A Relationship among Information Technology, Organization Culture, and Job Satisfaction in Pharmaceutical Industry in Thailand

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ABSTRACT
Information Technology is used widely in every organization. It is used to support many processes and functions, so that it can improve organization performance. Using Information Technology in organization successfully depends on active employers. Also the organizational environment, such as management styles and supports has some impacts on adopting the Information Technology. This research considers how Information Technology along with organization culture related to job satisfaction—an organization performance measurement. Pharmaceutical industry in Thailand is mainly used to be sample. The questionnaires are developed to collect data. Multiple linear regressions are used to analyze the collected data. The results show that organization culture has some effect on characteristics of Information Technology and job satisfaction. Information Technology has no effect on job satisfaction.

Keywords: Job Satisfaction, Information Technology Characteristic, Organization Culture, and Organization Performance Measurement.

INTRODUCTION
Nowadays, Information Technology involves in every organization. It can create the competitive advantage and innovation for every business [8][14][43]. However, Information Technology itself cannot create the value-added to the organization [42]. It can only make the better products and services via changing the working processes. Moreover, every organization can acquire the same technology and also it is easy to be copied in a short period of time [31]. To sustain the competitive advantages, managers should focuses on the resource management, which includes the management of assets, knowledge, personnel, technology, etc [3][9]. When using effectively information technology in the organization, the satisfaction of the user is expected. The user satisfaction is related to job satisfaction [1]. In the service sector, there is a relationship between job satisfaction and customer satisfaction directly [21][40][41][47].

There are some researches found that the effective use of information technology in any organization is affected by the organization culture [17][39]. Also people do not like to change from the old information technology to the new information technology [51], due to they have to spend time for learning the new technology. Moreover in the beginning period of using the new technology the overall performance decreases because the working processes might be changed. From this reason, it indicates that the culture of the organization can affect the job satisfaction of the employees [24][35].

The objectives of this study are finding the relationship among characteristic of information systems, organization culture and job satisfaction. The pharmaceutical industry in Thailand is focused. The companies in this industry in Thailand are mostly retailers. They import medical products from their head offices aboard. These companies also produce some basic medicines for using in domestic. For management, the head offices will set business strategies, plans, and procedures broadly. These companies have to adapt to fit their business environment in Thailand. The companies in pharmaceutical industry sell medical products to hospital using direct sale strategy. For regular drug stores and small physician clinics, they hire other companies to be their representatives for selling and freighting. With these business characteristics, this industry uses information technology mainly for contacting with its head office and other branches aboard, inventory management, office automations, and researching. We chose only the anti-biotic companies located in Bangkok and vicinity to study.

CHARACTERISTIC OF INFORMATION SYSTEMS
[2] proposed the measurement of information systems by considering five aspects, which are the numbers of applications using in the network, the frequency of usage, the average using time, the physical boundary of using the system, and the proportion of connection time. This measurement uses user feeling of using computer as a working tool, which is subjective. [30] proposed a measurement of information systems characteristics. This measurement considers two dimensions. Reach considers how far the information systems can connect and also how many people can access the information systems. It ranges from internal locations to anyone anywhere. Range considers the level of information that shared automatically and directly across services. It ranges from standard messages to cooperative transactions. Both reach and range can affect the quality of service. Due to good connectivity and communication can reduce operation time and steps, and also errors, so there leave some free time to research and to develop new products and services, which can create the competitive advantage. For service industry, board boundary gives convenience and fast services. This increases the level of service quality. Moreover, companies need fast and suitable response; information systems must be capable to connect and to support sharing information among internal departments [5][12][31][43]. Information systems will provide the differentiation to companies for creating competitive advantages when they have a good management and are fit with the business environment [13][31][36][42][51].
ORGANIZATION CULTURE

Organization culture consists of value and standard [32]. Value means target accepted by most people or by a group of people. It influences the behavior of those people in that group. Value is last long even the member of the group changes. Standard means the way to do or to act that is accepted by most people or by a group of people. If the prospect member can act as standard stated and can accept the value, then the group will accept that people as a new member; otherwise, they will not accept as a new member. [51] stated that organization culture came from beliefs and giving ones an importance so they became the behavior or group’s rules. Organization culture can be considered as knowledge of the organization [22][29]. [45] stated that organization culture is a group of significant hypotheses accepted by the main of group members. Most of them was not recorded anywhere. Different groups have different cultures depending on the history and experience of the group members [46].

Organization culture is always used to explain the problems between Information Technology department and the users [17]. It is also used to explain many occurrences in the organization. It has a lot of impact on long-term organization performance, so it is the major variable to make the organization success and failure. On the other hand, even it is hard to change; it can enhance the organization performance [32]. This research adopted the definition of organization culture of [11]. The organization culture was considered in 8 aspects: the response to changes, centralized or decentralized decision making, individual of collaboration, relationship to the external environment, basic of making decision and operation, knowledge exchange, performance measurement, and time.

JOB SATISFACTION

Many researchers studied about job satisfaction, customer satisfaction, and organization performance [21][40][41][47]. Today customers want both quality and good service [30], so it is important to consider job satisfaction as a basic organization performance. There are many factors affecting job satisfaction such as working place, colleagues, etc. [34] stated that unsatisfaction is equaled to requirement subtract by receive what we get, and then multiply the result by the importance. This implies that not every factor affects the job satisfaction. It depends on how important that factor is. [48] stated that almost employees would like to have the chance to get promote. Wage, management, and working hour have no effect on job satisfaction. There may be other intangible factors that employees concern [35]. [24] presented job satisfaction as a relationship between what to put in a job, such as education, time, and try and what to get from working, such as wage, position, working environment, and other personal factors.

[44] defined job as a combination of working experience, while satisfaction was defined as an evaluation of personal feeling about job. Job satisfaction can be considered in many aspects: attitude and feeling about the job in charged, opportunity and response from management level, and salary, working hour, and management. This definition is used in this research.

RESEARCH HYPOTHESES

When level of communication and working boundary of information systems get higher, they yield fast, correct, and convenient working processes. The chance to get a job done is high, so the level of job satisfaction is also high. In addition, when the employees get correct information for doing a job, they can finish their job efficiently. This would partially make higher job satisfaction [6][50]. Information systems can provide data and information, so information systems in term of reach and range can affect job satisfaction as well. This leads to the first hypothesis as:

H1: Characteristic of information systems has an effect to job satisfaction.

Organization culture is rooted partly from knowledge and experience of employees. It took a long period of time to be norms [51]; organization culture has an impact on the success of an organization. To consider using information systems successfully in an organization, organization culture also has an impact [15]. The integration of organization culture and characteristic of data and information provided by information systems affects the usage of information systems [16][28]. [19] found that technology has no impact on any change in organization; on the other hand, technology was adapted suitably to organization culture. These evidences lead to the second hypothesis.

H2: Organization culture has an effect to characteristic of information systems.

The study of [23] found that organization culture had an impact on job satisfaction and had an indirect impact on customer satisfaction level. This supported by the studies of [24] and [35]. Knowledge and individual experience led to individual expectation. Information systems are expected to provide a good data and information to employees. Information systems have an effect to job satisfaction [50]. If employees considered information systems providing valuable information to get any job done, information systems had an impact on job satisfaction also. This leads to the third hypothesis.

H3: Both organization culture and characteristic of information systems has an effect to job satisfaction.

DATA ANALYSIS

A questionnaire was developed to collect data in this study. The questions in the characteristic of information systems part are adapted from [5], using a 7x4 dimension table to evaluate the level of reach and range. Each corresponding row and column has a specific score representing characteristic of information systems. The questions in the organization culture part are adapted from [27] adjusted from the theory of [11]. These questions were measured using 5 Likert’s scale. The questions in the job satisfaction part are adopted from [35], which was used the theory of [44]. These questions were also measured using 5 Likert’s scale. Each question for organization culture and job satisfaction has the same weight, so the sums of each construct were calculated [11]. All of constructs were passed validity and reliability tests.

The questionnaire was sent to 700 small and medium enterprises in service sector located in Bangkok and vicinity. These companies are listed in Department of Business Development, Ministry of Commerce. It also sent to 4 micro-biomedicine
companies in Thailand located in Bangkok. Due to the micro-biomedicine companies is large, so 75 sets of the questionnaire were sent to each company to give to sale representatives and product managers to fill.

20 questionnaires were sent back from small and medium enterprises and 128 questionnaires were received from micro-biomedicine companies. Six questionnaires were incomplete. The response rate is 14.2 percentages, which was acceptable [20]. The data were coded and analyzed using multiple linear regressions in SPSS version 11.5.

**FINDING**

The respondents from the sampling organization use Internet and Intranet relatively high. They use them for internal communications, searching for business information, and communication with customers and suppliers. 47.1 percentages have branches abroad. 16.9 percentages have branches in other provinces and aboard. 10.6 percentages have branches in other provinces. 25.4 percentages have no branches. Most sample organizations are in private sector. The characteristics of the samples are closely to the characteristics of the population.

Table 1 shows the results from multiple linear regressions. The result shows no relationship between characteristic of Information Systems and job satisfaction, which leads to reject the first hypothesis at significant level at 0.05. Only organization culture has an effect on characteristic of Information Systems, so the second hypothesis is accepted at the same significant level. Also only organization culture has an effect on job satisfaction.

Considering in more details, the number of organizations that can access the Information Systems anywhere any time is small, same as the number of organizations that can communicate with their suppliers and customers without using specific applications. Even the number of organizations that can communicate with their suppliers and customers with a specific application is low also. The number of organizations that have internal communication with some branches in aboard and other provinces is relatively low. Even the number of organizations that can contact internally in the same building is also low. These findings can lead to the reason why characteristic of Information Systems has no effect on job satisfaction. Moreover, whether Information Systems are an important part in doing any job, but they have no effect on employees’ promotion and work opportunities or employee’s performance. As [48] mentioned, job satisfaction is affected by wage and salary, working opportunity and promotion, employer’s response to the employees’ request, and manager-employee’s relationship.

Considering in more details about organization culture and job satisfaction, the result from multiple linear regressions shows that only response to change, motivation to knowledge exchange, and performance measurements have some effect on job satisfaction. Firstly, change the working process can lead to the improvement of organization performance. If the performance of organization is better, it has a high chance to have higher wage and salary [54][55]. Secondly, good information is used to support effective working and then creates organizational knowledge, so high motivation to exchange knowledge can affect the employees’ performance, also the job satisfaction [6][50]. Lastly, reasonable performance measurements make employees feel stable and happy to work. Performance measurements have an effect on employees’ wages and salaries, so do on job satisfaction [1].

Considering about organization culture and characteristics of Information Systems, the result from multiple linear regressions shows that only the way of decision making and performance measurement have some effect on characteristic of Information Systems. Information Systems are used widely in any organization, so bringing Information Systems to use should be agreed by every department in the organization, not only by the decision of Information Technology department [17][51]. Also even using Information Systems is not stated in any performance measurement, it should be supported by the executive for promoting to use [27]. Because effective working performance needs good information, Information Systems can help accessing a lot of good Information from both internal and external organization [30]. Figure 1 shows the result of this research.

**LIMITATIONS AND CONCERNS**

Most questionnaires received for data analysis were from micro-biomedicine companies. As the nature of the pharmaceutical industry discussed above, the nature of information systems in this research would be based on the companies in this industry. The results in this research can represent the relationships of organization culture, job satisfaction and characteristic of Information Systems only in this environment or likewise environment. It would be valuable to repeat this research in other environment or industry to explore the relationships of these three constructs. Also the multiple linear regression models indicate that there are other factors affecting job satisfaction and characteristic of Information Systems.

**REFERENCES**


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![Figure 1: The Relationships of Three Constructs](image-url)

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<th>Sig.</th>
<th>Result</th>
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<td></td>
<td>Reject</td>
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<tr>
<td></td>
<td>Organization culture</td>
<td>H3</td>
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<td>0.000</td>
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<tr>
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<td>Organization culture</td>
<td>H2</td>
<td>0.249</td>
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Table 1: The Results from Regression Analysis