

## A STUDY ON THE ROLE OF LINGUISTIC ACTION IN PROJECT MANAGEMENT IN INFORMATION TECHNOLOGY SECTOR

S.S.Venkata Subramanian<sup>1</sup> and D.Nedunchezhiyan<sup>2</sup>

<sup>1,2</sup>Centre for Advanced Studies in Linguistics, Annamalai University, Chidambaram, Tamilnadu

<sup>1</sup>venkatasubramanian67@gmail.com

### ABSTRACT

*This paper evaluates the role of linguistic action in project management in Information Technology (IT) sector. Linguistic actions describe about the human processes, role of communication and project delivery. All the projects executed in the IT sector are either based on IT infrastructure management or software development projects. In all projects there will be multiple individuals who work together to achieve the project goals. Linguistic action provides an explanation for conversational nature of design, planning and coordination. Chi-Square test and percentage analysis have been used in this study to analyse the role of linguistic action in IT project management in Chennai.*

**Keywords:** Linguistic action, Information Technology, Project management, Chi-square test

### Introduction

Project management varies across different industries since the nature of work involves is different. Though in manufacturing sectors, the project work executed by the individuals may be identical, the nature of tasks will be different since the project is executed for a particular business will have a specific objective. In IT projects, the work involves around developing IT infrastructure or software development based on the customer's requirement. In all sectors, projects are executed by human resources. A typical project involves planning, designing, execution and testing. Simultaneously project monitoring is also carried out to ensure that the tasks are completed on time. According to Fernando Flores, project management involves the work of business in making and keeping commitments. According to him, making and keeping commitments is grounded in the theory of linguistic action. In this paper, the researchers explains the linguistic action and how it interrelates, aligns and supports project delivery.

All projects involves coordination and communication. In project execution, the human resources do more than a mere coordination. Linguistic action goes beyond coordination. According to Flores, there will be a grammar of action and conversation for action. In IT sector, the project comes into existence, when the head of the projects declares that there is a project kick off. There are a set of promises made to the customer for this project. Planning continues during the

entire life cycle of the project in order to effective handle issues, risks and cost. The project end result if critical for the success of the project. The customer must be satisfied that their project objectives are fulfilled. A project manager can state that;

- a. I am competent to handle the project.
- b. I have prepared a schedule and the final delivery will take so much days

Based on the schedule, tasks are assigned to the team. When the task is assigned they communicate with the team and also motivate them to solve the issues and ensure that the tasks are completed on time. In the project each resource will have different skill sets. Moods of individual resources do change every time. Mood can be either physiological or linguistic. Mood can be assessed by understanding the conversation that emanates from the mood. Overall the linguistic action factor in project management involves leadership, quality assurance, managing risks and cost, training and monitoring.

### Statement of the Problem

Human resources play are important role in project management, hence factors that contribute to linguistic action needs to be studied

### Objectives of the study

1. Evaluate the factors that contributes to the linguistic action in project management
2. Evaluate the satisfaction level of the human resources towards the factors that contribute to linguistic action

3. Evaluate the communication skills of the employees
4. Provide recommendations for improving the linguistic competence of the employees.

### Scope of the Study

1. Linguistic action forms an important aspect of IT project management
2. Factors that contribute to linguistic action enables human resources to deliver their projects on time
3. Organisation's project management practices are based on baselined practices and will have an impact based on human resources mood, handling independent tasks and decision making

### Review of Literature

Linguistic action is in relation to other human characteristics. This implies an interdisciplinary approach with language as its focus, using subjects like psychology, sociology and neurophysiology in order to get a better picture of language and the uses of language. Communication and especially linguistic communication is one of the most important factors behind the development and change of emotions and attitudes. Linguistic description depends on a 'convention based Prescriptive reconstruction. What a person believes to be correct will then in turn often govern how he behaves, and it is only in this way that linguistic description reflects actual linguistic behavior. All human beings are agents and their behavior is specific to the situation. During work individuals conform to the social norm. A connection between interaction and coordination in order to achieve the common objective can be summarized as "striving to achieve the same purpose and they trust each other". Hal Macomber et al, has explained the five aspects of linguistic actions perspective namely, coordination, assessments, discourse, trust and mood.

### Research Methodology

1. The study has been carried out in Information Technology company in Chennai. Primary data was collected based on a questionnaire. Regarding secondary data, articles appeared in journals were used to understand the concept and the same has been applied for the present study. The study covered both male and female gender. Random sampling was deployed for the study and the questionnaire was circulated to 100 respondents comprising of Project Managers, Project Leaders and Software Engineers. The questionnaire was pretested with the same set of questions to the same group of respondents.

### Data Analysis

The data obtained through the questionnaire was segregated based on gender based on a five point Likert scale and the following analysis has been carried out

- a) Analysis based on percentage
- b) Chi square testing
- c) Analysis of Variance (ANOVA)

### Limitations of the Study

The study is limited to IT companies in Chennai only and therefore, the findings of the study cannot be extended to other areas. Also each IT company has a specific domain area and the findings cannot be extended to other IT companies. All the findings and observations made in the study are purely based on the respondents' answers which may be biased.

### Hypothesis for the Study

1. There is no relationship between the factors contributing to linguistic action and project management
2. There is no relationship between linguistic action and project execution
3. There is no linguistic relationship between linguistic action and project delivery
4. There is no relationship between linguistic action and workflow reliability

### Analysis and Interpretation

Table 1

Designation	Number of employees	Percentage %
Project Manager	10	10
Project Leader	34	34
Software Engineer	56	56
Total	100	100

From the above table, it can be inferred that 56% of the respondents are project leaders and 10% of the respondents are team members, 34% of the respondents are project managers.

Table 1 a

Designation	Male	Female
Project Manager	4	6
Project Leader	20	14
Software Engineer	36	20
Total	60	40

Table 2

Groups in the project team	Number of employees	Percentage %
Software Design	8	8
Database Design	4	4
Programmer (Coding)	82	82
Tester	6	6
Total	100	100

From the above table, it can be inferred that 82% of the respondents are part of coding group, 8% of the respondents are working in software design, 6% of the respondents are working as software tester, 4% of the respondents are working as part of database design group.

**Age of Project team**

The age of the project team members are mentioned in Table 3

Table 3

Age of team members	Number of employees	Percentage %
25- 30 years	55	55
31- 35 years	25	25
36 - 40 years	10	10
> 40 years	10	10
Total	100	100

From the above table, it can be inferred that 55% of the respondents are in the age group of 25 to 30 years, 25% of the respondents are in the age group of 30 to 35 years, 20% of the respondents constitute the age group of 35 years and above

**Experience details**

The experience of the resources in terms of years of experience are captured in Table 4

Table 4

Years of service	Number of employees	Percentage %
< 5	30	30
6 - 10	12	12
11 - 15	40	40
> 15	18	18
Total	100	100

From the above table, it can be inferred that 40% of the respondents come under 11- 15 years of service, 30% of the respondents comes under less than 5 years of service, 18% of the respondents have greater than 15 years of

service, 12 %of the respondents have 6-10 years of service  
Table 5 provided the details of experience of Male and Female employees.

**Total male respondents: 60**

S.No	Experience	Male respondent	Percentage %
1	< 5	25	42
2	6 - 10	30	50
3	11 - 15	3	5
4	> 15	2	3

Table 5(a).

**Total female respondents: 40**

S.No	Experience	Female respondent	Percentage %
1	< 5	14	35
2	6 - 10	19	48
3	11 - 15	7	17

Table 5(b).

Table 5(a) and Table 5(b) provides the details of the male and female employees containing the details of years of experience

**Educational Qualifications**

Details of educational qualifications are shown in Table 6

Table 6

Education	Number of employees	Percentage%
B.Tech	30	30
BSc Computer Science	12	12
MCA	40	40
M.Sc IT	18	18
Total	100	100

From the above table, it can be inferred that 40% of the respondents possess MCA, 30% of the respondents have B.Tech degree across multiple disciplines, 18% of the respondents have post graduate degree in IT, 12 % of the respondents have graduate degree in computer science.

**Analysis based on questionnaire**

Questionnaire was provided to the project team to elicit details regarding the contribution of the linguistic action factors in project management in a five point scale. The linguistic action factors considered for the study includes Leadership, Quality Assurance, Risk and Cost, Training and project monitoring. The overall rating for the linguistic actions in project management are captured in Table 7

Table 7

Linguistic action factors in project management	Number of employees	Percentage %
Highly Satisfied	39	39
Satisfied	50	50
Neutral	9	9
Dissatisfied	1	1
Highly Dissatisfied	1	1
Total	100	100

From the above table, it can be inferred that 50% of the respondents are satisfied with the linguistic action factors, 39% of the respondents are highly satisfied with the linguistic action factors, 9% of the respondents

were neutral and 1% of the respondent were dissatisfied. Project Management involves multiple set of activities. Project management include project coordination, project execution, project delivery and workflow reliability.

Communication is essential part of project management. Communication should be provided to all stakeholders so that they are aware of the milestones and their corresponding deliverables. Sometimes project billing is also based on completion of milestones. Communication should be provided to relevant stakeholders indicating the project delivery status. One more aspect of project communication is that certain communication should be addressed to the particular group alone. For example, billing related communication should be sent to the personnel involved in contract management and need not be sent to all stakeholders. Communication competence is essential during the entire life cycle of the project. During the coding phase, the software engineer develops

the algorithm for the desired functionality in the software application. When the functionality gets modified, the code also needs to be modified. When the code is modified, the software engineer needs to mention under the “comments” placeholder the details of the changes carried out and also the details. This will enable the other person reading the code to understand the application logic. Thus linguistic competence is essential in the IT sector. If the engineer writes an incorrect comment/irrelevant comment, the entire business logic will be misunderstood by the other person leading to the collapse of the business application. The feedback of the respondents with respect to the importance of communication and coordination is provide in Table 8.

Table 8

Coordination and Communication during project execution	Number of employees	Percentage %
Highly Satisfied	35	35
Satisfied	45	45
Neutral	17	17
Dissatisfied	1	1
Highly Dissatisfied	2	2
Total	100	100

From the above table, it is inferred that 45% of the respondents are satisfied with the coordination during project execution, 35% of the respondents are highly satisfied. 17% of the respondents were neutral, 2% of the respondents were highly dissatisfied and 1% of the respondent was dissatisfied with the coordination during the execution of the project.

**Chi-Square Test**

Chi- square test was carried out to test the hypothesis of the study. Here SA indicates – Strongly agree, A- Agree, N-Neutral, D- Disagree, SD- Strongly disagree.

**I.Relationship Between Factors Contributing To Linguistic Action And Project Management**

Null Hypothesis (H<sub>0</sub>): There is no relationship between the factors contributing to linguistic action and project management

Table 9

Linguistic action factors	Project Management					Total
	SA	A	N	D	SD	
Project Leadership	6	18	5	3	1	33
Quality Assurance	4	6	2	2	1	15
Managing Risk and Cost	14	12	9	2	1	38
Training	4	2	1	1	1	9
Monitoring	1	1	1	1	1	5
Total	29	39	18	9	5	100

The test details are mentioned below

Calculated chi square value for degree of freedom 16 with  $\alpha = 0.05$  is 13.31 and P value is 0.6498

The table value for chi square 16 degrees of freedom at 5% level of significance is 26.29, since the calculated value is less than the table value, the null hypothesis is accepted. Hence we can infer that there is no relationship

between factors contributing to linguistic action and project management.

## II. Relationship Between Linguistic Action And Project Execution

Null Hypothesis ( $H_0$ ): There is no relationship between the factors contributing to linguistic action and project execution

Table 10

Linguistic action factors	Project Execution					
	SA	A	N	D	SD	Total
Project Leadership	20	8	3	2	0	33
Quality Assurance	11	3	1	0	1	16
Managing Risk and Cost	22	14	4	0	0	40
Training	4	3	3	0	0	10
Monitoring	0	0	1	0	0	1
Total	57	28	12	2	1	100

Calculated chi square value for degree of freedom 16 with  $\alpha = 0.05$  is 22.48 and P value is 0.1281

The table value for chi square 16 degrees of freedom at 5% level of significance is 26.29, since the calculated value is less than the table value, the null hypothesis is accepted. Hence we can infer that there is no relationship

between the linguistic factors and project execution.

## III. Relationship Between Factors Contributing The Linguistic Action And Project Delivery

Null Hypothesis ( $H_0$ ): There is no relationship between the factors contributing to linguistic action and project delivery.

Table 11

Linguistic action factors	Project Delivery					
	SA	A	N	D	SD	Total
Project Leadership	8	13	8	2	2	33
Quality Assurance	4	6	4	1	1	16
Managing Risk and Cost	10	17	10	1	2	40
Training	4	3	2	0	1	10
Monitoring	0	1	0	0	0	1
Total	26	40	24	4	6	100

Calculated chi square value for degree of freedom 16 with  $\alpha = 0.05$  is 4.25 and P value is 0.9983

The table value of chi square 16 degrees of freedom at 5% level of significance is 26.29, since the calculated value is less than the table value, the null hypothesis is accepted. Hence we can infer that there is no relationship between linguistic factors and project delivery

## IV. Relationship Between Factors Contributing The Linguistic Action And Workflow Reliability

Null Hypothesis ( $H_0$ ): There is no relationship between the factors contributing to linguistic action factors and workflow reliability.

Table 12

Linguistic action factors	Workflow Reliability					
	SA	A	N	D	SD	Total
Project Leadership	8	17	8	0	0	33
Quality Assurance	5	7	3	0	1	16
Managing Risk and Cost	16	15	8	0	1	40
Training	5	4	0	1	0	10
Monitoring	1	0	0	0	0	1
Total	35	43	19	1	2	100

Calculated chi square value for degree of freedom 16 with alpha = 0.05 is 18.54 and P value is 0.2929

The table value of chi square 16 degrees of freedom at 5% level of significance is 26.29, since the calculated value is less than the table value, the null hypothesis is accepted. Hence we can infer that there is no relationship between linguistic factors and workflow reliability.

**ANOVA Test**

One way Analysis of Variance Test (ANOVA) has been carried out in order to find the relationship between the linguistic action factors and Project Management, Project Execution, Project Delivery and Workflow Reliability

**ANOVA I – Relationship between linguistic action factors and Project Management**

Table 13

	SS	df	MS	F	p
Between Groups	520.522	4	130.1	4.494	0.002
Within Groups	2,750.87	95	28.96		
Total	3,271.39	99			

**Inference**

The P value is 0.002 which is less than the 5% level of significance which is 0.05 and it is significant.

**ANOVA II – Relationship between linguistic action factors and Project Execution**

Table 14

	SS	df	MS	F	p
Between Groups	490.114	4	122.5	1.919	0.113
Within Groups	6,064.35	95	63.84		
Tota	6,554.47	99			

**Inference**

The P value is 0.113 which is greater than the 5% level of significance which is 0.05 and it is insignificant.

**ANOVA III – Relationship between linguistic action factors and Project Delivery**

Table 15

	SS	df	MS	F	p
Between Groups	490.114	4	122.5	4.692	0.002
Within Groups	2,481.05	95	26.12		
Total	2,971.16	99			

**Inference**

The P value is 0.002 which is less than the 5% level of significance which is 0.05 and it is significant.

**ANOVA IV – Relationship between linguistic action factors and Workflow Reliability**

Table 16

	SS	df	MS	F	p
Between Groups	490.114	4	122.5	2.938	0.024
Within Groups	3,962.06	95	41.71		
Total:	4,452.17	99			

### Inference

The P value is 0.024 which is less than the 5% level of significance which is 0.05 and it is significant.

### Summary and Conclusion

Project execution in IT is always a challenge. The use of linguistic action to manage the project paves the way for linking linguistic and management with specific reference to project management. Linguistic ability is a key for communication and it contributes to the success of the project. The linguistic actions factors explored in this paper explains how the human resources collaborate to produce the desired output in IT project. In IT sector relationship between different team members is crucial for the success of the project. Linguistic action can be applied across all projects. This will enable to enrich knowledge management. Linguistic action factors are common across human resource management and project management. Communication is a key for successful IT project management. Whenever there are change requests for the IT Applications, the changes needs to be evaluated and negotiated before acceptance. The entire concept of coordination and human action is involved during the entire phase of project life cycle. There will be numerous interactions within the team as well as with the customers. The researcher has studied the the role of

linguistic action in an IT sector which has all types of projects namely software development, software maintenance and technical support. The data presented is based on multiple technologies followed in the organisations. With respect to communication and coordination, only 80% of the respondents are either satisfied/highly satisfied. The remaining of 20% of the respondents differ in their opinion. This is an important area that needs to be addressed since communication forms the bedrock of IT project. IN order to improve the communication competence, the employees should be provided soft skills training in a defined frequency. Communication competence also includes linguistic competence in terms of usage of words, vocabulary, tone and expression. The organization should plan for in-house sessions to assess the employees using role play. The resources who perform coding tasks don't get sufficient opportunity to communicate in a formal manner. They either communicate in local/native language. As a result their communication competence is less compared to other team members who perform different set of tasks. The study should be conducted across different verticals in the organization in order to understand the contribution of linguistic action factors across vertical and different projects.

### References

1. Budd, M., and Rothstein, L., (2000). You Are What You Say. Crown Publishers.
2. C.R Kothari (1990), Research Methodology, Second revised – edition, New Age international (P) Limited, Publishers, New Delhi
3. C.B. Memorial (1993), Personnel Management. Eleventh– edition, Himalayan Publications.
4. Denning, P., and Medina-Mora, R., (1995) "Case Study: George Mason University" in NewTools for New Times: The Workflow Paradigm, Layna Fischer, Editor. Future Strategies.pp. 59-73.
5. Goldratt, E. and Cox, J. (1986). The Goal: a process of ongoing improvement. North River Press, New York, NY, 274 pp.
6. Jerald Greenberg – A. Baron Robert (2003), Behavior in Organizations, Seventh – edition, Prentice Hall of India Pvt. Ltd., New Delhi.

7. Levin Richard, David S. Rubin (2002),  
Statistics for Management, Seventh – edition,  
Prentice Hall of India Pvt.Ltd., New Delhi.  
8. Macomber, H. & Howell, G. A. 2003,  
'Linguistic Action: Contributing to the Theory  
of Lean Construction' In:, 11th Annual

- Conference of the International Group for Lean  
Construction. Virginia, USA  
9. Solomon, R., Flores, F., (2001). Building  
Trust in Business, Politics, Relationships, and  
Life. Oxford University Press, p. 14.