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# Criteria of project success: an exploratory re-examination

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**Doubts often arise about what and who actually determine project success. The purpose of this article is to explore the issues from different perspectives of people looking at the project. The difference between criterion and factor is first discussed. Criteria are the set of principles or standards by which judgement is made; whereas factors are the set of circumstances, facts, or influences which contribute to the result. This article then proposes to classify project success into two categories: the macro and micro viewpoints. Some pictorial representations and models are presented to assist in the understanding of the concepts. It is suggested that two criteria are sufficient to determine the macro viewpoint of project success: completion and satisfaction. Whereas the completion criterion alone is enough to determine the micro viewpoint of project success. © 1999 Elsevier Science Ltd and IPMA. All rights reserved**

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In 1994, a well known property developer in Kuala Lumpur undertook a one million square meter shopping complex project located in an up-market suburb of Petaling Jaya. The contract was awarded to a Malaysian–Japanese Consortium for RM100 million with a completion time of 12 months. What followed was a period of intense construction activity. Finally, when the construction of the project was completed, the contractor took 15 months and RM146 million to build. The contractor put in an extension-of-time (EOT) claim for three months and variation/additional orders amounted to RM46 million. The developer is silent over the EOT matter but counter-offered RM20 million for the variation/additional orders. The contractual dispute is still on at the time of writing. Meanwhile, since opening, the shopping complex has proven to be very popular with both tenants and shoppers.

The above case study presents a few doubts to the project management practice:

1. Both the developer and contractor have obviously suffered losses. From their respective perspectives the project has failed. However, the perception of the overall project by the users and stakeholders is very different: the project is a big success! It seems that we really should not judge project success according to the usual project goals alone, contrary to normal understanding of project management concepts.
2. Since everyone (the developer, contractor, users, the general public, and so on) will have different expectations on a project, their criteria of project success

will differ also. What are these criteria of project success according to the different perspectives? How do we generalise them according to some practical classification?

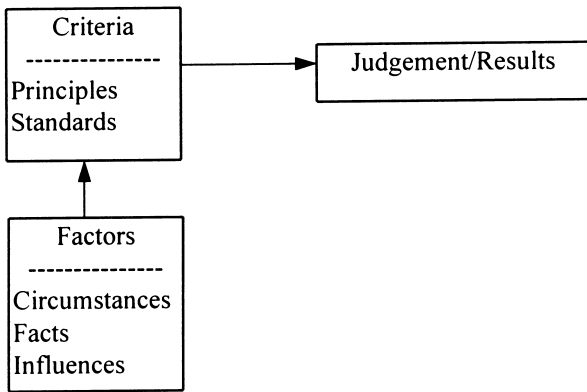
The above questions are significant because firstly, they will clarify our thoughts and understanding about project success, and secondly, they will become useful particularly to those who are studying and finding ways to improve project and project management performance.

## Criteria and factors

The Concise English Dictionary<sup>21</sup> explains a criterion as “a principle or standard by which anything is or can be judged”; whereas a factor is described as “any circumstance, fact, or influence which contribute to a result”. The pictorial representation of criteria and factors of project success is given in *Figure 1*.

When we apply the definition to project success, we obtained a similar pictorial representation as shown in *Figure 2*.

From *Figure 2* we can see that the criteria of project success is the set of principles or standards by which project success is or can be judged. These are the conditions on which judgement can be made. On the other hand, factors for project success are the set of circumstances, facts, or influences which contribute to the project outcomes. These are the influential forces which either facilitate or impede project success. They contribute to the success or failure of a project, but do not form the basis of the judgement.



**Figure 1** Pictorial representation of criteria and factors for project success

Critical factors are extremely important factors. Some project management literature has used the term as synonymous to criteria. In order to avoid confusion, this article will adopt the term criteria exclusively.

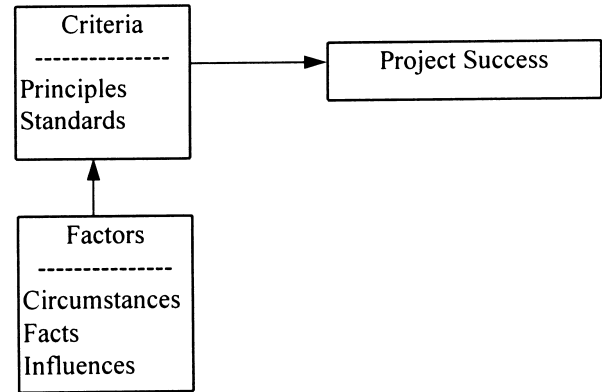
We shall use one example to illustrate the differences between criteria and factors. Let us use the example of a high school student wishing to pursue a certain degree course in a university. Obviously, the admission and the graduation criteria for that course are the two sets of conditions for the award of the degree. The admission criteria is a set of conditions for entering the university: qualification, fees, duration, entrance examination, experience, policy, and so on. The graduation criteria include the subjects, options, exemptions, practical experience, assignments, projects, passing marks, and so on. Fulfilling the two criteria would mean success in getting the degree. Conversely, failure to comply with any of the criteria would result in the failure to obtain the degree.

On the other hand, two sets of factors influencing the admission and graduation criteria could include the number of applicants, quota, competition, age, location, travelling, lodging, academic ability, finance, relationship, motivation, health, distractions, lecture-ship, and so on. These factors could be significant, but they do not determine the success or failure in getting the degree. Unless, of course, if any of the factors results in non-admission or non-graduation. In that case, the student fails to get his degree. The pictorial representation of this case is shown in *Figure 3*.

From the above explanations, we could deduce that criteria are the set of conditions sufficient for a judgement to be made, or result in certain outcome, nothing more and nothing less.

### Project success perspectives

We shall confine our discussion to the engineering and construction projects which involve physical construction. Such projects are usually some kind of social undertakings and will affect every element in the society. That being the case, project success should be viewed from the different perspectives of the individual owner, developer, contractor, user, the general public, and so on. These perspective differences will explain the reason why the same project could be considered a success by one and unsuccessful by another.



**Figure 2** Pictorial representation of the criteria and factors as applied to project success

For those involved with a project, project success is normally thought of as the achievement of some pre-determined project goals, which commonly include multiple parameters such as time, cost, performance, quality and safety. However, we must not forget that the users and the general public do not necessary have similar pre-determined goals regarding the project at all. Hence, the expectation on the outcome of the project and the perception of project success or failure will be different for everyone.

In this article, we propose to classify the perspectives of project success into two categories: the macro and micro viewpoints.

### Macro and micro views of project success

The macro viewpoint of project success will address the question: Is the original project concept achieved? If it is, the project is successful. If it is not, the project is less successful, or a failure.

Unfortunately, we can only know whether the original project concept is achieved or not at the operational phase of the project. This achievement depends on the users or stakeholders. This is the reason why most people will say that as long as the users are satisfied, the project is considered successful.

The micro viewpoint of project success will deal with project achievements in smaller component levels. It is usually referred to at the conclusion of project construction phase and the parties involved in the construction.

It would be ideal if a project could result in an overall win-win situation for everybody. But reality is always cruel, the ideal seldom happen. We must accept the fact that there may be some winners and some losers along the way. Normally, the losers will come from either or both of the two contractual parties to the project: the owner/developer or the contractor. Within these two groups, there may be included the respective consultants, suppliers, erectors, sub-contractors, and so on. Since undertaking a project is a business, any business venture will involve risks, and risks may result in losses. It is inevitable that an entity might suffer losses to a certain extent for various reasons.

In reality, the owner/developer and contractor would consider a project to be successful as long as their respective project objectives are achieved, particularly the financial ones. This is especially so if neither

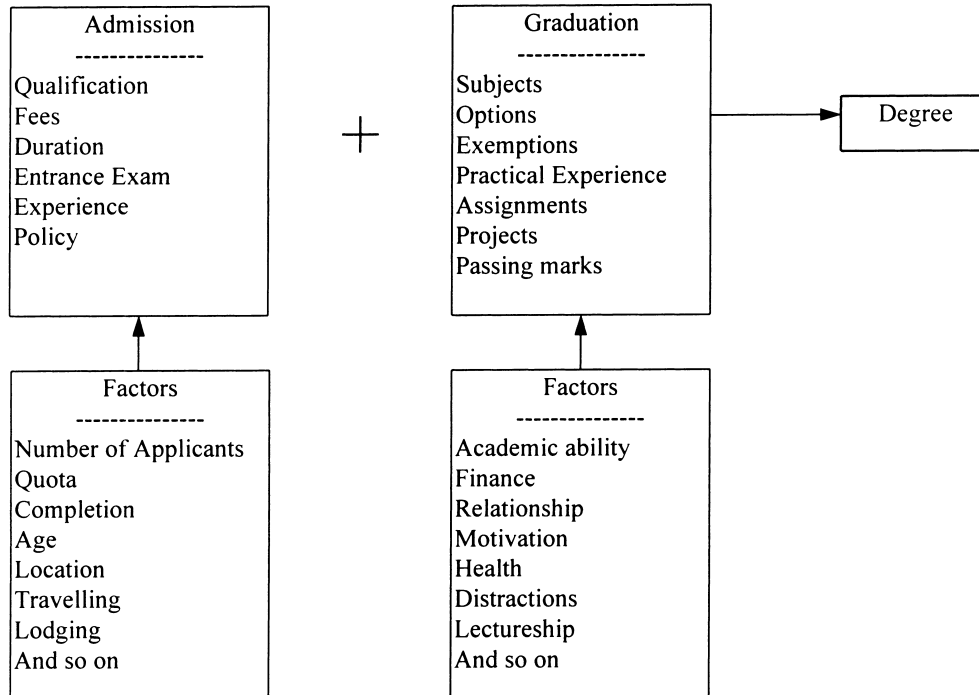


Figure 3 Pictorial representation of getting a university degree

of them are the future users or stakeholders themselves.

The concepts of macro and micro viewpoints of project success is likened to that of the forest and the trees. Are we looking at the forest? Or are we looking at the trees? This article suggests that we should be looking at both. But first, we must appreciate the fact that there are two viewpoints of project success.

### Project success frameworks

Based on the above explanations, we have presented three models to assist in the better understanding of the concepts.

Figure 4 depicts a model of the building blocks of the complete project life cycle as a project progresses from the conceptual phase to the operation phase. Along the way there are sets of factors impeding on each phase. The factors may include feasibility studies, marketing research, data of various kind, experience, site conditions, weather, flood, shortages, wastage, mistakes, workmanship, damages, thefts, approvals, changes, supervision, logistics, interfacing, and so on.

The two project phases which form the basis of the macro viewpoint of project success are the conceptual phase and operational phase. These phases are where 'the million dollar question' is first conceptualised and

finally tested. If the idea ticks, the project will be perceived to be successful.

The construction phase forms the basis of the micro viewpoint of project success. This is the phase where all the project goals like time, cost, performance, quality, safety, and so on of the contractual parties are established and put to test. How effective are the project management functions and how successful are the project goals will determine how much the individual party will perceive the project success from their own perspective.

One interesting observation to note is that the construction phase has been the focus of many studies.<sup>1, 2, 4, 5, 14, 15</sup> It is during the construction phase that the demands for time, cost and quality requirements become the most acute. In practice, there are plenty of examples where a project takes a long time to be decided, to be planned, to be designed, to be tendered, to be adjudicated and to be awarded. Finally, when it comes to the construction phase, all the past 'sins' (inadequacies) of every preceding phases manifest themselves, and everything must be undone within the schedule and budget given. We must therefore be aware that there may be important issues not being properly addressed in the preceding phases.

Figure 5 depicts a framework for the macro viewpoint of project success. The completion criteria and

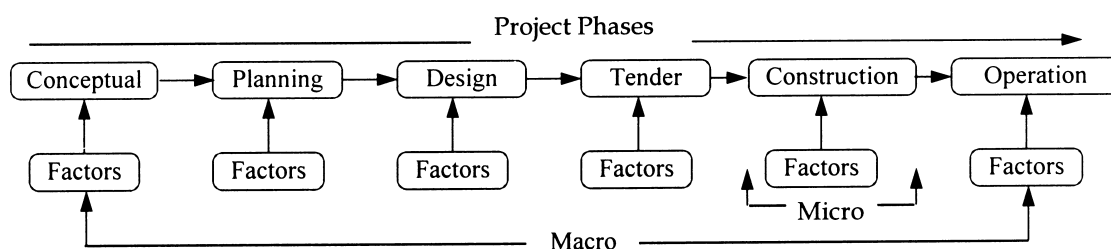


Figure 4 Building blocks of project life cycle

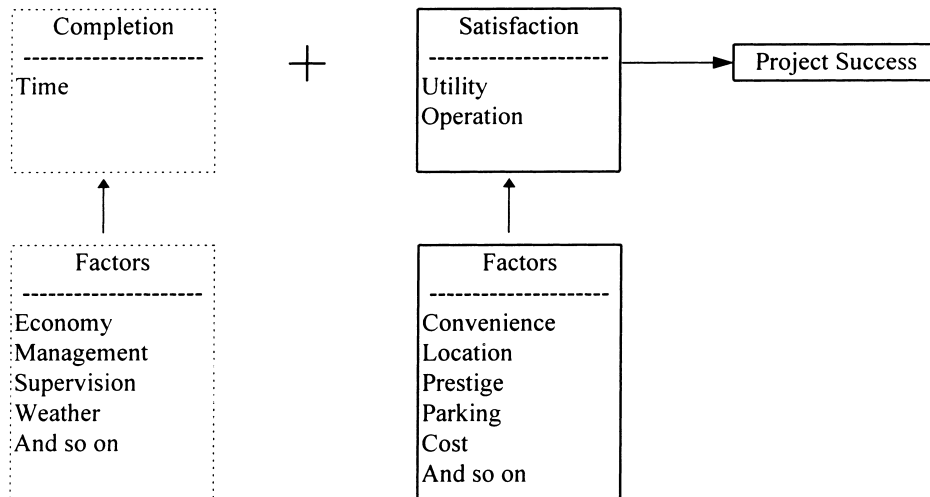


Figure 5 Macro viewpoint of project success

satisfaction criteria are the two sets of conditions for determining project success. The two criteria are in turn influenced by sets of factors respectively. Generally, the owner, users, stakeholders and the general public are the groups of people who will look at project success from the macro viewpoint.

It could be seen that the first criterion for project success is completion. The condition in this instance is the time factor. For instance, the commercial tenants may like a certain time to move in and commence business; the road users would like to shorten the suffering period of road blocks, traffic jams, and so on. There is a set of factors influencing the completion criteria. These factors include economy, management, supervision, weather, and so on.

Once the project has been completed, it must then satisfy the second criterion: satisfaction. This is the acid test of the original concept of the project. If the project is well accepted by the users, the project is perceived to be successful. Also, the level of perceived success seems to be correlated to the level of the users' satisfaction level. The higher the level of user satisfaction, the higher the level of perceived success of the project. The factors influencing the satisfaction criteria could include convenience, location, prestige, parking, cost, and so on.

Generally, users are less demanding on the completion criterion than the satisfaction criterion. There are cases whereby the users are so satisfied with the project that they are prepared to forgive and forget the inadequacies of the completion criterion. One classic example would be the famous Sydney Opera House.<sup>8</sup> This project took 15 years (from 1958 to 1973) and 14 times the original budget (from A\$7 million to A\$102 million) to build, yet, today it stands proudly as an engineering masterpiece and the symbol of Sydney. The intangible force is so overriding that whatever inadequacies in the project management of this building are overlooked. In special case like this, the completion criterion would fade into insignificance and there will be only one criterion left: satisfaction. The dotted lines indicate in the model (Figure 5) that under special cases the completion condition could be ignored. However, this is a special case and it should not be taken as the norm.

Figure 6 depicts a framework for the micro viewpoint of project success. The completion criteria are the set of conditions for determining project success. The criteria are in turn influenced by a set of factors. Generally, the developer (non-operator) and the contractor are the groups of people who will look at project success from the micro viewpoint.

The developer, especially if they are not user, stakeholder or operator, and the contractors are very much concerned with construction completion and achieving their own project objectives: time, cost, quality, performance, safety, and so on. Once they achieve their aspirations, they would consider the project to be a success, whether or not the completed project satisfies the user or stakeholder or not.

The factors influencing the completion criteria have been the study of many scholars.<sup>1-5, 7, 14, 15, 18, 19, 22</sup> The factors include technical, commercial, finance, organisation, risk environment, human, and so on. It must be emphasised that each industry will have their own

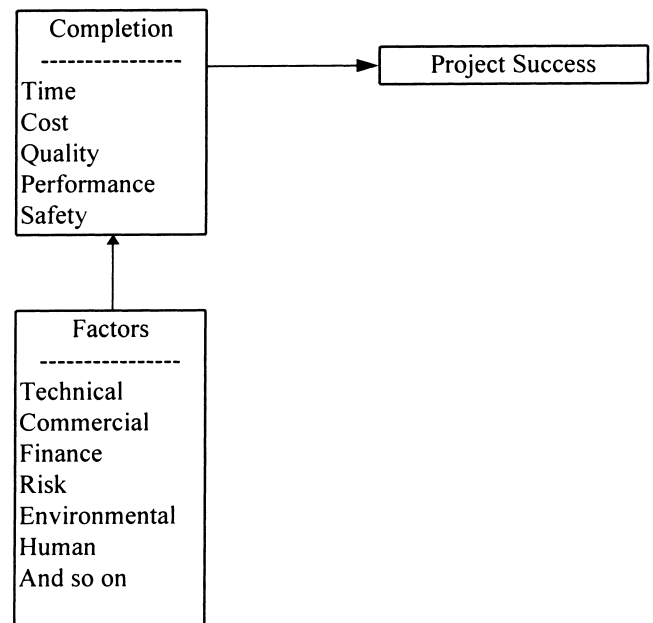


Figure 6 Micro viewpoint of project success

unique set of factors.

Another point to note is that the set of completion criteria for the micro viewpoint may not be the same as the set of completion criteria for the macro viewpoint. The respective sets of influencing factors differ in contents also.

### Previous studies

Preliminary review of the literature showed that the topic has been researched extensively in the eighties. Some of the major works included:

1. Baker *et al.*,<sup>3</sup> who postulated that the perceived project success or failure is not a function of time and cost.
2. Kerzner,<sup>9</sup> who identified six critical success factors for successful projects:
  1. Corporate understanding of project management,
  2. Executive commitment to project management,
  3. Organisational adaptability,
  4. Project manager selection criteria,
  5. Project manager's leadership style, and
  6. Commitment to planning and control.
3. Pinto and Slevin,<sup>19</sup> who identified ten general factors:
  4. Project mission,
  5. Top management,
  6. Project schedule/plan,
  7. Client consultation,
  8. Personnel,
  9. Technical tasks,
  10. Client acceptance,
  11. Monitoring and feedback,
  12. Communication, and
  13. Trouble-shooting.

Morris and Hough,<sup>15</sup> who listed twenty-two hypotheses for the success or failure of projects.

Pinto and Prescott,<sup>18</sup> studied ten critical success factors over the project life cycle.

Rosenau,<sup>20</sup> who suggested that the essence of successful project management consisted of satisfying the triple constraints of time, cost and performance.

Nicholas,<sup>17</sup> who identified fourteen critical points and postulated three level structures for the cause of project failure.

One of the most important findings arising from the preliminary literature survey was that the factors so far expounded could not explain the reason(s) why the same project could be considered as 'successful' by one party, and be considered as 'failure' by another. This has led to the current effort in re-examining the understanding of the issue.

### Experience survey

In order to further clarify our views, we have conducted an experience survey with about forty experienced project professionals in Kuala Lumpur over a period of three months. The information collection technique used was through unstructured interviews during site visits, at the offices, during lunches together, and at casual engagements.

When the question of criteria of project success was addressed to the interviewees, opinions were found to be split. This scenario confirmed that ambiguities do exist, even in the minds of the experts.

The conclusions from the previous studies and experience survey confirmed the need to further clarify the issue. The initial findings seemed to suggest that there could be a possible area for further research and academic debate. Subsequently, this topic has been incorporated as part of a post graduate research project for detailed investigation. We hope to present a more conclusive finding after the study is completed.

### Conclusions

The preliminary finding from the exploratory studies re-inforced the observation that project success is dependent on perspectives. There are two possible viewpoints of project success: the macro and micro viewpoints. The macro viewpoint takes care of the question "does the original concept tick?". The users and stakeholders are usually the ones looking at project success from the macro viewpoint. The micro viewpoint usually concerns the construction parties. The developer and contractor looks at project success from the micro viewpoint. This article suggests that the sets of completion criteria and satisfaction criteria are sufficient to determine the macro viewpoint of project success. Whereas the set of completion criteria alone is sufficient to determine the micro viewpoint of project success.

Three pictorial representations and three frameworks have been presented to assist in the better understanding of project success concepts. It is hoped that the explanation and models could contribute to the efforts in finding more efficient ways of improving projects and project management performance.

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