THE EFFECTS OF PI ACTIVITIES OF THE ROAD COUNCIL ON ROAD POLICIES AND PEOPLE'S RESPONSES

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ABSTRACT: The Road Council is the advisor to Japanese Minister of Construction on matters of road policy at the national level. To improve the process of road network development, it implemented Public Involvement (PI) activities to solicit people's opinions regarding the state of road transportation. The study analyzes the effects of people's opinions on the road policies. A document analysis methodology for extracting keywords from the relevant documents and people's opinions was developed. It is assumed that the number of keywords and frequency of opinions indicate the emphasis on the policy field and relationships between them for each policy field were analyzed. The differences between the opinions of those who responded once and those who responded twice are also analyzed. One of the findings is that PI activities proved effective and two kinds of changes in the documents were observed.

1. INTRODUCTION

Japanese society is changing in its quest for higher efficiency and effectiveness and stronger international competitiveness. To meet these objectives, the road sector is tasked to provide the society with better road transportation in a way that is environmentally benign, economically effective, and socially sound. But the traditional process of road network development has not been sufficient to respond to the society's needs and expectations. This is the major criticism from citizens mainly from urban areas and from the mass media against the present road administration. In view of this, the Road Council decided to promote Public Involvement (PI) in the course of establishing its recommendations to the Ministry of Construction (MOC) in order to determine the real needs of the citizens and to incorporate them in road policies.

The paper aims to examine whether the purpose of the PI activities of the Road Council has been achieved and to have some insight into the future direction of PI activities. The second section briefly explains about the Road Council and its PI activities. The third section describes the analytical framework of the study. The fourth shows how people's opinions influenced the contents and emphasis of the recommendations. The fifth section focuses on the comparison of two groups of respondents: those who responded twice (included in both Opinion Set No.1 and No.2) and those who responded once. An analysis is made on how the information provided by the Road Council influenced the opinions of those who responded twice. The last section presents the study's conclusions and recommendations.

2. THE ROAD COUNCIL, ITS PUBLIC INVOLVEMENT ACTIVITIES, AND THE NEW 5-YEAR ROAD DEVELOPMENT PLAN

The Road Council is the advisory body to the MOC as set by Japan's Road Law and is composed of three boards. The Basic Policy Board (of which one of the authors is a member) deals with the basic policy direction for road administration and road sector investment. It is the leading body which prepares the recommendations for the 5-year Road Development Plan of the MOC. The Road Environment Board discusses road-related environmental problems and develops recommendations. The third is the Toll Roads Board which develops policies for toll roads and for the national expressway network. The three committees have vital roles in their respective areas with the Basic Policy Committee leading the preparation of recommendations.

In the early stage of discussion for the recommendations, the Basic Policy Board decided to implement PI activities to develop recommendations that are better, more appropriate, and more responsive to society's needs than before. This is based on the recognition that

- Japan is changing to overcome various economic, environmental, and other problems;
- the road sector is one of the most important infrastructures necessary to promote and hasten these changes;
- existing road administrations are not necessarily able to meet the needs;
- this is the major background of the criticism and growing skepticism of people about the road administration.

The PI activities consist of the first call for people's opinions through the release of the Kick-off Report (Road Council, 1996a), summarizing of these opinions through the Voice Report (Road Council, 1996b), submission of the Intermediate Recommendation

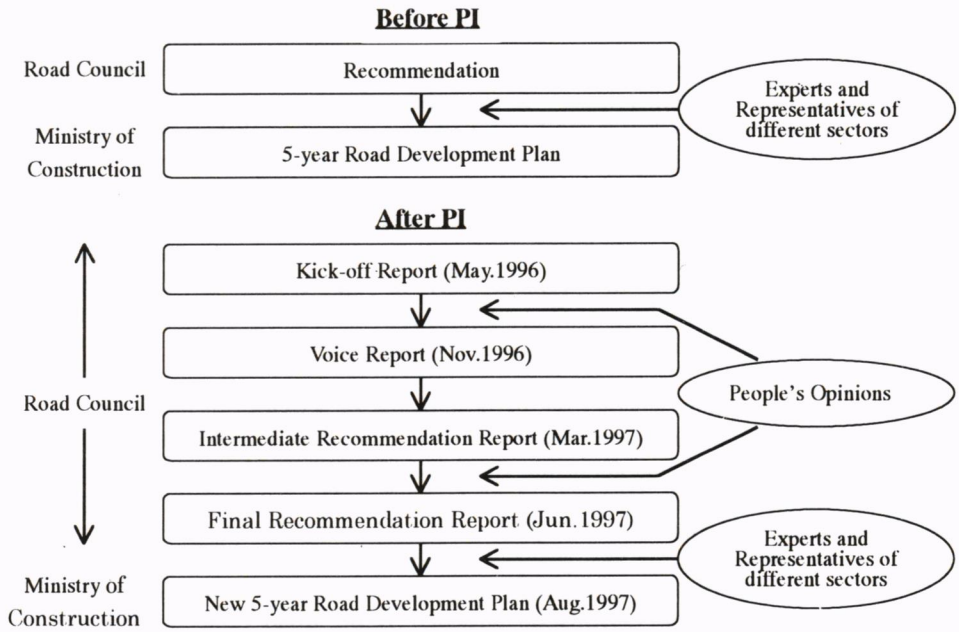

Figure 1. Process of Establishing the Recommendations of the Road Council

Report (Road Council, 1997a) and the second all for people's opinions, and finally the submission of the Final Recommendation Report (Road Council, 1997b) containing the Road Council's recommendations to the MOC.

A total of 500,000 copies of the Kick-off Report were distributed all over the country in May 1996 among different strata of society including the youth, elderly groups, and the disabled. It was designed to show that there are many different, sometimes contradictory opinions on 12 previously identified major themes in order to have a wide variety of opinions. Respondents were requested to answer the questions freely so that the Basic Policy Board could get people's opinions as they are. There were 35,689 respondents giving a total of 155,586 opinions. These opinions were gathered into a database open to the public, coded, tabulated, analyzed, and presented in the Voice Report which was released in November 1996.

The Basic Policy Board prepared its recommendations harmonizing the people's opinions with their own opinions, judgement, and observations on the road transportation situation. Their discussions and ideas on road policies were made public in March 1997 in the form of the Intermediate Recommendation Report towards which new people's opinions were solicited. Those people who gave the opinions to the Kick-off Report were also invited and many responded again. After considering the new round of people's opinions, the Road Council submitted the Final Recommendation Report to the MOC (titled Proposals for Road Policy Reforms) in June 1997. The MOC later drafted the New 5-year Road Development Plan (MOC, 1997c) which was approved for implementation by the Cabinet on May 29, 1998. Figure 1 shows the process of preparing recommendations before and after the use of PI activities.

This paper tries to describe and analyze how people's opinions influenced the discussion and considerations of the Road Council as well as the MOC. Since many people responded twice, it is interesting and possible to analyze and to describe the differences of opinions and the characteristics of the people between the two groups, those responding once and twice.

3. ANALYTICAL FRAMEWORK

3.1 Assumptions of the Analysis

The study tries to analyze the relationship between the road policies set by the Road Council and the MOC and the people's opinions, and to analyze the differences of the opinions of the repeating respondents not the single respondents in a scientific, objective, and quantitative manner. For this purpose, the following assumptions were made:

1. Official documents such as the Kick-off Report, Intermediate Recommendation Report, Final Recommendation Report, and the New 5-year Road Development Plan correctly and appropriately express the ideas and values of the Road Council as well as the MOC regarding road policies.
2. The more important policy areas have a bigger number of keywords which represent the principles and measures of the road policies. The changes in the policy emphasis can be measured by the change in the number of keywords.
3. People's opinions were coded by the Road Council to enable tabulation and data analysis. It is assumed that the frequency of coded opinions on a certain policy

area represents the degree of people's concern for it.

4. The relationship between the importance of the policy areas of the Road Council and people's concern can be analyzed using the number of keywords and the frequency of coded opinions.

3.2 Documents and Data

The following documents were analyzed:

1. Kick-off Report (Road Council, May 1996)
2. Intermediate Recommendation Report (Road Council, March 1997)
3. Final Recommendation Report (Road Council, June 1997)
4. New 5-year Road Development Plan (draft) (Ministry of Construction, August 1997)

Coded Data on people's opinions are:

5. Freely described opinions to the Kick-off Report or the Opinion Set No. 1 (35,689 respondents giving 155,586 opinions)
6. Freely described opinions to the Intermediate Recommendation Report or the Opinion Set No. 2
7. 5-point scale responses and free opinions on the policy measures contained in the Intermediate Recommendation Report (16,204 respondents giving 62,864 free opinions)

Personal and Socio-economic Data (name, gender, age, address, occupation, industry) are:

8. Personal data of the Kick-off Report respondents
9. Personal data of the Intermediate Recommendation Report respondents

3.3 Extraction and Grouping of Keywords from the Documents

Document analysis was performed in the study. A keyword is defined as a word or phrase showing a concept which concretely represents basic principles and road transportation policy measures. It is assumed that the importance and emphasis on each policy area can be measured by the number of keywords belonging to that policy area.

The extraction of keywords from the four documents was performed in this study. Since the four documents differ in many aspects such as volume of document, design or format, included illustrations, and others, it was difficult to directly compare the levels of emphasis among the four documents. Therefore, a trial-and-error procedure for extracting keywords and establishing the appropriate policy fields was done in order to have a basis for comparing the four documents in an objective and scientific manner. The procedure is as follows with examples shown in Figures 2 and 3:

1. Keywords or phrases which show the road policy measures or road policy variables such as "PC Communications could enable people to work at home", "flexible working hours", "car pooling", and others underlined in Figure 2 were identified.
2. Policy objectives were identified for the keywords in order to form them into a hierarchical multi-level tree diagram. This tree diagram is useful in checking for duplication and absence of keywords and also for analysis at any level of detail.

Person A :

"While putting up with some degree of inconvenience and changing the way we work and live, we have to give serious consideration to how we use automobiles. For instance, the development of PC communications could enable people to work at home. There are other ways such as flexible working hours to stagger commuting times, car pooling, and even the collection of fees from cars entering city centers. Such measures should be taken at the local area level. Thing won't improve if we just wait for someone to solve the problem for us."

Person B :

"Traffic congestion can be alleviated by adopting minor measures, for example, improving right-turn lane at intersections. Also, railroads should be elevated to eliminate crossings and more grade-separated crossroads should be constructed."

Person C :

...

Figure 2. Example of the Statements in Kick-off Report Theme 2 on Traffic Congestion

3. Figure 3 shows the tree diagram for a policy field "Congestion". A policy field was identified for each group of keywords such that all the identified policy fields could cover the full range of road policies without duplication. This was done by trial and error. Eight policy fields (Congestion, Freight, Safety, Regional Economies, Urban Roads, Environment Matters, ITS and Road Administration) were identified.
4. Some keywords were replaced with standard technical terms in the literature of road transportation policies to facilitate a meaningful comparison among the four documents.

Figure 2 shows the actual sentences in a portion of the Kick-off Report from which keywords shown in Figure 3a were extracted forming the "Traffic Congestion" policy field using the method mentioned above. For purposes of comparison, the tree diagram for the Final Recommendation Report is shown in Figure 3b.

It was attempted to obtain the most objective and unique keywords and tree diagrams by means of the aforementioned procedure, and by using standard terms in the literature of road transportation policies. However, the authors recognize the limitations of this approach. That is, there is no perfect guarantee that the obtained set of keywords and the hierarchical tree diagrams are unique. This was considered in the analysis based on the data generated through this procedure.

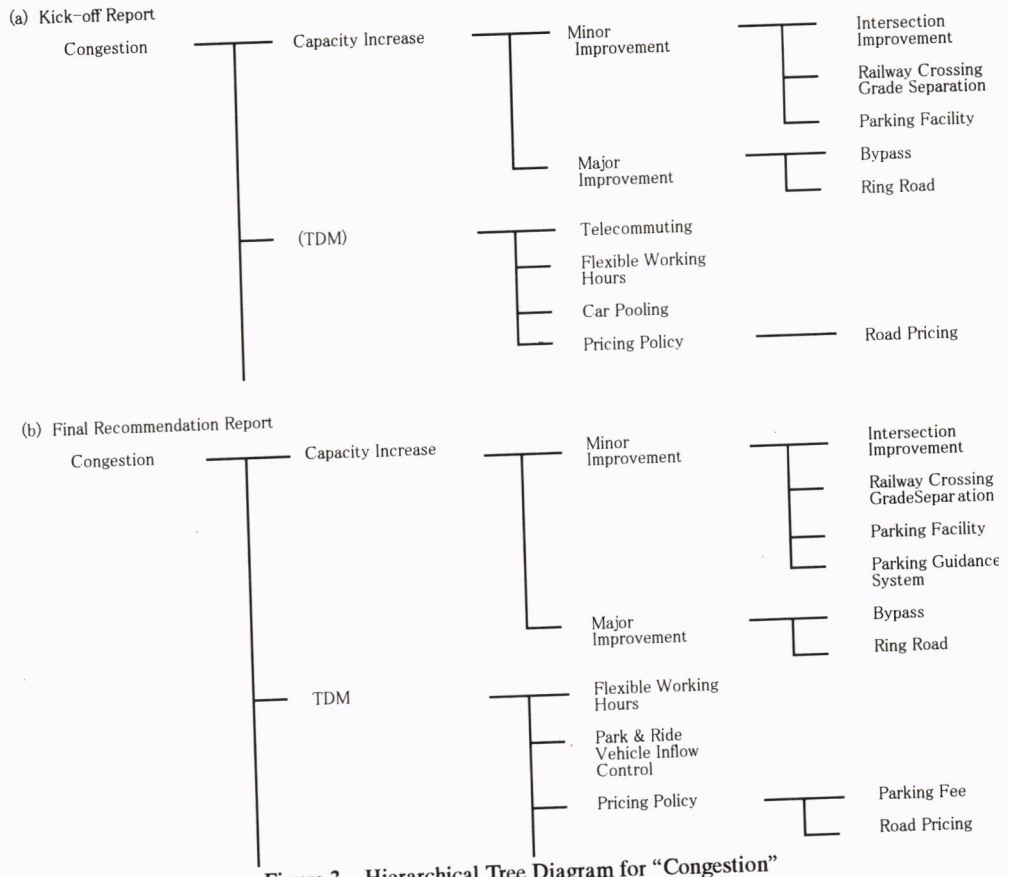

Figure 3 Hierarchical Tree Diagram for "Congestion"

3.4 Grouping of Coded Opinions

The opinions to the Kick-off Report (Opinion Set No. 1) given by 35,689 respondents total up to 155,586 while those for the Intermediate Recommendation Report (Opinion Set No. 2) total up to 62,864 given by 16,204 respondents.

Since all opinions were given by the respondents in free textual format, the Basic Policy Board developed a coding system in order to facilitate the tabulation and analysis of opinions. The code system consisted of more than 500 opinion codes which cover the full range of different opinions on all the issues. All answers were written freely by the respondents, therefore a single answer sometimes contains two or more opinions. In such a case, that answer was assigned to more than one opinion code.

Using this coded opinion data set, each coded opinion was first assigned to the appropriate place in the multi-level tree diagram of keywords and second, the number of coded opinions for each policy field or sub-field was determined. The 5-point scale responses to the various road policy measures proposed in the Intermediate Recommendation Report were also used to judge the degree of support or opposition of the respondents to each measure.

3.5 Definition of "Twice-respondent" and "Once-respondent"

People were invited twice to give their opinions or comments to the Kick-off Report and Intermediate Recommendation Report respectively. Since many people responded twice, it is interesting and possible to analyze and describe the differences of opinions and characteristics of the people between the two groups, those responding twice and those responding once.

The problem now is how to identify the same respondents in Opinion Set No.1 and Opinion Set No.2 since these two data sets have different personal ID codes. We achieved this by utilizing the personal data such as name, permanent address and age. In Japan, we know personal addresses roughly by referring to the postal code so that we use them to facilitate our work. The identification procedure is as follows: First, we set that a person with the same postal code (or prefecture), name, and age (within + or – 5 year difference) in the two opinion sets is considered as "twice- respondent". The others for which no match was made is considered "once-respondent". Some people wrote their names differently. For such respondents, manual checking was done. "Twice-respondents" totaled 2,539 persons.

4. CHANGES IN ROAD POLICIES IN TERMS OF CHANGES IN NUMBER OF KEYWORDS IN RELATION TO THE PEOPLE'S OPINIONS

4.1 Number of Keywords in the Four Documents and Frequency of People's Opinions

Table 1 shows the eight policy fields, the number of keywords belonging to each of them, and the corresponding number of opinions. With the extraction and grouping of keywords described in Section 3.3, totals of 84, 98, 232, and 307 keywords were identified in the Kick-off Report, Intermediate Recommendation Report, Final Recommendation Report, and the New 5-year Road Development Plan, respectively. There were 155,586 gathered opinions to the Kick-off Report and 62,864 gathered opinions to the Intermediate Recommendation Report. It can be observed that the number of keywords is increasing constantly in accordance with the sequence of the reports. This means that later reports were more concrete in their presentation, had a higher level of detail, and had a wider coverage. The effect of people's opinions on the emphasis placed on the different policy fields and sub-fields in each report is the object of this study.

It can be seen in Table 1 that "Safety" and "Congestion" have large numbers of keywords and opinions followed by "Regional Economics" and "Environment Matters." The changes in the number of keywords and opinions for "Safety" are noteworthy. The numbers of keywords are 10, 27, 54, and 67 for the respective documents. A relatively big increase in the number of keywords for "Safety" from the Kick-off Report to the Intermediate Recommendation Report compared to the other policy fields may be attributed to the high number of opinions for this policy field in Opinion Set No. 1 (51,497).

Table 1. Number of Keywords and People's Opinions

Policy Fields	Kick-off Report	Opinion Set No.1	Intermediate Recommendation Report	Opinion Set No.2	Final Recommendation Report	New 5-year Road Development plan
Congestion	17	30,323	12	11,589	37	46
Freight	0	418	6	4,404	10	16
Safety	10	51,497	27	12,540	54	67
Regional Economies	11	18,904	9	9,283	20	49
Urban Roads	13	10,386	10	3,561	31	31
Environment Matters	10	8,956	11	8,257	39	37
ITS	4	5,039	1	415	9	13
Road Administration	19	30,873	22	12,815	32	48
Total	84	155,586	98	62,864	232	307

4.2 Relationship between the Changes in the Emphasis on the Policy Fields and the People's Opinions

The previous section shows the results of keyword extraction and opinion tabulation for each of the eight policy fields. This section will explain their relationship in more analytic way.

Table 2 shows the policy fields for each of the documents and of the two opinion sets which were ranked according to the number of keywords or frequency of opinions belonging to them. For example, "Road Administration" has the highest number of keywords in the Kick-off Report followed by "Congestion", "Urban Roads", and so on. In Opinion Set No. 1 (opinions to the Kick-off Report), "Safety" is ranked top followed by "Congestion", "Road Administration", and so forth. It can be observed that the ranking is quite similar between the documents and the opinion sets.

A statistical measure of rank correlation called the Kendall's Rank Order Correlation Coefficients were calculated to analytically show the relationship between the emphasis on the policy fields and the people's opinions, if any. Table 2 shows the computed correlation coefficients. For example, the correlation between the ranking of policy fields for Opinion set No. 1 and for that of the Intermediate Recommendation Report is 0.62 which is statistically significant at 95% confidence level. The other coefficients (correlation between Opinion Set No. 2 and the Final Recommendation Report; Opinion Set No. 1 + No. 2 and the Final Recommendation Report; Opinion Set No. 1 + No. 2 and the New 5-year Road Development Plan) were also found to be significant at 95% confidence level. It is analytically shown, therefore, that there exists a significant correlation between the people's opinions and the emphasis placed by the Road Council and the MOC on the policy fields.

One note must be made for "Road Administration" which was eliminated in Table 2. The number of people's opinions to this policy field was exceptionally high which prompted the Basic Policy Board to devote one whole chapter to it in the Intermediate

Table 2. The Ranking of Policy Fields in terms of Number of Keywords and Frequency of Opinions

Rank	Kick-off Report	Opinion Set No.1	Intermediate Recommendation Report	Opinion Set No.2	Final Recommendation Report	New 5-year Road Development plan	Opinions Set No.1+No.2
1	Congestion	Safety	Safety	Safety	Safety	Safety	Safety
2	Urban Roads	Congestion	Congestion	Congestion	Environment Matters	Traffic Congestion	Congestion
3	Regional Economies	Regional Economies	Environment Matters	Regional Economies	Congestion	Regional Economies	Regional Economies
4	Environme Matters	Urban Roads	Urban Roads	Environment Matters	Urban Roads	Urban Roads	Environme Matters
5	Safety	Environment Matters	Regional Economies	Freight	Regional Economies	Environment Matters	Urban
6	ITS	ITS	Physical Distribution	Urban Roads	Freight	Freight	Freight
7	Freight	Freight	ITS	ITS	ITS	ITS	ITS
		0.52	0.62*		0.62*	0.62*	
						0.82*	

Kendall's Rank Correlation Coefficients * Significant at 95% level of confidence.

Recommendation Report, Final Recommendation Report, and the 5-year Road Development Plan. It was decided that this policy field was a special category of its own and should not be treated in the same was as the seven other policy fields.

The next stage now is to show the causal relationship between the people's opinions and the changes in policy emphasis. Figure 4 shows this relationship. The vertical axis represents the ratio of the number of keywords in the Recommendation Report to that in the Kick-off Report for each policy field. The horizontal axis shows the percent are of the

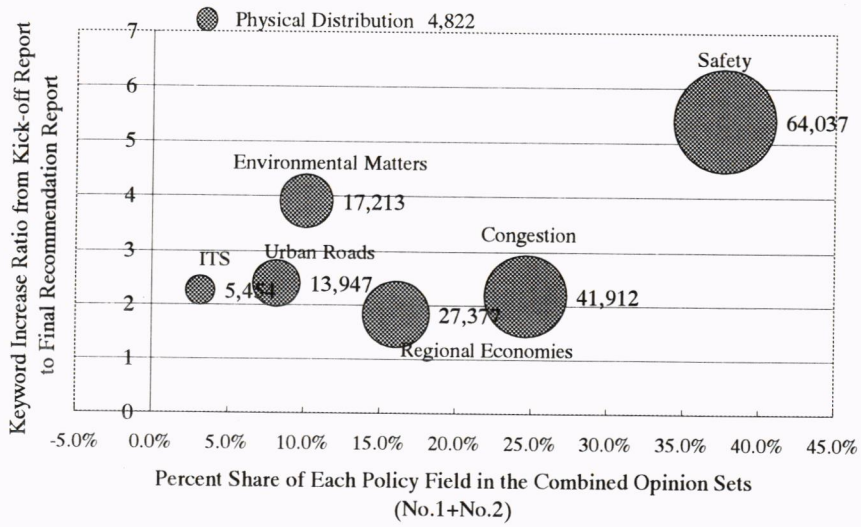

Figure 4. Relationship between Keyword Ratio and Percent Share of Opinions for all Policy Fields

number of keywords in the opinions (from Opinion Set No. 1 + No. 2) for each policy field. The numbers represent the quantity of opinions in that policy field graphically represented by the size of the circle. It can be observed from the graph that as the percent share of opinion for a policy increases, the ratio of the number of keywords under that policy field in the Recommendation Report to the Kick-off Report also increases. This means that the concern that people have towards the different policy fields as shown by the percent share influences the emphasis given by the succeeding report on those policy fields. The policy field "Safety" for example, has a percent share of 37.7% and this corresponds to a keyword ratio of about 5.50. "Urban Roads" has a percent share of 8.2% corresponding to a keyword ratio of 2.50. In other words, the increase in percent share also increases the keyword ratio.

4.3 Driving Forces that Changed the Emphasis on the Policy Fields

In the previous section, the relationship between the keywords in the four documents and in the people's opinions was described. It was shown that they are correlated. In this section, the focus of analysis is on the agents of change that shifted the emphasis or importance given to the policy fields. Specific instances of increase in keyword frequency for each policy were analyzed and two patterns of change were observed.

The first is the emphasis change caused by people's opinions. In this case, the Basic Policy Board devoted more space and keywords to that specific policy that was given high support and concern by the people. The second is the emphasis change initiated by the Basic Policy Board. In this case, the Board emphasized the importance of certain policy fields by presenting tables, figures, and other data in the Kick-off Report and the Intermediate Recommendation Report for the information of the people. In response to this provided information, the people accepted the Board's views and expressed their concern and support to these policy fields. This was reflected in the people's opinions to the Intermediate Recommendation Report.

The following examples show these patterns of change.

1. People-initiated Changes

The policy sub field "Snow Countermeasures" in the policy field "Safety" did not appear in the Kick-off Report. Many respondents mentioned the necessity of measures to minimize transportation problems due to snow especially those in high snowfall regions. The Basic Policy Board noted these opinions and decided to include these measures in the succeeding documents. This is shown in Figure 8.

Another example is the issue of road works causing traffic congestion. People consider this as a very important issue as shown by its high percent share of opinion. As a response to the people's opinions, the number of keywords concerning road works increased in the Intermediate Recommendation Report and remained high in the succeeding Final Recommendation Report and the New 5-year Road Development Plan Report. This is shown in Figure 9.

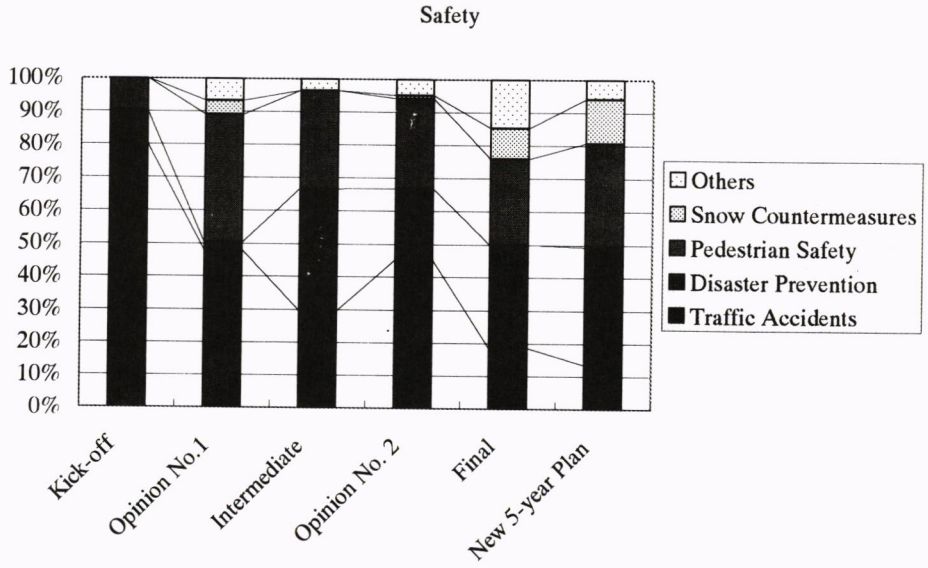

FIGURE 8 Percent Share of Keywords "Safety" in the Four Documents and two Opinions Sets

2. Board-initiated Changes

In Figure 8, the share of opinion on "Disaster Prevention Measures" is only 2.3% in Opinion Set No. 1 but the share in Opinion Set No. 2 increased to 21.5%. This increase can be explained by the strong emphasis placed by the Board on this issue in the Intermediate Recommendation Report indicated by the many keywords in this policy sub field in that report.

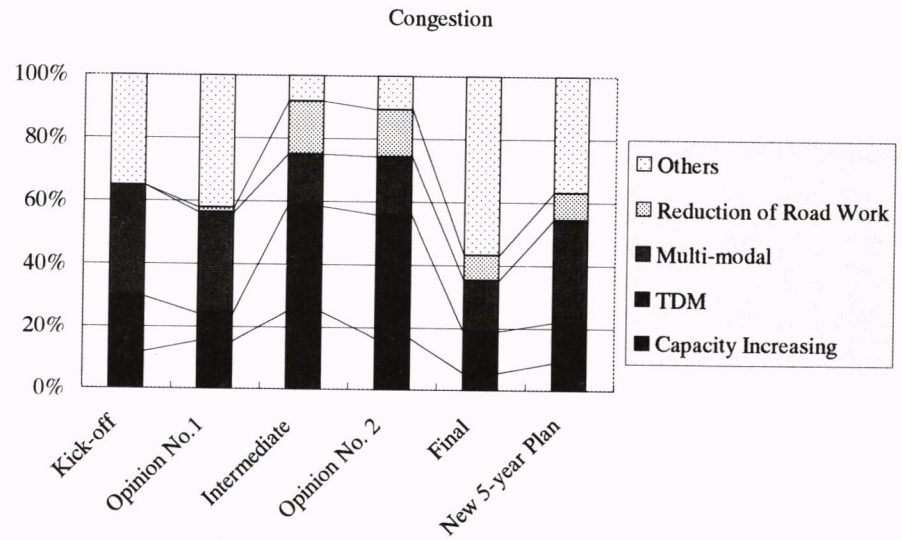

Figure 9. Percent Share of Keywords "Congestion" in the Four Documents and two Opinions Sets

In Figure 9, the "TDM Measures" under the policy field "Congestion" has 9.2% share in Opinion Set No. 1. The Board presented more information and placed more emphasis on TDM measures in the Intermediate Recommendation Report resulting in a much higher percent share (39.5%) of this keyword in the succeeding Opinion Set No. 2.

The following is another interesting finding. Some TDM measures such as road pricing and control on inbound vehicles entering congested areas generated relatively stronger opposition from the people than other TDM measures. This reaction of the people caused the 'softening' or 'moderation' of the succeeding documents. For example, "These policies will be vigorously pushed for..." in the Intermediate Recommendation Report was changed to "We will discuss the necessity and effect of road pricing continuously..." in the Final Recommendation Report and the New 5-year Road Development Plan. Also, the shares of the TDM related keywords in the Final Recommendation Report and the New 5-year Road Development Plan decreased.

5. EFFECTS AND CHARACTERISTICS OF PEOPLE'S OPINIONS

5.1 Characteristics of the Twice-respondents

Chapter 5 describes the difference of characteristics between the two groups of respondents, responding twice (twice-respondents) and responding once (once-respondents). The method of identifying individuals is shown in chapter 3. 2,539 persons were identified as twice-respondents and the others are once-respondents.

In order to describe the characteristics of the twice-respondents, T-test was conducted with null-hypotheses that the twice-respondents and all respondents have the same socio-economic characteristics. T-test results show that the twice respondent group has more males and less females, more workers and executives and less students and housewives. It also has more adults (40 to 80 years old) and fewer young people (below 30 years old) than the group of all respondents. We can say that these people tend to pay more attention to road policies.

5.2 Differences in the Number of Opinions and in the concerns for Road Policies between Twice-respondents and Once-respondents

People's free opinions are coded so that a person has plural opinions. The average number of opinions of the twice-respondents is 5.37 per person in the Opinion Set No.1 and about 6.79 per person in Opinion Set No.2 even though the average number opinions of the once-respondents in the two opinion sets is only 4.28 per person and about 3.67 per person, respectively. The average number of opinions of twice-respondents is higher in both Opinion Sets than that of the once-respondents. As expected, twice-respondents tend to be more eager to express their opinions.

The percent shares of each policy field in Opinion Set No.1 and Opinion Set No.2 of the twice-respondents and once-respondents are shown in Table 3. This shows that the percent share of each policy field of the twice-respondents and once-respondents have almost no difference. It can be said that all respondents tend to have similar concerns for road policies.

Table 3. Percent Share of the People's Opinions for Each Policy Field

	Congestion	Freight	Safety	Regional Economics	Urban Roads	Environment Matters	ITS	Road Administration
Once-respondents (to Opinion Set No.1)	19.5%	0.3%	33.4%	11.6%	6.6%	5.7%	3.3%	19.6%
Twice-respondents (to Opinion Set No.1)	19.0%	0.3%	29.6%	12.4%	7.0%	6.4%	2.8%	22.5%
Once-respondents (to Opinion Set No.2)	18.5%	7.1%	19.8%	15.0%	5.6%	13.0%	0.7%	20.3%
Twice-respondents (to Opinion Set No.2)	18.3%	6.7%	20.3%	14.3%	5.7%	13.5%	0.7%	20.5%

5.3 Differences in the 5-point Scale Responses between Twice-respondents and Once-respondents

The 5-point scale responses to the 51 road policy measures in the Intermediate Recommendation Report are available. All respondents to Opinion Set No.2 made a choice of one in a 5-point scale: very good (+2 points), good (+1 point), neutral (0 point), not so good (-1 point), and bad (-2 points). Each response is an evaluation of a certain road policy measure. The 5-point scale responses of both the twice-respondents and once-respondents are t-tested at 95% level of significance. It was shown that the evaluation of the twice-respondents statistically different from that of the once-respondents and that evaluations of the twice-respondents in almost all road policy measures are higher than that of the once-respondents. This means that twice-respondents tend to have favorable criticism of the road policy.

In Figure 10, the vertical axis represents the difference in the average points between the twice- and once-respondents for each question and the horizontal axis shows the average points of the twice-respondents in each question. From this graph, we can see that the higher the average evaluation points of all respondents, the bigger the difference of the average evaluation points. It can be said that twice-respondents have clearer attitudes towards the road policies.

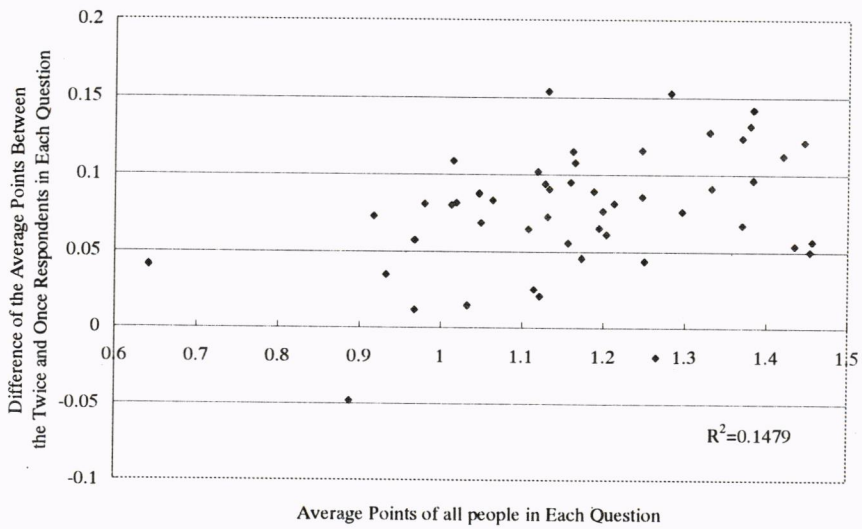

Figure 10. Relationship of Opinions between the Twice-respondents and all respondents

5.4 Effects of the Provided Information on People's Opinion

In the previous sections, the similarities and differences between twice-respondents and once-respondents were described. In this section, we try to analyze the effects, if any, of the information given in the documents on the people's opinions. The changes in the opinions of the twice-respondents for the Kick-off Report and the Intermediate Recommendation Report shown in Table 4, are analyzed. This table shows, for example, that out of 16,889 opinions given for "Congestion" in the Kick-off Report, 3247 are again given for "Congestion" in the Intermediate Recommendation Report. These data are χ^2-tested against the hypothesis that the opinion distributions are independent and that there is no significant change. This hypothesis is rejected at the 1% significance level. There are some relationships between the two opinion distributions of the twice-respondents, but we failed to fined these specific relationships. This may be attributed to our present analysis method, and this is a future task of the study.

Table 4. Counted Opinions Set No.1 (column) and Opinion Set No.2 (row)

	Congestion	Freight	Safety	Regional Economics	Urban Roads	Environment Matters	ITS	Road Administration	Total
Congestion	3,247	1,093	3,441	2,338	1,003	2,183	109	3,475	16,889
Freight	47	17	58	42	11	33	1	45	254
Safety	4,869	1,721	5,439	3,630	1,511	3,595	239	5,354	26,358
Regional Economics	2,029	845	2,321	1,567	623	1,564	77	2,326	11,352
Urban Roads	1,233	449	1,328	875	402	892	44	1,359	6,582
Environment Matters	1,094	409	1,085	808	336	819	34	1,116	5,701
ITS	557	156	479	350	154	368	21	528	2,613
Road Administration	3,764	1,419	4,039	2,960	1,212	2,807	134	4,123	20,458
Total	16,840	6,109	18,190	12,570	5,252	12,261	659	18,326	90,207

6. CONCLUSIONS AND RECOMMENDATIONS

The following are the conclusions and recommendations of the study:

It can be concluded that people's opinions influenced the road policies recommended by the Basic Policy Board and finalized by the MOC. This was demonstrated by the relationship between the number of keywords and the frequency of the people's opinions in each policy field and the significant positive correlation between the increase ratio in the number of keywords and the percent share of opinions for each policy field.

The Basic Policy Board of the Road Council conducted two nationwide PI activities. These consist of the release of the Kick-off Report which solicited people's opinions (Opinion Set No.1) and the Intermediate Recommendation Report which again called for people's opinions (Opinion Set No.2). The study analyzed the dynamic relationship between the Board and the people's opinions. Through this analysis, it has been found that there are two kinds of change in the emphasis on importance placed on the policy fields. These are the people-initiated changes through their opinions and the Board-

initiated changes through the information and data provided to guide the people in their opinions. This showed not only the fact that people's opinions could collectively influence national road policy but also the possibility that an experts' group such as the Board could gain the concern and support of the people by providing the people sufficient and clear information on relevant issues.

It was also shown that people who responded twice are eager to express opinions and tend to have favorable criticism of road policy. Twice-respondents are more interested in road policies and have clearer attitude towards them. However no significant differences in the opinion's tendencies for each policy field between twice-respondents and once-respondents were shown. In this study, we tried to analyze the relationship between Opinion Set No.1 and Opinion Set No.2 to know the effects of the documents rich in information and data probably, because the documents might be very informative and able to affect people's opinions strongly, both of the twice-respondents and the once-respondents. But we could not find their relationship because our analysis methods might not be appropriate or there may be no relationship between the two Opinion Sets at all. However, all respondents have similar opinions to each policy field, from which we can say that the Board-initiated changes established in Chapter 4 have proved to be appropriate.

The findings and conclusions mentioned above are supported by the results of the analysis. This means that the method used in the analysis is useful and reliable. This consists of extracting and grouping of keywords, grouping of coded opinions, identification of the policy fields, and the examination of the relationships and correlation among the keywords for each policy field for the different documents and opinion sets.

It has been shown that the PI activities of the Basic Policy Board were effective and useful. But these activities have only been implemented for road policies at the national level and covered only a small portion of the realm of road development and provision of road transportation services. It is recommended, therefore, that PI activities be extended to the wide spectra of road administration. PI can also be implemented to tackle problems and issues at the grassroots or local level such as within cities or towns as well as in the regional level as in issues involving more that one government administrative district. This will be similar to the bottom-to-top planning. PI may also be implemented according to the levels of detail of project planning such as in the policy-making phase, program selection, plan formulation, and detailed engineering phase. It may also be applied to the different stages of project implementation such as in the planning stage, construction stage, and project operation and maintenance stage.

As shown in this pioneering experience, public relations are important for the smooth implementation of PI activities. Through public relations, it is necessary to show those road policies and road administration that can be influenced and be improved by people's opinions.

Simple and direct application of the PI activities of Japan's Road Council to other Asian countries might be dangerous. Each country has its unique cultural, historical, social, political background, and infrastructure development levels. Asian countries also have characteristics which are different from their western counterparts. The developed countries such as the United States, France, and Germany have their own experiences and already established knowledge which are utilized to design and implement PI activities. It is therefore necessary for Asian countries to develop their own PI activities in planning

and implementing infrastructure efficiently and effectively. It is important to design and implement PI activities that suit the local culture and needs of a country. The authors would be very pleased if this study could contribute to this and enhance the exchange of experiences and knowledge among different countries.

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