A public health crisis in the university: Impact of crisis response strategies on universities' transparency and post-crisis relationships during COVID 19 pandemic

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ABSTRACT

During the COVID 19 pandemic, one of the most critical tasks of the university was to effectively communicate with students, faculty, and staff members. This study aims to explore perceived universities' crisis response messages during the pandemic and examine the effectiveness of each response strategy on public relations outcomes. A survey with 346 university students in the U.S., results showed how defensive and accommodative response strategies differently affected PR outcomes. Accommodative strategies generated higher OPR and greater perceived transparency efforts among students, while several defensive strategies affected students' negative evaluations on post-crisis OPR and perceived transparency of their universities. Such results revealed valuable insights that make significant contributions to theory and practices in university crisis communication and management, especially when dealing with public health crises that are seen as external locus of control.

1. Introduction

The COVID-19 pandemic (hereafter "the pandemic") has significantly affected the world's higher education institutions leading to lockdown and the enforced closure of schools, colleges, and universities (Watermeyer et al., 2021). To protect the institutions from possible physical and perceptual damages, institutions quickly canceled in-person classes and meetings while courses were transitioning to a virtual mode (Coyne et al., 2020). This rapid transition has caused numerous complaints and issues in the aftermath. For instance, students complained about immediate need for high-speed Internet access and low quality of virtually delivered classes (Gessen, 2020; Coyne et al., 2020). Also, there was minimal and limited guidance on how higher education institutions should respond to the situation (CDC, 2020).

During the pandemic, the most critical tasks for universities were to communicate with students, faculty and staff members. Public relations practitioners strongly recommended continuous communication efforts with their public (Kwok et al., 2021). To achieve this goal, universities have provided crisis communication messages in several ways to inform the students about how the classroom would be transformed and sterilized, and to update how a university dealt with the situation on a daily (or weekly) basis. These messages were mainly disseminated through the university email list, which enabled organizations (e.g., university administrations) to effectively deliver the crisis responses to their internal public.

Yet, not much pandemic related literature has addressed its impact on universities, which is one of the most affected organization types during the crisis. Scholars investigated how the pandemic impacted on marketing strategies (Nenonen & Storbacka, 2020), interpersonal relationship (Pietromonaco & Overall, 2021), international businesses (Sharma et al., 2020), corporate social responsibility (He & Harris, 2020), patient health management (Raymond et al., 2020) or management and social influence (Ali & Alharbi, 2020). A study from Liu et al. was the first to investigate its impact on university. This study investigated how U.S. higher education leaders have centered crisis management with interviews from 55 university leaders. They defined the pandemic as "a high impact event that often strips an organization of its core value" by quoting Seegar and Ulmer (2001, p.374). They argued universities displayed two main missions: academic maintenance as well as health and safety. Despite the fact that they tried a variety of measures to prioritize safety (e.g., canceling classes, sanitizing facilities, providing computer devices, or limiting dorm density), students were dissatisfied with the information they received as their uncertainty grew in the situation (Coyne et al., 2020). This indicates unicersities' lack of

knowledge regarding how to effectively deliver crisis response messages. In this regard, the current study aims to investigate the appropriate crisis response strategy for universities experiencing the pandemic.This can be a benchmark case of how a university manages the pandemic, and further provides necessitated responses to its key public. We adopted the situational crisis communication theory (SCCT) as a framework (Coombs, 2007, 2002) as SCCT has been used by countless crisis communication research for Fortune 500 (Ki & Nekmat, 2014), nonprofit organizations (Sisco, 2012), food companies (Wen et al., 2021), sports business (Brown et al., 2020) and leadership and leadership communication (Tourish & Jackson, 2008), it also served as a critical framework for crisis management in colleges and universities (Mitroff et al., 2006; Hong & Kim, 2019).

The next chapter of this article begins by reviewing crisis communication research with a focus on the guiding theoretical framework (Benoit & Pang, 2008; Coombs, 1998) followed by application of Crisis Response Strategy. Then, we test how university crisis responses during the pandemic influenced important public relations outcomes (e.g., organization-public relationship and perceived organizational transparency) to suggest how universities engaged with a disease outbreak should choose their messages ranging from accommodative to defensive ones.

2. Literature review

2.1. The COVID-19 pandemic as a university crisis

As the pandemic is an unprecedented event that would significantly impact on businesses and society, three research themes arose for public relations and strategic communication scholarship: lessons learned from the crisis, assessment of organizational responses, and organizational post-crisis communication plans for future (Bapuji et al., 2020). For universities' perspectives, R Slagle et al. (2021) explored a public university's experiences during the pandemic regarding types of information that were shared, and faculty/staff responses to the information shared while the university only disseminated the information from top administrators. Charoensukmongkol and Phungsoonthorn (2021) further confirmed the critical role of a university's crisis communication on its employees, and that official crisis communication from administration and management could reduce employees' uncertainties during the pandemic.

During a health crisis, such as a H1N1 flu pandemic, students are an important internal public to universities. They appreciated the university's communication efforts, prompt response, and transparency (Kim & Niederdeppe, 2013). Such a role of a university during a crisis needs to be explored in depth as more health related crises are forthcoming. Kim and Niederdeppe (2013) specifically suggested that managing a crisis, providing relevant information, and showing one's commitment to the impact of a crisis are important research topics to explore. Kim and Liu (2012) also underscored a need for a study that explores other organizations that responded to a pandemic: a higher education institution. To respond to the call for research, this study seeks to understand universities' crisis communication in pandemic, and its impact on the public perceptions (e.g., students) towards the university. The next chapter will identify university messaging strategies during the pandemic from expansion of theoretical application of SCCT and Image Repair Theory.

2.2. Crisis response strategy during the pandemic

As aforementioned, the pandemic is seen as a complex crisis that is harmful to organizations and their stakeholders. In responding to such type of crisis, universities' crisis management plan includes organizational actions and communications that aim to tackle three areas/stages: 1) pre-crisis preparedness, 2) proposal for handling midst-crisis situations, and 3) post-crisis strategies to restore the corporate image (Kwok

et al., 2021, Omilion-Hodges & McClain, 2016). Especially, universities' midst crisis communication messages employed during the pandemic are of utmost importance to study. Because the pandemic accelerated the urgency for change for university leaders who must use what they are learning in crisis to position their institutions for radical impact in the decades to come (Govindarajan & Srivastava, 2020).

Two of the primary crisis response frameworks are applied: Situational Crisis Communication Theory (SCCT) and Image Repair Theory (IRT). SCCT is developed from the Attribution Theory that explains people's tendency to attribute crisis responsibility (Coombs, 2002). Coombs (2009) ' SCCT argues that crisis communication should select a response strategy (e.g., denial, attack the accuser, excuse, justification, apology, compensation) depending on the perceived attribution toward the situation. As crises are primarily perceptual, their perceived nature determines effective crisis response strategies (Coombs, 2010).

Image Repair Theory in public relations scholarship has its roots embedded in both rhetoric- and social science, and has a long history of development in crisis communication. The nature of the accusations, attacks, or complaints are the key components in understanding IRT. Five image repair strategies with subcategories have emerged (Benoit & Pang, 2008): 1) denial with two variants (e.g., simple denial, shitting the blame by saying someone else is responsible); 2) evasion of responsibility (e.g., argument that it was *provoked* and responded to the act of another or that it had *good intentions*); 3) reducing offensiveness (e.g., *bolstering* by showing the concern to offset negative feelings, *differentiation*, t*ranscendence* by putting the act in a more favorite context, *attacking the accuser* by criticizing the accuser to undermine credibility of the attack, *compensation* by offering monetary compensation or goods); 4) *corrective action* (e.g., the communicative entity offers a plan to solve or prevent a problem); and 5) *mortification* (e.g., *apologizing*).

Crisis response strategies are used as a way to deal with crisis situations, while they are located on a continuum barring different levels of control (Coombs, 1998). Public judges the communicative entity, and attributes crisis responsibility to the organization based on the level of control it had over the crisis (Coombs, 2019). This approach eventually forms a crisis type depending on how much responsibility the public ascribe to an organization (Coombs, 2004). In this regard, different crisis types require different message strategies. Specifically, defensive strategies are more appropriate for situations weak control (e.g., natural disasters, Coombs, 1998) and when an organization is seen as a victim (Coombs, 2019). On the contrary, more accommodative strategies, such as corrective action and full apology, are better suited with conditions of strong personal control when the communicative entity is preventable from a crisis (Coombs, 1998).

In general, accommodative strategy is considered more impactful to produce more positive PR outcomes (Coombs & Holladay, 2002). An experiment from Holland et al. (2021) showed that rebuild strategies were more effective than defensive strategies. However, if a crisis responsibility is not attributed to an organization, SCCT and Image Repair scholars would suggest not to use accommodative responses (e.g., apology). Because providing accommodative responses is an easy fix, it also comes with severe consequences such as receiving unnecessary attention from the mass media and public (Yang & Bentley, 2017) and creating liability problems to the stakeholders (Hearit, 2006).

Studies using the public health crisis context may argue that the COVID-19 pandemic would neither be a preventable crisis nor can a particular university be seen as responsible. For instance, a flu outbreak or H1N1 influenza were considered faux pas with unintentional external locus of control (Kim & Niederdeppe, 2013). Kim and Liu (2012) investigated how 13 corporates and government organizations differently responded to the first phase of the 2009 flu pandemic. They concluded government organizations, such as the CDC and the World Health Organization, were more active in instructing information to their primary publics (e.g., precautionary measures), showing sympathy for those affected, and corrective actions (e.g., support for developing a vaccine) than corporations. However, corporate counterparts, such as

airline, pharmaceutical, and food services-related industries, emphasized reputation management in their crisis responses, frequently adopting denial, diminish, and reinforce response strategies.

Nevertheless, concerns about potential harm and threats towards a health related crisis remained (i.e., perceived severity of influenza outbreaks are much higher than other crisis contexts) (Bish & Michie, 2010). Thus, one can argue that the pandemic posed serious public concerns and perceptions of the crisis was extremely severe; and that students might assess their university, as a communicative entity, to have relatively stronger control than themselves. If so, universities' use of defensive strategies, such as denial, justification or minimization, could yield detrimental impact on their post-crisis relationships with students. In addition, an organization is responsible to provide relevant information promptly and show a strong accommodation to its public when a crisis evokes emotional fear and anxiety (Kim & Niederdeppe, 2013).

2.3. Post-crisis organization-public relationship

The key to reacting to a crisis largely depends on the communication approach and individual message strategy taken afterwards by organizations (Ma & Zhan, 2016). Therefore, previous research urges the need to test the "effectiveness" of individual crisis strategies for facilitating the appropriate selection of the messages during the actual crisis (Coombs, 1998, p. 186)which can be tested with the post-crisis organization-public relationship (OPR).

OPR has become a prominent paradigm in public relations research. It is evident that the post-crisis relationship between an organization and stakeholders can be impacted by communication management in the midst of the crisis (Coombs & Holladay, 2001). For example, from a survey of 429 students, Kim and Niederdeppe (2013) showed that perceived crisis responsibility of a university, which would determine its crisis response options, was associated with its relational trust among students. Similarly, Huang (2008) showed that in crisis managers' assessment, the form of crisis response (*How to say*, timely response, consistent response, and active response) is more powerful than crisis communicative strategies (i.e., *What to say*, denial, diversion, excuse, justification and concession) in predicting trust and relational commitment. These findings lead to the question of our own. During the COVID-19 crisis, did universities' individual defensive strategies yield a more detrimental effect, than that of accommodative responses, on maintaining positive relationships with stakeholders (e.g., students)? The aforementioned scholarly evidence guides us to the following two hypotheses:

Hypothesis 1. Defensive crisis response strategies during the pandemic [(a) denial; (b) shifting the blame; (c) minimization; (d) justification] would decrease organization-public relationships between university and its students.

Hypothesis 2. Accommodative crisis response strategies during the pandemic [(a) corrective action; (b) apology; (c) bolstering] would increase organization-public relationships between university and its students.

2.4. Organizational transparency

As another important public relations outcome in crisis communication literature, the concept of transparency has been increasingly studied as both ethical and beneficial to organizations (Holland et al., 2018; Holland et al., 2021; Kim et al., 2014; Rawlins, 2008). Numerous researchers have treated organizational 'transparency' as a multidimensional construct (Craft & Heim, 2008; Kim et al., 2014; Holland et al., 2018; Rawlins, 2008). That is, as Holland et al. (2018) pointed out, scholars should distinctively conceptualize and selectively operationalize actual transparency, message transparency, and perceived organizational transparency respectively.

As one of the pioneer studies that defined 'actual transparency,' Craft and Heim (2008) suggested transparency is instrumental in the construction of organizational accountability, while the two concepts, transparency and accountability, are distinct. For message transparency, transparency refers to corporate information to be visible and accessible to external stakeholders (Bushman et al. (2004); an organization's accuracy, clarity, and disclosure of crisis information (Holland et al., 2018); and/or disclosing detailed information and displaying information for public view (Kim et al., 2014). In the crisis communication literature, the aforementioned organizational message transparency dimensions (e.g., whether information is available and disclosed to stakeholders) have been found to influence organizational reputation (Kim et al., 2014).

Noteworthy, this study measures perceived organizational transparency to see how students evaluate university crisis strategies during the pandemic. Regarding a link among crisis types, message strategies, and organizational transparency, Holland et al. (2021) provided an empirical evidence: the diminish strategy was viewed as less transparent, produced less sympathy, produced more anger, and was viewed as less credible, compared to denying or rebuilding ones.

The effectiveness of individual crisis strategies during the pandemic on organizational transparency has been barely tested. If a university had focused on accommodation towards students through employing corrective action and bolstering, we presume it could have enhanced its perceived transparency efforts. As a previous study argued (Holland et al., 2021), it is plausible to argue that the 'diminish' crisis response strategy elicit a negative outcome for transparency, regardless of the nature of the response. Taken together, we posit that crisis response strategies used by universities, in the mindset of students, will influence student evaluations of organizational transparency effort during the pandemic.

Hypothesis 3. Defensive crisis response strategies during the pandemic [(a) denial; (b) shifting the blame; (c) minimization; (d) justification] would decrease student evaluations of universities' transparency.

Hypothesis 4. Accommodative crisis response strategies during the pandemic [(a) corrective action; (b) apology; (c) bolstering] would increase student evaluations of universities' transparency.

3. Methods

3.1. Sample

Participants recruited from three universities in the U.S. completed an online survey via Qualtrics during the pandemic (January - June, 2021). Two universities are located on the east coast (n = 250) and the other one (n = 96) is in the middle west. Participants received class credits as compensation. As a result, a total of 346 students completed the survey. The size of the sample gave the study enough power based on a priori G-power analysis (using software 3.1). According to an a priori power analysis using G-power 3.1 software, a minimum of 128 participants in total is needed to achieve a power of.80 at the Type I error rate of.05 if the effect size (f) is.5, which is medium (Cohen, 1988).

All samples are current college students as the focus of study is to measure their perceptions toward the university they are attending. Majority of samples are Caucasian (n = 235, 68.3%), followed by African American (n = 39, 11.3%), Hispanic (n = 34, 9.9%), Asian (n = 24, 7%) and others (n = 12, 3.5%). Female participants accounted for 64% of the participants (n = 220), indicating our sample was skewed to female rather than male (n = 124, 36%). The average age of the respondents was 22 years old, and 64 people (18.6%) were previously diagnosed with COVID-19.

3.2. Survey procedures

After the participants completed informed consent forms, they were asked to provide demographic information such as gender, age, or ethnicity. Participants were then asked to provide their evaluations regarding what response strategy they perceived their universities have used to deliver the COVID-19 related information (Coombs, 2010). Specifically, participants were asked to recall actual messages from their universities. To successfully operationalize what they had read, our survey 1) asked them to think about the messages they had received from the university, 2) provided the description for each question, and 3) asked them to indicate if they thought those strategies were used in the university generated messages. Then, respondents reported their post-crisis organization-public relationship (OPR) scores in four dimensions (i.e., trust, commitment, satisfaction, control mutuality) and perceived organizational transparency.

3.3. Variables measured

3.3.1. Crisis response strategies

This study operationalized seven crisis response strategies: denial, shifting the blame, minimization, justification, bolstering, corrective action, and full apology. Given that universities, in reality, utilized multiple response strategies in multiple messages (Dominic et al., 2021; Hong & Kim, 2019), we were careful to measure universities' use of each crisis strategy in the perception of students. Such measures have been widely used as a valid approach in strategic communication fields (Coombs & Holladay, 1996; Jaworski & Kohli, 1993). Specifically, respondents were asked in their opinions whether they viewed the-university had adopted any of the following strategies (see Table 1).

3.3.2. Post-crisis organization-public relationship

Following the work from Hon & Grunig (1999) and Hwang (2001),

Table 1
A Summary List of the Crisis Response Strategies in Literature.

Crisis response strategy		Operationalization	References
Defensive strategy	Denial	Statements that deny the occurrence or existence of the questionable event, or deny that the person is the cause of the event	Coombs (1998) Lyu (2012) Kim and Liu (2012)
	Shifting the blame	Statements that claim that another party is responsible about the event	Benoit (1997)
	Justification	Statements that claim that the actor did not have the knowledge, ability, or control to avoid the event	Benoit (1997, 2006) Huang et al. (2005)
	Minimization	Statements that suggest that the act in the question is not as offensive as it seems:	Lee (2005) Ferguson et al. (2012)
Accommodative strategy	Bolstering	Statements that assure positive attributes of an organization to protect its stakeholders:	Benoit and Pang (2008) Coombs (2007)
	Corrective action	Statements that involve a commitment to repair the damage from the crisis event and/or attempts to restore the state of affairs:	Coombs (2007) Huang et al. (2005)
	Apology	Statements that agree that the event did occur and made an apology:	Huang et al. (2005) Lyu (2012)

students' perception of organization public relationship was measured with Trust, Commitment, Satisfaction and Control Mutuality using a 7-point Likert-type scale (1 = strongly disagree, 7 = strongly agree). The scale has been modified to fit the context of this study (see Table 2).

3.3.3. Perceived organizational transparency

With regard to the original measurement of organizational transparency from Rawlins (2008), the current study used a condensed 17-items of perceived organizational transparency using a 7-point Likert-type scale (1 = strongly disagree, 7 = strongly agree; Holland et al., 2021; Kim et al., 2014).

4. Results

A series of independent T-tests was conducted to test Hypothesis 1 predicting defensive crisis response strategies during COVID-19 pandemic would have negative impacts on trust, commitment, satisfaction, and control mutuality. Results showed denial [$t(329) = 2.26$, p = .024], shifting the blame [$t(329) = 3.18$, p = .001], minimization [$t(329) = 2.78$, p = .006], and justification [$t(329) = 4.30$, p = .000] generated more negative scores on trust (see Table 3 for mean comparisons). Likewise, shifting the blame [$t(328) = 1.91$, p = .048], minimization [$t(328) = 2.79$, p = .006], and justification [$t(328) = 3.25$, p = .002] generated more negative scores on commitment (see Table 4 for mean comparisons). In addition, shifting the blame [$t(328) = 2.06$, p = .040], minimization [$t(328) = 2.82$, p = .005], and justification [$t(328) = 4.02$, p = .000] generated more negative scores on satisfaction (see Table 5 for mean comparisons). Finally, shifting the blame [$t(328) = 3.80$, p = .000], minimization [$t(328) = 2.64$, p = .006], and justification [$t(328) = 3.96$, p = .000] generated more negative scores on control mutuality (see Table 6 for mean comparisons). H1b, H1c, H1d were fully supported and H1a was partially supported as denial did not produce significant differences on commitment, satisfaction, and control mutuality.

To test Hypothesis 2 that postulates if the use of accommodative crisis response strategies during COVID-19 pandemic would have positive impacts on trust, commitment, satisfaction and control mutuality, independent t-tests were conducted. Apology [$t(329) = 4.42$, p = .000], corrective action [$t(329) = 3.22$, p = .001], ans bolstering [$t(329) = 3.57$, p = .000] generated more positive scores on trust (see Table 3 for mean comparisons). Similarly, apology [$t(328) = 3.44$, p = .000], corrective action [$t(328) = 3.26$, p = .001], ans bolstering [$t(328) = 2.81$, p = .003] generated more positive scores on commitment (see Table 4 for mean comparisons). Likewise, apology [$t(328) = 3.32$, p = .001], corrective action [$t(328) = 3.28$, p = .001], and bolstering [$t(328) = 2.16$, p = .016] generated more positive scores on satisfaction (see Table 5 for mean comparisons). Finally, apology [$t(328) = 2.95$, p = .003], corrective action [$t(328) = 2.25$, p = .023], and bolstering [$t(328) = 3.25$, p = .000] generated more positive scores on control mutuality (see Table 6 for mean comparisons). This shows H2a, H2b, H2c, and H2d were supported.

For Hypothesis 3, a series of independent T-tests was conducted to test if defensive crisis response strategies during COVID-19 pandemic would have negative impacts on transparency of the university. Results showed denial [$t(324) = 3.81$, p = .000], shifting the blame [$t(324) = 3.60$, p = .000], minimization [$t(324) = 4.50$, p = .000], and justification [$t(324) = 6.30$, p = .000] generated more negative scores on transparency, supporting H3a, H3b, H3c, H3d (see Table 7 for mean comparisons).

To test Hypothesis 4, another series of independent T-tests was conducted to test if accommodative crisis response strategies during COVID-19 pandemic would have positive impacts on transparency of the university. Results showed apology [$t(324) = 5.25$, p = .000], corrective action [$t(324) = 4.61$, p = .000], and bolstering [$t(324) = 4.57$, p = .000] generated more positive scores on university transparency, supporting H4a, H4b, H4c, H4d (see Table 7 for mean comparisons).

Table 2

Internal Reliability Check of the Items in OPR and Organizational Transparency.

Variable		M (SD)	Cronbach's alpha
Trust	University treats students like me fairly and justly	3.78 (0.99)	0.91
	University can be relied on to keep its promises.	3.50 (1.08)	
	I believe that University takes the opinions of people like me into account when making decisions	3.48 (1.02)	
	University has the ability to accomplish what it says it will do	3.63 (1.04)	
Satisfaction	I am happy regarding relationship with University	3.62 (0.94)	0.93
	Most students like me are happy in their interactions with University	3.47 (1.02)	
	Generally speaking, I am pleased with the relationship University has established with students like me	3.57 (1.01)	
Commitment	I feel that University is trying to maintain a long-term commitment to students like me	3.61 (0.99)	0.91
	I can see that University wants to maintain a relationship with students like me	3.39 (1.12)	
	Compared to other organizations, I value my relationship with University more	3.34 (1.05)	
Control mutuality	University and students like me are attentive to what each other say	3.60 (0.94)	0.90
	University believes the opinions of students like me are legitimate	3.47 (1.05)	
	University really listens to what students like me have to say	3.31 (1.12)	
Transparency	University asks for feedback from people like me about the quality of its COVID-19 related information	3.27 (1.26)	0.85
	University involves people like me to help identify the COVID-related information I need	3.26 (1.08)	
	University provides detailed COVID-19 updates to people like me	3.72 (1.05)	
	University makes it easy to find the COVID-related information I need.	3.74 (1.05)	
	University provides the COVID-related information in a timely fashion to m	3.56 (1.12)	
	University provides the relevant COVID-19 updates to me	3.69 (1.07)	
	University provides the COVID-19 information that could be verified by an outside source, such as an auditor	3.52 (1.06)	
	University provides complete information about the COVID-19	3.50 (1.09)	
	University provides the COVID-related information that is easy to understand	3.75 (1.02)	
	University provides accurate COVID-related information to me	3.73 (0.99)	
	University provides reliable COVID-related information to me	3.72 (1.01)	
	University is forthcoming with information that might be damaging to the University such as an increase in confirmed positive COVID-19 cases on campus	3.51 (1.21)	
	University is open to criticism by people like me	3.21 (1.17)	
	University freely admits when it has made mistakes in handling of the COVID-19 pandemic	3.05 (1.13)	
	University often leaves out important details in the COVID-19 information to me	2.75 (1.07)	
	University provides the COVID-related information that is full of	2.58 (1.09)	

Table 2 (*continued*)

Variable		M (SD)	Cronbach's alpha
	jargon and technical language that is confusing to me		
	University blames outside factors that may have contributed to the outcome when reporting bad news	2.70 (1.09)	
	University only discloses the COVID-19 information when it is required	3.04 (1.14)	

Table 3

Mean Comparisons of Crisis Response Strategies on Trust.

	Presence		Absence		t value	P value
	M	SD	M	SD		
Denial	3.41	0.87	3.68	0.86	2.262	0.024
Shifting the blame	3.38	0.81	3.32	0.88	3.184	0.000
Minimization	3.43	0.87	3.71	0.86	2.781	0.006
Justification	3.25	0.90	3.73	0.83	4.298	0.000
Bolstering	3.78	0.83	3.44	0.89	3.566	0.000
Corrective action	3.78	0.84	3.27	0.88	3.220	0.001
Apology	3.83	0.79	3.42	0.90	4.419	0.000

Table 4

Mean Comparisons of Crisis Response Strategies on Commitment.

	Presence		Absence		t value	P value
	M	SD	M	SD		
Denial	3.38	0.95	3.46	0.94	0.625	0.533
Shifting the blame	3.28	0.84	3.51	0.97	1.981	0.048
Minimization	3.23	0.98	3.54	0.91	2.748	0.006
Justification	3.14	0.97	3.53	0.92	3.145	0.002
Bolstering	3.58	0.90	3.29	0.97	2.805	0.003
Corrective action	3.61	0.94	3.27	0.92	3.275	0.001
Apology	3.62	0.87	3.27	0.98	3.439	0.000

Table 5

Mean Comparisons of Crisis Response Strategies on Satisfaction.

	Presence		Absence		t value	P value
	M	SD	M	SD		
Denial	3.46	0.90	3.58	0.89	0.966	0.335
Shifting the blame	3.39	0.78	3.61	0.93	2.059	0.040
Minimization	3.35	0.96	3.65	0.85	2.822	0.005
Justification	3.19	0.86	3.66	0.88	4.020	0.000
Bolstering	3.66	0.89	3.44	0.89	2.163	0.016
Corrective action	3.71	0.90	3.40	0.76	3.275	0.001
Apology	3.71	0.83	3.39	0.93	3.319	0.001

Table 6

Mean Comparisons of Crisis Response Strategies on Control Mutuality.

	Presence		Absence		t value	P value
	M	SD	M	SD		
Denial	3.34	0.94	3.49	0.90	1.246	0.214
Shifting the blame	3.16	0.83	3.57	0.91	3.798	0.000
Minimization	3.25	0.94	3.55	0.88	2.740	0.006
Justification	3.10	0.87	3.56	0.89	3.955	0.000
Bolstering	3.61	0.83	3.29	0.95	3.25	0.000
Corrective action	3.57	0.93	3.35	0.87	2.281	0.023
Apology	3.60	0.84	3.31	0.95	2.945	0.003

Table 7
Mean Comparison of Crisis Response Strategies on Transparency efforts.

	Presence		Absence		t value	P value
	M	SD	M	SD		
Denial	3.16	0.93	3.61	0.80	3.812	0.000
Shifting the blame	3.25	0.78	3.62	0.85	3.596	0.000
Minimization	3.18	0.81	3.67	0.82	4.959	0.000
Justification	2.99	0.89	3.67	0.77	6.296	0.000
Bolstering	3.71	0.77	3.30	0.87	4.571	0.000
Corrective action	3.73	0.77	3.31	0.87	4.612	0.000
Apology	3.71	0.79	3.20	0.93	5.248	0.000

5. Discussion

5.1. Main findings

The current study has demonstrated the impacts of crisis response strategies applied by the university during an actual public health crisis. The college student sample was collected to capture live responses as the primary public of the higher education institution. Our results show how defensive and accommodative response strategies can either negatively or positively affect PR outcomes. Specifically, denial, shifting the blame, minimization, and justification strategies generated negative scores for trust, satisfaction, control mutuality and commitment, while apology, corrective action and bolstering strategies produced positive scores from students. These findings are consistent with previous research: Lyon and Cameron (2004) or Kim and Liu (2012) defined how and in what ways an accommodative strategy can benefit an organization and a defensive strategy can do the opposite, and concluded that accommodative strategies should be applied during a severe crisis situation.

A considerable amount of crisis communication research found the impact of different types of crisis, while mixed findings did not provide clear guidelines about when to use which. For example, Claeys and Cauberghe (2014) stated that the match between a crisis type and a particular crisis strategy is unnecessary because their results showed the same effects generated between the correct pair and mismatched pair. Fuoli et al. (2017) also argued that there is no difference between denial and apology in terms of rebuilding a trust after a crisis. As Coombs (2007) suggested, apology strategy is only appropriate when the organization is responsible for the crisis as the public would perceive an organization to be unethical to avoid its responsibility (Coombs & Holladay, 2008). Taken altogether, it is ironic to witness that university messages including apology or corrective action can help reinstate an organization back to where it was and restore OPR during a public health crisis.

Interestingly, denial produced no differences on satisfaction, control, mutuality, and commitment. While denial is located at the edge of the crisis response strategy continuum, this strategy generally exhibits public backlash than other defensive strategies (e.g., shifting the blame or minimization). The unique nature of the pandemic crisis may offer explanations for these contradictory findings. First, it is plausible to assume that students viewed simple denial as an acceptable response since universities are not the focal entities that caused the global health crisis. Another explanation can be answered by the *Persuasion Knowledge Model* (Friestad & Wright, 1994). The Persuasion Knowledge Model points out that individuals' persuasion knowledge is critical to how they make sense of and accept persuasion messages from organizations. This theory posits people could distrust media content and evaluate it as negative, when they realize the communicator's explicit motives and intentions to persuade them into a certain direction. It doesn't matter whether a given crisis message is seen as an attempt to persuade students, or it be an individual's belief and own criteria to evaluate the situation, and an organization's persuasion attempt. Indeed, simple denial could be viewed differently from either shifting the blame or minimization as the denial strategy during the pandemic would attempt

to deliver the fact - that a university did not cause a pandemic. Future research, therefore, is needed to further examine whether or not shifting the blame or minimization would not be situated or assessed in the same category with denial strategy in the eyes of the public, especially during a health crisis context.

5.2. Conclusion

5.2.1. Theoretical contribution

Our contribution to SCCT is threefold. First, we extended prior work by enhancing the understanding about the significant effect of defensive strategy for disease outbreak (Coombs, 1998). Responding to Liu, Shi, Lim, Islam, Edwards and Seegar (2021)'s suggestion, this investigation enables us advance several actionable recommendations in crisis management plan for universities (and other type of organizations) providing valid solutions and add to the increasing body of research on SCCT. This study helps crisis communication scholars extend their understanding regarding the health crisis communication utilizing SCCT. As summarized in the main findings, the current literature focuses on the contradictory effects between denial strategy vs. shifting the blame or minimization. Compared to the existing literature, this study underscores on the importance of having a new perspective on health crisis communication which should fall into the victim category as a disease outbreak (Coombs, 2007). Tian and Yang (2022) defined COVID-19 as "sticky crisis" based on its longitudinal nature as well as external contextual factors by quoting Coombs (2020). If a crisis is a disease outbreak, public should embrace shifting the blame or minimization as it has the lowest crisis attribution. Yet, only denial, a most advocating strategy, was accepted by our sample (Scheiwiller & Zizka, 2021). By exploring how SCCT can be applied in the new type of crisis, this study seeks to identify proper communication strategies to deal with unpredictable situations like pandemics and prevent any detrimental effect.

It has been common knowledge to crisis communication scholars to conclude that practitioners should employ message strategies by mitigating blame attributions (Coombs, 2020). Crisis responsibility has been a main criteria of SCCT, yet a crisis like pandemic does not pinpoint direct responsibility. .

With a disease outbreak, public should not seek for crisis attribution due to its own nature, being minimally responsible. However, our findings suggest that organizations using shifting the blame or minimization provides an excuse for the public to blame for. Therefore, we are careful to suggest future SCCT studies should provide alternative recommendations for such crisis types not to use shifting the blame or minimization. Rather, denial strategies would be as effective as accommodative strategies.

Furthermore, this study ideally utilized universities' pandemic response messages during the actual time of the crisis providing strong external validity. By exploring "live cases and responses" of university's various types of response messages, the findings revisit SCCT in a way that shows how different types of crisis response strategies are perceived and which strategies are actually working, suggesting "best practices" for crisis management. Amidst the pandemic, university students are highly dependent on the university's timely and wise crisis management to protect their health and safety and to continue academic activities (Macnamara, 2021). This aligns with our contradictory finding with SCCT's claim that defensive strategies are best for victim crisis containing "very low attributions of crisis responsibility." This suggests that universities might need a different approach to the public health crisis than other crises. Practitioners need to facilitate the role of accommodative strategies that can be applied to health and other types of high impact crises to help organizations treat crises as opportunities. As the pandemic is an ongoing crisis, this study establishes a foothold for future studies to provide more understanding about crisis communication in a novel health-related crisis.

Finally, this study extends the SCCT framework by testing the impacts of crisis response strategies on an Organization-Public

Relationship (OPR) under the university-students relationship context. Although universities are also victims of COVID-19 pandemic, the findings suggest that accommodative response strategies are more beneficial to restore the relationship with students during the pandemic from OPR's perspective. The effect of crisis responses on OPR is contingent on the types of crisis response strategies from the universities by acknowledging the crisis, addressing students' concerns and clarifying their actions (i.e., accommodative strategies). To our best knowledge this study is the one of the first studies in public relations that addresses the urgent need to identify effective crisis response strategies about the pandemic after Tian and Yang (2022)'s study in the context of political crisis communication. This study can be applied to future health-related crises and/or a global pandemic crisis that could be prevalent at universities.

5.2.2. Implications

To conclude, universities suffered from the pandemic and did try to provide crisis response strategies with students. Despite continuous and countless emails and social media posts, many students and even employees did not find those messages comforting nor helpful (Liu et al., 2021), but the SCCT recommended not to apologize unless the locus of control is internal. Therefore, it remained unknown which "crisis response strategy" should have been used. The current study reveals that accommodative strategies are effective choices for a severe public health crisis such as a pandemic, even if the university is not responsible for the situation. Taken together, our findings expand upon the theoretical approach in a crisis communication research stream and support the argument that every crisis is different, thus requiring a unique approach.

5.3. Limitation and future direction

The present study has several limitations that could be addressed in future research. First, the study focused on the perception of participants toward universities' messages. As each university has its own crisis response, we carefully tailored our questionnaire to measure their perceptions regarding the use of crisis response strategy. Therefore, it is possible that participants' universities did not apply a certain crisis response strategy in their messages, even if students thought they did. Future research could conduct an experiment by 1) manipulating each type of crisis response to cancel out possible compounds (Reeves & Geiger, 1994) or 2) to utilize actual crisis statements issued by the organization to test their effectiveness to overcome this limitation. Second, the study conducted multiple t-tests with multiple hypotheses on the single data. Researchers recommend Bonferroni correction for multiple testings because of the increased risk of a type I error. If we apply Bonferroni correction to our analysis, the criteria value would be .007 (alpha = 0.05 divided by 7 tests) which could change the statistical significance of the uses of 'denial' on trust and commitment, satisfaction, 'bolstering' on satisfaction, 'shifting the blame for commitment and satisfaction, and 'corrective action' on control mutuality into non significance. However, many studies argued that when a researcher plans the specific analysis on a priory manner, Bonferroni correction is not necessary. One strong argument raised by Perneger's (1998) stated "specified hypotheses were tested, no formal corrections for multiple comparison were carried out (Perneger, 1998, p. 1993)." In a similar vein, Glaus et al. (2014) also argued that p-values were not adjusted for multiple testing because the hypotheses were specified a priori. Krane-Gartiser et al. (2014) did not apply Bonferroni correction because the specific analyses were planned before the study. Finally, although the COVID-19 pandemic is operationalized as a public health crisis, it carries so many unique characteristics that may not be applicable and comparable to other health crises. Thus, we suggest careful defining a public health crisis with possible consideration of various approaches.

Declaration of Competing Interest

There is no conflict of interest associated with this research project.

Data Availability

Data will be made available on request.

Acknowledgements

Appendix A

Questionnaire Used for Crisis Response Strategies

Suppose that university name would like to know how they handled the COVID-19 pandemic through university communication channels.

Please think about messages Your u*niversity* used in communicating about the COVID-19 updates. Then answer the questions below (e.g., please select yes if you think university name used such messages).

- (denial) In my opinion, *university* did claim that there is no pandemic to worry about
  Yes / No
- (shifting the blame) In my opinion, *university* did blame the third party (outside of the university) for the pandemic
  Yes / No
- (justification) In my opinion, *university* did deny its intentionality of the action involved with the situation and try to justify their decision
  Yes / No
- (minimization) In my opinion, *university* did claim the damage related to the situation is manageable
  Yes / No
- (bolstering) In my opinion, *university* did assure that they cared about the students and provided proper information about the situation
  Yes / No
- (apology) In my opinion, *university* did accept full responsibility about the situation and apologize to students
  Yes / No
- (corrective action) In my opinion, *university* did offer monetary compensation or academic accommodation to the affected students

  Yes / No.

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