



UNDERSTANDING LOGISTICS AIRMEN'S RISK INFORMATION SEEKING AND
PROCESSING DURING THE COVID-19 PANDEMIC: THE ROLE OF
ORGANIZATIONAL MEETINGS IN AN EXTENDED PRISM FRAMEWORK

THESIS

Christopher T. Price, Captain, USAF

AFIT-ENS-MS-22-M-163

**DEPARTMENT OF THE AIR FORCE
AIR UNIVERSITY**

AIR FORCE INSTITUTE OF TECHNOLOGY

Wright-Patterson Air Force Base, Ohio

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Christopher T. Price, M.S.

Captain, USAF

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Christopher T. Price, B.S.
Captain, USAF

Committee Membership

Lt Col Matthew D. Roberts
Chair

Seong-Jong Joo, PhD
Member

Abstract

The purpose of this survey-based research was to understand how organizational workplace meetings surrounding the COVID-19 pandemic impacted logistics Airmen across the United States Air Force and subsequently played a role into their risk seeking behavior on social media. Specifically, this research tested an extended Planned Risk Information Risk Seeking Model with organizational meetings as an antecedent to determine if current meetings influenced an Airman's perceived behavioral control, attitude toward seeking, subjective norms, knowledge sufficiency and intention to seek information regarding COVID-19. Using structural equation modeling, it was found that the expanded PRISM model showed adequate model fit. Furthermore, perceptions of existing meetings were positively related to subjective norms, which in turn, was positively related to knowledge sufficiency threshold and information seeking. Finally, comparisons between different demographic groups and organizations were performed and discussed.

Dedication

This study is dedicated to all Airmen during the COVID-19 pandemic who were increasingly frustrated each day not knowing what challenges would await in the foreseeable future. Our day-to-day jobs are mentally intensive and when combined with pandemic restrictions the intensity of the mission was amplified. Hopefully this study on how effective our communication methods are will decrease the strain that we deal with as Airmen in this great organization and allow us to continue to focus on our mission. This research aims to provide a building block that the Air Force can use to gauge how best to communicate with our airmen during periods of high stress and consistent changing requirements.

Acknowledgments

I would like to express my sincere appreciation to my advisor, Lt Col Matthew Roberts, for his guidance, patience, persistence throughout this endeavor. He gave me an opportunity to research something I thought could help us understand a phenomenon we tend not to place emphasis on, but nevertheless is vital to our sustainment. I would, also, like to thank Dr. Matt Douglas, a PhD professor teaching at Baylor University. Dr. Douglas your roadmap, recommendations, and responsiveness made this research straightforward, and smoother compared to what I had expected. I appreciate you being there with us from the onset of this thesis. Furthermore, I'm indebted to Lt Col Millard for his altruism and investment in my growth as a logistics readiness officer. Lt Col Millard, this research would not have been possible without your leadership and network support from the commanders, who provided survey data from their units. Finally, special thanks to my wife and son for allowing me to be the best person I can be day in and day out.

Christopher T. Price

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I. Introduction

General Issue

When the United States Air Force (USAF) Chief of Staff General Charles Q. Brown took office in 2020 his plan for the military department was simple, “Accelerate Change or Lose”. If the USAF plans to overhaul itself to prepare for warfare against a peer rival, then conventional ways of doing business may be outdated and there needs to be refinement in current operations. The COVID-19 global pandemic has been a recent occurrence that showed the masses how we all have room to improve in handling a highly transmittable virus. Obsolete processes combined with a lack of pandemic planning could be disastrous for the USAF. Therefore, it’s important we build upon lessons learned and we can start by looking at communication methods. Social media is one of the communication mediums used by USAF Wing level organizations to engage with their subordinates about the COVID-19 pandemic. The Air Force views most social media and networking in a positive manner and knows that social media is the primary tool used by Airmen for communication and networking (“Air Force social media”, n.d.). The current guidance from the Air Force’s Public Affairs is that social media can be used as a bridge to help those unfamiliar with the military understand more about the services, help shape conversations about mission, and connect with their Airmen on a more

personal level (SAF, 2020: 20-21).

Problem Statement

A pandemic poses an extensive threat to the Air Force's mission including its day-to-day operations. From interviews conducted with multiple logistics personnel throughout the Air Force, a common operational theme emerged. Split shifts, one where organizations were separated into "A" and "B" teams that did not interact face-to-face, were used to protect the organization against losing most of its personnel to COVID-19 infections and/or quarantine requirements. This separation of personnel was cited as a major reason for the increased importance of communication and new ways of passing along important information regarding the pandemic. As witnessed during the COVID-19 pandemic, Air Force guidance and directives flowed from the Department of Defense down to Air Force Wings in accordance with National Executive Leadership and Center for Disease Control (CDC) recommendations. However, we currently do not know if organizational meetings were effective in disseminating COVID-19 information, if other means of information flow such as social media were effective, or what influences Airmen to seek out information on the COVID-19 pandemic.

Research Objectives

The goal of this research is to evaluate USAF logistics Airmen's perceptions of the effectiveness of their existing workplace meetings and Wing's social media communication regarding the COVID-19 pandemic and to discover what influences them to seek information regarding the COVID-19 pandemic. Additionally, this research aims to identify if demographic factors play a role in these perceptions. Ultimately, results of

this study will be used to help improve existing communication methods regarding the COVID-19 pandemic.

Research Questions

RQ1: Do Airmen seek information on social media for COVID-19?

- IQ1: Is an expanded PRISM model effective in addressing Airmen information seeking via social media?
- IQ2: How does an Airmen's workplace meetings play a role into their information seeking through social media?
- IQ3: What impacts an Airman's motivation to seek COVID-19 information through social media?

RQ2: Do Wings effectively communicate social media messages to subordinate units during pandemic operations?

- IQ4: Do Airmen believe their wing's Facebook page effectively communicates information regarding COVID-19

RQ3: Are current communication methods effective in educating Airmen on the COVID-19 pandemic?

- IQ5: Does an Airmen's current knowledge have an impact on their sufficiency threshold?
- IQ6: Does accessibility and difficulty of wing social media pages play a role into the Airmen's current knowledge?

- IQ7: How do Airmen feel about their organizational meetings regarding the COVID-19 pandemic?
- IQ8: Do Airmen feelings about their organizational meetings differ based on organization?
- IQ9: How much information do Airmen believe they need to know regarding the COVID-19 pandemic?
- IQ10: How much information do Airmen believe they currently possess regarding the COVID-19 pandemic?
- IQ11: Are there differences between Wing's regarding COVID-19 information insufficiency?
- IQ12: Do demographics play a role in the COVID-19 information insufficiency?

Research Focus

Due to the complexity of social media and the organization structure of the United States Air Force, this research will focus on a deductive quantitative analysis of current meetings and social media as an effective form of communication during pandemic operations at the Air Force's wing level and a mixed method analysis to gauge the similarities and differences between clusters of the survey's participants.

Assumptions

This research assumes that organizational workplace meetings play a role in each Airmen's current knowledge. Additionally, this research assumes that the Air Force chain of command and peer groups apply normative pressure on Airmen; the Airmen working at the wing level will be influenced by their peers and people in their chain of command who they view as important. Furthermore, this research assumes that all Airmen surveyed will have access to social media and they are able to read the information on their social media feed. Finally, this research assumes that Airmen from the logistics career field can provide a good population sample to gauge similar combat support career fields.

Limitations

The data from this research will come from a survey questionnaire. Survey research can be insightful but does have limitations. Measurement error may occur due to participants becoming unengaged while completing the survey. This research could expect unengaged participants to leave questions blank, repeat similar answers for different questions without fully comprehending the question, and/or provide answers with a randomized pattern. Finally, interpretations of questions may vary depending on the participant's understanding of the question.

II. Literature Review

Effective Communication

There is no singular definition for effective communication. Effective communication is often used to describe a way to connect with others to create mutually satisfying outcomes (Lasater et al, 2019). In addition, research has shown that effective communication in an organization can drive better performance of its members (Mohammed et al, 2019). Another study found that there are several factors that are key when an organization or individual performs effective communication: effective communication must be provided to the recipient ahead of time to minimize impact of risk, it is polite, imaginative, contemporary, valuable, efficient, synergetic, and enlightening, transparent, and authentic (Reddy et al, 2020). Reddy and others go on to say that communication should exist at every hierarchy in an organization and should flow vertically both up and down the chains of command, horizontally to peers, co-workers, and other departments, as well as diagonal when applied appropriately (e.g., going to one of your supervisors' peers to ask for technical expertise).

Effective Communication for Organizational Success

Although there is no singular research definition of effective communication, there is ample research to describe how effective communication impacts organizations. For instance, Eunson (2007) believes that due to the complexity of the communication field that it isn't possible to create a model to answer all types of questions about communication. However, he does believe that you can tailor models down to specific instances to analyze effective workplace communication. Effective communication

within organizations has been proven to increase trust between members, build stronger relationships and help organizations achieve their goals faster (Barker & Gower, 2010). It is also important to understand that different mediums of communication impact members of groups in various ways. As an example, in Sweden it was found that workplace meetings had a distinct health-promoting value and gave workers the opportunity to influence decision making (Bergman et al, 2015). Another study has shown that teachers of children grades kindergarten through twelfth grade value collaboration and deeply intertwine effective communication with collaboration (Bowen and Schume, 2020). Before Air Force operations take place there must be communication regardless of if it is through meetings, email, electronic systems, cellular phone, etc. Internal Air Force communication occurs when the organization directly communicates to its members at home station and deployed. The Air Force externally communicates when its audience is mass media, congressional members, and foreign dignitaries. All the Air Force's internal and external audience members are critical to the Air Force's communication strategy and global reach as noted by former Chief of Staff of the Air Force Gen Mark A. Welsh III (National Academies of Science, 2016). The United States Air Force can capitalize on effective communication research which will help build stronger teams at every hierarchal level ultimately increasing mission readiness.

Growth Use of Social Media as a Communication Method

As previously stated, effective communication between an organization's members has been proven to expediate goal achievement. There are alternative means of communication and one of the more dynamic forms is social media. Social Media has

experienced exponential growth within the past two decades. In 2005, when researchers at the Pew Research Center began tracking social media usage it found only 5 percent of Americans used social media (Figure 1); by contrast that number had risen to 50 percent around late May 2011 and up to 72 percent early February 2021.

Social media use

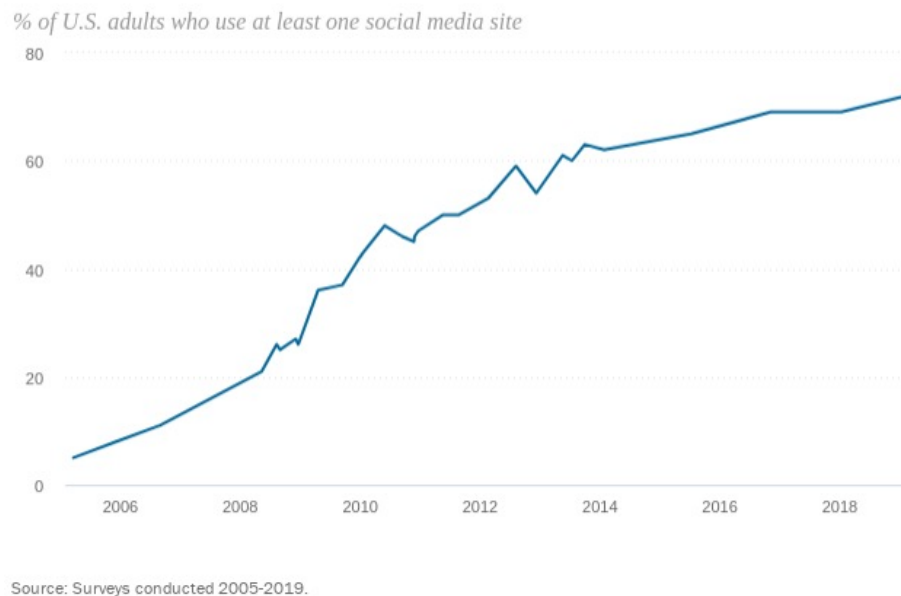


Figure 1. Adult Social Media use in United States of America (Pew Research Center, 2021)

Even as the amount of usage grows over time the data shows us that there are clusters of closely related groups. In most countries, younger adults between the ages of 18 to 29 have much higher social media usage than adults of age 50 or older (Figure 2).

According to the Air Force Personnel Center as of 30 June 2021, the average age of the enlisted force is 28 years old with 44 percent of enlisted members being under 26. Being that the enlisted members account for 81 percent of the 326,885 active-duty members it's

important to understand that they use social media more frequently than previous generations of Airmen.

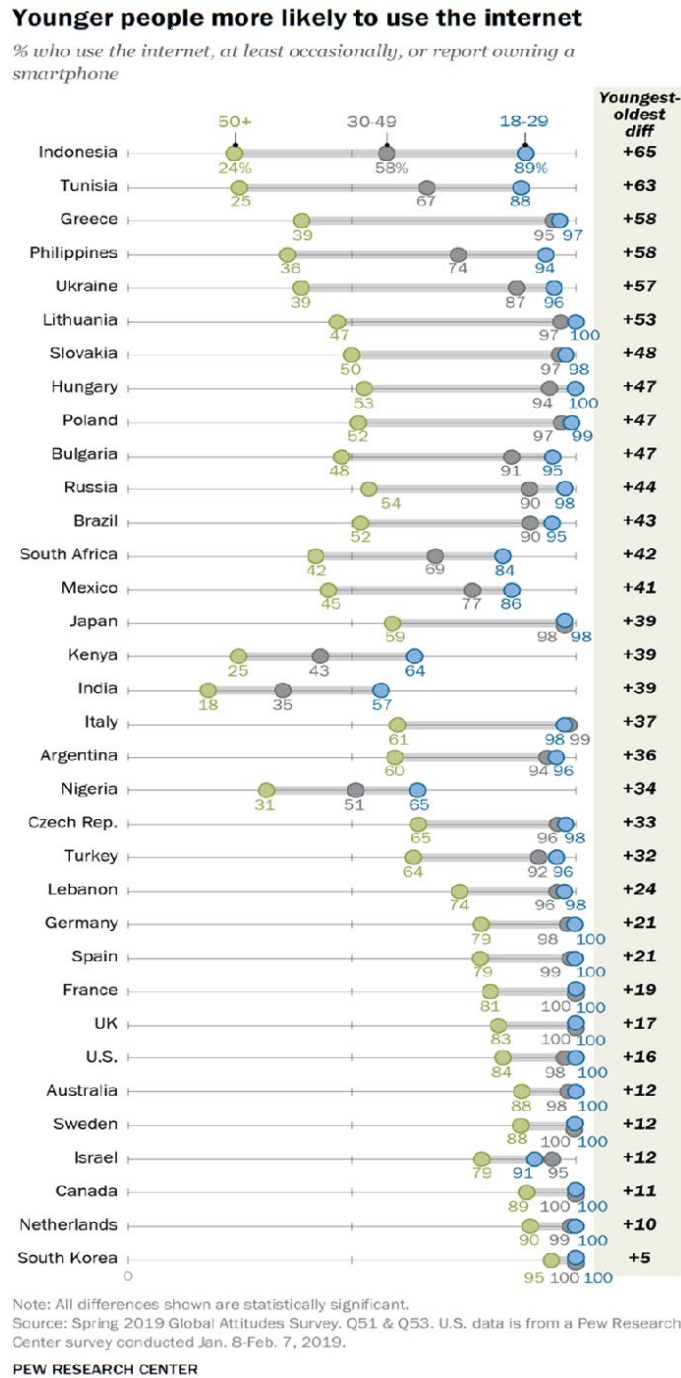
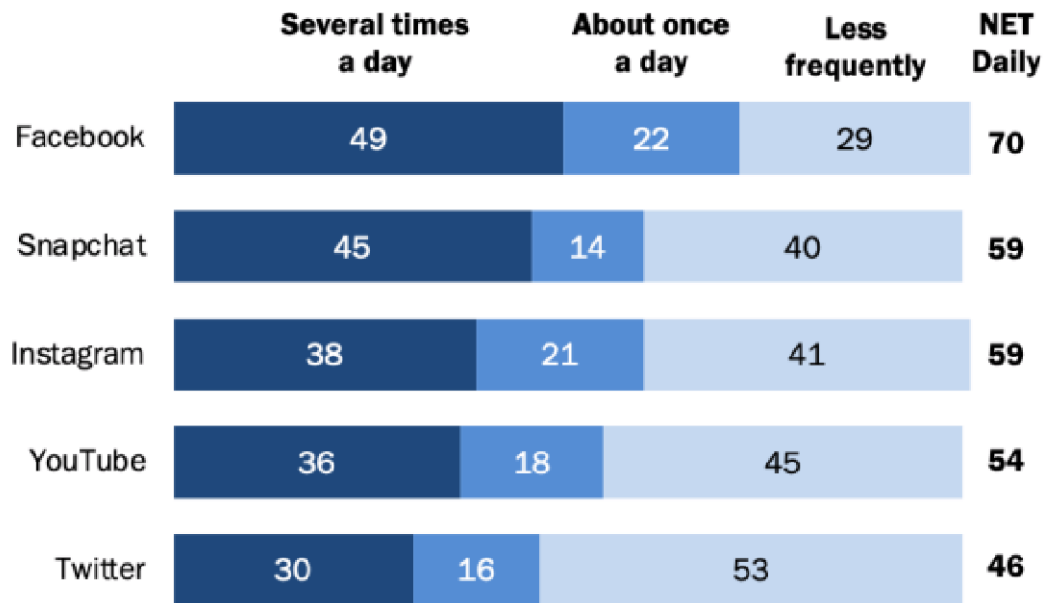


Figure 2. Social Media by Age Groups in each Country (Schumacher et al, 2020)

Facebook is the most active social media site in the world with over 2.7 billion active monthly users. As many as 49 percent of Facebook users claim they visit the site several times a day, 70 percent of adults log on their Facebook accounts daily, and up to about 87 percent who claim they log on at least weekly (Figure 3).

Seven-in-ten Facebook users say they visit site daily

Among U.S. adults who say they use ____, % who use that site ...



Note: Respondents who did not give an answer are not shown. "Less frequently" category includes users who visit these sites a few times a week, every few weeks or less often.

Source: Survey of U.S. adults conducted Jan. 25-Feb. 8, 2021.

"Social Media Use in 2021"

PEW RESEARCH CENTER

Figure 3. Daily Social Media Usage (Auxier & Anderson, 2021)

Since Facebook is the most actively used social media platform and the Air Force's highest ranked Officers and enlisted members actively use the platform, compounded with the fact that most of its Airmen may be highly active on social media, then it is important that all messages are effectively communicated.

Conceptual Background

RISP Model

The risk information seeking and processing (RISP) model has its foundation in the Theory of Planned behavior and is derived from Eagly and Chaiken's (1993) heuristic-systematic model. RISP model focuses on a person's ability to gauge how much information they have, then predicts their behavior to seek further knowledge by other communication means to feel comfortable enough with their decision-making judgement. The RISP model is built on the foundation that an individual's characteristics which are composed of relevant hazard experience, political philosophy, and demographics/sociocultural (gender, ethnicity, age, social status, income, education) will directly affect their perceived hazard characters, informational subjective norms, and current knowledge (Griffin et al, 2004). The perceived hazard characteristics of an individual are based on their risk judgement, institutional trust, and personal control. Perceived hazard characteristics directly affect the individual's affective response (e.g., worry). Affective response, informational subjective norms, and demographics are used to help a person behave on their information sufficiency (Figure 4).

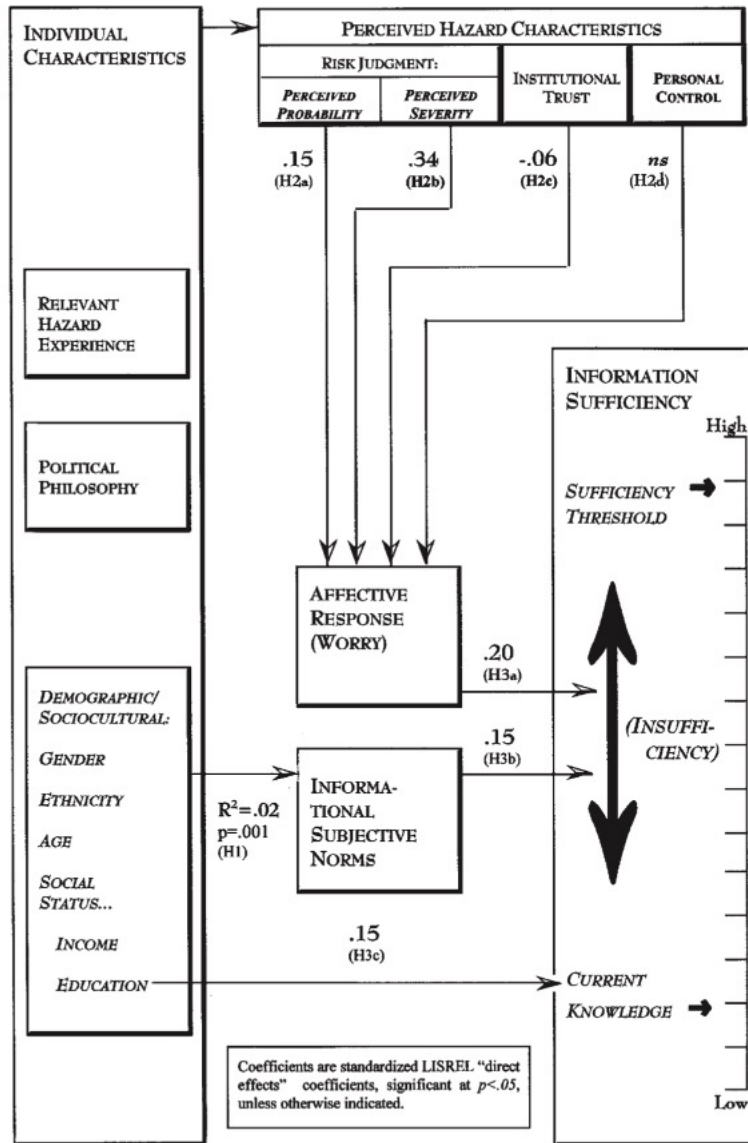


Figure 4. RISP Model and Relationships (Griffin et al, 2004)

PRISM

The Planned Risk Information Seeking Model (PRISM, Figure 5) provides a broad framework for trying to understand what motivates people to seek health and risk information. PRISM was built from a combination of theories and models including the RISP model by Kahlor et al in 2010. PRISM is a good baseline model, but the risk seeking intentions of individuals haven't been studied across different context. The PRISM model consists of attitude toward seeking, seeking related subjective norms, perceived seeking control, perceived knowledge, perceived knowledge insufficiency threshold, seeking intent, risk perception, and affective risk response.

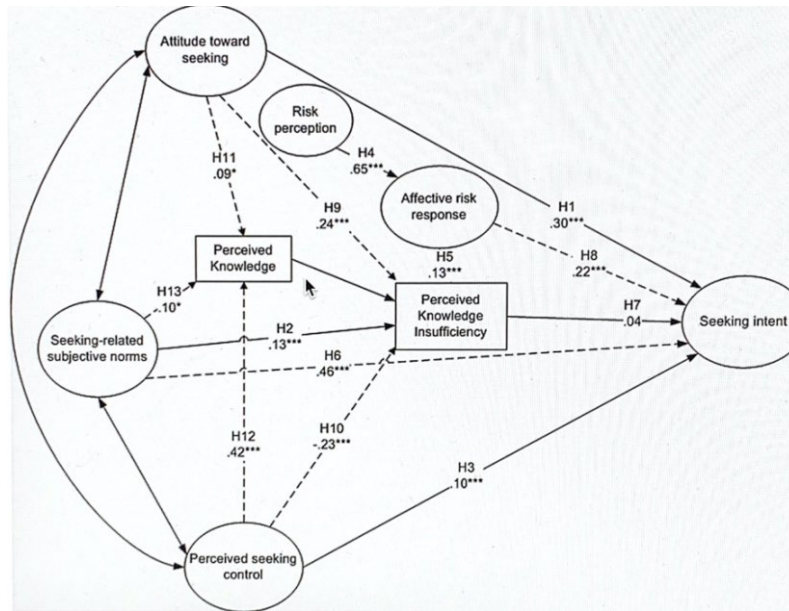


Figure 5. PRISM Model (Kahlor et al., 2010)

Expanded PRISM model

As stated earlier, there is no singular definition to effective communication or a specific model that will regularly help a researcher understand how different groups interact and received information. This research will expand the PRISM model and add perceptions of existing meetings (OM) to the construct (Figure 6) to see how it influences the other factors that play a role into risk information seeking (IS).

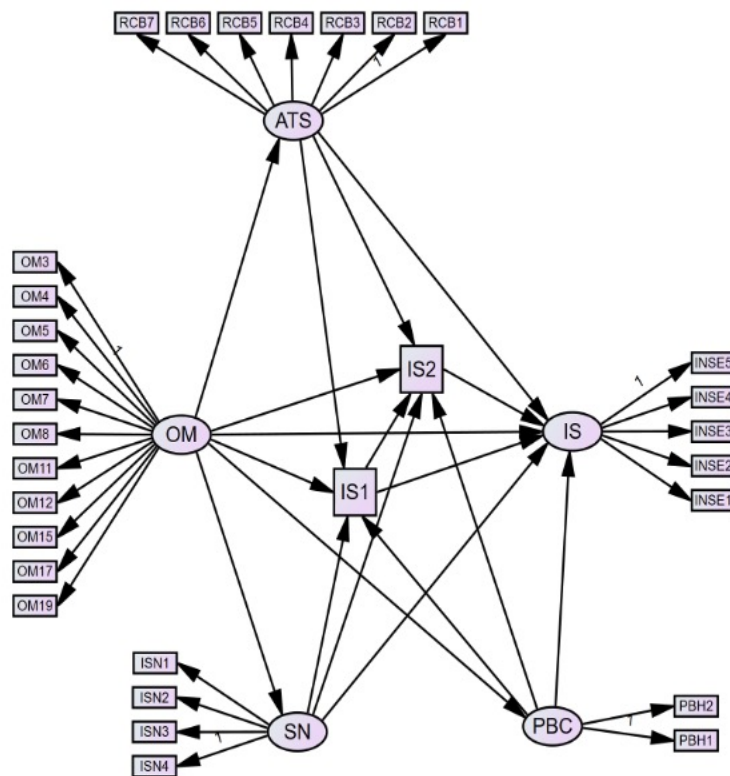


Figure 6. Expanded PRISM Model

Perceptions of existing meetings (OM)

Perceptions of existing meetings is a measure of how individuals feel regarding a meeting's social presence, communication effectiveness, and communications interface (Chidambaram & Jones, 1993). Social presence is when the communication medium allows members of the group to perceive a physical sensation of the communicator (Short, et al., 1976). Social presence has been measured by personalness, sensitiveness, sociability, and warmth (Short et al, 1976). An example of measuring social presence would be emails having a lower social presence than face-to-face meetings.

Communication effectiveness is the suggestion that certain types of communication media are better suited for meetings than they are for another meeting. An example of communication effectiveness would be a manager deciding if he or she should hold a face-to-face meeting or send an email for a 10-minute debriefing. A face-to-face meeting might be better to communicate the message, but it also might waste a lot of the team member's time. Therefore, the manager must decide which communication medium will be most effective before presenting the information. Communications interface refers to the actions needed within the communication medium to exchange information with participants of the meeting. Two examples of communication interface are the "raise your hand" button during a Zoom teleconference or the "talk" switch on a two-way radio.

Relevant Channel Beliefs

Relevant channel beliefs or attitude towards seeking (ATS) is an individual's beliefs about the communication channels that will provide them information on the topic of

interest. Channel beliefs from an individual can be gauged on if they view it as useful, trustful, beneficial, etc. Prior research suggest that relevant channel beliefs interact positively with information insufficiency and information seeking in a RISP model (Griffin et al., 1999).

Information (in)sufficiency

Current knowledge combined with sufficiency threshold are needed to test a person's "information sufficiency". This variable was proposed by Griffin et al, 2004 to gauge people's judgmental confidence. The size of the gap between current knowledge and information needed will affect the information seeking to learn more about the risk. The RISP model suggest that informational insufficiency is the gap between what people know and what they think they need to know to feel confident enough to act on behavior with any given risk (Huurne et al, 2009).

Perceived Behavioral Control (PBC)

PBC is the belief that an individual has control over their actions. PBC is assessed by the ease or difficulty of a behavior (Wallston, 2001) and is comprised of two dimensions. First a person must be able to access information. The other dimension is the ability to understand the information that they have accessed. Several research studies have found a positive relationship between perceived behavioral control and current knowledge (Kahlor et al., 2006, Griffin et al., 2008; Huurne et al., 2009). Perceived behavior control is believed to be a key link between information sufficiency and information seeking behavior (Yang & Kahlor, 2013).

Informational Subjective Norms (SN)

SN are how people are inclined to act based on social norms (Yang & Kahlor, 2013). SN can be defined as normative influences that causes a person to perform behaviors based on those past communication experiences. Social environments have been shown to increase an individual's desire to seek knowledge. When SN measures against risk seeking behavior in the RISP model it compares an individual's perception of how they think other people expect them to act about an issue. If individuals believe other people expect them to possess a certain level of knowledge, then they are more inclined to seek information. Prior research has already shown a positive relationship between information subject norms and information seeking (Griffin et al, 2008). The research suggest that people tend to seek a desirable image by being able to converse about topics they feel pressure to have current knowledge on.

Hypotheses

Apart from perceptions in existing communication methods, the hypotheses in this research are suggested by previous research and have been discussed in the literature review. An expanded PRISM model, as depicted in Figure 6, will be tested in this research. With regards to perceptions in existing communication methods the Air Force has placed an increased importance on battling the COVID-19 pandemic from a strategic aspect. This research expects that this drive from organizational leaders at the top will influence policy, guidelines, and requirements at the wing level. When information of this magnitude gets to the wing level it is expected to arrive at the squadron level, then down to Airmen to accomplish organizational goals. Thus, Airmen at all hierarchal levels

will view the information trustworthy and ensure it is made accessible to their subordinates which would influence all Airmen's attitude towards seeking. When the COVID-19 information arrives at the Airmen's meetings, it is expected that there will be an increase in each Airman's current knowledge due to the education provided at the meeting. It is also suspected, due to the priority that has been given to overcome the COVID-19 pandemic, that PBC will be affected. This is because leaders will ensure their subordinates can access COVID-19 information and provide an outlet that can help them seek answers to questions (e.g., CDC website). Lastly, it is anticipated that OM will play a role in SN because the meetings are typically led by a higher-ranking individual who has influence on those attending the meeting. Therefore, we expect:

H1: OM will be positively related to ATS.

H2: OM will be positively related to IS1.

H3: OM will be positively related to IS2.

H4: OM will be positively related to PBC.

H5: OM will be positively correlated SN.

H6: ATS will be positively related to IS2.

H7: ATS will be positively related to IS.

H8: IS1 will be positively related to IS2.

H9: PBC will be positively related to IS1.

H10: PBC will be positively related to IS.

H11: IS2 will be positively related to IS.

H12: SN will be positively related to IS.

H13: SN will be positively related to IS2.

III. Methodology

Survey Instrument

An online self-administered survey was designed to test the expanded PRSIM model (Figure 6). As stated earlier, this PRISM model was adapted from Khalor et al (2010) and expanded to capture the perceptions of Airmen's existing meetings. The questionnaire was first tested by an Air Force Institute of Technology (AFIT) professor followed by three AFIT students. The questionnaire first asked for demographic information which included Air Force wing level organization, how long the participant has been at their base (months), rank, age, gender, race, highest education achieved, and political beliefs. OM were represented by 20 questions each rated on a Likert scale of one to seven. The OM scales that this research used were taken from previous literature (Chidambaram & Jones, 1993). Information (in)sufficiency was split up with two questions, one for current knowledge and another for sufficiency threshold, both on a scale of zero to 100. SN consisted of four questions each on a Likert scale from one to six. PBC consisted of three questions all on a Likert scale from one to five; each question on PBC was reverse coded. ATS was represented by seven questions on a Likert scale of one to six; Two of the ATS questions were reverse coded. IS was represented by six questions on a Likert scale from one to six. Information seeking (IS) was represented by six questions on a Likert scale of one to six. All scales, other than the OM scales, were taken from the same research (Yang & Khalor, 2013)

Data Collection

The online survey was emailed from Headquarters Air Force, Logistics Force Development (HAF/A4LR) to commanders of the logistics organizations across the Air Force. The squadron commanders sent the survey link to members within their chain of command. Participants were sent an initial email from their commander to participate in an optional and anonymous survey regarding the effective communication of their wing's social media. Participants received three separate courtesy emails as a reminder during the one month that the survey was open. Multiple imputation software package in SPSS was used to impute blank data from participants.

Statistical Analysis

The model and hypotheses were tested using the two-step process for structural equation modeling (SEM) using IBM SPSS AMOS 26. First, a confirmatory measurement model using covariance-based SEM to assess the reliability and validity of the model was performed. Next, a confirmatory factor analysis was performed to verify measurement indexes on the latent variables. By using CB-SEM, this research assumed normality of data distribution and homoscedasticity.

Effective communication of meetings was measured with the OM variables of the model by using the mean of the participants answers and observing which sides of the scale they lean closer to. IBM SPSS 26 was used to perform an analysis of variance (ANOVA) on four different bases selected because they had more than 12 participants, a comparison between officers and enlisted members, black and white races, and education levels. Black and white races were selected because they had a minimum 15 members from each group. The third highest racial group only had seven participants.

IV. Results and Analysis

Profile of Respondents

There were 186 individuals who opened and attempted the survey during the survey window. Of the 186 participants that attempted the survey, 80 participants' results had to be discarded because of excessive missing data, which gave a 56.9 percent completion rate. Of the 106 participants who completed the survey, one participant was discarded because of unengaged responses. This resulted in a final sample of 105 participants. The response rate cannot be calculated due to not having the information from HAF/A4LF regarding the exact number of commanders that forwarded the survey out to their organization. The final sample was composed of 75 males, 28 females, one participant who reported other, and one participant who did not report gender. 50 Airmen answered they were ranked as enlisted, 36 responded ranked as an officer, 18 reported they were civilians, and one member left the response blank. The mean age of respondents was 34.2 years old with enlisted members averaging 30.6 years old, officers averaging 31.5 years old, and civilian members averaging 46 years old. The racial makeup of the sample was two (1.9%) American Indian or Alaskan Native, 15 (14.3%) Black or African American, seven (6.6%) Asian, 2 (1.9%) Native Hawaiian or Pacific Islander, 63 (60%) White, six (5.7%) Hispanic or Latino/a, four (3.8%) who identified as bi-racial, and six (5.6%) who did not report their race. The education of the sample was four (3.8%) Doctorate degrees or equivalent, 24 (22.8%) master's degrees or equivalent, 33 (31.4%) Bachelor's degree, 21 (20%) Associates degree, 21 (20%) with High school or equivalent education completed, one (.95%) member with multiple vocation certificates, and one (.95%)

member with a national diploma. The political identification of the group was 23 (21.9%) identified as liberal leaning, 23 (21.9%) identified as neutral, 35 (33%) identified as conservative leaning, and 24 (22.8%) who did not report their political beliefs.

Measurement Model Results

Internal consistency was examined using Cronbach's α . All constructs had alpha levels at or above the recommended minimum level of 0.70 (Nunnally & Bernstein, 1994). A rule of thumb of composite reliability is that if the constructs have five to eight variables, then they should meet a minimum score of .8 (Netemeyer et al, 2003). All five of the latent variables met the minimum.

To assess construct and discriminant validity, a CFA was performed using IBM SPSS AMOS 26. The constructs representing OM, ATS, IS, PBC, SN, and IS were included in the CFA. The measurement model resulted in the following fit indices: χ^2 (551.177, $df = 356$, p -value < .001); comparative fit index (CFI) (.94); incremental fit index (IFI) (.94); standardized root mean residual (SRMR) (.066); and root mean square error of approximation (RMSEA) (.073, 90% CI (.061, .084)). The fit indices indicate an adequate model fit except for the χ^2 statistic (Hu & Bentler, 1999). Although a significant χ^2 statistic was obtained, the normed χ^2 statistic was 1.55 which fell well below the recommended maximum of 3.0 (Kline, 2011).

To test for convergent validity, factor loadings were assessed along with the average variance extracted (AVE) for each construct. Standardized factor loadings and AVEs are shown in Table 1. All items loaded onto their corresponding constructs with $p < .001$, and all but two variables had factor loadings exceeding the 0.6 threshold recommended by

Hair et al. (2010). The rule of thumb for using AVE to assess convergent validity is 0.5 which means that the variance explained by the construct is greater than what is due to measurement error (Hair et al., 2010). All constructs had AVEs above the 0.50 threshold. These results provide evidence of convergent validity.

Table 1: Results of CFA after OM1, OM2, OM9, OM10, OM13, OM14, OM16, ISN5, PBC3 were removed

Constructs and scale items	Factor loadings	Constructs and scale items	Factor loadings
Organizational Meetings (AVE = 0.529)		Attitude Toward Seeking (AVE = 0.803)	
OM3	0.845	RCB1	0.862
OM4	0.652	RCB2	0.87
OM5	0.787	RCB3	0.864
OM6*	0.387	RCB4	0.944
OM7	0.735	RCB5	0.935
OM8	0.656	RCB6	0.861
OM11	0.807	RCB7	0.931
OM12	0.649	Information Seeking (AVE = 0.913)	
OM15	0.82	INSE1	0.969
OM17	0.874	INSE2	0.934
OM19	0.657	INSE3	0.966
Subjective Norms (AVE = 0.525)		INSE4	0.973
ISN1*	0.402	INSE5	0.934
ISN2	0.832		
ISN3	0.701		
ISN4	0.868		
Perceived Behavioral Control (AVE = 0.638)			
PBC1	0.83		
PBC2	0.766		

Notes: All t-values were significant with $p < .001$.

* indicates low factor loading score

Discriminant validity was assessed by performing the Fornell and Larcker (1981) test. According to this test, discriminant validity is supported if the square root of a construct's AVE is greater than the correlations between that construct and other constructs used in the model. As shown in Table 2, all constructs passed this test, which provides evidence of discriminant validity. Results for the structural model follow.

Table 2: Means, standard deviations, reliability, AVE, and correlations

Construct	CR	AVE	MSV	ASV	SN	OM	ATS	IS	PBC
SN	0.802	0.525	0.342	0.145	0.724				
OM	0.923	0.529	0.444	0.247	0.295†	0.727			
ATS	0.966	0.803	0.563	0.301	0.331†	0.666†	0.896		
IS	0.981	0.913	0.342	0.133	0.585†	0.280†	0.298	0.955	
PBC	0.779	0.638	0.563	0.251	0.205†	0.616†	0.750†	0.146†	0.799†

Structural Model Results

Model Fit

In response to RQ1's first investigative question, which asked if an expanded PRISM model was effective in addressing Airmen information seeking via social media, we found that the model was an adequate fit for the data (root mean square error of approximation = .079, 90% confidence interval [.068, .089], p close = .000, standardized root-mean-square residual = .0792, comparative fit index = .920, $\chi^2 = 674.699$, df = 410). The chi-square was significant ($p < .001$); however, this measure of fit is sensitive to

large sample sizes (Bearden et al., 1982). This expanded PRISM model explained 33.8% of the variance in intent to seek information about COVID-19 (Figure 7).

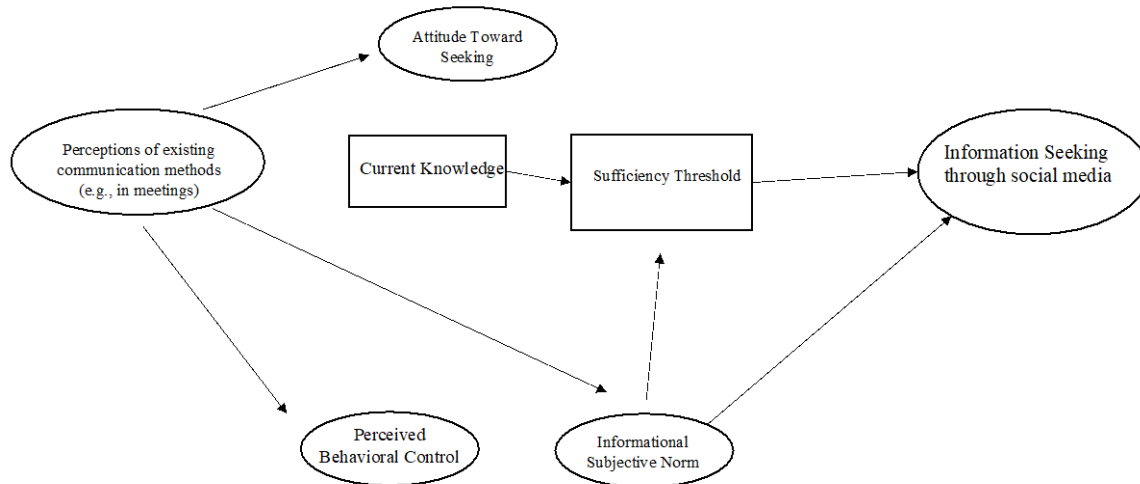


Figure 7. Final Expanded PRISM Showing Significant Paths

Investigative question two asked how an Airman’s workplace meetings play a role into their information seeking through social media. Hypotheses one through five will be used to address this question. Hypothesis one posits that OM will be positively related to ATS. Results show that OM was significantly related to ATS ($\gamma = 1.106, z = .687, p < .001$) which lends support to the hypothesis. Hypothesis two predicts a positive relationship between OM and current knowledge, IS1. However, results of the model suggest OM was not significantly related to IS1 ($\gamma = 1.844, z = .112, p = .445$), which leads to Hypothesis two being not supported. Hypothesis three posits that OM would be positively related to sufficiency threshold. However, results of the model suggest OM was not significantly related to IS2 ($\gamma = 4.499, z = .156, p = .242$), which leads to Hypothesis three being not supported. Hypothesis four posits that OM will be positively

related to PBC. Results show that OM was significantly related to PBC ($\gamma = .555, z = .645, p < .001$) which lends support to the hypothesis. Hypothesis five posits that OM will be positively related to SN. Results show that OM was significantly related to SN ($\gamma = .502, z = .308, p = .006$) which lends support to the hypothesis.

Investigative question three asked what impacts an Airman's motivation to seek out information on COVID-19. Hypotheses six to seven and 10-13 will be used to address this question. Hypothesis six posits that ATS would be positively related to IS2. However, results of the model suggest ATS was not significantly related to IS2 ($\gamma = 3.786, z = .211, p = .093$), which leads to Hypothesis six being not supported. Hypothesis seven posits that ATS would be positively related to IS. However, results of the model suggest ATS is not significantly related to IS ($\gamma = 0.104, z = .106, p = .372$), which leads to Hypothesis seven being not supported. Hypothesis 10 posits that PBC would be positively related to IS. However, results of the model suggest PBC was not significantly related to IS ($\gamma = -0.242, z = -0.132, p = .32$), which leads to Hypothesis 10 being not supported. Hypothesis 11 posited that IS2 will be positively related to IS. However, results of the model suggest IS2 was not significantly related to IS ($\gamma = .01, z = 0.174, p = .062$), which leads to Hypothesis 11 being not supported. However, the p -value is approaching significance, and it is believed the hypothesis may be supported with a larger sample size. Hypothesis 12 posited that SN will be positively related to IS. Results show that SN was significantly related to IS ($\gamma = 0.479, z = .493, p < .001$) which lends support to the hypothesis. Hypothesis 13 posited that SN will be positively related to IS2. Results show that SN was significantly related to IS2 ($\gamma = 4.019, z = .226, p < .023$) which lends support to the hypothesis. All results can be found on Table 3.

Table 3: Structural Equation Model Results

Structural path	Hypothesis	Estimate	SE	<i>p</i> -value	Supported
OM → ATS	H1	1.106	0.19	<0.0001	Yes
OM → IS1	H2	1.844	2.417	0.763	No
OM → IS2	H3	4.499	3.845	0.242	No
OM → PBC	H4	0.555	0.11	<.0001	Yes
OM → SN	H5	0.502	0.182	0.006	Yes
ATS → IS2	H6	3.786	2.257	0.093	No
ATS → IS	H7	0.104	.116	0.372	No
IS1 → IS2	H8	.29	.152	0.056	No*
PBC → IS1	H9	-2.801	3.034	0.356	No
PBC → IS	H10	-.242	.244	0.32	No
IS2 → IS	H11	0.01	0.005	0.062	No*
SN → IS	H12	.479	0.099	<0.0001	Yes
SN → IS2	H13	4.019	1.767	0.023	Yes

Note: * signifies the *p*-value is approaching significance

The SEM model (Figure 7) resulted in a comparative fit index of .917 and a root mean square error of approximation of .079 (Table 4).

Table 4. Root Mean Squared Error of Approximation

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.079	0.068	0.089	0
Independence model	0.257	0.25	0.265	0

To address RQ2, investigative question four asked do Airmen believe their wing’s Facebook page effectively communicates information regarding the COVID-19 pandemic. For this question this research focused on each survey question asked for PBC (Table 5) which were reverse coded questions. The questions were answered on a Likert

scale from one to five. On the Likert scale the number three was used as the neutral zone because it was in the middle of the scale. A one sample t-test was performed to compare PBC1 against the number four. The mean value of PBC1 ($M = [3.29]$, $SD = [.948]$) was significantly lower than the neutral zone; $t(104) = [35.522]$, $p = [<.001]$. Additionally, a one sample t-test was performed to compare PBC2 against the number four. The mean value of PBC2 ($M = [3.36]$, $SD = [1.136]$) was significantly lower than the neutral zone; $t(104) = [30.321]$, $p = [<.001]$. Therefore, Airmen did find their wings effectively communicated information on their Facebook page.

Table 5. PBC1 and PBC2 One-Sample Test

One-Sample Test							
Test Value = 0							
	t	df	Significance		Mean Difference	95% Confidence Interval	
			One-Sided <i>p</i>	Two-Sided <i>p</i>		Lower	Upper
PBC1	35.522	104	<.001	<.001	3.286	3.1	3.47
PBC2	30.321	104	<.001	<.001	3.362	3.14	3.58

Investigative question five asked does an Airmen's current knowledge have an impact on their sufficiency threshold. Hypotheses eight will be used to address this question. Hypothesis eight posits that IS1 will be positively related to IS2. However, results of the model suggest IS1 is not significantly related to IS2 ($\gamma = .29$, $z = .165$, $p = .056$), which leads to Hypothesis eight being not supported. However, the *p*-value is approaching significance, and it is believed with a higher sample size, the hypothesis may be supported.

Investigative question six asked does the accessibility and difficulty of wing social media pages play a role into the Airmen's current knowledge. Hypotheses nine will be used to address this question. Hypothesis nine posited that PBC would be positively related to IS1. However, results of the model suggest PBC is not significantly related to IS1 ($\gamma = -2.801$, $z = -0.147$, $p = .445$), which leads to Hypothesis nine being not supported.

Investigative question seven asked how Airmen felt about the organizational meetings they attended regarding the COVID-19 pandemic. This research used the means and standard deviations of the OM question responses to gauge the sample. Since the scales were from one through seven, this research used four as the neutral zone. The feelings which had values of their 95 percent confidence interval significantly different from four were deemed to be general feelings of the Airmen sampled. Overall, Airmen found the meetings that they attended to be good (OM3) (M=4.55, SD=1.569), accessible (OM4) (M=5.05, SD=1.410), accurate (OM5) (M=4.73, SD=1.694), true (OM7) (M=5.24, SD=1.529), painful (OM8) (M=3.43, SD=1.231), humanizing (OM11) (4.54, SD=1.557), successful (OM17) (M=4.58, SD=1.518), and boring (OM19) (M=3.69, SD=1.416). A one sample t-test was performed to compare each OM variable against the number four. Results (Table 6) showed that all variables tested except OM6, OM12, OM15 were statistically different from the neutral zone.

Table 6. Airmen’s Perceptions of Existing Meetings

One=Sample Test							
Variable	t	df	Significance		Mean Difference	95% Confidence Interval of the Difference	
			One-Sided <i>p</i>	Two-Sided <i>p</i>		Lower	Upper
OM3	29.735	104	<.001	<.001	4.552	4.25	4.86
OM4	36.683	104	<.001	<.001	5.048	4.77	5.32
OM5	28.627	104	<.001	<.001	4.733	4.41	5.06
OM6	27.531	104	<.001	<.001	3.781	3.51	4.05
OM7	35.111	104	<.001	<.001	5.238	4.94	5.53
OM8	28.529	104	<.001	<.001	3.429	3.19	3.67
OM11	29.901	104	<.001	<.001	4.543	4.24	4.84
OM12	33.567	104	<.001	<.001	4.19	3.94	4.44
OM15	37.481	104	<.001	<.001	4.257	3.95	4.56
OM17	30.928	104	<.001	<.001	4.581	4.29	4.87
OM19	26.665	104	<.001	<.001	3.686	3.41	3.96

Investigative question eight asked if Airmen’s feelings about their organizational meetings were different based on organization. A one-way ANOVA using the least significant difference (LSD) test revealed that there was a statistically significant differences in perceptions of existing meetings between base one and the other three bases on variables OM11($F(3, 48) = [5.879], p = 0.038$). Additionally, a one-way ANOVA test revealed that there were statistically significant differences in perceptions of existing meetings between base one and the other three bases on OM15 ($F(3, 48) = [9.396]$). Finally, a one-way ANOVA test revealed that there were statistically significant differences in perceptions of existing meetings between base one and the other three bases on OM19 ($F(3, 48) = [8.4886], p = 0.006$).

Investigative question nine asked how much information Airmen believe they need to know regarding the COVID-19 pandemic. The Airmen who participated rated, on a scale from one to 100, that the information sufficiency regarding COVID-19 was a 64 (SD=26.7).

Investigative question 10 asked how much information Airmen believe they currently possessed regarding the COVID-19 pandemic. The Airmen who participated felt they had more current knowledge than they needed to know about COVID-19 with a 72.7 on a scale of 100 (SD=15).

Investigative question 11 asked are there are differences between Wing's regarding COVID-19 information insufficiency. There was no statistically significant difference in IS1 between the four bases ($p = 0.396$). A one-way ANOVA revealed that there was a statistically significant difference for IS2 between at least two groups ($F(3, 48) = [3.325]$, $p = 0.027$). An LSD test for multiple comparisons found that the mean value of IS2 was significantly different between base one and base three ($p = 0.014$, 95% C.I. = $[-48.16, -5.63]$). Additionally, LSD test for multiple comparisons found that the mean value of IS2 was significantly different between base one and base four ($p = 0.012$, 95% C.I. = $[-47.07, -6.21]$).

Investigative question 12 asked do demographics play a role in COVID-19 information insufficiency. There were no statistically significant differences in mean information insufficiency scores between black and white races (IS1, $p = 0.894$; IS2, $p = 0.388$). Additionally, there were no statistically significant differences in mean information insufficiency scores between liberals and conservatives (IS1, $p = 0.374$; IS2, $p = 0.224$). Furthermore, there was no significant difference between officers, enlisted,

and civilian members in mean information insufficiency scores (IS1, $p = 0.742$; IS2, $p = 0.989$).

An LSD test for multiple comparisons found that the mean value of IS1 was significantly different between Airmen with a high school education and Airmen who graduated with an associates degree ($p = 0.016$, 95% C.I. = [-20.21, -2.17]). Finally, an LSD test for multiple comparisons found that the mean value of IS1 was a significant different between Airmen with a high school education and Airmen who graduated with a master's degree ($p = 0.049$, 95% C.I. = [-17.51, -0.03]). Regarding high school graduates, 13 of 21 had the rank of E-4 and below. Regarding participants who graduated with at least an associate degree, 17 of the 21 were enlisted members with the rank of E-5/E-6. Regarding participants who have obtained at least a master's degrees, 16 of the 21 records recorded were officers (13 Field Grade Officers, four Company Grade Officers). Participants with doctoral degrees or equivalent could not be measured due to only have two in the sample size.

V. Discussion

RQ1 Findings

The research focused on understanding how Airmen feel about their existing workplace COVID-19 meetings and how those meetings played a role in other factors that contributed to their risk information seeking on social media. The PRISM model developed by Khalor et al. (2010) was expanded to capture the Airmen's perceptions on organizational meetings, and the model was found to have an adequate fit with SEM. Additionally, it was found that these meetings played an important role in an Airmen's PBC, ATS, and SN of the COVID-19 pandemic; the expanded PRISM model (Figure 7) showed that SN was the only significant factor tested to have an impact on risk information seeking through social media. Therefore, this research asserts that COVID-19 organizational meetings most significant influence into logistics Airmen's risk seeking behavior is due to their peers and people they believe are important in those meetings as opposed to the meeting itself. Although the expanded PRISM model was found to be an adequate fit, the significance for the connection IS2 and IS was not statistically significant ($p = .062$). The IS2 to IS linkage was found to be significant in prior literature cited in the literature review section of this research. The p -value for that relationship in this study are approaching significance, and it is believed they would be statistically significant if there were a larger sample size. This research concluded that OM didn't play a significant role into Airmen's current knowledge. One reason organizational meetings might not have played an important role into Airmen's current knowledge is

because there is so much COVID-19 information available from news media, U.S government, internet, etc.

RQ2 Findings

This research found that Airmen do believe their wing's social media pages were effective communication mediums to respond to the COVID-19 pandemic. This research thinks that the organizational meetings played a role into the effectiveness of the wing's social media pages. The standardized regression weight linking OM to PBC was 0.645 indicating a strong relationship. This could be due to meetings emphasizing where to find information on those wing social media pages, supervisors and leaders reporting information from the social media page to the Airmen at those meetings, or group discussions centering around information from the social media pages.

RQ3 Findings

Although the expanded PRISM model was found to be an adequate fit, the significance for the connection between current knowledge and information insufficiency was surprising ($p = 0.056$). It was assumed current knowledge and information insufficiency would be significant at the $p = .05$ level due to prior literature showing the relationship multiple times as significant. The p -value for the IS1 to IS2 relationship in this study are approaching significance, and it is believed they would be statistically significant if there were a larger sample size. It was discovered that the Airmen's perception of their workplace meetings regarding the COVID-19 pandemic were thought to be good, accessible, accurate, true, painful, humanizing, successful and boring. Airmen could have had preconceived notions about their workplace meetings because participants

answered that they knew more than they think they should know about COVID-19 pandemic. This could also help us understand why there wasn't a significant link from organizational meetings to current knowledge, because Airmen felt like they already had the information. The feelings from these meetings were strong enough on the scale to indicate that Airmen went into each meeting and judged the meeting's success based on their current knowledge of what they expected to happen at the meeting. The meetings were probably judged as painful because Airmen believed they already had more knowledge than needed, so they could have felt as if they were wasting time with the repetition. Additionally, it was found that there are differences between bases. This provides further evidence for the validity of the model by showing that subjective norms at each base influence the participants surveyed at that base differently. Furthermore, it was found that there is a significant difference in current knowledge of the COVID-19 pandemic information between participants with at most a high school degree compared to associates and master's degree holders. There were no endogenous links to current knowledge within the expanded PRISM model (Figure 7), so further research would be needed to see why a gap exists between high school graduates and the other two groups. Furthermore, it was found that there isn't a significant difference in IS2 with regards to political beliefs. This was a bit surprising because SN was found to be significantly related to IS2 ($p = 0.023$) in the expanded PRISM model (Figure 7). The strongest variable in the SN construct was ISN4 with a factor loading of 0.868. This variable focused on the participant's families' expectations of them to seek information. ISN4 was shown to be approaching significance ($p = .055$) between the three groups (liberals, moderates, conservatives). There was a significantly ($p = 0.035$) different response in this

question between liberals and conservatives. Additionally, the second strongest variable for SN was ISN2 with a factor loading of 0.832. This question focused on the opinions of people the participants viewed as importance. Although ISN2 didn't show a significant difference between the three groups ($p = 0.075$), ISN2 showed a significant difference in opinion ($p = .024$) in answers between moderates and conservatives. This may not be much of a surprise when the standardized weight score of SN on IS2 (.226) is considered because the low score indicates weak strength between the two variables. The answers between groups on certain questions may appear significant, but the strength of those questions relating to the construct doesn't have a strong bond with IS2.

Future Research

This research has helped advance the understanding of how Airmen's existing meetings impact variables that play a role into their risk information seeking on social media. This research can be extended in various way and a few suggestions of future research are now presented. First, this research was mainly focused on logistics combat support Air Force specialty codes and might not have captured the value systems of the Air Force as a whole. To address this concern, this research recommends getting a larger population sample from various wings as opposed to samples from only commanders leading logistics readiness, aerial port, and air mobility squadrons. Next, studies should attempt to add additional variables to the model construct and expand the survey questionnaire. This can be accomplished by including all constructs of the PRISM model (e.g., risk perception, and affective response) and not tailoring it down. Furthermore, future research should test for mediated relations. This research only tested for direct

relations on the expanded PRISM. Mediated relationships may show if OM influences IS by influencing other variables. Finally, future research should attempt to find other variables that impact Airmen's current knowledge. If we understand how Airmen get their pandemic information, then we could run data checks on the validity and truthfulness of those communication mediums. This can help the Airmen understand how to analyze information to maximize the knowledge they receive and give them recommendation for how to avoid bad information sources.

Although this research provides an important stepping-stone into Airmen finding links between our day-to-day meetings and how they impact our Airmen, there is still a lot of room for improvement. This behavioral research can help us understand where we are falling short, and potentially solve issues of morale and esprit de corps.

Appendix A: Social Media Questionnaire

You have been asked to participate in a research study with the objective of investigating potential causal relationships between perceptions of existing meetings, current knowledge, perceived behavioral control, informational subjective norms, attitude towards seeking, and information seeking through social media. The results of this study may be included in research publications. You were selected as a participant in this questionnaire because members of your squadron participated in a previous COVID-19 study. You should read the information below before deciding whether to participate.

- This questionnaire is voluntary. Your decision not to participate or withdraw from participation will not jeopardize your relationship with the Air Force Institute of Technology, The U.S. Air Force, or the Department of Defense. You have the right not to answer any question, and to stop the survey at any time or for any reason. We expect that the questionnaire will take approximately 5 minutes.
- You will not be compensated for this questionnaire.
- Your responses will be kept strictly confidential. No personally identifiable information will be collected. All questionnaire results will be presented at an aggregate level.
- This project will be completed by December 2021. All questionnaire responses will be stored in a secure server until 1 year after that date. The questionnaire responses will then be destroyed.

Demographics:

- Age

- Gender
- Highest Level of Education Completed (GED, High School, B.S/B.A, M.S, PhD, etc.)
- Political Identification (1 to 11: 1 being Very Liberal, 6 being Center, 11 being Very Conservative)
- Race (White, Black or African American, American Indian or Alaskan Native, Asian, Native Hawaiian or Pacific Islander, Other)
- Rank
- Time in Organization (months)

Perceptions of existing Communication Methods (1 to 7 scale)

The scales below are designed to assess feelings and attitudes towards Wing, Group, Squadron, Flight, and Shift Call meetings regarding to COVID-19. Please consider the meetings you attend and circle the point along the scale which you consider to be the most appropriate for these meetings. Work rapidly; do not return to previously completed responses.

		1	2	3	4	5	6	7	
1.	Constrained	*	*	*	*	*	*	*	Free
2.	Complex	*	*	*	*	*	*	*	Simple
3.	Good	*	*	*	*	*	*	*	Bad
4.	Inaccessible	*	*	*	*	*	*	*	Accessible
5.	Distorted	*	*	*	*	*	*	*	Accurate
6.	Impersonal	*	*	*	*	*	*	*	Personal
7.	True	*	*	*	*	*	*	*	False
8.	Pleasurable	*	*	*	*	*	*	*	Painful
9.	Hot	*	*	*	*	*	*	*	Cold
10.	Distant	*	*	*	*	*	*	*	Close
11.	Dehumanizing	*	*	*	*	*	*	*	Humanizing
12.	Expressive	*	*	*	*	*	*	*	Inexpressive
13.	Difficult	*	*	*	*	*	*	*	Easy
14.	Emotional	*	*	*	*	*	*	*	Unemotional
15.	Meaningless	*	*	*	*	*	*	*	Meaningful
16.	Slow	*	*	*	*	*	*	*	Fast
17.	Successful	*	*	*	*	*	*	*	Unsuccessful
18.	Insensitive	*	*	*	*	*	*	*	Sensitive
19.	Interesting	*	*	*	*	*	*	*	Boring
20.	Constricted	*	*	*	*	*	*	*	Spacious

Descriptive Data for Variables in Study

Concept

Measure

Information (in)sufficiency

(0-100 scales)

Current knowledge: On a scale of 0-100, estimate your current knowledge of the COVID-19 pandemic with 0 = knowing nothing and 100 = knowing everything you could possibly know about the topic.

Sufficiency threshold: This time, using that same scale, estimate how much knowledge you think you NEED on this same topic (0-100).

Informational subjective norms (1-6 scale)

Injunctive norm:

It is expected of me that I seek information about the COVID-19 pandemic from my Wing's social media.

Most people who are important to me think that I should seek information on the COVID-19 pandemic.

I feel that there is an expectation of me to seek information about the COVID-19 pandemic.

My family expects me to seek information about the COVID-19 pandemic.

Descriptive norm:

People in my life whose opinions I value seek information about the COVID-19 pandemic from their wing's social media pages.

Perceived behavioral control (1-5 scale)

It is difficult to find credible/accurate information about COVID-19 on my wing's social media page (reversed).

I don't know where to find credible/accurate information about COVID-19 on my wing's social media(reversed).

I have a hard time understanding information about COVID-19 (reversed).

Relevant channel beliefs (a.k.a., attitude toward seeking) (1-6 scale)

Indicate the degree to which you feel that seeking information about COVID-19 on your wing's social media is . . .

Worthless... Valuable

Bad...Good

Beneficial... Harmful (reversed)

Not helpful...Helpful

Unproductive...Productive

Wise... Foolish (reversed)

Not useful...Useful

Information seeking (1-6 scale)

I plan to seek information about COVID-19 in the near future.

I will try to seek information about COVID-19 in the near future.

I intend to find more information about COVID-19 soon.

I intend to look for information about COVID-19 in the near future.

I will look for information related to COVID-19 in the near future.

If the pandemic resurges, I plan to seek social media information on my wing's page.

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14. ABSTRACT
The purpose of this survey-based research was to understand how organizational workplace meetings surrounding the COVID-19 pandemic impacted logistics Airmen across the United States Air Force and subsequently played a role into their risk seeking behavior on social media. Specifically, this research tested an expanded Planned Information Risk Seeking Model with organizational meetings as an antecedent to determine if current meetings influenced an Airman's perceived behavioral control, attitude toward seeking, subjective norms, knowledge sufficiency an intentions to seek information regarding COVID-19.

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