Article

Applying DEMATEL to Investigate the Relationship Between Factors Affecting Parole Boards' Decision-Making in Taiwan

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Abstract

Parole rejection/approval of inmates is subject to the decision-making of the parole board members of each prison. Previous studies have found that many factors influence the decision of the parole board. This study introduces Decision Making Trial and Evaluation Laboratory (DEMATEL), which is commonly used in commercial and industrial fields, to further explore the subjective factors parole board members consider in parole decisions. This study surveyed 20 parole board members in Taiwan and the results show that the major factors affecting the decision-making of parole boards include crime characteristics and offender recidivism risk, with crime characteristics being the most important factor.

Keywords

Taiwan, parole board decision-making, DEMATEL

Introduction

Parole is the conditional release of incarcerated offenders to community supervision prior to the expiration of their prison sentences. Based on the

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concept of rewarding good behavior with reductions in time served, parole is legally considered as a privilege and not a right. For an eligible offender, the parole board reviews information on the offender to determine if the offender is rehabilitated sufficiently to re-enter society. Once granted parole, the offender must obey the conditions of parole while under the supervision of trained officers in the community for the remainder of the sentence.

Parole serves many important functions within the correction system. First, the review of prisoners by the parole board provides them with an incentive to participate in programs and improve their behavior, thereby facilitating inmate re-socialization. Second, correctional officers can use the inmates' desire to appear before the parole board with a good record as a tool to manage inmates and maintain order in the prison. Third, parole boards help to solve the problem of prison overcrowding by formally identifying inmates most deserving of early release. Finally, the parole boards carefully consider the inmates' level of risk and chances for success in returning to the community to create individualized conditions for supervision and treatment. Supervision during parole encourages parolees to behave appropriately after release and helps them re-enter the community successfully (Chang, 2007; Chen, Lin, & Su, 2007; Hsu, 2005; Petersilia, 2003; Su, 2010).

Currently, the parole system in Taiwan operates according to the regulations of the *Criminal Code* and the *Law of Execution in Prison*. Inmates who have completed a minimum sentence, attained at least the second class of progressive corrective treatment,[1] and shown evidence of repentance are eligible for parole. The parole board of each prison decides whether to grant parole. Then, the prison reports the case to the Ministry of Justice for the final decision on parole. In Taiwan, the parole board exercises substantial discretion over granting parole for eligible inmates.

The important decisions made by the parole board include the time and requirements of an inmate's release, which also affects the welfare of the inmate and society (Burke, 2003). Once released on parole, inmates are under the supervision of probation officers in the community for their residual prison terms.[2] If inmates commit new crimes during their parole, especially serious crimes, the public and media may begin to doubt the parole system. Thus, parole continues to be a controversial topic.

Despite this controversy, parole remains a largely hidden part of the criminal justice system (Huebner & Bynum, 2006). Investigating factors associated with parole decision-making improves our understanding of the dynamics of this process and has significance for inmates re-entering the society. For example, when the factors inmates believe affect parole decisions differ from those considered by parole board members, the inmates will less likely follow the prison rules (Caplan, 2007). Several studies have found

that many factors influence parole decision-making, including personal characteristics, criminal history, crime severity, institutional conduct, time served, adjustment to society after release, and risk of recidivism (Caplan, 2007; Chen et al., 2007; Huebner & Bynum, 2006; Lien, 2009; Su, 2010).

What is the relative importance of these factors? According to Wilkins (1982), crime severity and risk of recidivism are the core issues that parole board members consider. For inmates convicted of sex offenses, Huebner and Bynum (2006) found that parole board members worry about community protection and public safety; thus, they emphasize the risk of recidivism. Despite these studies, we still lack a good understanding of the subjective factors that parole board members consider when deciding whether to grant parole.

Therefore, this study introduces Decision Making Trial and Evaluation Laboratory (DEMATEL) to explore the relationship between the subjective factors parole members consider when deciding on parole. Although used extensively in business administration, traffic planning, and performance evaluation, DEMATEL is rarely used in the field of criminal justice. In this study, DEMATEL is applied to examine whether the major factors considered by parole board members in Taiwan meet the original purpose of the parole system. Moreover, the aim of this study is to facilitate the interdisciplinary cooperation necessary to pursue future innovative studies of parole decision-making.

A Brief Review

This section reviews the related literature on the parole review system in Taiwan, factors associated with parole decision-making, and DEMATEL as a foundation for the subsequent analysis.

Parole Review System in Taiwan

According to the regulations of the *Criminal Code, Law of Execution in Prison*, and *Statute of Progressive Execution of Penalty*, parole in Taiwan includes three major elements. First, the "formal condition" for parole requires that applicants complete a minimum portion of their sentences. According to the *Criminal Code*, most inmates must serve half of their sentence before parole eligibility, although inmates with life sentences must serve at least 25 years and recidivists must serve two thirds of their sentences. In addition, inmates must attain at least the second class of progressive corrective treatment, as measured by their rehabilitation, assignment, and conduct scores, before they can apply for parole.

Second, the "substantial condition" for parole requires that parole applicants show an "evidence of repentance." In addition to the completion of a minimum sentence, parole applicants must demonstrate good performance in prison and specific adjustments that are evidence of sufficient rehabilitation to re-enter society. Only then are inmates allowed to file for a parole review. Although risk of recidivism is not specified in the *Criminal Code*, it is a very important consideration of parole review.

Third, the "procedural condition" for parole establishes the official process of review. Each prison in Taiwan is divided into several districts and each district has a discipline group that supervises and rehabilitates inmates. The parole procedure begins with the discipline small groups. Based on the time served and evidence of repentance, the discipline small group submits a list of inmates eligible for parole to the Rehabilitation and Education Section of the prison. After review, the Rehabilitation and Education Section then refers the eligible inmates to the prison parole board. The inmates who pass the parole board's examination are reported to the Ministry of Justice for final examination, which is based mainly on document examination. The inmates who have passed through all of these stages are granted parole. Any violation of parole conditions results in the revocation of parole.

In May 2002, the Ministry of Justice amended the *Organic Statute of Prisons* to define a prison's parole board as a group consisting of 7 to 11 members who jointly review parole applications. Experts in psychology, education, sociology, law, criminology, and penology, as well as probation volunteers, may be appointed part-time members of the parole board by the prison. The prison Superintendent, Director of Rehabilitation and Education, and Director of Security serve as the ex-officio members of the parole board. The superintendent chairs the parole board and convenes its meetings. Typically, meetings are held at least once a month to review parole applications. Due to the large number of inmates who apply for parole, parole decisions are based primarily on the review of documentation rather than interviews.

The appointment and operation of parole boards in Taiwan differs greatly from those in the United States. In the United States, almost all parole boards consist of full-time state employees and in most states the governor appoints parole board members. Also, risk-prediction instruments (e.g., Salient Factor Scores), interviews, parole hearings, and victim input all play an important role during the parole decision-making process. For example, the Michigan Parole Board, consisting of 10 full-time, non-Civil Service employees appointed by the director of the Michigan Department of Corrections, is the sole authority on parole in the state. The Parole Board is divided into three-member panels, which make most of the parole decisions. Parole board members conduct prisoner interviews throughout facilities in Michigan and use a

numerical scoring system to apply objective criteria to the decision-making process. Information used to calculate the parole guideline score includes the inmate's current offense, criminal history, institutional performance and adjustment, age, mental status, and risk of recidivism. An inmate who scores four and above may be granted parole without an interview. An inmate who scores −13 or lower may be denied parole without an interview. For inmates serving life sentences, the parole-decision process requires a public parole hearing and a majority vote by the entire board. The public hearing is necessary, and the opinions of the victim, prosecutor, and judge are also taken into account (Michigan Department of Corrections, 2011).

Factors Associated With Parole Decision-Making

Unfortunately, parole board members make their decisions based on a limited understanding of the inmates and without the tools necessary for predicting future behaviors (Huebner & Bynum, 2006). Given this reality, the factors that parole board members consider during the decision-making process are worthy of further investigation. Determining the factors associated with parole decision-making will provide a greater understanding of the parole review process, as well as the inmates returning to the society.

According to a study by Huebner and Bynum (2006), when conducting parole release decisions of sex offenders, parole board members give greater consideration to inmates' crime characteristics, case data, and prior records than crime severity and culpability. Also, Caplan's (2007) review of parole decision-making in the United States indicated that parole release decisions are influenced primarily by inmates' performance in prison, crime severity, criminal history, incarceration length, mental illness, and victim input. Similarly, Lindsey and Miller (2011), in a comparison of actual parole board members and mock parole board members, found that the actual parole board members are more likely to deny parole. The top three factors they listed for denying parole are lack of attending relevant programs in prison, violent behavior in prison, and severity of the crime.

In Taiwan, Chen et al. (2007) and Lien (2009) collected inmates' verdicts, intake assessments, performance in prison, and prior records to explore the criteria of parole release. They found that inmates' tattoos, age of first offense, number of prior records, type of offense for which the inmate is incarcerated, experience of penalty revocation, experience of security penalty, institutional misconduct, and time served have significant effects on the outcome of parole release decisions. In addition, Lien (2009) found that inmates' age at first offense, number of offenses, number of drug-related prior records, residual prison term, average reception per month, record of parole revocation,

employment situation, family conflicts, and deviant companions are highly associated with recidivism after parole. Therefore, Lien (2009) recommended incorporating these factors into a parole review index.

These studies used official documents and surveys of parolees to examine the factors associated with parole release decisions. However, few studies have directly targeted parole board members to determine what factors they consider during parole decision-making. Su (2010) conducted in-depth interviews of 35 parole board members, finding that four types of factors affect parole decision-making. The first type includes factors affecting administrative review[3] of the parole cases, such as considerations of recidivism (e.g., type of offense and prior records), harmfulness (e.g., methods of committing offense), retribution (e.g., sentence and time served), repentance (e.g., institutional misconduct), and returning to society (e.g., social support). The second type covers determinants of specific knowledge, including selection of determined goals (e.g., relieving prison overcrowding), values (e.g., attitudes toward specific offenses), experience in solving specific problems (e.g., background of parole board members), and gender of parole board members. The third type involves factors of organizational pressure. During the parole decision-making process, parole board members may face pressures from outside the organization (e.g., elected representatives or media), inside the organization (e.g., superiors), or the Ministry of Justice to render a particular decision. Finally, the fourth factor includes information providers (e.g., the prison staff) and methods of data presentation during parole decision-making (e.g., documents or inmates' presentations during parole meetings).

In sum, previous analyses clearly show that inmate personality, crime characteristics, criminal history, risk of recidivism, performance while in prison, future social adaptation, and organizational pressure influence parole release decision-making. However, the relationship between the subjective factors parole board members consider when deciding on parole remains understudied. For example, do crime characteristics or inmate performance in prison exert a greater influence on parole decision-making? Does organizational pressure exceed all other factors in its effect on the decision-making of parole board members? Investigation of the relationship between the subjective factors parole board members consider will advance an understanding of parole review and enable further discussion of the challenges facing parole boards. More specifically, the regulations of parole suggest that the substantial condition (i.e., evidence of repentance) should be of primary concern. Through an examination of the relative importance of various factors, we can explore whether the key factors that parole board members consider coincide with the stated purpose of the parole system. In this study, DEMATEL is introduced to the field of criminology and criminal justice to explore the

relationship between the subjective factors associated with parole release decision-making.

DEMATEL

DEMATEL was first developed by American scientists in a Science and Human Affairs Program in the early 1970s (Gabus & Fontela, 1973). DEMATEL is based on graph theory, enabling us to analyze and solve problems visually. Through the analysis of visual relationship, all elements can be divided into a cause–effect group, which helps researchers understand the structural relationship between elements and plot a network relationship map. Because DEMATEL is very useful for visually structuring the cause–effect relationship of complex problems, it has been applied to many fields, including business administration, market survey, traffic planning, and performance evaluation (Iirajpour, Hajimirza, Alavi, & Kazemi, 2012; Shieh, Wu, & Huang, 2010; Tzeng, Chiang, & Li, 2007; Wu, 2008; Wu & Lee, 2007).

The DEMATEL method involves seven steps:

Step 1: Determine the elements of the problem and the scales of measurement. Before analyzing the problem, the important elements of the problem should be clarified through a literature review, expert interviews, and brainstorming. Then, a scale for measuring the degree of the relative impacts of the factors should be determined. While no requirement for the measurement scale exists, scores of 0 to 3, 0 to 4, and 0 to 5 are common, with the higher score representing a greater degree of impact.

Step 2: Generate the initial direct-relation matrix. In the questionnaire, the experts were asked to assess the degree of direct effect between each pair of elements based on their experience. The initial direct-relation matrix is obtained by converting their assessments into values. Assuming that there are n elements, a direct-relation matrix $[Z]_{n \times n}$ will then be derived.

$$[Z]_{n\times n} = \begin{bmatrix} 0 & z_{12} & \cdots & z_{1n} \\ z_{21} & 0 & \cdots & z_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ z_{n1} & z_{n2} & \cdots & 0 \end{bmatrix}. \tag{1}$$

In the matrix, z_{ij} of $[Z]_{n \times n}$ stands for the direct impact of element i on element j and when $i = j$, the diagonal element $z_{ij} = 0$.

Step 3: Normalize the initial direct-relation matrix. The normalized direct-relation matrix is derived from Equations 2 and 3.

$$S = Max \left(\underset{1 \leq i \leq n}{Max} \sum_{j=1}^{n} z_{ij}, \underset{1 \leq j \leq n}{Max} \sum_{i=1}^{n} z_{ij} \right). \tag{2}$$

$$[X]_{n \times n} = \begin{bmatrix} 0 & z_{12}/S & \cdots & z_{1n}/S \\ z_{21}/S & 0 & \cdots & z_{2n}/S \\ \vdots & \vdots & \ddots & \vdots \\ z_{n1}/S & z_{n2}/S & \cdots & 0 \end{bmatrix} = \begin{bmatrix} 0 & x_{12} & \cdots & x_{1n} \\ x_{21} & 0 & \cdots & x_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ x_{n1} & x_{n2} & \cdots & 0 \end{bmatrix}. \tag{3}$$

Step 4: Calculate the total-relation matrix. The total-relation matrix is computed by using Equation 4, in which I is an $n \times n$ identity matrix.

$$[T]_{n \times n} = X(I - X)^{-1} = \begin{bmatrix} t_{11} & t_{12} & \cdots & t_{1n} \\ t_{21} & t_{22} & \cdots & t_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ t_{n1} & t_{n2} & \cdots & t_{nn} \end{bmatrix}. \tag{4}$$

Step 5: Establish the simplified normalized total-relation matrix. As the values of the total-relation matrix usually exceed the scope of the measurement scale and make it difficult to interpret the results, the normalized total-relation matrix is derived by using Equations 5 and 6. In this case, normalization forces the values of the matrix to fall within the scope of the measurement scale. For demonstration in Equation 6, the scale of 0 to 3 is used.

$$\left[\hat{T}^s \right]_{n \times n} = \begin{bmatrix} \hat{t}_{11}^s & \hat{t}_{12}^s & \cdots & \hat{t}_{1n}^s \\ \hat{t}_{21}^s & \hat{t}_{22}^s & \cdots & \hat{t}_{2n}^s \\ \vdots & \vdots & \ddots & \vdots \\ \hat{t}_{n1}^s & \hat{t}_{n2}^s & \cdots & \hat{t}_{nn}^s \end{bmatrix} \tag{5}$$

in which

$$\hat{t}_{ij} = \frac{(3-0)(t_{ij} - t_{ij,\min})}{(t_{ij,\max} - t_{ij,\min})}. \tag{6}$$

In addition, to represent the structural relationship among the elements while keeping the complexity of the system manageable, it is necessary to set a threshold value s to filter out insignificant effects in the normalized total-relation matrix. Those values in the matrix that are less than the threshold

value are listed as 0. Then, the final matrix is the simplified normalized total-relation matrix.

$$\left[\hat{T}^s\right]_{n\times n} = \begin{bmatrix} \hat{t}^s_{11} & \hat{t}^s_{12} & \cdots & \hat{t}^s_{1n} \\ \hat{t}^s_{21} & \hat{t}^s_{22} & \cdots & \hat{t}^s_{2n} \\ \vdots & \vdots & \ddots & \vdots \\ \hat{t}^s_{n1} & \hat{t}^s_{n2} & \cdots & \hat{t}^s_{nn} \end{bmatrix} \tag{7}$$

in which

$$\hat{t}^s_{ij} = \hat{t}_{ij} \quad if \ \hat{t}_{ij} > s; \hat{t}^s_{ij} = 0 \quad if \ \hat{t}_{ij} \le s$$

Step 6: Calculate the prominence and relation of the elements by summing each row and column in $\left[\hat{T}^s\right]_{n\times n}$ to yield D_i and R_i. Here, D_i is the sum of each row and represents the direct and indirect influence that element i has on all other elements, while R_i is the sum of each column and represents the total influence received by element i from all other elements.

$D_i + R_i$, the prominence of element i, shows all effects given and received by element i, that is, prominence represents the degree of importance that element i plays in the system. $D_i - R_i$, the relation of element i, shows the net effect that element i has in the system. If $D_i - R_i$ is positive, element i is a net causer in the system, while if $D_i - R_i$ is negative, it is a net receiver.

Step 7: Draw the cause–effect relationship diagram based on prominence and relation. A cause–effect diagram can be drawn by mapping the data set of $D_i + R_i$ and $D_i - R_i$. The mutual relationship between elements is shown in the cause–effect diagram.

Data and Method

Participants

This study was conducted by expert questionnaire, targeting parole board members of three prisons in middle and northern Taiwan during April and June of 2011; 20 expert questionnaires were collected in total. The background information on the interviewed parole board members is presented in Table 1.

The study included 6 ex-officio members and 14 appointed members. All are experts who participate in the parole review process. By surveying experts from academic and practitioner fields, the goal was to collect unbiased data for the subsequent analysis.

Table 1. Background Information of Parole Board Members in the Study.

Variables and types	*n*
Background	
Academic field	4
Procuratorial field	4
Correctional field	6
People of other fields	6
Sex	
Male	15
Female	5
Age	
30-40 years old	1
41-50 years old	6
51-60 years old	8
More than 60 years old	5
Education level	
High school	1
College	10
Master	5
Doctor	4
Work experience	
5-10 years	2
11-15 years	2
16-20 years	6
More than 20 years	10

Research Tool

Drawing on the literature review, this study summarized the subjective factors that parole board members consider during the parole review process into four groups: crime characteristics, performance in prison, risk of recidivism, and concerns about policy and public opinion. The factors contained in each group are as follows:

    I.   Crime characteristics represent the information about the crime for which the inmates were incarcerated, including type of legal interest infringed by the offense, degree of damage/harm, and whether and how the inmates compensated for the damage/harm.

   II.   Performance in prison depicts the inmates' rehabilitation in correctional facilities, including the time served, number of prior parole rejections, and evidence of repentance.

III. Risk of recidivism includes those factors that influence the inmates' chances of committing other crimes after release, such as whether the crime the inmate committed tends to have a high recidivism rate, criminal history, life skills of inmates, status of family support, and degree of social acceptance.

IV. Concerns about policy and public opinion include the pressures that might influence a parole board member's decision-making, such as political climate, policy direction of higher competent authority, the attention of media, and public opinion regarding a specific case or the general parole operation.

Based on these four groups, an expert questionnaire was compiled. In the questionnaire, each parole board member was asked to indicate the degree to which they believe the group i affects group j. An assessment of the direct effects between each pair of group was obtained using pairwise comparisons. Pairwise comparisons were given an integer score ranging from 0 to 3, with 0 representing no influence, 1 representing low influence, 2 representing medium influence, and 3 representing high influence. The parole board members were asked to evaluate 12 pairwise comparisons (e.g., "the degree of direct influence of 'crime characteristics' on 'performance in prison'"). A total-relation matrix was generated from their responses to investigate the relationship between crime characteristics, performance in prison, risk of recidivism, and concerns about policy and public opinion.

Results

Tables 2 and 3 show the simplified normalized total-relation matrix and the prominence and relation of the four groups considered in this study.

As Table 3 illustrates, the order of decreasing prominence size is crime characteristics, risk of recidivism, performance in prison, and concerns about policy and public opinion. These results indicate that the parole board members seem to focus on crime characteristics during the parole decision-making process. Table 3 also shows that the order of decreasing relation size is crime characteristics, risk of recidivism, concerns about policy and public opinion, and performance in prison. Crime characteristics and risk of recidivism have positive relation values, indicating that these groups are net causers in the system. Performance in prison and concerns about policy and public opinion have negative relation values, indicating that these groups are net receivers in the system.

In general, crime characteristics and risk of recidivism are the major factors that parole board members consider when deciding on parole, with crime

Table 2. The Normalized Direct-Relation Matrix for All Parole Board Members.

Groups	Crime characteristics	Performance in prison	Risk of recidivism	Concerns about policy and public opinion
Crime characteristics	0.00	3.00	2.71	1.98
Performance in prison	0.00	0.00	0.00	0.00
Risk of recidivism	1.75	2.75	0.00	1.70
Concerns about policy and public opinion	0.00	1.69	0.00	0.00

Table 3. The Prominence and Relation of Four Groups for All Parole Board Members.

Groups	Prominence (D + R)		Relation (D − R)	
	Score	Rank	Score	Rank
Crime characteristics	9.44	1	5.94	1
Performance in prison	7.44	3	−7.44	4
Risk of recidivism	8.92	2	3.50	2
Concerns about policy and public opinion	5.37	4	−2.00	3

characteristics considered most important. This finding may reflect the empirical experience that some types of offense have high recidivism rates. In addition, the importance parole board members give to the risk of recidivism likely reflects the purpose they serve within the parole review system.

Figure 1 combines Tables 2 and 3 into a cause–effect diagram, with prominence as the horizontal axis and relation as the vertical axis. The relationship among the four groups shown in Figure 1 can be described as follows:

1. There are mutual effects between crime characteristics and risk of recidivism, that is, crime characteristics will affect parole board members' evaluation of an inmate's recidivism risk. Furthermore, parole board members' judgment on an inmate's recidivism risk will also influence their appraisal of the inmate's crime characteristics. For
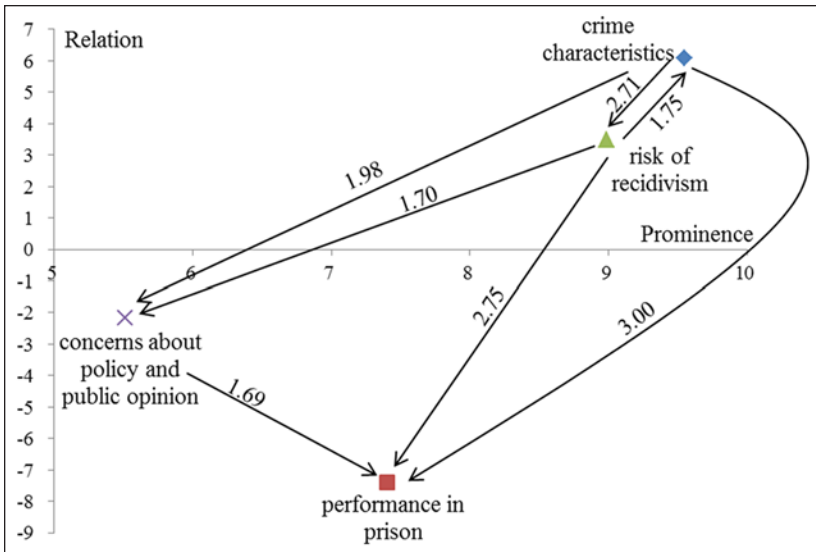
Figure 1. Cause–effect diagram of four groups for all parole board members.

example, Inmate A committed a crime of drug abuse and Inmate B committed a crime of intentional homicide. The different accusations against Inmates A and B will influence parole board members' evaluation of each inmate's risk of recidivism. Moreover, when parole board members have a judgment on inmate's recidivism risk, it will also correspondingly reinforce their appraisal on the inmate's crime characteristics.

2. Crime characteristics show direct effects on performance in prisons and concerns about policy and public opinion.

An inmate's crime characteristics will influence parole board members' concerns about policy and public opinion. For example, Inmate A committed a crime of compulsory sexual offense, while Inmate B committed a crime of assault. If the public and media pay more attention to sexual offenses, the public's perception and expected response for each of these offenses will directly impact parole board members' consideration of parole.

Crime characteristics will affect parole board members' consideration of the inmate's performance in prison. For example, Inmates A and B both committed a crime of homicide; however, Inmate A committed murder with a detailed plan, while Inmate B killed people due to momentary quarrel. The

crime characteristics of Inmate A may cause the parole board members to question that inmate's repentance while in prison.

3. Risk of recidivism shows direct impact on performance in prison and concerns about policy and public opinion.

The inmate's recidivism risk will affect parole board members' concerns about policy and public opinion. For example, if the parole board members have determined that an inmate has a high recidivism risk, they will pay closer attention to the social response and perception when reviewing that inmate's parole application.

The inmate's recidivism risk will influence parole board members' consideration of performance in prison. For example, if parole board members determine that an inmate has a high recidivism risk, their trust in that inmate's repentance or rehabilitation in prison will be shaken. As a result, they may set a higher threshold of correctional effects for that inmate.

4. Concerns about policy and public opinion show a direct effect on performance in prison. Recently, the public and media have shown strong opposition to some criminal offenses. When reviewing the parole applications involving these offenses, parole board members' may require greater evidence of an inmate's repentance or rehabilitation.
5. For the interactive relations among various groups shown in Figure 1, the effects of crime characteristics on performance in prison (relative strength 3.00), risk of recidivism on performance in prison (relative strength 2.75), and crime characteristics on risk of recidivism (relative strength 2.71) together account for 54.3% of overall impact strength. This result indicates that these relationships dominate parole board members' decision-making process.

Discussion and Conclusion

This study introduces DEMATEL to explore the relationship between the subjective factors that parole board members consider while making parole release decisions in Taiwan. Based on a survey conducted with 20 parole board members, the factor of crime characteristics is central to parole board members' subjective evaluation system. Furthermore, the results show that crime characteristics and risk of recidivism are major factors affecting parole decision-making.

According to the regulations of the *Criminal Code* and *Law of Execution in Prison* in Taiwan, the performance in prison and whether the inmate shows

evidence of repentance in prison play an important role during the process of parole review. However, this study yields a different result. The findings show that performance in prison is a net receiver in the system, while crime characteristics and risk of recidivism are net causers.

These findings conform to the view of Wilkins (1982), who suggested that an inmate's crime severity and recidivism risk are the core issues that parole board members should consider when deciding whether to grant parole. Also, the results are consistent with those of Huebner and Bynum's (2006) study, which indicated that the parole board members emphasize crime characteristics and criminal history during the parole decision process. However, in Lindsey and Miller's (2011) study, the parole board members considered the execution of corrections and evidence of adjustment in prison (e.g., program participation and violent behavior in prison) as the top factors for denying parole, which differs from the findings of this study. As discussed previously, the structure and appointment of parole boards in Taiwan differs from the United States. Furthermore, the parole review process in Taiwan is different as well. With the aid of risk-prediction instruments, parole hearings, and victim input, the U.S. parole board members have more information to help them with their decisions. Without these aids and due to the structural limitations of the parole review process, parole board members in Taiwan are more likely to rely on crime characteristics and risk of recidivism to make parole decisions. In contrast to the vague concept of evidence of repentance, these two factors provide a quantitative index for making parole decisions within a limited time.

First, there are no specific stipulations regarding evidence of repentance in the regulations and administrative orders in Taiwan. In Su's (2010) study, many parole board members pointed out that the concept of evidence of repentance is vague and difficult to interpret. Also, the parole board members further indicated that it would be very arduous to determine if inmates truly have repented while in prison. Moreover, overcrowding renders the number of correctional personnel in prison insufficient for adequately counseling inmates and executing parole reviews. Because of their large caseloads, correctional personnel often find it difficult to fulfill daily tasks of corrections, rehabilitation, and education, while also providing the evidence of repentance required for parole review. Under these circumstances, the clearer, more easily quantified concepts of crime characteristics and risk of recidivism exert greater influence on the judgment of parole board members.

Second, the structural limitations of the parole review process also cause crime characteristics and risk of recidivism to be the major factors in parole decisions. Parole board members usually hold meetings once a month. Due to the large number of inmates who file for parole and the limited meeting schedule, there is little time for parole board members to examine the parole

applications. The parole board usually reviews pertinent documents rather than interviewing inmates. These documents tend to contain quantifiable data on crime characteristics and risk of recidivism, rather than qualitative data derived from direct interaction with the inmates. Under these circumstances, it is challenging for parole board members to digest a vast amount of data, judge whether the inmates show evidence of repentance or re-socialization, and make parole decisions within a short time (Chang, 2007; Chen et al., 2007; Su, 2010). Compared with performance in prison, crime characteristics and risk of recidivism are more easily judged and, as a result, these two factors exert a greater influence on parole review than performance in prison.

This is the first empirical study applying DEMATEL to the investigation of parole decision-making and the findings further our understanding of hidden aspects of the parole review process. Although this study makes advances over prior parole decision-making research, several limitations are worth noting. First, the survey included only 20 parole board members of three prisons in the middle and northern Taiwan. Two of these prisons have a capacity of more than 2,500 prisoners, while the third has a capacity of more than 1,500 prisoners. Because the capacity of the prisons might influence parole board decision-making, future studies should use an expanded sample. Including prisons with different capacities would help clarify whether the capacity of the prison influences the factors that parole board members subjectively consider during the parole decision-making process.

Second, this study yielded four groups of factors based on the investigation of parole procedure in Taiwan. This process, of course, is neither perfect nor theoretical driven as this study cannot identify prior literature that specifically examines the same issue. Therefore, the researcher acknowledges that the categorization process used in the study might be limited for the sake of feasibility of the method. Future research should try to identify more comprehensive ways to group the factors, or use more efficient methods to conduct pairwise comparisons to further investigate the relationship between factors that might affect parole board's decision-making process for early release.

Third, this study is a preliminary examination of the relationship between subjective factors that the 20 parole board members consider when deciding on a parole. As the parole board includes male and female members, ex-officio and appointed members, and appointed members from different areas of expertise, it is worth exploring whether the gender, status of ex-officio or appointed, and expertise of parole board members affect the factors considered in parole decision-making.

Overall, this study has important implications for parole policy. First, evidence of repentance is the substantial condition of parole review; however, parole board members lack a set of objective guidelines for assessing

evidence of repentance. As a result, evidence of repentance is much less important than crime characteristics and recidivism risk in parole reviews, which violates the objectives of parole policy to encourage inmates to repent. Authorities should establish a method to evaluate evidence of repentance and investigate this criterion prior to parole review to enhance the quality of the parole review process.

Second, establishing an independent parole board may be a possibility in the future. Currently, there is no independent parole board in Taiwan. The parole board members are appointed for each prison. Parole applications have to be approved by the parole board of the prison. Then, the approved applications are submitted to the Ministry of Justice and a parole is allowed only after being approved by the Ministry of Justice. Decisions of the parole board in each prison and the Ministry of Justice are easily influenced by overall public safety, the present policy of the Ministry of Justice, and concern for public opinion and perception. Furthermore, the parole board members might have subjective preferences while conducting a review due to their personal expertise, life experiences, and understanding of parole review. Also, the structural limitations of the parole review system present significant challenges to the parole board members. Given all of these concerns, the objectivity and fairness of parole review is doubtful. Therefore, the authorities should establish a set of operating procedures and supervision mechanisms modeled on the independent parole boards in the United Kingdom and the United States. In these countries, the members of the independent parole board are chosen from diverse backgrounds and possess competence, morality, and virtue. They are employed to serve as full-time members of the parole board and to conduct professional and comprehensive examinations of parole matters to ensure conscientious, careful, fair, and equitable parole review.

In sum, this study reports the application of DEMATEL to conduct a preliminary investigation of the relationship between factors that parole board members consider when making decisions. This study should facilitate the interdisciplinary cooperation necessary to pursue innovative studies on legal decision-making, including decisions made by the police, prosecutors, judges, and parole boards. Finally, as the structure and operation of parole boards in Taiwan differs from those in the United Kingdom and the United States, the findings in this study provide an understanding of the parole decision-making process from a non-Western perspective.

Acknowledgments

Declaration of Conflicting Interests

Funding

Notes

1. Inmates in prison are divided into four classes based on the length of their sentence (at least 6 months) and whether they are first offenders. Each class is assigned a score that the inmates must meet. Inmates start in the fourth class and can get scores every month. When they obtain high enough scores, they advance to the next class. The privileges and requirements are different in each class, with the fourth class the strictest and the first class the most lenient.
2. In Taiwan, once inmates are granted parole and they re-enter the community, they are supervised by probation officers who help the parolees adjust to the community, search for employment, and conform to the conditions of parole.
3. The review is called "administrative" because the review of parole cases is conducted in administrative institutions rather than judicial agencies.

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