

FINAL TECHNICAL REPORT

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GRANT TITLE: The Impact of Communication Media Characteristics on Information Acquisition and Favorability of Attitudes Toward the Navy

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OBJECTIVE: Test media richness theory (Daft & Lengel, 1986) and extend its scope to include extra-organizational communication by investigating the influence of communication media characteristics on receiver perceptions of the communication process, comprehension of recruiting information, and attitudes, intentions, and behaviors associated with joining the Navy.

APPROACH: There has been little research examining the effects of different types or sources of recruiting information on the attitudes, intentions, or behaviors of potential job applicants (Breugh & Starke, 2000), and few instruments appropriate for measuring the communication process or related outcomes exist. As a first step, we used a pilot study to test and refine instruments written to measure receiver perceptions of communication processes (e.g., information quantity, information overload, distractions, personal focus, social presence, etc.) and receiver outcomes associated with recruiting communication (e.g., media satisfaction, media effectiveness, ambiguity, credibility, confidence in the information, comprehension, etc.).

An experiment was designed to evaluate the influence of four types of media (face-to-face, video, audio only, and text) on receiver perceptions of the communication process and decision-making variables incorporated in Ajzen and Fishbein's (1980) Theory of Reasoned Action (e.g., normative beliefs, motivation to comply, outcome expectancy, outcome evaluation, attitude strength, intention to join, and behavioral control) while controlling for differences in message content, message length, and receiver characteristics (gender, age, and experience). The use of a media X length X content research design allowed us to model main effects and potential interactions. For each type of message content, we created messages that contained the same information verbalized in the video mode. Audio messages contained the same voices and sounds, but no visual cues. Text was transcribed from the audio message and the face-to-face mode was operationalized by having a uniformed Navy representative read the transcripts and then respond to questions from participants. The one-minute and three minute versions were constructed so that the longer version repeated the same information but used additional sources of information. Including different levels of message length and message content in the design made it possible for us to separate the effects of message content and

message length from each other and from the effects of media. The control variables were included for similar reasons. Including them in the analysis made it possible for us to better evaluate the effects of media type on outcomes, by controlling for differences in experience with message content (Carlson and Zmud, 1999).

CONCLUSIONS: The study provides evidence that media differ in important ways, and that media characteristics influence communication outcomes and subsequent decision processes. Receivers' perceptions of communication characteristics varied across media (face-to-face, video, audio, and text), message length (one minute or three minute segments), and message content (objective or subjective). Nine of the 11 communication characteristics test in the study varied across media types. Seven communication characteristics were affected by message length and three were affected by the type of message content. Overall the design factors accounted for between 4 and 24 percent of the variance in the communication characteristics. It is noteworthy that two communication elements that have received much attention in the literature, social presence and personal focus, were affected by all three of the factors (e.g., Short, et al., 1976; Sitkin, et al., 1992; Perloff, 1993). This suggests potential sources of unexplained variance for studies that have not included all three design factors.

Message characteristics (especially distraction, amount of information, and information overload) predicted communication outcomes, and communication outcomes (especially credibility and confidence), explained variance in antecedents of decision-making (especially attitude strength). Consistent with Ajzen and Fishbein's (1980) model, attitude strength predicts intention to join, which is the strongest predictor of behavior. Within the context of organizational recruiting, results show that media characteristics have an important influence on the goals of informing, persuading, and creating a favorable impression of the organization in the minds of potential applicants and the general public. The study found links between communication processes aimed at informing and persuading, and decision-making processes. Results suggest that communication media influence decision processes by providing objective information, by providing social and contextual cues that aid in evaluating facts, and by conveying attitudes about the topic.

Another way our study contributes to the media richness literature is by testing the extent to which receivers' communication outcomes varied by media type. ANCOVA results show that media type influenced outcomes that are central to media richness theory. Media types were associated with different levels of ambiguity, comprehension, confidence in understanding the message, trust in the information, credibility of the sources, satisfaction with the communication medium, and judgments of communication effectiveness. Message length affected 4 of 7 outcomes, but message type only affected comprehension. Altogether, the 3 factors accounted for 4 to 15 percent of the variance in outcomes. Follow-up regression analyses examined the relationships between perceived communication characteristics and receivers' outcomes. They showed that communication characteristics accounted for substantial variance in all of the communication outcomes except for comprehension.

Results help to explain how communication characteristics influence communication outcomes. For example, 49 percent of the variance in receivers' ambiguity was explained by the amount of information, the complexity of the information, the amount of distracting material included in message, the amount of symbolism in the message, its personal focus, and extent to which the message provided a framework for evaluation. Similarly, 45 percent of the variance in perceived communication effectiveness was explained by the amount of information, the amount of distracting cues included in the message, its personal focus, and social presence. Without the experimental results showing that media characteristics varied across media type, it would be difficult to rule out the possibility that relationships between communication characteristics and communication outcomes reflect nothing more than the effects of common method variance. However, finding that communication characteristics differ across media types – and the characteristics explain substantial variance in outcomes makes it hard to accept this explanation.

The study also contributes to the literature on persuasion. One of the key variables in persuasive communication is credibility (Perloff, 1993). We found that 31 percent of the variance in credibility (of an information source) was explained by communication characteristics. Similarly, 15 percent of the variance in trust was explained by communication characteristics. Another hypothesis drawn from persuasion research is that satisfaction with the communication process may influence subsequent outcomes. The spillover hypothesis argues that people judge things more positively when they are in a good mood (positive affective state) than when they are in a bad mood. For a medium to trigger this sort of effect, it must first be associated with satisfaction. Regression results show that 47 percent of the variance in communication satisfaction is explained by communication characteristics. Beta weights were significant for information overload, the amount of information, the amount of distracting material and information, symbolism, personal focus, and social presence. However, results consistent with the spillover hypothesis were found for only one of the decision-making variables in subsequent analyses: the standardized beta weight obtained in regression analyses for communication satisfaction was negatively related to motivation to comply. In other words, people who were more satisfied with the medium used were also less likely to want to comply with the wishes of their parents, friends, coworkers, etc.

Hierarchical regression analyses found that there were stronger relationships between intentions and behavior than other predictors and behavior. Parallel analyses found identical results for the traditional multiplicative measure of attitude strength and a measure of attitude toward joining the Navy developed as part of this study. In both cases, intentions were more strongly predicted by attitudes than normative beliefs, motivation to comply, outcome expectancy, outcome evaluation. Results show that communication outcomes, attitudes and behavioral control each account for at least some distinct variance in intentions to join the Navy. No matter which attitude measure was used, the total Adjusted R^2 was .09.

We developed a new measure of attitudes toward joining because there have been concerns about the distributional properties of the multiplicative measure of attitude strength. Following suggestions by Ajzen and Fishbein (1980), attitude strength has been

computed as the multiplicative product of motivation to comply, subjective norms, outcome expectancy, and outcome evaluation. These results suggest the two measures may be at least functionally equivalent, but their correlation ($r=.28$) suggests that they represent different constructs. Further research is needed to develop better measures of attitude strength.

There was some evidence supporting the hypothesis that communication outcomes would influence the antecedents of intentions and behavior. Credibility had a significant beta weight in regressions for motivation to comply, subjective norms, outcome expectancies, outcome evaluations, and attitude strength. Confidence in understanding the message was a significant influence on subjective norms, outcome expectancies and attitude strength. Ambiguity (recoded as clarity) was positively associated with attitude strength, suggesting that clear messages are associated with more favorable attitudes toward joining the navy. Variance in subjective norms has to do with beliefs about what people who are important to you (and have your best interests in mind) think you should do. Results indicate that respondents who are less confident in their understanding of the message are more strongly influenced by subjective norms about joining the Navy.

Communication outcomes explained between 23 and 26 percent of the variance in attitudes with one exception: They only explained one percent of the variance in attitude toward joining the Navy. Trust and credibility each explained variance in three of the four attitudes. Only communication effectiveness explained a significant amount of variance in attitudes toward joining the Navy. Communication outcomes and behavioral control each explained a small but significant amount of distinct variance in intentions to join the Navy. Thus it appears that communication characteristics have at least some direct influence on intentions.

SIGNIFICANCE: This study answers the call for research to investigate the information processing requirements of media channels to increase understanding of cognitive processes and to improve advertising and communication practices (Geiger & Newhagen, 1993; Carlson & Zmud, 1999; Perloff, 1993; Sitkin, et al., 1992). Results link communication media characteristics to communication outcomes and communication outcomes to the antecedents of decisions contained in Ajzen and Fishbein's (1980) model.

PUBLICATIONS AND SUBMISSIONS (for total award period):

1. Van Scotter, J., Otondo, R., Allen, D., & Palvia, P. (2002). Impact of Media Type, Message Content, and Message Length on Communication Characteristics and Receiver Outcomes. Paper to be presented at the Southern Association of Information Systems Conference, March 1-2, 2002, Savannah, GA.
2. Van Scotter, J., Otondo, R., Allen, D., & Palvia, P. (in progress). Impact of Media Type, Message Content, and Message Length on Communication Characteristics and Receiver Outcomes. Paper being prepared for submission to Management Information Systems Quarterly.

3. Otondo, R., Van Scotter, J. R., Allen, D., & Palvia, P. (in progress). Relationships between media features and perceived social presence in organizational communication. Paper being prepared for submission to *Management Information Systems Quarterly*.

4. Allen, D., Van Scotter, J., Otondo, R., & Palvia, P. (in progress). Media as Recruiting Source Effects. Paper being prepared for submission to the *Journal of Applied Psychology*.

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