A Taxonomy of Unions and Organizational Outcomes

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Abstract

This study aims to investigate the relationship between various types of unionisms and organizational outcomes. This study takes an inductive taxonomic approach to identify the various types of unionisms with multiple dimensions of ideology, mobilization tendency, democracy level, solidarity level, and bargaining structure. The study results suggest that unions are heterogeneous and that unions are not entities that can be easily dichotomized based on one or two dimensions. Furthermore, the different types of unions lead to varying organizational outcomes, specifically in terms of turnover rate, strike occurrence, wage increase and firm performance. .

Key words: Union, Taxonomy, turnover rate, strike occurrence, wage increase and firm performance.

1. Introduction

This study aims to investigate the relationship between various types of unionisms and organizational outcomes; turnover rate, level of conflict, wage rate increase, and financial outcome. It has been explored union's impact on a firm but theoretical predictions are ambiguous. It is said to be associated to lower labour productivity and firm profitability resulting from implementing restrictive practices on workplace arrangement practices or setting above-market wages (Hirsch and Addison, 1986). Whereas it can raise productivity and reduce quits and absenteeism by voicing out discontents of workers and inducing managers to improve working and employment conditions (Freeman & Medoff, 1984). The ambiguity of predictions on a union arises because unions are considered as a homogeneous entity with a single characteristic. However, unions are not one-dimensional, simple, consistent entities, but are complex organizations with different and multiple characteristics.

To predict different behavioural aspects of unions many empirical and conceptual works have investigated various characteristics of unions and their impact on bargaining and industrial outcomes (Benson, 1996; Bhattacherjee, 1987; Boxall & Haynes, 1997; Friedman, 1988; Kalleberg & Lincoln, 1988; Murray & Reshef, 1988; Ofori-Dankwa, 1993; Robinson, 2000; Roxborouch, 1984). They used one or two dimensions such as union ideology (Barbash, 1943; Friedman, 1988; Murray & Reshef, 1988), militancy (Roxborouch, 1984), independency (Benson, 1996; Bhattacherjee, 1987), solidarity (Robinson, 2000), strategy (Boxall & Haynes, 1997), union structure (Kalleberg & Lincoln, 1988). Although the types of unions identified by these studies seem plausible, such classifications may be driven by the personal insights and subjective opinions of researchers. Therefore, although such classifications may have descriptive functions, they suffer from problems of oversimplification (Rich, 1992) and limited explanatory or predictive power (Hambrick, 1984; Rich, 1992), and therefore, may not accurately reflect reality.

In order to develop a system of classification of unions that overcomes the limitations of previous classifications based on a deductive typological approach, this study takes an inductive taxonomic approach. This study differs from that of the typological approach in that the former classifies objects empirically, while the latter classifies objects based on specific concepts chosen by the researchers. The taxonomic approach is considered as the best-fit methodology for classifying multidimensional organizations. The advantages of a realistic taxonomy will be helpful for refining hypotheses and providing a basis for predicting organizational decisions or change (Carper & Snizek, 1980).

Considering unions as complex bodies with multiple dimensions, including ideology, resources and abilities, and preferred strategy, this study examines the behavioural differences of unions according to their types. In the first part of this study, we review previous works that investigate the key dimensions of unions and types of unions. Using key dimensions previously identified in literature, we develop a classification of unions through an empirical methodology based on an inductive taxonomic approach. In the second part of the study, with the types of unions resulted from the clustering analysis we test the union types' impact on organizational outcomes, wage rate increase, level of conflict and turnover rate.

2. Literature review

To predict union behavior more accurately, many researchers have investigated various types of unionisms (Benson, 1996; Boxall & Haynes, 1997; Kim, 2011) and their characteristics (Barbash, 1943; Friedman, 1988; Heery, Simms, Simpson, Delbridge, & Salmon, 2000; Hyman, 2001; Lévesque & Murray, 2010; Murray & Reshef, 1988; Robinson, 2000). Using union ideology, researchers classified unions as business, uplift, predatory, (Hoxie, 1914), progressive, conservative (Barbash, 1943), economic, political (Murray & Reshef, 1988), social movement unionism (Robinson, 2000), and revolutionary, social welfare unionism (Hyman, 2001). Type of unions that tend to put the priority on economic benefits of their members are business, and conservative unionisms which focus on improving wage and employment condition of their own union members and mostly involved in workplace issues at micro level rather than social and political issues at macro level (Friedman, 1988; Hyman, 2001; Murray & Reshef, 1988). They often tend to build collisional relations with their employers and be indifferent in social and political issues. Since they are uncritical on political issues, they makes no effort to create a political party to challenge the current economic system (Robinson, 2000: 113). Different from business unionisms, those unions, revolutionary unionisms, progressive, political, social movement, and social welfare unionisms tend to pursue social and political advancement of working class. They do not limit the role of unions as economic advancer for their union members and tend to put the priority on the social and political benefits of workers (Murray & Reshef, 1988). Radical unions that encourage solidarity such as French unions are likely to organize large-scale strikes (Friedman, 1988) and tend to build inclusive relationships with workers, particularly those who are not union members based on workers' interests the union should defend (Robinson, 2000:

110-111). Social movement union is highly critical of *status quo* political arrangements and union activities are considered as a part of a larger social movements aiming to bring economic and political justice.

Types of unionisms has been identified whether a union prone to depend on collective actions against managers. Organizing model in seeking for union renewal in terms of increasing membership and activism (Gall & Fiorito, 2012), emphasizes on building collective identification and use the actions to mobilize the workforce (Heery et al., 2000) with the belief that the strength of a union depends on its ability to mobilize its members in strikes (Gallagher & Strauss, 1991), However, those of servicing model regards its members as customers who are provided with highly specialized services such as collective bargaining and grievance processing to members in return for dues (Fiorito & Jarley, 2008). Using mobilization orientation and relations with employers, Boxall and Haynes (1997) classified unions into paper tiger, partnership, traditional and consultation unionisms. Those traditional unions are oriented to mobilize members with having confrontational attitudes towards employers, whereas partnership unions tend to build trust based relations with employers. Those unions oriented to provide services to their members are paper tiger and consultation unionisms. Differences between the two unionisms are that paper tiger tend to build confrontational relation toward employers but consultation unionisms build trust based relations with their employers.

Another key union characteristic is democracy levels decided by the extent of participation in union affairs by the rank and file of membership. Effective bargaining outcomes depends on the level of member participation and commitment in union activities. However, union democracy are frequently at odds with organizational effectiveness (Fiorito & Jarley, 2008). Bargaining effectiveness is limited by the degree of democracy sine it entails decentralization of authority (Barbarsh, 1969), and bureaucratic structure enabled union to gain positive organizational outcomes such as organizing (Voss & Sherman, 2000). One the other hand, as the level of democracy decreases, member commitment and is neglected and consequently the union's capacity for effectiveness reduced. Further, since democracy is itself a union goal, union cannot be effective or efficient.

Trade unions are likely to develop and promote their own agenda, which enables them to change their conditions through building solidarity network across workplaces. Solidarity functions to minimize competition between wage earners within an organization with outcomes such as employment security and standardized wages and conditions of work. Further, it also is associated with attempts to change the existing social structure in favour of wage earners across workplaces and industries (D'Art & Turner, 2002). Using solidarity dimension, Lévesque and Murray (2010) identified unions of horizontally liked and vertically linked network. Horizontally linked unions refer to unions building solidarity within same sector or with the same employer. Vertically linked unions refer to the unions building networks formed with regional, industrial, national and international structure beyond their workplaces and employer. The level of density of the network within and between unions determines potentiality to leverage the power of unions (Lévesque & Murray, 2010).

The structure of collective bargaining system also determines union' influences on economic outcomes. Differences in the bargaining structure translate into differences in performance such as the scale of pay increases, inflation and employment. Also, these differences result from differing capacities of distinct bargaining structures to internalize the costs of their settlements (Traxler & Brandl, 2012). Unions with centralized bargaining system tend to be more inclusive than those with decentralized bargaining system in seeking to organize workers and extend to workers of other workplaces with sharing some features of common identity. Some unions make a strategic choice of more centralized bargaining system in seeking to strengthen socio-political influence and bargaining leverage and to improve the chance of organizing the unorganized (Lee & Yi, 2012).

The trend of empirical study to investigate union characteristics has started with developing systematic knowledge of associations with bargaining outcomes. Roxborouch (1984) based on the strike data from 1970-1980 in Mexican auto industry found that union militancy and union democracy increased wage level. Using multiple sources of match-merged data of Union financial statistics 1976 from the Labour and Management Services and Directory series from U.S. Bureau of Labour Statistics, Fiorito and Hendricks (1987) found that wage level decreased when level of union democracy is high but increased when union used militant strategy, strike. With the Bulletin of Trade Union Research and Information data set of 119 manufacturing plant-level agreements during 1978-1984 in Greater Bombay and Pune, Bhattacherjee (1987) hypotheses that unions without affiliation to external organizations such as federations and political parties are better representing the interests of workplace workers than unions externally-affiliated to either federations and political parties. The empirical result suggested that wage level was higher at the workplaces with unions not affiliated to any external organization. Based on data of individual annual earning level was collected during 1981-1983 from 4,567 U.S. employees and from 3,735 Japanese employees in seven manufacturing industries -52 plants in Indiana, U.S. and 46 plants in Kanagawa, Japan-, Kalleberg and Lincoln (1988) hypothesised that since enterprise unionism, typical types of unionism in Japan, is more sensitive to the interests of the company and more likely to moderate their demands in line with the firms' competitive position in the market, union effect on individual earning level would be different from U.S. union which has more coordinated bargaining system. The result suggested that individual earning level in Japanese plants were lower than those in U.S. plants. Further study conducted by Friedman (1988) using the strike data of U.S. and France suggested that strike success differs by militant strategy employed by unions. French radical unions could win large-scale strikes, in contrast, American unions, facing a more hostile government, win strikes by supporting small groups of critically positioned workers. To investigate the relationship between various union types and their behaviour impact on individual workers' behaviours such as annual turnover rate and strike activity, Benson (1996) using survey data of 433 companies with more than 50 union members in Osaka, Kyoto, and Kobe cities. Unions with two dimensions of structural independence and functional independence are typologized as company unions, enterprise unions, oligarchic unions and independent unions. Company unions hardly allow membership participation and rely on management sponsorship of their day-to-day activities. Enterprise unions allow both members' participation and managers' influences on union activities. Oligarchic unions tend to keep a distance from management by rejecting sponsorship of union activities but have a leader-driven structure in development of union policies. Independent unions tend to reply on collective membership involvement and reject management sponsorship. Each type of unionisms showed different behavioural impact on turnover, and strike. Annual turnover was highest at the workplace with company unions and lowest at the workplace with oligarchic unions. Industrial action was highest at the workplaces with independent unions. Independent unions had highest industrial action.

The previous studies suggest that unions with different characteristics would have different bargaining outcomes which affect financial outcomes of a firm. Those studies of union effect on firm performance have suggested that union reduce profits (Addison, 1983; Hirsch & Addison, 1986; Metcalf, 1990) ; or increase profits (Freeman and Medoff, 1984). Further, those studies of the relationship between union characteristics and bargaining effectiveness such as wage level, strikes, turnover (Benson, 1996; Bhattacherjee, 1987; Fiorito & Hendricks, 1987; Friedman, 1988; Kalleberg & Lincoln, 1988; Roxborouch, 1984) have suggested that union types and characteristics such as ideology, mobilization tendency, democracy, solidarity, and collective bargaining structure would result in different bargaining outcomes and employee's behaviours.

The limitation of the studies identifying the union effect on bargaining outcomes and firm performance did not consider unions as complex entities with aggregated dimensions of ideologies, resources and abilities, and preferred strategies. Unions are not one-dimensional, simple, consistent entities, but complex organizations with different structural and functional characteristics of 'one of the most complex, heterogeneous, and protean of modern social phenomena' (Hoxie, 1914). Consequently, they failed to uncover the dynamic behavioural effects of various types of unions on bargaining outcomes. And, those studies which investigated the relationship between various union characteristics and bargaining outcomes only explain a part of the behaviours of unions and may not accurately reflect reality, leading to limited explanatory or predictive power. Unions cannot be understood as dichotomized entity since union's behavioral strategy can be understood as a conjunction of postures toward workers and employers (Boxall, 2008). Although some studies (Benson, 1996; Boxall & Haynes, 1997) have identified union types using two dimensions, their classifications are based on typological methodology which classified unions into two to four different groups, making them fit into certain conceptual categories based on a specific characteristic or attribute. They identified different types of unionism based on a deductive typological approach with few specific concepts chosen by the researchers, which would not properly explain realistic aspects of different unionisms. Therefore, the resulting union types are not necessarily inclusive of the various multi-dimensional unions. A study (Kim, 2011) which took taxonomic approaches in seeking for types of unions with multi-dimensions, systemic knowledge to investigate the effect of multi-dimensional unionisms on firm performance and bargaining outcomes has not been developed.

This study purposes to synthesize literatures of the union typology and characteristics on bargaining outcomes and union effect on firm performance for better understanding union impact on bargaining outcomes and firm performance with the key question of, do multi-dimensional unionism have an effect on organizational performance?. Different from the previous studies using typological approaches, our study using taxonomic methodology to identify multi-dimensional unionisms. This research commences by finding different types of unionisms with multiple dimensions with taxonomic approaches. Further, the relationship between various unionisms and turnover rates, strikes, rate of wage increases, and firm sales as firm performance will be empirically tested.

This study is using a combination of inductive and deductive approaches. Inductive approach is taken to identify the types of unions. Then, deductive approach is taken to investigate relationship between types of unions and organizational outcomes. First, with the key variables (dimensions, the measurement scales of the dimensions) namely ideology, mobilization, democracy, external solidarity, and bargaining structure, are transformed into standardized Z-scores to obtain measurement data with a uniform scale to perform the cluster analysis. Second, we categorized the unions based on the common characteristics of each cluster and name each cluster. Third, we develop the hypotheses on the relationship between union types and the various organizational outcomes. Fourth, we conduct an empirical test to test these hypotheses. Finally, we discuss the results of the empirical analysis.

3. Taxonomy of unions

Data

This study examines unions in the metal industry in Korea. Unions in the Korean metal industry have the longest labour movement history and have played the most critical role in Korean labour movements. There are two federation level unions in Korean metal industry. One is the KMWU affiliated to the Korean Confederation of Trade Unions, progressive unions which were established by workers and union activists who involved in the Great Workers' Movements in 1987. The other one is the FKMTU affiliated to the Federation of Korean Trade Union, conservative unions which are with mainly economic goals. Most of unions in metal industry are affiliated to one of the two federations. The survey was conducted with the support of the Korean Metal Workers Union (hereafter KMWU) and the Federation of Korean Trade Union of Metal Workers (hereafter FKMTU).

Prior to the survey, we first explained the purpose of the research to the KMWU and FKMTU union officials at separate meetings in early 2010. Both the KMWU and FKMTU then provided us with the lists of affiliated unions. From these lists, we only selected unions with at least 50 members for the survey, as smaller unions neither can afford services for their members nor initiate collective actions likely leading to danger of survival of organization (Warner, 1972, p. 63) . We then visited the Headquarter offices of the KMWU and FKMTU to outline the research objectives and questionnaire. Union officials of the both federations gave the questionnaires to representatives of its affiliates and asked them to complete them. The respondents of the questionnaires were local union representatives. Most of them have been holding positions as president and general secretary elected before 2009. The completed questionnaires were collected by the union officials at the KMTU and FKMTU headquarters, who then returned them to us. In the questionnaire, the participants were asked about details on their unions' ideology, mobilization strategy, democracy level, and solidarity with workers in other workplaces. Furthermore, the participants were also asked about their unions' bargaining structure and wage levels. The survey was conducted from April to September 2010. There were 135 usable replies out of the 185 total replies, a response rate of about 73%.

Methodology: taxonomy of unions

In this session, a taxonomic approach was taken to develop a system of classification of unions. Such an approach is advantageous in that it enables the construction of a system of classification of organizations based on several dimensions of an organization, which could help avoid the problems inherent in oversimplification (Rich, 1992). As shown in table 1, the key variables identified from previous studies are used in the cluster analysis: ideology, mobilization, union democracy, solidarity, and bargaining structure. Those studies that identified union types based on ideology generally dichotomized unions into business-oriented and politically oriented unions. Business-oriented unions are likely to pursue the economic advancement of union members. On the other hand, politically oriented unions are likely to pursue the political and social advancement of the working class. Survey questionnaire was designed with the Semantic Differential (SD) measurement using bipolar scales defined with contrasting statement at each end “economic benefits of union members comes before political advancement of working class” VS “political and social advancement of working class comes before economic benefits of union members”

Mobilization is the methodological tendency of unions, that is, whether or not they tend to take collective actions through mobilizing union members to achieve their goals. An item measuring mobilization is whether union prefers to take collective actions when faced with conflicting issues with their managers with five Likert scales. Union democracy is another key dimension identified in previous studies as a determining factor of the effectiveness of unions and respondents were asked the degree of influence of shop floor workers. External solidarity is another key dimension that determines whether or not unions participate in large-scale strikes to support the issues of workers in other workplaces. External solidarity consist of 5 times with dichotomous questions that ask for whether union participated in fundraising campaigns, solidarity strikes for other union members and proposed for equal employment treatment for non-standard workers working at the same workplaces to their employers. Bargaining structure was measured based on whether unions negotiate with their employer at enterprise level or not.

To perform K-means cluster analysis, the measurement scales of the five dimensions, namely ideology, mobilization, democracy, external solidarity, and bargaining structure, were transformed into standardized Z-scores to obtain data with a uniform measurement scale, to avoid distortion of the cluster results due to unequal variances between variables. Definitions of each variable and their single-scaled scores for the cluster analysis are shown in Table 1.

INSERT TABLE 1. Variable Names, Descriptions, and Descriptive Statistics
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The resulting types of unions are presented in Figure 2. In Table 2 the mean, standard deviations, results of the one-way ANOVA test, and F-values are reported. All five dimensions showed statistically significant differences among the clusters, as indicated by the significant F-values from the ANOVA tests. Clusters 1, 2, and 3 accounted for 44%, 32%, and 59% of unions, respectively.

INSERT TABLE 2. Cluster mean, S.D., and ANOVA results

INSERT Figure 1. Three types of unions
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4. Naming the clusters

Based on the results of the cluster analysis, unions with similar features are grouped in a cluster and then examined. Each cluster is then named based on the key identifying features of the unions in the cluster.

Inactive unions

The unions in cluster 1 are called 'inactive unions' since they have key features of the lowest mobilization and democracy, which tells that these unions are not interested in increasing their members' commitment to enhance unions' organizational power. Although they pursue economic goals (-0.2 mean standard Z-score) and negotiate at enterprise level (-0.36 mean standard Z-score), it would not easy to achieve with such a low level of democracy (-0.71 mean standard Z-score) and mobilization (-1.03 mean standard Z-score).

These unions are the opposite of militant solidarity unions, as indicated by the lower mean scores in all five dimensions. 22 unions (55%) out of 44 unions clustered in this group are affiliated with the conservative federation, FKMTU.

Business unions

Unions in cluster 2 are called ‘business unions’ since they similar to inactive unions pursue the economic advancement over the political advancement of the working class (-0.6 mean standard Z-score), however, these unions are substantially different from inactive unions because they have relatively higher levels of mobilization (0.31 mean standard Z-score) and democracy (0.4 mean standard Z-score). The high level of democracy allows union members to participate in various decision-making procedures within their unions. It facilitates the information distribution among their members and also increases their members’ commitment, which enhances theirs unions’ organizational power. High level of mobilization and democracy shows that they are efficient in obtain economic goal such as job security and wage increase. However, low level of external solidarity (-0.47 mean standard Z-score) and high tendency to negotiate at enterprise level (-0.53 mean standard Z-score) shows that unions in this cluster tend to confine their activities to issues with their own companies and are not interested in the issues of workers in other workplaces.

Militant unions

The unions grouped in cluster 3 are called ‘militant unions’, since unions in this type have key features of the highest level of mobilization and external solidarity and pursuit for social and political advancement of working class. In Table 2, the mean of standardized Z-scores of each key dimension is 0.48 of ideology, 0.59 of mobilization, 0.3 of union democracy, 0.7 of external solidarity, and 0.5 of negotiation level.

Their objectives tend to lean towards the political advancement of the working class. These unions have high levels of mobilization, which is a common characteristic of militant unions (Friedman, 1988). They are able to sustain high levels of mobilization by building adversarial sentiments against employers among their members under the collective consciousness on the conflictual nature of the worker–manager relationship. The high levels of democracy in these unions may indicate that they pursue goals as determined by their members. These unions have democratic leaders who respect the voice of workers. Consequently, union members have a significant understanding of the instrumentality and effectiveness of their unions. The high levels of solidarity among these unions indicate that they are likely to support the issues and problems of workers in other unions and workplaces.

5. Development of hypotheses on the relationship between union types and various organizational outcomes

The previous discussions mainly sought the types of unions with taking inductive approach. We further expect the various types of unions to have different impacts on organizational outcomes. In this section, we will take deductive approach; we will discuss the development of the hypotheses on the relationship between the union types and organizational outcomes, specifically wage rate increase, level of conflict, turnover rate and financial outcomes.

Union type and turnover rate

Research has shown that trade unions are associated with significant reductions in exit behaviour. If workplace conditions and compensation systems are determined through negotiations between employers and unions, and workers are satisfied with the results of such negotiations, workers are likely to stay with their employer (Freeman, 1980). Furthermore, a strong correlation between union presence and turnover rates has been proven in empirical tests (Cotton & Tuttle, 1986).

In this study, we expect the lower turnover rates to be observed in ‘militant unions’ and ‘business unions’. These two types of unions have high levels of mobilization as well as high levels of bargaining power with employers, and are therefore able to put pressure on employers to respond to their demands. These unions also have high levels of democracy, which enables union members to voice their concerns to their union leaders, who then negotiate with the employers. Union commitment is determined by the union members’ satisfaction with their unions’ ability to secure the desired work-related outcomes such as wages and benefits (Bamberger, Kluger, & Suchard, 1999). The high levels of mobilization and democracy in these two types of unions stem from the high levels of commitment of the union members, who believe in the instrumentality of their unions, and who are willing to support them (Cregan, 2005).

On the other hand, we expect inactive unions with less democratic leaderships to have the higher turnover rates because their leaders are not committed to changing workplace conditions and compensation in favour of workers. Non-democratic leaders in these unions tend to mediate between union members and company managers rather than represent the demands of union members. These leaders are not committed to putting pressures on employers to improve working conditions and compensation of union members. The distance between union leaders and their members brings about a perception of union inefficiency among workers, who become frustrated and ultimately leave their companies.

Based on the above discussions, we then develop the following hypothesis on turnover rate and union type:

Hypothesis 1: Turnover rates are lower at workplaces with 'militant unions' and 'business unions' than at workplaces with 'inactive unions'.

Union type and strike

In this study, we expect militant unions to have the higher level of conflict with their employers. This is because militant unions have significant abilities to mobilizing their union members. They have high levels of union democracy, which enables them to voice the concerns of their union members. They actively intervene in workplace issues concerning their members and put pressure on employers to improve the working conditions and compensation. They support worker issues not only at their own workplaces but at other workplaces as well, which may evidence their external solidarity with workers in other workplaces. Furthermore, because these unions pursue the social and political advancement of the working class, they participate in the corresponding social and political campaigns. High level of solidarity shows that they tend to mobilize their members to support various issues and therefore, tend to have higher levels of conflict with employers compared to other types of unions. Different from militant unions, business unions having workplace level bargaining structure use bargaining power with high level of mobilization only for the economic advancement of union members since their interests are limited in their own workplace issues rather than issues of workers in other workplaces. Therefore, it is are expected that business unions would have the second higher level of conflict.

On the other hand, we expect inactive unions to have the lower level of conflict with employers because they tend not to mobilize their members, in order to avoid conflict with employers. Furthermore, these unions have the lower level of democracy and solidarity level, which suggests that they are not interested in engaging in any activities that voice the concerns of their members and workers in other workplaces.

Based on the above discussions, we develop the following hypothesis on the relationship between level of conflict and union type:

Hypothesis 2: The strike occurrence is highest at workplaces with 'militant unions' followed by 'business unions' and lowest at workplaces with 'inactive unions'.

Union type and wage rate increase

Militant unions are expected to have the higher wage rate increase because they are interested in the economic advancement of their workers, whom they mobilize through democratic leadership. These unions have high levels of mobilization, which enables them to put pressure on employers to compensate them fairly in return for their efforts to increase production. The democratic structure of these unions enables union leaders to persuade their members to commit to such effort on improving productivity. In return for their cooperation, union members expect their unions to negotiate higher economic compensation on their behalf. Similar to militant unions, business unions would have the interests in higher level of wage increases since they respect their members' demands for greater economic compensation. The high level of mobilization among these unions enables them to successfully negotiate their demands with their employers.

Meanwhile, we expect inactive unions to have the lower level of wage increase than militant and business unions because they tend to avoid conflict with company managers and, thus, hardly demand wage increase from their employers. They are unable to successfully negotiate with employers because they have the lowest level of mobilization.

Based on the above discussions, we develop the following hypothesis on the relationship between rate of wage increase and union type:

Hypothesis 3: The rate of wage increase is higher at workplaces with 'militant unions' and 'business unions' than at workplaces with 'inactive unions'.

Union type and company financial outcome

It is expected that the financial outcome will be higher at the workplace with business unions than the other two types of unions. Business unions have high level of mobilization as well as militant unions. However, their use of mobilizing their members is limited to the increase of members' economic benefits. They use their bargaining power when these unions realize that the possibility of gaining greater compensation. They tend to mobilize their members to take collective actions against employers to get their expected economic compensation. However, they are more likely to cooperate with their employers in return for proper economic compensation.

On the other hand, different from business unions, militant unions tend to mobilize their members not only for the economic benefits but also for the political issues. Also, these unions are involved in any activities that support the issues of workers in other workplaces and they are not interested in building cooperative relations with tier managers. Although having low level of mobilization tendency, inactive unions with less democratic leaderships to have the higher turnover rates because their leaders are not committed to changing workplace conditions and compensation in favour of workers. Due to the low interests of making the voice for the improvement of working and wage condition on behalf of their members, the workers performance would not as high as the business unions.

Based on the above discussions, we develop the following hypothesis on the relationship between rate of wage increase and union type:

Hypothesis 4: Financial outcomes are higher at workplaces with 'business unions' than at workplaces with 'militant unions' and 'inactive unions'.

6. Data and Methodology

The three types of unions identified above are utilized as independent variables and analysed to determine their impact on organizational outcomes, specifically turnover rate, strike, wage rate increase, and financial outcomes as total firm sales. Data on turnover rate and wage increase was collected through the 2010 survey, which asked company HR managers to report annual turnover rate in 2009 and local union representatives whose terms of office in 2009 to report wage rate increase resulting from negotiations conducted at the end of 2009. The level of conflict was measured based on strike occurrence in 2009 collected by the Ministry of Labour. The data of sales as financial outcomes was retrieved from the data bases of financial outcomes in 2010 each company reports to Korea Financial Supervisory Service. A summary of the mean, standard deviation, and minimum and maximum values of variables including control variables is presented in Table 4.

We estimated the turnover rate with an ordered logit model, the occurrence of strikes and compulsory arbitration with a logit model, and the wage rate increase and financial outcomes with ordinary least squares (OLS).

INSERT Table 3. Variable names, descriptions, and descriptive statistics

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7. Results

Ordered logit regression on turnover rate

INSERT Table 4. Ordered logit regression on turnover rate

Table 4 presents the ordered logistic regression estimates of the impact of union on turnover rate. The resulting ordered logit regression estimates suggest that, as predicted in hypothesis 1, turnover rates at workplaces with militant and business unions had significantly lower turnover rates than reference group, inactive unions.

Logit regression on strike occurrence

INSERT Table 5. Strike occurrence

Tables 5 presents the logistic regression estimates of the impact of union type on the strike occurrence when the reference group is business unions. The resulting logistic regression estimates support hypothesis 2, which predicted that strike occurrence would be highest among militant unions, followed by business unions, and lowest among inactive unions. The likelihood of strike occurrence in the group of militant unions was significantly higher than the reference union, business unions. It was significantly lower in the group of inactive unions than the reference union.

OLS on rate of wage increase

INSERT Table 6. Rate of wage increase

Table 6 presents the OLS on the impact of union type on wage rate increase. The reference group is inactive unions and the result shows that compared to inactive oligarchic unions, militant and business unions had a higher rate of wage increase, which supported the hypothesis 3.

OLS on firm sales

INSERT Table 7. Firm sales

Table 7 presents the OLS on the impact of union type on firm sales in 2010. The reference group is business unions and the result shows that compared to business unions, militant and inactive unions had a lower rate of firm sales, which supported the hypothesis 4.

8. Discussion and conclusion

To investigate varieties of unionism and their effect on bargaining and firm outcomes this study aims to synthesize the literatures of union characteristics effect on bargaining outcomes and union effect on firm performance. Considering a union as a homogenous entity, those literatures on relationship between union and firm performance were under controversy; monopoly role vs collective voice. Those literatures on the relationship between the union characteristics and bargaining outcomes to investigate union's behavioural impact on wage level and collective actions could only partially predicted union behaviours since they only looked into one or two dimensions of union characteristics and bargaining outcomes. To increase predictability on union's impact on firm performance and bargaining outcomes, this study took a taxonomic approach to identify varieties of unionisms, along with a clustering analysis that categorized unions based on five key union dimensions, namely ideology, mobilization, democracy, external solidarity, and negotiation level. Based on these five dimensions, three union types were proposed: inactive unions, business unions, and militant unions. Then, with these three union types, the impact of union type on organizational outcomes, specifically turnover rate, strike occurrence, and wage rate increase, and firm sales were further investigated.

Inactive unions have the lowest wage rate increase, which may be attributed to the fact that they have the lowest levels of democracy and mobilization. The low level of democracy suggests that their leaders have little support for the demands of their union members and, therefore, do not take the necessary action to negotiate these demands with employers. These leaders do not see the need to mobilize their members to put pressure on employers to improve working conditions and compensation. Because workers feel that union leaders do not take any necessary actions and negotiate their demands with employers, workers leave the company. Even though they have the lowest level of strike occurrence, their inactive tendency to resolve the grievance of workers at workplace led higher turnover rates and low firm performance.

Turnover rates and wage increase rate are lower in militant and business unions compared to inactive unions. This result may be because both unions are more likely to voice and negotiate the demands of their members regarding working conditions and wages. The results on strike occurrence showed that militant unions are most likely to use conventional ways of attaining economic and political gains for their members. Further, they are more likely involved in solidarity action for the workers in other workplaces. However, business unions tend to limit their activities within their workplaces in pursuit of better economic benefits of their own members rather than the advancement of working class, workplaces with business unions showed higher financial outcome than the other two unions, inactive and militant unions.

In summary, these results suggest that unions are heterogeneous, and that unions are not entities that can be easily dichotomized based on one or two dimensions. Rather, they are organizations with multiple dimensions. Therefore, the different types of unions lead to varying organizational outcomes, specifically in terms of turnover rate, level of conflict, wage rate increase and firm performance.

This study's findings have some implications for employers. First, when dealing with inactive unions, employers need to actively monitor workplace problems because these unions are considered passive when it comes to voicing and negotiating the demands of their members. Employers should therefore play an active role in addressing the concerns of their workers. Otherwise, such unresolved issues could result in increased turnover rates and lower firm performance.

On the other hand, employers should positively regard militant and business unions, which have high levels of democracy and militancy, because such unions listen to and negotiate workers' demands, which reduces turnover rates. Even though negotiating with these unions may pose additional costs owing to the increased wages, this strategy may yield productivity increases owing to the workers' cooperation. Under the cooperative alliance with these unions, employers need to identify necessary improvements in the workplace.

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TABLE 1 . Variable Names, Descriptions, and Descriptive Statistics

Variable	Description	N	Mean (S.D.)
Ideology	Priority on whether economic benefits or political and social advancement of working class The semantic differential measurement (scales 1~5)	135	3.33 (0.11)

Mobilization	Collective actions are preferred over issues that conflict with company managers (1=Strongly disagree ~ 5=Strongly agree)	135	3.45(0.10)
Democracy	Degree of influence of shop floor workers (1=Very low ~ 5=Very high)	135	3.57(0.07)
Solidarity	Standardized Z-score of sum of the following items	135	0.85(0.03)
	Participation in campaigns for unions in other workplaces (Yes = 1; No = 0)	135	0.77(0.03)
	Participation in fundraisers to support unions in other workplaces (Yes = 1; No = 0)	135	0.66(0.04)
	Strike led by elected union officials to support unions in other workplaces (Yes = 1; No = 0)	135	0.45(0.04)
	Solidarity strike by union members for the workers of other workplaces (Yes = 1; No = 0)	135	0.57(0.04)
	Proposal for equal employment treatment for non-standard workers (Yes = 1; No = 0)	135	3.32(0.14)
Bargaining structure	Participation in collective bargaining: at enterprise level only (0), at regional and industry level (1)	135	0.22(0.03)

TABLE 2. Cluster mean, S.D., and ANOVA results

Cluster Number of unions in cluster (%)		Ideology	Mobilizatio n	Democrac y	External solidarity	Negotiation level
Cluster 1	Mean	-0.209	-1.031	-0.712	-0.619	-0.369
44 (33%)	S.D	1.033	0.737	1.113	0.986	0.611
Cluster 2	Mean	-0.602	0.314	0.403	-0.479	-0.533
32 (24%)	S.D	0.980	0.765	0.636	0.951	0.000
Cluster 3	Mean	0.482	0.599	0.312	0.721	0.564
59 (44%)	S.D	0.733	0.608	0.777	0.400	1.204
F		16.818***	74.575***	21.761***	45.816***	22.305***

Table 3 Variable names, descriptions, and descriptive statistics

Variable names	Description	N	M	S.D.
Dependent Variables				
Turnover 2009	Annual Turnover rate in 2009 1 = less than 1%, 2 = more than 1% and less than 2%, 3 = more than 2% and less than 3%, 4 = more than 3% and less than 4%, 5 = more than 5%	133	1.74	1.30
Strike 2009	Yes = 1; No = 0	133	0.33	0.47
Wage increase 2009	The rate of wage increase in 2009	132	2.26	2.92
Sales per an employees in 2010	Log. of amount of sales per an employee in 2010	120	6.11	1.08
Control Variables				
Industries	Steel	135	0.07	0.25
	Machine manufacturing	135	0.07	0.25
	Electronics	135	0.10	0.30
	Fabricated metal	135	0.02	0.12
	Chemical	135	0.02	0.15
	Motor vehicle manufacturing	135	0.07	0.25
	Other manufacturing	135	0.20	0.40
High commitment: Communication system	Standardized score of mean of the following items 1) Level of participation in work related decision-making process 2) Level of work related suggestion system 3) Level of work related communication system among employees	133	0.00	1.00
Asset per an employee 2008	Log of amount of asset per an employee in 2008	122	6.02	0.84
Asset per an employee 2009	Log of amount of asset per an employee in 2009	121	6.02	1.02
Ave. service years of blue collar workers	Log of Average service years of blue collar workers	133	2.46	0.48
Capital (t-1)	Log of total amount of capital in 2008	120	11.44	1.98
Firm age	Log of Firm age	131	3.09	0.76
Firm size	Log of number of employees	133	6.39	1.44

Labour costs (t-1)	Log of total amounts of labour costs in 2008	131	8.92	1.67
Liabilities per an employee (t-1)	Log of amounts of liabilities per an employee in 2009	122	5.35	0.96
List status	Listed = 1, Not listed=0	135	0.40	0.49
Net profit (t-1)	Log of total amounts of net profit in 2008	100	9.36	2.32
Peak organization	KCTU = 1, FKTU = 0	135	0.66	0.48
Rate of blue collar workers	Number of blue collar workers divided by total number of employees	133	0.57	0.22
Rate of change in asset	(Amount of asset in 2009 - Amount of asset in 2008)/Amount of asset in 2008	121	0.18	0.96
Rate of change in capital	(Amount of capital in 2009 - Amount of capital in 2008)/Amount of capital in 2008	118	0.22	1.35
Rate of change in labour costs	(Amount of labour costs in 2009 - Amount of labour costs in 2008)/Amount of labour costs in 2008	131	0.02	0.46
Rate of change in liability	(Amount of liability in 2009 - Amount of liability in 2008)/Amount of liability in 2008	121	0.22	0.79
Rate of change in net profit	(Amount of net profit in 2009 - Amount of net profit in 2008)/Amount of net profit in 2008	130	-0.59	5.44
Rate of change in retirement benefits	(2009 retirement benefits - 2008 retirement benefits)/2008 retirement benefits	130	-0.04	0.67
Rate of change in wages	(Amount of wages in 2009 - Amount of wages in 2008)/Amount of wages in 2008	128	0.01	0.49
Rate of labour costs 2009	Total amount of labour cost / Total sales in 2009	131	0.04	0.07
Rate of liabilities	Liability rate=liabilities/assets	119	2.44	5.34
Sales (t-1)	Log of sales in 2008	130	12.63	2.08
Sales per an employee (t-1)	Log of amount of sales per an employee in 2009	131	6.19	1.34
Status of contractor	Subcontractor = 1; Prime contractor = 0	135	0.48	0.50
Union age	Log. of union age	132	2.71	0.85
Union density	Union density	133	0.91	0.16
Union size	Log of number of union members	133	5.75	1.31
Wages 2008	Log. of amount of average wages in 2008	129	8.63	1.67
Wages 2009	Log. of amount of average wages in 2009	130	8.54	1.69

TABLE 4. Turnover (Standard error in parentheses)

	Turnover
Militant unions	-1.527 (0.761)**
Business unions	-1.888 (0.873)**
Inactive unions	Reference
Union size	-0.107 (0.315)
Union age	0.656 (0.486)
Ave. service years of blue collar workers	-0.5 (0.77)
Rate of blue collar workers	-2.031 (1.369)
Union density	4.013 (2.432)*
Firm age	-0.204 (0.48)
Rate of labour costs	-6.542 (4.421)
Status of contractor	0.873 (0.846)
Steel	-17.092 (5704.923)
Machine manufacturing	-19.017 (5955.131)
Electronics	2.27 (1.088)**
Fabricated metal	-18.559 (0)
Chemical	1.336 (2.11)
Motor vehicle manufacturing	-1.449 (1.581)
Other manufacturing	0.341 (0.856)
List status	-2.15 (0.885)**
Rate of liabilities	-0.244 (0.154)
Rate of change in sales	0.033 (0.015)**
Rate of change in retirement benefits	-0.088 (0.574)
High commitment: Communication system	-0.018 (0.69)
Labour costs *(t-1)*	0.541 (0.298)*
Rate of change in labour costs	-2.505 (1.877)
-2 Log likelihood	155.817
Chi-square	39.019
Pseudo R^2	0.331
N	97

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.001$

TABLE 5. Logit regression on Strike occurrence (Standard error in parentheses)

	Strike occurrence 2009
Militant unions	2.58 (1.21)**
Inactive unions	-2.76 (1.61)*
Business unions	Reference
List status	-4.30 (1.63)**
Rate of liabilities *(t-1)*	0.59 (0.45)
Union age	-0.03 (0.54)
Firm size	-0.38 (0.80)
Steel	-1.23 (1.97)
Machine manufacturing	-4.20 (2.28)*
Electronics	-24.14 (11438.34)
Fabricated metal	-20.23 (40192.97)
Chemical	-2.60 (4.52)
Motor vehicle manufacturing	-1.41 (1.81)
Other manufacturing	-2.93 (1.51)*
Sales *(t-1)*	0.34 (0.59)
Capital *(t-1)*	1.72 (0.89)*
Net profit *(t-1)*	-0.81 (0.41)**
Rate of change in sales	-7.79 (4.88)
Rate of change in capital	-7.23 (3.72)*
Rate of change in asset	-13.60 (7.78)*
Rate of change in liability	5.79 (4.46)
Rate of change in wages	6.53 (4.28)
Rate of change in labour cost	7.38 (4.48)
Rate of change in net profit	0.05 (0.16)
Constant	-12.12 (4.81)**
-2 Log likelihood	51.237
Chi-square	64.672***
Pseudo R^2	0.51
N	90

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.001$

TABLE 6. OLS on Wage increase (Standard error in parentheses)

	Wage increase 2009
Militant unions	1.45 (0.64)**
Business unions	1.26 (0.73)*
Inactive unions	Reference
Constant	3.52 (2.60)
Peak organization	-0.47 (0.66)
Ave. service years of blue collar workers	-1.57 (0.55)**
Status of contractor	2.12 (0.85)**
Steel	-0.15 (1.26)
Machine manufacturing	1.45 (1.24)
Electronics	0.35 (1.09)
Fabricated metal	2.46 (2.08)
Chemical	3.54 (1.88)*
Motor vehicle manufacturing	2.55 (1.12)**
Other manufacturing	2.39 (0.94)**
Sales per an employee *(t-1)*	0.54 (0.26)**
Asset per an employee *(t-1)*	-0.83 (0.34)**
Wages 2008	0.77 (0.37)**
Adjusted R^2	0.172
F-stat	2.654**
N	119

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.001$

TABLE 7. OLS on Firm Sales (Standard error in parentheses)

	Firm sales in 2010
Militant unions	-0.46 (0.22)**
Inactive unions	-0.56 (0.23)**
Business unions	Reference
Constant	1.89 (0.77)**
Peak organization	0.37 (0.21)*
Status of contractor	0.07 (0.26)
Rate of liabilities	0.02 (0.01)**
Union density	-0.15 (0.53)
Steel	-0.18 (0.39)
Machine manufacturing	-0.07 (0.38)
Electronics	-0.67 (0.34)**
Fabricated metal	-0.08 (0.63)
Chemical	-0.35 (0.71)
Motor vehicle manufacturing	-0.23 (0.33)
Other manufacturing	-0.36 (0.28)
Sales an employee *(t-1)*	0.35 (0.08)***
Asset per an employee *(t-1)*	0.05 (0.21)
Liabilities per an employee *(t-1)*	0.28 (0.18)
Wages 2009	0.26 (0.11)**
High commitment: Communication system	0.10 (0.09)
Adjusted R^2	0.49
F-stat	7.08***
N	112

* $p < 0.1$,   ** $p < 0.05$,   *** $p < 0.001$

Figure 1. Union characteristics