The Two Dimensions of Virtual and Collocated Project Teams
or What Project Team Members WANT and GET:
An Empirical Study

By
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Abstract
The current paper compares and investigates the discrepancies in motivational drives of project team members with respect to their project environment in collocated and distributed (virtual) project teams. The set of factors, which in this context are called ‘Sense of Ownership’, is used as a scale to measure these discrepancies using one tailed t tests. These factors are abstracted from theories of motivation, team performance, and team effectiveness and are related to ‘Nature of Work’, ‘Rewards’, and ‘Communication’. It has been observed that ‘virtual ness’ does not seem to impact the motivational drives of the project team members or the way the project environments provide or support those motivational drives in collocated and distributed projects. At a more specific level in terms of the motivational drives of the project team (‘WANT’) and the ability of the project environment to provide or support those factors (‘GET’), in collocated project teams, significant discrepancies were observed with respect to financial and non financial rewards, learning opportunities, nature of work and project specific communication, while in distributed teams, significant discrepancies with respect to project centric communication, followed by financial rewards and nature of work. Further, distributed project environments seem to better support the team member motivation than collocated project environments. The study concludes that both the collocated and distributed project environments may not be adequately supporting the motivational drives of its project team members, which may be frustrating to them. However, members working in virtual team environments may be less frustrated than their collocated counterparts as virtual project environments are better aligned with the motivational drives of their team members vis-à-vis the collocated project environments.

1 Research Background and Rationale
1.1 Introduction
The growth of information led economy has lead to the emergence of virtual teams. Given that they are becoming a rapidly emerging work form of the future, it may be important to understand their performance and motivational dynamics, especially, as compared to the conventional collocated teams. However, quantitative field studies on virtual teams may be lacking (Bell, Kozlowski, 2002, Lipnack, Stamps, 1997). On the other hand, the study on human aspects in project management ignored the team members’ perspective of project team (Wilemon, 2002). Though we have previous studies which focussed on collocated and distributed teams, they have either been strictly from a performance perspective
PART TWO: PEOPLE

(Sambamurthy et al., 1993, Straus, 1996) or from team dynamics perspective (Cramton, 2001, Maznevski, chudoba, 2000), a comparative study of collocated and virtual teams by considering aspects of motivation and performance may have been wanting. The present paper attempts to address these issues by presenting a comparative empirical study of collocated and distributed project teams by holistically considering the motivation and the performance perspectives. Thus, progressing within the framework of team performance and motivation in a project environment, this paper identifies the factors which have been perceived to be most important by the members in a project setting (‘WANT’). Then, the ability of the project environment to provide or support these factors is measured and juxtaposed with the expectations of the project team members (‘GET’). These discrepancies are compared in collocated and distributed project teams to observe if either of these environments (collocated or distributed project environments) achieves a better fit between the WANT-GET as compared to the other.

1.2 The Research Study

The present paper is a part of the larger research study which explores the role of project team environment in providing or supporting the motivational drives of the project team members. The premise for this study has its roots in the concept of ‘Psychological Contract’ (Rousseau, Wade-Benzoni, 1994, Katz, Kahn, 1996, Spinder, 1994, Guest et al, 1996) which is defined as a contract that refers to the beliefs that individuals hold regarding promises made, accepted, and relied upon between themselves and another. Further, Rousseau and Wade-Benzoni (1994) posit that employees may have expectations with respect to equitable rewards in accordance with their contribution, opportunities for growth, and to be provided with work that leverages their abilities, from their employers (Katz, Kahn, 1996). These expectations are derived from models of motivation proposed by Vroom (1964) and operant conditioning theory (Skinner, 1974). Using the concept of Psychological contract as the framework, the present research study identifies the expectations of the project team members by drawing from the various theories on motivation, team performance, and team effectiveness; which are relevant in the project environment. This is referred to as ‘WANT’ in this paper, and in the larger research study. Then, the ability of the project team environment to provide or support those expectations of the team members are identified, this being referred to as ‘GET’ in this paper and in the larger research study. These trends are compared in two kinds of project teams—collocated and virtual or distributed project teams.

Thus, the objectives of the present research study are to

Explore if there is a discrepancy between the ‘WANT’ and ‘GET’ with respect to the project team members’ expectations and to measure the discrepancy in collocated and virtual project teams

To compare the motivational drives (‘WANT’) of the project team members working in collocated and distributed teams

To compare the ability of the project team environment to support the motivational drives of the project team members (‘GET’) in collocated and distributed teams

To understand the latent factors which may explain the motivational drives of the project team members (‘WANT’)

To understand the underlying factors which profile the ability of the project team environment to support the project team members’ expectations (‘GET’)

It may be mentioned here that the scope of the present paper is restricted to the research objectives 1, 2, and 3 mentioned above; which present a comparative account of the discrepancy between the motives of the project team members (‘WANT’) and the ability of the project team environment to provide or support those motives (‘GET’) in collocated and virtual project teams.

1.3 Organization of the Paper

The present paper is a part of the larger research study which studies the role of project environment in supporting the motivational drives of the project team members. The theory base for the present study is presented in Part II of this paper. The specific factors used as a scale to identify and measure the expectations / motivational drives (‘WANT’) of collocated and
distributed project team members and the ability of the project environment to provide/ support those expectations (‘GET’) are presented in part III of this paper (see figure 1, page 14 and see figure 2, page 15). Part IV presents the theory base on Virtual teams. The research design is detailed in Part V. Part VI of the paper lists the limitations of the research study followed by presentation of observations of results in Part VII and a discussion of results, conclusion and directions for future research in Part VIII.

2 Theory Base for the Research

2.1 Theory Base – Motivation

Motivation has been defined in terms of goal directed behaviour (Armstrong, 2003) and Individual effort (Mitchell, 1997). This emphasis on individual and performance orientation is relevant in a project context as projects are characterized by goals and a strict adherence to the behavioural approach to motivation may not necessarily stimulate a high level of performance. However, “the need for achievement” coupled with “goal setting” and “reward system” is effective in the project environment (Harrison, 1992). This now leads to a discussion of motivation theories, which are suited to a project context.

2.2 McClelland’s Theory of Needs

McClelland (McClelland, 1961) defined “Need for Achievement” as “The drive to excel, to achieve in relation to a set of standards, to strive to succeed”. Translating this to the project environment, Harrison (1992) observes that individuals working in project settings are ambitious; are driven by a need to achieve their goals and hence would value incentives such as advancement, money, good assignment, and feedback. This discussion on individual’s need to achieve his goals leads to the Goal-Setting Theory (Locke, 1968).

2.3 Goal-Setting Theory

The Goal-Setting Theory (Locke, 1968) suggests that specific goals produce a higher level of output and that when coupled with feedback on performance, motivates the person, as this would help a person to know how well he has achieved his targets. However, it has to be ensured that the individual’s targets are aligned with the overall project targets (Harrison, 1992), to be able to achieve the dual benefit of motivation and team performance.

It may be inferred from the above discussion on motivation that the undercurrent theme, running parallel to motivation is the emphasis on performance. Hence, this is briefly discussed next.

2.4 Theory Base - Team Performance

The characteristic of a project team and its ultimate performance depends on factors related to people, task, organization, and the extent to which the objectives related to these factors are met. Specific dimensions to measure team performance include adherence to budget, time, customer responsiveness, strategic value of the project for future business, organizational learning (Thamhain, 1998), adherence to schedule, achievement of project goals, and overall satisfaction from the company’s perspective (Wang et al, 2004). The next question which is discussed is how can this high team performance be achieved? Team effectiveness is the answer.

Team effectiveness includes the set of conditions relating to work, issues concerning the teams involved in doing the work, and the context and the processes, which direct the work effectively towards the planned performance objectives and expectations of the team. This is explained in the Team Effectiveness Model.

2.5 Theory Base - Team Effectiveness

The team effective model (Campion et. al, (1996), Hyatt and Ruddy (1997), Cohen and Bailey (1997), Neuman and Wright (1999), and Thompson (2000)) is a generic representation of factors that contribute to team performance and member satisfaction. The model posits that interesting, significant and autonomous nature of work, training opportunities for learning, suitable financial rewards mapped to performance, and specific goals lead to motivation, and team performance. The Job Characteristic Model discussed next seconds similar observations.
2.6 The Job Characteristic Model (Hackman and Oldham, 1980)

The model posits that any job may be described in terms of five core job dimensions:


Further, the presence of skill variety, task identity and task significance, and feedback would translate to the job being perceived as being important by the incumbent. This, along with autonomy, which gives a sense of personal responsibility for results, leads to motivation and enhanced performance. Extending this to projects, Thamhain (1998) contends that a professionally stimulating team environment, characterized by interesting and challenging work, enhances the effectiveness of the team. Further, when the team members take higher levels of responsibility and authority, which may be understood as having greater autonomy at work, it leads to enhanced team performance.

2.7 Framework for ‘Sense of Ownership’ factors

To recapitulate this discussion on Motivation, Team Performance, and Team Effectiveness, it is observed that factors which have been brought to fore by the theories of motivation, team performance and team effectiveness relate to the following 3 dimensions:

Nature of Work, Rewards, and Communication.

2.8 Nature of Work

Interesting nature of work leads to motivation and enhances team performance (Kovach, 1987). In the context of the projects, these observations are seconded by Kerzner (2003), when he states that interesting work and a stimulating environment is motivating and leads to team performance (Thamhain, 1998). The different facets to interesting work have been significant tasks, enjoyable nature of work, and feedback on performance, as seen in the Job Characteristics Model. A key aspect to enhance the performance of the project team is to impart the skills and the knowledge required to the project team to effectively perform the tasks (Baron, Kreps, 1999). Pfeffer (1998) and further Thamhain (1998) suggest that interesting nature of work may also be associated with a high clarity of potential for professional rewards, which is discussed below.

2.9 Rewards

The link between motivation-performance-rewards is brought to fore by the expectancy theory on motivation (Vroom, 1964) which emphasises on the link between effort-performance-rewards, which in this case may be expected performance outcomes from the team members and the proportionate performance based financial rewards which the team member may get. Apart from the tangible rewards such as the financial benefits, intangible rewards such as security of advancement (Herzberg et al., 1959), good work-life balance (Huws, 1999), and mentoring (Armstrong, 2003) have been found to enhance motivation and team performance. Mentoring involves the protégé receiving continuous feedback on his performance from the mentor, which lends the protégé to view the job to be meaningful (Beech, Brochbank, 1999) which again maps to ‘Nature of Work’.

2.10 Communication

Communication impacts team effectiveness and leads to increased job satisfaction and productivity (Verma, 1997). As seen in the definition of motivation, and in the McClelland’s theory of needs (1961), knowledge of goals and job specific information motivates employees. In a project environment, this translates to information exchange about scope definitions, quality, schedules and feedback apart from project objectives within the project teams, and with the project manager (Verma, 1997) fostering team spirit in project teams leading to motivation and performance (Kerkfoot, Knight, 1992).

3 The Sense of Ownership Factors

Following the discussion on Motivation, Team Performance, and Team Effectiveness, which are summarized in 3 dimensions- ‘Nature of Work’, ‘Rewards’, and ‘Communication’, the ‘Sense of Ownership’ factors are presented (see figure 1, page 14, see figure 2, page 15). These factors are used as the
survey items for the present study.

4 Theory Base for Virtual Teams

4.1 Introduction to Virtual Teams

The phenomenal growth of technology created work designs that overcome temporal, and geographic boundaries (D’Aveni, 1995). With increasing globalization of project management, teams comprising of individuals who may never directly interact with each other are becoming common place (Slevin, Pinto, 2004). Furthermore, issues of cost and skill distribution have catalyzed the shift towards the virtual teams recently (Elkins, 2000). However, the limited research on virtual teams presents a situation, where the key issues pertaining to virtual teams such as their definition and the degree of ‘virtual ness’ have not been investigated adequately. (Fiol, O’Connor, 2005).

Further, as mentioned earlier in the introduction to this paper, a study of human dimensions in project management, with a team member’s perspective in these two different project environments- collocated and distributed project teams, may be important.

4.2 Definition of Virtual or Distributed Team

A Virtual team is a Group of project team members, linked via the internet or the media channels to each other and various project partners (Cleland, Ireland, 2002).

Maznevski and Chudoba (2000) define virtual teams, rather, the Global Virtual teams as internationally distributed groups of people with an organizational mandate to make or implement decisions with international components and implications. Lipnack and Stamps (1997) define virtual teams as a group of people who interact through interdependent tasks, are guided by a common purpose, and work across space, time, and organizational boundaries using communication technologies. Other definitions of virtual teams have been given as being culturally diverse and geographically dispersed (Geber, 1995, and, Townsend et al, 1996). It is to be noted that based on the definition of virtual teams given by Maznevski and Chudoba (2000), the terms ‘virtual teams’, and ‘distributed teams’ have been used synonymously for the purpose of the present study.

Although physically separated, technology links these individuals so that they can share information and operate as a unified project team. The number of elements in a virtual team and their permanency can vary, depending on need and feasibility (Cleland, Ireland, 2002).

4.3 Characteristics of Virtual Teams

As the virtual team members are geographically dispersed, the virtual project environments differ from the conventional face-to-face project environments. Though, the team members have an opportunity to work closely with the end users of the projects, and the virtual teams offer more flexibility to the employees, especially as they provide the employees opportunities to telecommute (Goncalves, 2005), virtual teams are not without their shortcomings.

Mortensen and Hinds (2001) state that as the virtual team members are geographically distributed, they may be low mutual awareness among the project team members. Further, Galegher and Kraut (1994) cite that they may be low levels of information exchange among the team members owing to these spatial distances. Further extending the impact of low mutual awareness of the team members and the geographically displaced team members, Furst et al (2004) state that the low interpersonal contacts among the team members, hampers the development of quality relationships in the team. Seconding these observations, Warekentin, Sayeed, and Hightower (1997) suggest that as the virtual team excessively rely on technology for communication, overall, the virtual team members may be dissatisfied with respect to the interpersonal interaction as compared to their collocated counterparts. The excessive reliance on technology for interpersonal interaction, not only impacts the team bonding but also on the learning initiatives of the virtual teams. Straus (1996) suggests that virtual team environments may not be offering adequate opportunities for training and learning owing to low personal contact, dependence on technology and challenges of communication. Further, they may be little shared commonality among members. Computers may not be able to bridge these differences to facilitate a learning process (Alpay, Giboin, and Dieng, 1998) and
therefore may not offer a supportive training or a learning environment (Stahl, 2001). Extending the discussion on lack of free communication in virtual teams, Straus (1996) states that this condition also mars the feedback in the virtual teams, nurturing a feeling among the members of the virtual team that they have made no significant contribution to the project.

5 Research Design

5.1 Research Questions

Based on the above discussion on motivation, team performance, team effectiveness, and virtual teams, which bring to fore the aspects of ‘nature of work’, ‘communication’, ‘rewards’ and the role of environment, the following research questions are presented:

1. Is there a difference between the motivational drives of the project team members and the ability of the project environment to provide or support those motivational drives in collocated project teams and in distributed project teams?

2. Do the motivational drives of project team members vary in collocated and distributed project environment?

3. Does the ability of the project team environment to support the motivational drives of its team members vary in collocated and distributed project team environments?

4. Does a collocated project team environment offer a better fit between the motivational drives of the project team members and the ability of the project team environment to provide/support those expectations than the virtual environment?

5.2 Premises:

Based on the above discussion on Motivation, Team Performance, Team Effectiveness, and Virtual teams, it is inferred that members of the project team have higher expectations in terms of ‘nature of work’, ‘Rewards’, and ‘Communication’. Further, members in the virtual team may not be satisfied in general (Warekentin et al, 1997). Hence, the following premises are presented:

Premise 1: There is a significant discrepancy between the expectations of the project team members (WANT) and the ability of the project team environment to provide or support those expectations (GET) in collocated project teams with respect to the factors related to ‘Nature of Work’, ‘Rewards’, and ‘Communication’.

Premise 2: There is significant discrepancy between the expectations of the project team members (WANT) and the ability of the project team environment to provide or support those expectations (GET) in distributed project teams with respect to the factors related to ‘Nature of Work’, ‘Rewards’ and ‘Communication’.

Premise 3: There is a better alignment of the member expectations and the ability of the project team environment to support or provide those expectations in collocated project environments than the distributed environments and hence the collocated team members are less frustrated than the virtual team members.

5.3 Research Methodology Sample characteristics

In consonance with the objectives of the present research study, which aims to understand the motivational drives of the project team members working in collocated and distributed project teams and in project teams in general, irrespective of industry, a random sample, who were working in a project environment, were chosen. Overall, the group consisted of 63 % of men, and 37 % of women. The average age of the participants ranged between 31 and 36 years of age and the mean work experience of the respondents ranged between 11 and 16 years. The participant pool came from 17 countries spread across 6 continents and from diverse set of industries. Table 1 (see page 16) summarizes the respondent profile.

5.4 Procedure

The respondents were contacted by email, which were available in a centralized alumni database with the authors’ organization. Only those who were working in a project-based organization were contacted. A comprehensive explanation of the purpose of the research study, and the outcomes the research study summarized in an explanatory cover letter accompanied the survey instrument sent out by email. Further, the respondents were also contacted and the responses elicited during the
face-to-face interaction of the prospective respondents with the authors. The research study was explained to the respondents by the authors before they were asked to complete the questionnaire. A total of 140 questionnaires were sent by email and handed out to the participants, of which 85 responses were returned, giving a response rate of 60.7%.

5.5 Measures

The survey instrument was based on an earlier instrument used by Marvick (1958), who had identified the discrepancies between what was most important to people on their job, and how much of that factor was a characteristic of their job. The questions of the survey instrument were based on the items listed in Figure 1 (see page 14) and Figure 2 (see page 15); and are related to ‘Nature of Work’, ‘Rewards’, and ‘Communication’.

To assess the motivational drives of the project team members (‘WANT’), the following question was asked:

“How important to you on a scale of 1 to 7 are the following factors so that you feel that a Project is Yours (1- ‘Not Important’, 7- ‘Very Important’).”

To assess the ability of the project team environment to provide or support those expectations and (‘GET’), the following question was asked:

“How important are/were the following factors in your current/ latest projects (1- ‘Strongly Disagree’, 7- ‘Strongly Agree’).”

Further, questions related to the demographical information about the respondents such as Age, Professional experience, Industry, and Location of the Work, were included.

The measure of co-location vs distribution was obtained using a combination of questions such as:

“What percentage of your time do you spend telecommuting (working from home) in a typical working week?”

“On your current project, what percentage of the workforce is working from a distance?”

“Would you say that your current project is co-located or distributed?”

All the survey items (summarized in figure 1, page 14 and figure 2, page 15) were briefly explained in the questionnaire for the convenience of the respondents.

5.6 Pilot Test

The questionnaire was initially tested on a random sample of 40 respondents, which included members working in both collocated and virtual teams. A quick and dirty factor analysis led to the selection of the appropriate collocation and distribution indicators and to discard those of less interest. The respondents were then sorted on these variables along with this variable along a continuum of collocation vs. distribution and selected two groups: those who were scoring high on the collocation variable and those who were scoring low on this variable or, in other words, high on the distribution side.

6 Limitations of the Research

In the context of the present research, the influence of organization culture has not been considered. Organization culture is deeply embedded in the employee’s psyche and therefore has an impact over his decision making ability and behaviour (O’Reilly, Chatman, 1996). Also, a strong organizational culture has been known to influence performance (Barney, 1986).

The other factor which was not considered is the issue of Leadership in Project Teams. The various schools of theories on leadership such as The situational Leadership Model (Hersey, Blanchard, 1977), The Normative Decision Model (Vroom, Yetton, 1973, Vroom, Jago, 1988), Transformational Leadership Theory (Bass, 1985) influence factors such as employee participation, allocation of tasks, and decision making. It was assumed that these factors have already been accounted for. Finally, this study was intended to be a study of project environments and team members’ motivation in projects in general. Therefore, it was necessary to collate the responses from a cross section of industries. Hence, these observations may not hold true with respect to a specific industry unless the other moderating variables pertinent to that environment are considered. In spite of these limitations, it is believed that study would significantly contribute to the human dimension in projects and encourage future research in this direction.
7 The Results

In collocated project teams, the overall difference between the expectations of the team members and the project team environment’s support to those expectations is very significant ($t = 11.78$, $P = .00000003$, $N=43$). Discrepancies specific to the different factors are summarized in Table 3 (page 17). In case of distributed project teams, the overall difference between the team members’ expectations and the project team environment’s support to those expectations is also significant ($t = 6.15$, $P = .00002$, $N=42$). Discrepancies specific to the factors are summarized in Table 3 (page 17). The overall difference between the motivational drives of collocated and distributed project team members however, is insignificant ($t = 0.24$, $P = .4$, $N=13$) as shown in Table 2 (page 16). The overall difference in the mean scores of the ability of the project environment to support project team motivation in collocated and distributed teams is quite significant ($t = -5.66$, $P = .00005$, $N=13$) as shown in Table 2 (page 16). Finally, the t-test results comparing the overall relative alignment of the motivational drives of the project team members (WANT) and the ability of the project team environment to provide or support those expectations (GET) between the collocated and virtual projects is also quite significant ($t = -4.87$, $P = .00019$, $N=13$).

8 Conclusion and Future Research

The one tail unilateral t test results comparing the motivational drives of collocated and distributed project teams suggest that the expectations of the team members do not vary and that the degree of ‘virtual ness’ does not affect team members’ motivational drives. But there is a significant discrepancy between the expectations of the project team members (‘WANT’) and the ability of the project team environment to provide or support those expectations (‘GET’) in collocated and distributed project teams with respect to the factors related to ‘Nature of Work’, ‘Rewards’, and ‘Communication’. Thus, Premises 1 and 2 can be accepted.

It is further concluded that though there exist significant differences between the ‘WANT’ and the ‘GET’ in both collocated and distributed project teams, in case of collocated project teams, the discrepancies are highest with respect to the factors ‘Performance Based Financial Rewards’, ‘Comprehension of End-User Requirements’, ‘Training for Learning’, ‘Future Career Opportunities’, and ‘Enjoyable Nature of Work’ in that order. In the case of virtual project teams, the differences are most with respect to the factors ‘Comprehension of End-User Requirements’, ‘Easy Access to Project Related Information’, ‘Post Project Evaluation Feedback’, ‘Performance based Financial Rewards’, and ‘Enjoyable Nature of Work’, in that order. To summarize, in collocated projects the discrepancies are most with respect to ‘Financial Rewards’, followed by ‘Communication’, and then ‘Nature of Work’, whereas in distributed teams, the differences are most with respect to ‘Communication’, followed by ‘Financial rewards’, and ‘Nature of Work’.

Last but not least, it is observed that the virtual project environments better accommodate the motivational drives of their project team members vis-à-vis the collocated project environments. Hence, premise 3 is rejected because the exact opposite is clearly supported here. This result is a bit surprising and deserves to be further investigated as some elements of the literature would suggest that collocation is an important factor in creating team spirit and enjoyable nature of work.

As seen above, the results comparing the motives of the project teams members (‘WANT’) in collocated and distributed team show minimal discrepancy suggesting that there may be underlying factors, which may explain the motivational drives of the project team members, irrespective of they being collocated or virtual. Hence, it is proposed that a further study of this question be undertaken, by employing a Principal Component Analysis of the combined and a larger sample of collocated and distributed project team members to profile the motives (‘WANT’) of the project team members. Likewise, the two project environments in question-collocated and distributed, do not differ in their ability to support or provide the motives of the project team members (‘GET’), suggesting that there may be latent factors which comprehensively explain the nature of the project environments in relation to their support of project team members’ motivation. It is expected that a Principle
Component Analysis of the combined collocated and distributed project sample would throw light on this issue.

Further, to holistically explain project team members’ issues such as project leadership and organization culture need be considered and explored using additional constructs in the survey instrument. Also, specific aspects of nature of work, project communication, and rewards need be studied. Apart from the team members’ perspective on motivation, the employer perspective need be explored in greater detail by incorporating the concept of psychological contract (MacNeil, 1985), brought to fore by the innate reciprocal obligations or expectations that exist between the employees and employers with respect to nature of work, work environment, monetary and non-financial rewards.

9 References


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10 Appendix

Figure 1 Organization of the Present Paper & Sense of Ownership Factors
**Figure 2** Organization of the Key Literature Review for the Study

**Table 1** Overall Respondent Profile and Number of Respondents (in %)

<table>
<thead>
<tr>
<th>Location</th>
<th>Number of Respondents (in %)</th>
<th>Industry</th>
<th>Number of Respondents (in %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Construction</td>
<td>1.18</td>
<td>Oil &amp; Energy</td>
<td>5.88</td>
</tr>
<tr>
<td>Central &amp; South America</td>
<td>1.18</td>
<td>Telecommunications</td>
<td>1.18</td>
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<td>Europe</td>
<td>67.06</td>
<td>IS/IT</td>
<td>20.00</td>
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<td>Middle East</td>
<td>3.53</td>
<td>Pharmaceutical</td>
<td>1.18</td>
</tr>
<tr>
<td>Africa</td>
<td>3.53</td>
<td>Banking</td>
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<td>10.59</td>
<td>Consultancy</td>
<td>17.65</td>
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<tr>
<td>Indian Sub Continent</td>
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<td>Others</td>
<td>52.94</td>
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**Table 2** Comparative t test results-Collocated and Distributed Project Environments

<table>
<thead>
<tr>
<th>Comparing Project Team Environment with Team Members’ Motivation</th>
<th>Comparing Collocated and Virtual Project Team Environments</th>
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<tbody>
<tr>
<td>Comparing Collocated and Distributed Get</td>
<td>Comparing Project Team Environments</td>
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<tr>
<td>Collocated Want-Distributed Get</td>
<td>Collocated Get-Distributed Get</td>
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<tr>
<td>Mean Score Difference</td>
<td>0.72</td>
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<td>Observations</td>
<td>13</td>
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<tr>
<td>t- value</td>
<td>11.78</td>
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<tr>
<td>P(T&lt;=t) Unilateral value</td>
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Comparing Collocated and Distributed Get

<table>
<thead>
<tr>
<th>Collocated Want-Distributed Get</th>
<th>Distributed Want-Distributed Get</th>
<th>Collocated Get-Distributed Get</th>
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<tr>
<td>Mean Score Difference</td>
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<td>-0.25</td>
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<tr>
<td>Observations</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>t- value</td>
<td>6.16</td>
<td>-5.66</td>
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<tr>
<td>P(T&lt;=t) Unilateral value</td>
<td>0.40</td>
<td>0.000052</td>
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</table>
Table 3  Summarized t- test results- ‘WANT’-'GET': Collocated and Virtual Project Teams

<table>
<thead>
<tr>
<th>Factor</th>
<th>Collocated Project Teams</th>
<th>Distributed Project Teams</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Mean Score</td>
<td>P(T&lt;=t)* Unilateral value</td>
</tr>
<tr>
<td></td>
<td>want</td>
<td>get</td>
</tr>
<tr>
<td>Autonomy at Work</td>
<td>5.95</td>
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<td>Future Career Opportunities</td>
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<tr>
<td>Post Project Evaluation Feedback</td>
<td>5.54</td>
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<td>Training for Learning</td>
<td>5.90</td>
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<td>Project Accommodating Personal Life</td>
<td>4.82</td>
<td>4.54</td>
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<tr>
<td>Enjoying Work Itself</td>
<td>6.34</td>
<td>5.82</td>
</tr>
<tr>
<td>Comprehension of End-User Requirements</td>
<td>6.14</td>
<td>5.30</td>
</tr>
<tr>
<td>Performance-based Financial Rewards</td>
<td>4.87</td>
<td>4.03</td>
</tr>
<tr>
<td>Mentoring by Top Management</td>
<td>4.97</td>
<td>4.08</td>
</tr>
<tr>
<td>Being Involved in Critical Project Activities</td>
<td>5.94</td>
<td>5.45</td>
</tr>
<tr>
<td>Ease of Information Exchange/ Communication</td>
<td>6.16</td>
<td>5.23</td>
</tr>
<tr>
<td>Easy Access to Project Related Information</td>
<td>5.85</td>
<td>5.04</td>
</tr>
<tr>
<td>Strong Team Spirit</td>
<td>5.86</td>
<td>5.09</td>
</tr>
<tr>
<td>Overall Score</td>
<td>5.68</td>
<td>4.96</td>
</tr>
</tbody>
</table>

• For P(T<=t) < 0.05, the results are highly significant, implying that the two groups differ significantly
• rank order of the ‘Sense of Ownership’ factors according to Ascending Value of P(T<=t) Unilateral Value