

# COVID-19の流行に対する高等教育機関の対応 ——12の大学のパブリック・アナウンスメントにみる 危機コミュニケーションパターンの分析——

## Higher Education Institutions' Responses to the COVID-19 Outbreak: An Analysis of Crisis Communication Patterns in 12 Universities' Public Announcements

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higher education institutions, the covid-19 outbreak (pandemic), crisis communication, the situational crisis communication theory (SCCT), the linguistic inquiry and word count 2015 (LIWC2015)

### ABSTRACT

COVID-19流行の状況下で、高等教育機関には効果的な危機コミュニケーションの発展が求められている。状況に応じた危機コミュニケーション理論 (SCCT) に基づき、本研究はCOVID-19流行下のアメ

リカと日本における12の高等教育機関による危機コミュニケーションの実態を調査した。具体的には、各大学のCOVID-19ウェブページで公開されているテキストメッセージを分析し、各大学がいかに苦慮しながら自校の評判を守り、多様な受け手に情報を提供したかを検討した。これらの分析はLinguistic Inquiry and Word Count 2015 (LIWC2015)とR (Version 4. 1. 0)を活用して行われた。本研究の結果はCOVID-19流行に対する高等教育機関の対応がSCCT理論（指示的情報、適応的情報、評判の管理）に関連すること示している。

Under the impact of the coronavirus disease 2019 (COVID-19) pandemic, higher education institutions have been required to develop effective crisis communication. This study investigates the communication strategies of 12 higher education institutions in the United States and Japan during the COVID-19 pandemic based on the situational crisis communication theory (SCCT). Publicly available messages on each institute's COVID-19 web page were analyzed and examined in terms of how each institution managed to secure its reputations in the face of the COVID-19 pandemic crisis and offered information to multiple audiences. These analyses were conducted by employing the text analysis program Linguistic Inquiry and Word Count 2015 (LIWC2015) and R (Version 4. 1. 0). The result delineates that higher education institutes' responses to the COVID-19 pandemic relate to SCCT (instructing information, adjusting information, managing reputation).

## 1. Introduction

Higher education institutions have developed communication strategies in the face of unexpected crises that generate problems in their day-to-day activities. The causes of these crises vary from natural disasters such as earthquakes and typhoons (Kim, 2016; Midtbust et al., 2018; Mieno, 2012) to human accidents involving active shooters on campus (Greenberg, 2007; Myers, 2017), workplace violence (Maher, 2014), and technical breakdowns (Palmer et al., 2017). As these emergency situations likely exacerbate finances (Barringer, 2016) or reputations (Tutterow & Evans, 2016) of an institution, higher education institutions have developed communication plans to minimize the impacts of crises on their daily operations and community activities. Information dissemination is one of the most critical issues concerning crisis management (Fusch et al., 2018). Therefore, decades of research on academic institutions contributed to the knowledge on the

practical ways in which colleges and universities can effectively inform students, faculty, staff members, and their local communities about their coping strategies in crisis (Butler & Lafreniere, 2010; Egnoto et al., 2016; Mastrodicasa, 2008).

During the unprecedented pandemic of the coronavirus disease 2019 (COVID-19), which affected the entire world, the way that higher education institutions responded has not changed much. From the early stage of the pandemic, universities and colleges frequently reached out to stakeholders through campus emails about their positions (Agasisti & Soncin, 2021; Jung et al., 2021; Tamrat, 2021). Social networking services (SNS) such as Twitter and Facebook were also effectively used by higher education institutions (Lund & Wang, 2021; Sobaih et al., 2020). However, previous research has not yet investigated how higher education institutions interact with their stakeholders on their formal information-sharing platform, namely official websites dedicated to COVID-19 topics. Nor it has not systematically

examined the patterns of communication that emerged in the response of higher education institutions to the pandemic.

To address these research gaps, we collected publicly available announcements in response to the COVID-19 pandemic from 12 higher education institutions: nine liberal art colleges in the United States (Amherst College, Barnard College, Harvard College, Haverford College, Middlebury College, Pomona College, Swarthmore College, Williams College, and Yale College), a liberal arts college in Tokyo, Japan, International Christian University (ICU), a public liberal arts college, Eastern Connecticut State University (ECSU), and a regional public college, Central Connecticut State University (CCSU). The selection of these institutions is based on three considerations: (a) the 12 institutions are comparable in terms of academic backgrounds (i.e., liberal arts institutions) and their organizational scale and characteristics; (b) two institutions (CCSU and ECSU) were chosen to see whether public schools are different from others, and (c) one institution (ICU) in Tokyo was selected to allow an international analysis of the websites of higher education institutions. Based on this selection, we conducted a descriptive comparative study about the 12 institutions' responses to the pandemic crisis by categorizing publicly available information on their COVID-19 websites using the KJ method. Details on the KJ method and the summary of this study will be described in Section 3: Materials and Analytical Methods.

Based on these preliminary considerations, this paper aims to describe the communication patterns of the 12 higher education institutions and consider their implications for the crisis communication study from the viewpoint of the situational crisis communication theory (SCCT). The SCCT theory, proposed and developed by Coombs and others (Coombs, 2009; Coombs, 2010; Sturges, 1994), is a prominent theoretical framework for explaining

various types of communication in crisis situations. This paper especially focuses on the three information functions presented in the SCCT theory (i.e., instructing information, adjusting information, and managing reputation) and applies this perspective to its analysis of the information shared on the 12 universities COVID-19 websites. In the process of representing these websites' information into structured data, this paper uses Linguistic Inquiry and Word Count 2015 (LIWC2015) in order to obtain comparable data from different universities' webpages.

## 2. Literature Review

The issue of how to define the term "crisis" has occupied a significant space within the discussion of crisis communication (e.g., from Hermann, 1963; Barton, 1993; Fearn-Banks, 1996; Lerbinger, 1997; as cited in Gigliotti, 2020 to Heath & Millar, 2004; Coombs, 2015; Ulmer et al., 2018) because the definition is essential to understand the patterns of communication among educational institutions in detail. For example, Coombs (2015) describes a crisis as "an unpredictable event that threatens important expectations of stakeholders and can seriously impact an organization's performance and generate negative outcomes" (p. 3) and "a significant threat to operations that can have negative consequences if not handled properly" (Coombs, 2014, para. 3). Researchers (such as Coombs, 2019; Gigliotti, 2020; Ulmer et al., 2018) have extended this idea to a more stakeholder-centered description of crises by focusing on threats to the organizational reputation, the centrality of communication, and the importance of stakeholders' perception. Gigliotti (2020) particularly focuses on a crisis in terms of leadership responsibilities, elucidating that:

events or situations of significant magnitude that threaten reputations, impact the lives of those involved in the institution, disrupt the ways in

which the organization functions, have a cascading influence on leadership responsibilities and obligations across units/divisions, and require an immediate response from leaders (p. 49).

Gigliotti's description of a crisis is best consistent with the complexity of the pandemic crisis faced by higher education institutions.

The SCCT theory is one of the most commonly used theories in crisis communication research (Bukar et al., 2020; Macnamara, 2021). The theory articulates variables and relationships that are key to developing crisis response strategies in order to protect institutions' reputations (Coombs & Holladay, 2002). More specifically, in the SCCT theory, information sharing during a crisis is divided into three categories: instructing information, adjusting information, and managing reputation. While the *instructing information* category provides information that physically protects the public from the immediate dangers of a crisis, the *adjusting information* category refers to information that helps the public to cope psychologically when a crisis situation arises (Coombs, 2009; Coombs, 2010; Sturges, 1994). These two categories are essential and necessary when carrying out crisis communication at the onset of a crisis (Thelen & Robinson, 2019). In the later stage of a crisis, shifts in institutions' responses to crisis communication occur as they adopt the managing reputation strategy. Information shared with the *managing reputation* strategy is critical (Sturges, 1994; Thelen & Robinson, 2019). As such, the SCCT theory divides the managing reputation category into three approaches: (a) denial or deny and diminish, (b) rebuild, and (c) bolstering or reinforcing (Coombs, 2015; Thelen & Robinson, 2019).

Based on these fundamental principles of the SCCT theory, recent research has investigated how the COVID-19 pandemic has affected the patterns of crisis communication of higher education

institutions. McMillan (2020) has addressed this issue in terms of the strategic communication of higher education institutions with their students and parents. Macnamara (2021) and Slagle et al. (2021) have extended this research by including the responses of faculty and staff to the information provided by college authorities, investigating the case of institutions to which they belong. While other previous research (Ayman et al., 2020; Calonge et al., 2021) has used an alternative methodological framework (such as the public relations model and the Cynefin Framework) to analyze the communication patterns of higher education institutions during the pandemic, the previous studies using the SCCT theory have provided insights into the role of college authorities (including presidents) and their relationship with stakeholders. As already mentioned in the introduction section, the interaction between college authorities and stakeholders is not confined to campus emails but includes SNS communication.

While previous research has provided a detailed case study of crisis communication between higher education institutions and their stakeholders, little has been reported about the types of information shared by the institutions during the pandemic. Nor has it been shown a cross-institutional analysis of the contents of crisis communication during the COVID-19 pandemic. These research gaps have not been addressed in other types of crisis communication research (Claeys & Coombs, 2020; Lawton-Misra & Pretorius, 2021; Strielkowski & Wang, 2020). Thus, this paper concerns the following three research questions:

1. How did the 12 higher education institutions manage three types of information (i.e., instructing information, adjusting information, and managing reputation proposed in the SCCT theory) in the early stage of the pandemic?
2. What kind of contents (e.g., academic matters

and COVID-19 related issues) were included in each type of information examined in research question 1?

3. What were the roles of messengers of information (including college authorities) in the higher education institutions' treatment of the pandemic?

In order to address the research questions above, we built on our preliminary studies while analyzing the same cases in the considerations from the perspective of the SCCT theory. In this analysis, we focused on the patterns of crisis communication of 12 higher education institutions and the leadership of their college authorities. As COVID-19 is a form of crisis that triggered severe consequences for higher education institutions (Strielkowski & Wang, 2020) and particularly called for leadership (McNamara, 2021), we expected that crisis communication strategies that higher institutions take would be explainable through the lens of SCCT established categories.

### 3. Materials and Analytical Methods

#### 3.1 Materials

Materials in this paper come from texts on COVID-19 designated webpages that were the source of two technical reports (Sakurai et al., 2020; Sumlut et al., 2020). These reports compile COVID-19 related public announcements shared on the websites of 12 universities. The contents of these announcements included the general information of the COVID-19 pandemic, academic matters to students, instructions for faculty and staff, and notices from the institutions to a broader audience such as guardians, alumni, and local communities. In making these announcements, three types of information display were used: (a) information description, (b) frequently asked questions (FAQ), and (c) frequent updating announcements. All institutions kept updating the

announcements about their responses to the pandemic on the first page of the COVID-19 designated website.

The first data collection was conducted during the period that marks the onset of the pandemic, from January 24 to April 16, 2020, the end date of the initial data collection. The initial KJ charts that summarize the communication types of each university are compiled into a technical report (henceforward Technical Report 1) (Sumlut et al., 2020)<sup>1</sup>. In August 2020, a follow-up technical report (henceforward Technical Report 2) (Sakurai et al., 2020)<sup>2</sup> was created to observe what types of information were still accessible and what was not after four months from the initial data collection. This process consists of two steps: we revisited 12 liberal arts institutions' websites from August 14 to 28, 2020, compared them with the original data, and made changes to the data according to the research findings. These renewed 12 charts describe the traces of each institution's information dissemination during the ongoing COVID-19 pandemic.

#### 3.2 The KJ Method

The KJ-Method, *KJ-How*, is an idea-generating technique proposed by Jiro Kawakita in the 1950s, and the name KJ stands for the initials Jiro Kawakita (Kawakita, 1991; Scupin, 1997). This technique has been widely used to arrange unstructured data into a manageable format while preserving detailed information in various social and behavioral science research (Kawakita, 1991; Scupin, 1997).

In organizing the data first collected in the early stage of the pandemic, we used the KJ method and created Technical Report 1 so that both the types of information display and the contents of the information of the 12 institutions can be effectively identified and analyzed. As for information display, all of the institutions except for Yale College

employed information description. More specifically, four colleges (Amherst, Harvard, ICU, and Swarthmore) provided information to a wide range of stakeholders (such as students, faculty, and staff, guardians, alumnus, and local communities); seven institutions (Barnard, CCSU, ECSU, Haverford, Middlebury, Pomona, and Williams) targeted their core audience (i.e., students, faculty, and staff). Yale College used a FAQ format in presenting their announcements, mainly reaching out to their students.

As for the contents of the information, Technical Report 1 shows the overview of what information was provided to stakeholders in the early stages of the pandemic. For example, information about students includes grading policy, online classes, tools for remote learning, commencement, study abroad, academic assistance (such as online tutoring), travel booking assistance, visa for international students, financial aids, student employment, tuition, on-campus jobs, financial aid for travel, mental and physical well-being information, community support, resources on stress management, student's health insurance plan, and therapy programs. Also, information for faculty and staff covers remote teaching resources and guidelines, health and illness resources, travel policy, and educational information, compensation and payment information, arrangement for sick leave, health care benefits and insurance, information for health concerns, and family and childcare resources.

As for Technical Report 2, we found that the revisions are made to account for changes, given the ongoing situation of the COVID-19 pandemic, and aim to provide necessary information to respective target audiences on most websites. This process includes deleting outdated topics, redesigning the layout of websites, and adding updated information. Moreover, the strategy to reach multiple targets through websites has

continued since the initial period, and previous announcements are still accessible to audiences in many cases.

### 3.2.1 An Example From Technical Reports: Swarthmore College

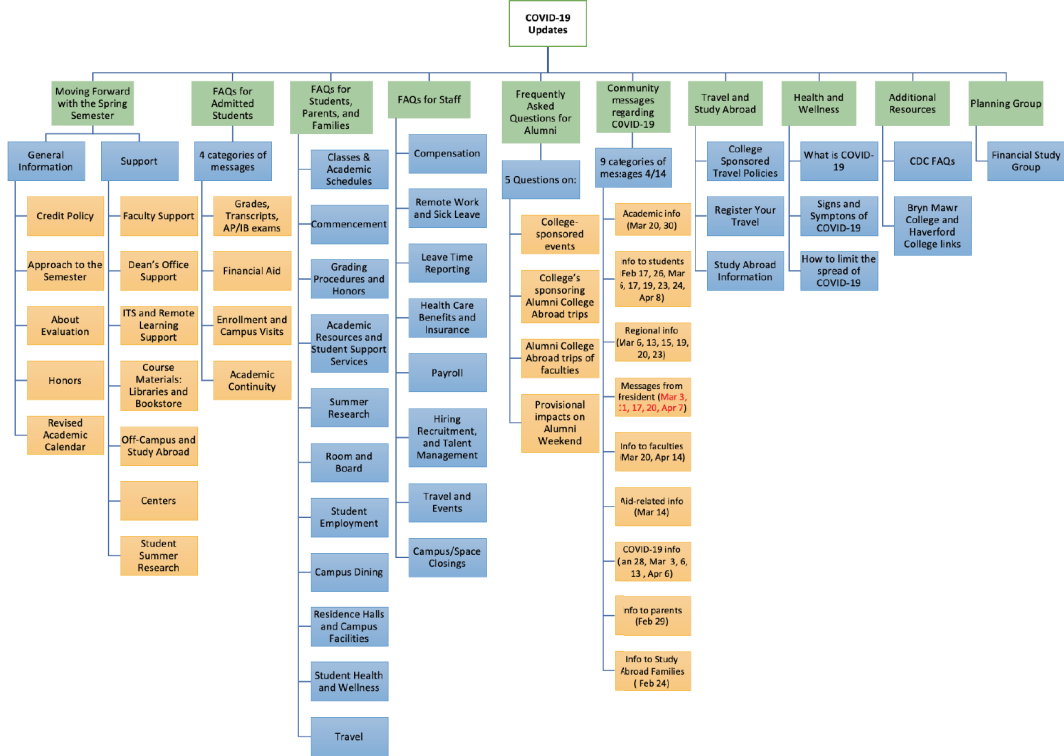
The KJ chart of Swarthmore College's public announcements is shown in Figure 1. "COVID-19 Updates" represents the title of the institutions' COVID-19 designated webpage. This webpage has eleven sub-pages that can be categorized into three different information contents: instructions to students and faculty staff about preparing for the coming semester, FAQs, and practical information. "Moving Forward with the Spring Semester" webpage is specific to circumstances in the United States where higher education institutions needed to communicate with their stakeholders about rapidly changing situations in the middle of the academic year. The FAQs are organized into four categories: (a) admitted students, (b) students, parents, and families, (c) staff, and (d) alumni. Practical information covers topics such as travel, health, and finance.

The updated KJ chart of Swarthmore College's public announcements is shown in Figure 2. While seasonal information (e.g., "Moving Forward with the Spring Semester") was deleted, most of the announcements were still available, including messages from presidents.

### 3.3 Linguistic Inquiry and Word Count 2015

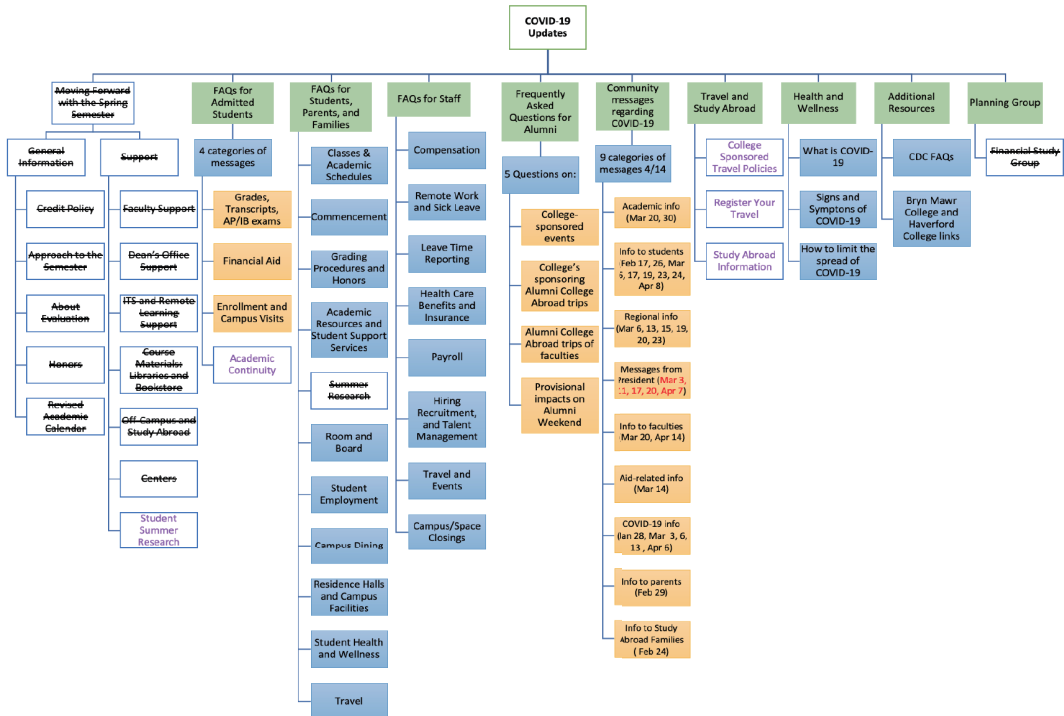
Analyses within the SCCT theory need reference points obtained from written text materials. In this paper, the materials were text used to compile the two technical reports (Sakurai et al., 2020; Sumlut et al., 2020). To determine the tone of a text using objective criteria, we used the Linguistic Inquiry and Word Count 2015 (LIWC 2015; Pennebaker et al., 2015). LIWC2015 is a text analysis program that demonstrates the tone of a text by calculating

**Figure 1**  
*The Initial COVID-19 Response KJ Chart Based on Publicly Available Information of the Swarthmore College*



Note. The red color represents messages from the president.

**Figure 2**  
*The Updated COVID-19 Response KJ Chart Based on Publicly Available Information of the Swarthmore College*



Note. The red color represents messages from the president. The purple color represents the original data was moved/ replaced/ juxtaposed (in)to other sections or renamed topics.

the word frequency of a set of words in a text using built-in categories or custom-made categories in the system-internal dictionary (Dudău & Sava, 2021). The word-by-word comparison with the built-in dictionary is also designed to tokenize, summarize, and count words (Dudău & Sava, 2021). The built-in dictionary of LIWC2015 consists of diverse groups of output variables categories such as (a) linguistic processes descriptors that quantify word frequency at various levels of a text, and (b) descriptive composite scores that indicate the tone of a text-based on the meaning of words that are pre-categorized psychological processes constructors, human-based constructs, and others. LIWC2015 does not offer a specific definition of each category but instead provides the list of words consisting of those categories. The word categories were carefully examined and selected by the authors of this paper and used in their analysis. Detailed descriptions of the constructs used in the default LIWC2015 dictionary categories are found in Pennebaker et al. (2015). The output of LIWC2015 has the percentage of total words from 93 pre-established categories (Pennebaker et al., 2015).

The collection of text files compiled from the websites of the 12 universities were first processed using the LIWC2015 text analysis program to count and extract words assigned to the pre-established categories. After examining the baseline analysis in the LIWC2015, categories matching the three types of constructs (i.e., instructing information, adjusting information, managing reputation) in the SCCT theory were identified. To associate results of LIWC2015 with constructs in the SCCT theory, we selected seven LIWC2015-established categories (i.e., *affect*, *affiliation*, *health*, *motion*, *work*, *money*, and *social*), which served as baselines for classifying elements in the texts. The *affect* category contains words such as challenge, risk, support; the *affiliation* category includes

belonging, community, team; the *health* category comprises words such as health, sick, well-being; the *money* category includes fees, finances, refund; the *motion* category involves move, stay, travel; the *work* category consists of employee, pay, work; the *social* category contains words such as encourage, recommend, request. The first and the second author closely examined specific words that were included in each of these seven categories to determine whether a category belongs to the three types of constructs in the SCCT theory. Though this process was subjective in nature, the two authors showed high agreement when matching LIWC2015-established categories to constructs in the SCCT theory. We established the following mappings between categories in LIWC 2015 and types in the SCCT theory: (a) the two data categories *affect* and *affiliation* represent adjusting information in the SCCT theory, (b) the four data categories *health*, *motion*, *work*, and *money* describe instructing information in the SCCT theory, and (c) the *social* category is assigned to the type managing reputation in the SCCT theory.

Results in the LIWC2015 analysis utilize all words in a text, which may or may not be directly related to information that we are interested in; the numbers could be biased by the internal algorithm. To compensate for this weakness, we ran an independent word frequency analysis that extracted information from texts using a Python script. The python script simply provided us with a list of words with the frequency. The top three words in each of the seven categories ( $n = 21$ ) were selected for further analysis. We complemented the LIWC analysis with the word frequency analysis to ensure increased reliability with the results of LIWC2015.

## 4. Results

The results obtained from the LIWC2015 analysis show that the 12 institutions tended to



reach out to their stakeholders with the three types of information in the SCCT theory (i.e., instructing information, adjusting information, managing reputation) in the early stage of the COVID-19 pandemic. Of these information types, instructing information is the most common type of shared information, followed by adjusting information and managing reputation (see Table 1 and 2). As for the contents of these information types, topics such as general information related to the pandemic and academic matters are observed, and the most frequent content category is “strategy to reach out to targeted audiences,” a topic that concerns a communication scheme (see Table 3). These findings further suggest the need for considering the roles assigned to messengers of information, including college authorities, in crisis communication during the pandemic (see Section 4.3). The following is a brief explanation of each result.

#### 4.1 Information Types

Table 1 provides the total number of words of each type of information, their percentage of occurrence, and their means collected from the data set. When communicating with the public, the most frequent category that appeared was *work*, ranging from 7.80 to 14.59 percent. The *social* category (2.13 ~ 10.21 percent) and the *affiliation* category (1.33 ~ 4.83 percent) are the next two categories treated by universities as important when displaying university-related information.

Table 2 uses the same data set but organizes the word counts based on three information types in the SCCT theory: instructing information, adjusting information, managing reputation. The count of three words that belong to each type is also represented. After extracting individual word counts, we calculated the composite number using R (Version 4. 1. 0) in RStudio (R Core Team, 2021).

The three categories with the highest word counts were *work* (e.g., employee, pay, work; 741

**Table 1**  
*Percentage of Total Words and Means From Pre-Established Categories Selected Based on the Situational Crisis Communication Theory (SCCT) in Each University Website*

| University name | Word count | Adjusting information |             | Instructing information |        |       |       | Managing reputation | Mean |
|-----------------|------------|-----------------------|-------------|-------------------------|--------|-------|-------|---------------------|------|
|                 |            | Affect                | Affiliation | Health                  | Motion | Work  | Money | Social              |      |
| Amherst         | 19544      | 3.98                  | 4.67        | 0.71                    | 1.98   | 11.58 | 0.66  | 9.85                | 4.78 |
| Barnard         | 8504       | 3.07                  | 2.43        | 1.07                    | 2.67   | 10.90 | 1.72  | 7.29                | 4.16 |
| CCSU            | 1377       | 1.67                  | 4.07        | 1.31                    | 1.60   | 13.51 | 0.29  | 5.74                | 4.03 |
| ECSU            | 2732       | 4.25                  | 4.83        | 1.13                    | 1.83   | 10.58 | 1.50  | 10.21               | 4.90 |
| Harvard         | 1330       | 2.18                  | 1.43        | 1.28                    | 3.01   | 14.59 | 2.18  | 4.14                | 4.12 |
| Haverford       | 1554       | 3.86                  | 4.70        | 1.48                    | 1.93   | 12.55 | 0.77  | 7.66                | 4.71 |
| ICU             | 751        | 0.93                  | 1.33        | 3.20                    | 1.46   | 10.25 | 0.13  | 2.13                | 2.78 |
| Middlebury      | 23767      | 3.27                  | 3.98        | 0.89                    | 1.99   | 10.92 | 0.98  | 8.64                | 4.38 |
| Pomona          | 1301       | 2.23                  | 4.30        | 2.38                    | 2.31   | 8.84  | 0.61  | 8.84                | 4.22 |
| Swarthmore      | 10735      | 3.10                  | 2.96        | 1.38                    | 2.42   | 11.99 | 1.78  | 8.04                | 4.52 |
| Williams        | 1576       | 1.14                  | 1.90        | 0.95                    | 0.25   | 7.80  | 0.32  | 5.84                | 2.60 |
| Yale            | 8596       | 2.95                  | 1.69        | 1.47                    | 2.00   | 9.34  | 1.68  | 8.12                | 3.89 |

tokens), *motion* (e.g., move, stay, travel; 434 tokens), and *health* (e.g., health, sick, wellbeing; 331 tokens); all of them belong to the type instructing information in SCCT. When communicating during a situational crisis, such as the COVID-19 pandemic, instructing the public with explicit information is not trivial; these three highest categories reflect that necessity.

## 4.2 The Contents of Information for Stakeholders

In addition to Tables 1 and 2 that show how the 12 higher education institutions responded to the COVID-19 pandemic from a crisis communication perspective, Table 3 focuses on both stakeholders and the contents of the information. This information was not built in LIWC2015, so the first author created a custom dictionary that identifies frequent words that have relevant information. Results in Table 3 display that *targeted audiences* and the *strategy to reach out to targeted audiences* are the two highest-ranked categories, both of which concern the receiver of information. Although teaching itself is one of the main functions in universities, the low scores were seen in the categories *moving online* (0.44) and *messengers* (0.53).

Table 3 reflects each institution's comprehensive plans to prevent the spread of COVID-19 and to protect the health of students, faculty, and staff. All universities shared information on managing COVID-19 related problems, including details about COVID-19, information on shifting online learning and academic matters, resources on financial aid and other support services, and additional information on COVID-19 associated issues. The academic matters category that included academic, grade, credit, campus, learning, semester, etc., was the most frequent words category used in the contents of information when the college authorities communicated with stakeholders; the

number triumphed over the rest of the COVID-19 related information.

The results from word frequency based on the LWIC2015 analysis (Table 1), information types constructed from the SCCT theory (Table 2), and the analysis about stakeholders and information contents (Table 3) call for a further examination of the role of stakeholders in crisis communication when a pandemic such as COVID-19 would arise. In the following subsections, we offer explanations based on information available in KJ diagrams (Sumlut et al., 2020), which represent the structure of campus communication inferred from the publicly available websites.

## 4.3 Messengers of the Information

Stakeholders of higher education institutions during crisis communication involve messengers who provide information (e.g., president, dean, director) and audiences who receive information (i.e., students, faculty, staff, guardians, alumni, and local communities). The college authorities employed various means such as frequently asked questions (FAQs), the website announcement, and the latest updates to effectively reach out to audiences amidst the ongoing threat of COVID-19. Table 3 lists features and kinds of words found in higher education institutions' crisis communication during the COVID-19 pandemic.

### 4.3.1 College Authorities

In crisis communication, the role of college authorities becomes important, especially when information is shared outside of the public relations office of a university. For Amherst, Barnard, Middlebury, Pomona, Swarthmore, Williams, and ICU, the president was the one to deliver important messages, i.e., messages of updating their decisions, warnings and alerts, and messages of encouragement and empathy to community members. In the case of Harvard College, these messages were provided

**Table 2**

*Word Categories and Word Counts Produced According to the Situational Crisis Communication Theory (SCCT) From Each University Website*

| Category                                 | University name |         |      |      |         |           |     |            |        |            |          |      | Total word count |
|--|-----------------|---------|------|------|---------|-----------|-----|------------|--------|------------|----------|------|------------------|
|  | Amherst         | Barnard | CCSU | ECSU | Harvard | Haverford | ICU | Middlebury | Pomona | Swarthmore | Williams | Yale |                  |
| Adjusting information                    |                 |         |      |      |         |           |     |            |        |            |          |      |                  |
| Affect (challenge, risk, support)        | 69              | 29      | 3    | 12   | 2       | 6         | 0   | 79         | 5      | 33         | 0        | 20   | 258              |
| Affiliation (belonging, community, team) | 73              | 43      | 4    | 13   | 4       | 8         | 0   | 84         | 12     | 32         | 5        | 15   | 293              |
| Instructing information                  |                 |         |      |      |         |           |     |            |        |            |          |      |                  |
| Health (health, sick, wellbeing)         | 53              | 42      | 6    | 9    | 7       | 6         | 0   | 79         | 13     | 53         | 7        | 56   | 331              |
| Money (fees, finances, refund)           | 38              | 52      | 1    | 14   | 5       | 6         | 0   | 47         | 2      | 27         | 3        | 18   | 213              |
| Motion (move, stay, travel)              | 113             | 60      | 5    | 15   | 11      | 7         | 3   | 64         | 15     | 96         | 1        | 44   | 434              |
| Work (employee, pay, work)               | 109             | 60      | 0    | 28   | 7       | 9         | 0   | 363        | 10     | 116        | 7        | 32   | 741              |
| Managing reputation                      |                 |         |      |      |         |           |     |            |        |            |          |      |                  |
| Social (encourage, recommend, request)   | 19              | 9       | 8    | 3    | 1       | 2         | 1   | 20         | 3      | 20         | 0        | 21   | 107              |

**Table 3**

*Percentage of Number of Words From Custom Dictionary Categories Based on Stakeholders and Contents of Information in Each University Website*

| Category  | University name |         |      |      |         |           |      |            |        |            |          |      | Mean |
|---|-----------------|---------|------|------|---------|-----------|------|------------|--------|------------|----------|------|------|
|   | Amherst         | Barnard | CCSU | ECSU | Harvard | Haverford | ICU  | Middlebury | Pomona | Swarthmore | Williams | Yale |      |
| Stakeholder   |                 |         |      |      |         |           |      |            |        |            |          |      |      |
| Messengers (president, dean, director)  | 0.11            | 0.18    | 3.41 | 0.26 | 0.08    | 0.59      | 0.67 | 0.15       | 0.16   | 0.43       | 0.00     | 0.26 | 0.53 |
| Targeted audiences (students, faculty, staff, members, alumni, community, parents, family)                          | 3.56            | 2.90    | 1.60 | 3.26 | 1.65    | 3.03      | 2.93 | 2.89       | 3.67   | 2.52       | 3.46     | 1.29 | 2.73 |
| Contents of information   |                 |         |      |      |         |           |      |            |        |            |          |      |      |
| Virus (coronavirus, covid19, pandemic, outbreak)  | 0.25            | 0.38    | 1.53 | 0.51 | 0.60    | 1.98      | 1.20 | 0.49       | 2.50   | 0.35       | 3.20     | 0.02 | 1.08 |
| Moving online (remote, remotely, moving, online)  | 0.65            | 0.67    | 0.44 | 0.48 | 0.45    | 0.33      | 0.00 | 0.54       | 0.70   | 0.47       | 0.06     | 0.43 | 0.44 |
| Academic matters (academic, grade, credit, campus, learning, semester)  | 1.33            | 1.58    | 3.27 | 1.47 | 2.18    | 1.78      | 2.53 | 0.83       | 1.09   | 2.41       | 0.96     | 1.95 | 1.78 |
| Support (aid, support, help, guidance, service, provide)  | 1.16            | 1.93    | 0.87 | 0.92 | 1.28    | 1.32      | 0.27 | 1.49       | 1.80   | 1.25       | 0.26     | 0.92 | 1.12 |
| Other information on COVID-19 related issues (health, telehealth, work, telework, safety, cancel, travel, finances) | 1.11            | 1.20    | 0.51 | 1.25 | 1.35    | 1.71      | 0.93 | 1.55       | 1.95   | 1.50       | 1.15     | 1.44 | 1.30 |
| Strategy to reach targeted audiences (faqs, message, email, update)   | 1.25            | 1.00    | 7.41 | 0.70 | 1.05    | 1.58      | 5.73 | 0.85       | 1.41   | 0.68       | 2.82     | 1.24 | 2.14 |

by a dean and director of the emergency management team. Both CCSU and ECSU belong to the same Connecticut State Colleges and Universities system. As such, messages regarding COVID-19 updates came from the president of each of the two colleges and the Connecticut State Colleges and Universities (CSCU) system's president. Haverford's messages of general information regarding COVID-19 and related decisions to the community were from the president, dean, and vice president for finance and administration. Yale's COVID-19 related public information was delivered as announcements from the dean.

College authorities frequently update their decisions on educational policies, knowledge of the current impact of the pandemic in their community, and beliefs and attitudes towards the crisis on the colleges' websites. College authorities in institutions such as CCSU, ECSU, and Yale had been actively engaging in this process to provide information ranging from announcements on online education to their thoughts on the social impacts of the pandemic. Moreover, in eight out of 12 higher institutions, college leaders also expressed empathy, gratitude, and encouragement to students and staff members, fostering a sense of unity and resilience to face the crisis confidently during the pandemic. For example, "Staying in touch messages" of Amherst's president and messages sent by the president of Swarthmore such as "We're in this together" and "Looking forward" during March and April 2020 represent such efforts.

Although details concerning the status of the messenger are not identical across universities, all universities shared COVID-19 related messages through an authoritative figure: president, dean, vice president, or a director. Interestingly, no universities shared messages through the public relations office that would have been less personable. COVID-19 affected every stakeholder in universities; as such, crisis management needed

to be represented by a person rather than an office; messages from college authorities in our study reflect that situation.

## 5. Discussion

### 5.1 Crisis Communication Patterns During the COVID-19 Pandemic

A crisis has dynamic and multi-layered circumstances, highlighting the importance of integrated crisis communication in an institution. The results of the current study indicate that the patterns of the 12 higher education institutions are markedly similar to those reported in the previous studies on crisis communication (Cartier et al., 2020; König et al., 2020). Table 1 shows that the most often used word category was *work* (e.g., employee, pay, work) in the instructing information type, and the second and the third were *social* (e.g., encourage, recommend, request) in managing reputation and the *affiliation* (e.g., belonging, community, team) respectively. This finding is supported by the word count data: the often-used word categories (such as *work* [e.g., employee, pay, work] and *motion* [e.g., move, stay, travel]) are found in the instructing information type (cf. Table 2). The 12 institutions integrated all three types of information (i.e., instructing information, adjusting information, and managing reputation) in their communication with stakeholders from the beginning of the pandemic.

We consider that these results provide both practical and theoretical insight into the crisis communication model of higher education institutions during the COVID-19 pandemic. The SCCT theory shows that instructing information and adjusting information are typically employed in the early stages of crises, and Slagle et al. (2021) suggest that this is also the case for the patterns of crisis communication of higher education institutions during the pandemic. On a practical

level, the results of the current study add further evidence that higher education institutions strategically use three types of information from the onset of the pandemic. In other words, information about managing reputations was a major information type in crisis communication of the 12 higher education institutions. This result is drawn from a bottom-up method, namely collecting data from the COVID-19 websites of the 12 institutions and organizing it to explain their patterns of crisis communication. While previous studies tend to employ documents analysis (Muindi & Kiarie, 2021) or interview data (McNamara, 2021), the current study relies on more objective data with a theoretical view to identify and assess the communication patterns of higher education institutions during the pandemic. Thus, the theoretical implications of the current study can be seen as providing a rationale framework for examining crisis communication in higher education.

## 5.2 Information Sharing and Exploring Communication Pathways

In the face of crisis situations, the transmission model (one-way process) of communication (i.e., providing safety information such as warnings and alerts) is often used by the messengers of communication (Dufty, 2020). The case of higher education institutions during the COVID-19 pandemic also showed a similar pattern of communication, and one of the most important topics in this regard was remote learning because more than 1300 colleges and universities in all 50 states in the U.S. canceled in-person classes or shifted to online-only instruction for the spring semester of 2020 (Smalley, 2021). Interestingly, however, the result of the current study shows that the transition to online learning is not the most critical part of their crisis communication (cf. Table 3). Instead, the 12 higher education institutions

frequently made announcements about their communication strategies with stakeholders. We consider that this result suggests that the 12 institutions were actively engaged in not only sharing information regarding their responses to the pandemic but also in exploring the effective communication channels in the early stages of the pandemic.

The effort to maintain or even strengthen the relationships with stakeholders is also reflected in the information display of each institution. Remarkable in this regard is the case of Yale College, in which most of the announcements are organized in a FAQ format and designed to emphasize the institution's commitment to its students (see Technical Report 1). A similar effort can be seen in other institutions (e.g., Amherst, Harvard, and Swarthmore) in their way to reach out to all possible audiences in terms of distributing information related to their COVID-19 responses. These proactive communications suggest that the effort to build trust with stakeholders is an important task in the crisis communication of higher education institutions, which leads to the consideration of the role of college authorities during the pandemic.

## 5.3 Building Trust With Stakeholders in the Period of Uncertainty

The COVID-19 pandemic has been accompanied by a number of stressful experiences. In the context of higher education, high levels of uncertainty and stress among students due to issues of isolation and disconnection have been critical issues (Birmingham et al., 2021; Leal Filho et al., 2021). This increasing challenge requires college leaders to communicate with their students with encouragement and empathy. The current study shows that college authorities of the 12 higher education institutions were actively engaged in this communication. For example, "We're in this

together,” the title of the message sent by the president of Swarthmore College represents the leader’s intention to foster a sense of unity within the campus community in the face of the pandemic. In the case of CCSU, ECSU, and Yale, college authorities played a role in providing information regarding academic matters while expressing their thoughts on the challenges they faced as a community (see Technical Report 1). We consider from these results that the college authorities of the 12 institutions undertook an initiative to build trust with stakeholders in the early stages of the pandemic, the period in which uncertainty about the pandemic and its impact on their communities were increasing.

This active role assigned to the college authorities is likely associated with the following two criteria: the institutional character of the organizations and an organizational management perspective. First, most of the 12 institutions are liberal arts colleges consisting of small students populations, which tend to generate a sense of community among stakeholders in its nature. This point is clear when we compare our results with previous studies (e.g., Slagle et al. 2021) showing that messages of empathy tend to be of less interest in the crisis communication of a large public school (Slagle et al., 2021). Second, from an organizational management perspective, the roles of the 12 institutions’ authorities can be considered as a part of their efforts to enhance the legitimacy of decision-making processes by allowing community members to be informed on many aspects of the institutions’ ongoing issues. Their leadership echoes the tendency that most higher education institutions decided to open their decision-making processes to constituents during the current pandemic (Izumi et al., 2020). It is yet interesting to note that messages of empathy and support were strategically included in the crisis management by college authorities examined in this paper, which further suggests that

crisis communication requires not only transparency but integrity and a cooperative attitude.

## 6. Limitations

The limitations of this study include the limited availability of data and a partial and short time examination of patterns of crisis communication. First, we only analyzed data that was publicly accessible on the 12 institutions’ COVID-19 websites. Thus, for some institutions (in particular, International Christian University (ICU) and Williams), the amount of publicly shared information would not represent the total of shared information because universities could have distributed emails via campus-wide emails. Also, it should be noted that higher education institutions employ communication tools other than their websites. Recent studies show that the practice of college leadership during the current crisis is not confined to publicly shared information on websites but can also be found in social media usage (Sobaih et al., 2020). Furthermore, this study only investigates the ongoing crisis phase through the analytical framework of SCCT but not the pre-phase and post-phase of the crisis. Hence, future research should address these issues, analyze the patterns of crisis communication of higher education institutions in social media, and examine these results from the viewpoint of pre-phase and post-phase of the crisis.

## 7. Conclusion

Following the COVID-19 pandemic outbreak, the initial response period from the end of January until mid-April 2020 was marked by the active implementation of disaster communication by higher educational institutions. The 12 higher education institutions examined in this paper strategically used three types of information (i.e., instructing information, adjusting information, and managing

reputation) to reach out to their stakeholders. Moreover, within this process, the 12 institutions sought to explore effective communication channels so that information sharing becomes the vital link between the organizations and their stakeholders. College authorities of the 12 institutions actively engage in this information-sharing process, and they tend to take the initiative to build trust with stakeholders by sending messages of encouragement and appreciation of the struggles faced in the community. While an essential aspect of disaster communication is to offer accurate information, the presidential role suggests that college governance requires a sense of human touch in the process of crisis communication.

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## Endnotes

<sup>1</sup> Sumlut et al. (2020) and

<sup>2</sup> Sakurai et al. (2020) are freely available on the website of the International Christian University Institute of Education and Research Service. (<https://subsite.icu.ac.jp/iers/en/publications/technicalreports/>)