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Multilevel Analysis for Examining the Effects of Community Disorder on Informal SOCIAL Control

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Abstract

The main goal in this study was to assess the impacts of social and physical disorders on individual level of informal social control. The data used in this study were collected from 700 male and female respondents living in Daegu Metropolitan City, the third largest city in South Korea. The results from HLM(Hierarchical Linear Regression Model) analysis, unlike previous findings, have shown that community disorder has no effects on informal social control. Both social disorder and physical disorder show no significant effects on informal social control. Meanwhile, residential stability has a significantly positive impact on informal social control. In addition, among demographic variables, gender and age are significant predictors. The male respondents are more likely to respond the higher level of informal social control than the females. Age is also positively related to the level of informal social control. This study in this field of research is almost the first attempt to apply for HLM statistical technique in South Korea. It is needed more researches to use the nested data for studying community and social problems in South Korean Community of Criminal Justice and Criminology.

[Keywords] *Community, Disorder, Informal Social Control, Residential Stability, Concentrated Disadvantage*

1. Background and Research Purposes

The fact that crime rates disproportionately vary across communities is well-known consensus in criminal justice and criminology. Generally, this conclusion is systemically explained by social disorganization theory. Shaw and McKay suggest that the outcomes of social disorganization is the disproportional pervasion of crime and victim. Many factors of these results are community's structural components, including poverty, residential mobility, and racial heterogeneity[1][2][3].

Recent theoretical development, so called the systemic control model, has extended the understanding of social disorganization theory and explained how neighborhood compositions are related to the concentration of crime and social problems across neighborhoods. The advocates of the systemic model

argue that social interactions and social ties generate a community's collective ability to regulate their neighbors, and to mediate the effects of neighborhood characteristics on crime, deviance, and analogous social problems[1][2][4][5][6].

General attentions of social disorganization theory are to examine the effects of structural characteristics of neighborhoods on crime, disorder, and fear of crime. The core mediator of the structural components of communities is informal social control or recently collective efficacy[3][6]. For a long time, crime problems(e.g. crime, disorder, victimization, fear of crime) have been perceived as the outcomes of community processes(e.g. social capital, social ties, neighboring, interactions, social cohesion, informal social control, collective efficacy, sense of

community, and so on) across neighborhoods[1][3][6]. Recently, its direction has been changed among traditional dependent and independent variables. Empirical evidence has shown that crime and disorder can be also constraints of the community's ability to regulate their neighbors[7][8][9][10][11].

Additionally, it is inevitable to use the nested data in the study of community and crime. Since Bryk and Raudenbush's work[12] of HLM, the application of HLM become a typical statistical tool in this field of study. However, the literature of South Korea have not often used this statistical tool, but more frequently use traditional multiple regression model[13]. It is not a long time to adopt the statistical technique of HLM in South Korean Community of Criminology. The first empirical test was performed by Yun[13] in 2010 with the nested data. After his work, some Korean researchers have followed to use HLM technique in examining community and crime. However, still the empirical test with HLM is rarely used in South Korean Community of Criminology.

Therefore, the primary purpose of this study is to examine the impact of disorder on informal social control with HLM. Specifically, this study suggests an implication to HLM in South Korea and the extension of the scope of understanding the systemic model of social disorganization by providing an insight to understand the impact of disorder on informal social control.

2. Literature Review

2.1. Social disorganization and community

One generally accepted finding in criminology is the concentration of crime across areas. Furthermore, extant empirical studies strongly support the meaningfulness of structure components of communities on crime and other community problems. Many of previous findings unearthed that communities' socioeconomic status can expound crime rates[14][15][16]. Residential instability and racial heterogeneity are also perceived as generators of crime [16][17][18]. The leading

theoretical explanation is based on Shaw and McKay's classical social disorganization theory. Recently, theoretical development of social disorganization, so called the systemic control model[1][19], become a decent explanation of crime and community. The advocates of the systemic model of social disorganization define community as "a complex system of friendship and kinship networks and formal and informal associational ties rooted in family life and on-going socialization processes(p.329)"[20]. The prime argument of the systemic model is that the communities' structural barriers(e.g. poverty, racial heterogeneity, residential mobility) obstruct neighbors' formal and informal social interactions which generate the community's ability to maintain social order[3].

2.2. Informal social control

The main outcome of social disorganization, therefore, is informal social control[19]. The definition of informal social control is "the capacity of a group to regulate its members according to desired principles to realize collective, as opposed to forced, goals(p.918)"[3]. The forefront causes of informal social control are structural characteristics of community[1][17][19][21]. Ecological studies have also shown that informal social control can be generated by social ties, community organizational participation, community attachment, community cohesion, territorial function, and social interaction among neighbors [17][19][21][22][23]. Residents' overall social interactions are key factors to predict the levels of informal social control in a neighborhood. Strong social ties and interactions increase residents' capability to engage in informal social control and thus decrease crime and analogous problems[3]. On the other hand, recent findings disagree with this conclusion since the strength of social ties or networks is insufficient to produce a level of informal social control and, occasionally, generates crime[1][5][6][14][24]. Although strong social ties increase residents' social interactions, sometimes these ties generate informal supervision and simultaneously encourage the activities of criminal groups or organizations[24].

2.3. Informal social control and disorder

In literature, the consistent findings are that there exists negative effects of ecological systemic processes (e.g. social cohesion, social ties, informal social control, and collective efficacy) on community problems (e.g. crime, disorder, fear of crime, and victimization) [3][4][5][7][11][17][18][21][22][25][26][27][28]. In 63 Baltimore neighborhoods, Taylor and his colleagues found that residents' responsibility and participation in community organization reduced violent crime rate in these neighborhoods [22]. Frequency of participation in community organizations also is inversely associated to delinquent behaviors [28]. Local social ties and friendship networks are also related to lower levels of adolescents' committing crime [19][25]. Neighboring among residents has a negative relationship with burglary, auto theft, and robbery rate [17]. In addition, social cohesion is a predictor of crime and disorder in testing of British Crime Survey [26]. Collective efficacy has a negative effect on violent crime rate in Chicago communities [3].

Although almost all literature in this field of research considers that neighborhood problems are the outcomes of social disorganization, some point out that community crime and disorder may also affect ecological systemic variables such as social cohesion, attachment of community, and informal social control [1][10][29][30]. Markowitz and his colleagues contend that unidirectional processes among friendship networks, informal social control, and crime is no longer simply conceptualized [26]. Skogan, in his book of 'Disorder and Decline', suggested a reciprocal relationship between disorder and community processes (e.g. participation in community organization and cooperation in the community) [10]. The signs of disorder in community reduce residents' participation in neighborhood organizations and cooperation in community. On the other hand, Taylor argued that the negative associations between community processes and social problems are not always applicable. Since crime sometimes leads neighbors to participate in crime prevention organizations [31].

Community disorder, defined as "a violation of norms concerning public behavior" [10], has multiple undermining effects on community. Gibson and his colleagues [11] show that community perceived disorder is a major predictor of collective efficacy and social interactions among neighbors. A study also finds that perceived risk of attack and community problems undermine informal social control [11]. Sampson and his colleagues also attest the deteriorative effect of neighbors' perception of community problems and fear of crime on social cohesion, community satisfaction, and child-centered informal social control [5]. Markowitz and his colleagues also show that the neighborhood informal social control is determined by community disorder [26]. In Baltimore and Salt Lake City, Perkins and his colleagues find that physical deterioration of community discourages neighbors' participation in community organizations [32].

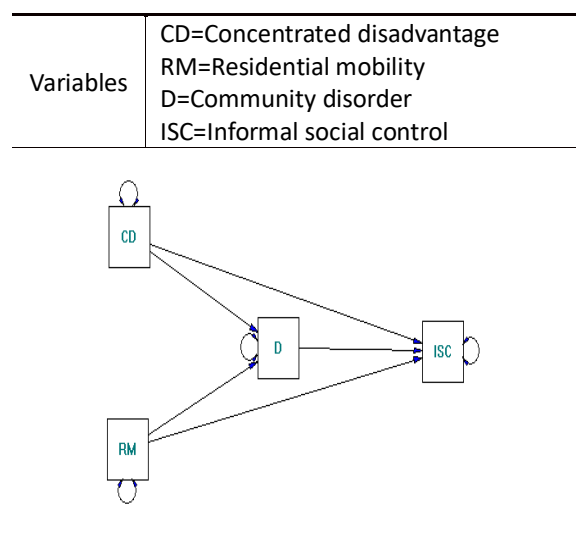
As a result, in this study, the author examines the effects of community disorder on informal social control with the nested data derived from 700 residents living in Daegu Metropolitan City, the third-largest city in South Korea. Until now, in the literature of South Korean Community of Criminology, there is not enough empirical evidence to clarify the effect of disorder on informal social control by using HLM.

3. Empirical Framework

The purpose of this study, therefore, aims to examine the impact of disorder on informal social control. The primary premise of this study is that community disorder undermines the community's ability to regulate their neighbors. <Figure 1> expresses the theoretical associations among variables. First, the concentrated disadvantages of communities and residential mobility may lead to the pervasiveness of community disorder. Second, the level of disorder barriers informal social control. To accomplish the goal of this study, it is necessary to specify systemic analytic models since this study requires the use of multi-level data, including individual and

community levels of information. For example, informal social control of respondents is an individual level of variable, while communities' structural components and disorder are considered the community level of variables. Consequently, the statistical equation to predict informal social control is concomitantly explained by the both community and individual levels of information(e.g. demographic characteristics of respondents, communities' structural components of respondents).

Figure 1. The hierarchical linear model of disorder and informal social control.



4. Research Method

4.1. Date and sample

The data used in this study were collected from 700 male and female respondents, over 18-years old living in Daegu Metropolitan City(the third largest city in South Korea) in 2010. The sampling were designed to distribute the questionnaires at 36 administrative districts, at least 20 each, randomly selected from 8 counties in Daegu Metropolitan City. To get the nested data, additionally, the census data were also collected for 36 administrative districts. At least, more than 10 questionnaires included in each administrative districts.

4.2. Measurement

4.2.1. Dependent variable

The primary dependent variable of this study is informal social control. Informal social control was measured by asking residents about the likelihood that their neighbors could be counted on to take action with 6 questions which were revised in Yun's study[33]. The factor analysis and reliability test were satisfied(Eigenvalue=3.664; Chronbach's alpha=.871).

4.2.2. Independent variable

The main independent variable is community disorder. Community disorder is measured by 9 items. Based on the previous studies, the questions were selected and asked to the respondents about the experience of seeing litter, broken street lights, abandoned cars, teenagers hanging out, people drunk in public places, loud argument so on. The factor analysis has shown that community disorder was divided into social disorder(5 items) and physical disorder(4 items). The Z-score of disorder in each administrative districts is calculated and used for model estimation.

4.2.3. Community structural components

Traditional measures of community structural characteristics were poverty, heterogeneity, and residential instability. Recently, many studies developed a new comprehensive measure, called concentrated disadvantage. Previous studies have shown that concentrated disadvantage is an impeding factor of informal social control[3][7][21]. Sampson and his colleagues, to measure the concentrated disadvantage, used 6 items form Census data the percentage of families below poverty line, the percentage of families on public assistance, the percentage of female-headed families, the percentage of unemployed people in a neighborhood, the percentage of people less than age 18, and the percentage of black population[7]. In South Korean Census data, all of items used to measure the concentrated disadvantage were not collected. Only the percentage of families on public assistance and the percent-

age of female-headed families were applicable. In the individual level of survey, it could be possible to extract the poverty by using the household income. As a result, in this study, the concentrated disadvantage were measure by the percentage of families on public assistance, the percentage of female-headed families, and the average of household income in each administrative districts. The second component of structural characteristics of community is residential mobility, normally measured by the percentage of people living in the community more than 5-years. In this study, residential mobility is measured by the average living months in the community so that it is called the residential stability. The Z-score of all items of structural characteristics of community were used in the statistical model.

4.2.4. Control variables

Residents' demographic variables are used as control variables, including gender(male=1, female=2), age, educational level(from less than high school to graduate school), and Owned house(0=rent, 1=house owner).

5. Analytic Results

5.1. Descriptive statistic

<Table 1> presents descriptive statistics of respondents' demographic variables. Among 710 respondents who participated in this study, 43.8% are male and 56.2% are female. There are somewhat over-represented female samples in the data. The average ages of respondents are 38.93-year old. Among the respondents, 36.8% are the renter and 63.2% are the house-owner. Respondents' academic level is somewhat high. More than 55% of respondents are holding the higher education degrees as like college and university.

Table 1. Demographic variables.

Variables	N(%)	Mean
Gender	Male: 311(43.8%); Female: 399(56.2%)	
Age		38.93
House owner	Rent: 261(36.8%) Owner: 449(63.2%)	

Education	Less than high school: 81(11.4%) High school degree: 207(29.2%) 2-year college degree: 158(22.3%) Bachelor's degree: 232(32.7%) Graduate degree: 32(4.5%)
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Table 2. Dependent and independent variables.

Variables	Mean	Min	Max	Std	N
Concentrated disadvantage	.00	- 1.97	1.84	1.00	36
Residential stability	.00	- 1.60	2.81	1.00	36
Social disorder	.00	- 2.30	1.73	1.00	36
Physical disorder	.00	- 2.46	3.09	1.00	36
Informal social control	20.01	6	30	4.42	705

<Table 2> shows descriptive statistics of dependent and independent variables. Average of informal social control is 20.01 which means a little bit high in the likelihood of community residents' intervention in terms of community problems, including crime, delinquency, and social problems. Other community level of variables is calculated by the Z-score.

5.2. Correlation between variables

<Table 3> shows the correlation among variables. Especially, community disorders and structural components of community have some statistically significant linear relationships. First of all, concentrated disadvantage has somewhat strong relationships both of physical and social disorder. It means that communities suffering with the concentrated disadvantage have also the higher level of social and physical disorder. Unlike previous findings, residential stability significantly increases physical disorder and has simultaneously no relation with social disorder. Perhaps, someone living longer in a neighborhood experience more physical incivility because the measurement of physical disorder gauges their experience of daily seeing the untidiness of their neighborhoods. While as the experience of social disorder may be depended on the use of land for living or commerce. In South Korea, pubs, restaurants, club bars are normally located in the small concentrated area for commerce. At these places, it is easy to confront the drunken people and the scenes of fighting. As

a result, the duration of living is related with physical disorder but not social disorder.

Table 3. Correlation of community level variables.

Variables	CD	RS	SD	PD
Concentrated disadvantage(CD)	1			
Residential stability(RS)	.251	1		
Social disorder(SD)	.559***	.038	1	
Physical disorder(PD)	.636***	.449***	.440***	1

Note: p<.10, * p<.05, ** p<.01, *** p<.001

5.3. HLM of informal social control

To test the effects of community disorder on informal social control, HLM analysis was performed. <Table 4> and <Table 5> present the results of HLM for informal social control. ANOVA analysis for the null model shows that informal social control can be explained both of individual and community levels of variables. More than 8% (.0813 = 1.557/ 1.557 + 17.98) of variance of informal social control can be significantly explained by the community level of variables.

With individual and community levels of variables, the results of HLM analysis are presented in <Table 5>. The results are somewhat different from previous studies. First of all, the concentrated disadvantage, generally a predictor of informal social control, is not a significant predictor in the model of HLM. Residential stability is the only significant predictor among community level variables. On the other hand, both of social and physical disorders fail to show significant effects on informal social control. The results show that community disorder is not a mediator and predictor of informal social control in South Korea. Meanwhile, gender and age are significant predictors of informal social control.

Table 4. ANOVA of informal social control.

Fix effect	Coefficient	SD	T
r00	20.037	.259	77.320***
Random effect	Variance	DF	Chi-Square
Between community	1.557	35	93.732
Within community	17.980		

Note: p<.10, * p<.05, ** p<.01, *** p<.001

Table 5. HLM of informal social control.

Community level	DV: Informal social control		
	Coefficient	SD	T
Concentrated disadvantage	.051	.271	.188
Residential stability	.579	.179	3.236**
Social disorder	-.315	.396	-.796
Physical disorder	-.474	.301	-1.575
Individual level			
Gender	-.834	.397	-2.100*
Age	.045	.017	2.66**
House ownership	.613	.354	1.729#
Education	-.065	.183	-.357
Within	17.448	31	68.825
Between	1.098		

Note: p<.10, * p<.05, ** p<.01, *** p<.001

6. Conclusion

The primary purpose of this study was to examine the effects of community disorder on informal social control. To accomplish this study, the author used the nested data collected from 700 respondents living in Daegu Metropolitan City in South Korea. Unlike previous studies, in case of South Korea, community disorder has no effects on informal social control. Both social disorder and physical disorder show no significant effects on informal social control. Meanwhile, residential stability has positive impacts on informal social control. The male respondents are more likely to respond the higher level of informal social control than the females. Age is also positively related to the level of informal social control. This study in this field of research is almost the first attempt to apply for HLM statistical technique in South Korea. It is needed more researches to use the nested data for studying community and social problems in South Korea.

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