Measuring the Level of Relational Coordination Among Higher Education Institutes (HEIs) Professionals

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Abstract
Students' academic success in Higher Education Institute (HEIs) is highly dependent on effective communication and coordination of its human resources. Relational coordination (RC) explain the performance of tasks that are carried out through coordination and communication among several individuals or groups of individuals.Purpose of this research is to measure the degree of Relational Coordination (RC) among professionals (Teachers, program coordinators, administrative staff, departmental heads and top management) as they perform coordinated tasks targeted at students' academic success and to identify the week links (where RC is lower) in a reputable private sector HEI in Peshawar, Pakistan. The three relational dimensions ("shared goals, shared knowledge, and mutual respect") and four communication dimensions ("frequent, timely, accurate, and problem solving communication") for task integration were used to assess relational coordination.Findings suggested that within-function relational links are stronger than the between-function relational ties. within functions relational coordination for Head of Departments and Top Management is relatively strong while it is weak for functional groups of Faculty members and Program Coordinators and weakest for functional group of Administrative staff. The weakest relational coordination is between Program Coordinators and Administrative Staff, Head of Departments and Administrative Staff and Faculty members and Administrative Staff. These are the three weakest links, which calls for interventions on part of management of HEIs.

Keywords: *Relational Coordination, Relational Coordination Theory, Higher Education Institutes (HEIs), Weak links*

1. Introduction

Higher Education Institutes (HEIs) today are growing more and more complex and so are the tasks and activities performed to carry out the various facets of jobs. Many complex tasks performed in modern organizations cannot be completed solely by a single individual, rather a (functional or cross-functional) groups of individuals are required to perform such tasks successfully. Relational coordination (RC) explain performance of the tasks that are carried out through coordination and communication among several individuals or groups of individuals typically from different functional areas. RC is defined as, "a mutually reinforcing process of communicating and relating for the purpose of task integration, that is expected to drive performance when work is highly interdependent, uncertain and time constrained" (Gittell, 2003). RCexplains that how interdependent tasks are managed by groups of individuals, workgroups or even organizations in situations of uncertainty and time constraints in swiftly varying circumstances (Kamatchi, Selwin & Prasad, 2015). Relational coordination theory (RCT) introduced by Gittell (2003) explains the relational procedurethat support the technical coordination process and states that relational coordination also involves the interdependence between task performers, beside the interdependence among the tasks.The theory has proposed relational dimensions of shared knowledge, shared goals, and mutual respect and the communication dimensions of accurate, timely, frequent, and problem solving communication.RCT explains the influence of RC on both quality and efficiency outcomes and rather than signifying formal organizational structures as obstructions or substitutes to relational coordination, state that relational coordination can be supported by designing formal organizational structures.

Students success in Higher Education Institute (HEIs) is highly dependent on effective communication and coordination of its human resources.This study, therefore intended to measure the extent of RC among employees (faculty members, program coordinators, administrative staff, departmental heads and top management) as they perform coordinated tasks targeted at students' academic success, and to identify the week links (where RC is lower) in a reputable private sector HEI in Peshawar, Pakistan. The seven dimensions proposed byRCT for task integration were used to assess relational coordination. Findings revealed thatwithin functions relational coordination for head of departments and top management is relatively strong while it is weak for functional groups of faculty members and program coordinators. However, weakest relational coordination is within the functional group of administrative staff. Findings for between functional groups revealed that relational coordination is stronger among program coordinators and head of departments, it is relatively weaker between faculty members and program coordinators, faculty members and head of departments, program coordinators and top Management and top Management and administrative staff. However, the weakest relational coordination is between administrative staff and program coordinators, head of departments and faculty members.

1.1 Problem Statement

It is evident from the liter ature that relational coordination is positively associated with organizational outcomes of quality and efficiency of the coordinated work practices in health-care, airline, banking and other sectors. The need for innovation in the current management and administration in HEIs and restructuring of current systems is important

for quality and efficiency outcomes. To examine the relational coordination among professionals in HEIs as various essential tasks are performed through interaction of individuals from different functional units is a necessary first step prior to the development of specific coordination and teamwork improvement interventions. To improve relational coordination, an important first step is to identify the weak links (areas of lower relational coordination) and to propose suitable interventions to provide directions and recommendations for HEIs policy makers.

1.2 Research Questions

The investigated research questions of the study were as follows.

- What is the degree of relational coordination among HEIs employees while they coordinate the tasks targeted at student success?
- Among which groups of employees the relational coordination is significantly low?

2. Literature Review

2.1 Relational Coordination

The worth of capitalizing on employees is highly recognized by high-performance work systems. Gittell (2003) presented a view that essentially outspreads beyond commitment of employees, worker's skills and motivation level as conjecturers of organizational quality. The Relational Coordination Theory (RCT)recognizes the reciprocally underpinninginteraction process between relationships and communication directed at integration of tasks. Coordination includes managing the tasks interdependence as well as interdependence among the tasks performers (Gittell, 2003). According to Siddique (2014) RC is considered as an emergent theory that emphasizes the dynamics of coordinated work processes and specifically refers to consolidation of an organization's tasks and activities for the purpose of achieving stated and implied goals.

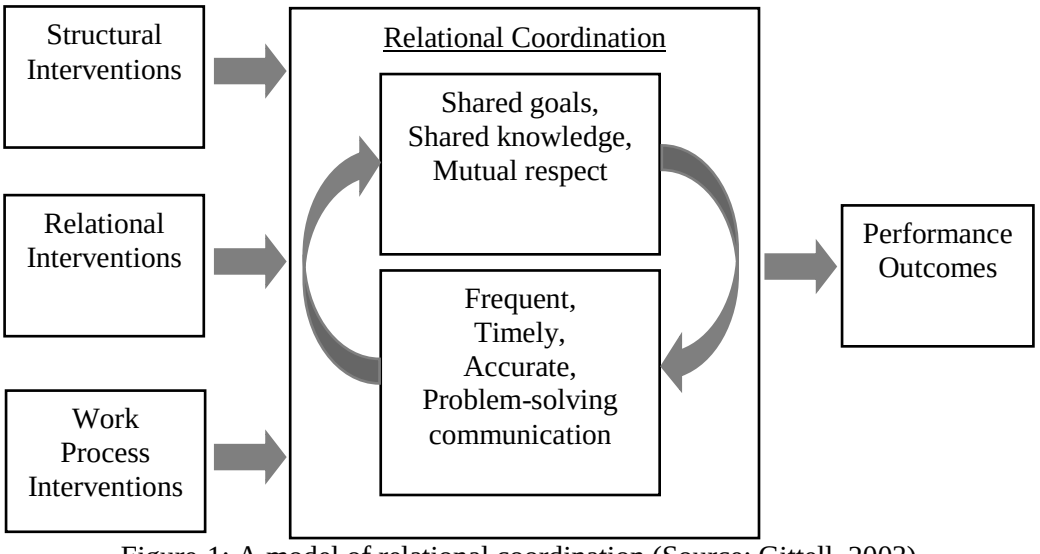

Figure-1: A model of relational coordination (Source: Gittell, 2003)

RCT presents that work performed in organizations results in quality outcomes by means of a reciprocally reinforcing mesh of relationships and that of communication (Gittell,

2003). Increasing levels of task interdependence, time constraints and uncertainty are typical characters of organizational work. Gittell (2011) state that tasks interdependence results in feedback loops among the tasks, thus increased relational coordination is required among the participants for mutually adjusting their activities.RCT specifically proposes that both outcomes of efficiency and quality can concurrently be improved, moving beyond the typically found efficiency and quality tradeoffs. The theory effectively hypothesizes that the quality and efficiency outcomes are simultaneous effected by relational coordination, especially in the conditions of reciprocal interdependence of task, uncertainty of task or input, and time constraints. Positive associations have been established between varied range outcomes (efficiency, quality and worker outcomes) and relational coordination over the years of research (Gittell & Logan, 2014).

2.2 Relational Dimensions

The relational dimensions of RC are work-based ties rather than the personal relationships and are theorized as association among the work roles not the individuals performing the tasks. Relations of shared knowledge &goals, and mutual respect empowerworkers to produce and deliver products or services that best suits customer needs (Coffey, 2015). According to Gittell (2012) these relationships enables employees to form meaningful connections across functional boundaries so that they can coordinate "on the fly" and their capacity to improvise is enhanced whenever required.Shared values and objectives of a workgroup leads to reinforcement of relationships (Hackman, 1990) and increased productivity (Lacayo-Mendoza &Pablos-Heredero, 2016). With shared goals enable participants to communicate and coordinate explicit functional objectives that encourage promote problem-solving. Shared knowledge among group members leads to building trust and teamwork effectiveness (Lacayo-Mendoza &Pablos-Heredero, 2016) and productive interactions (Hoegl&Gemuenden, 2001). Shared knowledge helps participants to see the interrelation of their particular tasks within the paradigm of larger process as a whole and to comprehend the other's role, thus enabling them to communicate accurate information timely. Gittell (2011) state that mutual respect can help remove the barrier of status among participants. It encourages the receptiveness to communication between task performersregardless of their relative position and promote the progression of shared goals and knowledge (Gittell, Beswick, Goldmann, & Wallack, 2014).

2.3 Communication Dimensions

The relational dimensions strengthen and are strengthen by communication dimensions which in turn enhance performance and coordination. Group members should be constantly connected via solid communication channels possible that allow for feedback and solving the problems (Katz &Tushman, 1979; Tushman, & Nadler, 1978). Frequency of the communication foster associations by developing familiarity that results from constant interaction (Gittell, 2012). Team leaders should strive to enhance frequent communication among members (Rogers & Kincaid, 1981). Beside frequency, time of communication is also very important (He, Butler, & King, 2007; Brodbeck, 2001; Pinto, & Pinto, 1990) as achievement of organizational goals depends upon the communication to be taken place in the precise moment (Waller, 1999). In coordinating highly interdependent work, beside frequency and accuracy, timing of communication can be

critical aserrors may be resulted due to delays in communication that may effect organizational outcomes negatively (Gittell, 2012). Timely communication can result in quick responses to information processing, resulting in decreasing delays (Siddique, 2014). Effectivity of coordination is also related to accuracy of communication as well. Relevant and accurate communication is critical for work group effectiveness as it aid in achievement of goals and implementation of HR strategies (Goggin, Bowman, Lester, & O'Toole, 1990). Gittell (2012) stated that inaccurate communication will results either in errors or delays as the process will be halted by the task performer to seek accurate and workable information. Joint problem solving is necessary to solve the problems arose from interdependent tasks, therefore, Gittell (2012) states that problem solving communication is required for effective coordination. Blaming other workgroup members can harm organizational outcomes (Deming, 1986) while problem solving communication can help to adopt positively to unforeseen circumstances (Lacayo-Mendoza &Pablos-Heredero, 2016)

2.4 Relational Coordination and HEIs

Higher levels of relational coordination can result in improvement of academic excellence in higher education institutes. Teaching and learning in HEIs is largely dependent on effective coordination of the employees as this will lead to enhanced knowledge, mutual respect and exchange of ideas (Smith, Rainie, &Zickuhr, 2011). Relational coordination model is successfully applied in various industries like healthcare (Gittell, 2009; Havens, Vasey, Gittell, & LIN, 2010; Gittell, Weinberg, Bennett & Miller, 2008), airline (Gittell, 2001; Gittell, 2006) and banking (Siddique, 2014). In HEIs the role of relational coordination is studied in various contexts such as its relevance to improve competitive position through digital social networks (Lacayo-Mendoza, &Pablos-Heredero, 2016) and the degree of satisfaction of teachers in e-learning context (Margalina, et, al., 2014). Education quality in HEIs is also expected to improve with increased level of relational coordination among members of these organizations (Lacayo-Mendoza, &Pablos-Heredero, 2016).

2.5 Measurement of Relational Coordination

RC can be measured using "The Relational Coordination Survey" (Gittell, 2003) which is a Likert format scale measuring the four communication dimensions ("accuracy, timeliness, frequency of communication and problem-solving communication") and three dimensions of relations ("shared knowledge, shared goals and mutual respect") between workers as they interact on the job. RC is assessed as coordination among roles rather than among the individuals due to the reason that coordination is the organization of interdependencies among work roles, and usually tasks are assigned to people through their roles.

3. Research Methodology

Cross-sectional, descriptive design was used by this study to answer the research questions. Survey design was used to measure the responses of the individuals participating in coordinated tasks with regard to the degree of relational coordination. The level of RC was assessed by surveying the employees coordinating for students' academic success by asking questions about their relationships and communication with other employees participating in that same work process. As the first step a focal work process was selected, which was students' academic success. In the second step

functional groups participating the focal work process were identified as suggested by (Gittell, 2012). While providing quality education many tasks are performed through interaction and coordination of various individuals or group of individuals. Interviews were conducted to identify all functional groups involved in the selected work process. The identified groups included faculty members, program coordinators, head of departments (HODs), top management and administrative staff.

3.1 Population and Sample

The population included professionals working in a reputable private sector HEI providing educations at graduate and under graduate level. Administering the 'Relational Coordination Survey' to all the participants in various functional groups of the focal work process was not feasible due to time and cost constraints. For smaller groups (i.e., HODs, program coordinators and top management) all the participants were surveyed, while for larger groups (i.e., faculty members and administrative staff) a sample of respondents was selected based on simple random sampling after obtaining relevant data of the participants at the site of the study.

3.2 Measures

Relational Coordination was measured using "The Relational Coordination Survey" (Gittell, 2003). The Relational Coordination Survey is used previously in patient care coordination study by Gittell (2009) and Cronbach's alpha was found to be 0.86 (N=338). Evidence from the literature shows that the relational coordination construct is successfully used in medical care (Gittell, Godfrey, &Thistlethwaite, 2013; Gittell, Weinberg, Bennett & Miller, 2008), surgical care (Gittell, 2009), financial sector (Siddique, 2014) and the criminal justice system (Bond & Gittell, 2010). Using the 5-point scale (1 = never; 5 = constantly/always), aggregated higher scores means that better relational coordination exist in interdependent work processes. Scores greater than 4.5 are considered strong while less than 4 are considered weak for within work group relational coordination. For between different work groups, scores greater than 4 are considered strong while less than 3.5 are considered weak.

4. Data Analysis, Results and Discussion

4.1 Computing the RC score

RC scoreswere first computed for each of the respondent, by computing a variable for all the seven dimensions and then computing the aggregation of these individual scores. For dyadic level analysis of relational coordination, five variables were computed for each of the respondent–one for RC with faculty members, another for RC with program coordinators and so on. The aggregation of scores on these new variables were placed into a symmetrical matrix diagram. To avoid biasness, of relational coordination score for the reason of over or under-representation of a group, a weighted RC score, was computed for each functional group following procedure used by (Gittell, 2011).

4.2 Confirmatory Factor Analysis (CFA) and Cronbach's Alpha

Results of CFA advocated that it was better to use relational coordination construct as a single factor. For all the items factor loadings were in acceptable range (.81 to 1.59), thus none of the items were dropped. Chi-square (χ^2=269.84, p=.83), Goodness of Fit Index (GFI=.76), Root Mean Square Error of Approximation (RMSEA=.061), Comparative Fit Index (CFI=.81) and Root Mean Square Residual (RMR=.59) were also within

acceptable ranges. Cronbach's alpha of .87, suggested a high level of reliability for the construct.

4.3 Analyzing the Patterns of Relational Coordination

Patterns of relational coordination were analyzed by developing a Dependency Structure Matrix, as proposed by Sosa, Eppinger& Rowles (2003) which is used to visualize the patterns of relational coordination.

Table-1: Symmetrical Matrix of Relational Coordination Ties

Functional Group	Faculty Member	Program Coordinator	Head of Department	Top Management	Administrative Staff
Faculty Member	**3.537415**	3.170068	3.170068	2.544218	2.265306
Program Coordinator	3.865079	**3.825397**	4.000000	3.198413	2.833333
Head of Department	3.761905	4.238095	**4.047619**	3.523810	2.619048
Top Management	3.761905	3.619048	4.190476	**4.285714**	3.476190
Administrative Staff	2.934066	2.857143	2.780220	2.461538	**2.703297**
Total	3.549107	3.433036	3.502232	2.966518	2.660714

The above matrix diagram shows RC patterns within functional groups and among functional groups i.e., faculty members, program coordinators, head of departments, top management and administrative staff. Within-function ties are highlighted in bold. Scores less than 4 for within-workgroup are considered to be weak and scores greater than 4.5 are considered to be strong (Gittell, 2011). Results shows that within functions relational coordination for Head of Departments (RC= 4.0) and Top Management (RC=4.2) is relatively strong while it is weak for functional groups of Faculty members (RC=3.5) and Program Coordinators (RC=3.8). However, weakest relational coordination is within the functional group of Administrative staff (RC=2.6). Table 1 also shows that relational coordination between functions was relatively lower than the within-function relational coordination.

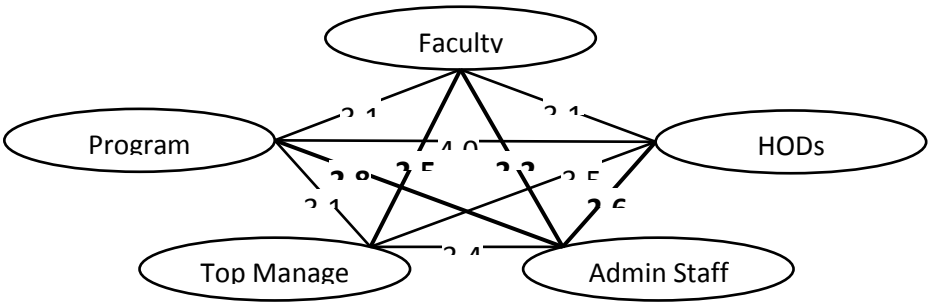

Figure-2: RC between functional groups.

From the results (Table-1) the strength of relational association among functional groups can be observed and the stronger and weakest ties can be assessed. Figure-2 shows that relational coordination is stronger among Program Coordinators and Head of Departments (RC=4), it is relatively weaker between Faculty members and Program Coordinators (RC=3.1), Faculty member and Head of departments (RC=3.1), Program Coordinators and Top Management (3.1) and Top Management and Administrative staff (RC=3.4). However, the weakest relational coordination is between Program Coordinators and Administrative Staff (RC= 2.8), Head of Departments and Administrative Staff (RC= 2.6) and Faculty members and Administrative Staff (2.2). These are the three weakest links, which calls for interventions on part of management of HEIs.

Table 2: Results of ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	10.035	4	2.509	4.294	.004
Within Groups	34.469	59	.584		
Total	44.504	63			

Results of ANOVA

Table-2 provides the results of one-way analysis of variance. The results suggested that the differences in relational coordination between the five functional groups are significant.

Results of t-statistic

Independent sample t-statistic was used to assess the significance of differences at dyadic level i.e., between any two groups.

Table-3: Results of t-statistic

Functional Groups		RC	t	df	Sig. (2-tailed)	Levene's Test	
						F	Sig.
Faculty Members	Program Coordinators	3.17	-2.803**	37	**.008**	2.283	.139
Faculty Members	Head of Departments	3.17	-3.317**	18	**.004**	5.208	.031
Faculty Members	Top Management	2.54	-2.887**	25	**.008**	1.089	.307
Faculty Members	Administrative Staff	2.26	.537	18	.598	6.728	.014
Program Coordinators	Head of Departments	4.00	-.358	22	.724	.893	.355

Program Coordinators	Top Management	3.19	-1.159	22	.259	.020	.888
Program Coordinators	Administrative Staff	2.83	2.298*	16	**.035**	12.25	.002
Head of Departments	Top Management	3.52	-.877	10	.401	3.642	.085
Head of Departments	Administrative Staff	2.62	2.578*	15	**.020**	12.35	.003
Top Management	Administrative Staff	3.47	2.903**	16	**.010**	6.674	.010

Table-3 shows that the differences were significant between all the groups accept for faculty members and administrative staff, program coordinators and head of departments, program coordinators and top management, and head of departments and top management.

5. Limitations and Future Research Directions

This study is not without limitations, which can be addressed by future research. First, the data for this research was gathered from one organization, which raise issues of generalization to other type of organizations. Generalizability may be increased by extending the study to other types of organization settings. Second, the study was based on cross-sectional data, future research might address this issue by experimental and longitudinal designs. Third, the current study's focus is restricted to identification of weak links only, however, future studies can focus on development of specific teamwork and structural interventions. Finally, other studies should replicate this study in other settings and explore the degree of RC in other types of organizations in further detail in those settings.

5.1 Implications and Conclusion

Relational coordination (RC) explain the performance of tasks that are carried out through coordination and communication among several individuals or groups of individuals. This research contributes to literature of relational coordination by exploring it in higher education context of Pakistan. The findings revealed that the level of RC among several groups was significantly lower, which are the weak links. Thus, specific teamwork and structural interventions are required in relation to those groups to increase the level of relational coordination.

References

Bond, B., &Gittell J. H. (2010). Cross-Agency Coordination of Offender Reentry: Testing Outcomes of Collaboration Policies. *Journal of Criminal Justice*.

Brodbeck, F. C. (2001). Communication and performance in software development projects. *European Journal of Work and Organizational Psychology*, *10*(1), 73-94.

Coffey, M. (2015). *Relational Coordination: An Exploration of Nursing Units, an Emergency Department and In-Patient Transfers* (Doctoral dissertation). Virginia Commonwealth University Richmond, Virginia.

Edwards, D. W. (1986). Out of the Crisis. *MIT Center for Advanced Engineering Study*.

Gittell, J. H. (2001). Supervisory span, relational coordination and flight departure performance: A reassessment of postbureaucracy theory. *Organization Science*, *12*(4), 468-483.
Gittell, J. H. (2003). A theory of relational coordination. *Positive organizational scholarship: Foundations of a new discipline*, 279-295.
Gittell, J. H. (2006). Relational coordination: coordinating work through relationships of shared goals, shared knowledge and mutual respect. *Relational perspectives in organizational studies: A research companion*, 74-94.
Gittell, J. H. (2009). *High performance healthcare: Using the power of relationships to achieve quality, efficiency and resilience*. New York: McGraw-Hill.
Gittell, J. H. (2011). Relational coordination: Guidelines for theory, measurement and analysis. *Waltham, MA: Brandeis University*.
Gittell, J. H., & Logan, C. (2015). Outcomes and Predictors of Relational Coordination: Empirical Assessment of an Emerging HRM Theory. *Unpublished manuscript*.
Gittell, J. H., Beswick, J., Goldmann, D., Wallack, S. (2014). Teamwork Methodologies for Accountable Care: Relational Coordination and Team STEPPS. *Health Care Management Review.*
Gittell, J. H., Godfrey, M., &Thistlethwaite, J. (2013). Interprofessional collaborative practice and relational coordination: improving healthcare through relationships.
Gittell, J. H., Weinberg, D., Bennett, A., & Miller, J. A. (2008). Is the Doctor In? A Relational Approach to Job Design and the Coordination of Work. Human Resource Management, 47(4), pp. 729-755.
Goggin, M. L., Bowman, A. O. M., Lester, J. P., & O'Toole Jr, L. J. (1990). Implementation theory and practice: Toward a third generation. Glenview, IL: Scott, Foresman.
Hackman, J. R. (1990). *Groups that work and those that don't*(No. E10 H123). Jossey-Bass.
Hoegl, M., &Gemuenden, H. G. (2001). Teamwork quality and the success of innovative projects: A theoretical concept and empirical evidence. *Organization science*, *12*(4), 435-449.
Havens, D. S., Vasey, J., Gittell, J. H., & LIN, W. T. (2010). Relational coordination among nurses and other providers: impact on the quality of patient care. *Journal of nursing management*, *18*(8), 926-937.
He, J., Butler, B. S., & King, W. R. (2007). Team cognition: Development and evolution in software project teams. *Journal of Management Information Systems*, *24*(2), 261-292.
Kamatchi T., Selwin, M., & Prasad, K. R. (2015). Measuring of Hypothesis and Questionnaire Framework by Effect of Relational Coordination Issues in Health Care System. *Intl. Journal of Innovative Research in Science, Engineering and Technology, 4*(3).
Katz, R., &Tushman, M. (1979). Communication patterns, project performance, and task characteristics: An empirical evaluation and integration in an R&D setting. *Organizational behavior and human performance*, *23*(2), 139-162.
Lacayo-Mendoza, A., &Pablos-Heredero, C. D. (2016). Managing relationships and communications in higher education efficiently through digital social networks: The importance of the relational coordination model. *Dyna*, *83*(195), 138-146.

Margalina, V. M., de PablosHeredero, C., Botella, J. L. M., & Martinez, A. R. G. (2014). The role of relational coordination in final teacher satisfaction in e-learning. *Procedia Technology*, *16*, 365-375.

Pinto, M. B., & Pinto, J. K. (1990). Project team communication and cross- functional cooperation in new program development. *Journal of Product Innovation Management: An Intl. Publication of the Product Development & Management Association*, *7*(3), 200-212.

Rogers, E. M., & Kincaid, D. L. (1981). Communication networks: Toward a new paradigm for research.

Siddique, M. (2014). *Exploring the Linkages between High Performance Work Systems and Organizational Performance: The Role of Relational Coordination in the Banking Sector of Pakistan* (Doctoral dissertation).Newcastle University Business School, UK.

Smith, A., Rainie, L., &Zickuhr, K. (2011). College students and technology. Pew Internet and American Life Project.

http://www.pewinternet.org/2011/07/19/college-students-andtechnology.

Sosa, M. E., Eppinger, S. D., & Rowles, C. M. (2003). Identifying modular and integrative systems and their impact on design team interactions. *Journal of Mechanical Design*, *125*(2).

Tushman, M. L., & Nadler, D. A. (1978). Information processing as an integrating concept in organizational design. *Academy of management review*, *3*(3), 613-624.

Waller, M. J. (1999). The timing of adaptive group responses to non-routine events. *Academy of Management journal*, *42*(2), 127-137.