

# Success Factors and Change Management in Malaysian Institutions of Higher Learning (IHL)

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**Abstract:** *More and more researchers and academic practitioners in Malaysia turn their interest into learning how the Institutions of Higher Learning (IHL) accommodate their success factors in change management. IHL, administered under the Ministry of Higher Education (MOHE), is one of the most important institutions that requires a successful strategic plan, reducing failure in projects and good inter-institutional relationships. IHL, that carries education through its citizens in the country, must have state-of-the-art strategic plans and 'bulletproof' change management practices. The failure in this institution means failure of accommodating education, dynamic relationship between students, and affecting mentality, monetary and not to mention good will in an educational institution itself. However, a shortcoming within the leadership, people and management caused by private or public institutions can be lessons learned for a better nation. Thus, this study carries to examine how project success and change management is being applied in Malaysia's IHL. This research aims to introduce how project change management in IHL is being applied and the measures that are being used in the Information Technology environment. This paper method uses the three value-driven relationship as a framework throughout data collection and analysis. The value-driven relationships are capable to offer optimum determination of strong framework used in business value. By using this approach, the expected outcome of this study is to show a stronger picture of managing project change management in IHL in Malaysia.*

**Keywords:** Project Success, Success Factor, Change Management, Project Management, IHL.

## 1. Introduction

More and more researchers and academic practitioners in Malaysia are turning their interests into learning how Institutions of Higher Learning (IHL) accommodates their success factor in change management.

IHL, administered under the Ministry of Higher Education (MOHE), is one of the most important institutions that requires successful strategic planning, reducing failure in projects and good inter-institutional relationships. Because IHL carries education through its citizens in its country, in the context in this paper, Malaysia, failure in the institution, is the failure of accommodating education, dynamic relationship between students, and effecting mentality, monetary and not to mention good will in an educational institution itself. Thus, this study carries to examine how project success and change management is being applied in Malaysian IHL.

Malaysia, as the known country with 3 dominant races and high number of international foreigners, is a good sample case to learn and seek lessons learnt on how to attain and measure success. This project is carried out with the target audience of anyone who is interested in project success in institute higher learning, practices in solving strategic change management, more specifically IT managers, project officers, lecturers, PMO members, project team and researchers. The remainder of the paper is organized as follows. First, the concept and framework used to carry this project and how the framework characterized by project value-driven theories is discussed, followed by its conceptualization in project change management.

Next, the study's results are outlined in a qualitative exploratory study that examines the project change used by 9 institutes higher learning participants in this study. A theoretical model is developed as the result of this qualitative study and then measured and discussed quantitatively in a confirmatory quantitative study. Finally, the paper concludes with the implications of the study, limitations, and suggestions for future research.

## 2. Concept and Framework

The definition of success and the understanding of the project related relationship can differ verily. This study uses three value-driven relationship theories described by Philip W. McDowell as the primary project elements, which are the business, Project Management Office (PMO), and the project team [1].

In general, each project elements wants feedback and positive support from the others. For instance, an output from business should help to make a PMO successful and vice versa. The Table 1 below depicts the valuable business input output from each project elements.

**Table 1:** Value from each elements, adapted from [1]

<i>Business</i>	<i>PMO</i>	<i>Project Team</i>
From PMO Consistent, accurate reporting on and/or view of all active	From Business Consistent, accurate reporting on and/or view of all active	From PMO Resources; coaching & mentoring;

projects; use expertise and tools to help project teams.	projects; use expertise and tools to help project teams.	escalation path and resolution.
From Project Team Successful projects (on time, within budget, meeting requirements).	From Project Team Successful projects (on time, within budget, meeting requirements)	From Business What's In It For Me?

Each value-driven element has its own priorities and variables. Business prioritize its function, with products, services and knowledge as its variables. Project Management Office prioritizes its functions, with tools, standards and processes. Project team prioritizes its functions, with trust, time, budget, scope and people.

The project success framework illustrated in Figure 1 as result of the predecessor work [2] for this study and has not been published yet.

### 3. Literature Review

The definition of success and the understanding of project-related relationships or value-driven relationships among three primary project elements which consist of the business, the PMO and the project team will help foster long-term commitment and mutual success that could impact the project success [1]. According to [3] change management is the process, tools and techniques to manage the people-side of change to achieve the required business outcome and it have to incorporate with the organizational tools to help individuals make successful personal transitions resulting in the adoption and realization of change. From a business perspective, the project success can be defined for the service, products and knowledge. Most of the organization's projects are successful when their business case for the system was documented for public knowledge [4].

The business value can be monitored by measuring project outcome. The achievement resulted from project outcomes can be seen by how the system completed and implemented helped in line with the business, improve teaching/learning and improve the innovation [5].

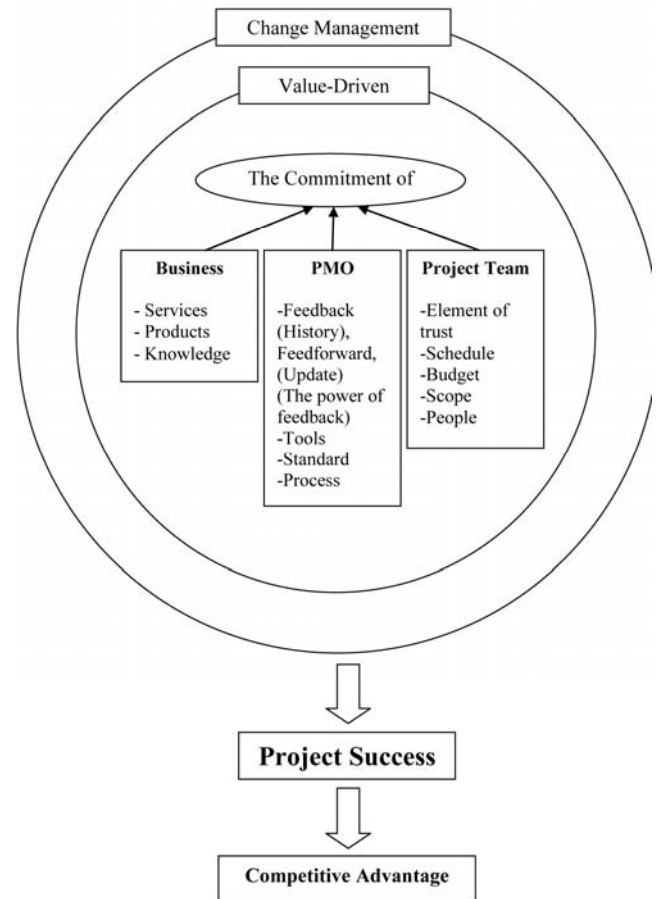


Figure 1: Project Success Framework

The capabilities to drive changes from strategic goals, invest in the most valuable projects, execute projects optimally to achieve business benefits from the new solutions as quickly as possible are scope of project success and change management within the organizations [6].

For the PMO which include tools, standards and process, the strategic level of the PMO must work with executive management to implement a governance framework that manages the strategic spend by implementing processes to select, prioritize and monitor strategic business investments (projects) [7]. The 7 Fundamental factors that can influence the IT Project Success according to [8] are Business case, Stakeholder and user engagement, Executive sponsorship, Third-party relationships, Project management, Change management and Resource availability. A consistent set of tools and processes for projects provides a basis for measuring performance and can act as a communication and training vehicle for developing project skills [9]. The project team has to consider about the trust, time, budget, scope and people. Effective project manager leadership is an important success factor on projects. The more experienced project manager, the higher project success and projects with mainly autocratic project leadership tend to be more successful [10].

The commitment and relationship among the business (service, products and knowledge), the PMO (tools, standard, process) and the project team (trust, time, budget, scope and people) are three important project elements which could affect the success of project development and implementation in most of the organizations and implementing the change management is also needed to be

determined to enhance the effectiveness and the sustainability of the project success.

#### 4. Research Design

A combination of data collection and analysis methods were used separately to examine this study. Questionnaires were distributed followed by a survey study on current conditions in the field. This multi-method of data analysis (referred to as mixed-method and pluralist approach) was chosen based on the premise that separate and dissimilar data sets drawn on the same phenomena would provide a richer picture [11][12] of the concept of and outcomes associated with project success and change management than would a mono-method approach. Qualitative methods were appropriate given the high degree of uncertainty surrounding the phenomenon under study [13]. Thus, qualitative methods provided a rich understanding of the activities, behaviors, and measure of projects that define project success and change management in the context of Malaysian IHL.

Secondly, qualitative methods allow a process model to be constructed by applying the three value driven relationship theories described by Philip W. McDowell as a framework for analysis [1] that contribute to a specific outcome. While results from participant theories were used as a framework of analysis, data collection for the qualitative study was not based on any priori theories, concepts, or outcomes, and therefore was exploratory.

Quantitative methods were then employed to test the theoretical model derived from the qualitative study and based on the researchers' understanding [14]. Hypotheses that were constructed from the qualitative study formed a variance model in pre-specified outcome variables [15]. Thus, combining qualitative and quantitative methods provided both a rich context and testability to the study [16]. In addition, this multi-method design strengthened the results through triangulation, meaning cross-validation of both kinds and sources of data were found congruent [16].

#### 5. Result of the Study

With a greater understanding of how team leaders and upper level management involvement in the project success and change management in the IHL, this section examines the effects of that involvement by applying each of the three value-driven theories suggested by McDowell. Research hypotheses are formulated from this analysis, leading to the research model tested in the discussion.

Questionnaires, as the medium to retrieve information from participants, was distributed across 9 institutes, mainly in the capital city area. For each institute at least 2 participants delivered their information. From the result, the answer was analyzed and divided into several categories. First is a public institution category. This category is divided into two subcategories based on how many personnel / staff of the upper level manager (as the participant of this study) need to manage. For the broader category, is 50-150 personnel, and

the second is more than 150 personnel. The same sub category is applied to private sector institution category.

The reason of this classification is to understand the distinction of how three value-driven being applied in the each section. The project manager might want to increase certain value based on the need of each sector area.

The result depicts that, the institution higher learning that has more than 150 staff in the public sector area believed that PMO value is the most important aspect of three-value driven approach. Meanwhile, the institution higher learning that has less than 150 staff in the public sector area believed that business is more important. On the other hand, the private institution higher learning in general (both that have more and less than 150 staff) believed that business is the most important aspect.

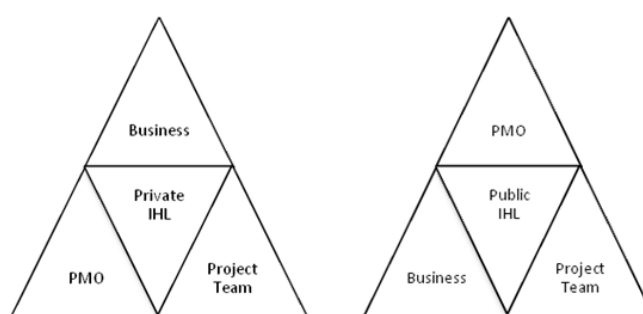


Figure 2, 3: Elements prioritized by Public IHL, Elements prioritized by Private IHL

From the above result we can conclude several theoretical models. First, the emergence of a number of personnel may change the need and importance of value from one institution to another. Second, public sector, which supported by ministry / government, being found that to emphasize more in PMO rather than the business and project team value. Third, private sector institution prioritized more in business area rather than the PMO and project team value.

The discussion section will list out in which elements that business, PMO and project team values are critical for project success and change management. The result will also exhibit what are the essential measurement of each three-value driven relationship.

#### 6. Discussion

This study utilized questionnaire-based survey for data collection, the population of this sample consists of at least 15 project managers from different higher learning institutions in Malaysia. This population was chosen because of their experience in IS project management.

The instruments were constructed in two sections with demographic and project success criteria consisting of business, project management office (PMO), and the project team with multiple types of scales. All the items in the instruments were developed and adapted based on several literature reviews on critical success factors on IS/IT

implementation domain. Table 2 summarizes the project success criteria constructs' definitions and the scale used.

**Table 2:** Project Success Criteria

Value	Definition	Scale
Success Criteria	Indicate the success factors criteria in project success and change management implementation as perceived by the project managers in Malaysian institutions of higher learning	3 items with multiple choice item, with the option to fill in their personal opinion.
Business	Indicate the business factor in project success and change management implementation as perceived by the project managers in Malaysian institutions of higher learning	10 items with ordinal value from 1-5. 1-strongly disagree 2-disagree, 3-neutral, 4-agree, 5- strongly agree
PMO	Indicate the PMO factor in project success and change management implementation as perceived by the project managers in Malaysian institutions of higher learning	10 items with ordinal value from 1-5. 1-strongly disagree 2-disagree, 3-neutral, 4-agree, 5- strongly agree
Project Team	Indicate the project team factor in project success and change management implementation as perceived by the project managers in Malaysian institutions of higher learning	10 items with ordinal value from 1-5. 1-strongly disagree 2-disagree, 3-neutral, 4-agree, 5- strongly agree

**6.1 Quantitative measurement**

As for data analysis, the questionnaires are being analyzed by using frequency method. The quantitative calculation is simple, the results will depict the value and the percentage of each element.

Table 3 refers to the demographic information on the respondents. The questionnaires were distributed to IS project managers in education sectors, covering universities and colleges in Malaysia by hands and via email.

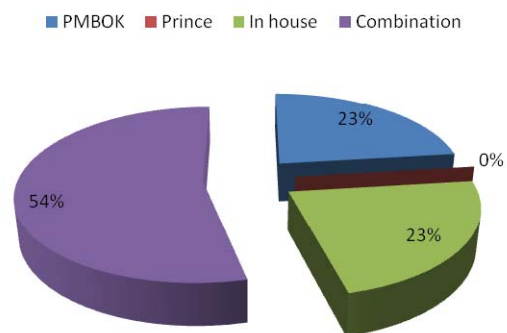
**Table 3:** Demographic Information

Measure	Item	Result (%)
Length of service in ICT industry	<5 years	24%
	5-10 years	38%
	> 10 years	38%
Experience as Project Managers	3-5 years	15%
	5-10 years	62%
	>10 years	23%
Number of successful projects handled	<5 projects	23%
	5-10 projects	46%
	>10 projects	31%
Number of staff managed	<50 personnel	69%
	50-100 personnel	23%
	<100 personnel	8%

**6.2 Project Management Methodology**

The most popular project methodology used, which weighh 54%, is a combination of PMBOK, PRINCE 1 & PRINCE2, In house / Custom methodology. Both PMBOK and In house / Custom methodology were chosen by 23% of the participants, while none of them are using PRINCE.

**Project Change Methodology**



**Figure 4:** Project Change Methodology

**6.3 Project Management Knowledge Area**

Figure below shows the list of project management knowledge area used in the project success and project change management. Based on participant result, the most

important areas are project integration management and project risk management with 17% for both.

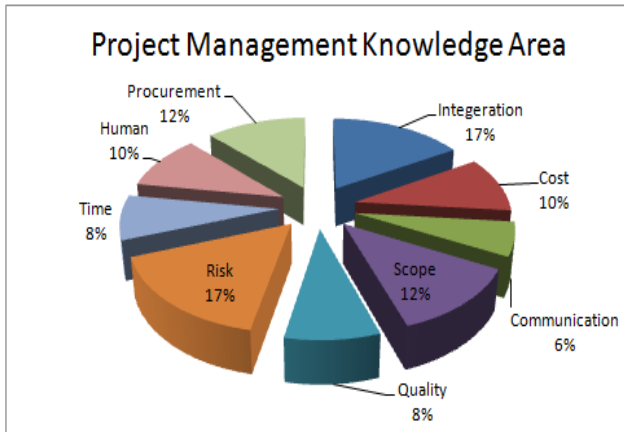


Figure 5: Project Management Knowledge Area

Project scope and procurement management are in the second place with 12%, followed by project cost and human management, 10%, Project time and quality management at 8% and lastly project communication plan 8%. This result shows that project managers tend to prioritize integration and security in the knowledge areas of project management.

#### 6.4 Project Development Methodology Software

Figure below shows the breakdown of the software development methodology used. Rapid Application Development (RAD) model is the highest with 44 %, Prototyping 13%, Agile 13%, Incremental 12 % and Spiral, Waterfall and Plan-Do-Check-Act all at 6%. None of the respondents use Extreme software development methodology.

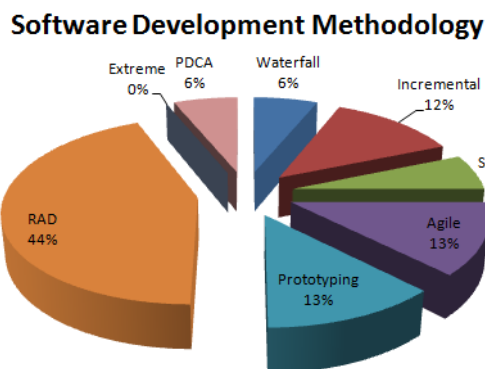


Figure 6: Project Development Methodology Software

#### 6.5 Success Factor and Change Management

In the questionnaire survey, the respondents were asked 10 questions each for each section of three-value relationship. These questions relate to their perception towards the process they perceived as critical in the project success and change management. The questionnaire asked the project managers to indicate the level of critical process listed.

There are three sections of this part, first 10 questions dedicated to business with products, services and knowledge

as its elements. The second part consists of 10 questions dedicated for Project Management Office with the tools, standard and processes as its elements. The last part also consists of 10 questions regarding project team with trust, time, budget, scope and people.

The Table 4 below listed processes that are critical to the business success, with products, services and knowledge as its essential elements.

Table 4: Business : Service, Products & Knowledge

<i>Business : Service, Products &amp; Knowledge</i>
The business case for the system was documented for public knowledge.
There are at least two broad categories of key success factors that are common to virtually all organizations: business processes and human processes.
In order to deliver better services and products, it is important for your organization to ensure that the technology, markets, trends and business environment related to the projects are able to deliver effective solutions and technological innovations.
The more experienced academic staffs, the higher academic success in higher learning.
The business value can be monitored by measuring project outcome. The achievement resulted from project outcomes can be seen by how the system completed and implemented helped in line with the business, improve teaching/learning and improve the innovation.
The capabilities to drive changes from strategic goals, invest in the most valuable projects, execute projects optimally to achieve business benefits from the new solutions as quickly as possible are scope of project success and change management within your organization.
Quantify project time, cost overrun and PMO are some of the best measurements of project success and change management practices.
In order to minimize project risks in change management, there are at least 3 stages that must be focused on; analysis (change risk analysis, change strategy), engagement (change leadership, stakeholder management, involvement strategies), delivery (organizational integration).
In order to endure change results, there are guidelines to guide what to do after the change. This guidelines created to solve the issues and problems that might arise.
Communication is a core element in all change management activities.

Most of the respondents believe that, in order to deliver good business plans in project success and change management, it is important for the organization to ensure that the technology, markets, trends and business environment related to the projects are able to deliver effective solutions and technological innovations. The second important element believed by respondents is that quantify project time, cost overrun and PMO are some of the best measurements of project success and change management practices.

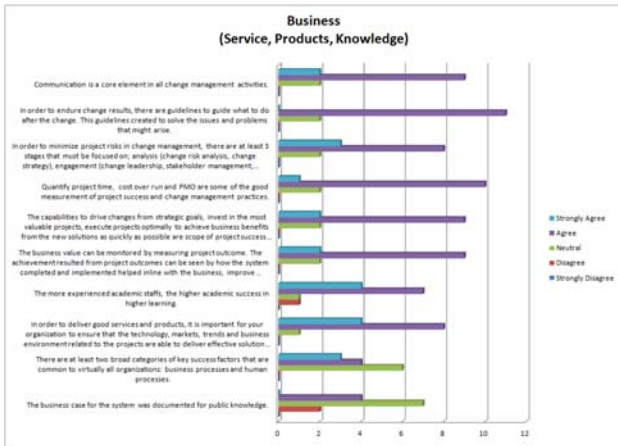


Figure 7: Business : Service, Products & Knowledge

The Table 5 below listed processes that are critical to the project management offices success criteria is shown, with tools, standard and process as its essential elements.

Table 5: PMO: Tools, Standard & Process

<i>Project Management Office (Tools, Standard &amp; Process)</i>
The strategic level of the PMO must work with executive management to implement a governance framework that manages the strategic spend by implementing processes to select, prioritize and monitor strategic business investments (projects).
A consistent set of tools and processes for projects provides a basis for measuring performance and can act as a communication and training vehicle for developing project skills.
Effective IT governance and performance helps organizations to ensure that business systems will deliver value to the business and the unique risk which inherent in technology are monitored in an appropriate governance framework.
The governance framework influences each project and includes consolidated project performance reporting which is delivered to the executives.
The project life cycle includes phases of conceptualize and initialize project, develop project plans and charter, execute and control the project, close project, and evaluate projects.
Business case provides the first analysis of your organizational value, costs, benefits and also project alternatives / options.

All project deliverables must get management approval before going to the next phase.

The organization's vision is used to guide all teams to develop clear, simple, compelling project strategies to achieve the vision.

Wins create enthusiasm and momentum; plan the implementation to achieve early successes. Do you believe in Short-term Wins?

Project professionals are those who can handle user involvement with extreme caution to reduce the negative effect on project progression.

Most of the respondents believe that, in order to deliver good project management office plan in project success and change management, it is important for the organization to ensure that the organization's vision is used to guide all teams to develop clear, simple, compelling project strategies to achieve the vision.

The second important element of PMO believed by respondent is that the effective IT governance and performance helps organizations to ensure that business systems will deliver value to the business and the unique risk inherent in technology are monitored in an appropriate governance framework. Along with it, a consistent set of tools and processes for projects should provide a basis for measuring performance and can act as a communication and training vehicle for developing project skills.

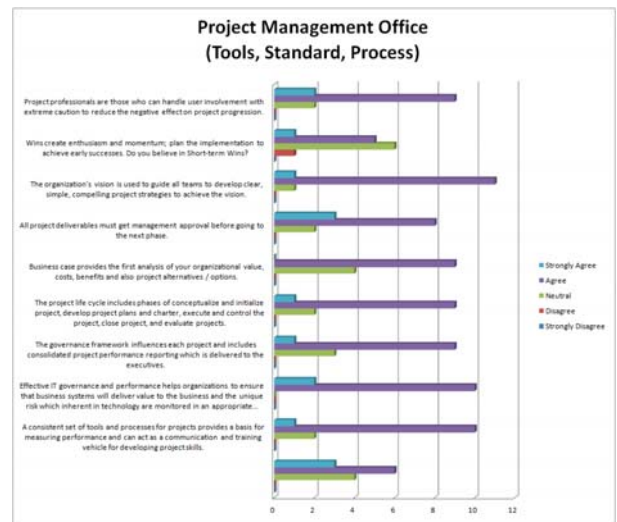


Figure 8: PMO: Tools, Standard & Process

The Table 6 below listed processes that are critical to the project team success criteria is shown, with trust, time, budget, scope and people as its essential elements.

**Table 6:** Project Team (Trust, Time, Budget, Scope and People)

<i>Project Team (Trust, Time, Budget, Scope &amp; People)</i>
Effective project manager leadership is an important success factor on projects. The more experienced project manager, the higher project success.
It's important for the project manager to have a customer (user centric) perspective rather than people-centric or business centric perspective.
The users can take part in active involvement of the project by modifying / adding / deleting specifications, until the product is the way that he /she wants it.
Stakeholders understand and commit to their roles and responsibilities such as defined problems, solutions, and action plans to take advantage of positive influences and neutralize negative one.
Project team members have a combination of technical (IT) and subject matter experts.
Projects with mainly autocratic project leadership tend to be more successful.
Project manager whom displaying flexibility behaviors towards the individual team members will show more leadership.
The team understands the technology and expertise required to accomplish the specific technical action steps.
Budgetary constraints may influence staff workloads because of dramatically losing sources. This may cause moral issues, low support and assistance, thus impact on project success.
The challenge of global competition, the fast growth of knowledge and the constant changes of technology make it hard to predict what kind of skilled people will be needed.

The majority of the respondent believes that, in order to deliver a good project team plan in project success and change management, it is important for the organization to have project managers who display flexible behaviors towards the individual team members and who will show more leadership. This element is believed as important as in the challenge of global competition, the fast growth of knowledge and the constant changes of technology make it hard to predict what kinds of skilled people will be needed.

The second important element of project team believed by respondents is that the team understands the technology and expertise required to accomplish the specific technical action steps.

**7. Limitation**

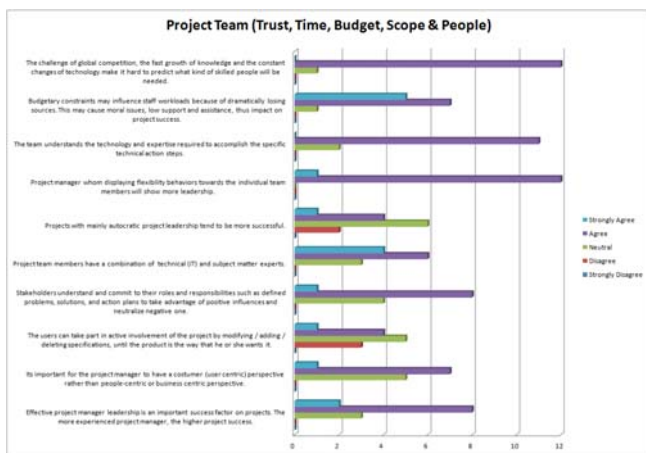
The limitation of this study is the population of the respondents was only from 9 different IHL. In order to get better results, the questionnaires should be distributed to a bigger population and bigger number of respondents who are experienced IS project managers. Since half of the questionnaires were distributed via e-mails to respondents, there no certainty that the email recipient is answering the questionnaire himself/herself without delegating to their assistant or other personnel.

**8. Conclusions**

The commitment and relationship among the business (service, products and knowledge), the PMO (tools, standard, process) and the project team (trust, time, budget, scope and people) are three important elements which could affect the success of project development implementation in most of the IHL. In this study, the project managers, as participants that have managed several successful projects, are more prone to think that the factors that have listed are critical for project success and change management. This concludes that the three value-driven relationships with their priorities and critical elements could improve project success and change management in Malaysian IHL.

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**Figure 9:** Project Team

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