

Critical Success Factor of E-Learning Effectiveness in a Developing Country

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ABSTRACT

Many research has been done on information technology planning effectiveness in a developing country, this paper takes a step further in examining such factors in Indonesia, which is also a developing country. The results have surprisingly shown that empirical data produced in Indonesia is not consistent to those researches conducted in other developing countries. Hence we come to conclude that a study of one developing country on E-learning Effectiveness cannot and should not represent all developing nations in the world. One should carefully study the regional cultures and background that will eventually help to determine one different IT behaviors to another. For research to become effective, hypothesis should be tested on several different countries and then follow by paying attention on similar behavior on the results before drawing the conclusion. Based on some previous research about E-learning Effectiveness in a Developing Country, we perform similar research in Indonesia on the 6 hypothesis research model previously performed in Kuwait [1].

Index Terms — Information Technology Planning Effectiveness, Developing countries, Indonesia

1. INTRODUCTION

The term Critical Success Factor (CSF) is defined simply as “The thing(s) an organization MUST do to be successful.” [2]. This definition is translated into the conceptual context of our subject, which is the critical success factor of E-learning effectiveness. What are the thing(s) a developed country MUST have in order to be effective in E-learning? As a whole, good E-learning must be able to integrate the business perspectives of the other organizational functions into an enterprise IT perspective that addresses strategic and internal technology requirements.

Research on Information Technology planning effectiveness has been done to many developing countries, such as North America [3], Latin America [4], Western Europe [5], Eastern Europe [6], South East Asia [7], and the Middle East. However, no similar research has been done on information technology planning effectiveness in Indonesia. Observing previous research shows little correlation between similar researches conducted on different regional parts of the world. We strongly believe that regional cultures and behaviors affect final results in the study of relationships of factors relating to information technology planning effectiveness.

Past research concludes that informed IT management, management involvement, and government policed contributes most to E-learning effectiveness. However, IT penetration, user involvement and financial resources does little effect to E-learning effectiveness [8]. We take a step forward by conducting similar research in Indonesia, to prove whether those hypotheses are true. The article is divided into five sections. Section 1 is the abstract and the introduction. Section 2 describes the research model and prediction of theory. Section 3

describes comparison of results. Section 4 discusses the global implications of our findings and the conclusion of our paper. Section 5 is the limitations and future directions.

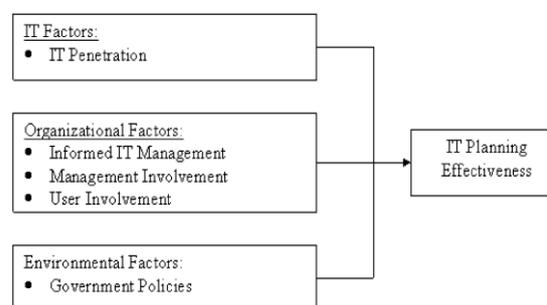


Figure 1. The Research Model

2. RESEARCH MODEL AND PREDICTION OF THEORY

This section restates the research model used by Aladwani in conducting study in Kuwait [9]. Looking at the strategic alignment model perspective [10], given a concise picture of business strategy which is the external domain, E-learning effectiveness should originate from the internal domains of IT. Particularly, Aladwani look at the organizational point of view affecting E-learning effectiveness. We would like to point out that the three organizational factors affecting E-learning effectiveness is not thorough, let alone adequate in representing organizational behaviors. Factors such as administrative structure and present critical business processes should also be considered. Furthermore, the environmental factors, which seems to be further extended from the organizational

internal model, should include additional factors besides government policies. Factors such as nations' economic strength, social and cultural value certainly contributes in determining the environmental factors of E-learning effectiveness.

For the purpose of this discussion, let us focus on the six factors affecting E-learning effectiveness, which is presented by Aladwani in the form of hypotheses. The research model in systematically represented in Figure 1.

A. Information Technology Factor

Information technology penetration may be conceptualized as the extent to which information technology is available throughout the premises of the organization [11]. Previous IS research in developed countries has shown that increasing information technology penetration into an organization leads to favorable business consequences [12]. The benefits of higher IT penetration include support for the linkage of IT-business plans and evaluation and review of the IT strategy [13]. However, only one existing research has specifically examined the relationship between information technology penetration and planning effectiveness in developing countries which is done by Aladwani. Therefore, it is not clear yet whether information technology penetration would affect information technology planning effectiveness in the context of a developing country such as Indonesia. The aim of the present study is to continue the previous attempt to test the following prediction:

H1: Information technology penetration is one of the critical success factors of information technology planning effectiveness in developing countries.

Prediction of theory on H1:

Based on unofficial survey among friends, colleagues and family, also based on personal experience, we mostly agree that information technology penetration will have a substantial positive effect on information technology planning effectiveness. As we humbly look at the regional data, metropolitan city such as Jakarta, which have the highest information technology penetration, have the best technology

infrastructures and services. On the contrary, suburban and countryside areas, which have the low information technology penetration, are also low on technology based facility. Thus we assume that organizations in the big city do better technology planning effectiveness compare to the countryside areas. Hence information technology penetration will have a positive effect on information technology planning effectiveness in developing country such as Indonesia.

B. Organizational Factor

In this study, organizational factors were measured using informed information technology management, management involvement, user involvement, and adequacy of financial resources for information technology planning. Informed information technology management in this study refers to the extent to which information technology management is informed about organizational goals and plans [14]. There is a consensus among researchers that the effectiveness of information technology planning is dependent on its integration with business objectives [15]. Weak IT-business relation was found to be among the top key issues facing information technology managers in Asian countries. Informed information technology management helps to accomplish certain information technology planning objectives such as better utilization of information technology to meet organizational objectives. Thus, we hypothesize that:

H2: Well informed IT management is one of the critical success factors of information technology planning effectiveness in developing countries.

Prediction theory on H2:

This is thus true whether this hypothesis is tested on developed country or developing country, that obviously informed IT management have a positive effect on information technology planning effectiveness. Inversely, uninformed IT management has adverse effect on E-learning because IT management is involved directly to E-learning. Hence, for E-learning to be effective, IT management has to be well informed on technology skills and update necessary. Thus, we fully support hypothesis H2 to be true that the critical success factor of E-learning effectiveness in developing country such as Indonesia is well informed IT management.

Management involvement is defined as the extent to which management is involved in the planning process [16], whereas user involvement is defined as the extent to which there is adequate user involvement in the planning process [17]. Both management involvement and user involvement are important ingredients for successful information technology planning [18];[19]. Premkumar and King reported higher management involvement in strategic IS planning [20]. Gottschalk reported a positive relationship between user involvement and the effective implementation of information technology planning [21]. Gibson asserted that management involvement is critical for successful planning for information technology transfer to Latin American countries [22]. In a study of information technology projects in Kuwait, Aladwani emphasized the importance of involving

management and users in information technology implementation activities [23]. Thus, in order to conduct similar survey in another developing country such as Indonesia, we hypothesize that:

H3: Management involvement is one of the critical success factors of information technology planning effectiveness in developing countries.

Prediction theory on H3:

Management is part of the stakeholder of information technology development. It also means that they are the source to provide funding to conduct operation such as E-learning. Funding becomes available after the management approval of E-learning. Hence the management has to be involved in information technology planning, if we want proper resource and funding to support the IT building. Hence we support the hypothesis that management involvement is definitely one of the critical success factors of information technology planning effectiveness in developing countries such as Indonesia.

H4: User involvement is one of the critical success factors of information technology planning effectiveness in developing countries.

Prediction theory on H4:

Organizations in developing countries too [24] If organizations want to benefit from information technology planning, then they must allocate adequate financial resources for information technology planning [25]. Thus, we hypothesize that:

H5: Adequacy of financial resources is one of the critical success factors of information technology planning effectiveness in developing countries.

Prediction theory on H5:

As it appear true that the extent of adequate financial availability mirror the success of information technology planning effectiveness in developed countries [26], it is even more critical for the financial factor to be available adequately for information technology planning to be effective in developing countries. Where E-learning in developing countries normally correspond to extensive deployment of new IT infrastructure, it is obvious that large funding is needed to purchase the infrastructure and to hire human resources, starting at the earliest stage such as planning activities. Hence, we fully support that adequate financial resources is one of the critical success factor of information technology planning effectiveness in developing countries such as Indonesia.

C. *Environmental Factor*

The environment of the IS organization is a critical determinant of its performance [27]. One of the major dimensions of the external environment is government policy, which is defined as the extent to which top management views government policies to be restrictive of liberal [28]. Understanding information technology management issues such as information technology planning in a global setting would require examining government policies in the local country [29]. In Saudi Arabia, Abdu-Gader and Alangari [30] reported that government practices and policies were among the top barriers of information technology assimilation. Organizations viewing government policies to be restrictive are expected to have less computerization [31];[32]; and are expected to devote less attention to strategic IT related activities such as information technology planning [33]. As it appears that the hypothesis environmental factors such as government policies are supported in Kuwait [34], we continue the same hypothesize that:

H6: Liberal government policy is one of the critical success factors of information technology planning effectiveness in developing countries.

Prediction theory on H6:

Liberal government policies generally act as a catalyst to encourage existing organization to extensively perform E-learning. How effective is the performance of technology planning somewhat contributes little for this purpose. We conclude that a liberal government policy is none whatsoever contribute to the effectiveness of E-learning. Hence a liberal government policy is not one of the critical success factors of information technology planning effectiveness in developing countries such as Indonesia.

3. COMPARISON OF RESULT

After we conduct similar research on E-learning effectiveness in developing countries such as Indonesia, as previously conducted in another developing countries Kuwait, we would like to produce a table of comparison between the two results.

Table 1. Comparison of Results between Kuwait and Indonesia.

		Kuwait	Indonesia
H1	IT Penetration	No	Yes
H2	Informed IT Management	Yes	Yes
H3	Management Involvement	Yes	Yes
H4	User Involvement	No	No
H5	Financial Resources	No	Yes
H6	Government policies	Yes	No

We observe that the research countries being conducted are both developing countries. They do not however produce the same results. Three of the hypotheses that is Informed IT Management, Management Involvement and User Involvement are supported similarly for both developing countries, whereas three other hypotheses that is IT penetration, financial resources, and government policies are supported differently for both developing countries.

4. GLOBAL IMPLICATION AND CONCLUSION

The goal of this study was to explicate the nature of contextual correlates of information technology planning effectiveness in Indonesia, in comparison to Kuwait. The present investigation contributes to the literature by being one of the first studies to provide an empirical test of information technology planning effectiveness in the context of developing countries. Our analysis for both countries reveals mixed and different support for the proposed relationships. In accordance with the findings of information technology planning research in Indonesia, we found a positive relationship between IT penetration, management involvement, informed information technology management, and financial resources. On the other hand, we found no support for a positive relationship between user involvement and liberal government policies on determining the critical success factor of information technology planning effectiveness.

Management involvement is found to have a positive relationship with information technology planning effectiveness. This result is somewhat expected. This finding confirms one more time the importance of management involvement in information technology initiatives in contemporary organizations. It is not surprising as it is pointed earlier in the paper that management involvement is more substantial in developing countries compare to developed country as the critical success factor of E-learning effectiveness. This finding indicates that management involvement is the most important facilitator of information technology planning in the research model. It coincides with our findings that both countries Kuwait and Indonesia both supports Management Involvement hypothesis (H3).

Informed information technology management is the second most significant correlate of information technology planning effectiveness in our study (H2). As we can see in the comparison tables, that Indonesia and Kuwait, both support the hypothesis. The findings show that an informed information technology manager plays an important role in enhancing information technology planning effectiveness through improving communication with top management of the organization. Additionally, the finding also show that an informed information technology manager has a greater

propensity to develop work plans that support organizational goals and activities leading to better integration of IT-business plans.

The findings of past information technology planning research highlight the importance of informed information technology management for organizations operating in developed countries [35] and our finding highlights the similar findings of the importance for organizations operating in developing countries as well.

Furthermore, we found contrasting relationship on liberal government policies and information technology planning effectiveness. Extensive government liberalization has been conducted in Indonesia where e-government plan supported fully by ICT, Nusantara 21, SISFONAS and BAPPENAS has been seriously conducted [36]. Yet despite such effort, E-learning effectiveness is still very minimal. This finding is not consistent with our theorizing and with the findings of Dasgupta and his colleagues [37]; [38]. Even though liberal government policies was ranked the second most significant determinant of information technology planning effectiveness in the ITPE-5 model (IT for gaining competitive advantage), survey conducted on the two countries failed to both support the hypothesis. When organizations perceive government policies to be less restricting, they become more inclined to engage in operations aimed at exploiting information technology opportunities for gaining competitive advantage.

5. LIMITATIONS AND FUTURE DIRECTIONS

Hofstede suggests that there are differences between developed and developing countries along these cultural aspects. Contrasting the culture of Kuwait and the United States gives a good example of Hofstede's scheme [39]. However, not mentioning the developed countries, are there any differences among the developing countries along these cultural aspects? Are there any similarity of E-learning effectiveness results in developing countries which have regional proximity, share the same religions, climates, and cultures? On the other hand, are there any similarity of E-learning effectiveness results in developing countries which are distant, do not share the same religions, climates and cultures. We will not be surprised to see that different provinces or states on the same developing country will produce different empirical results. We suggest that further research should starts on better grouping of data field rather than grouping by developed or developing countries to come to conclusion on factors affecting E-learning effectiveness.

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