Is Media Synchronicity Theory Culture Blind? An Empirical Test

Submission Type: Full Paper

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Abstract

As organizations are increasingly reliant on globally dispersed employees, they face a challenge understanding how media capabilities might influence interactions between employees from different countries who interact through communication technology. Based on media synchronicity theory (MST), this research examines how cultural differences may influence individuals’ assessments of different media capabilities and their relationship to synchronicity. Comparing data collected from 308 respondents in Italy and the US, the different cultural characteristics of uncertainty avoidance and high/low context were examined for their influence on media capabilities identified in MST and their contribution to synchronicity. Results show that for US respondents, four of the five media capabilities have a significant association, while for Italian respondents, only two of the five media capabilities have a significant association. This research suggests that contextual differences based on cultures exist in the way MST operates and that culture should be considered in theorizing with respect to MST.

Introduction

In the current global environment, organizations are increasingly reliant on dispersed members, and remote working is becoming a common practice. A recent study by the SHRM society reports that 66% of multinational companies rely on geographically dispersed workers, and 80% of the firms believe that the remote-working practice will increase even more in the next few years (SHRM 2013). These work practices result in networked organizational configuration that can bring several advantages in terms of innovation and performance because it allows organization to reap the advantages of skills and knowledge that are not necessarily co-located. Despite these potential advantages, organizations face the challenge of understanding how to maintain effective communication and coordination processes between employees who interact less frequently on a face-to-face basis but must increasingly rely on different forms of technology.

Previous research has attempted to address this challenge by applying a theoretical framework called Media Richness Theory (MRT) (Daft & Lengel, 1984). MRT posits that communication performance occurs when specific media is used that fit with the information requirements of the communication. On the basis of the MRT there is the assumption that the meaning of a message is not solely related to the message itself, but also connected to the medium chosen to convey it. In this vein, media that are considered “rich”, because they support the exchange of multiple cues (e.g., face-to-face meetings) are more suitable for complex tasks that require the elaboration of different information and rely on a sensemaking process. On the other hand less rich media (e.g., e-mail) fit better to contexts that require fewer cues for understanding.

For decades, researchers have used Media Richness Theory to explain media use even though empirical tests of it have been mixed. Although MRT is widely applied and represents a stepping-stone in the communication research, it is limited in explaining new media capabilities. Mainly, MRT does not focus on the process that lead individuals to chose a specific media (Dennis and Kinney 1998, Dennis et al.
Media Synchronicity Theory and Culture

Addressing these concerns, Media Synchronicity Theory (MST) was introduced to address the fit between the capabilities of the medium, the goal of communication, as well as the sender’s efficacy and experience with a medium and suggests that these factors influence the outcome of the communication task (Dennis et al., 2008). MST is a more contextualized theory focusing on communication purpose.

MST is based on the assumption that certain media capabilities affect the individual appropriation of media, influencing the way individuals convey and process information as well as the level of synchronicity (i.e. the ability to support individuals working together at the same time with a shared pattern of coordinated behavior), resulting in better performance for shared understanding. Synchronicity is a state in which individual communication proceed at the same pace and together, and individuals experience synchronicity when they exhibit shared coordinated behavior (Dennis et al. 2008). Since MST addresses contextual factors related to individual’s experience as well as communication goals, social and cultural factors likely to play a role in the application of media capabilities for a certain task. Cultural contexts provide the lens that individuals utilize to interpret the environment and make sense of the context (Leidner & Kayworth, 2006). Research has shown that cultural differences affect how workers approach communication (Gudykunst et al. 1996; Srite & Karahanna, 2006). In certain cultures, urgency related to a certain task may not be the same as in another culture. Similarly, certain cultures exhibit a slower pace at which tasks are completed than other cultures. There are many other factors that determine the expectations and norms of task performance and social values, which in turn, can influence the use of media capabilities. Since MST is a contextualized theory of media, individual use of various media capabilities could be different depending on country and culture. We seek to examine if MST is US-centric or would apply equally well in a work culture that is significantly different from the US.

We propose that the appropriation of media capabilities suggested by MST may play out differently in different cultures. These nuances in cultural differences may suggest that it is relevant and important to understand the role of culture in the application of media capabilities. The goal of our study is to empirically compare MST constructs between two cultures that differ on relevant cultural characteristics.

Given the above, our paper presents a comparative model of MST across two countries (US and Italy). Specifically, we test the association of the five media capabilities on media synchronicity across the two countries. Media synchronicity, a key interaction outcome, is relevant for examination as it is the central construct of MST that is fit to the communication purpose for communication performance. While our results show the robustness of media synchronicity theory, they outline that the appropriation of different media varies across different cultural characteristics, suggesting to organizations and managers the need to consider these differences when developing communication policies in a cross-national setting.

Theoretical Development

Studies of media use have long relied on Media Richness Theory such that that each medium could be ranked by its relative “richness” of communication. Richness was described as the ability of the medium to reduce the equivocality of the communication. This theory has been criticized that it disregards the nature of the task (Markus, 1994). A second criticism is that it’s determination of media choice fails to consider the social context such as familiarity of users with each other (Kraut et al., 1998; Carlson and Zmud, 1999). Some scholars have presented the perspective that media outcomes are influenced by media affordances (Kane, et al. 2012), how the media itself is utilized (DeSanctis and Poole, 1994) and individual’s familiarity with the medium (Carlson and Zmud, 1999).

Media Capabilities and Synchronicity

A more recent theory, MST, relies on the notion of Synchronicity, which is defined as “the extent to which a communication environment encourages individuals to work together on the same activity, with the same information, at the same time” (Dennis and Valacich, 1999, pg. 5). MST addresses the ability of media to support the communication processes used by individuals as they work on different types of tasks (Dennis, Valacich and Fuller, 2008). MST argues that communication is composed of two primary processes, 1) the conveyance of information with deliberation, and 2) the convergence on meaning. Media capabilities affect the shared focus that individual have to work on a task. This shared focus is more or
less necessary depending on the purpose of the communication, conveyance or convergence. MST proposes that communication performance will be enhanced when media capabilities are aligned with the requirements of these two processes.

This research extends MST by examining the influence culture may have on use of media capabilities. Globalization is pushing toward the use of different communication methods to maintain contact between different organizational nodes, implying the diffusion and use of different technologies across national boundaries. Such a global diffusion of communication media, despite the advantages, poses the challenge of appropriation of such media across national cultures. Behavioral and communication models do not universally hold across cultures (e.g. Keil et al. 2000), outlining the need to consider how national culture may influence the process of appropriation of different media capabilities and the effects on synchronicity. Indeed, national cultures are likely to influence individual perceptions, attitudes and behaviors, especially in the way through which individuals interact. Therefore, our second goal is to understand how different national cultures influence the effect of media capabilities on synchronicity. This goal is in line with the call by Dennis et al. (2008) who underscore that the test of MST should consider also other factors, which may affect the appropriation process, providing a better understanding of MST across different context.

MST considers five different media capabilities (velocity, parallelism, symbol variety, rehearsability, and reprocessability) that can impact the way through which a shared pattern of coordinated behavior may emerge: (Dennis et al. 2008). Media capabilities are considered a driver for explaining the level of interaction and shared focus between the sender and the receiver.

**Cultural Differences**

Our main thesis here is that the influence of media capabilities on synchronicity differs across national cultures. As posited by Hofstede (1991), culture can be defined as “the collective programming of the mind which distinguishes the members of one group or category of people from another”. Such distinctions pertain to the interpretive schemes individuals rely on in order to read and make sense of the environment (Reichers & Schneider 1990). Different frames to interpret the surrounding environment lead individuals belonging to different cultures to behave in different ways on the light of the lens they use to make sense of the context (Leidner & Kayworth, 2006). Differences in behaviors across cultures can be explained as a reflection of the underlying cultural assumptions, which take shapes through visible and audible behavior patterns. These visible differences across cultures can be noticed also in the individuals’ approach in terms of communication patterns (Gudykunst et al. 1996; Srite & Karahanna, 2006). In light of this, cultural differences may affect the way through which a media capability shapes pattern of communication between sender and receiver.

In our examination of MST constructs, we wanted to compare two national settings that show differences across relevant dimensions important in the way media capabilities might be appropriated. For this we reviewed the culture literature and from the two major approaches to culture, Hofstede (2006) and Hall (1976), we identified two cultural characteristics that have been frequently applied in the examination of communication behavior: uncertainty avoidance and high/low context.

Hofstede’s (2006) uncertainty avoidance, the extent to which individuals of a culture feel threatened by uncertainty and seek ways to reduce it, has been shown to be an important cultural factor when considering preferences for and communication behaviors (Vishwanath 2003). Depending on cultural tolerance for uncertainty avoidance, cultures high/low in uncertainty avoidance will require more or less clarity and information. Hall’s high/low context (1976), the extent to which individuals of a culture (e.g., high context) can communicate meaning using nonverbal cues or can rely on situation or context-specific knowledge to transmit meaning across to communication partners, has also been found to influence communication preferences and behaviors (Jia, Sundar, Lee & Lee 2014). Individuals from high context cultures relative to low context cultures are more able to communicate information relying on common understandings and shared meanings, and therefore do not need to make explicit all elements of a communication message.
Specifically, in developing our hypotheses we consider two different national settings, which show quite different cultural characteristics (i.e. USA and Italy). National cultural differences may affect the way in which media capabilities are embraced by individuals in the communication process, affecting the effect of media capabilities on the development of a set of shared coordinated behaviors. Furthermore, given the difference between these two countries in regards to uncertainty avoidance and context, they provided a natural difference that could be examined in the context of our research. Table 1 depicts the differences between our selected countries based on the two cultural characteristics. The logic behind these expected relationships is developed in the hypotheses presented below.

<table>
<thead>
<tr>
<th>Source</th>
<th>Characteristic</th>
<th>Italy</th>
<th>US</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hofstede (2006)</td>
<td>Uncertainty Avoidance</td>
<td>75</td>
<td>46</td>
</tr>
<tr>
<td>Hall (1976)</td>
<td>High/Low Context</td>
<td>High</td>
<td>Low</td>
</tr>
</tbody>
</table>

Table 1. Cultural Characteristics for National Settings

**Media capabilities, Synchronicity and culture**

According to MST, velocity refers to the ability of a communication medium to quickly deliver a message from the sender to the receiver. Because of the immediate transmission of the message between the parties, velocity is likely to allow a rapid exchange of information and feedback, allowing the parties to refine their messages toward a quick coordinated action (Burgoon et al. 1999-2000). In other words, velocity enables individuals to quickly refine their communication in an immediate way and therefore facilitating the emergence of synchronicity, shared focus, among the parties.

However, we argue that such effect of velocity on synchronicity is affected by the cultural characteristics of the actors involved in the communication process. In particular, we argue that there is a different impact of velocity on synchronicity if we consider individuals belonging to the Italian culture and US culture. The difference can be traced back to the fact that Italian culture is characterized by high level of uncertainty avoidance. National cultures with high uncertainty avoidance attempt to diminish the risk of being involved in an ambiguous situation (Hofstede, 1984; Srite & Karahanna, 2006). In particular, such kind of cultures are likely to reduce such uncertainty by increasing the amount of details (Hofstede, 1991) and arguments in order to limit potential conflict that they may arise with the counterpart. Such increase in the amount of particulars and details belonging to the communication process should correspond with a lesser need of velocity in developing a shared and coordinated understanding. In other words, even if the medium provides the capability to send and receive messages in a very quick way, for Italians to reduce uncertainty, there is a greater need to exchange a larger quantity of message details back and forth, diminishing the beneficial effects of velocity.

**H1: velocity has a more positive effect on synchronicity for US individuals when compared to Italians**

Parallelism refers to the capability of a medium to transmit multiple messages in a simultaneous fashion, exchanging a larger amount of information in a single time period. In such a case the sender and the receiver can be involved in multiple communication processes simultaneously (Dennis et al. 1997). Allowing to manage simultaneous communication processes in which sender and receivers do not need to sequentially wait one another, parallelism can negatively affect synchronicity. Indeed, individuals are less likely to focus on one single conversation at time, while shifting from one thread to another in a more superficial way (Erickson et al. 2002), diminishing the likelihood of a shared pattern of coordinated behaviors.

We argue that the negative effect of parallelism on media synchronicity varies across culture, and we theorize that there is a differential effect between Italy and USA based on the way through which individuals belonging to these two cultures approach the communication process. In particular the difference can be traced back to the tendency of individuals belonging to a specific culture to activate a large network of connections (Maznevski et al. 2002). The Italian culture is characterized by the tendency
to activate and maintain multiple connections, which make Italians more likely to embrace multiple conversations simultaneously. This tendency to be engaged in a large network of connections may become the end and not the means for achieving a certain goal, creating a more pronounced negative effect on synchronicity from the parallelism capability of the medium.

**H2: Parallelism has a more negative effect on synchronicity for Italian individuals when compared to US individuals**

National cultures with high context regard the additional stimuli in and around a message less necessary as the culture of the individuals themselves add to understanding (Hall, 1976). Additional cues are unnecessary for understanding. High context cultures are likely to excel with fewer words and cues as they rely on unspoken yet known in-group meanings that add meaning to the content of a message (Richardson & Smith, 2007). While a few words can communicate a complex message easily in a high context culture, the importance of those words and symbols take on special importance. Symbol variety refers to the media capability of encoding the message using multiple cues (e.g. using text, voice, images). We argue that the reliance on a wider set of symbols that can be used by the actors is beneficial in developing a shared understanding (Dennis et al. 2008). If the individual can choose the symbols that fit best with the context, it would be easier to coordinate different perspectives. However, other symbols, even if less immediate, have the capability to transfer a more fine-grained message, allowing a more profound and detailed shared understanding between the parties (Kock, 2004). By having a wider choice of symbols, actors may balance the need for speed and the need for details in order to create a shared pattern of coordinated behavior.

We argue that the positive effect of symbol variety on synchronicity varies across national cultures, and the impact of symbol variety on synchronicity is higher for US actors rather than for Italian ones. Our argument relies on the fact that the Italian culture, as a higher context culture, would be particularly less reliant on a multitude of cue types and rely on previously understood norms and manners of communication. Even if the media would allow using multiple symbol sets, Italian communication would be successful with a reliance on a smaller set of symbols with which they are more comfortable. Alternatively, lower context US individuals require a wider set of symbols to encode not only communication but also tone and interaction coordination. For Italians, the enlarged set of symbols is not necessarily translated in a better coordination process. Indeed, the modulation of different symbols (e.g. for achieving quick message delivery vs. for more fine grained explanation) is less contemplated by Italians.

**H3: Symbol variety has a more positive effect on synchronicity for US individuals compared to Italians**

Rehearsability refers to the capability of a medium to allow the sender to review the message before sending it to the counterpart. Rehearsability allows the sender to be very attentive in choosing what is conveyed to the receiver and to modify and rework on the message multiple times before the delivery (Cornelius & Boos, 2003). According to MST, rehearsability has a negative effect on synchronicity because the possibility to review a message before sending it may delay the communication process between parties (Dennis et al. 2008). As rehearsability increases it is likely that more time passes in the exchange of information between sender and receiver: on the one hand the sender needs time to craft a message, and on the other side the receiver needs time to develop the feedback message, losing the shared focus of the communication.

We argue that the negative effect of rehearsability is higher for Italians than for US individuals in developing a shared pattern of coordinated behavior. Such an effect can be traced back to the fact that Italian culture is characterized by high levels of uncertainty avoidance. Individuals who belong to cultures characterized by uncertainty avoidance are likely to be more attentive in the way they formulate messages and provide feedback in order to be sure to minimize any potential for ambiguity in the communication. Indeed, in an uncertainty avoidance culture it is critical that the conveyed messages present a recognized
pattern minimizing confusion and uncertainty. If there is the chance of reviewing a message before sending it, Italians are very prone to reshape the message multiple times before transmitting it. Ultimately, communication momentum slows and synchronicity suffers.

**H4: Rehearsability has a more negative effect on synchronicity for Italian individuals compared to US individuals.**

According to MST, reprocessability refers to the ability of a communication medium to maintain track of the messages exchanged during the communication process (Dennis et al. 2008). The reprocessability allows reexamining the exchange of information and consent to the sender and the receiver to spend more time to craft appropriate messages on the light of the past exchanges. As for rehearsability, the effect of reprocessability is related to the delay in the exchange of messages between the parties. This delay is not connected to the velocity of the medium itself, rather, is related to the “back office” activities that the sender and the receiver may engage in for analyzing the situation before responding to the counterpart (Weick & Meader, 1993). As with rehearsability, such a delay may impact the rhythm of the communication, negatively affecting the synchronicity.

On the light of the differences between Italian and US culture, we believe that reprocessability has a more negative effect on synchronicity for Italians if compared with US subjects. Indeed, because of uncertainty avoidance, Italians are more likely to examine and study the pattern of communication before sending a message. Analyzing the log of the communications allows crafting a message that is predictable in terms of tones, content, degree of formality, increasing the time between the reception of a message and the feedback to it. This is coupled with the degree attentiveness on how a message is crafted. Indeed, Italians are very likely to rely on the cues provided by the past, enhancing the chance to lose communication rhythm in favor of message formalization.

**H5: Reprocessability has a more negative effect on synchronicity for Italian individuals if compared with US individuals.**

**Method & Results**

**Study Methodology and Respondents**

To test the research hypotheses, a survey methodology was used. The respondents in this study were recruited from the master’s business programs from two large universities in the United States one in Italy. These respondents were recruited because they had at least two years of work experience and they were likely to have diverse experiences with different communication media for different purposes in a business context. They were considered representative of working professionals using communication technology for task-related purposes. Respondents were not compensated for their participation in the study. 308 respondents participated in the study, of which 154 were from Italy, and 154 were from the US. Respondents were 54.9% male with a mean age of 36.61 years.

The survey consisted of measures to capture respondent demographics, and items designed to measure respondent experience with media capabilities of different media (i.e., face-to-face, video conference, telephone, instant message, email, mail, paper memo). The survey was translated from English into Italian and assessed for any loss of meaning by native English and Italian speakers. Prior pilots of the measurement instrument indicated no loss of fidelity of the instrument from translation, and therefore it was used for data collection.

**Measures**

All variables were measured using multi-item scales created by the authors, as no known scales for these constructs exist, particularly as applied in the multicultural context. The overarching independent
variable for this research consisted of country of origin, represented by two distinct countries that differ along the cultural characteristics that we hypothesize influence the appropriation of various media capabilities. The other independent variables for this research consisted of the five media capabilities that influence media synchronicity as identified in MST. The main dependent variable, media synchronicity, a central tenet of MST, was also captured. As no established measures exist for these variables and our interest is in the manner in which individuals use these capabilities for communication, we developed items intended to measure how the respondent experienced and applied the capability during communication. Velocity was measured with two items (e.g., the medium transmitted my communications quickly). Parallelism was measured with five items (e.g., using the medium I communicated simultaneously to multiple people). Symbol variety was measured with four items (e.g., The medium allowed me to communicate using various symbols). Rehearsability was measured with three items (e.g., I could easily review my communications before transmitting them). Reprocessability was measured with two items (e.g., I found it easy to keep a log of the communication). Media synchronicity was measured with four items (e.g., my communication partner and I were focused on the communication at the same time). The items displayed adequate reliability with alpha scores above 0.7 for most of the constructs except media synchronicity (Nunnally 1978).

Although the reliability for media synchronicity was lower, it still falls above acceptable limits and therefore was used in the analysis (DeVellis 1991). Measures for each variable in the research were averaged together to create variable scores for each observation. Descriptive statistics and reliability assessments regarding the measurement variables are provided in Table 2 below.

<table>
<thead>
<tr>
<th>Variables</th>
<th># Items</th>
<th>Mean</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Velocity</td>
<td>2</td>
<td>6.51</td>
<td>0.84</td>
<td>1</td>
<td>7</td>
<td>0.746</td>
</tr>
<tr>
<td>Parallelism</td>
<td>5</td>
<td>5.20</td>
<td>2.02</td>
<td>1</td>
<td>7</td>
<td>0.811</td>
</tr>
<tr>
<td>Symbol Variety</td>
<td>4</td>
<td>3.94</td>
<td>1.90</td>
<td>1</td>
<td>7</td>
<td>0.798</td>
</tr>
<tr>
<td>Rehearsability</td>
<td>3</td>
<td>4.37</td>
<td>2.03</td>
<td>1</td>
<td>7</td>
<td>0.763</td>
</tr>
<tr>
<td>Reprocessability</td>
<td>2</td>
<td>3.97</td>
<td>2.18</td>
<td>1</td>
<td>7</td>
<td>0.864</td>
</tr>
<tr>
<td>Media Synchronicity</td>
<td>4</td>
<td>4.98</td>
<td>1.87</td>
<td>1</td>
<td>7</td>
<td>0.601</td>
</tr>
</tbody>
</table>

**Table 2. Means and Standard Deviations for Dependent Variables**

**Results of Hypothesis Tests**

To test the hypotheses, a series of regressions were run to determine the strength of each independent variable, the media capabilities, on the dependent variable, media synchronicity. Table 3 provides the results of the regressions. The first of regression provides the coefficients for the media capabilities on media synchronicity for the combined set of respondents. The second and third regressions separate the respondents by country and provide the regressions results for each country individually. The last regression provides a comparison between the two country sets of coefficients, testing the null hypothesis that the beta weights for each coefficient are the same between countries.

As can be seen by the first combined regression, across both sets of respondents, velocity and parallelism are significant positive predictors of media synchronicity, with reprocessability significant in the negative direction. The second regression indicates that for US respondents, all of the media capabilities are significant predictors of media synchronicity except for rehearsability. Italian respondents identify only parallelism and reprocessability as significant predictors of media synchronicity. The comparison between these two regressions indicates that there is a difference in the media capabilities for media synchronicity between the two respondent groups.

The last regression assesses the significance of the difference between coefficients between the US and Italian responses. To perform the comparison and test our hypotheses, a dummy variable was created to identify US and Italian responses. Using this dummy variable, a set of interaction variables was created to identify the significance of the difference between US and Italian responses. The regression provides US response coefficients in the upper part of the regression model and the bottom of the model (coefficients...
with the IT interaction term) the difference in coefficient betas as represented by Italian responses. This significance of the IT dummy variable indicates that there is a significant difference in response due to country. Specifically, we see that the Symbol Variety coefficient is the only significantly different coefficient between US and Italy.

<table>
<thead>
<tr>
<th>DV</th>
<th>1) Combined Unstd Beta</th>
<th>2) US Only Unstd Beta</th>
<th>3) IT Only Unstd Beta</th>
<th>4) Difference Unstd Beta</th>
</tr>
</thead>
<tbody>
<tr>
<td>VEL</td>
<td>0.272 ***</td>
<td>0.161 ***</td>
<td>0.114</td>
<td>0.161 ***</td>
</tr>
<tr>
<td>PAR</td>
<td>0.342 ***</td>
<td>0.258 ***</td>
<td>0.212 **</td>
<td>0.258 ***</td>
</tr>
<tr>
<td>SYM</td>
<td>0.058</td>
<td>0.434 ***</td>
<td>0.000</td>
<td>0.434 ***</td>
</tr>
<tr>
<td>REH</td>
<td>0.035</td>
<td>0.059</td>
<td>-0.015</td>
<td>0.059</td>
</tr>
<tr>
<td>REPR</td>
<td>-0.177 ***</td>
<td>-0.081 *</td>
<td>-0.189 ***</td>
<td>-0.081</td>
</tr>
<tr>
<td>IT</td>
<td>3.849 ***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT*VEL</td>
<td>-0.047</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT*PAR</td>
<td>-0.047</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT*SYM</td>
<td>-0.434 ***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT*REH</td>
<td>-0.074</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IT*REPR</td>
<td>-0.109</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>0.626</td>
<td>0.774</td>
<td>0.442</td>
<td>0.728</td>
</tr>
<tr>
<td>R2</td>
<td>0.392</td>
<td>0.599</td>
<td>0.196</td>
<td>0.530</td>
</tr>
<tr>
<td>Adj R2</td>
<td>0.382</td>
<td>0.585</td>
<td>0.169</td>
<td>0.513</td>
</tr>
</tbody>
</table>

***p<.001  
**p<.01  
*p<.05

Table 3. Regression Results

As a result of the analysis, it is clear that there is an overall difference in the influence of the different media characteristics on media synchronicity as seen in the within-country regression analysis. The model shows that for US respondents, four of the five media capabilities have a significant association with media synchronicity, while for Italian respondents, only two of the five media capabilities have a significant association with media synchronicity. Across countries, the media capabilities have a much stronger influence on media synchronicity as represented by the negative sign on the coefficients. However, only symbol variety is significantly different between the two countries, with symbol variety having a significantly stronger association with US respondents than with Italian respondents, providing support for H3.

In summary, this research suggests that contextual differences based on cultures exist in the way MST operates and that culture should be considered in theorizing with respect to MST.

Discussion

The goal of this paper was to examine the influence of culture on MST. We examined the effect of five MST media capabilities - velocity, parallelism, symbol variety, rehearsability, and reprocessability - on synchronicity differs across national cultures (Dennis et al. 2008). We compare two cultures that differ in regards to uncertainty avoidance and high context and test the effect of the five media capabilities on media synchronicity across the two countries. Our results show the appropriation of different media
varies across national cultures. We find that cultural differences, reflecting different interpretive schemes (Reichers & Schneider 1990) exist across these capabilities and their effect of synchronicity.

The research makes several important contributions. First, it extends the MST theory by showing that cultural effects exist in how the media capabilities play a part in synchronous communication. A key component of MST synchronicity or the extent to which a communication environment encourages individuals to work together on the same activity, with the same information, at the same time. One implication of our research is that if these individuals are working across cultural boundaries, then the cultural component becomes important and MST cannot be applied without incorporating such an effect. This applies to global teams, outsourcing software development teams, R&D teams, and many other types of inter-organizational work-groups that work across national boundaries, and utilize electronic media to communicate.

A second contribution is to the literature on distributed teams and groups. By explaining the way in which culture affects communication media capabilities and use, our findings shed some light on why cultural differences pose a challenge in achieving shared meaning in global teams. The findings provide an explanation of why and how different virtual teams may be using different interpretive frames embedded in different cultures to communicate in different ways (Leidner & Kayworth, 2006). Differences in behaviors across cultures can be explained as a reflection of the underlying cultural assumptions, which take shapes through visible and audible behavior patterns. These visible differences across cultures can be noticed also in the individuals' approach in terms of communication patterns (Gudykunst et al. 1996; Srite & Karahanna, 2006). In light of this, cultural differences may affect the way through which a media capability shapes pattern of communication between sender and receiver. We show that national cultural differences influence the way in which individuals in the communication process embrace media capabilities. This is likely to in turn affect important outcomes such as shared coordinated behaviors.

The findings have several practical implications for managers who are responsible for composition of teams involved in global work and organizations that need to consider cultural elements developing communication policies in a cross-national setting. Companies who have locations across national boundaries should pay attention to how communication among employees at various locations may be affecting the shared sensemaking and work product. However, it is worth bearing in mind that our findings are based only on two countries and therefore should be interpreted with caution. Further research should be conducted using other national contexts and cultures.

While this research makes important contributions, its findings should be interpreted with some caution. First, the study is cross-sectional in nature and the survey was administered at a single point in time, and does not imply causality. Second, we created our scales based on theory because existing scales were not available. Third, while we have examined salient factors relevant to media, several other factors that can affect synchronicity exist. Finally, a potential limitation of this study is the use of self-reported survey data. However, since many of these variables are related to individual experience and therefore self-reported measures are appropriate.

References


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