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2010 Unification Clock

When Will We See a Unified Korea?

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When Will We See a Unified Korea?

By Park Young-Ho and Kim Hyeong Ki

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Preface

The Unification of the Korean Peninsula is a highly complicated process involving numerous factors: the political, economic, social and military sectors, as well as international relations. What makes the process particularly difficult is the inability to fully grasp the internal situation of North Korea. Nevertheless, unification is bound to take place.

The 2010 G-20 Seoul Summit was held in Seoul on November 11-12, 2010. South Korea was the first non-G8 nation to host a G-20 Leaders Summit

The Korea Institute for National Unification (KINU) has conducted the Unification Forecast Clock project since 2009 as part of its official research program. This report highlights the work performed in 2010. All questionnaires used for the investigation were first developed in 2009 during the Expert Panel survey using the Delphi method, after which the questionnaire forms were modified and supplemented for this year's survey. Compared to the 2009 Delphi research targeting only a 50-member expert panel, the 2010 survey expanded the scope. Along with the expert panel group, it included a group of non-panel experts, inter-Korean businessmen and North Korean refugees. It also gathered responses using a public opinion poll.

It has been 65 years since the division of the Korean Peninsula and even today, uncertainty continues to threaten any chance for peaceful unification. In particular, military tensions left an indelible mark on this year's inter-Korean relations: the Cheonan naval ship incident (March) and the artillery assault on Yeonpyeong Island (November). Meanwhile, the two Koreas' performances over the years show a clear contrast. South Korea, once an aid-recipient, is now a donor in the international community, a remarkable and indeed, historical turnaround. Further proof of its stature in the international arena, in November 2010, the nation hosted the G-20 Seoul Summit which led to the Seoul Development Agreement. North Korea's record, on the other hand, cannot compare with the South's. A socio-political anachronism and a failed state, it is on the list of the world's poorest countries. Presently, efforts are underway to guarantee succession of a third-generation hereditary regime-an unprecedented move in the history of socialism.

Unification between these two completely different systems has been drawing keen attention. Is such an achievement theoretically or practically possible? Numerous studies on Korean unification have been conducted by both Korean and foreign scholars since Germany's experience and the collapse of the socialist bloc. According to those studies, various categorizations and scenarios for unification have been developed along with numerous public surveys. Still, there must be a concrete plan on how and when unification will occur. The development of the Unification Clock is intended to satisfy this need.

During the initial stage of the Unification Clock project in 2009, I was inspired by the Environment Doomsday Clock undertaken by the Asahi Glass Foundation in Japan, which was designed in 1992 to investigate, evaluate and report through consultations with environment experts throughout the world. I wish to extend my thanks to the project team.

The Unification of the Korean Peninsula is a highly complicated process involving numerous factors: the political, economic, social and military sectors, as well as international relations. What makes the process particularly difficult is the inability to fully grasp the internal situation of North Korea. Nevertheless, unification is bound to take place. Answers to the hard questions are another matter: whether it is in the near or distant future, and what events will bring it to fruition. This report would hopefully offer decision-makers and Korean Peninsula observers a better understanding of unification issues as well as promote an in-depth discussion, thereby working out an optimum policy alternative which will lead to the unification of the Korean Peninsula.

December, 2010

Park Young-Ho

Introduction

While staying on track with the work accomplished in 2009, the Unification Forecast Clock of 2010 supplemented and improved on issues raised by the post-hoc analysis. Moreover, in addition to the survey completed by the Delphi panel, more comparison groups were selected and researched.

On March 26, 2010, the Cheonan, a South Korean Navy ship sank off the country's west coast near Baengnyeong Island in the Yellow Sea by a North Korean torpedo.

Peaceful unification is a long-wished-for, but inevitable national goal of South Korea. It is a complex and multi-faceted process influenced by the domestic factors in both Koreas, inter-Korean relations, and the international environment. In order to accomplish the goal, a wise and optimized strategy based on systematic and scientific foundation is needed.

Numerous studies related to the unification issue have been conducted; however, in most cases the focus was on pending issues and short-term policy goals. Moreover, very little research can be found that scientifically reviews and predicts the factors for unification based on objective data. Thus, the goal of this research is to objectively measure and analyze various factors that affect unification, and to design an optimal forecast model (Unification Forecast Clock) to actualize a peaceful solution.

The 2010 Unification Forecasting Clock project is the outcome of a long-term research plan. It developed initially out of a theoretical foundation in two books: *Unification Scenarios and Policy Implementations in the Unification Process: A Theoretical Model and Experts' Perspectives* (2002)*, and Unification Forecast Model: Index Development and North Korean System Transformation Trends* (2003) both published by the Korea Institute for National Unification (KINU). Based on this foundation, the Unification Forecast Clock project was launched in 2009. A rare index on the Korean Peninsula, the project was designed as a multi-year plan, and this report is the summary of its second-year research.

During the research process of the Unification Forecast Clock in 2009, a total of 12 unification clocks were created based on one pilot study and three rounds of the Delphi survey. These clocks represent either the absorption type or the agreement type of unification and are categorized under six groups: overall, politics, economy, society, military, and international relations. In the results of the first survey, the Delphi panel of 51 experts in the areas of unification, foreign relations, and security suggested about 1,500 unification factors. These factors were classified and organized into the structure of the second survey, and finally narrowed down to 33 factors that were applied in the third Delphi survey.

While staying on track with the work accomplished in 2009, the Unification Forecast Clock of 2010 supplemented and improved on issues raised by the post-hoc analysis. Moreover, in addition to the survey completed by the Delphi panel, more comparison groups were selected and researched. The first comparison groups consisted of experts and businesspeople. The non-panel experts are sampled from the list of Korean scholars and experts engaged in the diplomatic, security, and unification areas which was used to pick up the Delphi panel in the 2009 survey. The inter-Korean businesspeople comprise another comparison group. They are engaging in inter-Korean exchange and therefore they are an attentive public who are sensitive to North Korea-related information. At first, both groups were selected to enlarge the sample size in order to overcome 'small N' problem of the Delphi panel. Later, however, they were analyzed separately due to the salient group differences. Also, the same survey was conducted on North Korean defectors who had entered the South. Finally, a public survey was performed using simplified questionnaires to assess the view of the general public on unification.

Comparing the results from the Delphi Survey with those from each comparison group is expected to reap interesting results, and should draw meaningful implications on policymaking by refining the Unification Clock model based on comparisons of each group. The survey of unification factors should also reveal similarities and differences in the views of each group.

This study is on the second-year results of the three-year project. Because it is focused on predicting the future based on the accumulated knowledge of the past as well as the intellectual judgments of the present, it is obvious that there are intrinsic limitations in the method. Moreover, since it deals with unification issues comprising complex and uncertain factors, careful attention is required. To develop accurate knowledge regarding unification and to draw effective policies based on it, this research needs to be implemented on a continual basis.

Methodology

The task is to forecast the future on the Korean Peninsula, a situation fraught with uncertainty, complexity, and duplicity. Indeed, despite prolonged division and transition to the post-Cold War era, the tension and instability there appears more intense than ever. Under these circumstances, the most objective and systematic future forecast method is a primary prerequisite. Only then can the best assessments and most appropriate strategy be employed. After reviewing various study methods, the decision was made in 2009 to adopt techniques from the Delphi method, which was deemed the most appropriate and useful methodology. The Delphi method, first developed by the RAND Corporation during the 1950s, has been applied in various fields. The Delphi method to optimize group opinions consists of the following four necessary features:*

(1) Anonymity: Panelists are given an opportunity to express their opinions regardless of their group's opinion.

(2) Iteration: Through a number of rounds, panelists are given an opportunity to reconsider their answers.

(3) Feedback: Between each iteration of the questionnaire, the facilitator informs panelists of the opinions of their anonymous colleagues.

(4) Statistical aggregation: The facilitator uses statistical estimates (mean or median) during the feedback and the final round.

For this research, the typical Delphi research technique was implemented from the first year (2009) of the research, which was largely focused on two factors: the time of unification for each type (agreement and absorption) and factors influencing it. While other unification types were suggested, it was judged that all types were converged on agreement type or absorption type.

First-year Delphi research comprised a pilot study and three Delphi surveys, and was conducted from June to November 13, 2009. The survey was processed based on the repetitive circulation of unification clock and

unification determinants presented in the first and second surveys for re-questioning.

The Delphi survey in year two was basically conducted in the same way as the previous year. The results of the first-year survey and the post-hoc analysis details were presented to the Delphi panel in the same manner. In the first year, the structure of the questionnaires tended to be too complicated due to the composition of questionnaires on the unification clock and the classification of unification influence factors. Therefore, the second year questionnaires were modified to result in simplified, more intuitive answers. In particular, the second year unification clock survey was implemented with various groups by expanding the target of the survey for comparison as well as analysis of each group.

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* Gene Rowe and George Wright, "Expert Opinions in Forecasting: The Role of the Delphi Technique," in *Principles of Forecasting: A Handbook for Researchers and Practitioners,* ed. by J. Scott Armstrong, New York, NY: Springer, 2001, pp. 126-127.

The Post-Hoc Analysis of the 2009 Unification Clock

The first year (2009) research on the Unification Forecast Clock was focused on classification of unification types and unification factors as a basic task to prepare the foundation for a systemized future forecast through durability and repeatability. A total of four rounds of the survey were implemented, which included a pilot study survey and three Delphi surveys. The Delphi panel consisted of 50 professionals and scholars who had studied for long periods of time at research institutes or universities specializing in unification, diplomacy and security.

While discussions have focused on various types of unification, according to the broad perspective these are deemed to converge into the agreement and absorption types. The agreement type refers to the realization of gradual unification through peaceful improvement of relations between the two Koreas. Conversely, the absorption type would be if North Korea collapsed and was absorbed into South Korea. These two types of unification were again subdivided into five areas: politics, economy, military, society and international relations. Accordingly, a total of 12 unification clocks were prepared for the survey. The 12 clocks were first gauged according to a 1 to 100-point scale and then recalculated into 12 hours of time. In other words, the closer to 12 o'clock, the greater the possibility of unification, and '100' would mean that unification had been achieved.

The unification clock of the first year was assessed as of November 2009 to read 4:19 in agreement type and 5:56 in absorption type (both overall). Most of the Delphi panelists in the 2009 survey replied negatively for both agreement and absorption types of unification. However, the range of minimum and maximum values (based on 100-point scale) showed widely dispersed results: from 5 to 70 points for the agreement type and from 15 to 80 points for the absorption type. Considering the homogeneity of the Delphi panel who had long shared similar information on North Korea and had all completed three rounds of the Delphi survey, this dispersed evaluation implied that these experts had a wide and incompatible range of opinions on unification.

Regardless of the area, absorption-type clocks are faster than agreement-type. And among areas, economic and social areas are faster than military and political areas. The military area agreement-type unification clock indicates the shortest time among all fields (2:51 minutes, 23.81 points). It should be noted that the responses to absorption unification in the economic sector passed the mid-point of 6 o'clock on the unification forecast clock. In other words, only this sector had a positive average view while all other unification clocks displayed negative inclinations. However, this occurred because some members of the panel gave exceptionally high points to the economic area absorption-type unification clock. It needs to be made clear, therefore, that more responders still gave points before the mid-point of 6 o'clock.

This research also employed open questionnaires asking about the factors influencing unification in each sector in order to establish a more analytical and explanatory

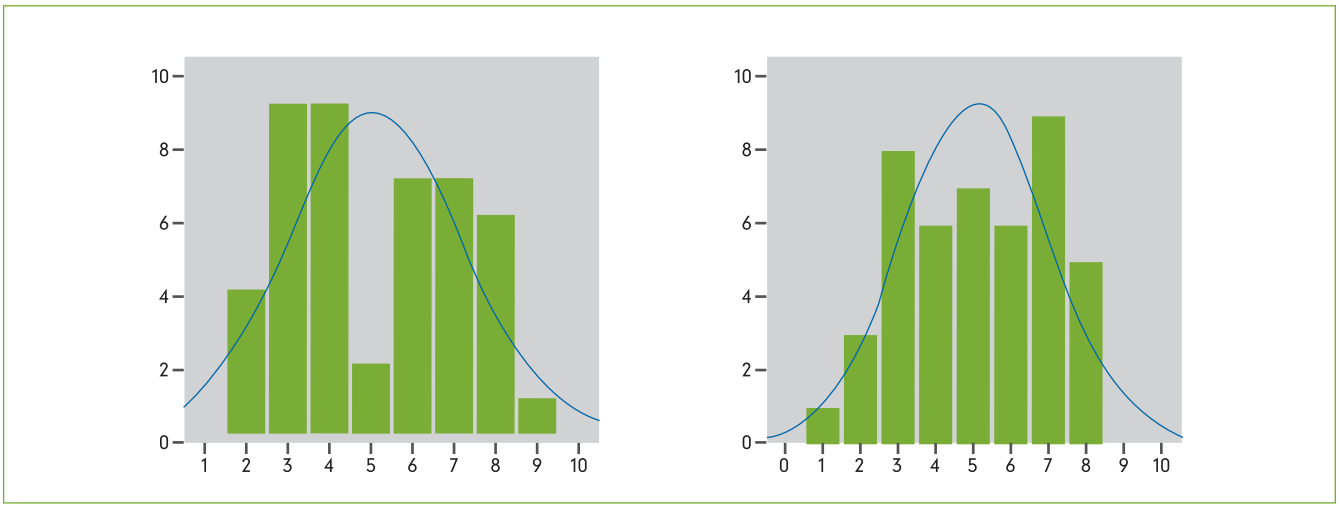
unification forecast model rather than predicting the unification time with a simple unification clock. For this, about 1,500 unification factors were suggested for each unification type and sub-area. Through a series of re-classifications, 33 factors (37 including sub-questionnaires) were converted into "unification factors survey" questionnaires in the third Delphi research of 2009.

Some of the factors show a clear converging central tendency. As displayed in 12 unification clock evaluations, however, the Delphi panel experts show a wide range of answers on some of the questions. Among them, clear bimodal distributions which have two different modes are observed, indicating that the Delphi panelists are clearly divided into two groups in evaluating some unification factors.

A statistical analysis was conducted using the unification clocks and 33 questions on unification factors; frequency, factor analysis, and regression. First, frequency analysis on the unification clocks and factors showed wide range (min-max) values throughout the entire questions. Narrow ranges that some questions showed, for example, on the economic situation or on North Korea's regime type, are exceptions. Despite scholars sharing similar information on North Korea over a long period of time, panelists' evaluations of the unification and its determinants remain distant. Moreover it corroborates the belief that all factors linked to the Korean Peninsula are plagued with uncertainty.

Questions that prompted clearly divided opinions or minimal concentration included: the stability of the Kim Jong-il regime; the stability of heir and leadership succession; the power struggle in North Korea; inter-Korean economic cooperation; North Korean residents' awareness of liberalization and openness; South-North military tension, the influence of North Korea's nuclear issue on unification; neighboring countries' interest in Korean unification; inter-Korean residents' agreement on unification; elements of the market economy and privatization in North Korea; North Korean residents' support of the regime; and control over North Korean residents. <Table > shows two examples of questions in which there was a clear division in the opinions of

Bimodal Distribution Examples from the 2009 Delphi Survey : Regime Stability(left) and Hereditary Succession(right)



participants.
Noted in the correlation and regression analysis is that there was a clear distinction between the agreement type and the absorption type of unification. In particular, the fact that there was no overlapping question manifests that the conditions of unification by agreement are separate from the conditions of unification by absorption. Unification by agreement was judged to be possible when North Korea reforms itself and becomes economically independent, while South and North Korea establish homogeneity, secure military trust, and earn China's cooperation. On the other hand, unification by absorption was judged to be possible when North Korea fails to overcome its crisis, the regime cannot survive due to power struggle and economic crises, and the U.S. cooperates with Korea in the process of unification. In brief, it is viewed that unification by absorption type is possible when North Korea cannot survive, while unification by agreement type is possible when North Korea turns to reform and openness.

Overview of the 2010 Survey

Through several workshops and brainstorming sessions, the 2010 Delphi Survey on the unification forecast clock was modified both in form and organization.

Questionnaires for the unification clock and its factors were refined and structured to mitigate the problems observed in the 2009 research. First, the 12 questions on the unification clocks, which in the first year were disorganized and somewhat vague, were modified. In addition, to provide survey participants with an evaluation standard, quartile criteria were suggested: 1-25 points: very negative, 26-50 points: somewhat negative, 51-75 points: somewhat positive, and 76-100 points: very positive. The simpler, more intuitive format enabled better and faster understanding by the respondents.

Second, questionnaires for unification determinants were also re-structured and simplified in a more intuitive manner. Existing questions were reclassified by each sector and then simplified into one- or two-line questions. In addition, the 10-point Likert scale was changed to 9-point format which has an integral number for its mid-point.

Third, the comparison groups were expanded: first of all, to solve the "large-vs. small-N" problem for future statistical analysis: For this, a group of experts not included in the Delphi panel or the inter-Korean businesspeople were included as comparison groups. Both groups were considered "attentive public,' with attitudes that were supposedly similar to the Delphi panel. Furthermore, a group of North Korean defectors and a group of respondents to a nation-wide public opinion poll

Summary of 2010 Survey Groups

Group	Interviewee	Period	Method and Procedure	Description
Delphi Panel	N=51 Unification, Diplomacy and security experts	August 20 - September 9, 2010	e-mail survey	2009 post-hoc analysis Unification forecast clock Unification factors Open questions
Non-panel expert	N=30 Unification, Diplomacy and security experts	September 9 -15, 2010	e-mail survey	2009 post-hoc analysis Unification forecast clock Unification factors Open questions
Inter-Korean Business	N=20 South Korean businesspeople at the Kaesong Industrial Complex	September 1-15, 2010	Corporate Association of Gaesong Industrial Complex	Unification forecast clock Unification factors Open questions
Public Opinion Poll	Nationwide survey, selected by stratified sampling	August 21-22, 2010	Conducted through Research & Research, Inc.	Unification clock(2) Unification factors(12)
North Korean Refugees	N=99 North Korean Refugees	August 31- September 20, 2010	North Korea Intellectuals Solidarity	Unification forecast clock unification factors

were added for comparison.

The draft of the questionnaire for the Delphi panel and the non-panel experts was completed in July 2010. A trial run of the survey was conducted with 30 graduate students in South Korea (from the departments of Politics and Diplomacy and North Korean Studies). As a result, 12 questionnaires about the unification clock, 36 about unification factors, and three open questions were selected.

The Delphi Panel was basically the same group as 2009 (only three respondents were replaced); however, a total of 51 experts participated in the 2010 Survey. The Survey was conducted by e-mail from August 20 to September 9, 2010. Most of the panel (47 experts) had completed the 2009 Survey. For feedback, the post-hoc analysis of the 2009 survey was attached with the 2010 questionnaire. The 2010 survey consisted of a questionnaire about the unification forecast clock and unification factors, and open questions. Of the 51 surveys sent out, all were collected.

As mentioned, a non-panel expert group and an inter-Korean businesspeople group were added to increase the sample and to compare data gathered with that of the Delphi panel. Both groups are regarded as more informed and more sensitive than the general public on North Korean affairs. For the non-panel experts group, 50 persons were sampled from the same list from which the

Delphi panel was picked. The survey was conducted from September 3-15 via email. They were provided the same questionnaires and the 2009 post-hoc analysis. All conditions matched those for the Delphi panel except for the fact that the non-panel experts group had not experienced the 2009 survey. Of 50 questionnaires sent out, 30 were completed and returned.

The Inter-Korean businesspeople group had unique characteristics: They had frequent contacts with North Korean residents and were more exposed to North Korea-related information than the South Korean public. Actually, they were the only group who had regular contacts with North Korea during the period between 2009 and 2010. For the survey on this group, help was provided from the Corporate Association of Gaesong Industrial Complex. As a private economic entity comprising businesses, it independently selected South Korean executives and staff members directly involved in the Gaesong Industrial Complex, and provided active cooperation in the distribution and collection of the questionnaires. This was the first time a survey on this topic had been conducted among the businesses in Gaesong Complex, and it attracted a good deal of attention. Of 20 copies sent out, all were returned during the period of September 1-15, 2010.

Nation-wide opinion polls were conducted to gauge the views of the general public on unification, which were then compared to figures from the Delphi Panel. The questionnaire was modified to include easier terms and phrases more suited to ordinary citizens. In addition, only two unification clocks (overall agreement-type and overall absorption-type) and 12 factors that were highlighted in the 2009 post-hoc analysis were selected for the sake of cost and efficiency. The firm of Research & Research was commissioned to conduct the survey on August 21-22, 2010. Conducted through computer-assisted telephone interviews (CATI), the survey targeted 1,000 adults over 19 years of age living in South Korea. The sampling was extracted randomly after proportionally allocating the registered population based on region, age and gender, and it had a margin of error of plus/minus 3.1 percentage points.

Finally, a survey on North Korean defectors was conducted as a comparison case. North Korean defectors represent a rare pool of respondents because they have recent ties with North Korea and as well as present experience in South Korea. With the help of the North Korea Intellectuals Solidarity, a non-profit interest group based in Seoul, 100 samples were distributed during the period between August 31-September 11, 2010, and 99 copies were collected.

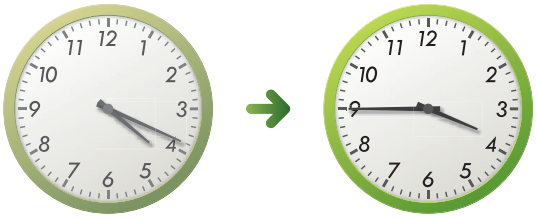
Chapter I
The Delphi Panel

When compared to 2009, all of the 12 unification clocks of the Delphi panel reversed without exception. The average time on the overall agreement-type unification clock for the Delphi panel was 3:45, representing a 34-minute reversal from the previous year. The overall absorption-type unification marked 5:20, 36 minutes behind the time of 5:56 in 2009.

On August 15, 2010, Seoul citizens gathered around Kwangwhamun plaza to celebrate 65th anniversary of Liberation Day.

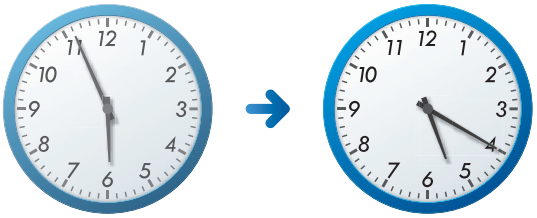
1. Unification Clock

Overall Agreement-type Unification Clock



2009	2010
04:19	03:45

Overall Absorption-type Unification Clock



2009	2010
05:56	05:20

Changes in Unification Clocks, 2009-2010

		Overall		Political		Economic	
		Agreement	**Absorption**	**Agreement**	**Absorption**	**Agreement**	**Absorption**
2009	Time	**4:19**	**5:56**	**3:53**	**5:44**	**4:57**	**6:26**
2010	Mean	31.18	44.508	22.9	36.745	39.12	53.039
	Range	58	60	58	40	55	50
	Convert	**3:45**	**5:20**	**2:45**	**4:25**	**4:42**	**6:22**
	Changes	-0:34	-0:36	-1:08	-1:19	-0:15	-0:04
		Social		**Military**		**International Relations**	
		Agreement	**Absorption**	**Agreement**	**Absorption**	**Agreement**	**Absorption**
2009	Time	**4:26**	**5:38**	**2:51**	**4:53**	**4:27**	**5:40**
2010	Mean	33.53	45.333	18.67	33.529	31.08	37.314
	Range	60	70	64	80	65	70
	Convert	**4:01**	**5:26**	**2:14**	**4:01**	**3:44**	**4:29**
	Changes	-0:25	-0:12	-0:37	-0:52	-0:43	-1:11

When compared to 2009, all of the 12 unification clocks of the Delphi panel reversed without exception. Among the clocks that significantly reversed are the "political-area absorption-type" (1:19), "international relations-area absorption-type"(1:11), "international relations-area agreement-type" (1:11), "political-area agreement-type" (1:08), and "military-area agreement-type"(52 min). On the other hand, the "economic-area absorption-type" (4

min) and "economic-area agreement-type" (15 min) clocks changed minimally compare to other clocks.

The 2009 panel's opinion that absorption-type unification could come somewhat sooner than agreement-type remained intact in 2010. Greater points were given to "absorption" than "agreement" in all aspects while the "economic-area absorption-type" unification clock indicated a time nearest to unification. In contrast, the "military-area agreement-type" clock remained the most distant time.

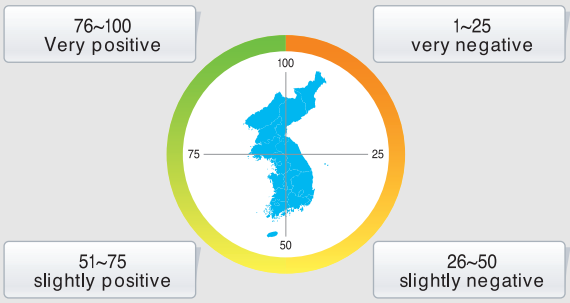
The range of the panel's response for each clock did not change significantly compared to 2009. Despite this year's efforts to make the questions more clear and intuitive and to provide a guideline, the effect was insignificant, which proved that although the Delphi panel was a homogeneous group which had long done research on North Korea and had good access to information on the North, inherent within the group was a wide range of positions and approaches regarding unification. The tendency toward dispersed responses also appeared in the "unification factors" survey.

Another characteristic of the 2010 unification clock was that there was greater difference in respondents' thoughts about on absorption-type unification compared to 2009. The standard deviation in all six sectors of the agreement-type clock was between 11.93 and 14.13 and the range was between 55 and 64. In the case of absorption-type unification, however, it was between 16.13 and 18.66 with a range of 60 to 80. On a scale of 1-100, opinion disparity in absorptive unification indicated radical differences among the panelists.

Design of the Unification Clock

Each unification clock is based on a set of twelve 100-point questions. Agreement-type unification is defined as gradual unification led by peaceful improvement of inter-Korean relations and North Korea's opening and reform. It has an overall agreement-type unification clock with five sub-area clocks: political, economic, social, military and international relation. Absorption-type unification refers to unification as a result of incorporation of North Korea by the South. It also has overall absorption-type unification with the same five sub-area clocks. The difference between it and the 2009 unification clock is the quartile guideline: Numbers 1-25 indicate "very negative," 26-50 "somewhat negative," 50-75 "somewhat positive" and 76-100 "very positive."A sample question is below.

How do you feel about the current level of agreement-type unification? Write points within the range from one to 100 (100 points indicates a unified Korea).



How many points do you give for the overall agreement-type unification at present?

(1) Overall Agreement-type Unification: ( ) points

What is the point on following areas?

(2) Political-area Agreement-type Unification: ( ) points

(3) Economic-area Agreement-type Unification: ( ) points

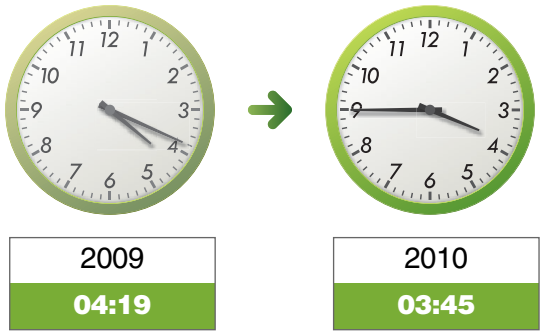
(4) Social-area Agreement-type Unification: ( ) points

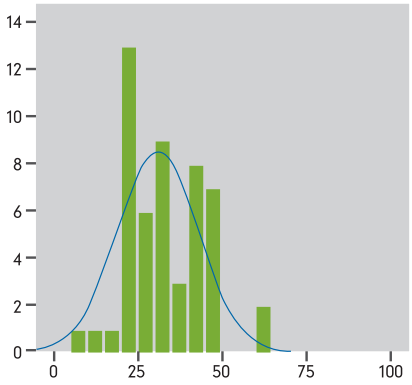
(5) Military-area Agreement-type Unification: ( ) points

(6) International Relations-area Agreement-type Unification: ( ) points

The Agreement-type Unification Clock

Overall Agreement-type Unification Clock(N=51)



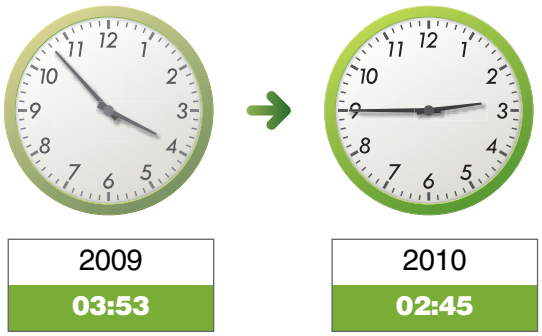


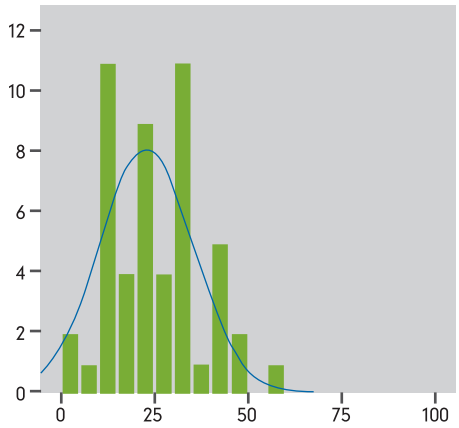
The average time on the overall agreement-type unification clock for the Delphi panel was 3:45, representing a 34-minute reversal from the previous year. The time was converted from a mean of 31.18 on a 100-point scale (standard deviation 11.93).** This 34-minute reversal presents a salient negative change in the overall agreement-type unification environment compared to that of 2009. The range of the panel's response was relatively narrow compared to the absorption-type clocks, with a minimum value of five to a maximum value of 63. The most frequent answer (mode) was 20 points (13 responses). Those responding 50 or below accounted for 96.1 percent and those showing very negative opinions (25 or below) reached 43.1 percent.

N	**Valid**	51
	Missing	0
Mean		31.180
Median		30.000
Mode		20.0
Standard Deviation		11.9293
Skewness		.398
Kurtosis		.124
Minimum		5.0
Maximum		63.0

** The mean value was converted to the minute unit (mean*720/100) and then converted to the 12-hour unit. 100 point and 12:00 o'clock means a unified Korea and quartile-criteria are 3:00, 6:00, 9:00, and 12:00

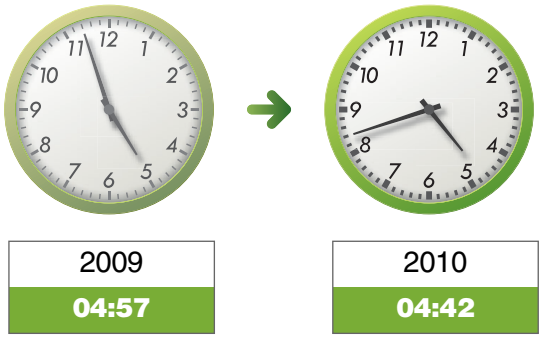
Political-area Agreement-type Unification Clock(N=51)

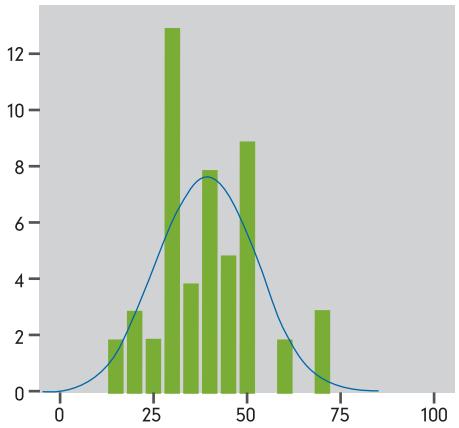




The political-area agreement-type clock, which stood at 3:53 in 2009, was 2:45 in 2010, showing the most negative response along with the military sector. Moreover, along with the political-area absorption-type clock, this clock marked the most significant changes among other unification clocks. Both represented reversals of 1:08 and 1:19, respectively, from last year. One respondent even gave the extreme value of '0' in the questionnaire, something almost never seen in the Delphi panel survey. The responses were in the range of zero to a maximum of 58, with an average of 22.902 (standard deviation of 12.58). All respondents, except one indicated negative responses (0-50), while very negative (0-25) responses accounted for 60.8 percent.

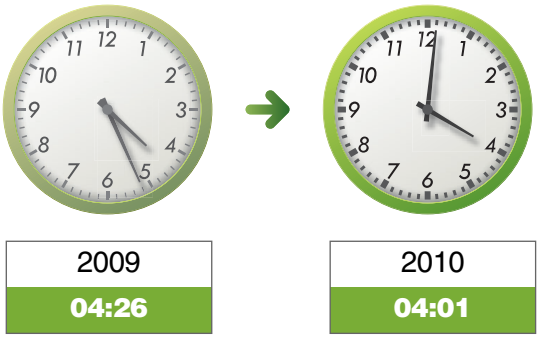
Economic-area Agreement-type Unification Clock(N=51)

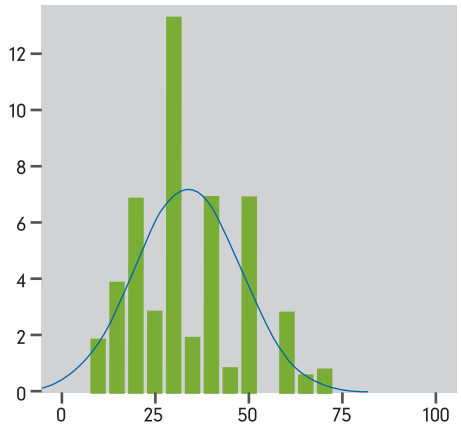




The Economic-area agreement-type clock remained comparatively the same considering rapid changes in the other areas; the time was 4:42, retreating 15 minutes from the previous year's 4:57. The economic sector contrasted sharply with the political sector. Among all the areas for agreement-type unification clocks, the economic sector came closest to unification. The panel's responses were relatively dispersed, with a minimum value of 15 and a maximum of 70. The average of 100-point scale was 39.12 with a standard deviation 13.25. The panel members with negative responses (50 or below) totaled 46 (88.2).

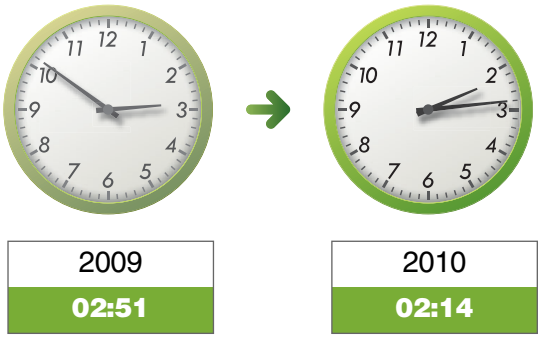
Social-area Agreement-type Unification Clock(N=51)

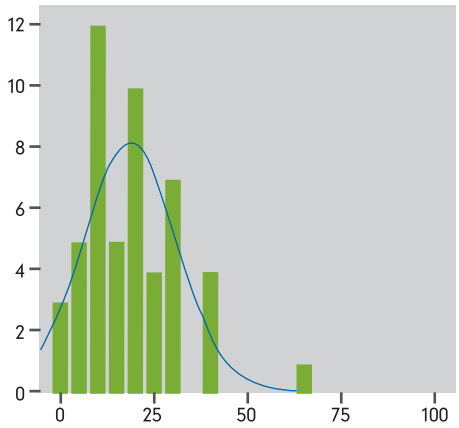




The social-area agreement-type clock was 4:01, a 25-minute reversal from the previous year. Along with the economic-area clock, this clock remained faster than other clocks in agreement unification. Out of the total 100, it had an average of 33.529. With a mode of 30, the responses ranged from 10 to 70. A total of 92.2 percent of the panel provided negative answers (50 or less).

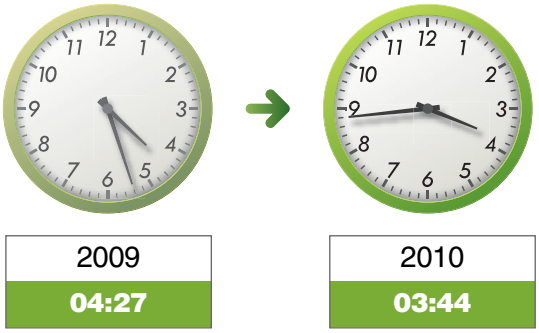
Military-area Agreement-type Unification Clock(N=51)

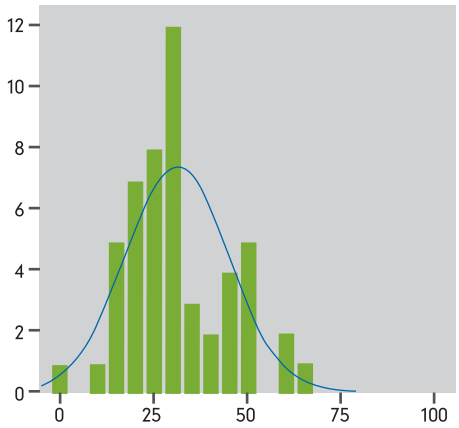




For both agreement-and absorption-type clocks, the military areas mark the slowest time, with the military-area agreement-type unification clock the slowest among all 12 clocks. This year, the minute-hand retreated 37 minutes from the time of 2:51 in 2009. The new time of 2:14 for agreement-type unification symbolized a severe military situation occurring during the first half of 2010. The mean value obtained was 33.53 on a 100-point scale, and the standard deviation was 12.49. The range value 64 shows somewhat wide disagreement in the evaluation, however, as seen on the histogram, the Delphi panel expressed a very convergent central tendency if one exceptionally deviant case was not considered. Fifty panel members (98 %) evaluated it as 40 points or less and those who gave 25 points or less (very negative) totaled 34 of 50 (76.5%).

International Relations-area Agreement-type Unification Clock(N=51)

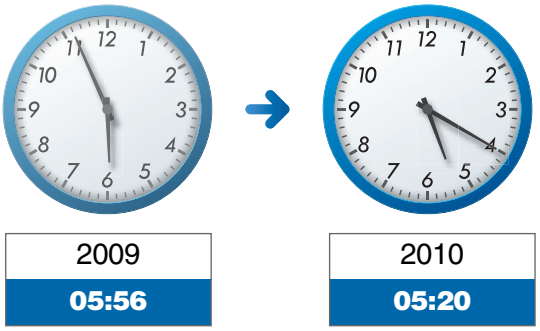


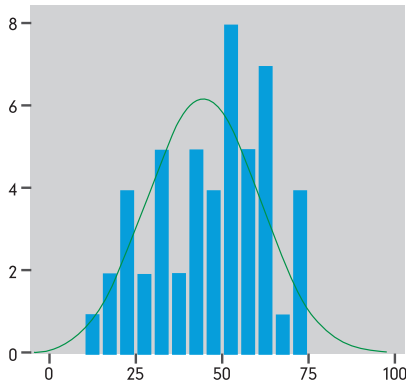


The international environment for agreement-type unification retreated markedly; the clock indicated 3:44, representing an hour and 11-minute reversal from last year's 4:27. The time calculated from the mean of 31.08, and standard deviation is 13.72. Twelve panelists answered the mode value of 30, with 0 to 65 points distributed along this line. The respondents with negative responses (50 or less) totaled 48 of 51 or 94.1 percent and 22 respondents gave answers of 25 or less.

The Absorption-type Unification Clock

Overall Absorption-type Unification Clock(N=50)

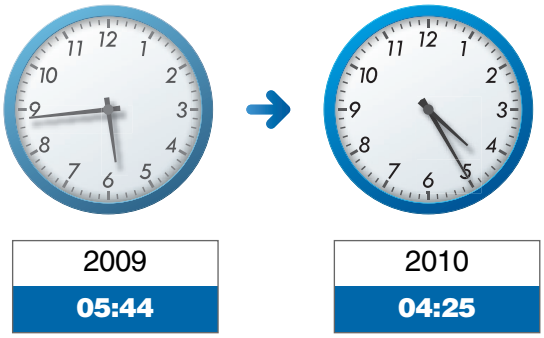


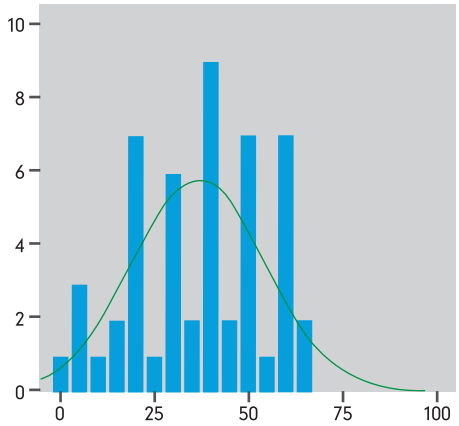


The average overall absorption-type unification scored 44.51 on the 100-point scale in 2010, which was converted to 5:20, 36 minutes behind the time of 5:56 in 2009. The panel's responses ranged from 10 to 70 points. The question on overall absorption-type unification contrasted sharply with the question for the agreement-type unification clock. Given that the time 5:20 was before the mid-point of 6 o'clock, the panelists' average evaluation of unification in this area was still negative. Nevertheless, there was a clear difference between the two approaches: The panel estimated that absorption-type was closer to unification than agreement-type by an hour and 35 minutes. Another feature was more significant disagreement over absorption-type than there was for agreement-type unification. Viewing the histogram above, it is widely distributed without extreme values, and has a low kurtosis (-.775) and high standard deviation (16.13). This indicates that there was more disagreement on the overall absorption-type unification clock than on the agreement-type one. About 38 percent (20 panelists) viewed the possibility of overall absorption-type unification positively.

N	**Valid**	50
	Missing	1
Mean		44.508
Median		48.000
Mode		60.0
Standard Deviation		16.1277
Skewness		-.353
Kurtosis		-.775
Minimum		10.0
Maximum		70.0

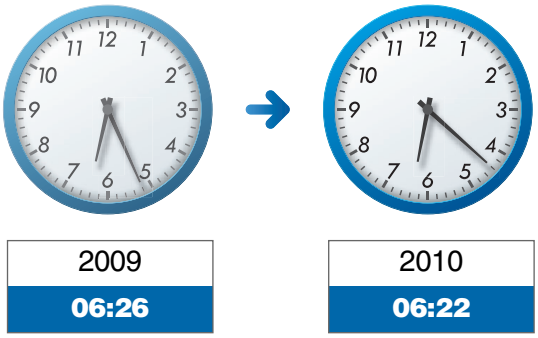
Political-area Absorption-type Unification Clock(N=51)

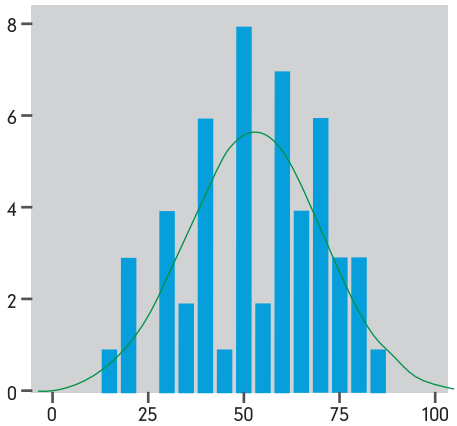




The absorption-type unification clock in the political area was at 4:25 in 2010. Compared to last year's time of 5:44, the hands on the clock retreated one hour and 19 minutes, which was the most significant slowdown among all 12 unification clocks. With the average 36.745, the panel responses ranged from 0 to 67 with standard deviation and kurtosis at 17.68 and -.841, respectively. This was greater than seen in the same area of the agreement-type, which indicated a greater disparity among the panel members. The number of members showing a negative response to absorption-type unification in this area totaled 40 (78.4 percent).

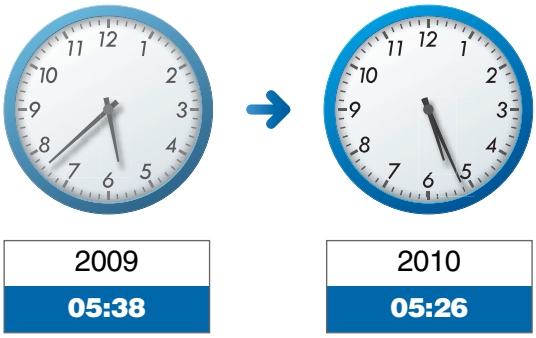
Economic-area Absorption-type Unification Clock(N=51)

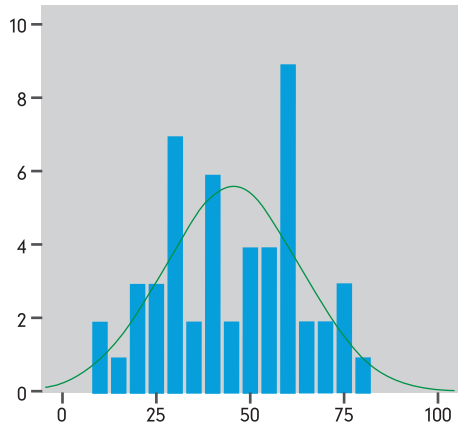




As in the 2009 survey, the economic-area absorption-type unification clock continued to have the highest average and the fastest time among all 12 clocks. The mean was 53.04, which, on a 12-hour clock, converted to 6:22. The clock's hand move back only 4 minutes marking the smallest retreat. Also, among the 12 clocks, this was the only area to exceed the mid-point of six o'clock, even though the minute-hand advanced only 22 minutes past six, and thus is the only unification clock whose average time can be interpreted positively. Panel responses ranged from a minimum value of 15 to a maximum of 85, indicating wide dispersal. The most frequent answer was 50 points (six o'clock), which was distributed in a bell shape around the median 54.5. Responses of below 50 points accounted for 49 percent and those of more than 50 points accounted for 51 percent, indicating normal distribution.

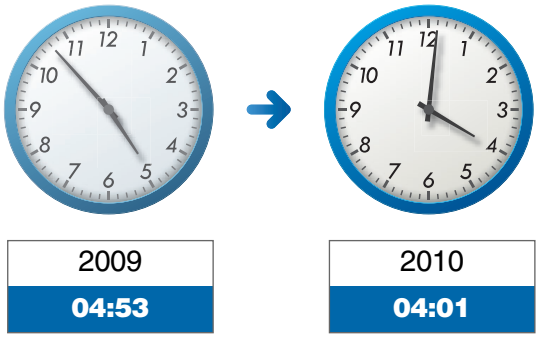
Social-area Absorption-type Unification Clock(N=51)

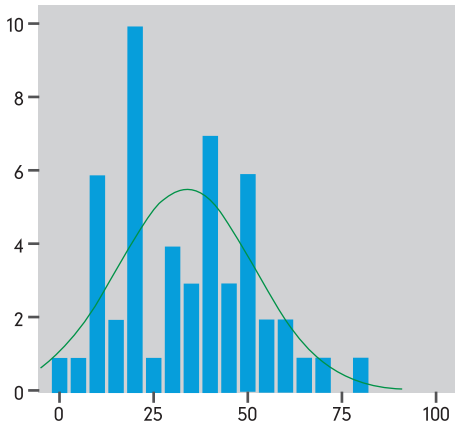




The time on the social-area absorption-type clock was 5:26, converted from the mean value of 45.3. The minute-hand slowed by only 12 minutes from last year, meaning it showed the second-least amount of change, behind the economic-area absorption-type. The responses showed a wider range of 70 with the standard deviation of 18.3. As indicated in the histogram above, the panel responses were clearly divided between the negative and positive sides: About 59 percent marked scores of 50 or below and 41 percent answered higher than 51.

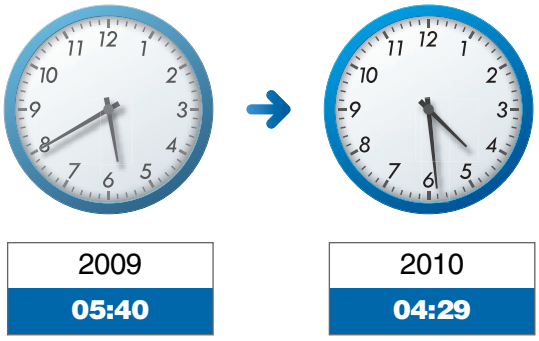
Military-area Absorption-type Unification Clock(N=51)

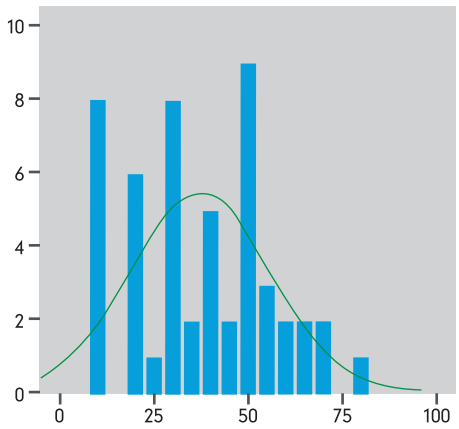




Following the year 2009, the military-area showed the lowest score among the six absorption-type clocks. The clock was 4:01, converted from the mean 33.5-a 52-minute slowdown from the previous year's 4:53. Responses from the panel were dispersed widely from 0 to 80, the largest range among all 12 clocks. With a mode value of 20 (10 responses), 84.3 percent answered 50 or below.

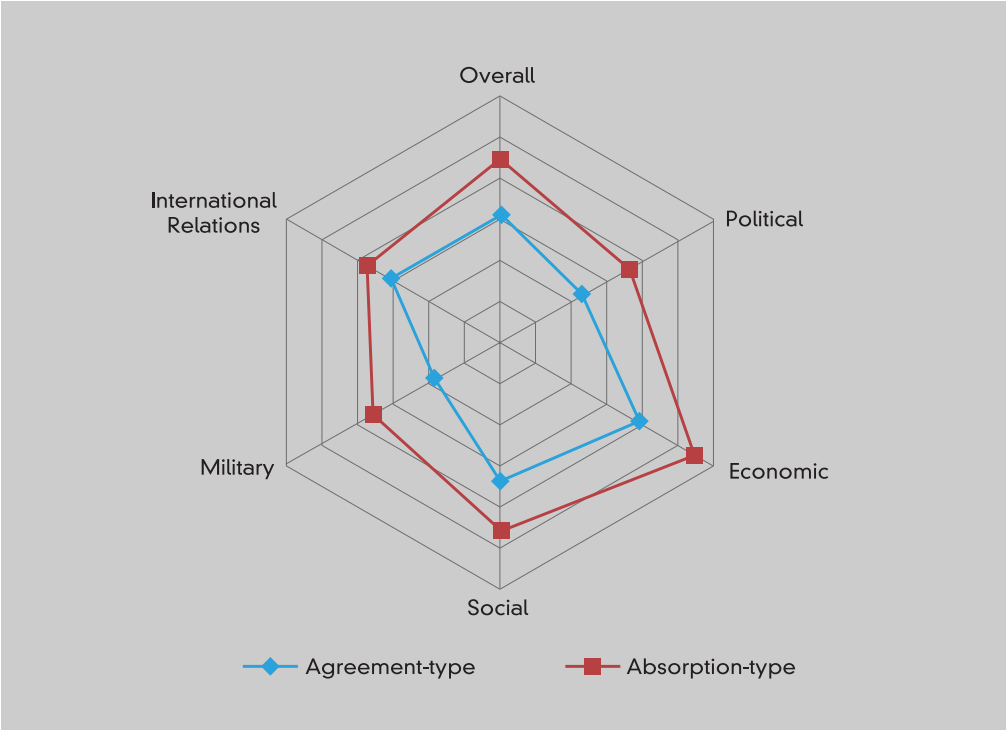
International Relations-area Absorption-type Unification Clock(N=51)





Respondents' evaluation of absorption-type unification in the international relations area rapidly plummeted in 2010 just as it did in the political area. Converted into time, the panel evaluated it as 4: 29, which fell behind the 2009 time by an hour and 11 minutes. Noteworthy is that international relations in agreement-type unification also retreated by an hour and 11 minutes. The standard deviation for the international relations-area clock was 18.7, which was the greatest among all the 12 clocks. The panel's evaluation was also represented by a histogram whose abnormal shape required careful attention in order to interpret the results. As shown in the histogram above, most of the panelists' assessments were concentrated at 10 points (8 respondents), 30 points (7 respondents) and 50 points (8 respondents). This multi-mode distribution indicated that there was great disparity in the evaluation of the international relations-area clock. A total of 41 respondents (78.4%) answered 50 or less.

Delphi Panel : Agreement-type vs Absorption-type



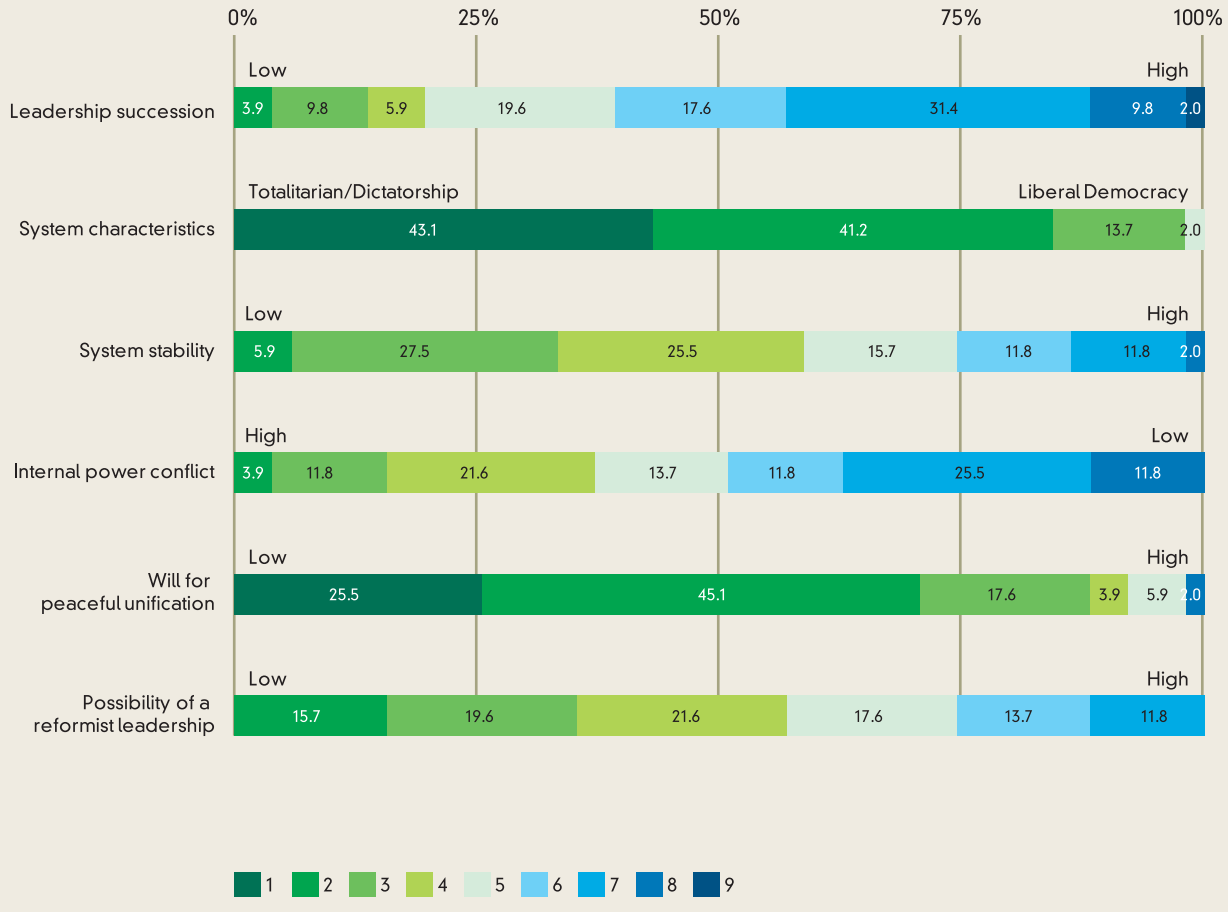
The radar chart clearly summarizes the relative size of the absorption-type versus agreement-type as well as each area's scale. Absorption-type unification is evaluated to occur sooner than agreement-type unification. Both the political and military areas tend to be against unification and in particular, the military sector gave an extremely low evaluation of agreement-type unification. In contrast, the economic and social areas indicate unification is relatively closer. Absorption-type unification in the economic area alone, among the 12 unification clocks, exceeded the mid-point 50, that is, 6 o'clock.

2. Unification Factors: The Delphi Panel

During the 2009 Delphi survey, 1,500 factors that might have an effect on unification were reclassified, and 33 questions (37 including sub-questions) were developed and used in the 3rd Delphi survey of the same year. In the 2010 survey, the same questions were modified to 36 questions which were clearer and more concrete. All questionnaires were based on a 9-point Likert scale, which unless otherwise specified, is normally interpreted as 1 "extremely negative," 2 "very negative," 3 "negative," 4 "slightly negative," 5 "neutral," 6 "slightly positive," 7 "positive," 8 "very positive," and 9 "extremely positive."

North Korean Politics

Six questions were reserved for the North Korean political area: (Q1) Leadership succession after Kim Jong-il, (Q2) Characteristic of political system in North Korea, (Q3) Stability of Kim Jong-il's power system, (Q4) The possibility of internal power conflict, (Q5) The willingness of the North Korean leadership towards peaceful unification, and (Q6) The possibility of emergence of a reformist leadership. Of the questions, respondents shared common opinions on Q2 and Q5, but had wider range of views on the others.



Q1) With regard to establishing leadership succession in North Korea, about 80 percent of the panel evaluated that it was proceeding smoothly, as indicated by their answers: 'neutral (5)' to 'extremely positive (9).' The mode value was seven points (16 respondents). A wide range (2 to 9) was seen, indicating a large disparity among the panel members.

Q2) This question asked about the North Korean regime type from totalitarian dictatorship to liberal democracy along a 1-to-9 point scale; the lower points meant a more totalitarian dictatorship, and vice versa. Panelists' evaluations of the North Korean system characteristics showed great similarity. About 98 percent (50 responses) gave three points or less. Compared to the 2009 survey, the panel's responses exhibited a more narrow distribution around extreme values of 1 and 2. That is, the Delphi panel viewed that the regime had changed for the worse during the 2010 period. Responses to this question showed the smallest disparity among the panel members, along with responses to Q17 and Q24. The mean values and standard deviations for these questions were 1.76 and .839, respectively.

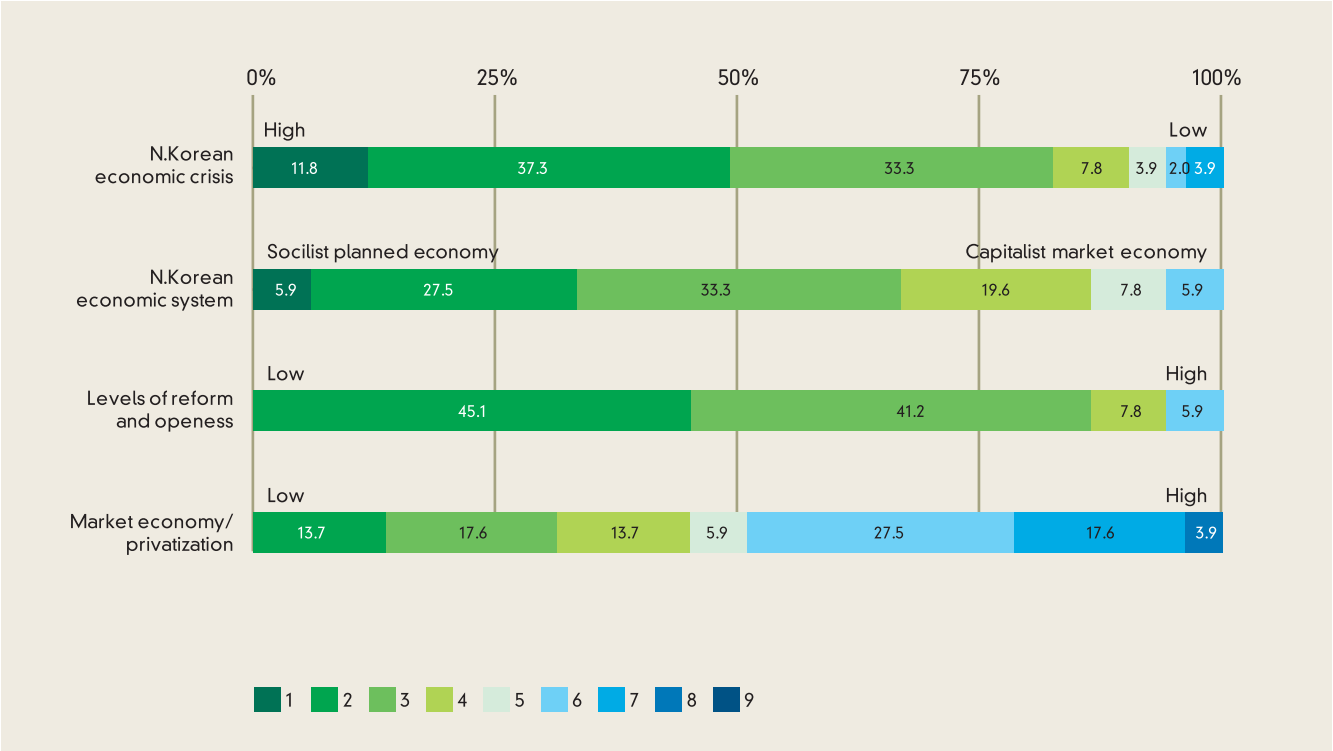
Q3) Regarding the stability of the Kim Jong-il regime, the most frequent answers were 'negative (3),' and 'somewhat negative (4),' both accounting for 53 percent. The mean value of the 51 responses was 4.43, with a standard deviation of 1.54. As seen from the mean value, while the majority responded negatively, a sizeable number (25.6 %) responded that the regime was stable.
Q4) The current state of the North Korean regime's internal stability was asked, and responses were to be given on a 1-to-9 point scale from 'extremely unstable (1)' to 'extremely stable (9).' A significant gap was seen among the panel members on power conflict in North Korea. Of the respondents, 11 answered that it was 'somewhat unstable (4),'and 13 answered 'stable (7).' The remaining responses were distributed in a bimodal shape. The range of responses was very wide, from 2 to 8 points. A total of 37.3 percent of the panel saw the conflict as serious while 13.7 percent were neutral and 49.1 percent thought that the North remained stable.

Q5) Of 51 respondents, 47 (92.2%) responded negatively to the North Korean leaders' desire for peaceful unification. The majority (23) selected 'very negative (2)' with answers concentrated between one and three points. The mean value was 2.29, with a standard deviation of 1.331.

Q6) With regard to the possibility of the emergence of reformist leadership, 56.9 percent answered negatively. Nine responded 'neutral (5)' accounting for 17.6 percent, and 13 responded positively (25.5%). The mode value was 'negative (4)' and the answers were evenly distributed around it. In the 2009 Delphi survey, very negative opinions were dominant (3 out of 10 points) and though it still remains negative, it appears that the panel's view has changed.

North Korean Economy

Questions on the economic sector include (Q11) on the economic crisis, (Q12) on the economic system, (Q13) on opening and reform, and (Q20) on the spread of a market economy and private ownership. Although the first three questions were quite distinct, the answers showed a pattern of similarity. Specifically, the Delphi panel responded very negatively, most of them giving only two or three points. For the question on North Korea's spread of a market economy and privatization, however, it showed bimodal distribution, indicating a significant disparity among panel members.



Q11) With regard to North Korea's economic crisis, 36 respondents (70.6%) answered either 'very negative (2)' or 'negative (3).' Furthermore, 6 respondents (11.8%) viewed it as 'extremely negative (1).' Thus, the mean value was 2.76, with a relatively smaller standard deviation of 1.365.

Q12) For the question on North Korea's economic system (a continuum between "socialist planned economy" and "capitalist market economy"), respondents' answers were on a scale of 1 to 9 points. The panel viewed North Korea's economic system as being close to a purely socialist planned economy. With the mode value '3,' responses ranged from one to six. The mean value was 3.14 and the standard deviation was 1.249, which was relatively low. Of the respondents, 44 (86.3%) gave four points or less.

Q13) The panel was in near agreement regarding its view of openness and reform in the North Korean economy. 'Very negative (2)' or 'negative (3)'evaluations were given by 44 respondents (86.3%), with a mean value of 2.80 and a standard deviation of 1.02, which was very low.

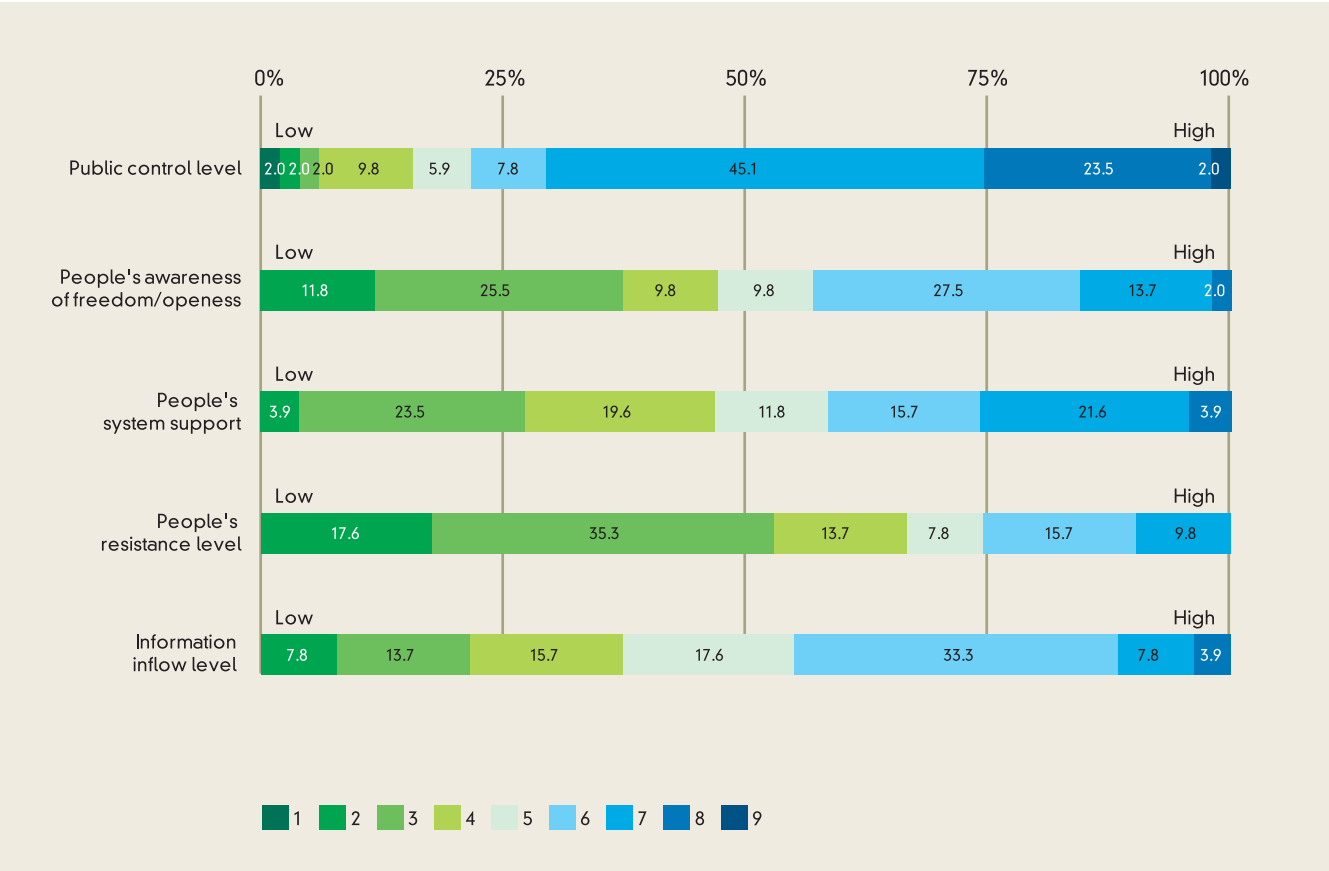
Q20) Unlike the above three questions, the distribution of the responses for this question is notable. To the question on diffusion of market economy and private ownership in North Korea, the mean value was calculated at 4.84 and the standard deviation, at 1.859. The mean value, that

approximating the mid-point '5,' indicates there could be a divided opinion on this question. There were 23 responses (45.1%) for 'somewhat negative (4)' and below, and 25 responses (49%) for 'somewhat positive (6)' and above. Responses fell across a wide range from a minimum of two to a maximum of eight. This clearly indicates that there was a clear bimodal distribution on this question. The panel fell into two groups on either side of the mid-point of five.

The answer to this question was significantly different from 2009, when negative views were slightly dominant. However, in 2010, positive views on the diffusion of market economic factors and privatization increased significantly.

North Korean Society

Questions regarding the social sector were mostly about North Korean residents. These included (Q18) North Korean authorities' control over their residents, (Q19) Residents' awareness of liberalization and openness, (Q21) Residents' system support, (Q22) Resistance and protest against the system, and (Q23) inflow of external information.



Q18) Panelists views differed widely regarding North Korean authorities' control over NK residents: responses ranged from 'extremely weak (1)' to 'extremely strong (9).' Nevertheless, the views were concentrated on 'strong (7)' and 'very strong (8)' by 35 respondents (68.6%). 40 responses (78.4%) were six points or higher, indicating that overall, the panel evaluated North Korea's public control as strong as ever. The mean value was 6.49.

Q19) The question on liberalization and openness for North Korean residents resulted in somewhat negative answers, with a mean value of 4.65. However, the answers formed a typical bimodal distribution with two mode values: 13 responses were concentrated around 'weak (3)' and 14 were concentrated around 'strong (6)'. A total of 24 (47.1%) responses were four points or less, while five (9.8%) were 'neutral (5),' and 22 (43.2%) were for six points or more.
Given that in 2009, this question recorded a mean value of 3.91 and was distributed around a mode of 3, it appears that a considerable number of panel members have since changed their view.

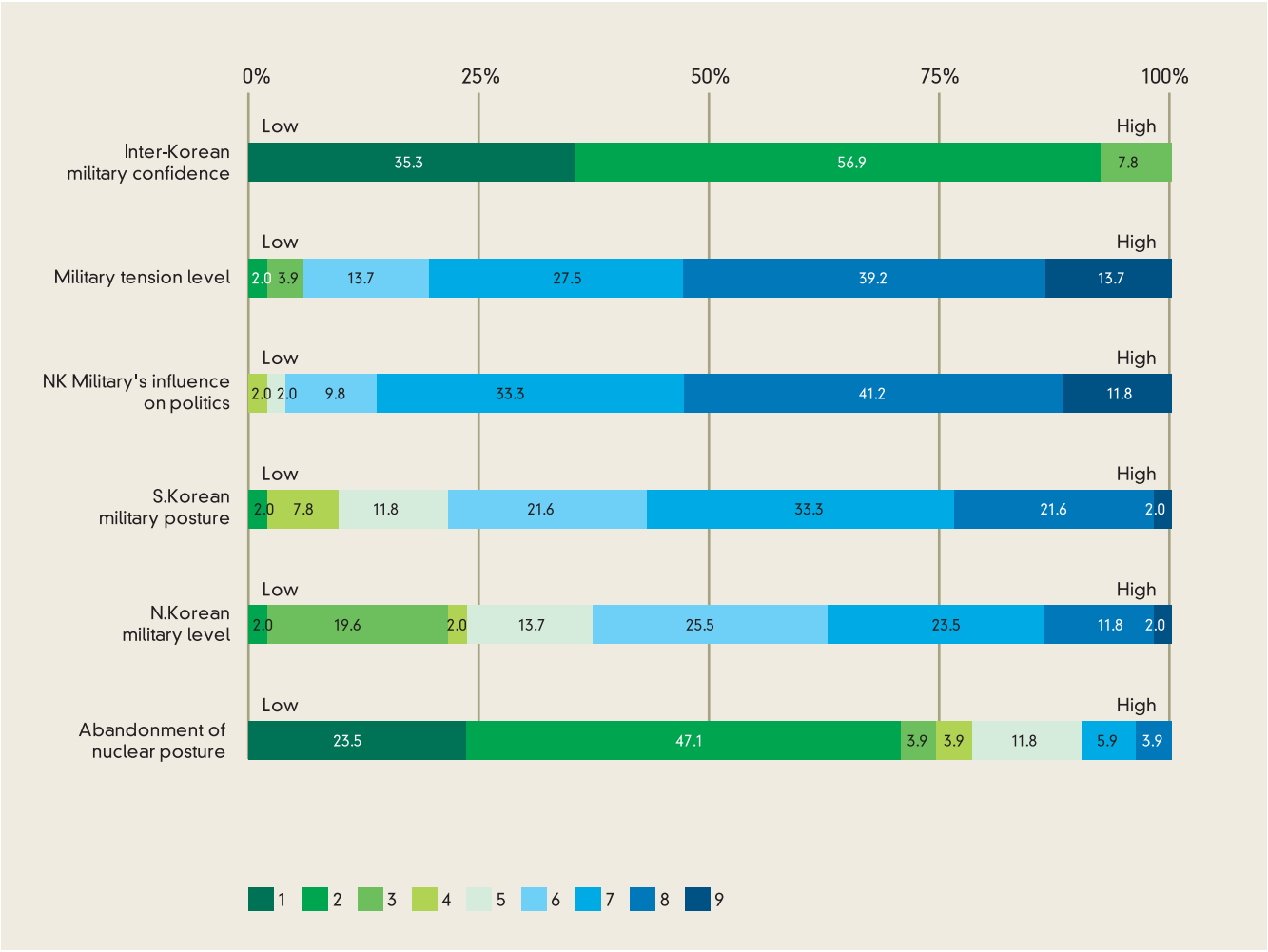
Q21) To the question on North Korean resident's regime support, the answers formed a bimodal distribution with a mode of 'low (3)' by 12 respondents and 'high (7)' by 11

respondents. The mean value was 4.92 (close to five) and the standard deviation was 1.707. More specifically, 24 (47.1%) responses were low and 21 (41.2%) were high. Q22) The question on the residents' resistance was expected to have a minus-correlation relationship with Q21: If regime support for residents decreased, then resistance would increase, and vice versa. Yet, the relationship between the two questions was still vague. For North Korean resident's resistance, 18 respondents viewed it 'low (3)' and the remaining panelists were evenly distributed at between two and seven points. The mean value was estimated at 3.98 and the standard deviation at 1.643.

Q23) Regarding the question on inflow of external information, a wide range of answers from 'very low (2)' to 'very high (8)' was seen. The average was 4.94, which was close to the mid-point of five, and the standard deviation was 1.567. Of the respondents, 19 (37.3%) answered negatively with 'somewhat low (4)' or less while 23 (45%) answered positively with 'somewhat high (6)' or more. Although the mean value was slightly below 5, the number of positive panelists exceeded those that were negative.

Military Area

Questions regarding the military sector were as follows: (Q24) Inter-Korean confidence building and arms control level, (Q25) Inter-Korean military tensions, (Q26) The role of the North Korean military in sustaining the system, (Q27) South Korea's readiness against North Korea's military, (Q28) North Korea's military capability, and (Q29) The possibility of North Korea's abandoning its nuclear program. The panel members' views on North Korea's military generally coincided.



Q24) Panel members' views on the military sector generally coincided. On inter-Korean military confidence level, the panel members showed a more concentrated evaluation: A total of 18 responses expressed 'extremely negative (1),' 29 were 'very negative (2)' and four were 'negative (3).' For this answer there was a mean value of 1.72 with a .607 standard deviation, which was considered very low.

Q25) Response results for the question about military tension between the two Koreas were concentrated on a mode of eight points (by 20 respondents) with a mean value of 7.27 and a standard deviation of 1.471. The extreme value (9 points, extremely high) was given by

seven respondents while 48 respondents (92.1%) gave answers of 'somewhat high (6 points)' or above. This result differed from the same question in the 2009 survey. Last year, the panel was clearly divided into two groups forming a bimodal distribution, while a sizeable number of panelists moved their evaluations toward the higher side in the 2010 survey.

Q26) Panel members' evaluations of the North Korean military's influence on politics were concentrated on a mode of eight by 21 respondents. The mean value was 7.43 with a standard deviation of 1.10. A total of 49 respondents (96%) gave answers valued at 'somewhat high (6 points)' or above and six answered with an extreme value (9 points). While this tendency was similar to that seen in 2009, some panel members moved their answers closer to the higher side in 2010.

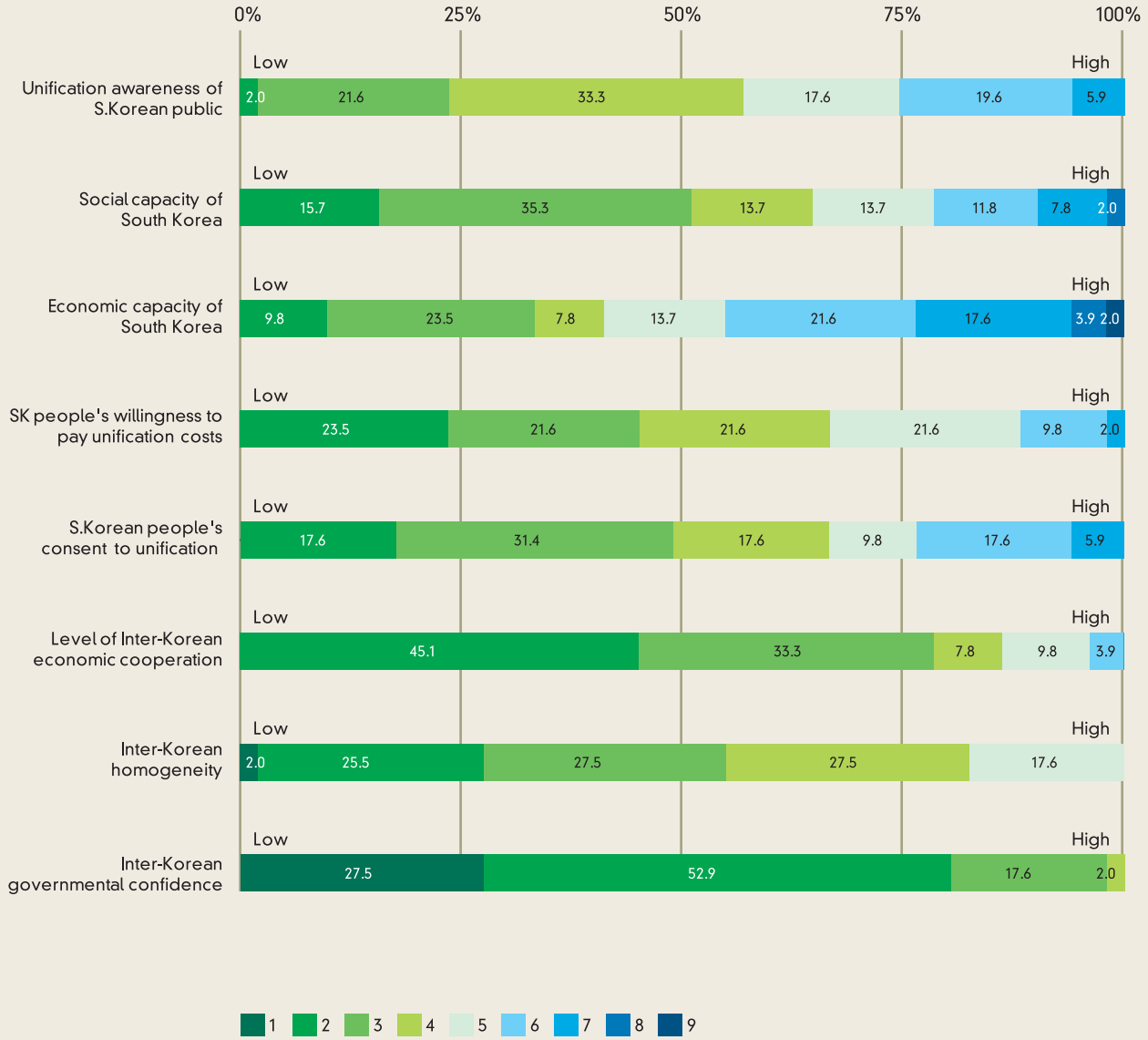
Q27) The panel highly evaluated South Korea's military readiness against North Korea, which had a mean value of 6.47 and a standard deviation of 1.391. The range between the points (2 to 9) was quite wide. The positive answers totaled 39 (76.5%).

Q28) Evaluation of North Korea's military power was widely distributed from 2 to 9 points, with a mean value of 5.69 and a standard deviation of 1.772. A total of 12 respondents (23.5%) answered with 'somewhat low (4)' or below and 31 (60.8%) answered with 'somewhat high (6)' or above.

Q29) With regard to the possibility of North Korea's abandonment of nuclear power, answers were distributed across a wide range from one to eight points, but the answers were concentrated in one area. That is, 36 respondents (70.6%) gave answers of 'extremely low (1)' or 'very low (2).' The mean value was 2.76 with a standard deviation of 1.966. Only five respondents predicted North Korea's abandonment of nuclear power.

South Korea's Capability and Inter-Korean Relations

This issue comprised eight questions. First, in terms of South Korea's capability, there were five questions: (Q7) South Korean residents' understanding of unification, (Q8) South Korea's social capacity for unification, (Q9) Its economic capacity for unification, (Q14) South Korean residents' willingness to pay unification costs, and (Q15) South Korean residents' consent to unification. Second, questions about inter-Korean relations were as follows: (Q10) The level of inter-Korean economic exchange and cooperation, (Q16) Inter-Korean social and cultural homogeneity, and (Q17) Inter-governmental mutual trust.



Q7) Regarding South Korean residents' understanding of unification, 17 answered 'somewhat negative (4)' and answer values were distributed from 'very negative (2)' to 'positive (7).' While the answers of 'somewhat negative (4)' or below totaled 29 (56.9%), responses for 'somewhat positive (4)' totaled 13 (25.5%). The mean value was 4.49 with a standard deviation of 1.255.

Q8) Answers to the question on South Korea's social capability for unification were slightly more negative than answer to the question on understanding unification. The mode value was 'negative (3)' with 18 answers. While 21.6 percent (11 responses) responded positively, 64.7 percent (33 responses) evaluated its social capacity negatively. The mean was 4.02 with a standard deviation of 1.647.

Q9) The answers regarding South Korea's economic capacity clearly show a bimodal distribution: Answers of 'somewhat negative (4)' or below were given by 21 (41.2%) respondents, while those of 'somewhat positive (6)' or more were given by 22 respondents (45.1%). The range covered from 'very negative (2)' to 'extremely positive (9).' The mean value was 4.92 (close to mid-point 5) and the standard deviation was 1.885.

Q14) To the question on South Korean's willingness to pay for unification costs, the most prevalent answer (12 respondents) was 'very negative (2)' along the range from 'very negative' to 'positive (7).' Answers of 'somewhat negative (4)' or below totaled 34 (66.7%) and six (11.8%) responded 'somewhat positive (6)' or above. The mean was 3.72 with standard deviation of 1.549.

Q15) The panel's evaluation of South Koreans' consent to unification was similar to Q14 above. Answers were distributed over a range of 'very negative (2)' to 'positive (7).' Among the answers, 34 (66.7%) were negative responses (four points or below), while 12 (23.5%) were positive (six to seven points). The mean value was 3.98, and the standard deviation was 1.549.

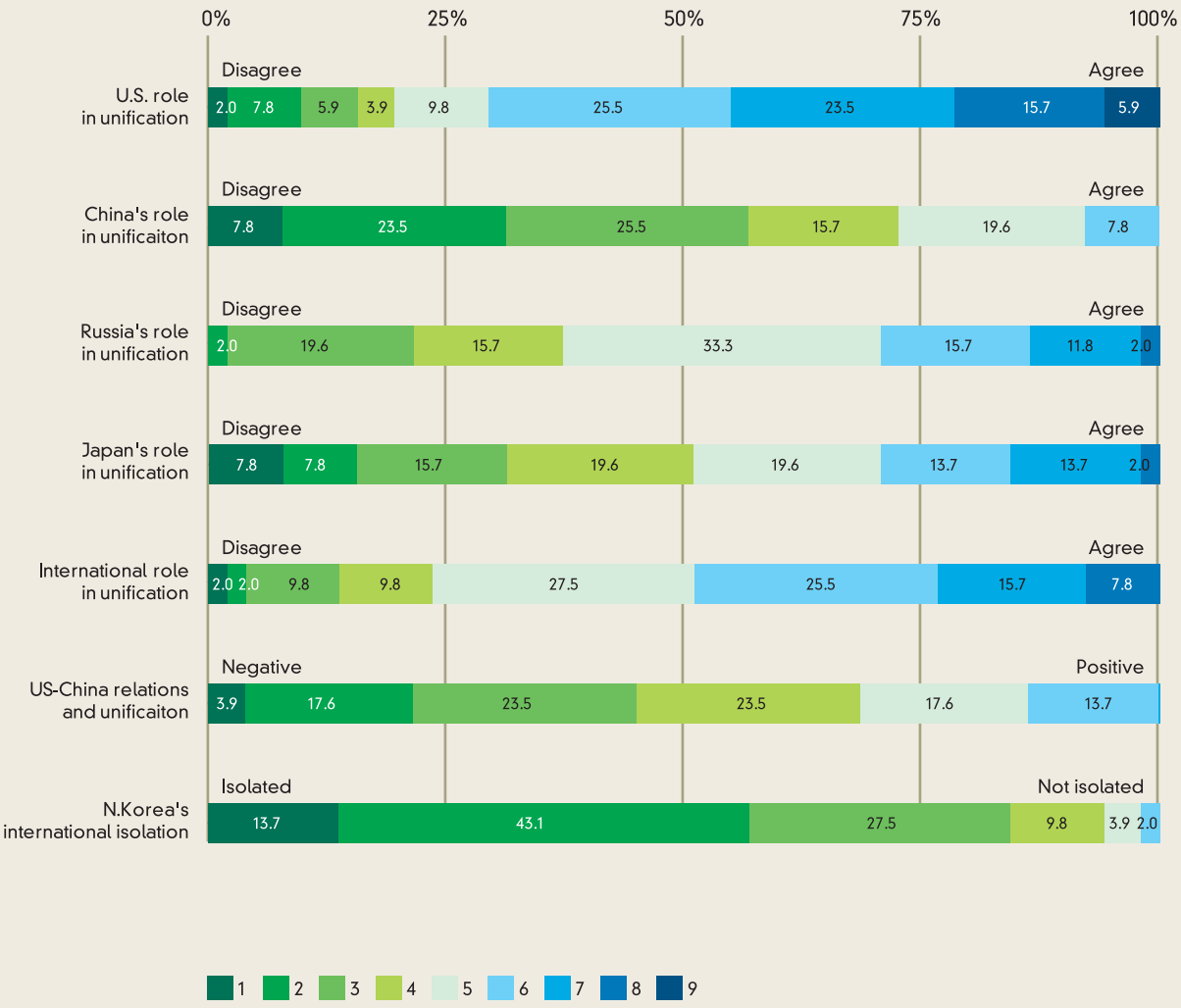
Q10) With regard to current inter-Korean economic cooperation, the response was quite negative. The mode value was 'two (very negative)' given by 23 respondents. A total of 44 respondents (86.3%) gave answers of 'somewhat negative (4)' or less. The mean value was 2.94, indicating a very negative view for this question.

Q16) Regarding social and cultural homogeneity between the two Koreas, the range of answers was narrower than the 2009 Delphi survey and also, the level of homogeneity was slightly lower. Of the respondents, 82.4 percent (42 responses) gave answers of 'somewhat negative (4)' or below in the 2010 survey. The mean value was 3.33 with a standard deviation of 1.108. In general, the panel viewed that there was significant social and cultural heterogeneity between the two Koreas.

Q17) In general, the panel showed concentrated negative views on inter-governmental mutual trust. With the mode value of 'very negative (2)' with 27 responses, all panelists answered negatively (four points or below). Worth noting, 14 respondents gave an extreme value of one point (extremely negative), which was seldom seen in the expert surveys. The mean value was 1.92 and the standard deviation, also low, was .724.

International Environment

The international environment was also a very important factor in the study of unification. Surveys of interest were conducted in surrounding countries: (Q31) The U.S., (Q30) China, (Q32) Russia, and (Q33) Japan. Moreover, there were questions on the attitude toward unification in the international community (Q34), as well as North Korea's isolation level (Q36). Considering its importance to the unification process, (Q35) Current US-China relations' influence on unification was added in the 2010 survey.



Q31) In the 2009 post-hoc analysis, the U.S. stance emerged as a prerequisite for absorption-type unification. The question was "Do you think that U.S. interests agree or disagree with the idea of Korean unification?" The answers to this question fell along a bimodal distribution in 2009, which continued to some extent in 2010. Panel members' views on the role of the U.S. were widely dispersed from 'extremely negative (1)' to 'extremely positive (9).' In sum, however, about 70.6 percent (36 responses) answered 'somewhat positive (6)' or above. The mean value was 5.96 with a standard deviation of 2.00. This is the only question in which the mean exceeded the mid-point 5, that is, the average evaluation of the four surrounding nations was positive.

Q30) According to the 2009 survey, China's stance on unification had a positive correlation with agreement-type unification. The results for the same question in the 2010 survey were similar. The panel members' view on China's role in unification was negative, with the mean value of 3.38 (standard deviation, 1.455). A total of 37 respondents (72.5%) gave answers valued at 'somewhat negative (4),' or below, while only four people answered 'somewhat positive (6).'

Q32) Panel members' views on Russia's role in unification of the Korean peninsula appeared to be neutral. Of the responses, the mean value was 4.84, with 17 concentrated on a mode of 'neutral (5 points).' Regarding Russia's role, 19 responded (37.3%) negatively while 15 (29.5%), positively.

Q33) Panel members were slightly more negative toward Japan's role in unification than of Russia's. Of the respondents, 26 (51%) gave negative answers, while 15 (29.4%) answered positively. The mean value was 4.41 with a standard deviation of 1.835.

Q34) The Delphi panel viewed that the international community would be somewhat friendly to unification of the Korean peninsula. A total of 26 responses (53%) were distributed between five (neutral) and six (somewhat positive) points, but the range of answers was quite wide. Negative responses totaled 12 (23.5%). The mean value was 5.37 with a standard deviation of 1.574.

Q35) This question was first introduced to the 2010 survey considering the importance of the two countries' stance and their relations. The average of 3.75 reflects the panel's negative evaluation. Answers from 'extremely negative (1)' to 'somewhat negative (4)' were given by 68.6 percent (35 respondents), while only seven (13.7%) gave answers of 'somewhat positive (6).'

Q36) This question presented a 1-to-9 point scale along a continuum from 'isolated' to 'not isolated.' Views on North Korea's isolation were more negative compared to 2009. About 94.1 percent (48 respondents) gave answers of four points or below. The distribution pattern was quite similar to 2009, but fewer respondents answered 'not isolated (6 points or above).' Moreover, the distribution was closer to the extreme value, with a mean value of 2.53 and a standard deviation of 1.102.

Chapter II

Non-Panel Experts and Inter-Korean Businesspeople

In addition to the Delphi panel, two groups, the non-panel experts and the inter-Korean businesspeople, were organized as comparison groups for the Delphi panel. Surveys were conducted on the two groups, which were considered to be more familiar with North Korea and had easier access to information than the average person.

Gaesong Industrial Complex

In addition to the Delphi panel, two groups, the non-panel experts and the inter-Korean businesspeople, were organized as comparison groups for the Delphi panel. Surveys were conducted on the two groups, which were considered to be more familiar with North Korea and had easier access to information than the average person. For the non-panel expert group, 50 participants were selected through a non-proportional quota sampling, from a list of researchers and scholars in the fields of diplomacy, security, and North Korean studies. The list was identical to the one used for the Delphi panel selection in 2009. The same questionnaire answered by that panel was sent to the new groups via email. The groups received the following: the 2009 post-hoc analysis, questionnaires on the unification clock and unification factors, and open questions. In the final tally, 30 responses were collected.

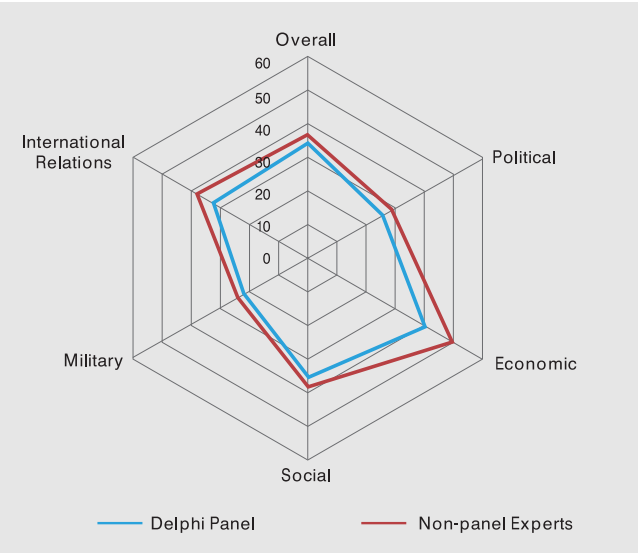
The inter-Korean businesspeople included managers and staff working in the Gaesong Industrial Complex, were the only group who regularly visited North Korea in an official capacity during the period of 2009-2010. With the help of the Corporate Association of Gaesong Industrial Complex, this group was the first of its kind to be surveyed under the auspices of this study. A total of 20 copies of the questionnaire were distributed, and all were returned.

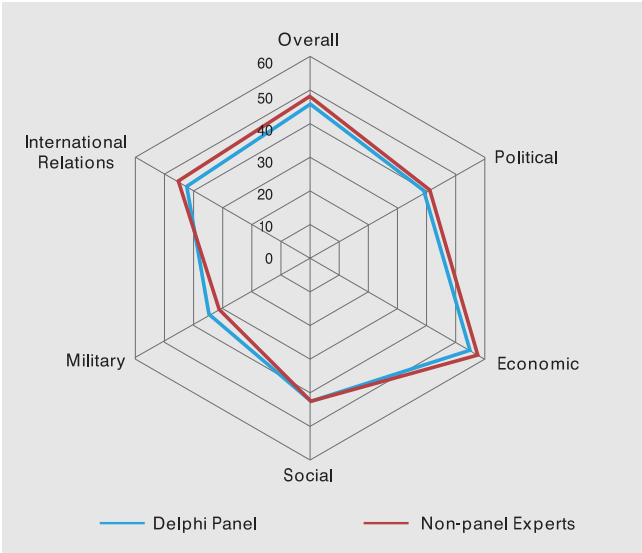
At first, the non-panel experts and businesspeople were categorized into a single group for frequency analysis, but when differences between them were found, the groups were separated. Given that there were 30 and 20 questionnaires, respectively, it was difficult to strictly apply the parametric statistics approach. The features of the two groups were distinguishable, however, and there was no problem in reviewing the general tendencies and characteristics of each.

1. Non-panel Experts

All of the non-panel experts were first exposed to the questionnaire in 2010. Since they were selected from the same list from which the Delphi panel was chosen in 2009, the two groups showed more similarities than differences. First of all, certain patterns emerging from the answers of both groups (for each unification clock) were very similar: (1) They saw that absorptive unification was more likely than agreed unification, and (2) economic and social areas were closer to unification than political and military areas. In particular, the non-panel expert group's evaluations on absorption-type unification were almost identical with those of the Delphi panel. In fact, the group viewed all six agreement-type unification clocks more positively, with the hands on the non-panel experts' clock advancing one hour and ten minutes ahead of the clock of the Delphi panel. Moreover, the radar charts clearly showed the similarities and differences between the Delphi panel and non-panel experts.

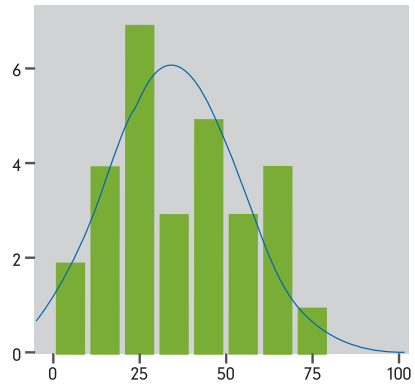
The Delphi Panel vs Non-panel Experts: Agreement-type (left) and Absorption-type (right)





Overall Agreement-type Unification Clock (N=30)

Non-panel Experts
04:07
Panel +22min



The non-panel experts' evaluation of the overall agreement-type unification clock was 4:07, which was 22 minutes faster than the Delphi panel's clock, converted from the mean value of 34.35. The non-panel experts' response was widely dispersed, ranging from 5 to 75 with a standard deviation of 18.933. A total of 24 responses (79.3%) were negative regarding this agreement-type clock.

Agreement-type Unification Clocks by Area

Political
03:15
Panel +30min

Economic
05:52
Panel +1hr 10min

Social
04:34
Panel +33 min

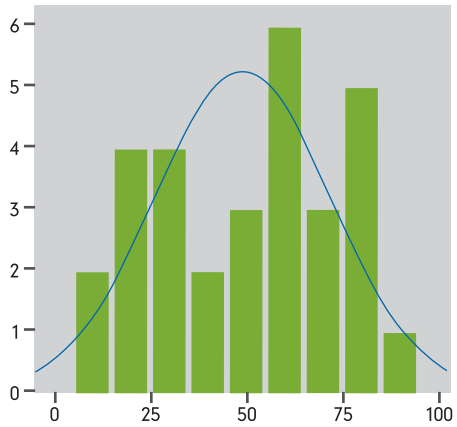
Military
02:46
Panel +32min

International Relations
04:39
Panel +55min

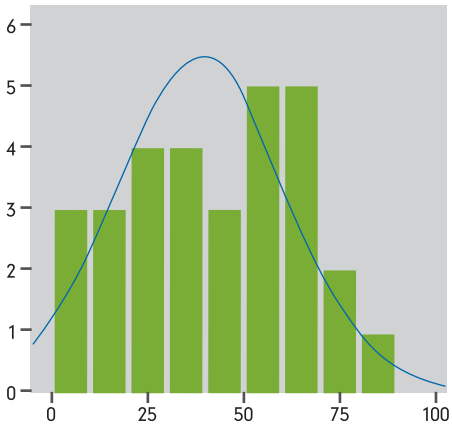
All five sub-areas were less negative than the Delphi panel. By area, the political- and military-area clocks were considerably slower than those of the economic and social areas: The hands of the economic-area clock advanced 2 hours and 6 minutes ahead of the military-area clock. The mid-point is 6 o'clock-dividing the negative/positive continuum toward unification: the economic-area clock approached the mid-point by only 8 minutes less. It is worth noting that despite the small number of cases, the range and standard deviation were more widely dispersed than the Delphi panel.

The non-panel experts' political-area agreement-type unification clock indicated at time of 3:15, 30 minutes faster than the Delphi panel. Still, the time indicates a considerably negative evaluation for this area. The mean value was 27.03 with a standard deviation of 17.678. The answers were distributed over a range of 2 to 65 points. Negative answers of 50 points or less (before six o'clock) totaled 26, or 83.3 percent.

Histogram: Economic-area Agreement-type Unification Clock by Non-panel Experts



Histogram: International relations-area Agreement-type Unification Clock by Non-panel Experts



The highest points were obtained for the economic-area clock, indicating 48.8 on average, which was converted to a time of 5:52. While these results could be considered slightly negative if only the average points are considered, the evaluation was reviewed in the context of other statistics because the view of the experts in this sector was more dispersed than in other sectors. The standard deviation was 22.807 with a significantly wide range (10 to 90). Fifty percent (15 respondents) gave answers of 51 points or more and the other 50 percent gave answers of 50 points or less. In other words, there was a clear division of the two groups at around six o'clock. A bimodal distribution was seen in the histogram as well, in contrast to the Delphi panel, which had a negative response of 50 points or less (88.2%).

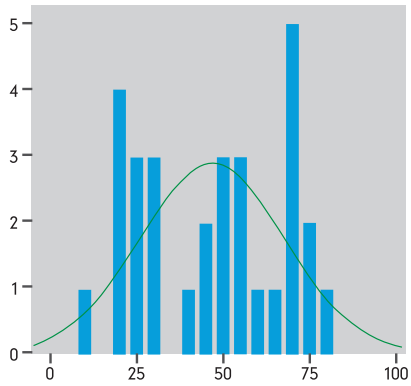
Dispersed answers were seen in the social sector, too. The mean value was 38.0 (converted to a time of 4:34) indicating a somewhat negative view. The standard deviation was 20.81 with a range of answers of between 3 and 70 points. About 76.7 percent (23 respondents) answered negatively with 50 points or below.

Among the agreement-type clocks, the military sector showed relatively concentrated views: The mean value was 23.03 (converts to 2:46), which was considered very negative for the agreement-type. The standard deviation (16.594) and the range (59) were also low. One of the 30 non-panel experts gave a 60-point response, while the remaining 96.7 percent respondents gave 50 points or less. The most frequent answer (by seven respondents) was 10 points, considered to be extremely negative.

Responses for the international relations-area clock were also dispersed. The unification time was 4:39, which was calculated from the mean value of 38.8. This is a 55-minute advance in time compared to the Delphi panel. For the international relations sector, responses to the agreement-type unification clock appeared somewhat negative. The modes were 30 points, 50 points and 60 points, answered by four respondents each. In general, 21 (70%) responded negatively with 50 points or below.

Overall Absorption-type Unification Clock (N=30)

Non-panel Experts
05:37
Panel +17min



The non-panel experts evaluated that the absorption-type unification clock would be faster than the agreement-type clock by an hour and 30 minutes. Furthermore, the non-panel experts' view on absorptive unification had less deviation than did the agreement-type.

The overall absorption-type unification clock indicated 5:37 (converted from a median value of 46.87). The standard deviation was 20.92. A total of 17 (56.7%) respondents gave answers of 50 points or less and 13 (43.3%) gave answers of 51 points or above, indicating a clear division of opinion among the experts. That is, responses to the absorption-type unification clock fell under two groups: 'very negative' and 'positive.'

Absorption-type Unification Clocks by Area

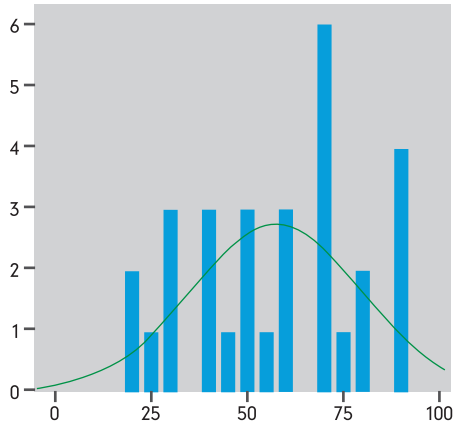
Political	Economic	Social	Military	International relations
04:41	**06:53**	**05:26**	**03:31**	**05:12**
Panel +16min	Panel +31min	Panel +0min	Panel -30min	Panel +43min

Among the five sub-sectors of absorption-type unification, only the military sector was found to have moved back -30 minutes slower than the Delphi panel. Generally, answers given by the non-panel experts were dispersed across a wide range and showed a high standard of deviation.

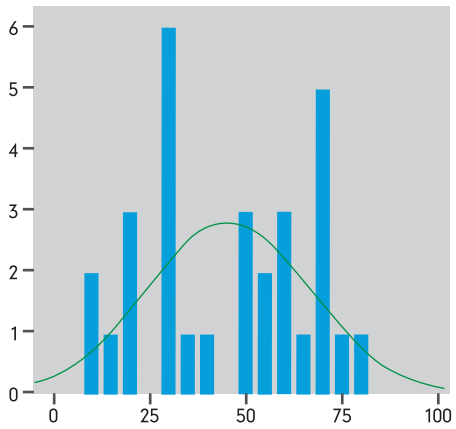
The time on the absorption-type unification clock for the political area was 4:41. The mean value was 39, with a standard deviation of 22.80, which is relatively high. A total of 21 respondents (70%) answered negatively, while nine registered positive views. The modes were 10, 20 and 70 points answered by four each. The clock advanced 16 minutes closer to unification than the Delphi panel.

The time on the economic-area absorption-type

Histogram: Economic-area Absorption-type Unification Clock by Non-panel Experts



Histogram: Social-area Absorption-type Unification Clock by Non-panel Experts



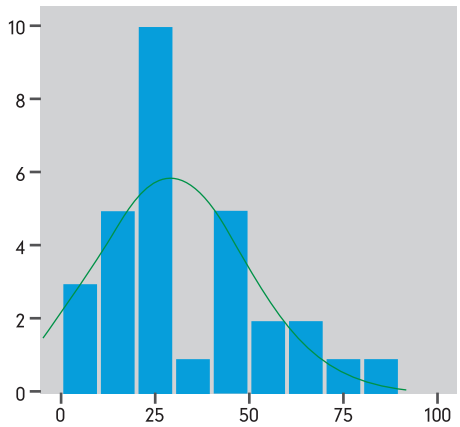
unification clock was 6:53, the only clock of non-panel experts group that exceeded the six o'clock mark. The mean value was 57.33 with a standard deviation of 21.882. Evaluations by non-panel experts fell between 20 and 90 points, with six respondent (20%) giving 76 points or above ('very positive') and 17 (56.7%) responding with 51 points or above. Except for the mode 70 points (6 respondents), scores were evenly distributed from 20 to 90 points, indicating a more widely dispersed view on this clock.

Worth noting, the time of unification for the social sector was exactly the same as that of the Delphi panel, with a mean value of 45.33, which converts to a time of 5:26. For the panel and the non-panel experts, the range of distribution was between 10 to 80 points, and both showed bimodal distributions. A total of 17 respondents or 56.7 percent gave answers worth 50 points or less and 13 respondents answered 51 points or above. The negative views were concentrated at a mode of 30 points (six respondents) and positive views were concentrated at 70 points, answered by six.

For the military sector, the non-panel experts' group evaluations set the clock at 3:31, an exceptional 30 minutes behind the Delphi panel. The mean value was 29.37 with a standard deviation of 20.451. As seen in the histogram, the group response ranged widely from zero to 80 points, but the distribution is centered on the left side. A total of 86.7 percent responded negatively (50 points or less).

The international relations-area clock was 5:12, 43 minutes closer to unification than the Delphi panel's clock of 4:29. The mean was 43.33, with a standard deviation of 21.429. While the responses ranged widely from two to 80, 70 percent (21 respondents) answered 50 points or below.

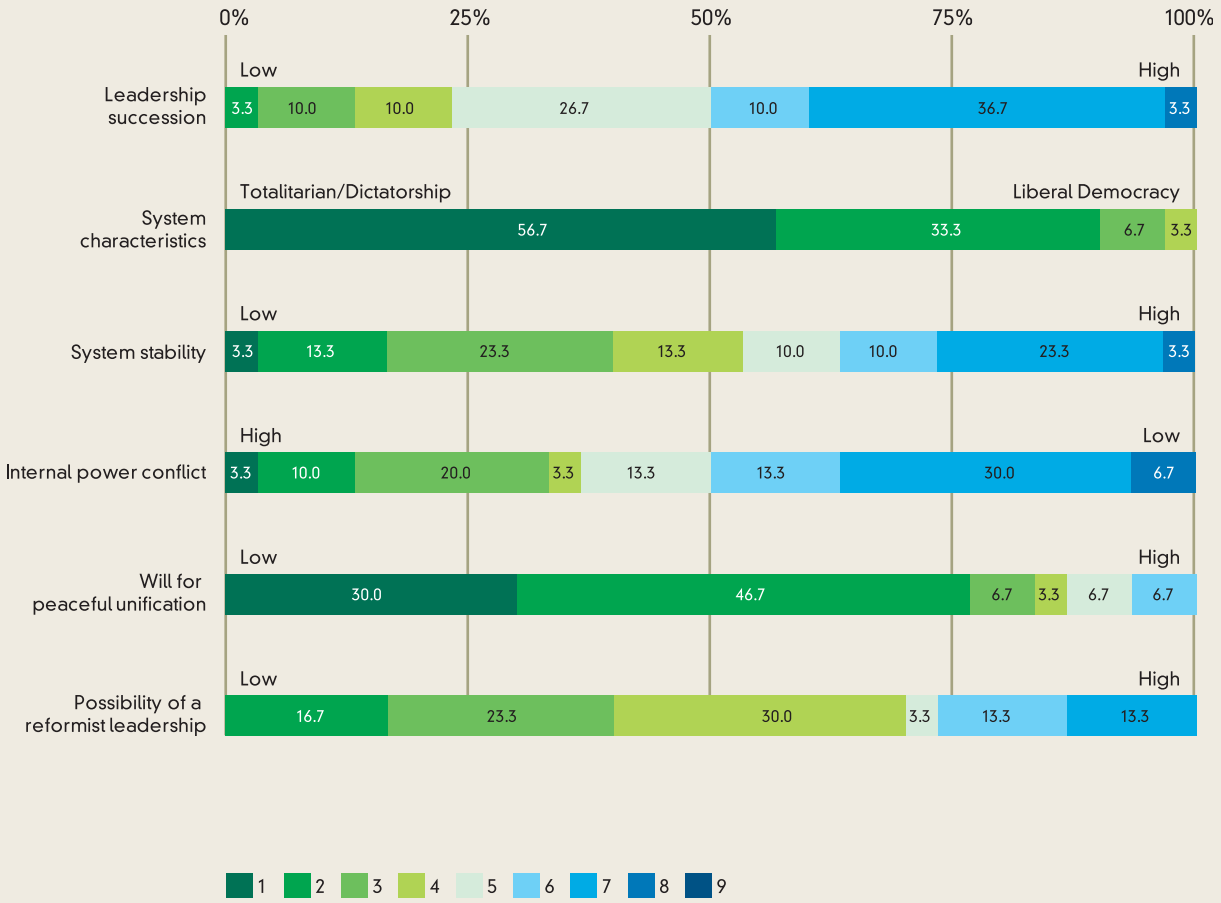
Histogram: Military-area Absorption-type Unification Clock by Non-panel Experts



Unification Factors: Non-panel Experts

North Korean Politics

The distributions seen in all six questionnaires on North Korean politics—from Q1 to Q6—are very similar to those of the Delphi panel. Considering that the non-panel experts' evaluations on both agreement-type and absorption-type clocks in the area of politics advanced the clocks closer to unification than those of the Delphi panel, this similarity needs to be analyzed more carefully in the future. One simple explanation is that the Delphi panel's reiterated feedback led to a more precise clock time.

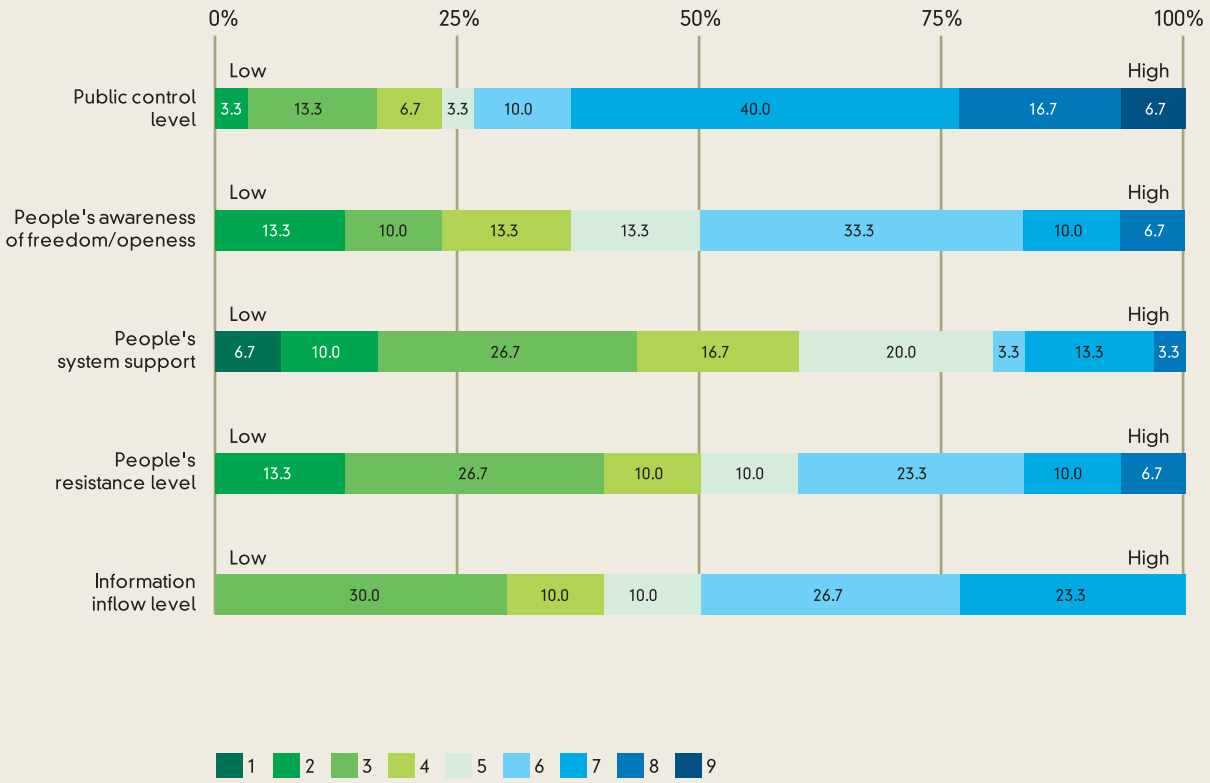


North Korean Economy

Non-panel experts viewed N. Korea's economic crisis more negatively. For (Q12) North Korea's economic system, and (Q13) reform and openness, they basically evaluated it as an extremely socialist planned economy. However, differences were within the margin of error. Though the answers were generally concentrated, views on (Q20) North Korea's market economic factors and private ownership were widely distributed.

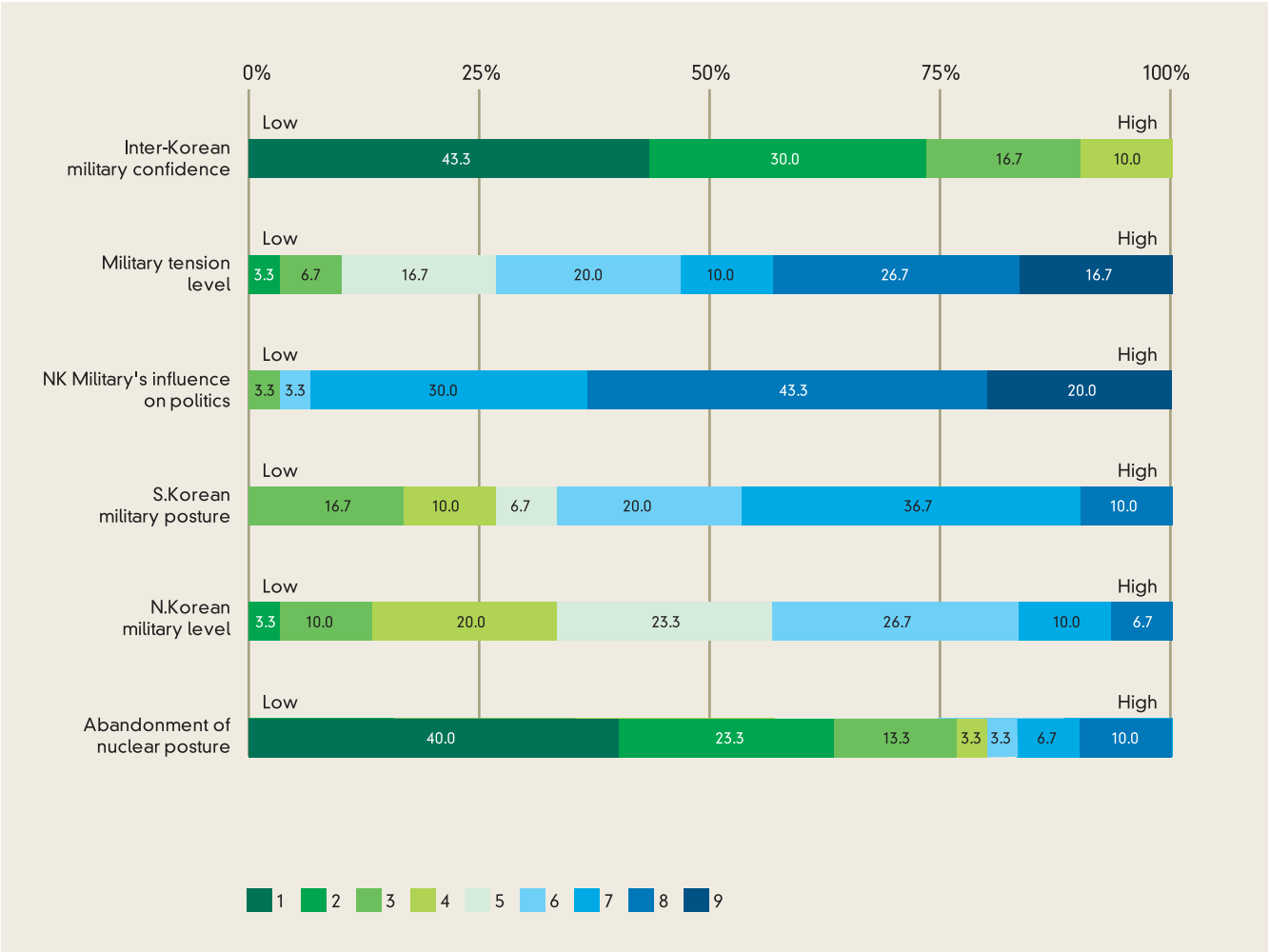
North Korean Society

Generally, answers regarding the social sector were distributed widely; in fact, the same way as the Delphi panel, within the margin of error. Slight differences are as follows: On the question (Q21) about North Korean residents' system support, the non-panel experts evaluated lower, while the Delphi panel's answers of high and low were equally divided. As for the question (Q22) on North Korean residents' resistance against the system, non-panel experts generally had a negative view, although a few more answered high compared to the Delphi panel.



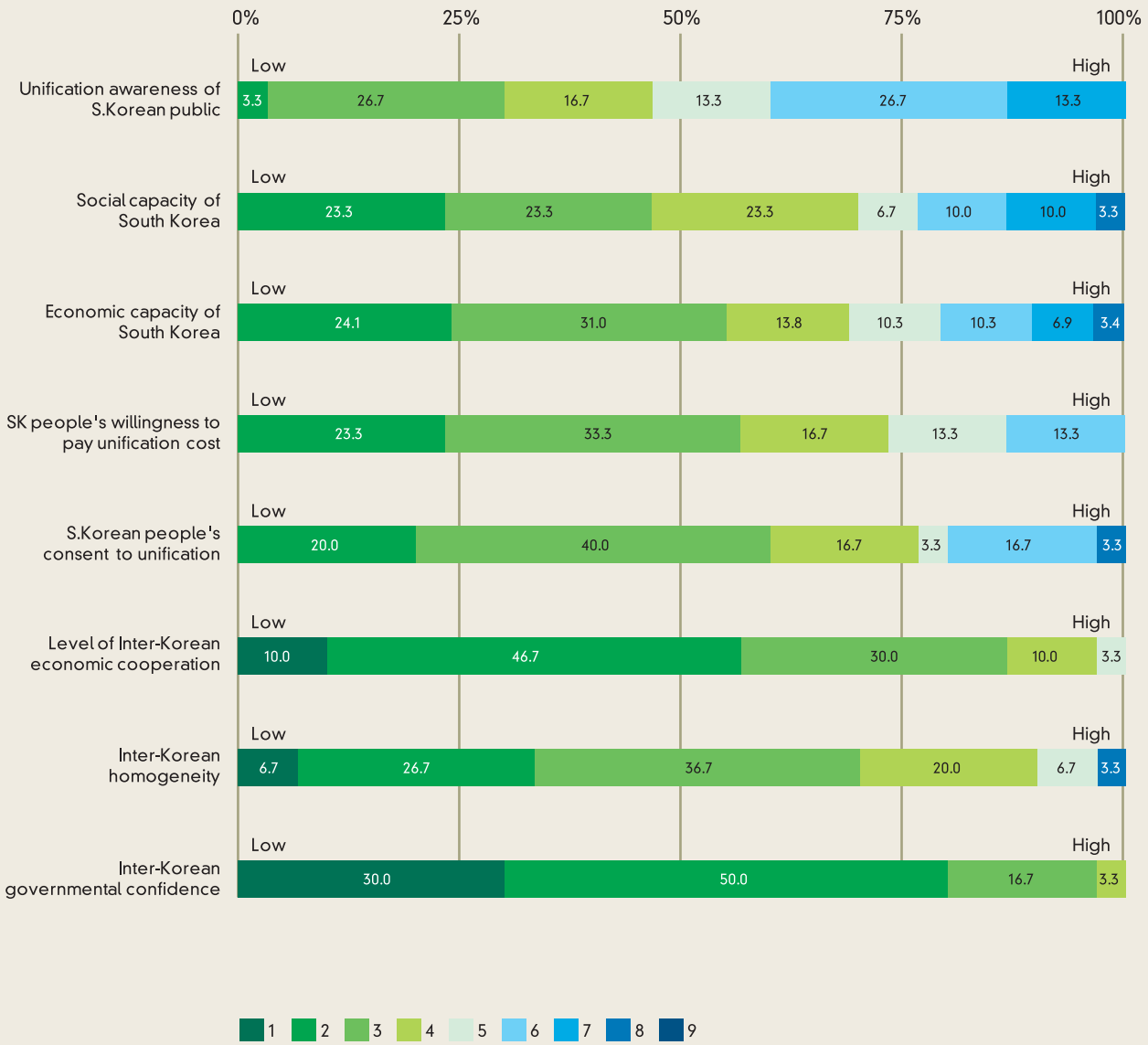
Military Area

Differences compared to the Delphi panel were also within the limits of acceptability. Non-panel experts viewed (Q24) military confidence building more negatively, when it came to (Q25) military tension, the Delphi panel viewed it more negatively.



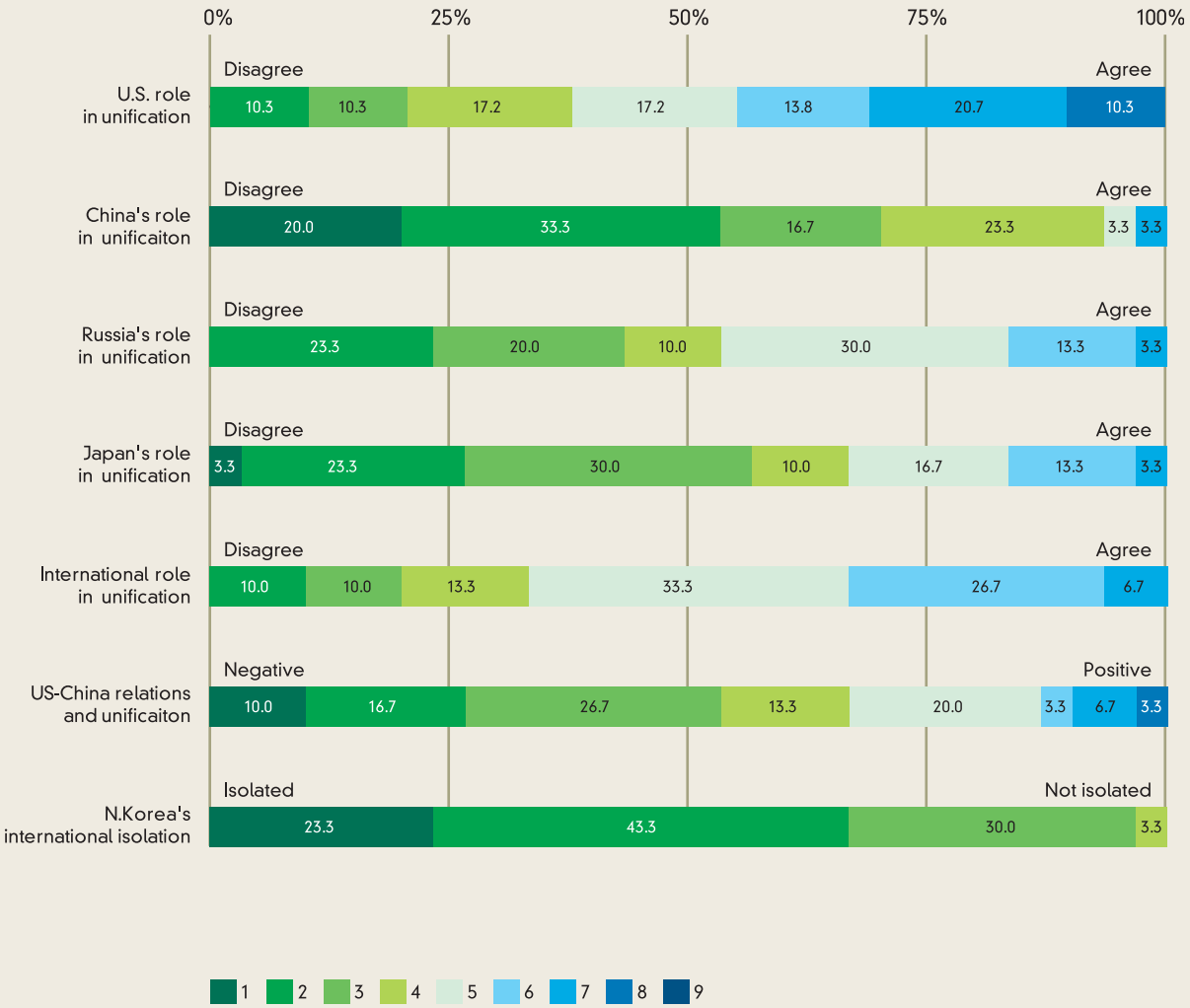
South Korea's Capability and Inter-Korean Relations

Generally, answers by non-panel experts were either similar or more positive than the Delphi panel, but when it came to (Q9) South Korea's economic capacity or (Q10) economic cooperation, it responded more negatively than the Delphi panel.



International Environment

Non-panel experts viewed the current international community as not amicable to unification. When compared to the Delphi panel, the experts rated more negatively (Q30) on the role of China, and (Q33) on Japan. On the contrary, views about the U.S. were distributed widely. There were slightly more positive responses (the USA was friendly) than negative ones. Many viewed that the US-China relationship would have a negative effect on unification.



2. Inter-Korean Businesspeople

South Korean businesses engaging in inter-Korean economic cooperation are considered to have their finger on the pulse of North Korea. They not only have more experience in dealing with the North, but also have accessibility to vital North Korea-related information. When it comes to Gaeseong Industrial Complex, since April 2004 when it opened for business on the model site, participating corporations have been accumulating business experience with North Korea. In fact, research for this study was conducted in cooperation with the Corporate Association of Gaeseong Industrial Complex. Through this cooperation, we conducted for the first time a survey of South Korean businesspeople working on North Korean projects. While a comprehensive evaluation is difficult because of the limited sample, no problem was seen in implementing an approximate trend analysis. Given that these businesspeople frequently and regularly visit North Korea, the survey is considered to be meaningful.

The surveys were sent by e-mail?20 copies were distributed by the Association and all copies were returned between August 22, 2010 and September 11. The 2009 post hoc analysis, which was distributed to the Delphi panel and non-panel experts, was not distributed. This survey, together with that given to the 30 non-panel experts was initially intended to supplement the sample size of the Delphi panel. During the analysis, however, it was discovered that the Delphi panel and non-panel experts could be considered as part of the same group, but the businesspeople in Kaesong needed to be treated separately.

The business people's views on unification were significantly different from those of the Delphi panel and the non-panel experts. In the case of the overall agreement-type unification clock, responses by businesspeople resulted in a unification time of 5:16. This was one hour and 31 minutes closer to unification than the Delphi panel's 3:45 and one hour and 9 minutes closer than the non-panel experts.

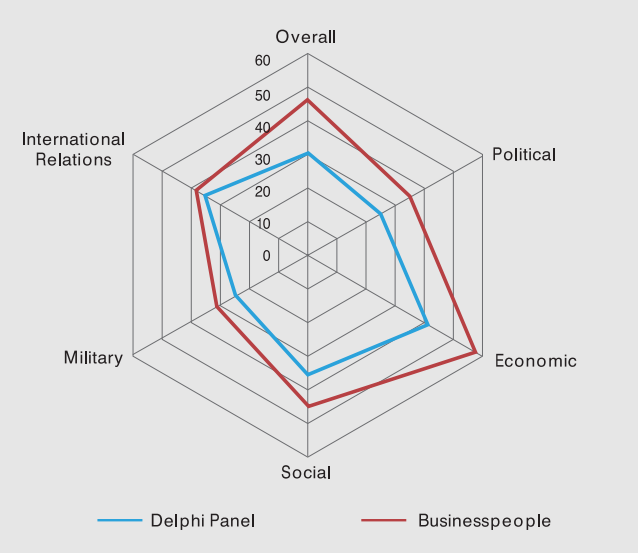
With regard to the absorption-type unification clock, a more unusual outcome emerged. Four of the five groups (Delphi panel, non-panel experts, inter-Korean businesspersons, the general public and North Korean refugees) viewed that absorptive unification would be more likely to happen than agreed unification, as evidenced by their absorption-type unification clocks which ran faster than their agreement-type clocks. The views of the businesspeople were totally opposite these other groups.

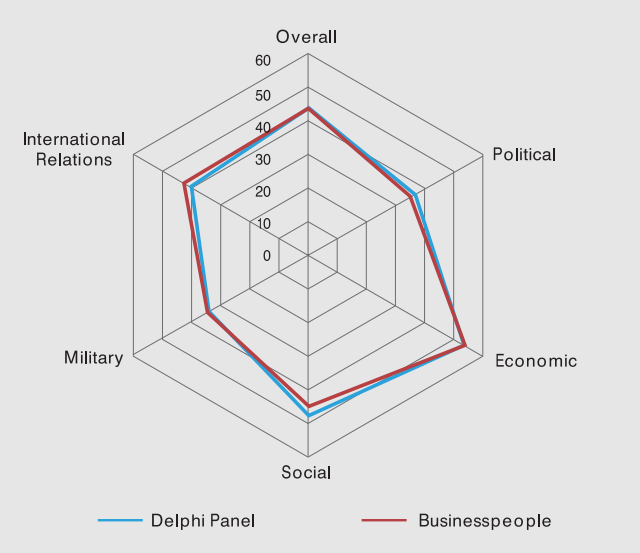
It is too early to judge the responses given by the Gaesong group, given the limited number of cases and lack of representativeness. Considering the time gap among the sub-areas of the unification clock, however, the truth of their answers cannot be doubted. They also gave lower points to the political and the military areas, while giving high points to the economic and social areas. In sum, despite the limited number of questions, the questionnaires were able to estimate a trend.

It seems that their unique responses for the agreement-type unification clocks were not based on the current situation; rather, they were based on what they expected for the future. Because business with the North is sensitively affected by the political situation between the two Koreas, they tended to give higher-valued responses to agreement-type unification, believing that it would be more favorable to their businesses. The economic sector was the best example. They estimated that the situation in 2010 was somewhat closer to agreed economic unification than it was to absorptive economic unification. Survey results put the agreement-type economic-area unification clock at 6:33, which was an hour and 51 minutes closer to unification than the Delphi panel's 4:42. Moreover, the time was eight minutes faster than it was for absorptive unification time (6:25). The absorption-type unification clock estimated by the other three groups in 2010 was closer to 12 o'clock than it was for the agreement-type unification clock. Again, because of their dealings with North Korea, businesspeople gave higher scores, reflecting the wish for smooth economic unification.
On the other hand, their responses were not significantly different from other groups with regard to the survey on unification factors. Distribution of the responses did not contrast sharply with results of other groups despite the

limited number of cases (20).

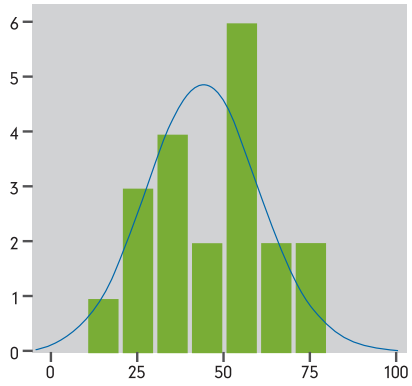
The Delphi Panel vs Inter-Korean Businesspeople: Agreement-type (left), Absorption-type (right)





Overall Agreement-type Unification Clock (N=20)

Inter-Korean Businesspeople
05:16
Panel +1hr 31min



The time for the overall agreement-type unification clock based on answers by those doing business in North Korea was 5:16, which was converted from a mean value of 43.90. According to the overall distribution, respondents seemed somewhat negative to agreement-type unification. The most frequent answer was 50 points given by five respondents. For clarification, a 50-point answer is considered to be the mid-point on a scale of 1-100. A total of 10 respondents gave answers of 50 points or below, while five gave answers of 51 points or above. Answers were distributed widely from 10 points to 76 points.

The inter-Korean businesspeople had a different view compared to the scholar groups represented by the Delphi panel and non-panel experts. The clock hands advanced an hour and 31 minutes closer to unification than the Delphi panel's clock, and an hour and 9 minutes closer than that of the non-panel experts.

Agreement-type Unification Clocks by Area

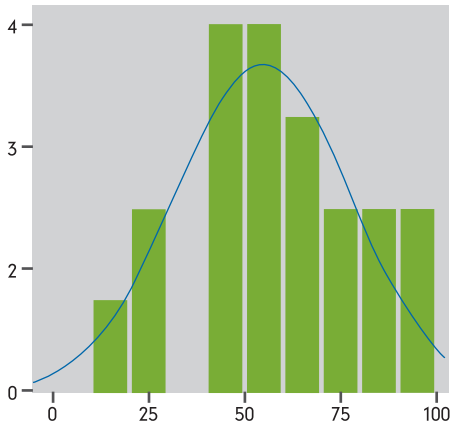
Political	Economic	Social	Military	International Relations
03:58	**06:33**	**05:19**	**03:37**	**04:23**
Panel +1hr 13min	Panel +1hr 51min	Panel +1hr 18min	Panel +1hr 23min	Panel +39min

The relative time by area appeared to be similar to the panel's time: unification time in the political and military areas ran behind, while time in the economic and social sectors were closer to unification. However, there was a significant time gap compared to the Delphi panel, just as had occurred with the overall unification clock. The widest gap was seen in the economic area (by an hour and 51 minutes) and the narrowest gap was 39 minutes in the military area. Unexpectedly, the economic-area agreement-type clock was at 6:33, a 33-minute advance past the mid-point of 6 o'clock.

Time on the agreement-type political-area unification clock was 3:58, which was converted from a mean value of 33.05, with a standard deviation of 19.338. The answers were distributed over a wide range-from 10 to 80 points. A total of 17 respondents (85%) gave negative responses of 50 points or below.

As mentioned earlier, the economic area evaluated by the people doing business in North Korea yielded the most unusual results. Only this group believed that agreed unification was more likely than absorptive unification. Businesspeople put the unification time of agreement-type economic- area at 6:33. The mean value was 54.55 with a standard deviation of 22.464-the largest among all 12 clocks by the inter-Korean businesspeople. Answers by the businesspeople were widely dispersed from 10 to 90 points. Eleven (55%) answered positively with 51 points or more and four answered very positively (76 points or more). The most frequent answer (given by 4 respondents) had a value of 40.

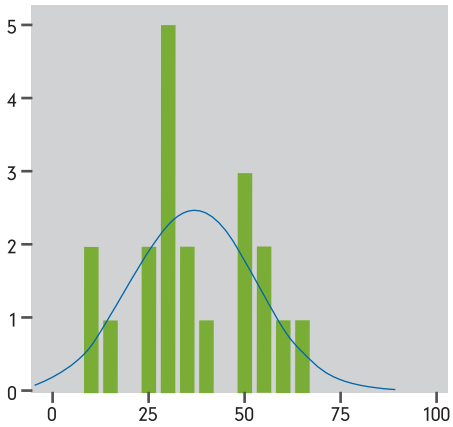
Histogram: Economic-area Agreement-type Unification Clock by Inter-Korean Businesspeople



In their responses, businesspeople expressed relatively positive thoughts on the agreement-type social-area compared to the panel. The clock in this area was at 5:19, meaning that the clock hands had advanced an hour and 18 minutes past the Delphi panel's clock. The mean was 44.3 with a standard deviation of 17,586. A negative response (50 points or less) was given to agreed unification in the social sector by 14 respondents (70%) and positive responses were given by six. The range of the answers was 10 to 70 points.

Of all 12 unification clocks for the businesspeople, the military-area agreement-type clock showed the slowest time: 3:37. The mean was 30.1 with a standard deviation of 17.639. The answers were distributed over a range of zero to 60 points. The dominant answer was 50 points or

Histogram: International Relations-area Agreement-type Unification Clock by Inter-Korean Businesspeople

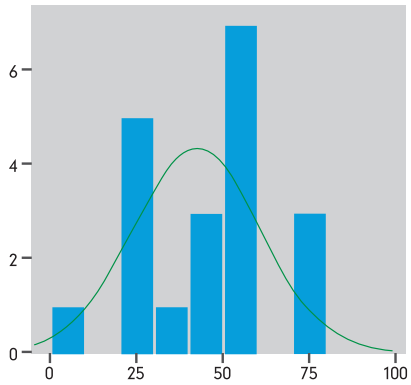


below, given by 18 respondents (90%). In case of the Delphi panel, the same clock indicated 2:14, an hour and 23 minutes behind the clock of the businesspeople.

The international-area unification clock was 4:23, converted from the mean value 36.55. It showed the least disparity among the 12 clocks with a narrow standard deviation of 16.113 and a point range of 10 to 65. The mode was 30 points answered by five respondents. A total of 16 respondents (80%) gave responses of 50 points or less. In sum, the businesspeople's international-area clock is 39 minutes closer to unification than the Delphi panel clock, which is at 3:44.

Overall Absorption-type Unification Clock (N=20)

Inter-Korean Businesspeople
05:05
Panel -15min



Inter-Korean businesspeople gave an unusually high score for agreement-type unification, but lower than the Delphi panel and non-panel experts for absorption-type unification. The overall absorption-type unification clock indicated the time of 5:05, which is 15 minutes behind the Delphi panel's 5:20. Given that the agreement-type unification clock is ahead by an hour and 31 minutes, it seems to be a very inconsistent response. The mean value was 42.35, with a standard deviation of 18.437. The range of answers was distributed from five to 70 points. There were six (30%) very negative responses (25 points or less) and 13 responses (65%) ranging from five to 50 points.

Absorption-type Unification Clocks by Area

Political
04:05
Panel -20min

Economic
06:25
Panel -3min

Social
04:57
Panel -29min

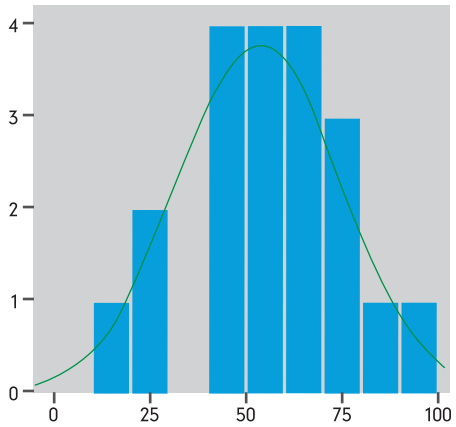
Military
03:59
Panel -2min

International relations
04:55
Panel -26min

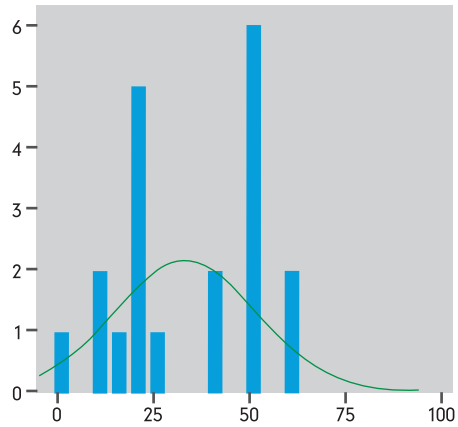
Unlike responses to agreed unification, the answers about absorptive unification were almost identical to those of the Delphi panel (rather negative). On absorptive unification alone, the businesspeople and the panel could easily be seen as the same group.

The absorption-type political area unification clock showed a time 4:05. The mean value was 34.05 with a standard deviation of 12.156. Ten respondents (50%) answered very negative (25 points or less), while 15 respondents (75%) gave answers valued at between 1 and 50 points. Only five respondents gave answers of 51 points or more. The absorption-type political-area unification clock was 15 minutes slower than the panel's time of 4:25. In other words, they believed there was less possibility of absorptive unification than the expert group.

Histogram: Economic-area Absorption-type Unification Clock by Inter-Korean Businesspeople



Histogram: Military-area Absorption-type Unification Clock by Inter-Korean Businesspeople



The absorption-type economic area unification clock indicated 6:25, and was the only one among the absorption-type clocks that passed the mid-point of six o'clock. The mean value was 53.5 with a standard deviation of 21.127. The answers were distributed from 10 to 90 points. Twelve respondents (60%) answered 51 points or above. The Delphi panel's unification clock in the same area showed a time of 6:22, which was only three minutes behind that of the businesspeople.

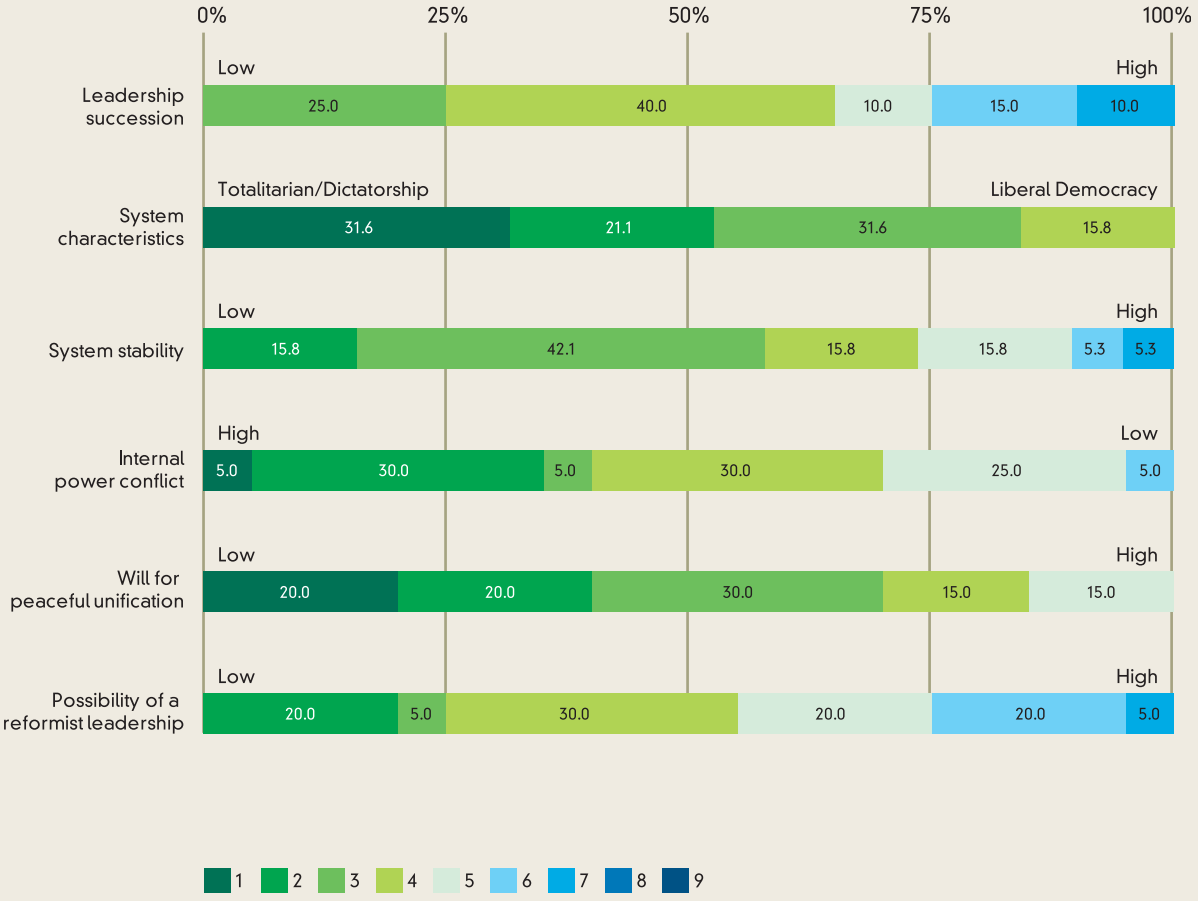
The absorption-type unification clock in the social area indicated a time of 4:57, derived from the mean value of 41.25. The most frequent answer was 50 points given by five respondents. Answers ranged in value from 10 to 90 points, and among them, answers of 50 points or less totaled 15 (75%). Compared to the same clock estimated by the Delphi panel (at 5:26), the businesspeople's estimated unification time was 29 minutes slower.
The businesspeople's relative time by areas remained the same compare to the Delphi panel and non-panel experts: The absorption-type unification clock in the economic area ran the fastest while the military area was the slowest. The military-area clock was positioned at 3:59, which was almost the same as the Delphi panel's estimate of 4:01. The mean value was 33.25, with a standard deviation of 18.671. The answers ranged from one to 60 points, the narrowest range among the 12 unification clocks. About 80 percent (16 respondents) indicated 50 points or below.

The Absorption-type Unification Clock by Area

Usually, a limited number of case studies will cause each value to be either underestimated or overestimated. Nevertheless, it is not difficult to read the general patterns that emerge. Since the results resemble those of the Delphi panel within statistical confidence interval, this review will highlight the differences.

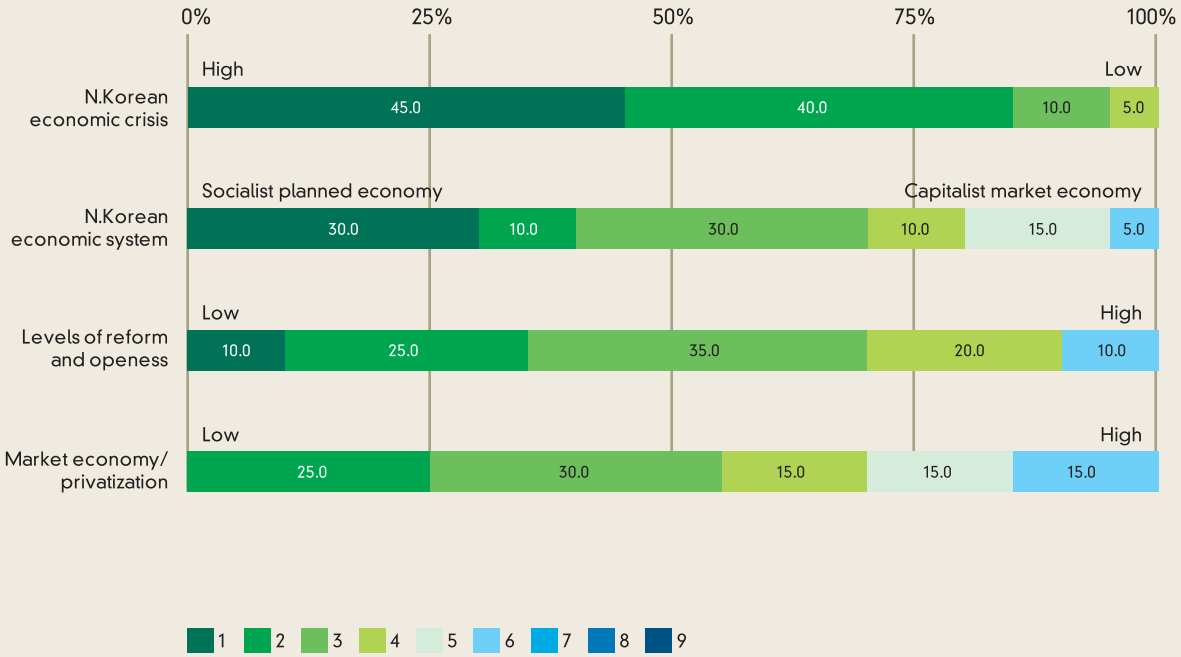
North Korean Politics

Businesspeople had a more negative view than the Delphi panel of (Q1) on the possibility of hereditary leadership succession. Their evaluation of (Q3) North Korean system stability was also slightly more negative.



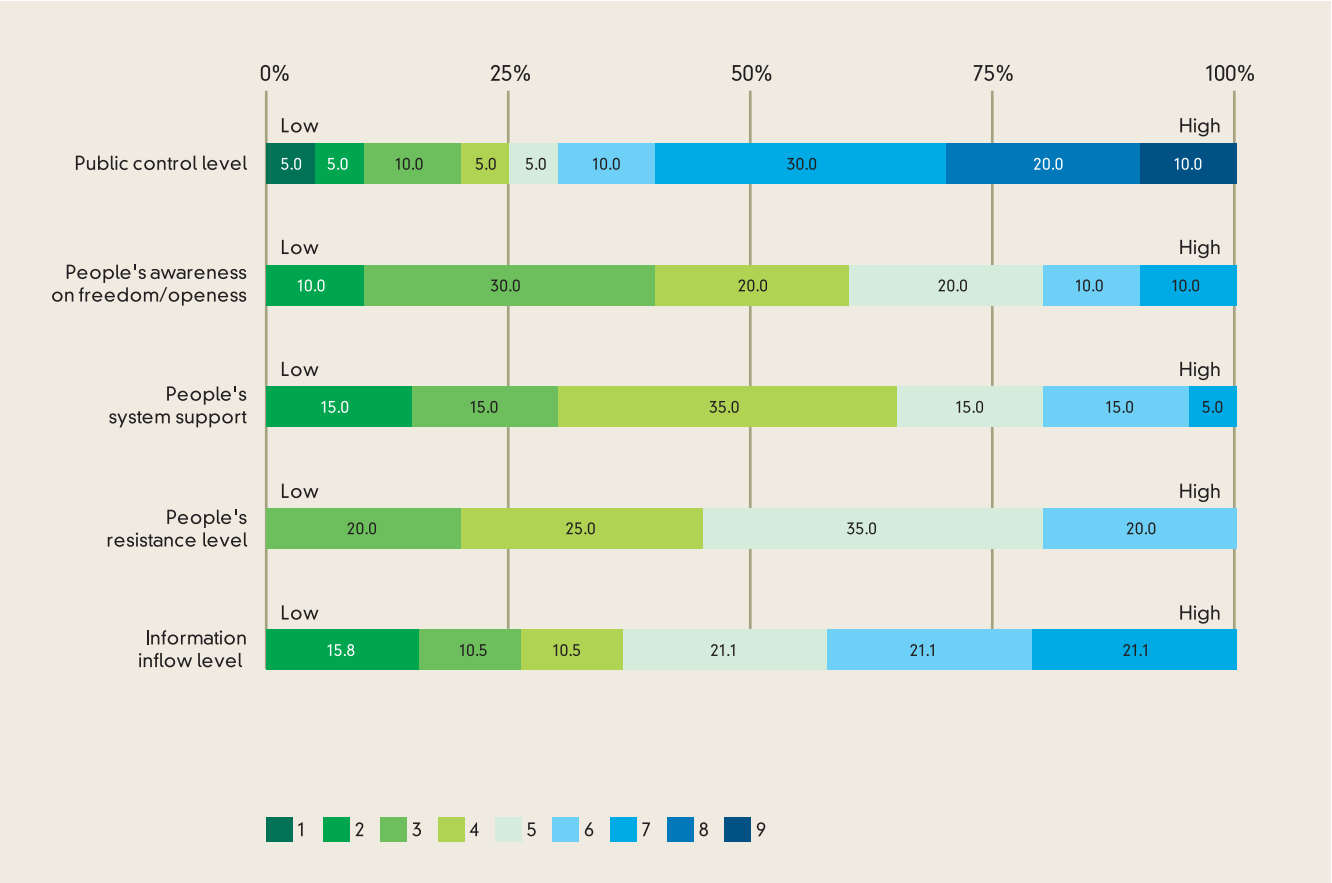
North Korean Economy

The businesspeople's view of the North Korean economy was relatively negative compared to the Delphi panel. They evaluated (Q11) on the North Korean economic crisis more negatively (no positive responses). For (Q12), they said it had an extreme socialist planned economy; and for (Q20) the view was that there was minimal spread of a market economy and privatization.



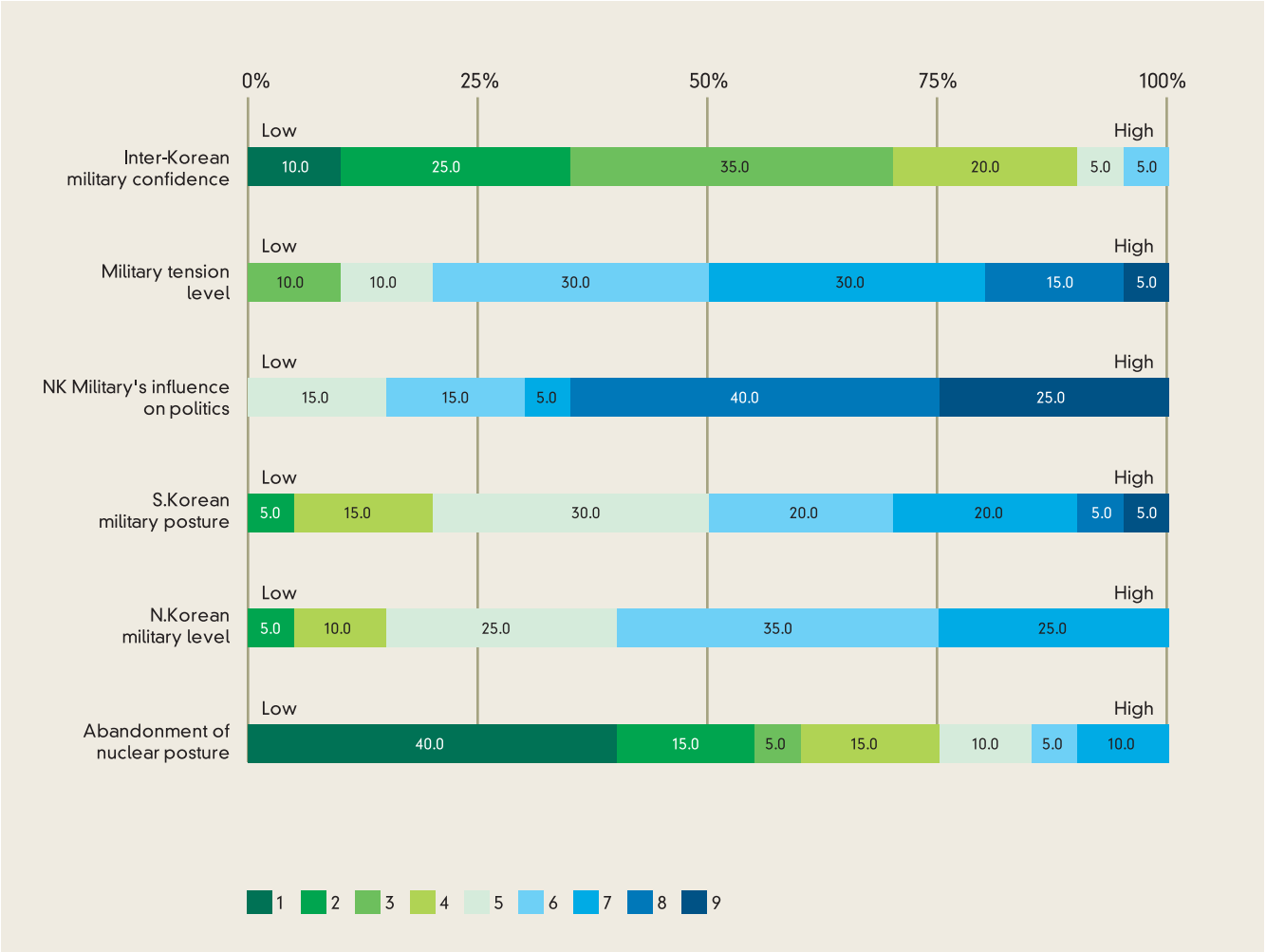
North Korean Society

Since the businesspeople group was the only one to have regular contact with North Korean residents during the 2009-2010 period, their feedback in this area was of great importance. Generally, their evaluations of North Korean society show a similar distribution to that of the Delphi panel.



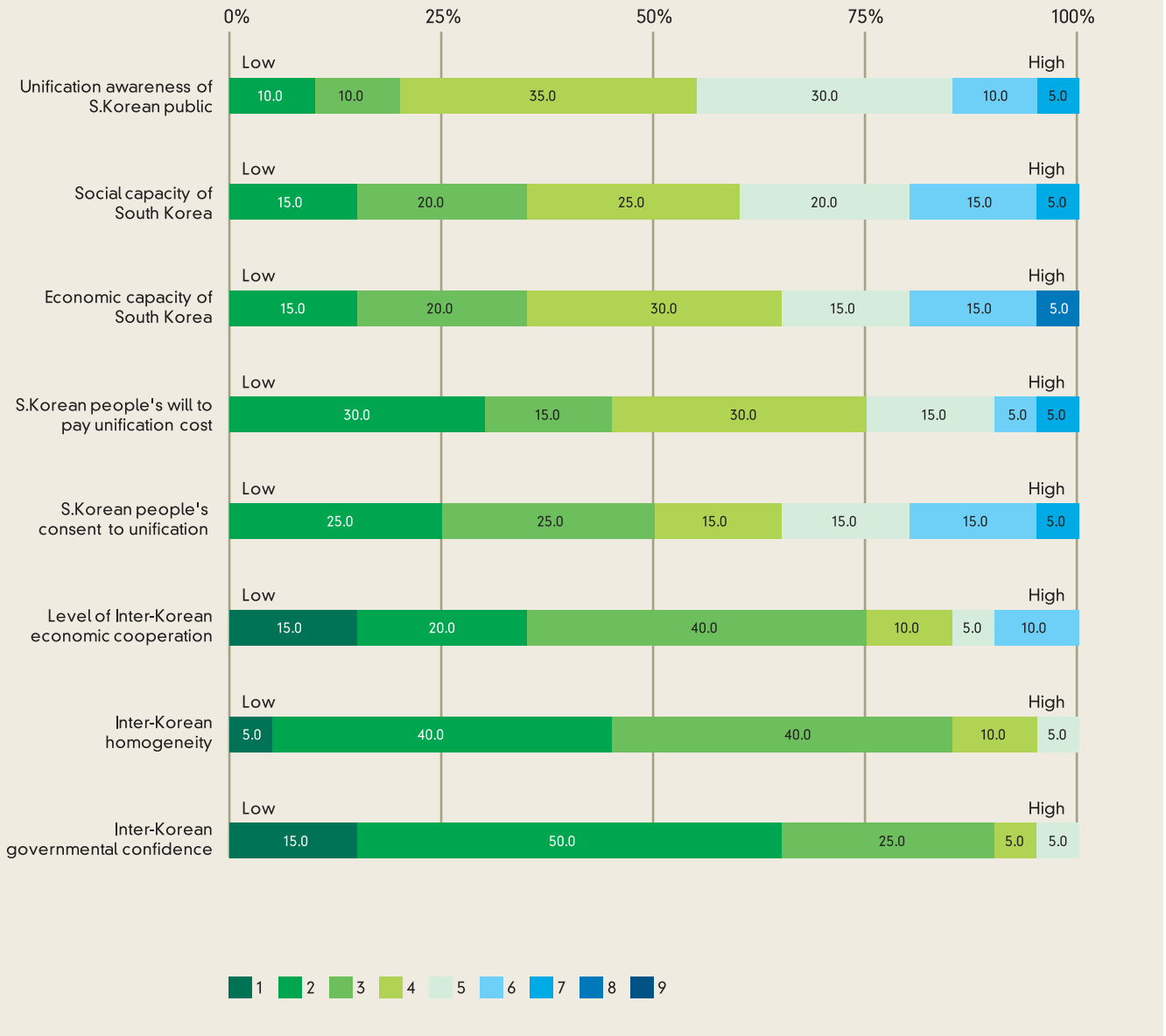
Military Area

Although the businesspeople's evaluation of the military showed a distribution similar to the Delphi panel, their view was less harsh than the Delphi panel, which was extremely negative in many cases. While data was within the limits of acceptability, businesspeople evaluated the South Korean military power (Q27) on the low side and North Korean military power (Q28) on the high side.



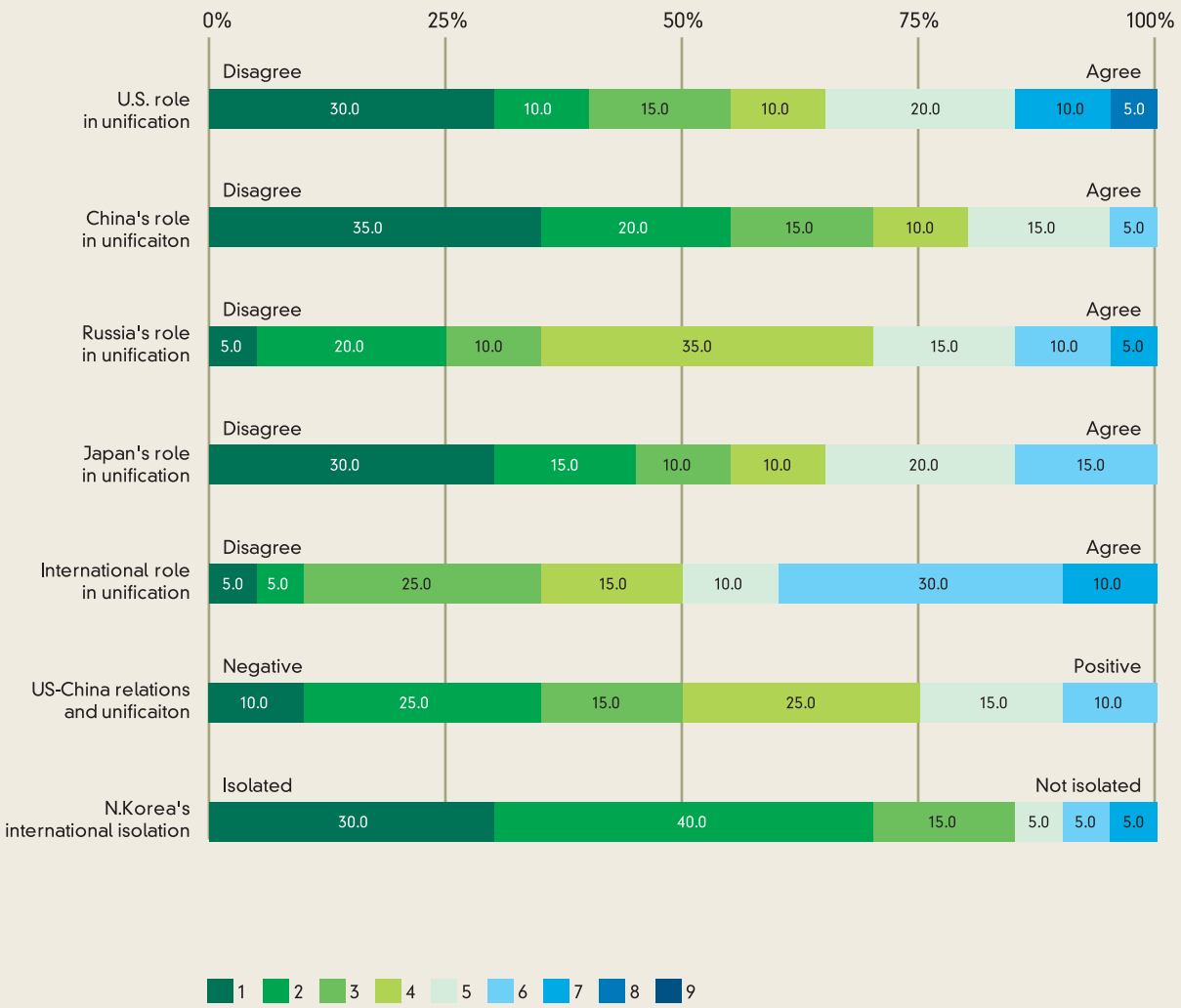
South Korea's Capability and Inter-Korean Relations

The distribution of answers in this area showed a very similar pattern to that of the Delphi panel.



International Environment

The businesspeople's view of the international role in unification was generally negative. Specifically, Japan was viewed to be less friendly than Russia regarding unification. The role of the USA for that same question resulted in the mean value of 3.45, a sizeable difference from the Delphi panel's 5.96. About 65 percent of the businesspeople viewed the USA as unfriendly.



Chapter III

North Korean Refugees

North Korean refugees present a unique and unusual case. Because they have experience in both North and South Korea, their evaluation of the unification clocks and factors were expected to be significantly different from the other groups.

Mobilized Pyongyang citizens at Kimilsung square.

North Korean refugees present a unique and unusual case. Because they have experience in both North and South Korea, their evaluation of the unification clocks and factors were expected to be significantly different from the other groups.

The survey on the refugees was conducted from August 31 to September 11, 2010, using the same questions given to the Delphi panel. Because the refugees were considered non-experts, the questions were modified to make them more understandable. A total of 100 copies were sent to °∞NK Intellectuals Solidarity°± and of those, 99 were returned. In as many cases as possible, interviewees were selected among those who had been educated in the North and had recently defected. This was to guarantee that they understood the long and difficult questionnaire and that their answers would reflect recent changes in North Korea.

Of the total, there were 36 male respondents and 60 females (three missing values), ages ranging from 25 to 62 (42.6 on average). The period of stay in South Korea ranged from one year to 20 years, or 5.98 years on average. Those who had defected within the past three years totaled 56. In terms of education in North Korea, 36 had attended middle school (graduated or dropped out), 21 had attended a college (graduated or dropped out) and 42 had attended university (graduated or dropped out). This sample was considered to have a higher-than-average education compared to other North Korean refugees. Of 99 respondents, 70 had held specialized positions, technical jobs or military assignments in the North.

The relative time on their 12 unification clocks was not significantly different from the other groups. Refugees also viewed that absorption-type unification would be more likely than agreement-type, more so in the economic and social areas than in the political and military areas. Noteworthy was the fact that the unification clocks in five areas appeared not to differ much, yet views on the two "overall" unification clocks were significantly different. Compared to the Delphi panel, the hands on the refugees' agreement-type unification clock advanced by an hour and 26 minutes while the absorption-type unification clock advanced by an hour and 20 minutes.

To identify the reason, a series of t-tests (comparison of means) was carried out and it was found that the level of education and gender were closely connected to the estimated unification time: The lower the education level of the respondent, the closer to unification. Females' answers also reflected a time that was closer to unification than males.

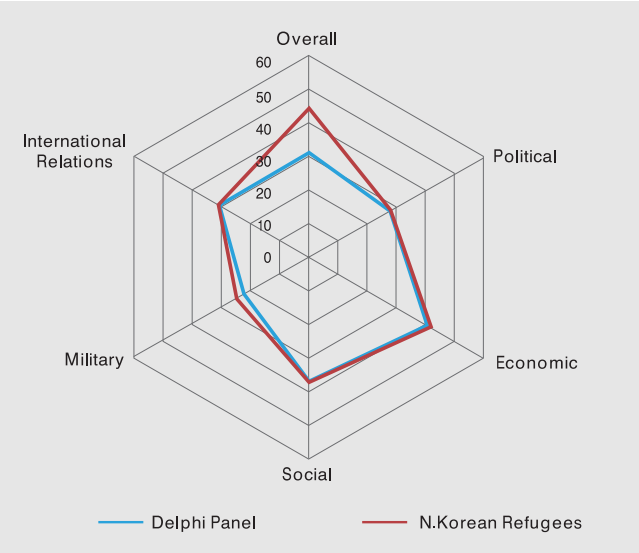
North Korean refugees' answers were wide-ranging; however, general tendencies could be identified. They gave the lowest scores for the military-area absorption-type, which set the unification clock at 2:45, while the unification time in the political area was 2:57. In contrast, the agreement-type economic-area clock was at 6:11.

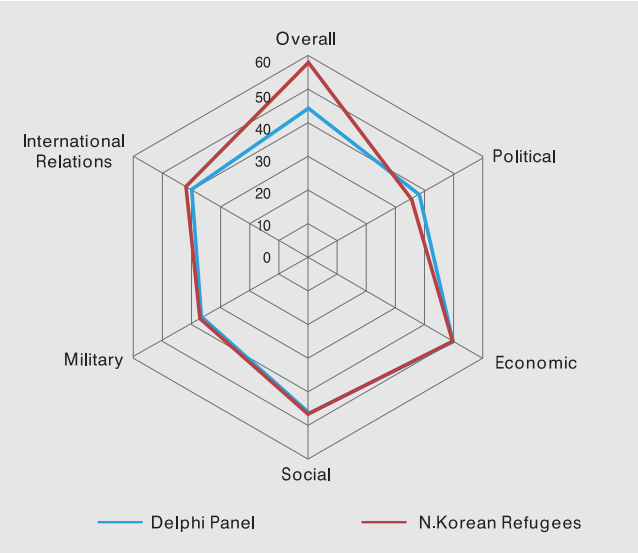
The survey on unification factors revealed some unusual features when compared to the Delphi panel members. Refugees were strongly against North Korean politics. For instance, while the expert panel responded positively to the question (Q1) on North Korea's hereditary succession, the defectors were mostly negative. Furthermore, the majority evaluated (Q2) the North Korean system as an extreme dictatorship and for (Q29) said the North would never give up its nuclear program. In terms of S. Korea's capability and recognition of unification, they were generally negative, yet they evaluated (Q9) South Korea's economic capacity highly.

Responses to the domestic situation in North Korea showed a unique pattern. Whereas the answers in other sectors were widely distributed, answers to (Q11) North Korea's economic crisis were concentrated on extreme values of one or two points. Answers to the question on (Q12) the economic system and (Q20) market economic factors were widely dispersed, which was attributable to individual experiences and to the time they defected.

The answers to the question on resistance against the North Korean regime were also unique. While other groups were dispersed bimodally with a mean value of five or less, the refugees' answers to the question on resistance and desertion yielded a high score with a mean value of six.

The Delphi Panel vs North Korean Refugess: Agreement-type (left), Absorption-type (right)

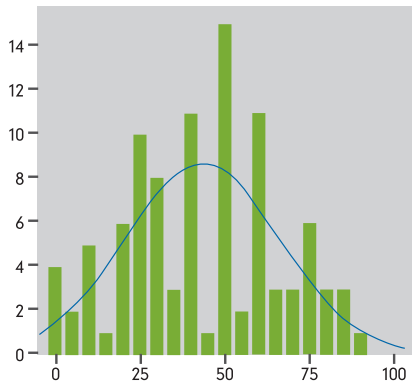




1. Unification clock

Overall Agreement-type Unification Clock (N=98)

NK Refugees
05:11
Panel +1hr 26min



North Korean refugees had a slightly negative view of agreed unification, indicating a time of 5:11, equal to a mean value of 42.24. The most frequent answer was 50 points (from 12 respondents). There was a wide range of answers, from zero to 90 points, and the standard deviation was 22.680.

Refugees showed significantly different views to agreement-type unification compared to the Delphi panel, the non-panel experts, businesspeople and the public. The unification time estimated by the public (the closest to unification) was 4:47 and the time estimated by the Delphi panel (the farthest from unification) was 3:45. The time lag between these two groups was 24 minutes and an hour and 26 minutes, respectively. Noteworthy was the fact that the refugees' views were wide-ranging, when compared to the other groups.

Agreement-type Unification Clocks by Area (N=96~99)

Political
02:57
Panel +12min

Economic
04:51
Panel +9min

Social
04:20
Panel +19min

Military
02:45
Panel +31min

International Relations
03:52
Panel +8min

Unlike the overall unification clock, unification clocks for each area generally coincide in terms of distribution and proportion. That is, refugees also gave low scores to the political and military sectors while giving a higher score to the economic sector. Compared with the Delphi panel, the time gaps of each area were relatively small, ranging from 8 to 31 minutes.

The agreement-type political-area unification clock indicated a time of 2:57, which was converted from a mean value of 24.55 with a standard deviation of 21.368. The answers were widely distributed, ranging from zero to 80 points. Of 98 respondents, about 87.8 percent gave answers with values of 50 or below. The mode value was 20 points; however, 17 respondents were concentrated on the extreme value of zero.

The unification clock in the economic area was at 4:51, which was converted from the mean value of 40.39. The range was from zero to 95 points, with a standard deviation of 24.047. The mode value was 30 (15 respondents), and about 73.5 percent responded 50 points or below. The expert panel gave a unification time of 4:42 for the same clock, while refugees estimated the time as nine minutes closer to unification. The refugees' time was nine minutes closer to unification than the expert panel's unification time of 4:42 for the same clock. Thus, no significant gap was seen.

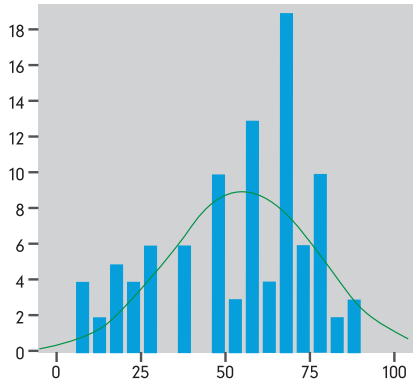
The social-area unification clock indicated 4:20, converted from the mean value of 36.09. Both the standard deviation of 24.045 and the range from zero to 100 indicated a wider distribution of respondents. Of 99 respondents, about 76.8 percent (71 refugees) answered 50 points or less. In the social area, the clock was 19 minutes faster than that of the Delphi panel (4:01).

The unification clock in the military area indicated a time of 2:45, which was farthest from unification among all 12 clocks. The mean was 22.97, with a range from zero to 85 points. For this area, refugees gave answers yielding extreme values. A total of 45 respondents gave answers of 10 points or less and 24 even gave zeros. In sum, about 89.7 percent responded negatively. For the expert panel the same clock was at 2:14, even further behind (31 minutes) the refugees' evaluation.

Regarding international relations, refugees were divided, some with positive opinions and some with negative. The answer yielded a mean value of 32.22, converted to a time of 3:52. The most frequent answer from 19 respondents was 10 points. Of 96 valid cases, a total of 73 respondents gave answers of 50 points or less (76%), yet, a considerable number of respondents gave answers valued at 51 points or more. The clock estimated by the refugees was eight minutes closer to unification than the expert panel.

Overall Absorption-type Unification Clock (N=97)

NK Refugees
06:40
Panel +1hr 20min



The refugees' answers to overall absorption-type unification, as in the case of the agreement-type, was very extreme compared to those of the Delphi panel. The refugees estimated the absorption-type unification clock at 6:40 (unusual given that all other groups gave times before the mid-point, six o'clock). This was an hour and 20 minutes closer compared to the time of 5:20 estimated by the Delphi panel. This difference can be attributed to their positive view on absorptive unification itself. Viewing each area of the absorption-type clock below, no significant difference with the other groups was seen. The average score for general absorptive unification was 55.53. Answers were widely distributed from eight to 90 points and the standard deviation was 21.634. Of the 97 respondents, 60 (61.9%) gave answers with values of 51 points or above.

Absorption-type Unification Clocks by Area (N=95~98)

Political
03:56
Panel -29min

Economic
06:11
Panel -11min

Social
05:22
Panel -4min

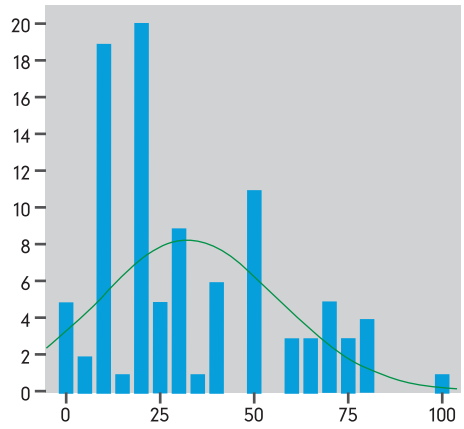
Military
04:10
Panel +9min

International relations
04:43
Panel +14min

The relative differences in time between each area are normal: Clocks for economic and social areas run faster than those for political and military areas. They were more widely distributed than other groups, however, with sizeable extreme values on each side.

The political-area absorption-type unification clock indicated 3:56, converted from a mean value of 32.724. The standard deviation was 23.84, ranging from zero to 80 points. The refugees' evaluation of this area was 29 minutes behind the time of 4:25 estimated by the Delphi panel. As illustrated in the histogram, this reversal was

Histogram: Political-area Absorption-type Unification Clock by NK Refugees



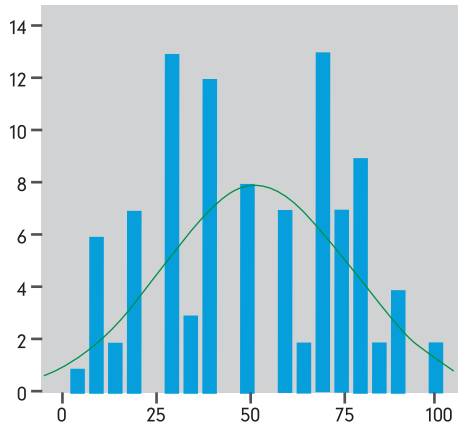
influenced by the concentration of answers between 10 and 25 points given by 44 respondents (44.8 percent). The most frequent answer, given by 20 respondents, was 20 points, while 19 gave answers valued at 10 points. Of 98 valid cases, a total of 78 respondents (79.6%) answered 50 points or less.

North Korean refugees' evaluations for the absorption-type economic area set the clock past the six o'clock mark as well. They estimated the clock at 6:11, which was 11 minutes behind the Delphi panel. As seen in the histogram, the refugees' view formed a bimodal distribution. About 73.5 percent answered 'negatively' (50 points or below), while 36.5 percent answered 'positively' (51 points or above). The mean value (51.47) was influenced by the concentration of higher points. The standard deviation was 24.90, with a range from zero to 95 points.

For the social area, the absorption-type unification clock marked 5:22. The mean value was 47.763 with a high standard deviation of 26.98. The answers were dispersed widely, and as seen in the histogram, it has a multi-modal distribution. This pattern reflected the varied views of social-area absorption-type unification. Answers were also widely distributed from four to 100 points.

Responses for the military area indicated a mean value of 34.70, which was converted to 4:10. It has a wide standard deviation of 27.254 with a range from 0 to 100

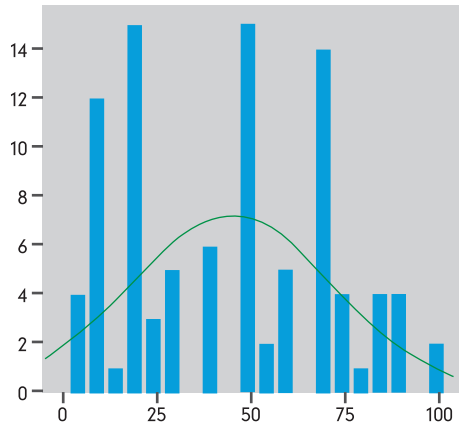
Histogram: Economic-area Absorption-type Unification Clock by NK Refugees



points. The respondents answering 25 points or less totaled 44 or 46.3 percent. The refugees' time was nine minutes closer to unification than the Delphi panel's time of 4:01.

The mean value of the international relations area was 39.35, converted to a time of 4:43. The standard deviation was 27.77, which was the largest among the 12 unification clocks. Answers ranged from zero to 95 points while the mode was 10 points, answered by 17 respondents. In sum, the refugees' time was 14 minutes closer to unification than the Delphi panel members' time of 4:29.

Histogram: Social-area Absorption-type Unification Clock by NK Refugees

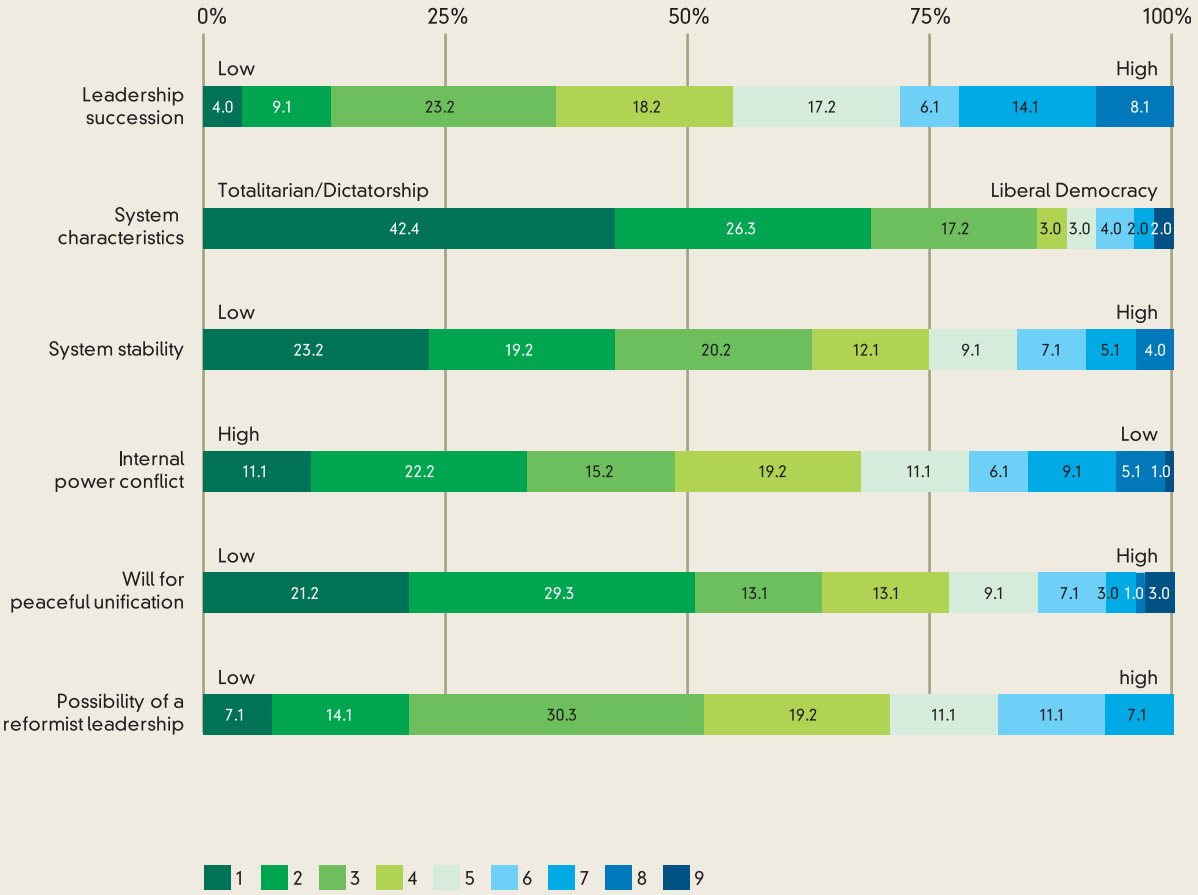


Unification Factors: North Korean Refugees

Many answers given by refugees differed from those by the Delphi panel. Despite the simplified questions, the answers reflected extreme values far from reality. To illustrate, two people responded that the North Korean system was "liberal democratic." The two were female respondents who were less educated. One had defected less than a year before and the other, no more than six years before. A similar thing occurred in the public survey as well. In view of this problem, it is necessary to look at the overall tendency rather than at a minute number of extreme values.

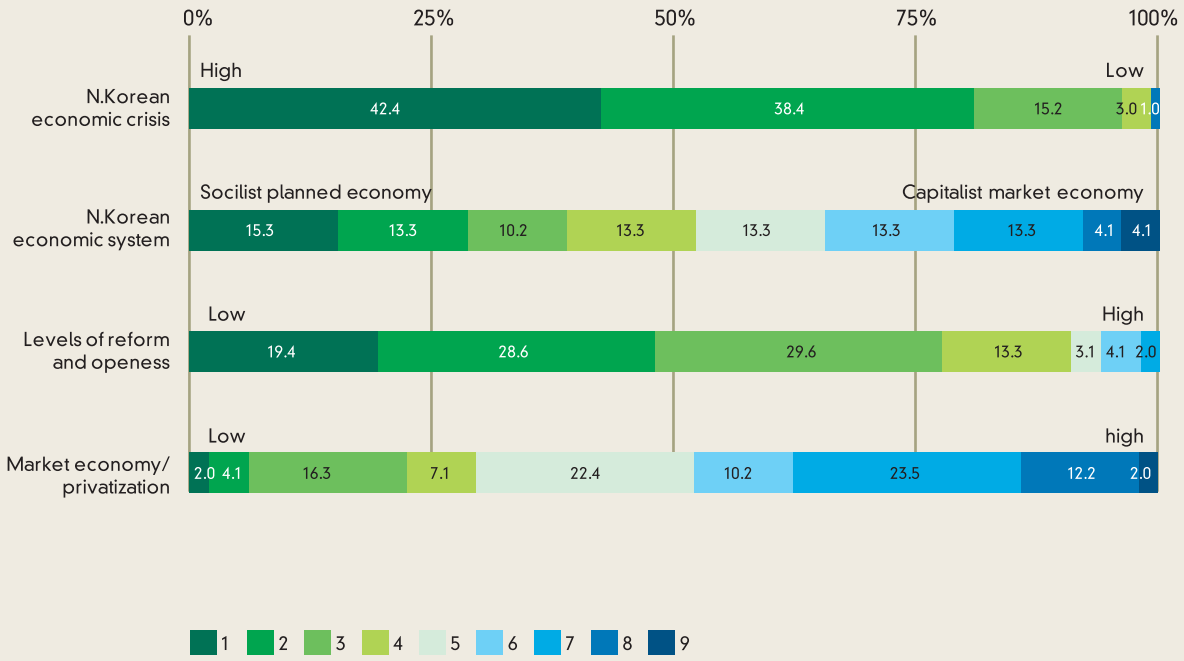
North Korean Politics

Compared to the Delphi panel, refugees in general expressed a negative view of the political situation in the North. To the questions on North Korea's political stability, including (Q1) on leadership succession, (Q3) the stability of the regime, (Q4) the internal power conflict within the North, and (Q6) the possibility of an emerging reformist leadership, they held more negative views than the Delphi panel.



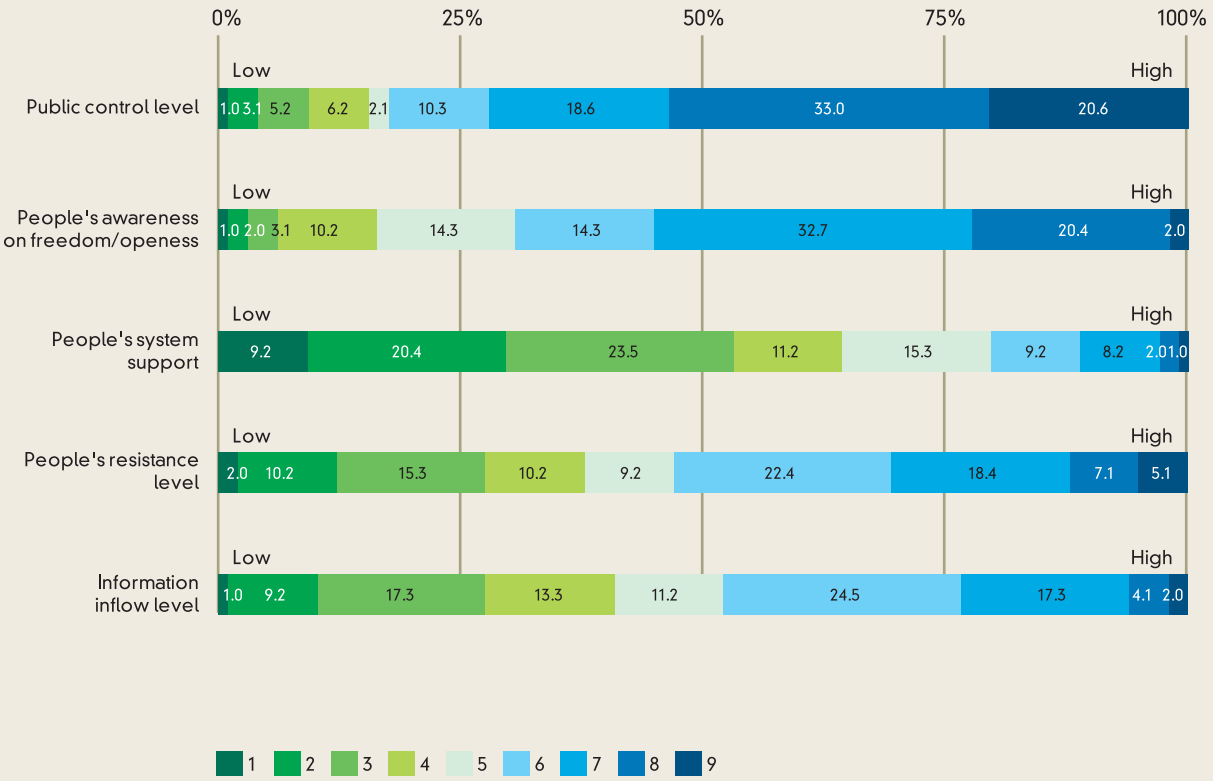
North Korean Economy

Refugees saw (Q11) North Korea's economic crisis as extremely critical and answers were mostly concentrated on one or two points. The answers to the questions on (Q12) the North Korean economic system, and on (Q20) market economic and privatization resembled bimodal distributions. That is, a relatively large number of respondents answered that North Korea's economic system and behavior have changed. This is a significant finding that needs further study.



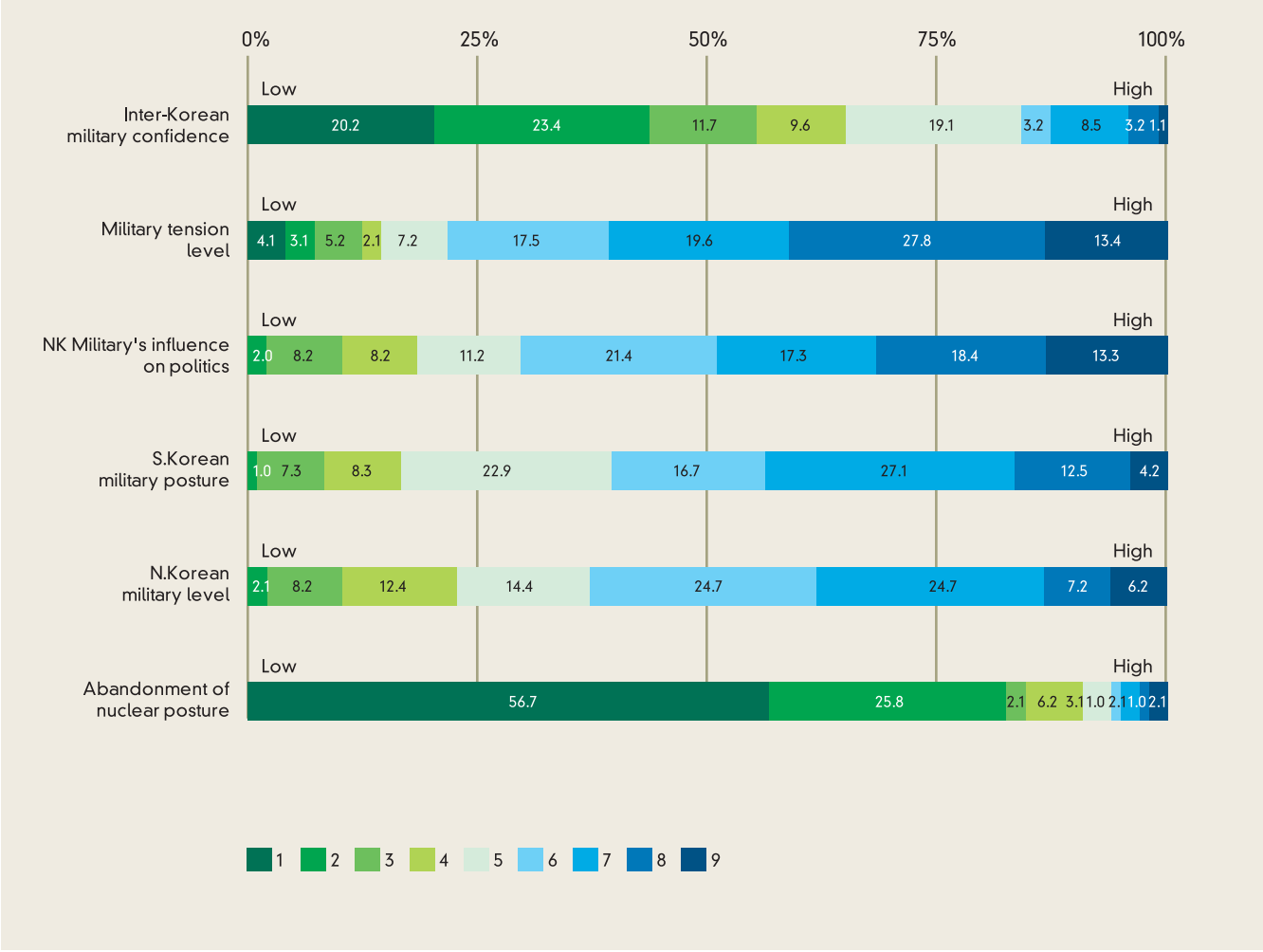
North Korean Society

Answers for this sector were unique. About 82.5 percent answered 'high' for the question on (Q18) North Korean authorities' control over its residents, which was similar to the Delphi panel. The following questions, however, revealed some interesting points: For (Q19) the people's awareness on freedom and openness, about 69.4 percent responded 'positively'; on (Q22) people's resistance level, 53 percent responded 'high'; and on (Q21) people's regime support, 64.3 percent answered 'low.'



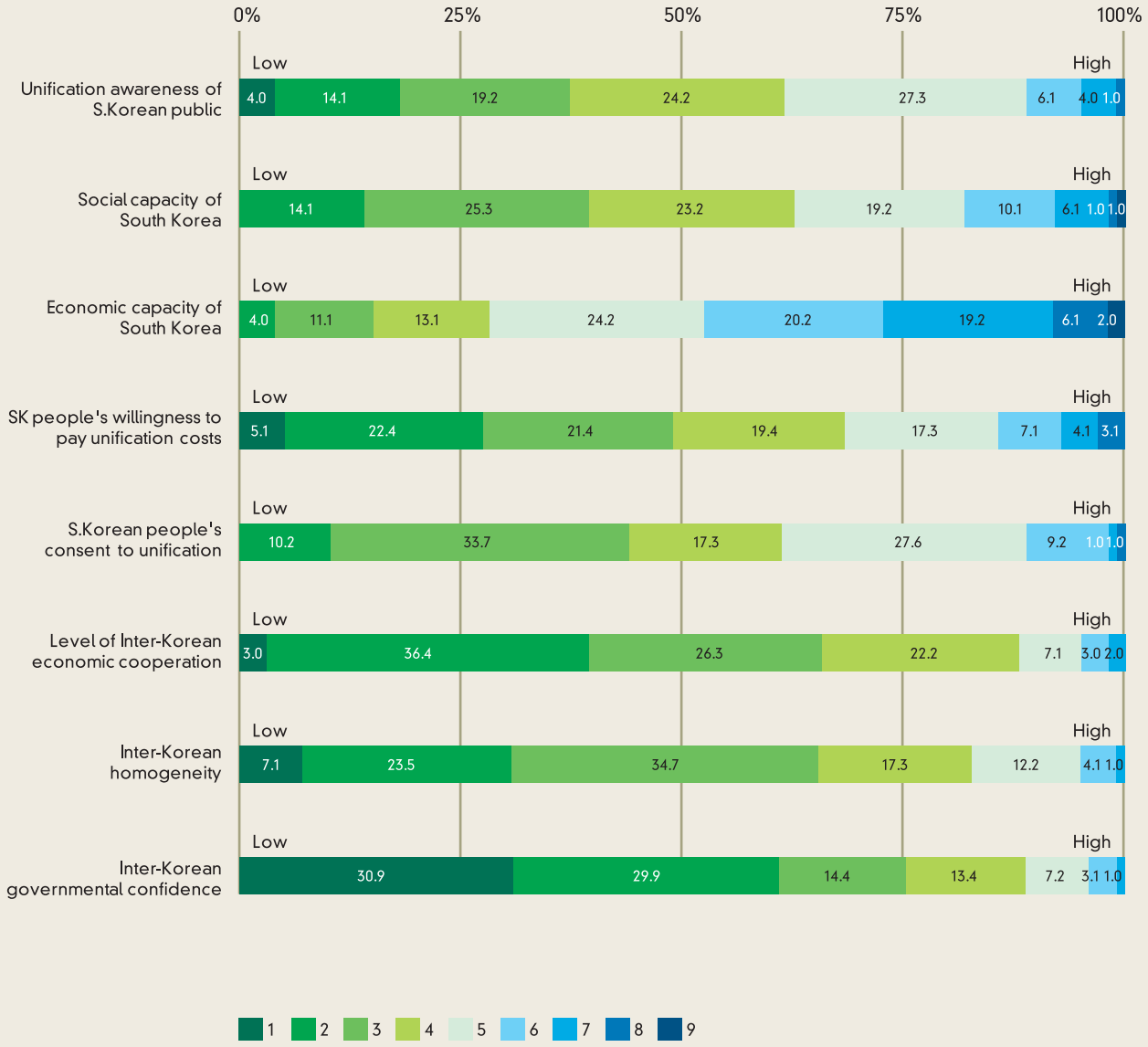
Military Area

The wide range of answers was generally similar to those of the Delphi panel. One exception was (Q24) inter-Korean military confidence level: Only 64.9 percent answered negatively compared to the Delphi panel's 100 percent.



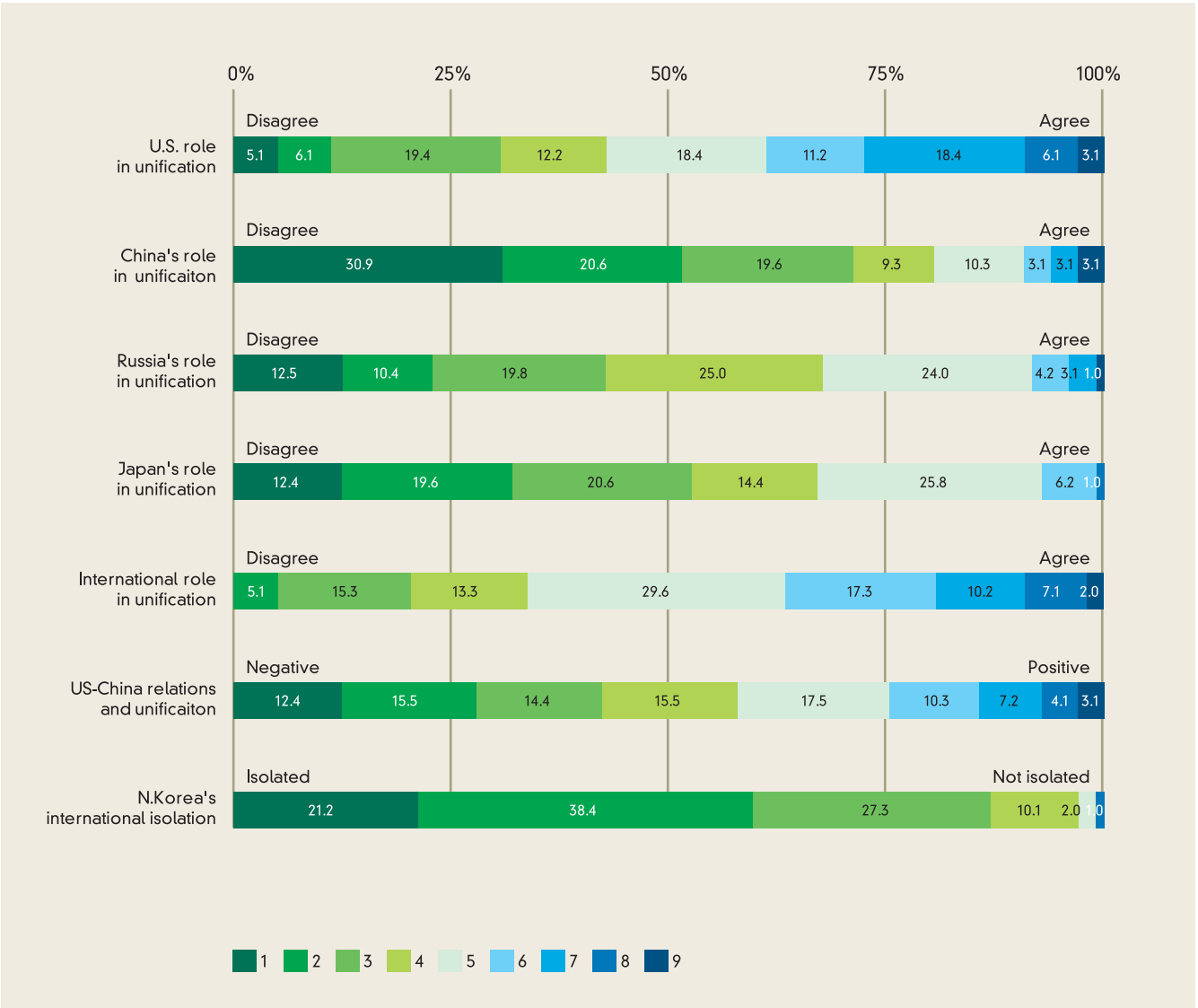
South Korea's Capability and Inter-Korean Relations

For the series of questions on South Korean capabilities, the refugees had generally negative views, including (Q7) people's agreement to unification, (Q8) social capability, (Q14) willingness to pay for unification costs, and (Q15) internal agreement on unification. However, for (Q9) South Korea's economic capacity, 47.5 percent answered positively. On the series of questions about inter-Korean relations, however, answers were generally negative: (Q10) on the questions about inter-Korean economic cooperation, (Q16) on socio-cultural homogeneity, and (Q17) inter-governmental mutual trust. All answers for this area coincided with those of the Delphi panel.



The international relations sector

Refugees viewed that four of the neighboring countries would have some amount of negative effect on unification, but for the USA, the negative and positive views were almost balanced.



Chapter IV
Public Opinion

The public opinion poll was intended to identify how the South Korean public actually viewed unification and to compare those findings with the Delphi panel survey. The subjects of the poll were 1,000 male and female adults, aged 19 or above. The sampling error was 3.1 percent at the 95 percent confidence interval.

Millions of South Korean football supporters - famously known as the "Red Devils" - went out to the streets to root for the national team in front of giant TV screens nationwide.

Courtesy of Kim Taewon

The public opinion poll was intended to identify how the South Korean public actually viewed unification and to compare those findings with the Delphi panel survey. The poll was contracted to Research & Research, Inc. and conducted on August 21 and 21, 2010. The subjects of the poll were 1,000 male and female adults, aged 19 or above. The sampling error was ±3.1 percent at the 95 percent confidence interval. Sampling was done according to proportionate quota based on region, gender and age. The interview method was a computer assisted telephone interview (CATI).

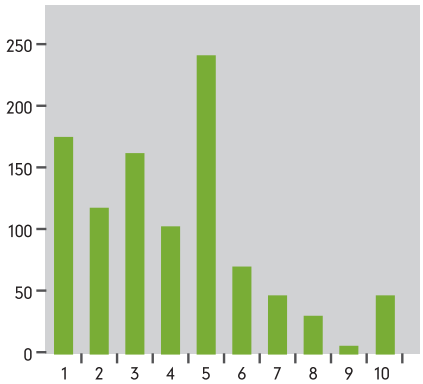
Questions were developed from two unification clocks and 14 unification factors derived from the 2010 Delphi survey. Cost and time were considerations. The lengthy questions in the Delphi survey required considerable attention by respondents, making it very difficult to conduct through the telephone-interview approach. Yet, a face-to-face interview would have required a large group of survey interviewers. This public opinion poll was not independent research, but was intended to obtain a comparison group for the panel survey on the unification forecast clock.

A total of 14 questions were developed around what were considered to be critical unification factors based on the post-hoc analysis of 2009. The questions for the public opinion poll were designed to be simple and not to require expertise, so that they would be more comprehensible in a telephone survey. For this, the questions were modified using a five-point Likert scale with a reverse order. For the questions on the unification clock, only the overall agreement-type and absorption-type were included. The 100-point scale was modified to a 10-point scale.

1. Unification Clock: Public Opinion

A. Agreement-type Unification Clock (N=970)

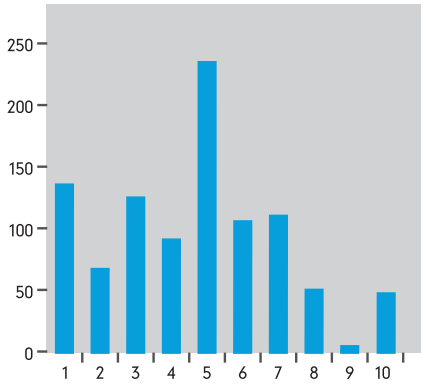
Public opinion
04:47
Panel +1hr 02 min



About eighty percent of the public viewed that agreement-type unification would be difficult. As a result, the agreed unification clock was at 4:47 (converted from a mean value of 3.98 under 10-point scale) which was closer to unification by an hour and 2 minutes compared to the Delphi panel. As mentioned, the public's survey was on a 10-point scale with a mid-point of 5.5 or 6 o'clock. Negative answers of five points or below accounted for 80.7 percent. The most frequent answer given by 234 respondents (24.1 percent) was five points. One of the characteristics of the public opinion poll was a wider range of answers. This poll also showed extreme values far from reality. For example, as seen in the bar chart, only five respondents gave 9 points; however, 42 respondents gave 10 points. This study did not transform these extreme numbers, especially 'one' and 'ten,' so that those values would offset each other under the large number of cases.

B. Absorption-type Unification Clock (N=972)

Public opinion
05:36
Panel +16 min



The public's answers resulted in a time of 5:36 for the absorption-type unification clock, which was 49 minutes closer to unification than the agreement-type. This evaluation (that absorption-type unification will occur sooner than agreement-type) concurred with opinion of the Delphi panel. The mean value was 4.66 with a standard deviation of 2.434, and the answers ranged from one to 10 points. The most frequent answer was five points given by 219 respondents (22.6 percent). A total of 643 respondents gave answers of one to five points (66.3 percent). A total of 9 respondents gave a score of 9 points. Regarding answers for absorption-type unification, the extreme values of zero and 10 points appeared often. For a more specific analysis, cross tabulation and Chi-square analyses were conducted for both types of unification clocks. While no clear tendency toward a very negative attitude (one point) was seen, the answers indicating a close approach to unification (10 points) showed a number of distinct features. First, older respondents chose 10 points. A total of 86.5 respondents who gave 10-point answers were 40 or older. Income was also an influencing factor. A review of respondents' earnings revealed a high negative correlation (-.790).

2. Unification Factors: Public Opinion

Q-1. What do you think about the level of social and cultural homogeneity between South and North Korean residents?

	Frequency	%	Valid %	Cumulative %
Very homogeneous	73	7.3	7.6	7.6
Somewhat homogeneous	105	10.5	10.9	18.5
Neutral	226	22.6	23.4	42.0
Somewhat heterogeneous	295	29.5	30.7	72.6
Very heterogeneous	264	26.4	27.4	100.0
Total	964	96.4	100.0	
Missing value	36	3.6		
	1000	100.0		

Of the respondents, 58.1 percent answered that it was 'heterogeneous,' 23.4 percent remained 'neutral,' and 18.5 percent answered it was 'homogeneous.' According to (Q16) in the Delphi survey, 82.4 percent of the panel answered it was 'heterogeneous,' indicating that the public was less negative than the panel.

A large number of the better-educated (college students or graduates) and high-income (more than KRW4mil/month) respondents gave the answer 'heterogeneous,' while many of those answering 'homogeneous' were either 40 or above (24%) or they were blue-collar workers (27.6%).

Q-2. What do you think about South Korean residents' desire for unification?

	Frequency	%	Valid %	Cumulative %
Very high	78	7.8	7.9	7.9
High	244	24.4	24.7	32.6
Neutral	407	40.7	41.3	73.8
Low	210	21.0	21.3	95.1
Very low	48	4.8	4.9	100.0
Total	987	98.7	100.0	
Missing value	13	1.3		
	1000	100.0		

The questions on S. Korean's desire for unification were modified from (Q7) of the Delphi survey. Among the respondents, the most frequent answer given was 'neutral' (41.3 percent). A total of 32.6 percent gave the answer 'high,' while 26.1 percent answered 'low.' In the Delphi survey, there were more answers of 'low.' Answers to this question varied depending on the respondent. The higher the age and the lower the educational background, the more desire there was for unification.

Q-3. South Korea is expected to pay for unification when unification comes. What do you think about South Korean residents' willingness to pay for unification costs?

	Frequency	%	Valid %	Cumulative %
Very high	89	8.9	9.0	9.0
High	184	18.4	18.8	27.8
Neutral	318	31.8	32.4	60.2
Low	291	29.1	29.6	89.9
Very low	99	9.9	10.1	100.0
Total	982	98.2	100.0	
Missing value	18	1.8		
	1000	100.0		

The question on South Korean residents' willingness to pay for unification costs was the same as (Q14) in the Delphi survey. While the residents' willingness to pay for unification was evaluated a little low, many answered positively. A total of 39.1 percent answered 'low,' 31.8 percent answered 'neutral,' and 27.3 percent responded with 'high.'

In view of the backgrounds of the respondents, their education, gender, age and income were related to social and economic parameters: Male respondents were more willing to pay than female respondents (positive responses were 47 percent and 36 percent, respectively). Also, those from 40 to 60 gave more positive responses. By occupation, housewives and students were significantly negative. Income and willingness to pay appeared to have an inverse relationship. That is, the higher the income, the lower the willingness to pay.

Q-4. Do you think North Korea is likely to carry out a reform policy like China?

	Frequency	%	Valid %	Cumulative %
Very high	43	4.3	4.4	4.4
High	150	15.0	15.4	19.9
Neutral	236	23.6	24.2	44.1
Low	331	33.1	34.0	78.1
Very low	213	21.3	21.9	100.0
Total	972	97.2	100.0	
Missing value	28	28		
	1000	100.0		

To the likelihood of North Korea's reform policy, more than half of the respondents expressed a negative view. The most frequent answer was 'low' (34 percent). Answers of 'low' and 'very low' accounted for 55.9 percent. Answers of 'neutral' accounted for 24.2 percent, and answers of 'very high' and 'high' together made up 19.8 percent. To the same question (Q13) in the Delphi survey, 86.3 respondents had a negative view.

Q-5.Do you think North Korea will successfully complete its hereditary succession to Kim Jong-il's son, Kim Jung-eun?

	Frequency	%	Valid %	Cumulative %
Completely successful	67	6.7	7.0	7.0
Somewhat successful	407	40.7	42.7	49.7
Somewhat unsuccessful	421	42.1	44.2	93.9
Completely unsuccessful	58	5.8	6.1	100.0
Total	48	4.8		
Missing value	1000	100.0		
	1000	100.0		

This question was identical to (Q1) in the Delphi survey. A total of 47.7 percent of the people gave responses of 'completely successful/somewhat successful' and 50.3 percent said 'somewhat unsuccessful/completely unsuccessful,' indicating the answers were balanced.

Q-6. What do you think about the level of North Korean resident's resistance against the regime and their defection?

	Frequency	%	Valid %	Cumulative %
Strongly resistant/ will likely defect	110	11.0	11.5	11.5
Somewhat resistant	486	48.6	50.7	62.2
Generally compliant	303	30.3	31.6	93.8
Completely compliant/ will never defect	60	6.0	6.2	100.0
Total	958	95.8	100.0	
Missing value	42	4.2		
	1000	100.0		

This question was similar to Q22 in the Delphi survey. The majority answered some resistance existed by 50.7 percent, which was followed by 'generally compliant' with the regime (31.6%). This pattern was quite similar to the answers in the Delphi survey.

Q-7. How do you define the current North Korean economic system?

	Frequency	%	Valid %	Cumulative %
Completely socialist planned economy	508	50.8	54.1	54.1
Moderately socialist planned economy	273	27.3	29.0	83.1
Moderately capitalist market economy	83	8.3	8.9	92.0
Completely compliant/ will never defect	75	7.5	8.0	100.0
Total	940	94.0	100.0	
Missing value	60	6.0		
	1000	100.0		

This question was a simplified version of Q12 in the Delphi survey. More than half of the people (54.1%) perceived the North Korean economy as a 'completely socialist planned economy.' Answers for 'completely/moderately socialist planned economy' accounted for 83.1 percent. The results were substantially identical to those of the Delphi panel.

Q-8. How do you see the military tension between the two Koreas?

	Frequency	%	Valid %	Cumulative %
Very high	315	31.5	31.8	31.8
High	474	47.4	47.9	79.7
Neutral	156	15.6	15.7	95.4
Low	37	3.7	3.7	99.1
Very low	9	0.9	0.9	100.0
Total	990	99.0	100.0	
Missing value	10	1.0		
	1000	100.0		

This question was a simplified version of Q25 in the Delphi survey. About 79.7 percent of respondents answered that military tension was 'very high' or °'high.' Overall distributions coincide with those of the Delphi panel.

Q-9. When unification is imminent, do you think the USA will be for or against it?

	Frequency	%	Valid %	Cumulative %
Strongly against	132	13.2	13.6	13.6
Generally against	324	32.4	33.4	47.0
Neutral	242	24.2	25.0	71.9
Generally supportive	221	22.1	22.8	94.7
Strongly supportive	51	5.1	5.3	100.0
Total	970	97.0	100.0	
Missing value	30	3.0		
	1000	100.0		

Of the respondents, a total of 47 percent answered 'strongly against' or 'generally against,' while 28.1 percent answered 'generally supportive' or 'strongly supportive.' The lowest age group (19~29, 69.0%) and higher educational background (college students or above, 55.4%) tended to answer 'against' on this question. This was a simplified version of Q31 in the Delphi survey. On the other hand, about 70 percent of the Delphi panel evaluated the US role in unification 'positively'.

Q-10. When unification is imminent, do you think China will be for or against unification?

	Frequency	%	Valid %	Cumulative %
Strongly against	284	28.4	29.3	29.3
Generally against	447	44.7	46.2	75.5
Neutral	166	16.6	17.2	92.7
Generally supportive	64	6.4	6.7	99.4
Strongly supportive	6	0.6	0.6	100.0
Total	968	96.8	100.0	
Missing value	32	3.2		
	1000	100.0		

This question was a simplified version of Q30 in the Delphi survey. Of the respondents, 75.5 percent answered that China would be 'generally against' or 'strongly against,' which was significantly higher than the 47 percent for the USA, indicating that the Korean people view China's role more negatively than the United States. Only 7.3 percent answered that China would be 'generally supportive' or 'strongly supportive' of unification.

Q-11. What do you think about the likelihood of absorptive unification by S. Korea?

	Frequency	%	Valid %	Cumulative %
Very high	65	6.5	6.7	6.7
High	259	25.9	26.7	33.4
Moderate	317	31.7	32.6	66.0
Low	218	21.8	22.5	88.4
Very low	112	11.2	11.6	100.0
Total	971	97.1	100.0	
Missing value	29	2.9		
	1000	100.0		

This question was developed as a comparison question for the unification clocks together with Q11-1, Q12, and Q12-1 below. Answers of 'neutral' were most frequent (32.6 percent), 'high' and 'very high' had a response rate of 33.4 percent, and 'low' and 'very low' were answered by 34.1 percent. The mean value was 3.06 and the standard deviation, 1.104. Compared to the results for the absorption-type unification clock (10-point scale), the result is almost identical. And although the two questions used different measurements, both indicate that the possibility of absorption-type unification is 'slightly negative.'

Q-11-1. When do you expect absorptive unification to be achieved?

	Frequency	%	Valid %	Cumulative %
Within 5 years	40	4.0	4.4	4.4
Within 10 years	208	20.8	23.0	27.4
Within 15 years	128	12.8	14.2	41.6
Within 20 years	138	13.8	15.3	56.9
After 20 years	390	39.0	43.1	100.0
Total	904	90.4	100.0	
Missing value	96	9.6		
	1000	100.0		

Regarding the time of absorption-type unification, 43.1 percent of the respondents answered 'after 20 years,' while 23 percent answered 'within 10 years.'
By age, respondents in their 20s and 30s answered 'after 20 years' (52.9% of the total), while the response of 'within 10 years' came mostly from respondents in their 60s. More educated, white-collar workers and students tended slightly to answer 'after 20 years.'

Q-12. How do you see the possibility of North Korea's implementation of a reform and open policy?

	Frequency	%	Valid %	Cumulative %
Very high	27	2.7	2.8	2.8
High	142	14.2	14.7	17.5
Moderate	274	27.4	28.3	45.8
Low	323	32.3	33.3	79.1
Very low	202	20.2	20.9	100.0
Total	969	96.9	100.0	
Missing value	31	3.1		
	1000	100.0		

The question asked to compare the agreement-type unification because whether North Korea's reform and open policy was a critical prerequisite for the agreement-type unification. About 54.2 percent answered such possibility was 'low' or 'very low,' while only 20.3 percent answered 'high' or 'very high.' indicating a negative view about the possibility of reform. The average was 3.55 with a standard deviation of 1.063. The result was consistent with the 10-point scale agreement-type unification.

Q-12-1. If North Korea is reformed and agreed unification is possible, when do you expect it to be achieved?

	Frequency	%	Valid %	Cumulative %
Within 5 years	34	3.4	3.7	3.7
Within 10 years	187	18.7	20.3	24.0
Within 15 years	134	13.4	14.6	38.6
Within 20 years	143	14.3	15.6	54.2
After 20 years	421	42.1	45.8	100.0
Total	918	91.8	100.0	
Missing value	82	8.2		
	1000	100.0		

To the question about the time of agreed unification, 45.8 percent answered 'after 20 years,' while 20.3 percent said 'within 10 years.' Of the respondents, 'after 20 years' was answered by those 19-29 years old (55.3%), college students or above (47.5%). By occupation, students (54.6%) and white collar-workers (50.2%) tended to respond 'after 20 years.' Generally, public opinion poll results for this type of question-when will unification be achieved-are concentrated on 'within 10 years' and 'after 20 years.' Both Q-11-1 and Q-12-1 are no exception. The results on the time of absorption-type and agreement-type unification showed differences, but the gap is within the margin of error. Nevertheless, considering the approximation of each unification type, the results are consistent: The public thinks that absorption-type unification (Q-11-1) will occur slightly before agreement-type (Q-12-1). For instance, although the gap was only 2.7 percent, for Q-11 'within 10 years' was answered by 23 percent, while for Q-12, 20.3 percent said the same answer.

Q-13. How do you see the level of the North Korean military force?

	Frequency	%	Valid %	Cumulative %
Very strong	177	17.7	17.8	17.8
Strong	497	49.7	50.1	67.9
Neutral	244	24.4	24.6	92.5
Weak	64	6.4	6.4	99.0
Very weak	10	1.0	1.0	100.0
Total	992	99.2	100.0	
Missing value	8	0.8		
	1000	100.0		

This question is the simplified version of Q28 in the Delphi survey. Of the respondents, 67.9 percent viewed N. Korea's military force as 'strong' or 'very strong,' while only 7.4 percent saw it as 'weak' or 'very weak.' As for the Delphi panel's response to the same question, 62.7 percent responded 6 points or above (strong) and 23.5 percent answered 4 points or below (weak).
Taking into consideration the characteristics of the respondents, 71.6% of females, 74.9% of respondents in their 50s, 73.1% of high school graduates and 74% of housewives saw them as 'strong' while 9.0% of respondents with an education of college or above saw them as 'weak.'

Q-14.How do you estimate South Korean military readiness toward the North?

	Frequency	%	Valid %	Cumulative %
Highly sufficient	73	7.3	7.4	7.4
Sufficient	374	37.4	38.2	45.6
Neutral	292	29.2	29.8	75.4
Insufficient	214	21.4	21.8	97.3
Highly insufficient	27	2.7	2.7	100.0
Total	980	98.0	100.0	
Missing value	20	2.0		
	1000	100.0		

This question was simplified from the Delphi survey's Q27. Regarding the ability of the South Korean military force, 45.6 percent of the respondents that it was 'highly sufficient' or 'sufficient,' 29.8 percent responded 'neutral,' and 24.5 percent responded 'highly insufficient' or 'insufficient.'
To the same question, the Delphi panel responded that 78.4 percent answered 'sufficient' (6 points or above) and 9.8 percent was 'insufficient' (4 points or below).

Summary and Conclusion

On November 23, 2010, North Korean forces fired around 170 artillery shells and rockets at Yeonpyeong Island killing four South Koreans and injuring 19.

The 2010 Delphi survey was conducted amid a somewhat tense situation because of the sinking of the South Korean navy ship Cheonan and news about North Korea's preparations for hereditary succession. The survey of diverse comparison groups was expected to complement the Delphi survey as well as to provide a rare opportunity to measure and compare various groups' understanding of the current situation.

Noteworthy during 2010 survey of the five groups were the similarities and differences between the Delphi panel and other groups. The Delphi panel is the expert group who have long been involved in North Korea-related affairs, unification and security and as they have shared the views on unification clock and unification factors through 2009 survey, they are considered to be the homogeneous group. On the other hand, the other groups involved had their own characteristics. The non-panel experts group, sampled from the same list used for the Delphi panel in 2009, showed basically identical attitudes but the evaluation range was wider than that of the Delphi panel. The businesspeople working in North Korea represented a very rare case. As either South Korean employers or employees at the Gaeseong Industrial Complex, they were in constant contact with North Korean partners and workers, even amidst tense inter-Korean relations (currently at a standstill). The North Korean refugees were selected because of their unique experience both in North and South Korea. Finally, the public opinion poll was conducted in a bid to identify the gap between the Delphi panel and the general public, but due to the limitations of the telephone survey, a simplified survey was carried out instead.

Overall Agreement-type Unification Clock by Comparison Group

Delphi panel	Non-panel experts	Inter-Korean businesspeople	Public opinion	North Korean refugees
03:45	**04:07**	**05:16**	**04:47**	**05:11**
0	+22min	+1hr 31min	+1hr 2min	+1hr 26min

For agreement-type unification, the Delphi panel estimated unification time at 3:45, which was 34 minutes behind the 2009 clock. All five of the other agreement-type clocks were further behind. Among them, the hands on the political-area clock marked the greatest change at 2:45, which is an hour and 8 minutes slower than last year.

Non-panel experts evaluated the agreement-type unification clock at 4:07, a very negative view of agreed unification (although it was closer to unification than the Delphi panel). When a simple t-test was carried out to compare answers of the Delphi panel with those of non-panel experts, the difference between the two groups was found to be within the limits of acceptability.

Most of the groups held, to a lesser or greater extent, a more negative view of agreement-type than absorption-type unification. In the case of businesspeople working in the Gaesong Industrial Complex, however, the agreement-type unification clock was faster than the absorption-type. More specifically, the overall agreement-type unification clock was 5:16, while the absorption-type was 5:05. The businesspeople's exceptional view resulted from the effects

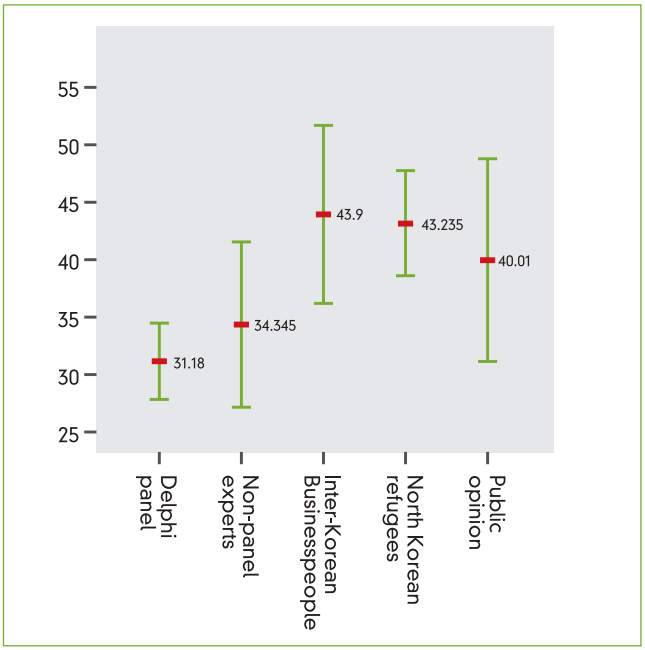
of their environment, which has intensified their feelings about economic exchange with North Korea. For that reason, many of their answers reflected their expectations rather than a realistic evaluation of the current situation.

In the public opinion poll, the agreement-type unification clock was at 4:47, an hour and 2 minutes faster than the Delphi panel's clock. After a series of t-test analyses, the Delphi panel and the public opinion were proved independent each other, while, interestingly, the public opinion group and the inter-Korean businesspeople appeared to be identical groups.

North Korean refugees evaluated the agreement-type at 5:11, an hour and 26 minutes closer to unification than the Delphi panel. The refugees' estimate of the agreed unification time was also closer because they tended to express their expectations and rely on their experience, rather than considering the reality of the current situation.

For a visual comparison among the five groups, a 95 percent confidence interval chart was developed. The quadrangle in the middle of the chart below indicates the average points, and the vertical line refers to a 95 percent confidence interval.

95% CI Chart: Agreement-type Unification Clock



As indicated in the table, the non-panel experts' confidence interval covered the Delphi panel, which reflected that both groups were selected from the same list. The inter-Korean business people, refugees, and the public overlapped each other, indicating their resemblance.

Overall Absorption-type Unification Clock by Comparison Group

Delphi panel	Non-panel experts	Inter-Korean businesspeople	Public opinion	North Korean refugees
05:20	**05:37**	**05:05**	**05:36**	**06:40**
0	+17min	-15min	+16min	+1hr 20min

For the Delphi panel, the time on the absorption-type unification clock, like the agreement-type clock, was behind. The overall absorption-type unification clock was at 5:20. In other words, the clock hands were 36 minutes slower than the previous year. Some may think that the agreement-type and absorption-type clocks could show an inverse relationship. During the designing process and the post-hoc analysis, we found both clocks were partly influenced by separate factors, and the 2009 post-hoc analysis revealed the reasons for this. Included in the

agreement-type unification factors were reform and openness of the North Korean economy, China's role, the emergence of reform leadership in North Korea, diffusion of market economy factors, homogeneity between the two Koreas, and military trust. And included in the absorption-type unification factors were instability of Kim Jong-il regime, the internal power conflict in the North, economic crisis, South Korean residents' understanding of unification, and US interests. These factors seemed to cause a setback, adversely affecting the unification time for both types.

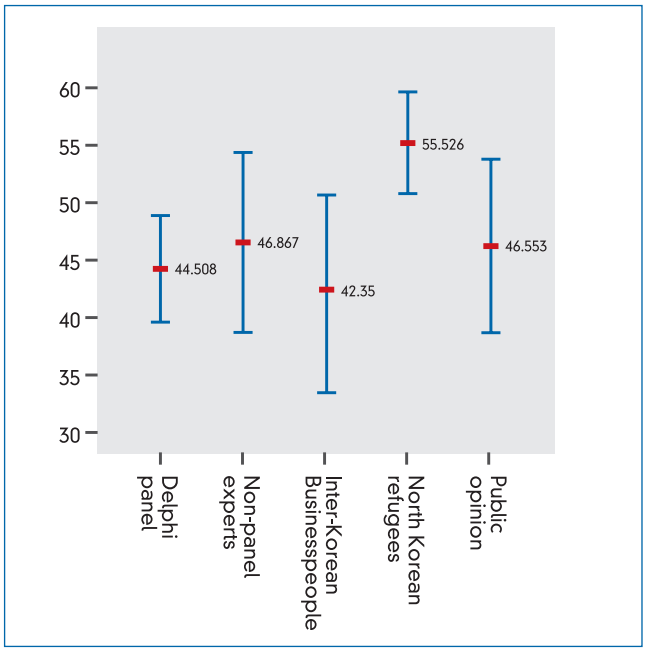
The non-panel experts estimated the overall absorption-type clock at 5:37, which was 17 minutes faster than the Delphi panel. Moreover, it was an hour and 30 minutes faster than their estimate for the agreement-type unification clock, showing that they envisioned a better possibility for absorption-type. This is coincidental with the Delphi panel's estimate. For a comparison of the two, a t-test was carried out and as a result, the two groups were found to be very similar.

As mentioned, the absorption-type unification clock for the inter-Korean businesspeople indicated a time of 5:05, an exceptional 11 minutes behind their clock for agreement-type unification. Meanwhile, unlike the agreement-type clock, the inter-Korean businesspeople's absorption-type clock were found to be similar with the Delphi panel-only 15-minute gap. The result of a t-test indicates same results that the two groups are not different.

The public opinion poll estimated the absorption-type clock at 5:36, which was 49 minutes ahead of the agreement-type clock, and 16 minutes ahead of the Delphi panel's absorption-type clock. The results of the t-test indicated that the Delphi panel and the public opinion group were not independent groups.

North Korean refugees' answers put the overall absorption-type clock at 6:40, which was an hour 20 minutes faster than the same clock of the Delphi panel. The gap of one hour and 26 minutes between the refugees' agreement-type and absorption-type clocks held consistent with the other groups' results. As a result of the t-test on the Delphi panel, the two groups were found to be independent of each other.

95% CI Chart: Absorption-type Unification Clock



All group differences were also found in the 95 percent CI chart. Regarding absorption-type unification, no significant gap was seen among the Delphi panel, non-panel experts, inter-Korean businesspeople and the public opinion group, and confidence intervals were overlapping. Among the absorption-type unification clocks, only the refugee group had distinctive results with a relatively higher mean.

About KINU

The Korea Institute for National Unification (KINU) was founded in 1990 as a government-funded policy research institute in Seoul, Republic of Korea. As the hub of research on North Korea and unification and a locus for the international network on Korean Peninsula issues, KINU plays a leading role in providing in-depth analysis on current issues related to North Korea and the unification of the Korean Peninsula.

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2010 Unification Clock

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By Park Young-Ho and Kim Hyeong Ki

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