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# STUDY ON THE IMPLEMENTATION STATUS OF BUSINESS CONTINUITY PLAN (BCP) TRAININGS AND EXERCISES IN COMPANIES

Kosuke Nakazawa[1], Shoji Ohtomo[2] & Reo Kimura[3]

[1] University of Hyogo, Himeji, Japan, k-nakazawa@shinkenpress.co.jp

[2] College of Interhuman Symbiotic Studies, Kanto Gakuin University, Yokohama, Japan,

[3] School of Human Science and Environment, University of Hyogo, Himeji, Japan

**Abstract**: *Although trainings and exercises are considered important to improve the effectiveness of business continuity plans (BCPs), specific training and exercise methods have not been adequately studied. This study will determine what differences exist in the implementation of trainings and exercises between groups who feel that their BCPs will function as expected and those who feel that they will not. In this study, a web survey was conducted among risk managers subscribing to the e-newsletter of Risk-taisaku.com, a media outlet specializing in BCP (n=310). Of the companies that responded, 37.7% were in the manufacturing industry, while other industries accounted for under 10% each. The analysis of the survey results revealed that companies that regularly review their BCPs are more likely to believe that their BCPs will function as expected. Comparison of the responses of the group feeling that their BCP will function as expected and the other group, feeling that they will not, found no difference in most items regarding the perception of the importance of trainings and exercises; however, a marked difference in the frequency of implementation was evident. Specifically, we found that the group that believed their BCPs would function as expected conducted more drills and exercises than the group that believed they would not. The number of scenarios that had been incorporated into trainings/exercises in the past was also higher for the group that believed their BCPs would function as expected than for the group that believed it would not. It is thought that reviews of the BCP led to increases in the number of trainings and exercises conducted and the number of scenarios, which in turn increased the effectiveness of the BCP. Companies are expected not only to formulate a BCP, but also to make reviewing the BCP on a regular basis a part of the corporate culture.*

## 1. Background and Objectives of the Study

In recent years, more and more companies are developing business continuity plans (BCP) to prepare for large-scale disasters, accidents, and IT failures. .BCP is defined as “documented procedures that guide organizations to respond, recover, resume, and restore to a pre-defined level of operation following disruption”(ISO,2019). Trainings and exercises are considered important to increase the effectiveness of BCPs (Cabinet Office, 2023 and ISO, 2019). It has been established that trainings and exercises were influential factors in the functioning of BCPs in the Great East Japan Earthquake (Sashida et.al., 2012, Hiruma and Noda, 2012, and Maruya and Torayashiki, 2016). However, few studies have specifically clarified the types of trainings and exercises conducted by companies that are more strongly aware of the effectiveness of their BCPs, and statistically demonstrated the relationship between methods and frequency of trainings and exercises and the effectiveness of the BCP. By elucidating these relationships, companies will be able to effectively increase the effectiveness of their BCPs. This study clarifies what differences exist in the

implementation of trainings and exercises between the group that believes that their BCPs will be highly effective and the group that believes that they will be less effective.

## 2. Research Method

The study used responses to an online survey on the status of trainings and exercises; the survey was conducted by Risk-taisaku.com, a media outlet specializing in risk management and BCP, over a seven-day period from October 17 to October 24, 2022 (Shinkenpress, 2022). The survey was directed at approximately 22,500 subscribers to the Risk-taisaku.com e-newsletter, with responses from 318 individuals involved in management and crisis management at their organizations. In cases where multiple responses were received from the same organization, the earliest response received was used, resulting in 310 valid responses.

The survey clarified what kind of trainings companies are conducting in business continuity management and to what extent. For the survey items, we used International Standard (ISO) and Cabinet Office reports and past feature articles on Risk-taisaku.com as references. Eighteen types of trainings and exercises conducted by companies were itemized, and survey participants were asked how important the companies feel they are for the effectiveness of business continuity (importance) and how often they conduct them (frequency). Answers were given on two 5-point Likert scales(ISO, 2013, Cabinet Office, 2011, and Shinkenpress, 2009). The five Likert options for importance ranged from “1. Not important at all” to “5. Very important.” Frequency of implementation was rated on a five-point scale: “1. Never implemented,” “2. Implemented several times in the past (currently not implemented),” “3. Implemented once every year,” “4. Implemented several times every year,” and “5. Implemented at least once every two months.” The types of trainings are listed in Table 2.

Next, referring to reports etc. by the Cabinet Office, 34 scenarios of damage that might occur at a company in the event of a disaster were listed, and respondents were asked to select, in a multiple-response format, which of these scenarios they had incorporated into trainings in the past(Cabinet Office,2016 and Cabinet Office, 2022). The scenarios are listed in Figure 3.

A t-test comparison of these responses was conducted by two groups: those who believed that their BCPs would be highly effective (hereinafter the “BCP will Work” group, n=99) and those who believed that their BCPs would be less effective (hereinafter the “BCP will not Work” group, n=175).

## 3. Results

### 3.1 Respondent Characteristics

As Table1 shows, the most common organizational size was between 101 and 500 employees, at 23.9% of respondents. By industry, the manufacturing industry had the highest percentage at 37.8%, and by location of headquarters, 51.3% of the companies had their headquarters in Tokyo. Among the respondents, 77.4% were in charge of BCP and 13.5% were managers.

*Table 1. Respondent Attributes. (n=310)*

| Employees | % |
|---|---|
| 1 ～50 | 12.3% |
| 51～100 | 5.5% |
| 101～500 | 23.9% |
| 501～1,000 | 17.7% |
| 1,001～5,000 | 20.6% |
| 5,001～10,000 | 8.7% |
| 10,001以上 | 11.3% |

| Head office(top 10) | % |
|---|---|
| Tokyo | 51.3% |
| Osaka | 10% |
| Kanagawa | 5.2% |
| Aichi | 4.5% |
| Shizuoka | 3.5% |
| Hyogo | 3.2% |
| Kyoto | 2.9% |
| Saitama | 2.6% |
| Chiba | 2.3% |
| Nagano | 2.3% |

| Industory（top10） | % |
|---|---|
| Manufacturing | 38% |
| Wholesale and retail trade | 7.7% |
| Professional Services | 7.1% |
| Information technology and telecommunications | 6.1% |
| Other | 5.2% |
| Construction | 4.5% |
| Transportation | 4.5% |
| Real estate | 4.5% |
| Finance/Insurance | 4.2% |
| Consulting | 3.9% |

As Figure 1 shows, 9.4% of the respondents answered that they “had not formulated a BCP,” 12.9% responded that they “were in the process of formulating one,” 12.3% responded that “they had formulated one but had never reviewed it,” 37.4% responded that they “had formulated one and reviewed it irregularly,” and 28.1% responded that they “had formulated one and reviewed it regularly.”

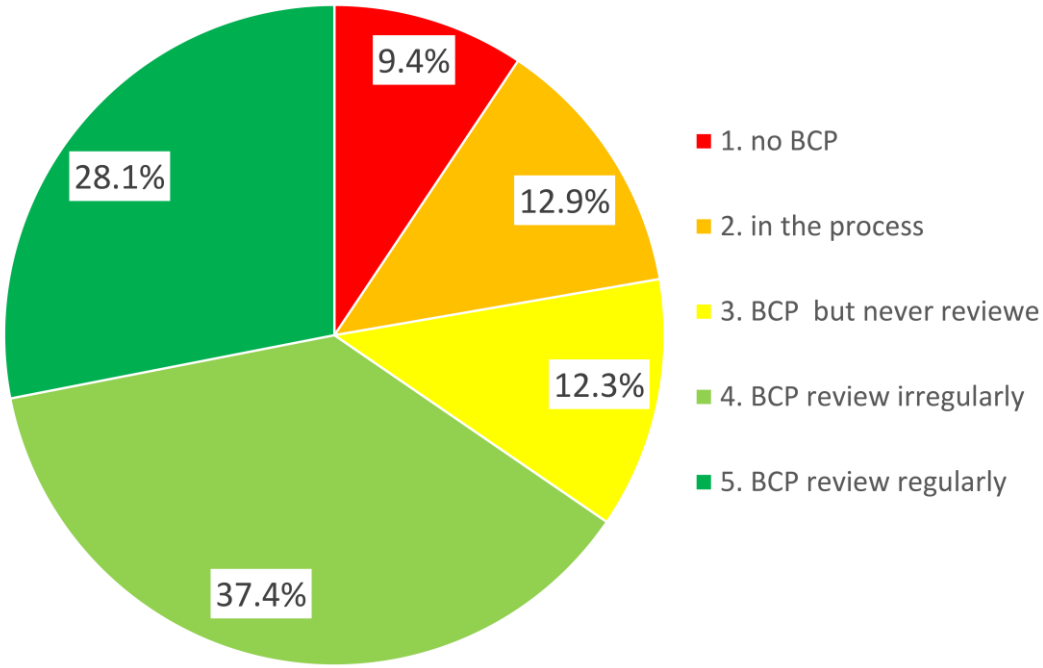


*Figure 1. Proportion of Companies by BCP Review Frequency. (n=310)*

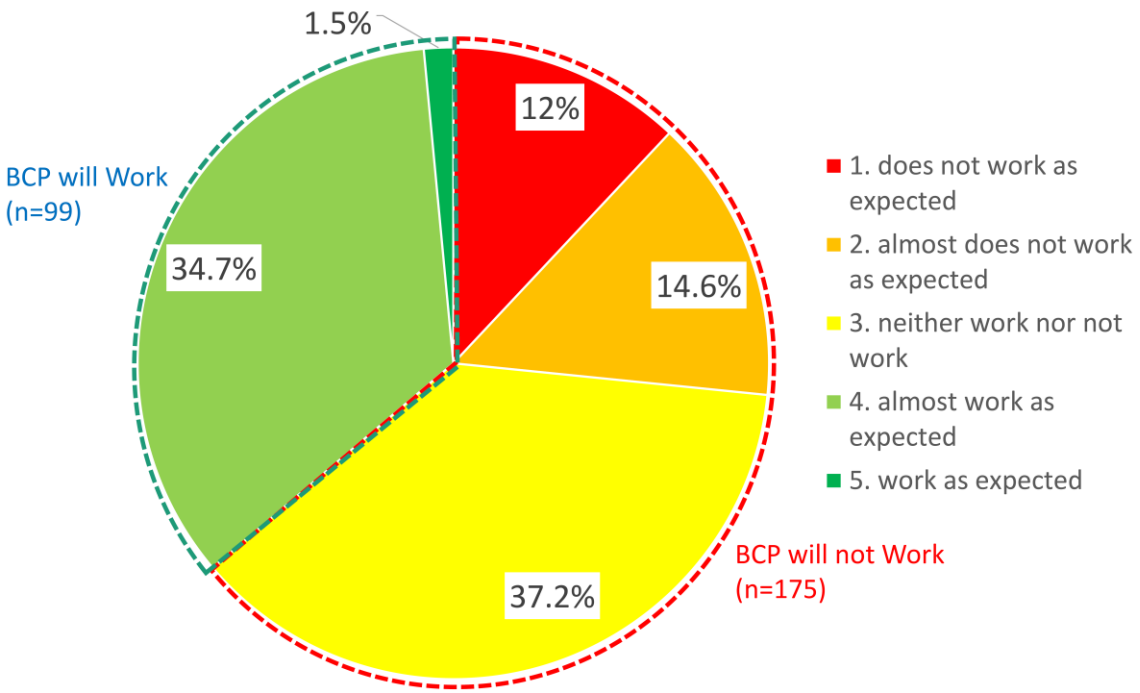


*Figure 2. Proportion of Companies' Perception of BCP Effectiveness. (n=274)*

Regarding the effectiveness of their BCPs, companies that had formulated a BCP (n=274) were asked, “Do you think your BCP will function as expected in the event of a large-scale disaster, accident, or other unforeseen event involving your company?” The respondents were asked to select one answer from “1. it will not function as expected” to “5. it will function as expected.” The results were: 12.0% responded “1. It will not work as expected,” 14.6% responded “2. It will almost completely fail to work as expected,” 37.2% responded “3. Cannot say whether it will work or not,” 34.7% responded “4. It will work to some extent as expected,” and 1.5% responded “5. It will work as expected.” Of these respondents, those who answered with 1-3 were designated as the “BCP will not Work” group and those who answered with 4-5 as the “BCP will Work” group. Companies with no BCP in place were excluded.

Comparing the “BCP will Work” group and “BCP will not Work” group in terms of BCP review status, the “BCP will Work” group reviewed their BCPs more frequently than the “BCP will not Work” group ($\chi 2$ (4) = 28.255 , $p < .01$).

### 3.2 Status of Training Implementation

When asked about the importance of each of the 18 trainings and exercises in enhancing the effectiveness of business continuity, the most important was the “safety confirmation” training with a score of 4.67 out of 5, while the least important was the training for response to people who cannot return home, with a score of 3.61. The frequency of each training/exercise was found to be 3.30 for “safety confirmation,” the highest, and less than 3 for all others, i.e., not conducted more than once a year (Table 2).

Regarding scenarios that had been incorporated into trainings in the past, the only scenario that exceeded 50% was “headquarters are damaged” while the other scenarios did not reach 50% (Figure 3).

*Table 2. Evaluation of BCP Training & Exercises: Importance vs. Engagement Frequency.*

| Exercise types | Importance | Frequency |
|---|---|---|
| Evacuation | 4.44 (0.77) | 2.94 (0.82) |
| Fire extinguishing | 4.25 (0.88) | 2.64 (1.04) |
| Notification (to the fire department, etc.) | 4.1 (0.92) | 2.08 (1.21) |
| Safety confirmation | 4.67 (0.62) | 3.3 (1.1) |
| First aid | 4.2 (0.82) | 1.99 (1.11) |
| Rescue | 4.04 (0.88) | 1.7 (1.06) |
| Establishment of EOC | 4.42 (0.8) | 2.14 (1.11) |
| Establishment of EOC via online | 4.1 (0.97) | 1.61 (1.03) |
| Response to employees who cannot go home | 3.61 (0.98) | 1.32 (0.73) |
| Operation of communication devices | 4.1 (0.92) | 2.07 (1.32) |
| Information management | 4.33 (0.86) | 2.07 (1.26) |
| walkthrough | 4.13 (0.81) | 1.99 (1.11) |
| Desk top exercises: workshop type | 3.91 (0.87) | 1.79 (1.06) |
| Desk-based exercises: role-playing type | 3.95 (0.85) | 1.68 (1.04) |
| Comprehensive exercise | 4.12 (0.86) | 1.64 (1.08) |
| Decision Making for Conductors | 4.17 (0.87) | 1.48 (1) |
| System switchover | 3.99 (0.95) | 1.34 (0.93) |
| Data backup and recovery | 4.07 (0.93) | 1.35 (1.04) |

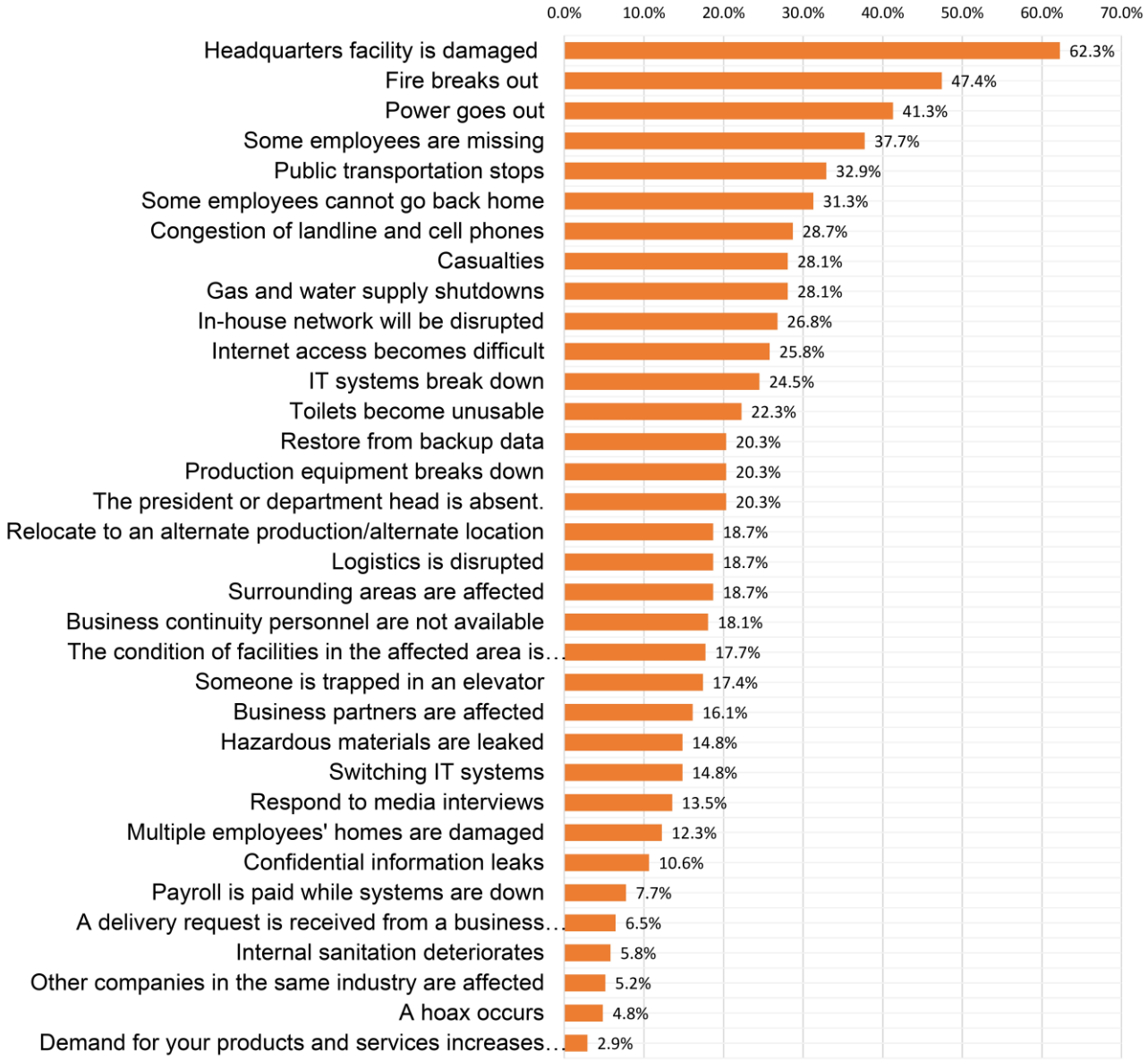


*Figure 3. Number of scenarios incorporated into the exercises.*

### 3.3 Comparison of the “BCP will Work” group and “BCP will not Work” group

A t-test was conducted to compare the responses of the “BCP will Work” group and the “BCP will not Work” group regarding the importance of trainings and exercises in enhancing the effectiveness of business continuity. The five areas that showed significant differences between the “BCP will Work” group and the “BCP will not Work “group were: “safety confirmation,” “establishment of emergency operations center (EOC),” “establishment of EOC via online,” “operation of communication devices,” and “system switchover.” On the other hand, a comparison of the frequency of trainings showed significant differences in 13 types of trainings and exercises, with the exception of evacuation training, fire training, first-aid training, system switchover training, and data backup/restoration training.

*Table 3. Comparison of Training & Exercise importance between "BCP will Work" and "BCP will not Work."*

| No. | Exercise types | BCP will Work | BCP will not Work | t value |
|---|---|---|---|---|
| 1 | Evacuation | 4.47 (0.76) | 4.45 (0.75) | t(272)=-0.246, n.s |
| 2 | Fire extinguishing | 4.17 (0.95) | 4.31 (0.8) | t(272)=1.323, n.s |
| 3 | Notification (to the fire department, etc.) | 4.04 (0.99) | 4.17 (0.82) | t(272)=1.129, n.s |
| 4 | Safety confirmation | 4.79 (0.5) | 4.64 (0.64) | t(244)=-2.126* |
| 5 | First aid | 4.23 (0.75) | 4.23 (0.82) | t(272)=0.02, n.s |
| 6 | Rescue | 4.06 (0.85) | 4.10 (0.81) | t(272)=0.35, n.s |
| 7 | Establishment of EOC | 4.62 (0.68) | 4.38 (0.79) | t(230)=-2.629** |
| 8 | Establishment of EOC via online | 4.3 (0.83) | 4.03 (1.01) | t(272)=-2.262* |
| 9 | Response to people who cannot return home | 3.61 (0.96) | 3.63 (0.96) | t(272)=0.187, n.s |
| 10 | Operation of communication devices | 4.32 (0.87) | 4.03 (0.89) | t(272)=-2.606** |
| 11 | Information activities | 4.41 (0.8) | 4.34 (0.8) | t(272)=-0.767, n.s |
| 12 | Confirmation of BCP | 4.24 (0.7) | 4.13 (0.81) | t(272)=-1.205, n.s |
| 13 | Desk top exercises: workshop type | 4.00 (0.81) | 3.89 (0.88) | t(272)=-1.066, n.s |
| 14 | Desk-based exercises: role-playing type | 4.07 (0.82) | 3.91 (0.85) | t(272)=-1.538, n.s |
| 15 | Comprehensive exercise | 4.23 (0.75) | 4.10 (0.89) | t(272)=-1.276, n.s |
| 16 | Decision Making for Conductors | 4.26 (0.83) | 4.12 (0.88) | t(272)=-1.317, n.s |
| 17 | System switchover | 4.14 (0.83) | 3.95 (0.97) | t(272)=-1.658* |
| 18 | Data backup and recovery | 4.15 (0.79) | 4.06 (0.98) | t(272)=-0.772, n.s |

* $p < .05$ , ** $p < .01$

*Table 4. Comparison of Training & Exercise Frequency between "BCP will Work" and "BCP will not Work."*

| No. | Exercise types | BCP will Work | BCP will not Work | *t*-value |
|---|---|---|---|---|
| 1 | Evacuation | 3.10 (0.81) | 3.00 (0.72) | t(272)=-1.064, n.s |
| 2 | Fire extinguishing | 2.83 (1.06) | 2.66 (0.99) | t(272)=-1.338, n.s |
| 3 | Notification (to the fire department, etc.) | 2.37 (1.28) | 2.05 (1.18) | t(272)=-2.109, * |
| 4 | Safety confirmation | 3.66 (0.82) | 3.37 (1.00) | t(237.434)=-2.542, ** |
| 5 | First aid | 2.21 (1.20) | 2.01 (1.05) | t(272)=-1.482, n.s |
| 6 | Rescue | 1.92 (1.12) | 1.67 (1.04) | t(272)=-1.819, * |
| 7 | Establishment of EOC | 2.47 (1.07) | 2.14 (1.10) | t(272)=-2.425, ** |
| 8 | Establishment of EOC via online | 1.85 (1.10) | 1.57 (1.03) | t(272)=-2.085, * |
| 9 | Response to employees who cannot go home | 1.56 (0.89) | 1.24 (0.64) | t(156.115)=-3.087, ** |
| 10 | Operation of communication devices | 2.51 (1.33) | 1.98 (1.27) | t(272)=-3.198, ** |
| 11 | Information management | 2.38 (1.33) | 1.99 (1.17) | t(182.757)=-2.466, ** |
| 12 | Walkthrough | 2.34 (1.13) | 1.98 (1.08) | t(272)=-2.614, ** |
| 13 | Desk top exercises: workshop type | 2.11 (1.11) | 1.70 (0.99) | t(272)=-3.195, ** |
| 14 | Desk-based exercises: role-playing type | 2.07 (1.17) | 1.57 (0.92) | t(166.683)=-3.652, ** |
| 15 | Comprehensive exercise | 2.05 (1.23) | 1.51 (0.96) | t(166.407)=-3.732, ** |
| 16 | Decision Making for Conductors | 1.72 (1.19) | 1.42 (0.91) | t(164.071)=-2.136, * |
| 17 | System switchover | 1.43 (1.07) | 1.32 (0.89) | t(174.709)=-0.901, n.s |
| 18 | Data backup and recovery | 1.42 (1.13) | 1.34 (1.01) | t(185.338)=-0.634, n.s |

* $p < .05$ , ** $p < .01$

For scenarios that had been incorporated into trainings/exercises in the past, the number of responses selected was counted and scored. The “BCP will Work” group had an average of 10.08, while the “BCP will not Work” group had an average of 6.51; this was significantly higher for the “BCP will work” group ($t(193.303) = -4.364$, $p < .01$).

## 4. Discussion

In summary, the results show that although most companies recognize the importance of trainings and exercises, which are considered essential to the effectiveness of BCPs, they are conducted infrequently. Among the scenarios incorporated into training, the only scenario that more than 50% of companies responded that they had incorporated in the past was “headquarters facility is damaged.” If the headquarters is damaged, various hindrances can be expected to occur, such as inability to enter the building, inability to use the restrooms, and loss of internal internet access, and it is considered necessary to create a scenario that takes into account these consecutive damages.

Some differences were evident between the group that believed their BCPs would work (BCP will Work) and those that believed it would not work (BCP will not Work).

First, it was found that the more regularly a company reviews its BCP, the more effective it considers its BCP will be. It is believed that by regularly reviewing their BCPs, they have come to recognize that their BCPs will work.

Next, comparing the responses of the “BCP will Work” group and the “BCP will not Work” group regarding recognition of the importance of trainings/exercises and frequency of implementation, no differences were observed in most items regarding recognition of the importance of trainings/exercises, but differences were apparent in most items regarding frequency of implementation. It is thought that the “BCP will not Work” group also understands the importance of each training/exercise, but is unable to implement them. It was not possible to clarify in this analysis how the BCP Work group and the BCP Not Work group tended to differ in terms of the type of training and exercises they conducted. However, the BCP Work group tended to conduct a variety of training/exercises, with a higher average score for frequency of implementation than the BCP Not Work group in all types of training/exercises.

The number of scenarios that had been incorporated into trainings/exercises in the past was also higher for the “BCP will Work” group than for the “BCP will not Work” group. By experiencing many scenarios, it is believed that the effectiveness of the BCP will be more strongly felt.

Once the BCP is reviewed, the methods and assumptions used in training and exercises will inevitably change in order to verify the changes made as a result of the review. As a result, the methods of training and exercises have become more diverse and more frequent, and various scenarios have been incorporated accordingly, gradually increasing the effectiveness of the BCP.

Companies are expected not only to formulate a BCP, but also to make reviewing the BCP on a regular basis a part of the corporate culture.

## 5. Conclusion and Future Developments

This study sought to determine what differences existed in the implementation of trainings and exercises between groups that felt that their BCPs would function as expected and those that did not. First, this study has established that the more regularly a company reviews its BCP, the more likely it is to believe that its BCP will work. By not only formulating a BCP but also reviewing it on a regular basis, it is thought that such companies become more strongly conscious of the effectiveness of their BCPs. Comparing the responses of the groups that felt that their BCPs would function as expected and those that did not, no difference was found in most items regarding the perception of the importance of trainings and exercises, but differences in the frequency of implementation were evident in most items.

The group that believed that their BCPs would be highly effective (the “BCP will Work” group) conducted more trainings and exercises more frequently than the group that believed that their BCPs would be less effective (the “BCP will not Work” group). The BCP Work group tended to conduct a greater variety of training and exercises than the BCP Not Work group, with a higher average score for frequency of implementation in all training and exercises.

The number of scenarios that had been incorporated into trainings/exercises in the past was also much higher for the “BCP will Work” group than for the “BCP will not Work” group. A review of the BCP will result in changes to the BCP document. Various types of drills and exercises will be required to verify the changes. The number of scenarios that can be incorporated into training and exercises is expected to increase accordingly. By experiencing a variety of scenarios through these various drills and exercises, companies are likely to have a stronger sense of the effectiveness of their BCPs.

Japan is expected to experience many more disasters in the future. Companies need to improve their disaster response capabilities more than ever. Companies need to improve the effectiveness of their BCPs by periodically reviewing them. In the future, it will be necessary to develop crisis management personnel who are responsible not only for formulating BCPs, but also for periodically reviewing BCPs and conducting trainings and exercises.

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