Project Success Criteria Preferences

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Research on projects and their success have pondered on many dimensions related to the management of projects in various sectors and the resultant outcomes. Project success studies concentrated on management systems in place for projects as well as the benefits realized due to projects and programs. Project success in the perspective of various stakeholders differs from each other and this is largely due to the success criteria each consider while evaluating/ judging the success of projects. This study is a pilot that tries to capture the preferences of workforce related to success criteria for projectsin their respective work areas.

Keywords : Project Success, Project management success, Success factors, Success criteria, Performance measurement

Introduction

This paper draws inspiration from Atkinson's paper titled "Project management: cost time and quality two best guesses and a phenomenon, it's time to accept other success criteria" (Atkinson, 1999) which dwells on the need to adopt additional success criteria for projects than just the major three criteria generally referred as the 'Iron Triangle' – time, cost, quality and eventually puts forward a method called the "square route" with additional considerations towards project success criteria.

This paper forms part of the Ph.D. research on success factors in planning of infrastructure projects and is an initial portrayal of the preferences of project professionals in India about success criteria in projects.

Project Success and Project Management Success

Project success as a topic of research was studied for the past few decades. (Baker, Fischer, & Murphy, 1974) studied effectiveness of projects to determine those factors which affect project performance and to distinguish between those factors which improve success and those which cause failure. The notion during early years was that if the project finished on time, near the budget cost and performed as envisaged, it was considered successful. Considerations like client satisfaction came into picture later (Pinto & Slevin, 1988). Researchers all over the world have differentiated project success from success of project management process and pointed to the fact that an overall success in the project management process does not ensure a successful project and that poor performance in terms of project management performance measurement need not indicate a project failure (de Wit, 1988; Munns & Bjeirmi, 1996) . Baccarini states that project management success is measured in terms of internal factors (cost-time-quality) whereas achieving product success is concerned with project's external effectiveness. Product success is of higher order, project management success is subordinate to product success. (Baccarini, 1999). Delivering project success is more difficult than delivering project management success. Goals and methods are liable to change whereas project management success is based on predetermined goals (Cooke-Davies, 2002)

Success Criteria and Success Factors

Success criteria refer to the measurement of project success whereas success factors refer to the those inputs to management system that lead directly / indirectly to the success of project / business. (Cooke-Davies, 2002). Critical success factors are those few things that must go well to ensure success for a manager or an organization ... (Boynton & Zmud, 1986). Critical Success Factors (CSFs) are the limited number of areas in which satisfactory results will ensure successful competitive performance for the individual, department or organization. CSFs are the few key areas where "things must go right" for the business to flourish and for the manager's goals to be attained. (Bullen& Rockart, 1981)

Project performance over the years is habitually measured in terms of the management factors referred to as "iron triangle" comprising cost, time and quality factors (Atkinson, 1999). Many researchers have pointed out the role and use of these criteria in the management of project execution and also highlighted the cons of using these criteria alone as a means of project success measurement. Hard factors like cost, time, quality are relatively easy to measure. Soft factors like happiness, job satisfaction, enhanced reputation are subtle and difficult to measure. (Baccarini, 1999).

Success of project means different things for different people (Shenhar, Dvir, Levy, & Maltz, 2001). Different stakeholders based on their interests / involvement in the project during particular project phases have their own views on success of the project,

Some researchers suggested that project success criteria should be specific to each project and that they should therefore be determined by stakeholders at the start of

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each project. Critical Success Factors are those components that are necessary to deliver the success criteria and can be described as the set of situations, factors or actions that contribute to the final results or the achievement of success criteria (Gomes & Romão, 2016).

Methodology and Analysis

Project Success Criteria obtained from literature and authors' own experience in public infrastructure projects formed the basis for choosing the twelve success criteria which were included in the study. An online questionnaire-based survey was conducted, the respondents targeted were employees in their mid-career level for various industry segments with experience above10years in their respective work streams. Convenience sampling was adopted for collection of responses and eventually it was observed that few respondents were having lesser experience. Data on success criteria with respect to the perceived importance and perceived difficulty in achieving the criteria was collected from the respondents and analysis of preferences for success criteria among respondents is included here.

Success criteria that were considered for the survey are :

- Projects are completed on-time or ahead of time (Time)
- Projects are completed within budget (Cost)
- Projects is executed as originally planned (Scope)
- Customers / users are happy about the project (Customer satisfaction)
- Project meets / exceeds the expected benefits (Benefit Assessment)
- Project is profitable (Profitability)
- Project is innovative / brings something new (Innovation)
- Project does not have any adverse effects on society and surroundings (Environmental and Social safeguards)
- Project outsmarts competition (Uniqueness)
- Project involved use of new / improved technology (Technology focus)
- Project sticked to its original plan throughout the time-frame (Variations)
- There are no adverse comments on the project from any of the stakeholders (Stakeholder coordination / Stakeholder integration)

A total of 84 completed responses were obtained, partially completed responses were separated out prior to the analysis. Respondents belong to various industry sectors, currently employed at different hierarchical levels in their organisations. Respondents were mostly from South India which also included expatriate professionals belonging to the region while few responses received from other cities. The geographical breakup of respondents is provided Table – 1 below:

Table-1 : City-Wise Split-up of Respondents

City/ Geography	No. of Responses
Kerala (Thiruvananthapuram, Kochi, Kozhikode, Kollam, Kottayam, Thrissur, Palakkad, Payyannur)	21
Tamilnadu(Chennai, Coimbatore)	5
Bangalore	16
Hyderabad	4
Mumbai & Pune	10
Kolkata	4
Ranchi	2
Other cities(Anand, Bhilai, Barmer,Davangere, Jamshedpur, Raipur, Vadodara)	7
Middle East (Dubai, Abudhabi, Doha, Kuwait)	12
London	1
US	1
Singapore	1
TOTAL	84

Information from respondent profile shows that average age is 40.8 years and average years of experience of 16.5 years. An industry split-up of the respondents is shown in Figure 1 below, the data shows that there are respondents from a minimum of 12 industry sectors of which Engineering (Non IT) sector has the maximum of about 31% respondents. A maximum of 33% respondents have identified themselves as professionals while managers account for 23% and consultants / advisors 15%. Among them, all managers and consultants have expressed involvement in projects whereas 93% of respondents categorised as professionals involved in projects. Overall, there is 94% involvement in projects.

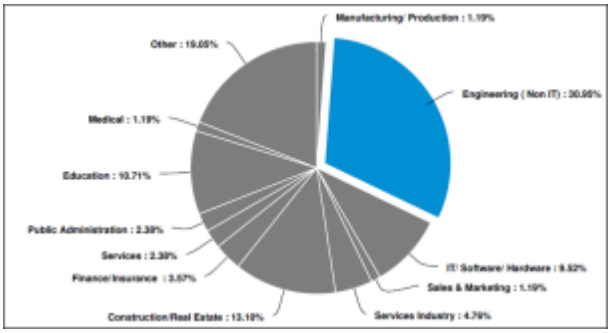

Figure 1 : Industry wise split-up for respondents

The questionnaire enabled respondents to select their choice of success criteria from the provided list of 12 criteria and also to select those success factors which they feel are more difficult to achieve. In addition, a qualitative rating for the level of importance and level of difficulty for the selected success criteria on a three-point scale was also gathered. As shown inFigure-2 below, it can be seen that on-time completion (61%) is selected as the most important success criteria followed by within budget, execution as planned and user satisfaction (all the three in the range 52%-53%) whereas in terms of difficulty in achievement, both on-time completion and within budget are selected as critical by maximum number of respondents. In addition, other success criteria like user satisfaction, meeting expected benefit and innovation are also given some focus.

Figure-2 below shows a plot of the success criteria selection along with perception on the difficulty in achieving success with respect to the particular criteria, it can be observed that the preference towards the success criteria by the respondents and their assessment of difficulty for achievement of the particular criteria shows a similar trend. A relation between the two variables is a possibility based on the available variation pattern. The present study explores the basic preferences on success criteria and therefore is not in a position to comment on this aspect. It is expected that further analysis on the same could throw some light.

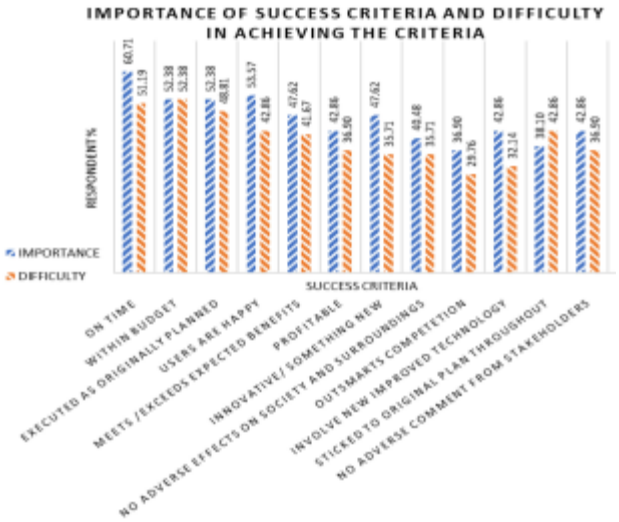

Figure 2 : Selection of success criteria based on importance and difficulty

Regional preferences for success criteria

A comparison on the collected data on a regional basis was carried out. From Table-1 above, we can see that 25% of the respondents are from Kerala (21 Nos), 19% respondents from Bangalore (16 Nos) whereas 12 respondents (14%) from Middle east cities (Dubai, Abudhabi, Doha and Kuwait). The selection also assumes significance considering that respondents from Kerala are from smaller cities / towns which could be considered as semi-urban whereas both Bangalore and Middle east cities are categorised as world cities(Sassen, 1991). Table-2 below gives a comparison of the basic respondent characteristics. It could be seen that a comparatively substantial representation from Non IT engineering professionals in the sample considering the total sample as well as regional split-up (> 30 % overall and upto 47% for Kerala). This suggests that the success criteria selection could possibly have a bias towards Engineering (Non IT) projects. The fact that the present study is intended to aid the' research on project success in infrastructure project planning(Kothandath, 2017)could possibly add another reason for the biased sample.

Table -2 : Comparison of Respondent Characteristics by Region

	Kerala	Bangalore	Middle East	Total
Response Count	21	16	12	84
Avg. Age (years	42.1	35.9	39.9	40.8
Avg. Experience (Years)	17.5	12.3	16.3	16.5
Sector with most responses and % share of total	Engineering (Non IT) 47.6%	Engineering (Non IT) 37.5%	Engineering (Non IT) 41.7%	Engineering (Non IT) 30.9%
Involvement in projects	100%	93.7	91.7%	94%

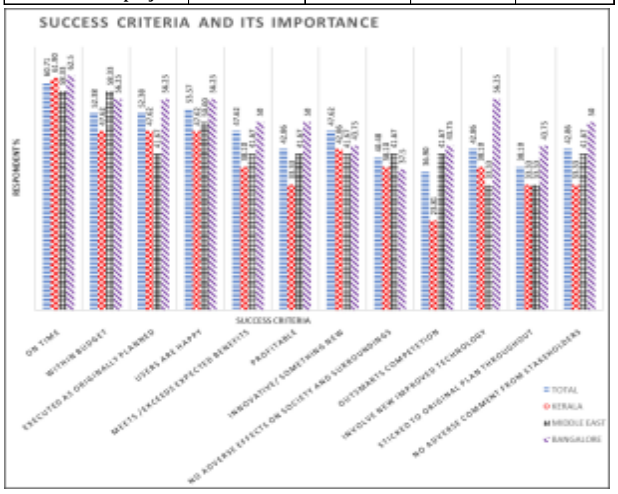

Figure 3 : Selection of success criteria based on importance - Comparison of regions

A plot of regional comparison with regards to the selection of success criteria and perceived difficulty in achieving the particular criteria for the four regions in Table 2 is provided in Figure 3 and Figure 4 respectively. 'On time completion' is selected as the most important criteria in all the regions followed mostly by 'within budget' and 'user satisfaction', a general similarity in preferences is found along with some unique preferences. For instance, a clear preference towards 'user satisfaction' and 'new technology' can be found for Bangalore.

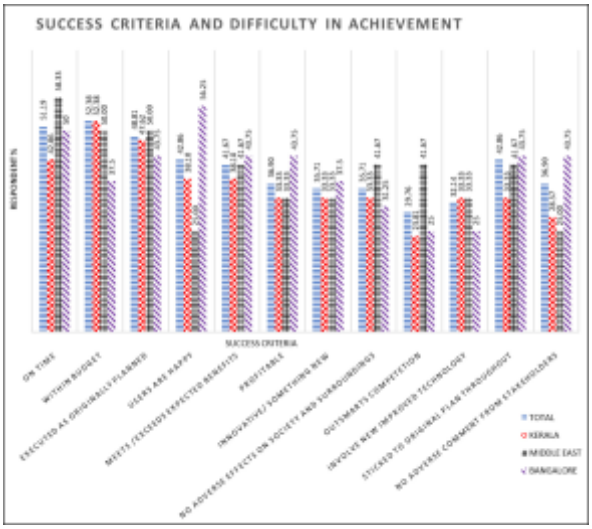

Figure 4 : Selection of success criteria based on its difficulty - Comparison of regions

Sectoral preferences for success criteria

A comparison of the characteristics and success criteria preferences for the main sector to the other sectors combined was carried out to explore any major visible differences. In this analysis, major sector considered is samples from Engineering (Non IT) and Construction / Real Estate sectors put together with a total of 37 responses. Other sectors combined accounts for the balance 47 responses. Table 3 compares the basic characteristics of the two categories along with the overall data.

Table-3 : Comparison of respondent characteristics by sector

	Engineering (Non IT) and Construction/ Real Estate (A)	All Sectors except (A)	Total (All sectors)
Response Count	37	47	84
Avg. Age (years	41.8	40.1	40.8
Avg. Experience (Years)	17.6	15.7	16.5
Involvement in projects	96%	91%	94%

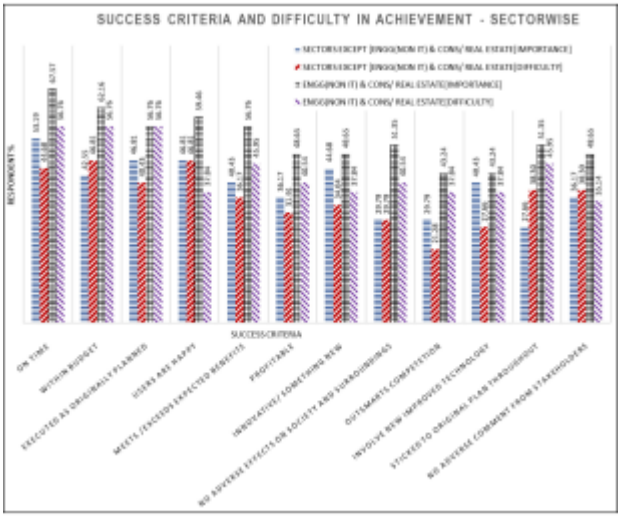

Figure 5 : Sector comparison of success criteria and difficulty in achievement.

A comparison of the preferences for the sectors is plotted in Figure 5, the first two columns in the chart for importance of success criteria and corresponding difficulty in achievement for other sectors and the third and fourth columns representing importance of success criteria and corresponding difficulty for the main (Engg.+ Construction) sector. The chart shows substantial difference in the levels for both the variables across all the 12 success criteria. More importance to the success criteria in the major sector is indicated by the comparatively higher preference whereas for the other sectors relative importance is less for most of the criteria. 'On time completion' and 'user satisfaction' are the two important criteria for the other sectors. A similar variation is observed in the difficulty level assessment. Another observation is that despite the substantial difference in preferences between the sectors, there is good similarity between the responses for importance of success criteria and difficulty in achievement i.e., Columns 1 and 2 have a similar trend, similar is the comparison for Column3 and Column 4. The perception on importance of the success criteria and its difficulty level follows a similar pattern in the overall as well as regional and sectoral analyses suggesting the possibility of a relation between the two. However, the current analysis is not in a position to suggest on this, further study will be required to explore this aspect

It could be argued that success criteria considerations are of a wider spectrum in physical infrastructure projects whereas in comparison, success could be judged reasonably well using the one or two most important criteriain other sectors. The findings also go in line with the widely accepted fact that physical infrastructure projects are relatively complex. (Godau, 1999; Jajac, Knezic, & Marovic, 2009; Koops, Coman, Bosch-Rekveldt, Hertogh, & Bakker, 2015)

Results

A total of 84 usable responses received from more than 250 prospective respondents to whom questionnaire posted including 21 from Kerala, 16 from Bangalore, 10 from Mumbai and Pune and 15 from expatriates of which 12 from Middle east. Engineering (Non IT) sector has the maximum of 31% respondents. 33% respondents are professionals, managers are 23% and consultants / advisors 15%. 94% have expressed project involvement.

'On time completion' is chosen as the most important criteria overall, the same is found true for region wise analysis and sectoral analysis. A general similarity in preferences is found in regional analysis with some unique preferences like preference towards 'user satisfaction' and 'new technology' found for Bangalore. Substantially higher preference for success criteria observed in the major sector in comparison to other sectors combined.

Conclusion

Higher preferences to time and budget criteria across sectors and geographies is observed and points to more focus being given to project management process and operational aspects instead of project benefits and success (Shenhar et al., 2001). Sectoral comparison of perception for success criteria is in line with general belief regarding complexity for physical infrastructure projects and its preference for more success criterion. A possible close relation between preference for a success criterion and its perceived difficulty to achieve is found, the present analysis not sufficient to confirm the same and hence further analysis needed on this aspect.

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