"Trust: A 'Must' for Virtual Team Effectiveness"

A Literature Review on the Role of Trust in Virtual Team Effectiveness

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ABSTRACT

Virtual teams experience a major portion of its communication through technological medium. This drives them towards the need for mutual trust among team members who lack face to face interaction. Available literature clearly states the presence of trust is important in achieving team efficiency (Powell, Piccoli and Ives, 2004). That communication competence being a trust generator has been statistically proved and discussed through a factor analysis. This study concentrates on highlighting trust as the team efficiency enhancer, thereby claiming its importance as a mediator (change in relationship of the variables if trust is absent) or moderator (no change in relationship of the variables in the absence of trust) from various factors towards team efficiency through the available literatures. The importance of trust building and its application in the workplace is also discussed.

Key words: Virtual Teams, Virtual Team Effectiveness, Trust, Communication Competence and Virtual Communication.

INTRODUCTION

Virtual teams is, "an interdependent group working on a project across time and space relying on information and communication technologies" (Lin, Standing and Lui, 2008). Most organisations encourage building virtual teams as they benefit economically by using computer mediated technology for communication (Powell, Piccoli and Ives, 2004) and increased speed and productivity by a 24-hour work cycle on a project (Lerner, 2008).

Effective virtual team performance therefore is dependent on the technological and behavioural competence of its team members. But studies say that technical competence is easier to yield to than behavioural competence as human behaviour is unpredictable (Gibson C.B & Manuel. J.A, 2003). Choosing the effective technological communication medium (like email, video conferencing, chat etc.) is easier when compared to the choice of individual communication behaviour (listening, empathising, responding, initiating etc. (Gibson C.B & Manuel. J.A, 2003, Prathiba & Mathew. J, 2013). The size of a virtual team averaging from 3 to 7.7 members (Kinney and Panko, 1996) is basically dependent on the choice of communication medium and the group communication competence behaviour for an effective team performance.

The focus on virtual team effectiveness identified various factors such as cohesion, communication effectiveness, motivation, collaboration and trust contributing towards it, initiated by communication competence. Trust was highlighted in most of the reviews as a factor for team performance. (Powell, Piccoli & Ives, 2004, Prathiba & Mathew, 2013, Hashim.N et al. 2014 etc.) Trust among the team

members was generated through the competent communication behaviour of individual virtual team members, in turn increased virtual team effectiveness. (Jarvenppa and Leidner, 1999)

"Trust is the glue of the virtual workplace" (O' Hara- Devereaux and Johansen,1994). Trust yields an emotional connection to the members of the team, to remain benevolent to each other during the achievement of their objective, making the team performance effective, cohesive and well-co-ordinated.(Gibson B.C &Manuel.J.A, 2003)

Researchers end up highlighting trust as a variable supporting, team effectiveness. The exact communication behaviour of the team member which contributes towards trust has not been highlighted, for application in workplace.

In this research article we bring to light the presence of trust building components present in the existing communication competence behaviour of the virtual team members.

Objectives

1. To highlight trust as a factor contributing to virtual team effectiveness.

2. To confirm the presence of trust building factor in the communication competence of virtual teams.

3. To identify, if trust moderates/mediates the relationship between communication competence and team effectiveness, through the literature reviews.

4. To suggest ways to develop trust for virtual team application.

Discussion

The first objective is accomplished based on *an* extensive literature survey where the contribution of trust in effective virtual team performance is highlighted. Trust is "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the *trustor*, irrespective of the ability to monitor or control that other party" (Mayer's et al, 1995).

The second objective is to highlight trust as a component in communication competence of virtual team members, a factor analysis of the adapted 36 item scale is done in statistical package, SPSS. The communication competence scale (CCS) generated by Weimann in 1977 is used to collect the response of about 100 virtual team employees. The responses revealed 19 statements as trust building. These statements were grouped into four factors and named after the literature reviews which highlighted individual communication behaviour as trust building behaviour as per their commonality (tab 1.1).

Factor 1 is named as interactive listening behaviour, as the statements under this factor revealed 8 statements highlighting the listening and responding behaviour of the virtual team members. These are the essential behaviours of a virtual team

Factor 2 is named as empathetic cohesive behaviour, describing the empathizing nature of the virtual team members with the aim of working together without confrontation. With the last statement relating to video conference based communication the other statements reveal the mutually supportive behaviour of the team.

Factor 3 is the competent adaptive behaviour, describing the initiating and clarifying behaviour of the team adapting to the given situation to build trust in varied situations dealing effectively.

The last factor is named self-perceived contemplative behaviour where the respondents have accepted the confessing statements about distant relationships within the team and lack of conversational

competence, intending to accept their need for change aiming at better team performance. This is called a contemplating behaviour.

The third objective to identify the nature of trust as a moderator or a mediator, a survey is done with articles supporting both the views.

The fourth objective, importance of the applications of trust and trust building at the virtual workplace is discussed based on the literature survey.

Ashmi J.E and Arti A.K (2014), presently researching, on the relationship between communication competence and team effectiveness in virtual teams, tending to identify, the nature of perceived supervisory support as a mediator or moderator over the relationship, identified in their literature review, that trust is an essential factor for virtual team effectiveness ((Hashim.N et al., 2014) (Prathiba and Mathew .J, 2013, Gibson B.C &Manuel.J.A, *2003*)). The review of various variables moderating or mediating the relationship between communication competence and team effectiveness, revealed trust as the most important factor with a positive effect on the relationship.(Malhothra. A, Majchrzak. A, Rosen.B, 2014, Powell, Piccoli and Ives 2004, Jarvenppa and Leidner, 1999, Gibson B.C and Manuel. J.A , Hashim .N et al, 2014,Sridhar V, 2007, Prathiba and Mathew.J, 2013)

Mayer's et al. (1995), studied that trust claimed its presence in enhancing virtual team effectiveness as three antecedent factors - perceived ability, benevolence and integrity. In their study Mayer's et al identified these as socio psychological antecedents of trust. According to the study, integrity was identified as the most impacting factor in the formation of trust. Benevolence and perceived ability developed through the integration process in the early stages of team development. Benevolence was found to increase with time, based on the perceived ability of the co-workers. Integrity is the ability of the team to provide timely responses to the team members on the right behaviour and benevolence is a generous, just and fair behaviour.

Mc Allister (1995) classified trust into two, based on his research which studied formation of trust and monitoring teams. He identified trust as having foundations of cognition and affection. He named them Cognition-based trust (CBT) and affection-based trust (ABT). CBT is the factual knowledge which existed between the trustor and trustee, and ABT is the emotional bond which existed in a group. He identified that CBT (Integrity and competence) though it had emotional contents, had an effect over the formal work groups whereas ABT (honesty, loyalty, care and concern for the welfare of partners, etc.) existed in family relations and informal groups.

Thus the above reviews lead us to conclude that trust has socio psychological antecedents which are behavioural elements. This helped us to identify that behavioural competence like integrity and benevolence lead to the formation of trust in virtual teams.

Jarvenppa and Leidner, (1999) studied the essentiality of trust in virtual teams, as virtual teams were geographically dispersed and culturally different. These features of virtual teams possessed in themselves socio psychological issues on assuming the ability of the co-workers, language barriers, cultural differences and technological interruptions. So they suggested the presence of trust in virtual teams for team effectiveness, through communication behaviour of the virtual team members in an exploratory method. Their primary research question was, if trust can exist in virtually organised teams who were geographically distant. Their research proceeded with the paradoxical thought, only trust can prevent the distances in global virtual team members who are geographically and organisationally distant, from becoming psychologically distant (O'Hara-Devereaux &Johansen 1994). They concluded confirming the presence of trust in effective virtual team performance.

Kanawattanacha and Yoo.Y, (2002) researched on the dynamic nature of trust in virtual teams,

classifying them as high-Performing and low-performing teams. They also studied trust in the three stages of virtual team growth, the early, middle and mature stages. Their study was based on the fact that virtual teams experienced increased levels of trust than that of normal face-to-face communicating teams. (Hartman, 1999). High performance teams require high trust which is built by the continuous and frequent interaction for work content and socialisation (Iacono & Weisband, 1997). The study concluded, virtual teams have higher cognitive behavioural trust (CBT) than affective behavioural trust, (ABT) though the levels varied at the various stages of virtual team growth. This confirms the explicit intention of virtual teams to develop trust and the altered communicative interactions at different stages. One other important fact revealed from the study that high performing virtual teams retained trust levels for a longer time when compared to low performing virtual teams.

Powell, Piccoli and Ives (2004) in their review on virtual teams, highlighted trust as a factor of study. Trust being a crucial factor for the success of virtual teams (Sarker et al.2001). They quoted virtual team experience as a significant social communication, along with positive relationship among the team members and a positive leadership to cope with risk based on the presence of trust among themselves (Jarvenppa, 1998). Trust enhancing a co-operated work scenario with task interdependence was highlighted through their study.

Zakaria. N, Amelinckx A and Wilemon D (2004) researched empirically on global virtual teams and their effectiveness. They identified that team relationships, conflict management and communication were the important factors in ascertaining virtual team success. Trust was found to contribute towards better relationships and team success. This study identified trust as credibility of the team members and benevolence. This research concluded saying both these sub contents i.e., credibility (believing one's ability) and benevolence could be developed through good communication practices.

Rico R.D,(2009) identified trust as one of the factors affecting the virtual team performance, making the cost of monitoring and controlling the least, thereby enabling more effective communication and transactions.

Prathiba and Mathew. J (2013) identified that communication issues in virtual team is the biggest challenge. Conceptually trust among the virtual team members initiated effective communication and virtual team performance. This research was done through grounded theory approach.

Hashim N et al. (2014) analysed through his empirical study that virtual team trust played a key role in virtual team performance; trust was initiated by effective communication, cohesion, motivation and team empowerment.

These studies helped us in narrowing down the facts, that the presence of trust is unavoidable in virtual teams for team success. High performing teams explicitly intend to develop trust and retain them through interactive efforts to assure high performance.

The nature of trust varied in required behavioural limits based on the team's stage of growth. The uninterrupted working atmosphere in virtual teams is initiated by trust. The communicative interaction which is explicitly trust based, brought in cohesion and collaboration in virtual teams solving the confrontations through different behavioural contents. Team effectiveness is the mean of team function and team empowerment (Udai pareek, 2000). Cohesion, collaboration and confrontation were the factors consolidated under team function. So, Trust contributes significantly towards virtual team effectiveness.

In detail, trust is a factor, which significantly reduces the cost of monitoring and controlling, thereby enabling more effective communication and team performance.

Trust as a Variable

Jarvenppa. L, Shaw .T.R and Staples .D.S (2004), studied the significance of trust in virtual teams. They confirmed that trust and communication was related to virtual team effectiveness. Task communication maintains trust and social communication strengthens trust. (Jarvenppa 1999). The context of social communication refers to explicit communication of commitment, excitement and optimism. This study explicitly concluded that members' trust in team operates as a moderator, indirectly affecting team communication and the perceptual outcomes. This study also found that trust affects virtual teams differently in different situations.

Hashim. K.F and Tan. B.F (2015) identified trust as a mediator in knowledge sharing online communities, between the communicative pattern and member satisfaction. Members' satisfaction is the possible effective outcome of online communities who share knowledge. They analysed the data through the mediation analysis model developed by Baron and Kenny's in 1986.

Sridhar V, Dhruv. N, Ravi. P and Kavitha. K (2007) studied that trust and communication effectiveness were positively correlated with virtual team member performance. In a study where they analysed the various factors contributing towards team effectiveness, they identified trust and communication effectiveness as two separate variables contributing towards team effectiveness. They technically termed these factors as, predictors of team performance. They also identified that learning effectiveness contributed towards team effectiveness and learning effectiveness was high when trust levels were high in the virtual team.

Through the above reviews we learnt that trust has an effect on the team performance through communication competence behaviour of the virtual team members, which has been mentioned as credibility, competence or capability of the individual, benevolence, the responsibility behaviour of the individual, integrity, the timely response behaviour.

Trust is found to moderate the relationship between communication and team performance in virtual teams (Jarvenppa, Shaw and Staples. S, 2004), where moderator "is a quantitative or qualitative variable which affects the strength of the relationship between a predictor or independent variable and a criterion or dependent variable." (Baron. R.M and Kenny .D.A, 1986)

Trust was found to mediate communication and the outcome in online communities. (Hashim. K.F and Tan. B.F, 2015). Mediator "is where independent variable causes a mediating variable and the mediating variable causes the dependent variable". Sometimes successful mediator also caused the independent variable." (Baron. R.M and Kenny .D.A, 1986).

Recent studies also consider trust as a separate independent variable contributing to the virtual team effectiveness. (Sridhar .V, 2007)

This helps as to conclude that trust is an unavoidable contributor to team effectiveness, though the role of trust in virtual teams is completely dependent on the situation. (Jarvenppa, 2004).

Trust and communication are mutually dependent and hence trust cannot be treated as an independent variable. This analysis also helps in concluding that, the medium through which trust is expressed is communication.

Contradicting, a recent research (Aubert.B. A and Kelsey B.L, 2009) state that formation of trust has no effect on team performance, claiming good communication and information symmetry as the causatives of high performing teams.

Factors of Trust in Communication Competence.

A factor analysis of a questionnaire in communication competence behaviour contributed to the confirmation of factors of trust present in the competent communication behaviour of virtual team employees.

The requisite behaviour for building trust were identified from a review of literature (Gibson C.B and Manuel J.A, 2003). These behavioural factors were, risk and task interdependence, resource interdependence in multicultural environment, listening empathising, adapting or contemplating, timeliness, initiating and responding or follow up.

Analysis

Four factors were identified as valid contributors of trust building behaviour in communication competence after five iterations of dimension reduction in statistical package SPSS. The KMO factor revealing a value of 0.833., crediting the goodness of the reduced dimensions, the factor analysis showed 70 % of the total variance of the data in 19 statements out of the original 36 statements.

The first set of factors was named 'interactive listening behaviour', as it listed eight statements on, the listening skills, the responsive behaviour, understanding the context on conversation, relaxed explanatory skills, respecting interruption for clarification, close association or formal bonding and attention towards the conversation context of other team members. These behaviours were listed as trust building behaviours in virtual team communication. (Iacono C.S & Weisband. S, 1997, Gibson B.C & Manuel. J.A, 2003, Coppola N.W, Hiltz S.R & Rotter N.G, 2004)

The second set of factors were christened as 'empathetic cohesive behaviour'. This factor had six statements of communication competence. These statements included empathising with the co-team member, meeting strangers for working together, a relaxed conversing behaviour inviting others to approach with task oriented issues and confiding the right response in a timely manner, in an expressive communication mode (video conferencing and audio chat etc.). Empathising is claimed as framing (Gibson B.C & Manuel. J.A, 2003) and timeliness and cohesive behaviour as factors for team effectiveness which builds trust among the group. (Sridhar.V, 2007)

The third factor was given the name "competent adaptive behaviour". The three statements under this factor were, competence to change, interrupting conversations to understand the context and effective information acquiring ability from co-workers. Risks of cultural differences and language barriers, adapting to team members' communication style fell under the category of trust builders. (Gibson B.C & Manuel. J.A, 2003, Powell, Piccoli and Ives, 2004)

'Self-perceived contemplative behaviour' was the fourth factor in the analysis. This contained the statements of confession, where the virtual team member accepts his weak relationship with others, due to which his conversations are not smooth. This statement shows the intention of the team member to build good relationship with his team members for better conversation. This has been specified as a contemplating behaviour in literature (Gibson B.C & Manuel. J.A, 2003)

Applications of Communication Competence to Build Trust

The literature reviewed helped us in focussing how trust could be applied through effective communication among the team members, to improve effective virtual team performance.

Listening, observing, responding, clarifying, understanding, initiating, following up, empathising and integrating improved interaction and build trust (Gibson B.C & Manuel. J.A, 2003). Reducing the team size built trust. Relationship building, cohesion and collaboration also paved way for trust within the teams (Powell, Piccoli and Ives, 2004, Sridar.V, 2007). Overcoming cultural differences, language barriers, geographical distances and time variations helped in virtual team trust. Training and trust

building activities are required in early stages of team formation to build trust. (Kaiser et al., 2000; Van Ryssen & Godar, 2000, Powell, Piccoli and Ives, 2004).

CONCLUSION

The nature of trust and its effect on the relationship between virtual team effectiveness and virtual communication competence has been reviewed extensively, confirming its presence in the communication competence of the virtual team. Effective communication helps in the exchange of ideas and helps in building the trust in a virtual environment. To efficiently build trust among the group the virtual teams should concentrate on trust building factors through effective communication techniques and training for the team members, in the early stages of team development and maintain its propensity throughout the team life. This will enhance the stability of the trust and create effectively performing virtual teams. Through our study, we narrowed down on the view that trust is dependent on communication effectiveness, whereas communication effectiveness is an independent variable in virtual teams, which means communication competence (independent variable) causes trust (mediating variable) and trust causes team effectiveness (dependent variable). Thus trust can be called a mediating variable. The extent of the effect of the relationship and the nature of trust as a variable, requires further research. The effect of trust on the relationship of variables like cohesion, collaboration, confrontation, autonomy and accountability with team effectiveness needs future focus, though we have identified its contribution for team function.

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Table 1.1, The Factor analysis table with the names

Interactive listening behaviour	I am a good listener	.845			
	I generally know how others feel	.663			
	I let others know I understand what they mean.	.792			
	I understand other people	.713			
	I am relaxed and comfortable when speaking	.678			
	I listen to what people say to me.	.863			
	I like to be close and personal with people.	.666			
	I pay attention to the conversation.	.693			
Empathetic cohesive behaviour	I do not mind meeting strangers.		.737		
	I can easily put myself in another person's shoes.		.766		
	I am generally relaxed when conversing with a new acquaintance.		.802		
	People can come to me with their problems.		.654		
	I generally say the right thing at the right time.		.618		
	I like to use my voice and body expressively to communicate.		.735		
Competent adaptive behaviour	I adapt to changing situations			.644	
	I interrupt others too much.			-.769	
	I deal with others effectively.			.683	
Self perceived contemplative behaviour	My personal relationships are cold and distant.				.802
	My conversation behavior is not "smooth."				.709
	Total	5.516	4.294	2.096	1.395
	% of Variance	29.033	22.598	11.031	7.343
	Cumulative %	29.033	51.631	62.662	70.005

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