



# Impact of heterogeneity and collaborative conflict management style on the performance of synchronous global virtual teams

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## Abstract

Virtual teams cut across organizational cultures, national cultures, and functional areas, thereby increasing group heterogeneity, which may result in increased conflict among team members and less effective performance of the team. Our study explored the relationships that might exist among the heterogeneity of the virtual teams, their collaborative conflict management style, and their performance outcomes. The paper reports the findings of a laboratory experiment in which homogeneous and heterogeneous virtual teams, consisting of subjects from the USA and India, worked independently on a decision task involving the adoption of a computer use fee by an online university. Team members, used a web-based group decision support system (GDSS) that allowed them the opportunity to discuss task options, critique suggestions, and vote on the result. The data analyses suggested that collaborative conflict management style positively impacted satisfaction with the decision making process, perceived decision quality, and perceived participation of the virtual teams. There was weak evidence that links a group's heterogeneity to its collaborative conflict management styles.

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## 1. Introduction

Virtual teams are work groups whose members are spread over geographic and/or organizational boundaries but are linked together via computer and communication technologies. These teams interact, either in a synchronous or asynchronous mode. In synchronous teams, members collaborate in real-time, whereas in asynchronous teams, members perform their assigned tasks at different times, at their own pace, and according to their own time limitations.

Given today's fast-paced globalization of commercial activity, it is not uncommon for organizations, especially those that span across nations, to group people from different locations into virtual teams. As interorganizational cooperation is becoming a common phenomenon in the business world, newer organizational forms and structures that facilitate such cooperation are increasingly being sought. Virtual teams may be the answer to the evolving organizational needs. For example, with supplier and customer organizations located across national boundaries and intense time and market pressures for new product development, virtual teams can provide a vehicle for global collaboration and coordination of R&D-related activities. In fact, the need to be able to transfer

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expertise no matter where qualified experts are located has led to widespread workforces. Work environments have shifted from a predominantly production-oriented set-up to a service- and knowledge-oriented one. Pressures for proactive actions and rapid responses to a fast-paced business environment necessitate the possession of a high degree of organizational flexibility and structural agility. Virtual teams can help organizations adapt better [56]. In fact, they may provide firms with other advantages, such as increased utilization of employee-time, round-the-clock workforce availability, and the opportunity to leverage knowledge and expertise around the world.

Nonetheless, the use of virtual teams leads to many challenges. The need to manage team heterogeneity, use technology efficiently, and develop trust among the members are some of the challenges. Virtual teams may cut across organizational cultures, national cultures, and functional areas, thereby increasing their heterogeneity which may result in less effective performance [64]. Virtual team members communicate and collaborate using different types of groupware technologies. The interactions usually offer lower levels of social presence and information richness than face-to-face (FTF) meetings. Some technologies, such as video conferencing, are more effective than others, such as electronic and voice mail. Proper assessment of these two factors is crucial in the selection of an appropriate groupware technology and its subsequent use by virtual teams. Trust is another critical factor [31]. While a trusting alliance usually develops in long-term relationships, many virtual team members work on short term or temporary projects. The team members may never meet in an FTF setting. Hence, development of trust becomes a major challenge.

This study focuses on heterogeneous virtual teams that include participants from different cultures. In the information systems (IS) field, researchers have examined culture as a factor that influences group performance. However, our understanding of how heterogeneity or homogeneity may impact the performance of virtual teams is far from complete. Prior research has compared FTF and computer-supported groups [8,50] and the performance of homogeneous groups in the US vis-à-vis groups from other cultures [63]. Many studies have also used heterogeneous groups to understand other issues, such as the utility

of maintaining mutual knowledge in virtual teams [11]; the effect of shared mental models on coordination in teams [15]; the strategies employed by team members to overcome the “time-space divide” in virtual teams [49]; the communication and collaboration in global virtual teams [34,54]; the implications of geographical, functional, identity, and organizational boundaries of virtual teams [16]; and antecedents of trust in virtual teams [25]. Studies have also been undertaken to compare heterogeneous and homogeneous teams, but the global nature of organizational work and the increasing mobility of employees have ushered in the need to study heterogeneous groups in varied settings.

Additionally, diversity among team members can cause variations in their attitudes, values, and overall performance, perhaps giving rise to conflicts when team members interact [44]. Furthermore, conflicts are far more evident in problem solving and decision making situations, which frequently involve many knowledge workers today. These types of interactions may increase as well, given globalization, the growing number of multinational organizations, and e-commerce. In addition, the characteristics of communication technology, especially in a virtual team, may contribute to team conflict [29]. Thus, the very nature of the electronic exchanges within virtual teams may be a source of conflict; when the level of information richness is low because of a lean medium of communication. The end result may be confusion, differing interpretations, and ultimately conflicting points of view. It is therefore important to understand the relationship between diversity in virtual teams, their conflict management style, and their performance.

Prior studies on computer supported virtual teams [62] have primarily looked at asynchronous teams using e-mail or other tools. Our work adds to this body of knowledge by focusing on virtual teams' performance in a synchronous mode.

## 2. Literature review and hypotheses

### 2.1. Virtual teams and group decision support systems

Virtual teams are considered different from FTF teams due to the physical and, sometimes, temporal

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