JOB DISCRETION AND JOB SATISFACTION IN GERMANY: ARE THE EAST GERMAN WORKERS STILL AFFECTED BY THE EXPERIENCE UNDER COMMUNIST REGIME?

By

LIM, Kyungwon

THESIS

Submitted to

KDI School of Public Policy and Management

In Partial Fulfillment of the Requirements

For the Degree of

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Abstract

Job Discretion and Job Satisfaction in Germany: Are the East German Workers Still Affected by the Experience under Communist Regime?

This research aims to find the impact of the institutional differences between the regimes of East and West Germany on job satisfaction and discretion. By using the division of Germany for 45 years after the World War II as a natural experimental setting with the data from the German Socio-Economic Panel (SOEP) from 1990 to 2009, I find that the workers of East German origin (the Easterners) have a lower level of job satisfaction after 20 years of the German reunification compared to their western counterparts. In addition, when the same amount of job discretion is granted, the Easterners exhibited a higher level of job satisfaction since they might be more appreciative of job discretion that they could not experience under the communist regime. However, this phenomenon disappeared after ten years. I also investigate the impact of migration to the region of West Germany after the reunification from East Germany. I found that among Easterners, migrants had higher job satisfaction than non-migrants but migrants experienced lesser increase in job satisfaction determined by job discretion.

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I. Introduction

How do workers respond to discretion at work? Does more discretion make them more satisfied or dissatisfied? Many researchers have revealed that offering job discretion which is the freedom in workplaces increases workers' job satisfaction (Sousa-Poza and Sousa-Poza 2000; Bradley, Taylor, and Nguyen 2003; Benz and Frey 2004; Thompson and Prottas 2006, 115). However, such results are only the case in the countries with democratic political system along with capitalism. It would be interesting to investigate the impact of job discretion in former communist countries where people did not have much discretion in society in general. Thus, a study to unravel the relationship between job discretion and job satisfaction of workers in authoritarian communist regime is in order. The institutional differences between capitalism and communism with regards to political and economic freedom would affect the work environment so that laborers would work in completely different work environment. While it was possible for people living in capitalist societies have reasonable degree of job discretion depending on the position in workplace, workers in communist societies had little or no discretion on their job. Thus, they may be unfamiliar with how to deal with and respond to discretion in workplaces. At this point, it is possible to ask the question that how do workers who lived under the communist regime feel in response to job discretion in workplaces and that does it make the workers satisfied as capitalist country workers do. There would be three hypotheses. First, if there is no impact of the institutional differences between capitalism and communism on workers, the impact of job discretion offered to former communist country workers on their job satisfaction is not systematically different from those of workers in capitalist countries. Second, when the difference in institutions has an influence on workers, it would be manifested in two ways. If the

workers from the former communist countries can be said to be unfamiliar with how to deal with job discretion while carrying out their tasks, it would be uncomfortable for them. This would make workers dissatisfied with the job. On the contrary, they would be more appreciative regarding job discretion than the workers under the capitalist system so that the job satisfaction of the workers from the former communist countries would be higher than those of the capitalist counterparts.

For the demonstration of these hypotheses, Germany provides researchers with a good natural experiment setting. The partition for 45 years in German population which had almost similar characteristics in various aspects was not attributable to their desire so that it became the exogenous shock offering researchers good treatment and control group¹. Based on this natural experimental setting, I aim to study on how the job satisfaction of the workers of East German origin workers (the Easterners) changes in response to job discretion compared to those of the West German origin workers (the Westerners). In order to verify these hypotheses, this paper uses the data from German Socio-Economic Panel Study (SOEP) since 1984. Random effect and panel ordered logistic regression are the main empirical strategies to test my hypotheses. This research consists of five sections including introduction which is Section I. Section II is for the literature review. Section III presents hypothesis, data, and empirical strategies for this research. Section IV is the part for empirical results. Discussion and conclusion are in Section V.

¹ Many studies have used this natural experimental setting. For example, Ockenfels and Weimann found that former East Germans were more selfish than former West Germans are through public good game (Ockenfels and Weimann 1999). Frijters et al. (2004) show that real household income growth has a positive impact on life satisfaction(Frijters, Haisken-DeNew, and Shields 2004). Alesina and Fuchs-Schündeln (2007) show that East Germans are more favorable to state rather than West Germans are (Alesina and Fuchs-Schündeln 2007). Redding and Sturm (2008) used this natural experiment in demonstrating that the population growth of cities in West Germany near the border with East Germany compared to those in other West Germany cities (Redding and Sturm 2008).

II. Literature Review

A. Natural Experimental Setting

For social scientists, how to capture and prove causal relationship has been one of the most important tasks. In order for this, proper randomization is useful (Rubin 1974). When it comes to using the randomization setting to get causal effect from research, samples should be homogeneous in terms of all aspects except for whether they are treated or not. Thus, it is required to make sure that Germany has had homogeneous population before taking advantage of German Division and Reunification as a natural experiment. First of all, Germany was unified in 1871 by Bismarck known as Iron Chancellor. Thus, only one government started to control all regions in Germany so that Germans came under identical rule from one political institution. The unification had not brought economic integration until 1914 but Germany became economically one country in 1933 by the end of Weimar Republic (Wolf 2009). The evidence of economic integration of Germany could be also found in the 2007 paper by Alesina and Fuchs-Schündeln. They demonstrated that income and many other economic aspects of both East and West Germany were similar (Alesina and Fuchs-Schündeln 2007, 1510). Thus, Germany was politically and economically homogeneous before the World War II. In addition, the regions of former East and West Germany have the same climate and language (Uhlig 2008, 519). Not only that, according to Alesina et al. (2003)'s index measuring ethnic, linguistic, and religious fractionalization of 190 nations in the world, Germany is quite homogeneous in ethnicity and language (Alesina et al. 2003). Considering the increase in foreign immigrants to Germany after World War II², it makes sense to assume that Germany would be lesser fractionalized before the

² Münz and Ulrich (1998)'s paper shows the increase in foreign immigrants after World War II.

division in 1945, that is to say, German population was more homogeneous than it is in these days. For these reasons, German population achieves the homogeneity of samples that is a precondition for randomization.

Aside from the homogeneity of the German population, Germany has the exogenous shock providing good treatment and control group. Three months before German Surrender to Allies of World War II, Winston Churchill, Franklin Roosevelt, and Joseph Stalin had a conference at Yalta in the Soviet Union in February 1945 in order to discuss the postwar treatment of Germany. One of the articles that they agreed was the joint occupation of Germany. After Germany's defeat in May 1945, the western part started to be governed by France, Great Britain, and the United States based on capitalism and democracy. The eastern part was under the rule of the Soviet Union with communism and socialism. In 1949, Federal Republic of Germany (West Germany) was established in the regions being occupied by France, Great Britain, and the United States and German Democratic Republic (East Germany) was founded under the control of Soviet Union in the eastern region. Thus, Germany had to be separated into two parts without German citizens' desire (Alesina and Fuchs-Schündeln 2007, 1537). 40 years after the establishment of both East and West Germany, the Berlin Wall unexpectedly collapsed by East Germans' flooding into the Wall, precipitated by the announcement of Günter Schabowski in November 1989 (Zawilska-Florczuk and Ciechanowicz 2011, 12). Because of the aftermath of fall of the Berlin Wall, Germany became reunified in October 1990. These two events that are unexpectedly occurred have been considered as an exogenous shock so that they have allowed social scientists to capture the causality coming from the different political institution between East and West Germany.

B. The Measurement, Determinants of Job satisfaction and Discretion

1. The Measurement of Job Satisfaction

According to Spector (1997), "Job satisfaction is simply how people feel about their jobs and different aspects of their jobs (Spector 1997, 35:2). As this definition mentioned, job satisfaction is able to be measured with people's overall feeling about a job or with various facets of job satisfaction by asking multiple questions in a survey. It is still debatable. Some researchers have cast doubt on the reliability of using a single question in measuring overall job satisfaction by presenting the limitations of single-item measure. It is pointed out that using single-item in measuring job satisfaction is less comprehensive than multiple-item (Pollard 1996). Also, a factorial analysis is impossible with a single question so that it is difficult to investigate job satisfaction in diverse dimensions (Abdel-Khalek 2006, 147). Despite these limitations, many researchers have proven the reliability of using single item measure based on the evidence that it is significantly correlated with multiple item measures (Wanous, Reichers, and Hudy 1997; Mark and Nagy 2002; Dolbier et al. 2005). Also, because of cost-effectiveness and practicality, many researchers are favorable to take advantage of a single question in measuring job satisfaction. In addition, researchers prefer the single to multiple in various occupations because the specific traits of which are inherited in each occupation can be removed (Oshagbemi 1999). It seems that what kind of method do researchers take depends on the purposes of their research.

2. The Determinants of Job Satisfaction and Its Relation with Discretion

Herzberg (1959) proposes the theory called *Two-Factor Theory* that two factors have influences on worker's job satisfaction. One is motivators (achievement, advancement, intrinsic interest in the work, and responsibility) that increase satisfaction in a job and the other is hygiene factors (company policy and administrative practices, interpersonal relationships, salary, supervision, and working condition) that affect dissatisfaction when those are equipped (Herzberg 1959). In addition, Hackman and Oldham (1976) suggest that five factors (skill variety, task identity, task significance, autonomy, and feedback) motivate employees to work hard and increase their job satisfaction (Hackman and Oldham 1976, 256). Not only that, Frey and Stutzer (2005) argue that the actual outcomes are not the only source for people to get utility but they are able to obtain utility from the path to achieving their utility (Frey and Stutzer 2005). They defined procedural utility as "the well-being people gain from living and acting under institutionalized processes as they contribute to a positive sense of self, addressing innate needs of autonomy, relatedness and competence (Frey, Benz, and Stutzer 2004)." These studies point out that autonomy matters to job satisfaction of workers. Applying Herzberg's theory, offering more autonomy and authority to workers let them have more responsibility so that it plays a role in motivating them to work hard (Syptak, Marsland, and Ulmer 1999). Furthermore, according to the definition of procedural utility by Frey et al. (2004), autonomy plays a role as a factor increasing procedural utility which can be considered as procedural satisfaction. Thus, it is likely to hypothesize that job autonomy is able to be a factor that increases workers' satisfaction in the workplace based on procedural utility theory.

These theories are supported by many empirical studies so that it is possible to say that job discretion increases workers' satisfaction with job (Sousa-Poza and Sousa-Poza 2000; Bradley, Taylor, and Nguyen 2003; Benz and Frey 2004; Thompson and Prottas 2006, 115; Benz and Frey 2008; Lange 2012). Aside from these studies based on the data from Western countries, Lin et al. (2013) targeted community health center workers in Taiwan in order to do analyze their job autonomy and their work outcomes. They demonstrate that workers who have more job autonomy show higher job satisfaction (Lin et al. 2013). Moreover, Sung (2013) shows the similar result with the case of Western countries that more autonomy leads to lowering withdrawal behaviors which happen when workers are dissatisfied with their jobs by using Korea Labor and Income Panel Study³ (Sung 2013). Through the papers mentioned above, we are able to understand that the freedom in job activity positively affects job satisfaction of workers in capitalist countries. However, it is unlikely to correspond to ex-communist countries labors' cases. Even though there is almost no empirical research using individual-level data in terms of job satisfaction and discretion in workplaces due to data unavailability, we are able to infer based on the literatures. In communist countries, the economy was operated by central planning entailing supervision so that even workers who were in managerial position in companies were controlled and supervised (Linz 1988). In addition, there were harsh legislations to control workers in response to economic problems in the Soviet Union (Burawoy and Krotov 1992, 20). Also, it is found that the advent of State Socialism led to the dramatic decrease in operational autonomy in organizations (Allmendinger and Hackman 1996). Thus, the discretion in the

³ Korea Labor and Income Panel Study is a longitudinal random survey targeting households and individuals who are among working age population (over 15 years old) living in urban areas in South Korea which has been constructed since 1998 by Korea Labor Institute (KLI). The latest wave is 18th wave for 2015.

workplace is what people who lived in former communist countries did not experience. Thus, they would be unfamiliar with how to deal with the discretion while working.

III. Hypothesis, Data, and Empirical Strategy

A. Hypotheses

There would be three hypotheses. First, if the institution of communist countries based on little freedom in the workplace were not significantly different from that that of capitalist countries, the response of who lived in communist countries to job discretion and its impact on job satisfaction would not be different from that of people in capitalist countries. However, if there were the difference in institution between communist and capitalist countries, it would alter the case. If the unfamiliarity of dealing with discretion while working made communist country origin workers discomfort, it would lead them to be more stressed and dissatisfied with their jobs. On the other hand, if they were more appreciative of getting job discretion at work despite the unfamiliarity of utilizing it, they would be more appreciative of the discretion and be satisfied with work compared to the capitalist country origins would be. Along with the hypotheses above, this research also focuses on the impact of migration of the Easterners. I hypothesize that the living experience of the Easterners in West Germany would entail the communication with the Westerners who are familiar with job autonomy at work. For this reason, the difference in the response to job discretion is likely to occur.

B. Data

This research uses the German Socioeconomic Panel (SOEP) which has been constructed since 1984. After the reunification of Germany in 1990, SOEP expanded the survey to the respondents who lived in East Germany who were under the communist government. While the original data provides information on individuals covering 11000 households and 30000 individuals consisting of Germans including the Easterners, foreigners, and immigrants, the subjects of analysis are confined to those are Germans. This is because it ensures that they are homogeneous in terms of race and that only those who are directly ruled by the East or West German government remain. In addition, analytical samples are qualified to those who are employed since this research is only interested in job satisfaction and job discretion of employed workers. The total number of samples from 1990 to 2009 is 125573 which are derived from 20045 respondents. The Easterners are 41245 and the West German origins are 84328.

The dependent variable of my research is workers' job satisfaction. To measure workers' job satisfaction, SOEP asked about respondents' overall job satisfaction with the single question that "how satisfied are you with your job?" Respondents could evaluate their job satisfaction on 11 points Likert Scale ranging from 0 (low) to 10 (high).

This research has three key independent variables: job discretion, *East*, and the interaction term between job discretion and *East*. First, job discretion is evaluated by five points scale from 1 (low) to 5 (high). According to the SOEP codebook, "the basis for the "autonomy in occupational activity" scale is the classification of the occupational position. Self-employed persons are categorized according to the size of the company (with the exception of farmers, who

are all classified within the same category of autonomy, independent of farm size in hectares). Civil servants are differentiated according to the civil service laws defining each kind of activity and the amount of autonomy connected to it. Workers are differentiated according to their vocational trainning, and thus categorized hierarchically according to the different tasks they can be expected to carry out and the different amounts of responsibility associated with each task. Similarly, salaried employees are classified according to how differentiated their tasks are and how much responsibility is associated with each." Second, East is the variable to measure the impact of institutional difference caused by 45 years' division between the East and West Germany. SOEP asked the question, "Where did you live in 1989?" to distinguish whether a respondent lived in the East or West Germany before the reunification. Based on this question, I make a dummy variable called *East* by assigning one to respondents who lived in the East Germany as a treatment group and zero to those who lived in the West Germany as a control group. Table 1 shows 33 percent of Germans are of the Eastern origin. These two variables are the composition of the interaction term in order to discern whether the communism has an impact on the relation that job discretion positively affects workers' job satisfaction. Not only do I look into the effect of East and its interaction term with job discretion, but also I try to investigate the migration effect focusing on the Easterners who have ever migrated to the region of former West Germany. In constructing the variable to distinguish workers who have migration experience from whole the Easterners, I make the dummy variable called *migration* that immigrants get 1 and 0 is for those who lived in East Germany before the reunification with no migration experience. Among all the Easterners, 11 percent of them have an experience of living in West Germany because of their migration.

In addition to these key variables, I also control occupational characteristics including the log of income⁴, employment status (regular job = 1 and irregular job = 0), working hours, and occupation codes⁵. Furthermore, I control the impact of company size measured by the number of employees in SOEP since it is correlated with job discretion (Osterman 1994). Not only that, male (male = 1 and female = 0), marital status (spouse = 1 and no spouse = 0), years of education and age are controlled in order to reflect demographic effects.

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⁴ In order to reflect the effect of inflation, income is adjusted by consumer price index of which base year is 2010.

⁵ Based on International Standard Classification of Occupations in 1988 (ISCO88), occupations are classified into 10 major groups: 1 (Legislators, senior officials and managers), 2 (Professionals), 3 (Technicians and associate professionals), 4 (Clerks), 5 (Service workers and shop and market sales workers), 6 (Skilled agricultural and fishery workers), 7 (Craft and related trades workers), 8 (Plant and machine operators and assemblers), 9 (Elementary occupations), and 0 (Armed forces). This research excludes occupation 0 due to its very small number of samples. The reference group consists of blue collar jobs including 6, 7, 8, and 9.

Table 1. Descriptive Statistics

Variable	Mean	S.D	Max	Min	N	Respondetns
Dependent variable						
Job satisfaction	7.05	2.00	10	0	125573	20045
Key independent						
Job discretion	2.82	1.07	5	1	125573	20045
East	0.33	0.47	1	0	125573	20045
Migration	0.11	0.32	1	0	41245	6699
Occupational characteristics						
Log of income	7.71	0.71	11.65	0.77	120302	19217
Hours of work	40.81	15.02	103.1	0	125573	20045
Regular job	0.97	0.18	1	0	125573	20045
Firm size 1 (less than 20)	0.26	0.44	1	0	125573	20045
Firm size 2 (20 - 200)	0.29	0.45	1	0	125573	20045
Firm size 3 (200 - 2000)	0.22	0.41	1	0	125573	20045
Firm size 4 (More than 2000)	0.23	0.42	1	0	125573	20045
Legislators, senior officials and managers	0.06	0.24	1	0	125573	20045
Professionals	0.18	0.39	1	0	125573	20045
Technicians and associate professionals	0.23	0.42	1	0	125573	20045
Clerks	0.13	0.34	1	0	125573	20045
Service workers and shop and market sales	0.10	0.30	1	0	125573	20045
Blue collar	0.30	0.46	1	0	125573	20045
Demographic variables						
Male	0.54	0.50	1	0	125573	20045
Marital status	0.66	0.47	1	0	125573	20045
Years of education	12.56	2.65	18	7	125573	20045
Age	41.71	10.72	86	17	125573	20045

C. Empirical Strategy

Because the dependent variable of this research consists of 10 points scale which is not a continuous form, ordered probit or logit model is more appropriate for regression analysis. However, since it is difficult to interpret the interaction term in ordered probit or logit (Norton, Wang, and Ai 2004), I choose to use random effect model which is the model (1) as an analytical strategy for convenience. I also include ordered logit regression as the model (2) for robustness check. Table 2 including models (1) and (2) shows how the Easterners' responses are different from the Westerners when they get job discretion which has a positive impact on job satisfaction by the interaction term of *East* and job discretion within 20 years with all analytical samples. Not only do I just investigate it but also I do analysis to know whether time trend effect exists on the interaction term by dividing 20 years into four periods: 1990-1994 for the model (3) and (7), 1995-1999 for the model (4) and (8), 2000-2004 for the model (5) and (9), and 2005-2009 for the model (6) and (10). Model (3), (4), (5), and (6) are based on random effect and (7), (8), (9), and (10) are ordered logistic regressions. Models are written as follows.

$$JS_{it} = E_i \alpha + D_{it} \beta + (E_i \times D_{it}) \gamma + X'_{it} \delta + \varepsilon_{it}$$

 E_i is East, and its coefficient α will show the disparity in job satisfaction between the Easterners and the Westerners. D_{it} is job discretion of each worker. $E \times D_{it}$ is the interaction term to know whether the impact of job discretion on job satisfaction is different due to the communism which is the eco-political system in East Germany and γ is its coefficient. X'_{it} is the set of other occupational characteristics such as income, hours of work, regular job dummy, firm

size, and occupation types and demographic traits including gender, marital status, years of education and age.

From the model (1) to (10), *East* indicates that the Easterners are homogeneous in terms of the experience that they were under the reign of communist regime before Germany reunification. After it achieved the reunification in 1990, some of the Easterners migrated or commuted to work to the region of former West Germany for their fortunes (Staab 1997). The migration would cause the heterogeneity within the Easterners. Thus, I confine the analytical subjects to the Easterners by excluding the Westerners and separate them into two groups with those who migrated and remained in East Germany. Thus the dummy variable *Migration* plays a role in distinguishing the migrated from all the Easterners. The Easterners who migrated to West Germany takes 1 and others living in East Germany region without any migration experience get 0.

$$JS_{it} = M_i \alpha + D_{it} \beta + (M_i \times D_{it}) \gamma + X'_{it} \delta + \varepsilon_{it}$$

Instead of East, Migration which is represented by M_i is in the regression model. It is the indicator variable reflecting the job satisfaction gap between the migrated and others. Migration—discretion interaction term reports the impact of East—West migration on the relationship between job satisfaction and discretion. Other occupational characteristics and demographic controllers are also included.

IV. Result

A. Basic Regression

Table 2 shows the result from basic regressions with random effect in the model (1) and ordered logit in the model (2). First of all, *East* has a negative sign of its coefficient on both the model (1) and (2), and it is statistically significant. It indicates that the Easterners have a lower job satisfaction than the Westerners do. Second, the models report that job discretion has a positive effect on workers' job satisfaction level. In other words, the more job discretion workers get the more satisfied with the job they become. It is consistent with what is shown in the literature review. Third, the interaction term between *East* and job discretion plays a role in discerning whether the institutional difference between communism and capitalism affect workers. Table 2 shows that it is positive as well as statistically significant. It means that when the Easterners are offered the same level of job discretion in their workplaces, they get higher job satisfaction compared to the Westerners, that is, the Easterners would be more appreciative to job discretion in being more satisfied with their work.

Table 2 also shows the interesting result from occupational characteristics and demographic controllers. Table 2 reports that income has a positive impact on workers' job satisfaction. Whether a job is regular or not does not seem to make a significant affect job satisfaction. When it comes to the firm size, the larger the firm is, the less job satisfaction workers have as preceding studies (Idson 1990; Tansel and Gazîoğlu 2014) show. Compared to the job satisfaction level of blue collar jobs, all other occupations' job satisfaction levels are higher. Male workers are less satisfied with their work rather than female workers (Hodson 1989; Clark 1997; Kim 2005). Spouse dummy indicating people living with their spouses show higher

job satisfaction. After the control of income and other job characteristics, years of education has a negative impact on job satisfaction (Glenn and Weaver 1982; Burris 1983; Tsang, Rumberger, and Levin 1991). In this research, age shows that the older, the less satisfied with the job but defining the relationship between age and job satisfaction is still a debatable issue⁶.

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⁶ Bernal, Snyder, and McDaniel point out that several arguments have appeared in explaining the relationship (Bernal, Snyder, and McDaniel 1998): Linearly positive (Hulin and Smith 1965; Hunt and Saul 1975), linearly negative (Muchinsky 1978), and U-shaped (Clark, Oswald, and Warr 1996).

Table 2 Basic Regressions

	(1)	(2)
	RÉ	OLOGIT
East	-0.334***	-0.416***
	(0.060)	(0.072)
Job discretion	0.141***	0.176***
	(0.012)	(0.015)
East x Job discretion	0.047**	0.043^*
	(0.020)	(0.024)
Log of income (monthly)	0.261***	0.315***
Log of meome (monumy)	(0.019)	(0.023)
Hours of work	-0.004***	-0.005***
Hours of work	(0.001)	(0.001)
Regular job	-0.022	-0.040
Regular Job	(0.045)	(0.054)
Firm size (Ref. less than 20)	(0.043)	(0.054)
Firm size (Ref. – less than 20)	0.040**	0.07.4***
Firm size 2 (20 - 200)	-0.049** (0.023)	-0.074*** (0.027)
	(0.023)	(0.027)
Firm size 3 (200 - 2000)	-0.049*	-0.081**
	(0.026)	(0.031)
Firm size 4 (More than 2000)	-0.042	-0.081**
	(0.026)	(0.032)
Occupations (Ref blue collar job)		
Legislators, senior officials	0.174***	0.238***
and managers	(0.040)	(0.049)
Professionals	0.201***	0.253***
	(0.037)	(0.045)
Technicians	0.122***	0.143***
and associate professionals	(0.030)	(0.036)
Clerks	0.076**	0.083**
Civino	(0.034)	(0.040)
Sales and service	0.147***	0.183***
Suics and service	(0.037)	(0.045)
Male	-0.060**	-0.085**
Water	(0.026)	(0.033)
Spouse	0.068***	0.067**
Spouse	(0.021)	(0.026)
V f . d	-0.025***	
Years of education	-0.025 (0.005)	-0.036*** (0.007)
•		-0.028***
Age	-0.020*** (0.001)	
	(0.001)	(0.001)
Constant	5.989***	
Constant	(0.124)	2.809***
Constant		
N	120302	(0.053)
N	120302	120302 Standard errors in parentheses

Standard errors in parentheses p < 0.1, *** p < 0.05, *** p < 0.01

B. Regression with Time Trend

We found that the Easterners become more satisfied with their job than the Westerners do when job discretion is offered as Table 2 shows. At this point, I got one more interesting question: if the Easterners acclimatize to the political environment that job discretion is granted to them, then how does the gap that the interaction term indicates the change? To answer this question, I split the analytical time from 1990 to 2009 into four periods: 1990-1994, 1995-1999, 2000-2004, and 2005-2009. After that, I am going to observe the size of each variable's coefficient in a horizontal direction from the left to the right in order to focus on the change in the size of coefficient as time goes on. As did in Table 2, linear random effect from the models (3) to (6) and panel ordered logit regression from model (7) to (10) are used. Table 3 shows very interesting results in terms of job discretion, *East*, and the interaction term.

First, the coefficients of job discretion are positive and statistically significant in those four periods. In addition, the coefficient of job discretion becomes larger as time goes on. It means that not only does job discretion play a role in raising German worker's job satisfaction as shown in Table 2 but also its impact on job satisfaction becomes larger over time. Second, the dwindling size of *East* indicates that the job satisfaction gap between the Easterners and the Westerners is on the wane even though it still remains in the last period which is from 2005 to 2009 shown in the model (6) and (10). Third, interestingly, the interaction term shows its size of coefficient was the biggest in the first period from 1990 to 1994 but became dramatically smaller in the second period. Eventually, it lost the statistical significance since the third period indicated by the models (5) and (9). This means the extent of job satisfaction gap between East and the Westerners determined by job discretion has ebbed over time. Fourth, the impact of income on

German workers' job satisfaction has decreased so that it implies that the importance of income has been marginalized. Considering the change in the coefficient of job discretion and income, I infer that in recent days, German workers would consider job discretion more importantly when they work but the importance of money become smaller as time goes by.

Table 3 Regression with Time Trend

	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	RE	RE	RE	RE	OLOGIT	OLOGIT	OLOGIT	OLOGIT
	1990-	1995-	2000-	2005-	1990-	1995-	2000-	2005-
	1994	1999	2004	2009	1994	1999	2004	2009
East	-0.724***	-0.386***	-0.256***	-0.191**	-0.850***	-0.464***	-0.337***	-0.323***
	(0.116)	(0.107)	(0.087)	(0.092)	(0.146)	(0.140)	(0.116)	(0.123)
Job discretion	0.099***	0.125***	0.131***	0.147***	0.140***	0.167***	0.181***	0.210***
	(0.026)	(0.025)	(0.019)	(0.020)	(0.033)	(0.034)	(0.026)	(0.028)
East x Job discretion	0.174***	0.085**	0.024	0.024	0.190***	0.081*	0.010	0.037
	(0.040)	(0.036)	(0.029)	(0.030)	(0.051)	(0.047)	(0.038)	(0.040)
Log of income	0.413*** (0.045)	0.330 ^{***} (0.044)	0.258 ^{***} (0.029)	0.257*** (0.029)	0.504*** (0.058)	0.439*** (0.058)	0.347*** (0.039)	0.337*** (0.040)
Hours of work	0.001	-0.004***	-0.005***	-0.006***	0.001	-0.004***	-0.006***	-0.009***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)	(0.001)	(0.001)
Regular job	-0.235*	-0.174	0.026	0.031	-0.288*	-0.265*	-0.001	0.014
	(0.131)	(0.129)	(0.075)	(0.065)	(0.167)	(0.160)	(0.098)	(0.089)
Firm size (Ref. – less than 20)	-0.148***	-0.081*	-0.086**	-0.074**	-0.204***	-0.118**	-0.144***	-0.108**
Firm size 2 (20 - 200)	(0.050)	(0.046)	(0.036)	(0.037)	(0.065)	(0.060)	(0.048)	(0.050)
Firm size 3 (200 - 2000)	-0.211***	-0.096*	-0.057	-0.100**	-0.286***	-0.138**	-0.111**	-0.169***
	(0.055)	(0.050)	(0.041)	(0.042)	(0.071)	(0.067)	(0.055)	(0.056)
Firm size 4 (More than 2000)	-0.174***	-0.065	-0.068*	-0.097**	-0.273***	-0.107	-0.137**	-0.156***
	(0.055)	(0.052)	(0.040)	(0.041)	(0.071)	(0.069)	(0.054)	(0.056)
Occupations (Ref blue collar) Legislators, senior officials and managers	0.085	0.095	0.171***	0.106 [*]	0.150	0.147	0.274***	0.175**
	(0.092)	(0.086)	(0.062)	(0.062)	(0.118)	(0.112)	(0.084)	(0.085)
Professionals	0.148 [*] (0.086)	0.179 ^{**} (0.080)	0.179*** (0.055)	0.195 ^{***} (0.057)	0.248 ^{**} (0.110)	0.223 ^{**} (0.102)	0.238 ^{***} (0.074)	0.267*** (0.077)
Technicians and associate professionals	0.060 (0.061)	0.196*** (0.057)	0.097 ^{**} (0.046)	0.091* (0.047)	0.081 (0.078)	0.246*** (0.075)	0.116 [*] (0.060)	0.115 [*] (0.063)
Clerks	0.147** (0.062)	0.084 (0.063)	0.029 (0.052)	0.018 (0.054)	0.156 [*] (0.081)	0.089 (0.083)	0.005 (0.068)	0.036 (0.072)
Sales and service	0.167** (0.072)	0.084 (0.068)	0.162*** (0.057)	0.200**** (0.058)	0.233** (0.094)	0.123 (0.092)	0.187** (0.075)	0.271*** (0.079)
Male	-0.170****	-0.078*	-0.054	-0.073**	-0.225***	-0.140**	-0.109**	-0.101*
	(0.050)	(0.047)	(0.036)	(0.037)	(0.066)	(0.064)	(0.049)	(0.052)
Spouse	0.036	0.053	0.095***	0.047	0.026	0.072	0.112***	0.017
	(0.043)	(0.041)	(0.031)	(0.032)	(0.057)	(0.055)	(0.043)	(0.044)
Years of education	-0.051***	-0.041****	-0.015**	-0.017**	-0.077***	-0.058***	-0.029***	-0.028***
	(0.011)	(0.010)	(0.007)	(0.008)	(0.015)	(0.014)	(0.010)	(0.011)
Age	-0.007***	-0.015***	-0.012***	-0.014***	-0.010***	-0.021***	-0.017***	-0.018***
	(0.002)	(0.002)	(0.001)	(0.002)	(0.003)	(0.003)	(0.002)	(0.002)
Constant	4.976*** (0.310)	5.580 ^{***} (0.288)	5.615*** (0.184)	5.634*** (0.182)				
Constant					3.324*** (0.122)	3.635*** (0.122)	3.730*** (0.097)	3.989 ^{***} (0.105)
N	20202	23776	39550	36774	20202	23776	39550	36774

Standard errors in parentheses p < 0.1, ** p < 0.05, *** p < 0.01

C. Regression with Migration Dummy

Tables 2 and 3 using whole analytical samples show that the institutional differences between East and West Germany cause the difference in job satisfaction gap, the difference in size of job discretion's contribution on the increment in job satisfaction between the Easterners and the Westerners and its time trend. Now, to analyze what migration experience affect the Easterners' job satisfaction, I put *Migration* dummy for who have ever migrated to West Germany from East Germany after the reunification in 1990. In addition, I also add the interaction term of *Migration* with job discretion to capture the difference in the response to job discretion between migrants and non-migrants. Since the analytical focus is confined to the Easterners, I exclude the Westerners in the model for table 4.

To begin with, *Migration* indicates among all East German origin workers, those who migrated into the region of West Germany after the reunification had a higher level of job satisfaction than those who did not migrate in the models (11) and (12). It seems that many factors obtained by the migration to West Germany would lead them to achieve higher job satisfaction among the Easterners. However, job discretion was not the factor playing a role as others. *Migration* dummy interacted with job discretion shows that even though job discretion raises workers' job satisfaction for both migrants and non-migrant, the increment in the satisfaction of migrants led by the discretion was less than those of non-migrants.

Table 4 Regression with Migration Effect

	(11)	(12)
	RE	OLOGIT
Migration	0.459***	0.572***
T. P 2	(0.137) 0.157***	(0.163)
Job discretion	(0.021)	0.184*** (0.025)
16 c 11 r c		
Migration x Job discretion	-0.145*** (0.048)	-0.177*** (0.056)
T (: (41)	0.544***	0.627***
Log of income (monthly)	(0.039)	(0.046)
TT C 1		
Hours of work	-0.005***	-0.005*** (0.001)
- · · · ·	(0.001)	(0.001)
Regular job	-0.033	-0.087
	(0.118)	(0.136)
Firm size (Reference – less than 20)		
Firm size 2 (20 - 200)	-0.035	-0.051
	(0.039)	(0.046)
Firm size 3 (200 - 2000)	-0.061	-0.091
	(0.049)	(0.057)
Firm size 4 (More than 2000)	-0.009	-0.019
	(0.050)	(0.059)
Occupations (Reference - blue collar job)		
Legislators, senior officials and managers	0.215***	0.327***
	(0.080)	(0.093)
Professionals	0.255***	0.361***
	(0.070)	(0.081)
Technicians and associate professionals	0.172***	0.230***
r	(0.056)	(0.064)
Clerks	0.129^{*}	0.196***
	(0.068)	(0.076)
Sales and service	0.218***	0.281***
	(0.066)	(0.077)
Male	-0.044	-0.059
	(0.047)	(0.057)
Spouse	0.009	0.004
	(0.041)	(0.049)
Years of education	-0.036***	-0.049***
	(0.010)	(0.013)
Age	-0.022***	-0.029***
<i>o</i> -	(0.002)	(0.002)
Constant	3.815***	
	(0.254)	***
Constant		2.361***
		(0.081)
N	36188	36188
		Standard errors in parentheses

Standard errors in parentheses p < 0.1, *** p < 0.05, *** p < 0.01

V. Discussion and Conclusion

The well-made natural experimental setting brought by the unexpected division in 1945 and German reunification in 1989 makes it possible to capture the impact of the institutional difference between East and West Germany. Especially to analyze whether the impact of the communist institution on the Easterners' job satisfaction and discretion exists or not even after the fall of East Germany, I set up the Easterners as a treatment group and the Westerners as a control group with the variable called *East*. Not only does it allow me to find the gap in job satisfaction between the Easterners and the Westerners but also to discover the Easterners' behavior towards job discretion at work by its interaction term with job discretion.

Under the setting, I find that the job satisfaction of the Westerners is higher than that of the Easterners. It appears that communism on which East Germany was based have a negative impact on workers' job satisfaction and that the Easterners feel the discomfort in working environment settled under the capitalist institution even after 20 years of the German reunification. Also, Job discretion being at issue of this research has a positive impact on job satisfaction of both the Easterners and the Westerners. That is, the unfamiliarity with job discretion that the Easterners have is not a matter of decreasing their job satisfaction. Rather, the Easterners get more satisfied with job than the Westerners do under the same amount of job discretion while working. It seems that the Easterners would be more appreciative of job discretion being offered by their companies.

Furthermore, I study about the gap in that the job satisfaction gap between the Easterners and the Westerners. First, the result indicates that the gap had diminished over time but still remained after 20 years of the German reunification. Second, the impact of job discretion on job satisfaction got larger but those of income, conversely became smaller by time. It means that German employees have considered

the autonomy at work as being more and more important but they became less concerned to income for their job satisfaction. While the importance of job discretion in raising job satisfaction become larger, the more appreciative manner of the Easterners regarding job discretion waned as time passed and it finally disappeared. It is likely that the Easterners got familiar with job discretion as time goes on so that their satisfaction coming from the discretion disappeared.

Lastly, I investigate how the Easterners' migration to West Germany after the German reunification affected job satisfaction and discretion. I found that the migration to West Germany brought migrants higher job satisfaction compared to the satisfaction of non-migrants. It seems that migrants would enjoy the better job and labor market environment of West Germany so that it led them to get higher job satisfaction than non-migrants did. On the other hands, migrants experienced the lower increment in job satisfaction through job discretion than non-migrants did. One hypothetical reasoning in order to explain this phenomenon is that migrants would experience the relative disparity between migrants and the Westerners in the amount of job discretion which made them less satisfied with their job so that the impact of the discretion of them was smaller than those of non-migrants who did not experience such disparity. However, it is needed to explain why it happens so that I leave accurate explanations for it in abeyance for later research.

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