RESEARCH REVIEW JOURNALS
Volume-04
Issue-03
March-2019

ISSN: 2455-3085 (Online)
RESEARCH REVIEW International Journal of Multidisciplinary
www.rrjournals.com[UGC Listed Journal]

Distances in Geographically Distributed Team: A Review

*1Ms. Vinita Seshadri & 2Dr. Elangovan N

1Research Scholar, Research & Development Center, Bharathiar University, Coimbatore(India)
2Director, National Institute of Fashion Technology, Dharmasala,Mangattuparamba, Kannur(India)

ARTICLE DETAILS

Article History
Published Online: 13 March 2019

Keywords
Distributed Teams, Virtual Teams, Global Teams, Spatial Distance, Temporal Distance, Psychological Distance, Psychic Distance, Cultural Distance, Configurational Distance, Social Distance, Subjective Distance

***Corresponding Author**
Email:vinita.seshadri@christuniversity.in

ABSTRACT

Distributed team is a group of people collaborating together virtually from different locations, different time zones and are culturally diverse from each other. Such team have the characteristics of both virtual team and culturally diverse team and is termed as Geographically Distributed Team (GDT). Members of geographically distributed team (GDT) experiences different forms of distances while working together as team both in terms of objective distance based on physical location and subjective distance based on perception. Since the members are located in different continents and working at different time zones they heavily rely on computer mediated communication tools to collaborate.Being distant from each other members experiences a unique set of challenges compared to traditional collocated team which hinders collaboration. The most commonly highlighted issues are related to absence of social ties, distorted flow of information, misunderstanding, misperception and miscommunication. The inability to observe each other work and lack of spontaneous communication due to physical distance builds in perceptual distances among members. The cultural differences among the members being from different nationality, values, beliefs, work style and languages adds to the complexity of working together as a team. Several research studies have looked into both positive and negative effect of distances on team effectiveness. This paper examines the various forms of distances experienced by individuals working in a distributed teams, how it has been measured and the challenges posed by it in GDT.

1. Introduction

Internationalisation and global led competition in business have made organisation to work in global teams to create a global product, cartering to the market needs and requirement globally. The technology has helped organisations to leverage expertise from across the world without relocating people to single location. It has enabled the global organisations to save cost by engaging people across the globe to work for them virtually (McDonough, 2003).The individuals working in a global virtual teams are selected by organisation to collaborate together in order to create and execute global strategies of the organisation. Being located in different part of the world these team members colloborate with each other through computer mediated tools with limited or no face to face interaction (Maznevski, 2000). Regardless of the units of measurement, geographically distributed team (by definition) requires at least two team members be separated by spatial distance. By defining geographically dispersed teams in this way, we allow for a continuum of dispersion from teams with one remote member to teams with no colocated members(O'Leary & Jonathon N. Cummings, 2007).The commonly used technology medicated communication tools by GDT's are e-mail, lotus notes databases, telephone, teleconferencing and videoconferencing (Cramton & Webber, 2005). A distributed team is characteristsed by the distance between members, hetrogenity among members with respect to culture and nationality,usage of communication technology to collaborated and the dispersion of the members(Johri, 2012).

Distances are the critical factor which differentiates between GDT and traditional teams.GDT poses a unique set of challenges in relation to managing and coordinating each member's activities seperated by time-zone differences, physical distances and cultural distances. Being from different countries and working virtually would mean that these individuals may never know each other, never see each other in person, may not be very fluent in a common language and are likely to have different working style and norms. Yet they have to collaborate together for a common goal or objective.These distances often leads to lack of trust, weak work relationship, misperception and misunderstanding hampering the team work quality of GDT (McDonough, 2003). It also impact the amount of information sharing and level of motivation which either inhibit or facilitate impression formation of members about each other(Johri, 2012). Lack of physical presence for team members to see each other while they work together demands the members of virtual team to put in extra effort to inform other about their availability to the other team members. Also not being aware of what tasks the other team members are working on may have an impact on synchronizing all the members work for achieving team goal can make coordination difficult in GDT(Malhotra & Majchrzak, 2014).

2. Methodology and Aim of the Study

The review of research papers on Geographically Distributed Teams (GDT's) published in various journals like Organisation Behaviour, Information Technology, Human Computer Interaction, Human Resource Management, and International Business shows how the distance between distributed team members have been investigated from different perspectives. The studies explains these distances

through the lens of various theories from psychology, sociology, management and technology.

This paper aims to fulfill two objectives, firstly to explain the various forms of distances an individual may experience while working in geographically distributed teams. And secondly, it points out the challenges these distances pose to team processes of a Geographically Distributed Team (GDT).

3. Forms of Distances experienced in Geographically Distributed Team

Geographically Distributed Teams experience various kinds of distances which are both objective and subjective in nature. The objective distance is measured quantitatively in terms of miles, kilometers, time zones, number of sites etc. and subjective distance is aqualitative measures which is the behavioral aspect experienced by the individuals.After reviewing the various research studies on distributed teams following eight kinds of distances have been identified which are experienced by individual's working in GDT.

3.1 Spatial Distance

Spatial Distance is the physical or geographic distance between the sites/locations where team members are located(Cramton & Webber, 2005; Mortensen & Hinds, 2001; Ocker, Huang, Benbunan-Fich, & Hiltz, 2011; Wilson, O'Leary, Metiu, & Jett, 2005). Itis assessed by how far the individuals are from each other physically. It is measured in terms of miles and kilometers between the two sites/locations. To measure this distance, Spatial Distance Index (SDI) was developed by (O'Leary & Jonathon N. Cummings, 2007) which calculated the distances between sites, weighted by the number of members at the sites, based on a matrix of all possible, non-redundant, member-to-member connections.The higher the SDI, the more spatially dispersed the team is. High spatial distance makes coordination as well as communication among dispersed members more difficult. Spatial distance leads to lack of familiarity among members about each other's work environment and limits interaction opportunities (Espinosa, Slaughter, Kraut, & Herbsleb, 2007).

3.2 Temporal Distance

Temporal Distance is the time difference due to the physical distance between two geographical locations. The time zone difference may lead to shorter common time window available for the team members to communicate synchronously(Jarvenpaa, Knoll, & Leidner, 1998; Nurmi, 2011; Oertig & Buergi, 2006). This distance is measured with time zone index (TZI) gauging the number of work hours team members have during a day in which theycan communicate synchronously(O'Leary & Jonathon N. Cummings, 2007). The lesser the number of overlapping hour more is the temporal distance between the sites as a result members work opposite shifts(Wilson et al., 2005). This distance decreases the pace of collaboration and team productivity(Ocker et al., 2011). The research have also proved temporal distance to negatively impact the team cohesion among the members(Cha, Park, & Lee, 2014).

3.3 Configurational Distance:

In geographically distributed teams, this distance is a critical contributor to team effectiveness. It is the numbers of members at each site or location irrespective to spatial and temporal distance. This distance is measured by the number of sites/location where members of the team are present (site index), number of team members in each of these site (isolation index) and the standard deviation of members per site divided by the size of the team(O'Leary & Jonathon N. Cummings, 2007). Higher team dispersiondecrease the closeness, affinity and low mutual awareness among teammates. It has been observed that it is not the team size but the team's configurational dispersion that have a significant negative effect on team performance of GDT. The configurational distance is measured in terms of number of collocated members and numbers of dispersed members(Cramton & Webber, 2005).

3.4 Cultural Distance

Cultural Distance or Diversity can be both at the surface level and deep level. The surface-level diversity is the visible diversity which can be measured objectively in terms of age, gender, language, education, profession, nationality, race, and origin country of the individual's. The deep level diversity however can be assessed by the level of difference in values, attitudes and beliefs based on the national culture among individual's (Harrison, Price, Gavin, & Florey, 2000; Pinjani & Palvia, 2013; Stahl, Maznevski, Voigt, & Jonsen, 2010; Staples & Zhao, 2006). Hofstede (1970) developed measure to categories the deep cultural diversity in five dimensions power distance index, individualism vs collectivism, masculinity vs femininity, uncertainty avoidance index and long term vs short term orientation.

Cultural distance in distributed team brings in a variety of cross cultural issues with respect to difference incontext and communication styles, language barriers and absence of team trust (Holtbrügge, Schillo, Rogers, & Friedmann, 2011).

Surface level diversity assessed in terms of nationality did not have any impact on affective or task conflict among distributed team members(Hinds & Mortensen, 2005).This was attributed this to the virtual nature of the team as lack of face-to-face interaction may make cultural difference invisible.The study overlooked the cognitive/deep cultural diversity.When Cultural Distance was assessed at the surface level in terms of nationality, county of birth and native language and at the deep level based on Hofstede's value dimension of individualism vs collectivism on newly formed virtual teams (Staples & Zhao, 2006). The study found cultural diversity to have negative effect on team processes (like conflict and cohesiveness) and team satisfaction.Also cultural diversity did not affect the team performance when supported by communication technologies like email, chat, instant messaging as it facilitates visual anonymity, equity in participation and asynchronous communications. However cultural distance did affected the level satisfaction of team members in terms of low cohesion and high conflict.

3.5 SubjectiveDistance

The temporal and spatial distance affects the interpersonal aspect between individuals which is referred as Subjective

Distance. It is the individual's cognitive and affective representations between them and their team members which can have an impact on team outcomes (Wilson, Leary, & Jett, 2005). Unlike objective distances, subjective distance is dynamic in nature, which can be experienced by the focal individual high or low based on presence or absence of certain factors. (Wilson, Leary, & Jett, 2005)Proposed a model listing the factors which may playa role in increasing or reducing the perceived subjective distance among team members of distributed teams. There are individual factors like personality and amount experience in working in dispersed environment; social factors like level of similarity and status differential between the members; organisational factors like task interdependence, technologies and structure. These factors mediated by the frequency and depth of communication and to what extent members identify themselves with the team can predict the level of perceived subjective distance among members. This distance can be assessed using socio-psychological scale where the individual is asked to plot the other individual, X on a diagram of two concentric circle indicating how far the other person seems to be. The circles are converted into graphic rating to measure the distance between points to measure subjective distance.

3.6 Social Distance

Social Distance is a group phenomenon, classified into subjective social distance characterised by what in-group member think about out-group member and objective social distance which mainly arises due to cultural difference between in group and outgroup (Willard C. Poole, 1927). Social distance can be understood by it in three dimensions affective, normative and interactive. Affective dimension of social distance is related to individual's feeling of closeness; mutual sympathy and the amount of identification with the group. Normative dimension is about recognising norms of the members of the group. And the interactive distance includes frequency and length of interaction between two groups. Cultural Distance based on cultural similarity or dissimilarity (Karakayali, 2009).

Social distance between groups is experienced by the existence of sub groups in geographically distributed teams based on location, culture, nationality, language etc.This distance can be assessed by the group attitude in terms of norms and customs of treating the other group member(Bjorkman, Stahl, & Vaara, 2007; Karakayali, 2009; Liberman, Trope, & Stephan, 2007; S. Yilmaz & D.A. Tasci, 2013; Van den Bossche, Gijselaers, Segers, & Kirschner, 2006; Wilson et al., 2005)(Pinjani & Palvia, 2013; Stephan, Liberman, & Trope, 2011).Perceived subgroup formation among team members of geographically distributed teams negatively affect the team performance. Team members of the subgroups experience of less cohesive behaviour of among group members and are detrimental to teams cognitive process (Shen, Gallivan, & Tang, 2016).

3.7 Psychological Distance

The psychological distance is explained in Construal Level of Theory as the level of abstractness experienced by individual due to lack of direct experience and knowledge about a distant object, event and individual. There are three main components to psychological distance temporal (time), spatial (geographical) and social distance(Cha et al., 2014; Jarvenpaa et al., 1998; Liberman et al., 2007; Lim, Cha, Park, Lee, & Kim, 2012; Marlow & Dabbish, 2011; Pinjani & Palvia, 2013; Stephan et al., 2011).

Psychological proximity is found to influence the team work quality (communication, collaboration, coordination and cohesiveness) and team performance of GDT.Out of the three dimensions, temporal distance was found tonegatively influence team cohesion whereas spatial distance negatively affect coordination and communication. But it was the social distance which turned out to have a strong influence on all the aspect of teamwork quality i.e. communication, coordination, cohesion and collaboration and team performance (Cha, Park, & Lee, 2014).

3.8 Psychic Distance

Psychic Distance is a concept from international business which explains the perceptual distance. It is the perceptual evaluation of the nearness of the country which influence the international trade preference. This perception is largely influence by the physical distance between the two countries as it is perceived the countries which are closely situated will have less cultural differences and less uncertainty in doing business. Psychic Distance can be assessed the degree of perceived difference and difficulty of working together among the individual of different nationality (Magnusson, Schuster, & Taras, 2014).

4. Discussions &Conclusion

For GDT's to work effectively it has to overcome challenges of distances.The distanceshampers the information sharing about situation, observation while interacting and spontaneous interaction among individuals (Johri, 2012)**.** Some of the interventions which have been found to be effective in manage these distance are: usage of communication technology like email, telephone, video-conferencing, chat, and instant messenger etc. helps to largely to connect or communicate with each other extensively.Regular conference call among team members helps to resolve issues within the team, making decisions and staying committed to the team goals (Maznevski & Chudoba, 2000). Usage of ICT tool for presence awareness and task awareness of non-routine task among virtual team members can positively influence team collaboration (Malhotra & Majchrzak, 2014). The negative effect of configurational distance on team performance is mitigated by increased communication and coordination among dispersed team members(Cramton & Webber, 2005).

Shared Identity developed in GDT over a period of time make culturally diverse members homogeneous(Hinds & Mortensen, 2005). Team identity can be fostered by enhancing social ties there by reducing social distance among dispersed members (Gibson, Huang, Kirkman, & Shapiro, 2014).

Knowledge and information sharing by distributed members can help to create the team norms for effective team work(Johri, 2012). Distortion of knowledge and information during transfer due to the temporal distance can be managed by documentation and technology tools like email, files management and cloud computing(Cha et al., 2014).

Leadership style positively influence collaboration behaviours and the performance of virtual team members. Effective leadership style is reflected by leadership behaviours like acting as a role model, participative decisions making, coaching team members, keeping them informed about team's goals and showing concern for the team. Such leadership behaviours can solicit collaborative behaviours across the difference that exist in GDT there by acting as a bridge to distances(Hill & Bartol, 2016).

Selection of team members is also key to the success of GDT. Individual attribute of team member like openness to experience and cultural sensitivity are important to work in a virtual team environment. Individual's ability to deal with everyday situation in virtual work and respond appropriately to them to improve team performance of distributed team(Hill & Bartol, 2016).

Photo sharing among team members was also found to be an effective way to overcome difficulty on conceptualising the other team member due to physical distance. Photo sharing improves context visualisation and helps team members in connecting with each other by enhancing better understanding of distant colleague's work environment (Marlow & Dabbish, 2011)

Manager to assess the nature of distance that is impacting the team's performance and adopt strategies to support team members to overcome the challenges posed by these distance.

References

1. Björkman, I., Stahl, G. K., & Vaara, E. (2007). Cultural differences and capability transfer in cross-border acquisitions: The mediating roles of capability complementarity, absorptive capacity, and social integration. *Journal of International Business Studies*, *38*(4), 658–672. https://doi.org/10.1057/palgrave.jibs.8400287
2. Cha, M., Park, J.-G., & Lee, J. (2014). Effects of team member psychological proximity on teamwork performance. *Team Performance Management: An International Journal*, *20*(1/2), 81–96. https://doi.org/10.1108/TPM-03-2013-0007
3. Cramton, C. D., & Webber, S. S. (2005). Relationships among geographic dispersion, team processes, and effectiveness in software development work teams. *Journal of Business Research*, *58*(6), 758–765. https://doi.org/10.1016/j.jbusres.2003.10.006
4. Espinosa, J., Slaughter, S., Kraut, R., & Herbsleb, J. (2007). Team Knowledge and Coordination in Geographically Distributed Software Development. *Journal of Management Information Systems*, *24*(1), 135–169. https://doi.org/10.2753/MIS0742-1222240104
5. Gibson, C. B., Huang, L., Kirkman, B. L., & Shapiro, D. L. (2014). Where Global and Virtual Meet: The Value of Examining the Intersection of These Elements in Twenty-First-Century Teams. *Annual Review of Organizational Psychology and Organizational Behavior*, *1*(1), 217–244. https://doi.org/10.1146/annurev-orgpsych-031413-091240
6. Harrison, D. A., Price, K. H., Gavin, J. H., & Florey, A. T. (2000). Time, Team, and Task Performance: Changing Effects on Surface and Deep Level Diversity on Group Functioning. *Academy of Management Meeting*, (817), 2–45.
7. Hill, N. S., & Bartol, K. M. (2016). Empowering Leadership and Effective Collaboration in Geographically Dispersed Teams. *Personnel Psychology*, *69*(1), 159–198. https://doi.org/10.1111/peps.12108
8. Hinds, P. J., & Mortensen, M. (2005). Understanding Conflict in Geographically Distributed Teams: The Moderating Ef... *Organization*. Retrieved from http://search.proquest.com.ezproxy.library.wisc.edu/abicomplete/docview/213831869/fulltextPDF/50C77E5BB1774D24PQ/14?accountid=465
9. Holtbrügge, D., Schillo, K., Rogers, H., & Friedmann, C. (2011). Managing and training for virtual teams in India. *Team Performance Management: An International Journal*, *17*(3/4), 206–223. https://doi.org/10.1108/13527591111143727
10. Jarvenpaa, S. L., Knoll, K., & Leidner, D. E. (1998). Is Anybody out There? Antecedents of Trust in Global Virtual Teams. *Journal of Management Information Systems*, *14*(4), 29–64. https://doi.org/10.1080/07421222.1998.11518185
11. Johri, A. (2012). From a distance: Impression formation and impression accuracy among geographically distributed coworkers. *Computers in Human Behavior*, *28*(6), 1997–2006. https://doi.org/10.1016/j.chb.2012.06.038
12. Karakayali, N. (2009). Social Distance and Affective Orientations. *Sociological Forum*, *24*(3), 538–562.
13. Liberman, N., Trope, Y., & Stephan, E. (2007). Psychological Distance. In *Cogntive Systems* (pp. 353–381).
14. Lim, S., Cha, S. Y., Park, C., Lee, I., & Kim, J. (2012). Getting closer and experiencing together: Antecedents and consequences of psychological distance in social media-enhanced real-time streaming video. *Computers in Human Behavior*, *28*(4), 1365–1378. https://doi.org/10.1016/j.chb.2012.02.022
15. Magnusson, P., Schuster, A., & Taras, V. (2014). A Process-Based Explanation of the Psychic Distance Paradox: Evidence from Global Virtual Teams. *Management International Review*, *54*(3), 283–306. https://doi.org/10.1007/s11575-014-0208-5
16. Malhotra, A., & Majchrzak, A. (2014). Enhancing performance of geographically distributed teams through targeted use of information and communication technologies. *Human Relations*, *67*(4), 389–411. https://doi.org/10.1177/0018726713495284
17. Marlow, J., & Dabbish, L. (2011). Reducing psychological distance in globally distributed teams. *Chi '11*, 1–4. https://doi.org/10.1145/2141512.2141568
18. Maznevski, M. L., & Chudoba, K. M. (2000). Bridging Space Over Time: Global Virtual Team Dynamics and Effectiveness. *Organization Science: A Journal of the Institute of Management Sciences*, *11*(5), 473–492. https://doi.org/10.1287/orsc.11.5.473.15200
19. Mortensen, M., & Hinds, P. J. (2001). CONFLICT AND SHARED IDENTITY IN GEOGRAPHICALLY DISTRIBUTED TEAMS GEOGRAPHICALLY DISTRIBUTED TEAMS. *International Journal of Conflict Management*, *12*(3), 212–238.
20. Nurmi, N. (2011). Coping with coping strategies: How distributed teams and their members deal with the stress of distance, time zones and culture. *Stress and Health*, *27*(2), 123–143. https://doi.org/10.1002/smi.1327

21. O'Leary, M. B., & Jonathon N. Cummings. (2007). The Spatial, Temporal, and Configurational Characteristics of Geographic Dispersion in Teams. *MIS Quaterly*, *31*(3), 433–452. https://doi.org/10.2307/25148802
22. Ocker, R. J., Huang, H., Benbunan-Fich, R., & Hiltz, S. R. (2011). Leadership Dynamics in Partially Distributed teams: An Exploratory Study of the Effects of Configuration and Distance. *Group Decision and Negotiation*, *20*(3), 273–292. https://doi.org/10.1007/s10726-009-9180-z
23. Oertig, M., & Buergi, T. (2006). The challenges of managing cross-cultural virtual project teams. *Team Performance Management: An International Journal*, *12*(1/2), 23–30. https://doi.org/10.1108/13527590610652774
24. Pinjani, P., & Palvia, P. (2013). Trust and Knowledge Sharing in Diverse Global Virtual Teams. *Information &Management*, *50*(4), 144–153.
25. S. Yilmaz, S., & D.A. Tasci, A. (2013). Internet as an information source and social distance: any relationship? *Journal of Hospitality and Tourism Technology*, *4*(2), 188–196. https://doi.org/10.1108/JHTT-10-2012-0026
26. Shen, Y., Gallivan, M. J., & Tang, X. (2016). The Impact of Perceived Subgroup Formation on Transactive Memory Systems and Performance in Distributed Teams. *International Journal of E-Collaboration*, *12*(1), 44–66. https://doi.org/10.4018/ijec.2016010104
27. Stahl, G. K., Maznevski, M. L., Voigt, A., & Jonsen, K. (2010). Unraveling the effects of cultural diversity in teams: A meta-analysis of research on multicultural work groups. *Journal of International Business Studies*, *41*(4), 690–709. https://doi.org/10.1057/jibs.2009.85
28. Staples, D. S., & Zhao, L. (2006). The effects of cultural diversity in virtual teams versus face-to-face teams. *Group Decision and Negotiation*, *15*(4), 389–406. https://doi.org/10.1007/s10726-006-9042-x
29. Stephan, E., Liberman, N., & Trope, Y. (2011). The effects of time perspective and level of construal on social distance. *Journal of Experimental Social Psychology*, *47*(2), 397–402. https://doi.org/10.1016/j.jesp.2010.11.001
30. Van den Bossche, P., Gijselaers, W. H., Segers, M., & Kirschner, P. A. (2006). Social and Cognitive Factors Driving Teamwork in Collaborative Learning Environments. *Small Group Research*, *37*(5), 490–521. https://doi.org/10.1177/1046496406292938
31. Wilson, J. M., O'Leary, M. B., Metiu, A., & Jett, Q. R. (2005). Subjective distance in teams. *Global-Production.Com*. Retrieved from http://www.global-production.com/scoreboard/resources/wilson_2005_subjective-distance-in-teams.pdf

