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EXTENDING MEDIA RICHNESS THEORY: THE INFLUENCE OF A SHARED SOCIAL CONSTRUCTION

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Abstract

Globalization has seen the emergence of virtual teams solving complex organisational problems using computer-mediated technologies. By extending Media Richness Theory, it was the aim of this research to demonstrate that virtual teams can utilise a lean medium, such as email, for effectively solving an equivocal problem, given that participants develop a shared-social construction. A quantitative study was carried out to measure the effects of a shared basis on perceptions of Media Richness, Group Cohesion and Decision-Making Effectiveness of participants engaged in group communication using only email to facilitate their discussions. There was found to be no significant effects of a shared basis on these variables, however, it was found that Media Richness and Group Cohesion have a mediating effect on Decision-Making Effectiveness. In addition to this, the scales used in data collection were, for what is believed to be the first time, exposed to confirmatory factor analysis.

Keywords: Virtual Teams, Shared Social Construction, Media Richness Theory, Computer-Mediated Communication.

1 INTRODUCTION

Effective communication amongst organisational members plays a key role in ensuring that staff alike can accomplish their objectives at both individual and group levels (Dennis et al. 1998). Researchers have found that managers can spend anywhere between 75-85% of their time engaged in communication activities (Panko 1992). Thus, research into understanding factors influencing communication media choice and exploring optimal ways of communicating within an organisational context has sparked the interest of academics and practitioners alike. With the growth of global organisations, virtual teams, and advances in networks and telecommunications, face-to-face meetings are no longer the sole communication medium used by organisations to facilitate collaborative work. Computer-mediated communication (CMC) systems that have emerged in recent years have revolutionised communication and made possible new and expanded forms of group work. CMC media have become an integral component of organisational communication as they are more convenient and less expensive than travelling to face-to-face meetings as well as being integrated into multi-media environments and digital networks (Baltes et al., 2002).

CMC media include e-mail, voice-mail and video conferencing over digital networks. These media have come to be known as the new media as opposed to the traditional media of face-to-face meetings, telephone and text based documents. There has been much research exploring the use of the new media attempting to develop theoretical approaches for explaining media choice and usage in organisational contexts where available media for communication has now been complemented by the new media. However, there has been little work done to investigate how CMC systems can be used as effectively as conventional face-to-face meetings to enhance group performance. This issue must be addressed as CMC is emerging as the preferred medium to facilitate virtual workgroups.

This research project joins a body of literature that aims to extend one of the most widely investigated media choice theories: Media Richness Theory (MRT). Although MRT describes many CMC tools as 'lean', and thus unsuitable for equivocal problem solving, research has also demonstrated that virtual teams employing such tools can in fact produce superior and more effective decisions than face-to-face teams (Valacich et al. 2002). In fact, despite their commonly asynchronous nature, organisations have reported positive outcomes when using CMC tools, including reduced delays in information exchange (Baltes et al. 2002). Some users have reported an increase in organisational productivity (El-Shinnawy 1998).

An emerging dimension of research in CMC is the effectiveness of teams using CMC technologies as the medium for all communication and collaboration of virtual teams. This paper aims to determine whether a *shared basis* in virtual teams engaged in CMC will positively influence their perceptions of media richness, group cohesion and decision-making effectiveness. In particular, there are two objectives; (a) to determine the influence of a *shared basis* on the afore mentioned variables of interest and (b) to determine whether there is a mediating effect of media richness and group cohesion on decision-making effectiveness. The study achieves its objectives through the use of empirical research.

The remainder of this paper is outlined as follows. Section 2 provides a review of relevant theory while Section 3 introduces the research model employed in the current study and recounts the experimental design, including the development of a *shared basis*. The research methodology is described in Section 4. Results of statistical analysis are presented in Section 5. The study is finally drawn together and conclusions are provided in Section 6.

2 LITERATURE REVIEW AND THEORY

While there has been a vast amount of literature investigating CMC, it is still not well understood how these new media are integrated into users' communication behaviour or which traditional media are displaced by the new media within the users' task environments. To answer these questions there has

been research in the many dimensions of CMC usage including: changing perceptions of communication media (Schement & Stout, 1989); the technical and social characteristics of the new media (Huang & Wei, 2000); the human conceptualisation of the underlying properties, roles and functions of the new media (Katz & Rice, 2002); the perceived characteristics of the new media (Trevino et al., 1990); the affect of context and social influence on the adoption and usage of the new media (Carlson & Zmud, 1999).

CMC systems have been shown to reduce delays in information exchange, improve maintenance of records and information received, increase coordination of geographic dispersed groups, and improving users' capabilities to process large amounts of information (Baltes et al., 2002). As these new media generally are asynchronous and, involve text and audio modes, they tend to be characterised by a relatively lower information carrying capacity relative to face-to-face.

Virtual teams that meet through 'email' are an increasingly common phenomenon and this has been adopted as the CMC medium of choice in the current research (Alge et al. 2003). Virtual teams refer to "*Groups of people who work together...dispersed across organizational, space, and/or time boundaries and...often cross-functional in nature, where team members come from a variety of organizational departments or business units*" (Lurey & Raisinghani 2001, p. 523-524) Team members work on a specific high-level task or goal. CMC systems are used widely to facilitate virtual teams to communicate and exchange knowledge and information to achieve the team goal. The effectiveness of CMC in supporting the collaboration and successful outcomes of virtual teams is the focus of this paper. In addressing the effectiveness of CMC tools in facilitating such collaboration, we turn our attention to MRT. MRT is the context for the proposed technique in the current research aiming to increase the information carrying capacity of CMC media for virtual teams.

2.1 Media Richness Theory

According to Lengel (1983) the richness of a medium is based on its ability to process rich information. Daft & Lengel (1984) proposed Media Richness Theory (MRT), which hypothesises on the information carrying capacity of media. This capacity is increased by the extent to which the medium meets four criteria as follows (Daft & Lengel 1984):

- Feedback Capability – the ability of the medium facilitate instantaneous feedback (synchronicity) and clarification of issues during engagements.
- Multiple Cues/Communication Channels Utilised – the range of cues, (including body language, voice inflection, physical representations) facilitated by the medium.
- Language Variety – the ability of the medium facilitate engagements involving both numbers and natural language.
- Personal Focus/Source – the ability of the medium to convey the personal feelings and emotions of communicating parties

Daft & Lengel (1984) state that, media low in richness are suitable for facilitating discussion over simple topics, while media high in richness are suitable for complex organizational topics. Lengel (1983) focused on 'traditional' communication media, such that face-to-face meetings were considered the richest media, while the leanest media were considered to be formal, unaddressed documents (such as memos). Media were placed on a continuum of information richness, suggesting that the richness property of each medium was fixed.

Daft et al. (1987) were among the first to test MRT by identifying a relationship between media selection and managerial performance. According to their findings, high performing middle and upper level managers were those who made more sensitive selection of media in their communications. By sensitivity, the researchers were referring to the extent that these managers were able to select richer media for equivocal tasks and leaner media for unequivocal tasks. Similarly, Trevino et al. (1990), who set out to explore the relationship between individual differences (characteristics) and media

choice, found further support for MRT. Participants in this study chose richer communication media as tasks increased in equivocality. The researchers also concluded that, while individual differences could exert influences on media choice, this influence disappeared as task equivocality increased.

Despite initially drawing support from fellow researchers, MRT has been the object of much scrutiny within research circles on both an empirical and conceptual basis. Among the empirical criticisms, researchers have questioned the validity of the approach used by Daft et al. (1987) and the variations on this research. For instance, Rice (1992) expressed concern that since there was no task performed by participants in the Daft et al. (1987) study; the survey only measured managers' opinions of the best communication media for a hypothetical task. Thus, there were no objective measurements of actual media choice or task performance. D'Ambra (1995) found that the measures used by Daft et al. (1987) to be highly unreliable and unidimensional.

2.2 The Inadequacies of MRT in Dealing with CMC

In their early work on MRT and the criteria for media richness, neither Lengel (1983) nor Daft and Lengel (1987) accounted for computer-mediated communication tools. This has led to difficulties in trying to position such media on a scale of relative richness. For instance, if we attempt to assess an electronic medium such as email, based on the criteria for media richness we see that, email is not a rich medium and thus should not be used for highly equivocal communications. However, researchers have expressed disagreement, citing situations in which managers have successfully used email for such communications (Markus, 1994; Valacich et al. 2002). The effectiveness of computer-mediated teams has been found to improve where: the teams had a shared history (Alge et al., 2003); when training in developing media use and communication-related issues took place (Lurey & Raisinghani, 2001); teams had the ability to build personal relationships in the mediated environment (Pauleen & Yoong, 2001); the media allowed the team to adopt their behaviour to match the nature of the task and other constraints (Majchrzak et al., 2000). Some researchers (e.g. Fulk et al., 1990; Huang et al., 1996) contend that media richness is not a fixed feature of a medium, but could be changed by shared social constructions, which refers to an object that is, at least in part, socially constructed and subjectively generated, as defined by Huang et al. (1996).

Huang & Lai (2001) further investigated the influences of an embedded shared social construction (referred to in the current study as a *shared basis*) on groups engaged in problem-solving using Group Support Systems (GSS). Variables of interest included: group cohesion, decision satisfaction, decision process satisfaction, group maturity and decision quality. The aim was to investigate whether groups with the framework would form relatively higher perceptions of these variables than those without. They conducted a longitudinal study using a web-based GSS embedded into the framework of a *shared basis*. It was found that initially an embedded framework did lead to higher perceptions of the variables of interest. Huang and Lai's (2001) findings are of key importance to the current study insofar as providing evidence that, given an appropriate framework (i.e. a *shared basis*) groups engaged in CMC can enhance perceptions of group cohesion, decision satisfaction, decision process satisfaction and decision quality. Of concern in this project is the assertion by MRT that 'lean' media, such as email, cannot be used for effectively conveying 'rich' information. As shown above, contrary to MRT, researchers have demonstrated a lean medium *can* effectively be used to facilitate this type of communication given time, the right social surroundings and experiential factors. On considering the social context of communications, Huang et al. (1996) suggested that it may be possible for *shared social constructions* between communicating parties to allow a medium to successfully reduce task equivocality and render it suitable for rich communications. If this is true, then a shared social construction (or *shared basis*) could also lead to greater media richness perceptions of a so called lean medium of communication, such as email (Huang et al. 1998a). Huang & Lai (2001) demonstrated that a *shared basis* could also improve perceptions of group cohesion and decision satisfaction, decision process satisfaction and decision quality in GSS. The existing literature suggests that the

effect of a *shared basis* on these variables and media richness using *email* to facilitate communications has not yet been explored.

3 RESEARCH OBJECTIVE AND MODEL

The objective of this research is to determine whether a *shared basis* (*an accepted basis for effective communication in the context of email usage*) amongst participants engaged in CMC will positively influence their perceptions of media richness, group cohesion and decision-making effectiveness. By building on an initial framework suggested by Huang (1998b), a research model was developed, as illustrated in Figure 1. The aim was to develop and test a sound framework, using the concept of a *shared basis*, to enhance the effectiveness and richness perceptions of CMC.

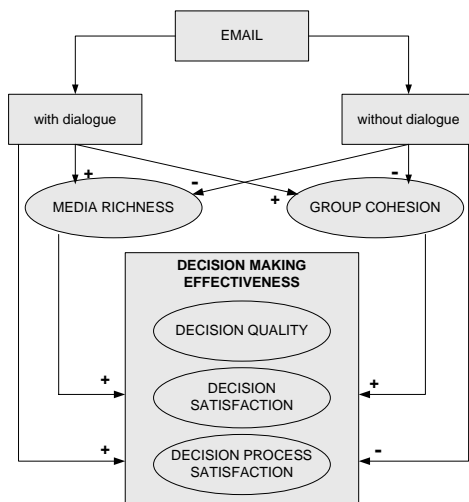


Figure 1. Research Model

The model in Figure 1 describes two groups: a ‘with dialogue’ group, which underwent the treatment of a *shared basis*, and a ‘without dialogue’ group that received no such treatment. In order to facilitate the development of a *shared basis* amongst participants in the ‘with dialogue’ treatment group, the theoretical framework for team building developed by Huang et al. (1998b) was employed. The model also specifies email as the CMC medium of choice for the current study. In Figure 1, group cohesion refers to the degree of social integration and interpersonal attraction within a group, while decision-making effectiveness is to be measured as manifested in decision quality (contentment with the quality of the group’s decision), decision satisfaction (contentment with group’s decision itself) and decision process satisfaction (contentment with the decision-making process of the group). The effects of the two treatments on 5 variables are considered, as well as the mediating effect of media richness and group cohesion on the three dependent variables intended to operationalise decision-making effectiveness. The variables outlined in the research model were measured in a survey using adaptations of previously tested, validated and demonstrably reliable measures as summarized in Table 1.

Measured Dependent Variable	Source of Scale
Media Richness	D'Ambra (1995)
Decision Quality	Gouran et al. (1978)
Decision Satisfaction	Green and Taber (1980)
Decision Process Satisfaction	Tan et al. (1999)
Group Cohesion	Seashore (1954)

Table 1. Summary of Measured Dependent Variables

3.1 Hypotheses

Hypotheses were developed to explore the effects of a *shared basis* on perceptions of three key areas: decision-making effectiveness, media richness and group cohesion. Hypothesis 1 relates to the influence of a *shared basis* on the dependent variables decision quality, decision satisfaction and decision process satisfaction. Hypothesis 2 relates the influence of a *shared basis* on the independent variables media richness and group cohesion. Hypotheses 3 relates to the mediating effect of the independent variables on the dependent variables.

- **H1:** Users of email with a *shared basis* will have higher levels of perceived *decision quality*, *decision satisfaction* and *decision process satisfaction* when using only email to facilitate a group decision-making process, than those without a *shared basis*.
- **H2:** Users of email with a *shared basis* will have higher levels of perceived *group cohesion* and *media richness* when using only email to facilitate a group decision-making process, than those without a *shared basis*.
- **H3:** Higher perceptions of *media richness* and *group cohesion* will improve perceived *decision quality*, *decision satisfaction* and *decision process satisfaction*.

4 RESEARCH METHODOLOGY

The research methodology aimed to investigate perceptions of the variables of interest between two treatment groups. In addition to this, media richness perceptions were observed at two points in time; *before* and *after* the suggested treatment of a *shared basis* for both treatment groups. A positivist quantitative study in the form of a written survey was conducted to enable gathering of results.

The participants were a group of postgraduate masters and undergraduate honours students enrolled in a 14-week elective course run within the Commerce and Economics faculty of a university. There were two separate streams of lectures for the course and each stream accommodated approximately half of the course participants. The first of the two streams was selected as the group to develop a *shared basis* ('with dialogue treatment'), while the second received no such treatment ('without dialogue' treatment). Participants were randomly allocated to groups of ideally 3 members, but with some exceptions containing 2. The duration of the experiment ranged from 1 to 2 weeks, depending on the treatment group.

Participants in both treatment groups were required to complete a 'Pre-Meeting Questionnaire'. The objective of this survey was to facilitate the gathering of information about demographics and initial media richness perceptions. This formed the first data collection point. Participants then assembled into their randomly allocated groups and engaged in a 15 minute 'small-talk' session (Step 1 of table 2). Topics of discussion included brief introductions and an exchange of email addresses. The two treatment groups were then given different instructions. The 'without dialogue' treatment group members moved onto 'The Van Task'. The 'with dialogue' treatment group, on the other hand, was required to engage in a dialogue session, during which they were to develop a *shared basis*.

4.1 The Development of a Shared Basis

The development of a *shared basis* was to occur over a period of 1 week, using *email* to facilitate their discussions. This session was referred to as the ‘Effective Communication Dialogue’ task and was carried out as outlined in Steps 2-4 of Table 2. These steps were carried out using only *email*. It was anticipated that group members would feel closer to one another after having established a set of agreed-upon ground-rules for effective communication (Huang & Lai 2001).

Action
Step 1: (Small-Talk) Participants took part in a small-talk session (15 minutes) to introduce themselves and to get to know one another
Step 2: (CornerStone) Participants engaged in structured dialogue (1 week) where they were asked to reflect on their past cooperative working experiences. They were also asked to identify characteristics from these experiences which they would classify as good communication protocols
Step 3: (InfiniteContainer) Participants were requested to listen openly to each other’s ideas and to avoid criticisms. The facilitators of the sessions (the researcher) intervened if necessary.
Step 4: (LaserGenerator) Participants were asked to rank the communication protocols in order of importance

Table 2. Steps in developing a shared basis (Adapted from Bohm 1990)

4.2 The Van Task

Having completed the ‘small talk’ session (for the ‘without dialogue’ treatment) or after the ‘Effective Communication Dialogue’ task (for the ‘with dialogue’ treatment) participants in both the treatments were required to engage in a group decision-making activity called ‘The Van Task’. The task had no clear decision-making criteria and no demonstrably correct answer (i.e. it was equivocal). The aim of the task was to facilitate a group problem-solving activity amongst participants, using only email as a medium of communication. Participants were explicitly asked to avoid using any other medium of communication for the duration of the task.

4.3 The Post-Meeting Questionnaire

After 1 week of attempting ‘The Van Task’ the ‘without dialogue’ treatment group completed the ‘Post-Meeting Questionnaire’ and submitted their solutions to the task and the completed surveys. This formed the 2nd data collection point for this treatment group. Also during this week, the ‘with dialogue’ treatment group completed the ‘Effective Communication Dialogue’ task. They were then given the go ahead to begin solving ‘The Van Task’ over the following week. A similar second data collection point for this group was held after completing this task. As a result, both groups were allocated the same duration of time in which to complete ‘The Van Task’. Both treatments groups completed the same ‘Post-Meeting Questionnaire’.

5 RESULTS AND DISCUSSION

Table 3 describes the groups who successfully completed the experiment. There was an 84% valid response rate, resulting in 26 groups for the study. It is worth noting that one group in the ‘with dialogue’ treatment group was recorded as having only 1 member. This was due to the fact that, despite completing the experiment as a group, the other member of this 2-member group did not

submit a 'Post-Meeting Questionnaire'. It was still considered worthwhile including the contribution of the remaining member since the experiment was completed satisfactorily.

Treatment	Participants	Groups	1 member groups	2 member groups	3 member groups	Members Per Group	
						Mean	Range
With Dialogue	35	13	1	2	10	2.7	1-3
Without Dialogue	35	13	0	4	9	2.7	2-3

Table 3 Final Sample Size Details

Demographic information was collected and t-tests were carried out to confirm that various external factors did not have any significant effects on findings. Factors that were taken into account included the following points of interest:

- Gender-There was an uneven distribution of males and females in the population, with males (65.7%) clearly outnumbering the number of females (34.3%)
- Country of Birth - The majority of participants (91.3%) were born overseas
- Years Using Email - Participants had an average of 5.8 years email experience
- Work Experience - Participants had an average of 2.7 years work experience
- Employment Status - The majority of people were working with approx. half of these in full-time employment

None of these factors were found to have a significant effect.

5.1 Testing Hypotheses 1 and 2

Hypotheses 1 and 2, which referred to the effects of a shared basis on perceptions of *decision quality*, *decision satisfaction*, and *decision process satisfaction*, were tested using T-testing. Paired-samples t-testing demonstrated that there were no significant differences between the two treatment groups before the experiment. Independent samples t-testing demonstrated that, after the introduction of a shared basis and the completion of the experiment, there were still no significant differences in the perceptions of the two treatment groups regarding the dependent variables. Similarly, there was found to be no significant effects of a *shared basis* on perceptions of the independent variables media richness and group cohesion. This leads us to *reject* hypotheses 1 and 2. In other words, a *shared basis* amongst participants engaged in CMC did not influence their perceptions of media richness, group cohesion and decision-making effectiveness.

5.2 Testing Hypothesis 3 – Multiple Regression

Hypothesis 3, which addressed the effects of the mediating independent variables in the dependent variables, was tested using Multiple Regression. In all cases the R-square values were sufficient and significant. Thus, hypothesis 3 was supported. Table 4 shows the regression values.

Dependent Variable	Independent Variable	Standardized Coefficient Beta	Sig.
Decision Quality*	Media Richness	.375	.001
	Group Cohesion	.347	.002
Decision Satisfaction**	Media Richness	.443	.000
	Group Cohesion	.262	.015
Decision Process Satisfaction***	Media Richness	.429	.000
	Group Cohesion	.261	.016

*R Square = .277; **R Square = .279; ***R Square = .266

Table 4 Multiple Regression values

5.3 Testing Hypothesis 3 – Structural Equation Modeling

Structural Equation Modeling (SEM) was employed as an alternative analysis technique to reinforce the findings of the first generation data analysis techniques used to test Hypothesis 3. Described as having the ability to test statistical conclusion validity within IS research (Gefen et al. 2000), SEM is a second generation data analysis tool that moves beyond techniques like linear regression to explore the complex relationships between a set of dependent and independent variables simultaneously. In other words, it allows the testing of the model as a *whole* by assessing both the *structural* (causation between constructs) and *measurement* (loading of observed items) models, resulting in a more rigorous analysis (Gefen et al. 2000). This study utilised Partial Least Squares (PLS) method of SEM analysis, to examine item loadings, variances and regression (R-square) values in the research model. Secondly, it was also of interest to conduct Confirmatory Factor Analysis (CFA) to further test the strength of the scales used in the study. The PLS Graph is shown in Figure 2 below.

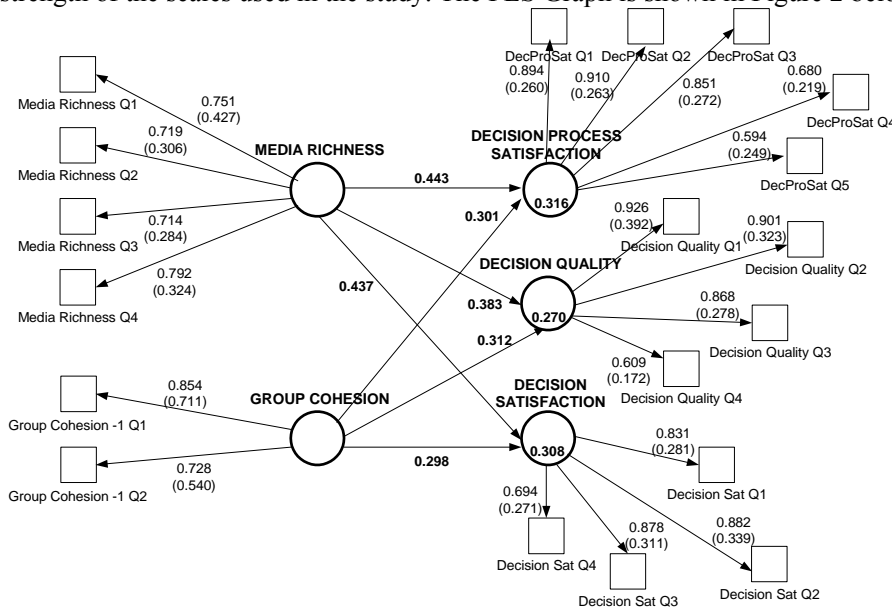


Figure 2 PLS Graph Output.

Bootstrapping is commonly used in SEM to test the reliability of the dataset used in the study through the creation of pseudo-replicate datasets by re-sampling from the original dataset. In this case, 100 datasets were generated. Table 5 demonstrates that all paths were significant, with t-values above 1.645 ($\alpha > 0.05$), providing support for the *structural model*. In other words, there was support for the mediating effect of the independent variables on the dependent variables in the model.

Variable	Path-Coefficient, T-Statistic					
	Decision Process Satisfaction		Decision Quality		Decision Satisfaction	
Media Richness	.443	4.8793	.383	4.2049	.437	5.5356
Group Cohesion	.301	4.2749	.312	3.4121	.298	2.5148

Table 5 Path-Coefficients

Confirmatory Factor Analysis (CFA) was carried out to assess the *measurement model*. CFA is considered a more rigorous test of scales than the first generation Factor Analysis. The main findings were that, when rounded to one decimal place, item 5 of decision process satisfaction and item 4 of decision quality did not load adequately (i.e. <0.7) and thus need to be investigated further to ensure that they adequately measure their respective variables of interest. (Gefen et al. 2000) These concerning items are listed in Table 6 below. The remaining items loaded adequately onto their respective variables, including the group cohesion scale, which was modified prior to SEM by removing 3 items that did not load adequately in first generation factor analysis. Thus support was provided for the remaining scales through second generation analysis. All in all, SEM provided confirmatory *support* for Hypothesis 3. In other words, higher perceptions of media richness and group cohesion improve perceived decision quality, decision satisfaction and decision process satisfaction.

Constructs and their Items	Model 1	
	Loading	T-Statistic
Decision Process Satisfaction		
Item 5	0.594	5.483
Decision Quality		
Item 4	0.609	5.338

Table 6 Low Factor Loadings

5.4 Summary of Findings

Hypotheses 1 and 2 were entirely rejected. In other words, first generation statistical analysis showed that a *shared basis* did not improve decision quality, decision satisfaction, decision process satisfaction, group cohesion or media richness. Interestingly, findings with respect to the effects of a *shared basis* on group cohesion, decision satisfaction and decision process satisfaction were somewhat inconsistent with the work of Huang & Lai (2001) who found that perceptions of all of these variables were increased with the treatment. There are many possible reasons for this occurrence. For instance,

- Differences in durations of the study (Huang & Lai (2001) had a 5 week study, while the current research ranged from 1-2 weeks)
- Different media were used by the two studies, with Huang & Lai (2001) using a *web-based GSS* to facilitate communication, and the present study utilizing *email* and the communication medium of choice

There was, however, *support for Hypothesis 3* using both first generation (Multiple Regression) and second generation (SEM via PLS) statistical analysis tools. The results in both sets of analysis have uncovered a *mediating* influence of media richness and group cohesion on decision-making effectiveness perceptions in virtual teams. In other words, despite arguments from researchers such as Daft et al. (1987) and Trevino et al. (1990), implying that effective decision-making (and thus problem solving) involving equivocal tasks requires the use of a *rich* medium, this research has demonstrated that decision-making effectiveness can in fact be increased by more than just media richness perceptions.

In addition to assessing the above mentioned hypotheses, the study was also successful in both providing additional support for and questioning the borrowed scales used in the questionnaires to gather information through CFA.

6 CONCLUSION

In conclusion, this study has made a contribution to the body of literature that aims to extend MRT in light of CMC tools. The findings of this study have been threefold. Firstly, the research demonstrated that a *shared basis* did not positively influence any of the variables of interest. Secondly, a mediating influence of media richness and group cohesion on decision-making effectiveness has been brought to light, providing evidence that media richness alone does not determine how effectively an equivocal task is solved. Thirdly, a set of previously tested and validated scales have now been subject to confirmatory factor analysis, providing additional support for some, and uncovering inconsistencies in others.

Several limitations were encountered in the administration of this study. Threats to validity which occurred as the study was being carried out include:

- **External Validity:** Participants used in the study were students. This makes it more difficult to generalize the results to organisational groups. For instance, unlike a group of students, in an organisation people can be in the same group as their supervisor or manager and feel less comfortable expressing ideas, or political pressures.
- **Construct Validity:** Although participants were explicitly told verbally and in written form that they should use only *email* to communicate with one another during the duration of the study, there was no way of guaranteeing this. Hence, it is not possible to be sure that unwanted influences were not being measured also. Students were, however, asked to keep a transcript of their discussions so that it could be verified whether participants had complied with the requirement to carry out the “Effective Communication Dialogue” task with the required timeframe in the ‘with-dialogue’ treatment group.
- **Internal Validity:** Threats to internal validity occurred with respect to potential selection biases in the sample space. For instance, the participants were a non-randomly selected pool. They all happened to be attending a course at the university which was selected for the study due to ease of access to the students. Participants in the study were not representative of the general population in that they were all students of a similar educational background

Before the effects of a *shared basis* can be fully understood, not only should further research be conducted on a larger scale, and within an industry context, but researchers should also consider modifications to the model to explore the effects of a *shared basis* on different dependent variables, e.g. Task Participation (Yoo & Alavi 2001). Furthermore, this study looked only at email as a CMC medium, it would be worthwhile to consider other forms of electronic media (such as video-conferencing and instant messaging) before generalising results to all CMC. Very different results might be encountered with other so called ‘lean’ media. This current research has also brought into question some of the items in Gouran et al.’s (1978) decision quality scale and Tan et al.’s (1999) decision process satisfaction scales. It is highly recommended that such scales are refined before this study is replicated. This might yield more reliable findings on the effects of a *shared basis*.

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