Implementation of Digital Public Relations in Crisis Management: the Evidence of Palestinian Director of Education During the Covid-19 Pandemic

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Abstract

This study aimed to investigate the application of digital public relations in crisis management. In particular, our focus was on studying whether the information communication strategies implemented by the Palestinian Director of Education During the Covid-19 Pandemic led to the Organization's successful crisis management. The Binary logit regression was applied to analyze the data collected from participants of the Palestinian Director of Education digital public relation information updates discussion forum. The findings revealed that pedagogy and mitigation information strategies are positively and significantly associated with Organization digital public relation application in crisis management. In contrast, Adoptive and Modification information strategies show a negative and significant association with Organization digital public relation application in crisis management. Hence, the study concludes that the Organization's implementation of Digital Public Relations in Crisis Management should study its chosen strategies to ensure clear and consistent information, careful information management, media management, direct communications, and actions.

Keywords: Digital public relations, crisis management, information strategy, and COVID-19.

Introduction

Many digital public relations studies emphasize how organizations apply communication to manage crises and performance and how audiences react to an organization's crisis response (Gifford, 2010; Huang, Wu, & Huang, 2017; Rosidin & Hamid, 2020; Sweetser, 2019; Taylor & Kent, 2007; Taylor & Perry, 2005). However, organizations do not always face crises alone. Sometimes audiences can actively participate in crisis

communications while publicly defending the Organization (Brown & Billings, 2013). In Addition, literature has acknowledged the effectiveness of organizational use of digital public relation mean as a strategy for crisis communication (Claeys & Cauberghe, 2014; Claeys, Cauberghe, & Vyncke, 2010; T. W. Coombs, 2018; Fuoli, van de Weijer, & Paradis, 2017). Drawing on Situational Crisis Communication Theory (SCCT) (W. T. Coombs, 2015), believers (Luoma-Aho, 2015), the concept of shared meaning creation (Botan & Taylor, 2004), and the search for framing (D'angelo, 2002), this paper investigates the effectiveness of the Palestinian director of education crisis communications strategy.

While there are often several sources of information on the crisis, organizations often design their canals of communication, among others, social media (for example, Facebook, Instagram, tweeter, LinkedIn, and so on) and websites, and use both digital media and traditional organizations (in forms of both earned and paid media) to spread the updates information related to the crisis. Whereas these canals give organizations some control of the information, compared to the media, they are often untrusted (Bunker, 2020) and unpopular (Mescheder, Oechsle, Niemeyer, Nowozin, & Geiger, 2019; Rugkåsa et al., 2001; Westlund & Ghersetti, 2015) amongst the audience as a source of information. From that perspective, online news media offer an exclusive setting for understanding how the organizations, the public, and the news media exchange online. For instance, (Valentini & Kruckeberg, 2012; Valentini, Kruckeberg, & Starck 2012) argued that gatekeepers of news are the digital news media as they regulate the content of what is written. Also, digital news platforms tolerate interexchange between the organization members and public participation in debates (Valentini & Kruckeberg, 2012). Hence, because of the high reliability of digital media outlets and their capability to spread information to the public (Bunker, 2020; Geiger, Gore, Squire, & Attari, 2021), public relations practitioners in crisis realism intended to connect with these media and enhance the chances that their Organization's crisis management to be covered by journalists. However, the existing literature revealed that the media seldom fully reflect the evidence of the Organization's crisis management. Instead, the media usually cover selective organizations' crisis management strategies (Bowen & Zheng, 2015; Zheng, Liu, & Davison, 2018) while framing the crisis as more severe than the organization desires

(Park, Cho, Johnson, & Yurchisin, 2017). And often, when this happens, the public familiar with the Organization participates with their comments to voice the Organization's position in the digital media or voice their opinion.

Empirical evidence shows that organization members and its digital news audience participation in the discussion have a significant effect on defending the Organization's crisis management strategy implemented during the crisis (Holland, Seltzer, & Kochigina, 2021)and that they play an influential role in determining the discernment of news among the audience (Goncalves Filho & Waterson, 2018; Weber & Prochazka, n.d.). Audience participation in the discussion can also encourage other readers' opinions on the media credibility (Nichols et al., 2022; Searles, Spencer, & Duru, 2020) information quality evaluation (Dohle, 2018; Prochazka, Weber, & Schweiger, 2018), bias (Anderson, Yeo, Brossard, Scheufele, & Xenos, 2018), and the will to seek news from the journalists (Searles et al., 2020). Heinbach et al. (2018) concluded that member and audience participation could influence the article's persuasion for more than two weeks after the information was read. This implies that member and public participation can have long-term effects on others. Moreover, organization members and public participation discussion is revealed to have a significant impact on the new audience's opinion of perceived responsibility, displaying the impact on the assessment of news and public in crisis management (Von Sikorski & Hänelt, 2016; Ziegele, Jost, Bormann, & Heinbach, 2018). Hence, this paper aimed to investigate how Palestinian teachers and the public participation in the discussion on the Palestinian director of education covid-19 health crisis management through digital media updates information following the Organization's implemented crisis management strategy.

Literature Review and Hypothesis Development
Several studies on crisis management have acknowledged that digital public relation is an emergency response strategy (Alfonso & Suzanne, 2008; Grunig, 2009; Hidayat, Anisti, & Wibawa, 2020). While some scholars, such (T. Coombs & Holladay, 2015; W. T. Coombs, 2015), defined crisis as the "perception of an unpredictable event that threatens significant stakeholder expectations in terms of health, safety, environment, and economics, and which can have a serious impact on an organization's performance and

generate negative outcomes. Any crisis related to organizational management could negatively affect the quality of its relationships with the public (Dowling, 2002) and harm the Organization's reputation and legitimacy (Patriotta, Gond, & Schultz, 2011).

To implement digital public relation crisis management to mitigate the threats that the crisis could cause, organizations often apply a variety of crisis communication responses. For example, Coombs (2015) listed the common digital public relation crisis management into three types: (1) Pedagogical information is information that tells people what to do to protect themselves from physical threats. Hence, we set the study's first hypothesis as follows:

Hypothesis 1: Pedagogical information strategy is positively associated with the organizational digital public relation crisis management success

(2) reputation restoration is divided into four subcategories: denial, Mitigation, reconstruction, and empowerment. Clusters are organized by defining the purpose of the public relation crisis management strategy on whether it changes the public perception of the crisis or the Organization (W. T. Coombs, 2014). The denial cluster aims to deny any criticism that challenges the Organization's response in digital public relation crisis management (W. T. Coombs, 2014) and includes the offensive strategies of the accuser, simple denial (Coombs, 2007, 2015) and ignoring (Liu, 2010). The mitigation cluster aims to sensitize and aware to the audience to the crisis and why the effect of the crisis is not as bad as the public might think (W. T. Coombs, 2015) by downplaying the Organization's responsibility and also involving strategies such as excuses and justification (W. T. Coombs, 2007). The reconstruction cluster aims to reconsolidate the relationship between the Organization and the public. In this strategy, the Organization attempts to improve its reputation by approaching the public with material and symbolic assistance, including compensation and apologies from the reconstruction cluster (W. T. Coombs, 2015). In comparison, the empowerment strategy aims to reinforce and gain public approval for the Organization (W. T. Coombs, 2015). Remembering, Consent, Victimization (W. T. Coombs, 2015), and Approval (Liu, 2010) are strategies in this cluster. Hence to investigate the relationship between an organization's digital public

relation crisis management and its implemented reputation restoration strategy, we set the following four hypotheses:

Hypothesis 2a: Organizational denial strategy is positively associated with the organizational digital public relation crisis management success

Hypothesis 2b: Mitigation strategy is positively associated with the organizational digital public relation crisis management success

Hypothesis 2c: reconstruction strategy is positively associated with the organizational digital public relation crisis management success

Hypothesis 2d: empowerment strategy is positively associated with the organizational digital public relation crisis management success

(3) adaptive information helps the audience deal with the psychological threat of crisis (W. T. Coombs, 2007). The adaptive information category helps stakeholders psychologically manage the crisis and includes information about what exactly happened, how the Organization is addressing the crisis, and what needs to be done to prevent future crises (T. Coombs & Holladay, 2015). Ulmer et al. (2007) argue for a renewal strategy that focuses on the potential positive side of the crisis and ways to see the crisis as an opportunity. Hence, we set the following hypothesis to investigate the relationship between adaptive information strategy and the Organization's digital public relation crisis management.

Hypothesis 3: adaptive information strategy is positively associated with the organizational digital public relation crisis management success

And (4) Similar to information modification, strategy or innovation helps stakeholders cope with the psychological stress of the crisis (T. Coombs & Holladay, 2015). Hence, we set the following hypothesis to investigate the relationship between information modification strategy and the Organization's digital public relation crisis management.

Hypothesis 4: information modification strategy is positively associated with the organizational digital public relation crisis management success

Research Method and Materials

We used a binary logit research design to investigate the ODPR-CM grounded on a sample of 168 participants. The research data were collected through survey questionnaires of statewide teachers who have contributed to the discussion on the Palestinian director of education's covid-19 health crisis management through digital media updates information following the Organization's implemented crisis management strategy.

Respondents were selected based on their contribution to the discussion and knowledge of ODPR-CMand were encouraged to participate in research and provide high-quality, detailed information that they seemed could be taken into account in the study. In Addition, respondents were encouraged to suggest potential participants they feel are deemed to participate in the study. The pool of respondents is the audience participating in the Palestinian director of education covid-19 health crisis management through digital media updates information discussion forum.

Given the context of the study, while there were, among the audience, non-teacher participants, we screened the data, and the teachers from Universities, high schools, and junior high schools were selected to participate in this study. This choice was because (1) the operational staff members who are directly involved in implementing ODPR-CM and (2) they are deemed to have appropriate knowledge on the issue raised in this study. The sample includes teachers and administrative members of Palestinian Universities, high schools, and Junior high schools.

Research Procedure

The data collection process involved administrative procedures in obtaining the data file containing the biography and contact details of the participant on the Palestinian director of education digital media updates information platform. Thus, in the first step, a permission letter requesting access to the data of the participant's biography and contact data. After approval of our request for permission for data collection was sent to a contact person in charge of cooperation activities, an appointment for a meeting was taken during which we discussed in detail, the study aims and signed the ethical engagement for the use of the data. We also obtained useful advice on selecting the study participants, which was taken into account in this study. The reason was that the person might have a clear

idea of the right people to participate in the study as he had regular contact with the participants that contributed to the discussion on the public relation discussion platform.

A Permission notice with the link to access the data was sent to me two weeks before our meeting with the person in charge of cooperation with a validity of three months. Within this time frame, we were able to contact the potential participants. At first, we sent emails to them requesting participation in the study with an attachment of the survey questionnaires. Two weeks after sending the emails, we followed up the request by phone to those who did not acknowledge receipt of our email. Anytime, a request was formulated to the respondent to suggest other potential participants who they feel are deemed to participate in the study. A total of 168 questionnaires were filed and returned to us out of 240 sent, making a 70% rate of participation. The descriptive statistic of the participants' demography is presented in Table 1.

Table 1:Descriptives Statistics

		Frequency	Percent	Cumulative Percent
Gender	Male	107	63.7	63.7
	Female	61	36.3	100.0
	18 - 30	53	31.5	31.5
	31 - 40	64	38.1	69.6
Age	41 - 50	47	28.0	97.6
	51 - 60	4	2.4	100.0
	Administration	8	4.8	4.8
	Junior High school	15	8.9	13.7
Position	High School	43	25.6	39.3
	University	102	60.7	100.0
	1 - 5	36	21.4	21.4
Work Experience	6 - 10	60	35.7	57.1
	11 - 20	48	28.6	85.7
	21 - 30	22	13.1	98.8
	31 - +	2	1.2	100.0

Research Findings

The study applied a binary logit analysis to test participants that answered that the ODPR-CM strategy is positively associated with the Organization's crisis management success (coded 0 = negative association, 1= positive association) as a function of seven

continuous predictor variables (Pedagogical, denial, Mitigation, reconstruction, empowerment, adaptive, and modification strategy).

Model Fit

To fit the research model, we used chi-square tests to assess whether the model represents a significant increment in fit relative to a null/baseline/intercept-only model. The chi-square test result shows that the study model significantly improves fit relative to an intercept-only model, $\chi^2(7) = 3121.53$, with $p = 0.000 < 0.05$. In Addition, the logit model for positive association shown in table 2 provides additional useful information that helps describe how well the study model is fitting. Specifically, it presents the degree to which the study model predicts the observed outcomes.

Table 2: Model Fit Statistics

Iteration 0: log-likelihood	=	-102.28401
Iteration 1: log-likelihood	=	-48.649644
Iteration 2: log-likelihood	=	-42.208006
Iteration 3: log-likelihood	=	-41.523708
Iteration 4: log-likelihood	=	-41.516759
Iteration 5: log-likelihood	=	-41.516756
Logistic regression	Number of obs = 168	
	LR chi2(7) = 121.53	
	Prob > chi2 = 0.0000	
Log likelihood = -41.516756	Pseudo R2 = 0.5941	

The overall percentage correct indicates the percentage of cases with an observed outcome correctly predicted (in terms of the outcome) by the model. In table 3, the overall percentage is 91.67, indicating a good fit.

The Sensitivity denotes the percentage of cases observed to fall in the target group (Y=1; e.g., respondents that indicated that the ODPR-CM is positively associated with organization crisis management success) whom the model is correctly predicted. i.e., it is an index of the model's Sensitivity to identify cases that fall into the target group correctly. In table 2, the model's Sensitivity is = 95.76%, indicating a good fit.

Moreover, the Specificity denotes the percentage of cases observed to fall into the non-target (or reference) category (e.g., respondents that indicated that the ODPR-CM is

negatively associated with organization crisis management success) whom the model correctly predicted to fall into that group. In other words, it reflects the degree to which the model correctly identifies cases that do not fall into the target group. In table 3, the model's Specificity is 82.00% indicating a good fit.

Overall, the predictive accuracy rate was very high at 91.67%. The model exhibits good Sensitivity since among those respondents who indicated that the ODPR-CM is positively associated with organization crisis management success, 95.79% were correctly predicted to indicate that the ODPR-CM is negatively associated with organization crisis management success based on the model. Moreover, the model exhibits good Specificity since among those respondents who indicated that the ODPR-CM is negatively associated with organization crisis management success, 82.00% were correctly predicted to indicate that the ODPR-CM is negatively associated with organization crisis management success.

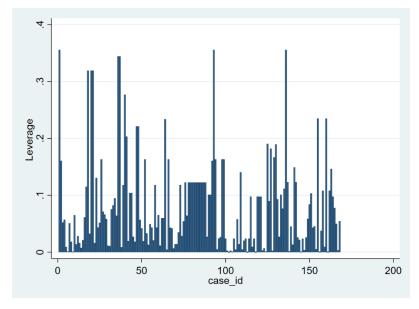Table 3: Logistic model for ODPR-CM

	True		
Classified	D	~D	Total
+	113	9	122
-	5	41	46
Total	118	50	168

Classified + if predicted Pr(D) >= .5		
True D defined as ODPR_CM != 0		
Sensitivity	Pr(+ D)	95.76%
Specificity	Pr(-~D)	82.00%
Positive predictive value	Pr(D +)	92.62%
Negative predictive value	Pr(~D -)	89.13%
False + rate for true ~D	Pr(+~D)	18.00%
False - rate for true D	Pr(- D)	4.24%
False + rate for classified +	Pr(~D +)	7.38%
False - rate for classified -	Pr(D -)	10.87%
Correctly classified		91.67%

Moreover, in logit regression, cases with higher leverage are more likely to be multivariate outliers concerning the predictors in the model (Darlington & Hayes, 2017). As a result, they are also more likely (but not always) to exert greater influence on the

model. We applied (Pituch & Stevens, 2016) size-adjusted thresholds for identifying a high leverage cases: 2p/n (more liberal identification of outliers) or p/n (more conservative identification of outlying values), where p=k+1 & where k=number of predictors in the model.

Using 3p/n as the formula for computing the threshold for high-leverage cases, the threshold for the current analysis is: 3(8)/168 = 0.1429. Hence, Figure 1 shows a few cases that may exceed our size-adjusted cutoff of .1429. But most cases have their leverage value under the size-adjusted cutoff of .1429. Since cases with higher leverage are those that are more likely to exert a stronger influence on the regression solution. Hence, in the current study, few cases may exert a greater influence on the regression solution. Nevertheless, it is not a given that a high-leverage case exerts strong influence since influence is a product of both leverage and discrepancy (see Fox, 1997). In other words, a high-influence case will likely have both high leverage and a large residual.

Figure 1: Leverage Value against Case Identifier

Hypotheses Testing

Table 4 presents the unstandardized regression slopes, associated significance tests, and confidence intervals for the regression coefficients.

Given $logit = \beta_0 + \beta_1 x_1 + \cdots + \beta_1 x_k$, we see that the fitted value for the regression model has predicted logit (Y=1) for the case in our study. This means that each unstandardized slope is interpreted more literally as a predicted change in logits (or (ln(Y=1))) per unit increment on a given predictor controlling for other predictors in the model.

Hence the results show in table 4 that Pedagogical information strategy is a positive and significant predictor of the probability of respondents who indicated that the ODPR-CM is positively associated with organization crisis management success (b=3.73 s.e.=0.94, Wald Z = 3.98, p = .000). Hence the hypothesis 1 cannot be rejected. Denial information strategy is a positive but non-significant predictor of the probability of respondents who indicated that the ODPR-CM is positively associated with organization crisis management success (b=.15 s.e.=.73, Wald Z = .20, p = .84 > .05). Hence the hypothesis 2a cannot be accepted. Mitigation information strategy is a positive and significant predictor of respondents' probability Reconstruction information strategy is a positive but non-significant predictor of the probability of respondents who indicated that the ODPR-CM is positively associated with organization crisis management success (b=1.05 s.e.=.71 Wald Z = 6.01, p < .14). Hence hypothesis 2c cannot be accepted. Empowerment information strategy is a negative but non-significant predictor of the probability of respondents who indicated that the ODPR-CM is positively associated with organization crisis management success (b=-.40 s.e.=.58 Wald Z = -0.69, p = 1.48). Hence hypothesis 2d cannot be accepted. Adaptive information strategy is a negative and significant predictor of the probability of respondents who indicated that the ODPR-CM is positively associated with organization crisis management success (b=-2.79 s.e.=.96 Wald Z = -2.90, p = .004 < .05). Hence the hypothesis 3 cannot be accepted. Modification information strategy is a negative and significant predictor of the probability of respondents who indicated that the ODPR-CM is positively associated with organization crisis management success (b=-5.50 s.e.=1.14 Wald Z = -4.81, p = .004 $p = .000 < .05$). Hence the hypothesis 4 cannot be accepted.

Table 4: Hypotheses Summary Table

Hypothesis	Conclusion
H1	Accepted
H2a	Rejected
H2b	Accepted
H2c	Rejected
H2d	Rejected
H3	Rejected
H4	Rejected

Table 5: Baseline Logistic model for ODPR-CM

ODPR_CM1	Coefficient	Std. err.	z	P>z	[95% conf.	interval]
Pedagogical	3.729365	.9374616	3.98	0.000	1.891974	5.566756
Denial	.146734	.7336609	0.20	0.841	-1.291215	1.584683
Mitigation	8.172132	1.35937	6.01	0.000	5.507816	10.83645
Reconstruction	1.052418	.7119887	1.48	0.139	-.3430542	2.44789
Empowerment	-.4006349	.5801283	-0.69	0.490	-1.537665	.7363957
Adaptive	-2.789252	.9633454	-2.90	0.004	-4.677374	-.9011292
Modification	-5.495216	1.14162	-4.81	0.000	-7.73275	-3.257682
_cons	-14.95386	3.927051	-3.81	0.000	-22.65074	-7.256981

Given our logits model: $logits\ ODPR - CM = -14.95 + 3.73 + 8.18 - 2.79 - 5.50$

Conclusion

Several Public Relations scholars have paid much attention to new media research, application, and insights that go beyond other categories of research, namely usability, concerns, and theoretical contributions. These studies have been helpful for academicians to a better sense of why the introduction of technology into the public relations process is considered revolutionary for the practice. However, few studies on tactile and experiential user interfaces with various media. Though, there has been a marked shift in the focus of public relation research over time from mechanistic studies of specific media to perceptual studies of how platforms are used to lead to a change in an emotional state, professional status, or probability of acting. The relatively high volume of perceptual studies underlines this trend as a digital public relation study is a fruitful area for further research. This aspect of communication research is rarely covered in Public relations journals but is becoming increasingly important and complex in practice.

Academic research can contribute significantly to the field by evaluating, testing, and refining best practices in digital media governance, examining ethical challenges from organizational and consumer perspectives and staying abreast of the changing legal parameters that guide and influence digital public relations. The evolution of dialogic and interactive research demonstrates these concepts' overlap (and continuing relevance) in public relations. The bulleted list of studies on atypical theoretical contributions categorized as "other" is a real guide to expanding digital public relations research and offers an interesting starting point for further analysis and study support. While scholars should build on these pioneers' contributions, this study investigates the perception of the Palestinian audience that participated in the discussion on the Palestinian director of education's covid-19 health crisis management through digital media updates information following the Organization's implemented crisis management strategy. The findings revealed that among the organizational digital public relations crisis management strategies implemented, the Pedagogical and Mitigation information strategies only have a positive and significant association with its success. In contrast, Adaptive and Modification information strategies show a negative association with its success. These findings support existing studies on perceptual, which show that professionals are increasingly comfortable and frequent with new technologies, but the underutilized dialogical potential remains a common theme in this study.

Organizational use of new media for crisis management (and the audience's perceptions using these media) is an open and valuable area of research that has not been fully explored. While participants have indicated that they are hesitant to believe in the information that has been adapted and/or modified on the widespread use of services such as digital public relation challenges some negative sentiments in this perception study (W. T. Coombs & Holladay, 2012a, 2012b). Application studies are the most prominent of new media studies, and lack of interactivity is a common and long-standing theme in research on the use of websites and social networks by businesses, organizations, nonprofits, activists, and government/politics. Policy studies are growing rapidly, and areas of applied research abound. Should every Organization interact with its audience online? What role do employees, social governance, and ethics play on social media platforms? How might scholars revive some of the interesting but abandoned theoretical

contributions to improve the understanding of any new media at the time? Our findings show that Pedagogical and Mitigation are core pioneer information strategies for an organization's successful implementation of digital public relations in crisis management. Hence, places, opportunities, and challenges await public relations scholars on this topic, as these are some of the pressing questions facing scholars in the new media research of our days.

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