–701.
- Sigelman, Lee and Richard G. Niemi. 2001. Innumeracy About Minority Populations: African Americans and Whites Compared. *Public Opinion Quarterly* 65(1): 86–94.
- Siherman, Nachum and Oded Galor. 1990. A Theory of Career Mobility. *Journal of Political Economy* 98(1): 169–192.
- Simmel, Georg. 1971. *On Individual and Social Forms*, edited by D. N. Levine, Chicago, IL: University of Chicago Press.
- Skarżyńska, Krystyna and Krzysztof Chmielewski. 1997. Motywacja osiągnięciowa i uwarunkowania sukcesu w Polsce [Achievement Motivation and Determinants of Success in Poland]. *Studia Psychologiczne* 36(2): 95–117.
- Sloane, Peter J. and Ioannis Theodossiou. 2000. Earnings Mobility of the Low Paid. Pp. 82–99 in *Labour Market Inequalities: Problems and Policies towards Low-wage Employment in International Perspective*, edited by M. Gregory, W. Salverda, and S. Bazen. Oxford, UK: Oxford University Press,

- Slocum, Walter L. 1974. *Occupational Careers: A Sociological Perspective* (2nd edition). Chicago, IL: Aldine.
- Slomczynski, Kazimierz M. 1998 [2003, 2008]. *Dokumentacja badania "Struktura społeczna w Polsce. POLPAN 1998"*. [Documentation of the 'Study Social Structure in Poland. POLPAN 1998']. Preparation for Archiving M. Zieliński. Warsaw, PL: IFiS PAN.
- Slomczynski, Kazimierz M. 2003 [2008]. *Dokumentacja badania "Struktura społeczna w Polsce. POLPAN 2003"* [Documentation of the 'Study Social Structure in Poland. POLPAN 2003']. Preparation for Archiving M. Zieliński. Warsaw, PL: IFiS PAN.
- Slomczynski, Kazimierz M. 2007. Wprowadzenie. Kariera i sukces jako przedmiot badań socjologicznych [Introduction: Career and Success as a Topic of Sociological Research]. Pp. 259–282 in *Kariera i sukces: analizy socjologiczne* [Career and Success: Sociological Analyses], edited by K. M. Slomczynski. Zielona Góra, PL: Wydawnictwo Uniwersytetu Zielonogórskiego.
- Slomczynski, Kazimierz M. 2009. Occupational Scales According to Skill Requirements, Complexity of Work, Material Remuneration, and Prestige. Pp. 137–179 in *Sociological Tools Measuring Occupations. New Classification and Scales*, edited by H. Domański, Z. Sawiński, and K. M. Slomczynski. Warsaw, PL: IFiS Publishers.
- Slomczynski, Kazimierz M., ed. 2000. *Social Patterns of Being Political*. Warsaw, PL: IFiS Publishers.
- Slomczynski, Kazimierz M., ed. 2002. *Social Structure: Changes and Linkages*. Warsaw, PL: IFiS Publishers.
- Slomczynski, Kazimierz M., Ireneusz Białecki, Henryk Domański, Krystyna Janicka, Bogdan W. Mach, Zbigniew Sawiński, Joanna Sikorska, and Wojciech Zaborowski. 1988 [2003, 2008]. *Dokumentacja badania "Struktura społeczna w Polsce. POLPAN 1988"* [Documentation of the 'Study Social Structure in Poland. POLPAN 1988']. Preparation for Archiving M. Zieliński. Warsaw, PL: IFiS PAN.
- Slomczynski, Kazimierz M., Ireneusz Białecki, Henryk Domański, Krystyna Janicka, Bogdan W. Mach, Zbigniew Sawiński, Joanna Sikorska, and Wojciech Zaborowski. 1989. *Struktura społeczna: schemat teoretyczny i warsztat badawczy* [Social Structure: Theoretical Framework and Research Methods]. Warsaw, PL: IFiS PAN.
- Slomczynski, Kazimierz M. and Joshua K. Dubrow. 2010. When and Where Class Matters for Political Outcomes: Class and Politics in a Cross-National Perspective. Pp. 195–214 in *Handbook of Politics:*

- State and Society in Global Perspective*, edited by K. T. Leicht and J. C. Jenkins. New York, NY: Springer.
- Słomczynski, Kazimierz M. and Krystyna Janicka. 2005. Pęknięta struktura społeczeństwa polskiego [Broken Social Structure in Poland]. Pp. 162–184 in *Polska, ale jaka?* [What Kind of Poland?], edited by M. Jarosz. Warsaw, PL: Oficyna Naukowa.
- Słomczynski, Kazimierz M., Krystyna Janicka, Goldie Shabad, and Irina Tomescu-Dubrow. 2007. Changes in Class Structure in Poland, 1988–2003: Crystallization of the Winners-Losers' Divide. *Polish Sociological Review* 157(1): 45–64.
- Słomczynski, Kazimierz M., Krystyna Janicka, Henryk Domański, and Irina Tomescu-Dubrow. 2008 [2010]. Polish Panel Study, POLPAN 1988–2008. Available at Leibniz Institute for the Social Sciences (<http://www.gesis.org>).
- Słomczynski, Kazimierz M. and Grażyna Kacprowicz. 1979. *Skale zawodów* [Occupational Scales]. Warsaw, PL: IFiS PAN.
- Słomczynski, Kazimierz M., Tadeusz K. Krauze, and Zbigniew Peradzynski. 1988. The Dynamics of Status Trajectory: A Model and Its Empirical Assessment. *European Sociological Review* 4(1): 46–64.
- Słomczynski, Kazimierz M. and Sandra Marquart-Pyatt, eds. S. 2007. *Continuity and Change in Social Life*. Warsaw, PL: IFiS Publishers.
- Słomczynski Kazimierz M. and Goldie Shabad. 1997. Systemic Transformation and the Salience of Class Structure in East Central Europe. *East European Politics and Societies* 11(1): 155–189.
- Słomczynski, Kazimierz M. and Irina Tomescu-Dubrow. 2008. Systemowe zmiany w strukturze klasowej a ruchliwość społeczna. Analiza tablic przepływu osób między różnymi kategoriami początkowymi i końcowymi [Systemic Changes in Class Structure and Social Mobility: Analysis of Tables Containing Different Origin and Destination Categories]. Pp. 75–96 in *Zmiany stratyfikacji społecznej w Polsce* [Changes in Social Stratification in Poland], edited by H. Domański. Warsaw, PL: Wydawnictwo IFiS PAN.
- Słomczynski, Kazimierz M. and Irina Tomescu-Dubrow, eds. 2012. Structural Constraints, Gender, and Images of Inequality: The Polish Panel Survey, POLPAN 1988–2008. Special issue of the *International Journal of Sociology* 42(1).
- Słomczynski, Kazimierz M. and Irina Tomescu-Dubrow, eds. 2013. Sociodemographic Differentiation in a Dynamic Perspective: The Polish

- Panel Survey, POLPAN 1988–2008. Special issue of the *International Journal of Sociology* 42(4).
- Slomczynski, Kazimierz M., Irina Tomescu-Dubrow, and Zbigniew Sawiński. 2013. Modeling Occupational Careers for a Turbulent Economy: From Simple to Complex Approaches. *International Journal of Sociology* 42(4): 56–70.
- Slomczynski, Kazimierz M., Irina Tomescu-Dubrow, and Joshua Kjerulf Dubrow. 2015. Changes in Social Structure, Class, and Stratification: The Polish Panel Survey (POLPAN). *ASK: Research & Methods* 24(1): 19–37.
- Socha, Mieczysław W. and Jacob Weisberg. 2002. Labor Market Transition in Poland: Changes in the Public and Private Sectors. *International Journal of Manpower* 23(6): 553–577.
- Sørensen, Aage B. 1974. A Model for Occupational Careers. *American Journal of Sociology* 80(1): 44–57.
- Spilerman, Seymour. 1977. Careers, Labor Market Structure, and Socioeconomic Achievement. *American Journal of Sociology* 83(3): 551–593.
- Standing, Guy. 2011. *The Precariat: The New Dangerous Class*. London, UK: Bloomsbury Academic.
- Stola, Dariusz. 2001a. Międzynarodowa mobilność zarobkowa w PRL [International Income Mobility in People's Republic of Poland]. Pp. 62–100 in *Ludzie na huśtawce. Migracje między peryferiami Polski i Zachodu* [People on the Swing. Migration from Polish Peripheries to Peripheries of the West], edited by E. Jaźwinska and M. Okólski. Warsaw, PL: Scholar.
- Stola, Dariusz. 2001b. Two Kinds of Quasi-Migration in the Middle Zone: Central Europe as a Space for Transit Migration and Mobility for Profit. Pp. 84–104 in *Patterns of Migration in Central Europe*, edited by C. Wallace and D. Stola. London, UK: Macmillan.
- Sudman, Seymour, Norbert M. Bradburn, and Norbert Schwartz. 1996. *Thinking about Answers: The Application of Cognitive Processes to Survey Methodology*. San Francisco, CA: Jossey-Brass.
- Swinnerton, Kenneth A. and Howard Wial. 1995. Is Job Stability Declining in the U.S. Economy? *Industrial and Labor Relations Review* 48(2): 293–304.
- Swinnerton, Kenneth A. and Howard Wial. 1996. Is Job Stability Declining in the U.S. Economy? Reply to Diebold, Neumark, and Polsky. *Industrial and Labor Relations Review* 49(2): 352–355.

- Szczepański, Jan 1978. Early Stages of Industrialization and Changes in Class Structure. Pp. 11–36 in *Class Structure and Stratification in Poland*, edited by K. M. Slomczynski and T. Krauze. White Plains, NY: Sharpe.
- Sztanderska, Urszula and Gabriela Grotkowska. 2007. *Zatrudnienie i bezrobocie kobiet i mężczyzn* [Employment and Unemployment of Women and Men]. Pp. 170–218 in *Aktywność zawodowa i edukacyjna a obowiązki rodzinne w Polsce w świetle badań empirycznych* [Economic and Educational Activity Versus Family Obligations], edited by I. E. Kotowska, U. Sztanderska, and I. Wóycicka. Warsaw, PL: Scholar.
- Tachibanaki, Toshiaki. 1979. Models of Educational and Occupational Achievement over Time. *Sociology of Education* 52: 156–162.
- Taylor, Marylee C. 1998. How White Attitudes Vary with the Racial Composition of Local Populations: Numbers Count. *American Sociological Review* 63(4): 512–535.
- The Economist*. 2014. A Golden Age for Polish Farming? March 24.
- Thomas, George M., Henry A. Walker, and Morris Zelditch. 1986. Legitimacy and Collective Action. *Social Forces* 65(2): 378–404.
- Thurow, Lester C. 1996. *The Future of Capitalism: How Today's Economic Forces Shape Tomorrow's World*. New York, NY: Morrow.
- Tomescu-Dubrow, Irina. 2007. Rapid Changes in Labor Market Segmentation and the Risk of Unemployment. Pp. 139–151 in *Continuity and Change in Social Life: Structural and Psychological Adjustment in Poland*, edited by K. M. Slomczynski and S. T. Marquart-Pyatt. Warsaw, PL: IFiS Publishers.
- Tomescu-Dubrow, Irina. 2015. International Experience and Labour Market Success: Analysing Panel Data from Poland. *Polish Sociological Review* 191(3): 259–276.
- Tomescu-Dubrow, Irina, Kazimierz M. Slomczynski, Henryk Domański, Joshua Kjerulf Dubrow, Zbigniew Sawiński, and Dariusz Przybysz. Forthcoming. *Dynamic Class and Stratification in Poland*. Budapest, HU: CEU Press.
- Topel, Robert H. and Michael P. Ward. 1992. Job Mobility and the Careers of Young Men. *Quarterly Journal of Economics* 107(2): 439–479.
- Tóth, István György and Tamás Keller. 2013. Income Distribution, Inequality Preferences, and Redistributive Preferences in European Countries. Pp. 173–206 in *Income Inequality: Economic Disparities and the Middle Class in Affluent Countries*, edited by J. C. Gornick and M. Jantti. Stanford, CA: Stanford University Press.

- Triandafyllidou, Anna, ed. 2006. *Contemporary Polish Migration in Europe: Complex Patterns of Movement and Settlement*. Lewiston, NY: Edwin Mellen.
- Trump, Kris-Stella. 2013. The Status Quo and Perceptions of Fairness – How Income Inequality Influences Public Opinion. Harvard University, Department of Government Working Paper Series.
- UKIE. 2003. Mapa pomocy Unii Europejskiej udzielonej Polsce w ramach programu Phare 1990–2003, ISPA 2000–2003 oraz SAPARD [Mape of UE help for Poland granted in Phare Program 1990–2003, ISPA 2000–2003, and SAPARD]. Urząd Komitetu Integracji Europejskiej.
- United Nations Development Program (UNDP). 2004. Working out Employment. National Human Development Report Poland 2004. Warsaw, PL: UNDP.
- Ustawa z dnia 26 października 1982 r. o postępowaniu wobec osób uchylających się od pracy [Law of October 26, 1982, on Proceedings Against Persons Avoiding Work]. Dziennik Ustaw [Journal of Laws of the Republic of Poland] 1982, No. 35, item 229 (http://g.ekspert.infor.pl/p/_dane/akty_pdf/DZU/1982/35/229.pdf#zoom=90/).
- Ustawa z dnia 23 grudnia 1988 r. o działalności gospodarczej [Law of December 23, 1988, on Entrepreneurial Activity]. Dziennik Ustaw [Journal of Laws of the Republic of Poland] 1988, No. 41, item 324.
- Ustawa z dnia 3 marca 2000 r. o wynagradzaniu osób kierujących niektórymi podmiotami prawnymi [Law of March 3, 2000, on the Remuneration of Individuals Managing Some Legal Entities]. Dziennik Ustaw [Journal of Laws of the Republic of Poland] 2000, No. 26, item 306.
- Valletta, Robert G. 1996. Has Job Security in the United States Declined? Federal Reserve Bank of San Francisco Weekly Letter 96-07, February 16.
- Valletta, Robert G. 1999. Declining Job Security. *Journal of Labor Economics* 17(4): S170–S197.
- Van Dijk, Jan A.G.M. 2013. Inequalities in the Network Society. Pp. 105–124 in *Digital Sociology: Critical Perspectives*, edited by K. Orton-Johnson and N. Prior. Basingstoke, UK: Palgrave.
- Walker, Henry A., Larry Rogers, George M. Thomas, and Morris Zelditch Jr. 1991. Legitimizing Collective Action: Theory and Experimental Results. *Research in Political Sociology* 5(1): 1–25.
- Walker, Henry A., Larry Rogers, and Morris Zelditch Jr. 1988. Legitimacy and Collective Action: A Research Note. *Social Forces* 67(1): 216–228.
- Walker, Henry A., George M. Thomas, and Morris Zelditch Jr. 1986.

- Legitimation, Endorsement, and Stability. *Social Forces* 64(3): 620–643.
- Wallace, Claire. 2002. Opening and Closing Borders: Migration and Mobility in East-Central Europe. *Journal of Ethnic and Migration Studies* 28(4): 603–625.
- Wallace, Claire and Dariusz Stola, eds. 2001. *Patterns of Migration in Central Europe*. Basingstoke, UK: Palgrave.
- Walzer, Michael. 1983. *Spheres of Justice*. New York, NY: Basic Books.
- Wang, Ruqu and Andrew Weiss. 1998. Probation, Layoffs, and Wage-tenure Profiles: A Sorting Explanation. *Labour Economics* 5(3): 359–383.
- Warner, Lloyd W., Marcia Meeker, and Kenneth Eels. 1949. *Social Class in America: A Manual of Procedure for the Measurement of Social Status*. Chicago, IL: Science Research Associates.
- Weakliem, David, Julia McQuillan, and Tracy Schauer. 1995. Toward Meritocracy? Changing Social-Class Differences in Intellectual Ability. *Sociology of Education*, 68(4): 271–286.
- Weatherford, Stephen M. 1983. Evaluating Economic Policy: A Contextual Model of the Opinion Formation Process. *The Journal of Politics* 45(4): 866–888.
- Weber, Max. 2000. *Economy and Society*, edited by G. Roth and C. Wittich. New York, NY: Bedminster Press.
- Wegener, Berndt. 1992. Gerechtigkeitsforschung und Legitimationsnormen. *Zeitschrift für Soziologie* 21(4): 269–283.
- Wesołowski, Włodzimierz and Bogdan Mach. 1986. Unfulfilled Systemic Functions of Social Mobility, II: The Polish Case. *International Sociology* 1(1): 173–187.
- Wesołowski, Włodzimierz and Kazimierz M. Slomczynski. 1977. *Investigations on Class Structure and Social Stratification in Poland*. Warsaw, PL: IFiS Publishers.
- Whitmeyer, Joseph M. 2004. Past and Future Applications of Jassos Justice Theory. *Sociological Theory* 22(2): 432–444.
- Wolny-Peirs, Maja. 2005. *Język sukcesu we współczesnej polskiej komunikacji publicznej* [Language of Success in Contemporary Public Communication in Poland]. Warsaw, PL: Trio.
- Wong, Cara J. 2007. ‘Little’ and ‘Big’ Pictures in Our Heads: Race, Local Context, and Innumeracy about Racial Groups in the United States. *Public Opinion Quarterly* 71(2): 392–412.
- World Development Indicators: Income share held by highest 10% (SI.DST.10TH.10), and Income share held by lowest 10% (SI.DST.

- FRST.10). October 31, 2015 (<http://data.worldbank.org/country/poland>).
- Woźniak, Wojciech. 2012. Użycie i nadużycie nauk społecznych. Przypadek merytokracji [Uses and Abuses in the Social Sciences: A Case of Meritocracy]. Pp. 99–120 in *Wiedza, władza, ideologia* [Knowledge, Power, Ideology]. Warsaw, PL: Scholar.
- Wright, Erik O. 1997. *Class Counts: Comparative Studies in Class Analysis*. Cambridge: Cambridge University Press.
- Xie, Yu. 1992. The Log-Multiplicative Layer Effect Model for Comparing Mobility Tables. *American Sociological Review* 57: 380–395.
- Young, Michael. 1958. *The Rise of Meritocracy: 1870–2033: An Essay on Education and Equality*. London, UK: Thames and Hudson.
- Zajonc, Robert B. 1968. Attitudinal Effects of Mere Exposure. *Journal of Personality and Social Psychology* 9(2.2): 1–27.
- Zelditch Jr., Morris. 2001. Theories of Legitimacy. Pp. 33–53 in: *The Psychology of Legitimacy*, edited by J. Jost and B. Major, New York, NY: Cambridge University Press.
- Zelditch Jr., Morris and A.S. Floyd. 1998. Consensus, Dissensus, and Justification. Pp. 339–368 in: *Status, Power, and Legitimacy: Strategies and Theories*, edited by J. Berger and M. Zelditch Jr., New Brunswick, NJ: Transaction.
- Zelditch, Morris and Henry A. Walker. 1984. Legitimacy and the Stability of Authority. Pp. 1–25 in *Advances in Group Processes*, Vol. 1, edited by E. J. Lawler. Greenwich, CT: JAI.
- Zelditch Jr., Morris and Henry A. Walker. 2003. Legitimacy of Regimes. Pp. 217–249 in *Power and Status. Advances in Group Processes*, Vol. 20, edited by S. R. Thye and J. Skvoretz. Amsterdam, NL: Elsevier.
- Żuk, Piotr. 2008. O aktualności pojęcia „klasa społeczna” w społeczeństwie i analizach socjologicznych [On the Current Understanding of the Concept of ‘Social Class’ in Society and Sociological Analyses]. *Ruch Prawniczy, Ekonomiczny i Socjologiczny* 70(3): 165–184.

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This book explores main social and economic phenomena that, across nations, are fundamental to transformations of the social structure: labor market processes, precarity, processes and mechanisms of inequality, and perceptions of attainment and of resource allocation. The idea of dynamic social structure implies that structures are changeable and produce tensions and conflict between people, groups, and institutions. The case of Poland demonstrates that social and economic phenomena related to the labor market remain major stratifying forces.

The Polish Panel Survey, POLPAN 1988–2013, is the empirical foundation of this volume. POLPAN is the longest continuously run panel survey in Central and Eastern Europe that focuses on changes in social structure with individuals as the units of observation. The context of Poland's transformation and the availability of this unique panel survey constitute a great opportunity to study changes in the social structures.

Together with *Social Inequality and the Life Course: Poland's Transformative Years, 1988–2013* (IFiS Publishers, 2016), this volume belongs to the series of books that use POLPAN to provide analyses of, and insights into Polish society. They are available at polpan.org.



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