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The Influence of Collectivistic and Individualistic Value Orientation on the Acceptance of Individually-Tailored Internet Communications

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Introduction

Tailored communications are individualized communications intended to reach one specific person that are based on characteristics that are unique to that person. The rationale for utilizing a tailored communication is founded in the idea that information elaboration is likely when a message is seen as personally relevant and this increased elaboration leads to an enhanced likelihood of adoption and utilization of the tailored message [1]. Research has found tailored communications to be effective in promoting behavioral change within a variety of areas such as smoking cessation [2], weight loss [3], educational achievement [4], and the adoption of healthy eating behaviors [5].

While the evidence in support of tailored communication is promising, research has demonstrated that the overall effectiveness of the tailoring approach might be limited [6]. For example, in some studies aimed at detailing the effectiveness of the tailoring approach, only about half of the participants indicated that the study materials that they received applied to them specifically [7] [8]. It has been suggested that limitations found in such an approach might be the result of not including potentially relevant and influential characteristics such as contextual, cultural, or personality factors [9] [10]. While work detailing personality factors that might enhance the tailoring approach has begun [e.g.,11], an examination of cultural influences on the acceptance of tailored forms of communication remains lacking.

One such cultural dimension upon which identification and use might bolster the effectiveness of tailored internet communications is within the distinction between a collectivist and an individualist value orientation. The identification of such a culturally-based value orientation has proven useful in a variety of areas including career counseling [12], Internet shopping [13], and psychotherapy [e.g., 14]. Though diverse in their investigative focus, such studies consistently highlight the influence of an individual's cultural values and beliefs on the subsequent acceptance of information.

This project is aimed at detailing the role that collectivist and individualistic value orientations play in the acceptance and eventual utilization of information delivered via the Internet that is tailored (i.e., individualized) to the needs and characteristics of an individual recipient. Participants from both a predominantly collectivist culture and a predominantly individualistic culture provided demographic, dietary, and health belief information used in the creation of a series of Internet-based tailored health messages. It was expected that the individuals receiving the tailored communication message would be more likely to indicate a personal connection to the information contained in the message and would be more likely to utilize this information in the future regardless of cultural value orientation.

Method

Participants

Participants within the present study were drawn from two diverse locations. In particular, one group of study participants included individuals currently living in the United States, and the other included individuals currently living in Japan. Participants in the US sample— students currently attending a graduate program in the Portland, Oregon area—were recruited via e-mail communication wherein they were presented with a brief description of the study and hyperlink access to begin participation. Participants in the Japan sample were obtained via a snowball sampling methodology. In this sampling method, three individuals were directly contacted by the principle researcher and

presented with a translated version of the recruitment e-mail used for the US sample. These individuals, in turn, distributed this e-mail recruitment message to other individuals within the target population (Japan) with a request for them to also distribute the recruitment message to additional individuals and so on. Such a sampling method is often utilized in situations where either target individuals are difficult to access, or when other survey methods are not available [15].

Measures

For the US sample, all communications and study materials were presented in English. Communication messages and study materials for the Japan sample were translated versions of the materials used in the US sample. A two-step translation method was employed with materials first being translated into Japanese by an individual currently living in the US for whom Japanese was their native language. These materials were then back-translated to English by an independent translator to verify the maintenance of cross-linguistic meaning. Within the present study, the following assessments were presented to each research participant:

Demographic Assessment. Participants provided standard demographic information used in the development of the tailored heath communication message (for those individuals within the tailoring condition), and for use in future e-mail contact. This demographic information included the participant's first name, their age, their gender, their e-mail address, and country of residence. Also, a series of questions were presented aimed at assessing the participant's current health beliefs. For example, participants were asked to indicate such things as how important they believe their daily diet is in maintaining good health, their perceptions of how likely they are to improve their dietary habits in the future, and their beliefs of who and what influences their dietary habits.

Tailoring Questionnaire. Within the tailoring questionnaire, participants were presented with a series of questions aimed at determining their current dietary practices. These questions were drawn from standard

dietary recommendations as presented by US department of Health and Human Services and the Ministry of Health in Japan. The focus of this questionnaire was on those areas of recommendation shared by both cultures, and included questions on such things as the regular assessment of one's weight and physical activity; regular intake of fruits, vegetables, and dairy products; and the keeping of regular hours for meals.

Measure of Vertical and Horizontal Collectivism and Individualism. To determine the cultural value orientation of each participant along the collectivism and individualism dimension, a measure developed by Singelis, et al [16] was utilized. A particular strength of this measure is that it categorizes individuals within each orientation along the additional dimension of vertical and horizontal characteristics within each. This approach is widely viewed as a preferred approach over a simple distinction between the collectivist and individualist orientations [17]. This method results in the relative placement of an individual within four distinguishable categories. The first, horizontal collectivism (HC) is a cultural pattern stressing equality wherein an individual views oneself as an interdependent part of others within the group. The second, vertical collectivism (VC), is a pattern stressing service and sacrifice for the overall group wherein an individual (while interdependent with others in the group) recognizes differences in status within the group. The third, horizontal individualism (HI), is a pattern stressing autonomy between group members wherein an individual is viewed as independent yet more or less equal in status with others within the group. The final pattern, vertical individualism (VI), stresses competition between members within the group and the individual is viewed as independent and a level of inequality is expected [18].

Self-Esteem Scale. The Rosenberg Self-Esteem Scale [19]—a 10-item self-report measure—was utilized as a measure of global feelings of self-worth and self-acceptance.

Resiliency Scale. The Neill and Dias [20] modification of the Wagnild and Young measure [21] of resiliency was utilized in the present study. Resilient individuals are characteristically self-confident and understand

their personal strengths and abilities. Perseverance in the face of change and challenges highlights the resilient individual.

General Self-Efficacy Scale. The General Self-Efficacy Scale (GSES) [22] is a 10-item measure designed to assess an individual's self-beliefs in their abilities to cope with a wide range of life challenges. Rather than being a measure of optimism, the GSES refers to personal agency—the belief that one's actions are responsible for successful outcomes.

Multidimensional Health Locus of Control. Each participant's beliefs of personal control over his or her health and well-being were determined using the Multidimensional Health Locus of Control Scale (MHLC) [23]. The MHLC is an 18-item measure hat contains three sub-scales that determine the relative influence of three sources of control over an individual's health: internal, powerful others (external), and chance (external).

Procedure

Data collection involved participation in three distinct study sessions detailed below. The procedures to follow were the same for both the US and the Japan sample.

Session 1
Upon entering the secure study website, each participant was welcomed to the study and presented with a copy of an informed consent document informing them of their rights as a research participant. Upon agreeing to continue participation in the study, they were then presented with, and asked to complete, the assessment measures detailed previously. Upon completion of these measures, participants were informed that they would be contacted via e-mail in one week to continue their study participation.

Session 2
One week after completing participation in the first session, participants received an e-mail message containing an Adobe Acrobat (.pdf) file attachment containing one of two types of dietary/health information

communication. Specifically, participants were presented with a health communication message detailing recommended healthy eating behaviors (4 printed pages in length) either tailored to their individual characteristics as determined through assessment in Session 1 or with a generic equivalent. Participants were asked to read this material and were directed to a second secure study website within which they rated their particular health communication along a number of dimensions, including the applicability of the information to them personally (i.e., goodness of fit), their emotional reaction to the material, the utility of the information, their understanding of the information, and the "trustworthiness" of the information presented. Participants were then informed that they would be contacted again in one week to complete their participation in the research project. The assessment procedure detailed above applied to all study participants regardless of communication condition (tailored
v. generic health communication).

Session 3
One week following completion of the second session, study participants were sent an e-mail message containing a hyperlink to a third secure study website within which they provided assessment information on how many times they revisited the healthy eating materials and how influential the materials were in helping them to eat healthier. Additionally, participants again completed the self-esteem, resiliency, self-efficacy, and health locus of control measures used in Session 1 to determine if significant changes resulted from having been exposed to a tailored communication message. Upon completing these assessments, participants were informed that their participation was now complete and were thanked for their time.

Results

Sixty-two individuals in total participated in the study. Of these participants, 24 (11 male, 13 female) were individuals living in Japan and 38 (8 male, 30 female) comprised the US sample. The average age of participants in the Japan sample was 24.13 years (range: 19 to 29 years) and 30.26 years (range: 22 to 58 years) for the US sample. Given

the very unequal representation of males and females within the samples, no further analyses will be based on participant gender unless specifically stated.

Participant Characteristics by Communication Condition
To determine if significant differences existed between participants within the tailored and generic communication conditions on any relevant study variables prior to more detailed analyses, a series of t-test analyses were conducted between condition groups on initial reports (Session 1) of age, demographic information, learning style, cultural value orientation, self-esteem, self-efficacy, resiliency, and health locus of control. No significant preexisting differences were identified between groups, therefore subsequent analyses continued without the need for corrective measures.

Overall Tailoring Effectiveness at Session 2
Significant differences between communication conditions were found in responses to the healthy eating materials in Session 2 with individuals in the tailoring condition indicating that the materials were more engaging (t (49) = -4.44, p = .000), more attractive (t (49) = -2.60, p = .012), more informative (t (49) = -5.05, p = .000), more interesting (t (49) = -4.93, p = .000), more likely to bring about a change in eating habits (t (49) = -5.43, p =.000), had more application to them personally (t (49) = -5.99, p =.000), and were seen as more trustworthy (t (49) = -2.73, p = .009).When examined by cultural value orientation, the responses to the healthy eating materials were found to differ somewhat. Table 1 below details message characteristics assessed and presents significant differences that were found between message conditions (tailored v. generic), both overall and by cultural value orientation.

Table 1. Evaluation of Message Characteristics
- The information in the healthy eating materials was engaging. 1, 2
- The information in the healthy eating materials was new tome. 3
- The healthy eating materials were attractive. 1

- The healthy eating materials were informative. 1, 2, 3

- The healthy eating materials were clear.

- The healthy eating materials were interesting. 1, 2, 3

- The healthy eating materials encouraged me to change my eating habits. 1,2,4

- The healthy eating materials applied to me personally. 1, 2, 3, 4

- The healthy eating materials applied to me culturally. 2

- The healthy eating materials were trustworthy. 1, 4

- I will likely re-read and use the healthy eating materials.

- I am likely to change my dietary routine.

1 - Significant differences between message condition (tailored v. generic) overall (N = 51, p <.05)

2 - Significant differences between message condition (tailored v. generic) HC (N = 20, p < .05)

3 - Significant differences between message condition (tailored v. generic) VC (N = 9, p < .05)

4 - Significant differences between message condition (tailored v. generic) HI (N = 20, p < .05)

Note: There were too few participants in the VI cultural value condition to assess differences between message condition (N = 2).

Session 3 Outcomes Overall and by Cultural Value Orientation
Significant differences between message conditions (tailored v. generic) were also found in responses made during the third study session. Individuals in the tailored message condition were significantly more likely to report having re-read the healthy eating materials more often between Sessions 2 and 3 (t (42) = - 2.91, p =.006). Additionally, individuals in the tailored condition were significantly more likely to

indicate that the healthy eating materials were influential in helping them eat healthier (t (42) =-3.91, p = .000).

When examining responses made in Session 3, differences between message conditions were found to be inconsistent across cultural value orientations. In particular, individuals holding a horizontal collectivist (HC) orientation who received the tailored communication message indicated a higher likelihood of re-reading the information than those individuals who received the generic message (t (14) = -3.79, p = .002). No significant difference was found, however, between message conditions for the HC individuals in its perceived influence on healthy eating. Individuals holding a vertical collective (VC) orientation who received the tailored communication message were not found to differ from those receiving the generic message in either their having re-read the information or in its perceived influence on their dietary habits. Individuals holding a horizontal individualism (HI) orientation who received the tailored communication, however, did not re-read the information significantly more than those in the generic condition, but they did indicate a greater degree of influence of the healthy eating materials on their dietary habits (t (16), - 3.05, p = .008).

Self-Esteem, Self-Efficacy, Resiliency, and Health Locus of Control
As previously discussed, there were no significant differences between message conditions in initially-reported self-esteem, self-efficacy, resiliency, or health locus of control beliefs. No significant differences were found between message conditions in a change in these study variables from Session 1 to Session 3 when examining the entire sample. Likewise, no significant differences were found between Session 1 and Session 3 for any of these variables within any of the cultural value conditions.

A series of one-way ANOVA procedures was conducted to determine if significant differences existed between cultural value orientations in initial reports on the self-esteem, self-efficacy, resiliency, and health locus of control measures. A significant difference was found between cultural orientation groups in self-esteem (F (3, 58) = 4.94, p = .004) and

self-efficacy (F (3, 58)= 4.59, p = .006). Post hoc t-test analyses (using a Bonferroni alpha correction to control for multiple comparisons) revealed the differences to be between the horizontal collectivist and vertical collectivist orientations for both. In particular, individuals in the horizontal collectivist condition indicated higher levels of self-esteem (M = 24.88) and self-efficacy (M = 30.04) than individuals expressing a vertical collectivist orientation (Self-Esteem M = 21.70, Self-Efficacy M = 25.20).

Differences between Study Locations
The focus of the present study is not on differences between Japan and the United States in particular, but rather on the effectiveness of the tailoring approach and the potential influence of cultural value orientation. It is interesting to note, however, that a number of significant differences were found in responses to study assessments when study site is considered. In particular, individuals in the US sample were significantly more likely to endorse an internal health locus of control than were individuals within the Japan sample (t (60) = -8.64, p = .000). Likewise, individuals in the Japan sample were more likely to endorse a powerful others (external) health locus of control (t (60) = 7.60, p= .000). There was no difference between study sites, however, in the endorsement of a health locus of control that emphasizes the role of chance.

Significant differences between study sites were also found with individuals in the US sample indicating higher levels of reported self-esteem (t (60) = -7.57, p = .000), self-efficacy (t (60) = - 7.82,p = .000), and resiliency (t (60) = -6.78, p = .000).

Discussion

Overall, the present study provides additional support for the growing body of literature on the effectiveness of information tailoring. Across the entire sample, individuals who received a health communication message that was tailored to their current dietary behaviors and health beliefs were more likely to feel an initial connection to the health communication and were more likely to utilize the information

contained within the message than were individuals who received a generic equivalent. These findings mimic those of previous studies that found individuals receiving a tailored communication indicate more positive thoughts regarding the communication [24], indicate a more personal connection to the communication [25], and indicate a resulting change in behavior [26]. In the present study, however, a number of differences were found between individuals holding different cultural value orientations. While individuals within all cultural value orientations who received a tailored health communication message indicated a greater personal connection to the message than did those receiving a generic equivalent, the level of engagement, attractiveness, and novelty of the information presented within the tailored communication message did differ between orientations.

These differences are further reflected in differences between cultural value orientation groups in the continued reference to the tailored materials and in the perceived utility of the tailored health communication message. Individuals holding a horizontal collectivist orientation were more likely to re-read the tailored communication, but did not find it to be useful in bringing about a change in dietary behavior. Individuals holding a horizontal individualistic orientation, however, were more likely to view the tailored communication message as useful in bringing about a change in eating behavior. Individuals holding a vertical collectivist orientation who received the tailored communication were not more likely to re-read the information and did not find the information any more useful than did those receiving the generic equivalent. Thus, while an initial connection to the material was indicated by all orientation groups, only those individuals holding a horizontal individualist value orientation found eventual utility in the tailored health communication. Given the disproportionate size of the cultural orientation groups (and the fact that there were only 3 individuals representing the vertical individualism orientation), this finding should be taken with caution and be further examined in future research.

No significant changes in self-esteem, self-efficacy, resiliency, and health locus of control beliefs were found between the initial assessment of each and their assessment during Session 3 in either the tailored or generic communication condition. Differences, however, were found between individuals in regard to self-esteem and self-efficacy with individuals holding a horizontal collectivist orientation indicating a higher level of both when compared to individuals holding a vertical collectivist orientation. Also, while not a focus of the present study, it is interesting to note that individuals in the Japan sample indicated significantly lower levels of internal health locus of control, self-esteem, self-efficacy, and resiliency than did the US sample. These findings, however, support those of similar cross-cultural research and highlight previous study findings [27] [28] [29]. That is not to say that Japanese individuals truly believe themselves lower on such attributes. It is likely, however, that this particular pattern of responses reflects a self-effacement norm prevalent in their society [30].

Limitations of the Current Study

Though the findings within the current study are promising, significant limitations exist. Firstly, there was highly unequal representation within the four cultural value orientation conditions. This inequality limited the resulting analyses and conclusions that could be drawn. The use of two culturally-diverse study locations was an attempt to maximize the likelihood of obtaining samples representing a variety of orientations. The range of cultural value orientation within the US sample, however, was particularly restricted and was not what one would characteristically expect in that it was dominated by individuals holding either a horizontal collectivist or horizontal individualist orientation. This is contrary to the expected vertical individualist orientation previously found within US samples [31]. A more diverse sample of cultural value orientation with a more expansive sampling method is called for. Additionally, while no changes in self-efficacy, self-esteem, resiliency, or health locus of control were found from Session 1 to Session 3, it is premature to assume that information tailoring has no influence on these variables. The time span between the first and third sessions was likely too short and the influence of a single communication message too minimal to

bring about such changes. Examination of the influence of more extensive tailored communication messages presented over a longer period of time on these variables is called for.

Conclusions

The present study represents an initial step toward a more complete understanding of the role that cultural value orientation plays in the acceptance to tailored internet communication messages. While the findings of the study provide further support for the tailoring communication methodology, differences found between cultural value orientation differences that were found are preliminary and should be taken with caution. Further research is called for to better detail differences found within this study that addresses the limitations mentioned previously. Regardless, the information tailoring methodology remains a beneficial approach to the effective distribution of a wide variety of messages.

Endnotes

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