

The Systematic Development of Efficient Teamwork of Personnel of King Mongkut's University of Technology North Bangkok Rayong Campus

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Abstract

The systematic teamwork and groups of people within the organization that interact in the organization. As a result of the aforementioned elements, educational institutions, both government and private sectors, should pay attention. and deeply aware in management organizational structure organization management This element, if managed properly and systematically, would affect the behavior of personnel and people within that organization. There is very interesting to study the systematic teamwork effectiveness of the personnel of King Mongkut's University of Technology North Bangkok Rayong Campus and Teamwork component of the personnel of King Mongkut's University of Technology North Bangkok Rayong Campus.

The objectives of this research were to study the systematic teamwork effectiveness of the personnel of King Mongkut's University of Technology North Bangkok Rayong Campus and Teamwork component of the personnel of King Mongkut's University of Technology North Bangkok Rayong Campus.

This was quantitative research and the population that answered the questionnaire consisted of 236 persons who work at the King Mongkut's University of Technology North Bangkok Rayong Campus, chosen through purposive sampling. The data was obtained from the questionnaire form. The data were analyzed using frequency, percentage, mean, standard deviation and structural equation model method.

The results showed that the teamwork's efficiency of the personnel of King Mongkut's University of Technology North Bangkok Rayong Campus was at a high level. There are 4

components in the teamwork model of the personnel of the King Mongkut's University of Technology North Bangkok Rayong Campus comprises Leader, Member, Task and System and in general attitude on these were at a high level. Development systematic structure of the team's efficiency of the personnel of the King Mongkut's University of Technology North Bangkok Rayong Campus was training and workshop.

Keywords: Personnel efficient; teamwork; development process

Introduction

Nowadays, teamwork is an important factor affecting the success of any organization. Especially the management process that must focus on the participation of all personnel because when the cooperation in the work of the personnel. Such as this creates a good working environment and promotes work processes to be more efficient. It can help an organization achieve its objectives finally. Teamwork can help an organization get a new concept from members' different skills and experiences. This may lead to creating innovations in the organization (Sayadpanit, 2020).

The development of information technology makes any organization has a more complex structure. So, it is necessary to operate systematically. At present, the operation of any organization must have a relationship with another organization too. This led to the adoption of teamwork principles and styles. To build a strong team and let all personnel see the importance of working together as a team (Paoart, 2016). The organizational management of a business needs to be able to make decisions and resolve issues in order to be both effective and beneficial. The process of organizing, planning, leading and controlling resources within an entity with the overall aim of achieving its objectives. In addition, organization management refers to the art of getting people together on a common platform to make them work towards a common predefined goal. Organization management enables the optimum use of resources through meticulous planning and control at the workplace. Essential Features of Organization Management comprised planning, organizing, staffing, leading, control, time management, and motivation (Juneja, 2022).

Teamwork is a working process of people with different knowledge and skills in an organization. There shows that the person will have a different cost of knowledge, ability, or human capital.

In good teamwork, team members must work together where everyone on the team has to put their thoughts, energy, and energy for the job or the success of the job by not being

considered as the work of one's only. A good team should create a trusting work environment, trust and relationship with each other which leads to love and unity among the group. Good teamwork should have a good management system or team management with quality members who can work and are responsible for their duties and have effective team leaders with good leadership qualities.

King Mongkut's University of Technology North Bangkok Rayong Campus is an educational organization consisting of many personnel with different human capital. Therefore, to work efficiently, it is necessary to develop the human capital of internal personnel as well. Researchers recognize the importance of working as a team and the importance of human capital affecting teamwork. The research was conducted to study the current teamwork efficiency of personnel of King Mongkut's University of Technology North Bangkok Rayong Campus and study the elements of teamwork and factors affecting the team's efficiency of the personnel and study on development guidelines of the team's efficiency of the personnel of King Mongkut's University of Technology North Bangkok Rayong Campus too.

Human Resources Behavior of personnel or the teamwork and groups of people within the organization that interact in the organization. As a result of the aforementioned elements, educational institutions, both government and private sectors, should pay attention. and deeply aware in management organizational structure organization management This element, if managed properly and systematically, would affect the behavior of personnel and people within that organization.

Research Objectives

1. To analyze the teamwork efficiency of the personnel of King Mongkut's University of Technology North Bangkok Rayong Campus.
2. To examine the teamwork component of the personnel of King Mongkut's University of Technology North Bangkok Rayong Campus.

Literature Reviews

Concept and theory of development

The concept of development is the first part of theory development. Human resource management (HRM) is the practice of recruiting, hiring, deploying and managing an organization's

employees. HRM is often referred to simply as human resources (HR). A company or organization's HR department is usually responsible for creating, putting into effect and overseeing policies governing workers and the relationship of the organization with its employees. The term human resources were first used in the early 1900s, and then more widely in the 1960s, to describe the people who work for the organization, in aggregate (Chai, 2022). Human resource development is very important to the development of the organization. There are several methods of development e.g. training, seminar, and on job training etc. However, in the development, there are many factors involved. The results of Kaewkhao, Misomnai and Rajphaetyakhom (2018) found, that factors influencing human resource development of the Department of Agricultural Extension, Ministry of Agriculture and Cooperatives comprises cognitive-behavioural science support of senior management performance of key human resource management functions and technological advancements. And Guidelines for human resource development include individual human resource development planning, career advancement planning, and budget allocation for sufficient human resource development. While Niveen M. Al-Sayyed. (2014) found, that the most important internal and external factors affecting human resource development are leadership style, employee commitments and motivation, demographic characteristics, labor unions, and governmental laws and regulations.

From this concept, factors affecting human resource development comprise leadership style, employee commitments and motivation, demographic characteristics, cognitive-behavioural science, support of seniors, management performance of key human resource management functions and technological advancements.

Concept of efficiency

Efficiency is the (often measurable) ability to avoid wasting materials, energy, efforts, money, and time in doing something or in producing the desired result. In a more general sense, it is the ability to do things well, successfully, and without waste. Efficiency is thus not a goal in itself. It is not something we want for its own sake, but rather because it helps us attain more of the things we value (Stone, 2012). In more mathematical or scientific terms, it signifies the level of performance that uses the least amount of inputs to achieve the highest amount of output. It often specifically comprises the capability of a specific application of effort to produce a specific outcome with a minimum amount or quantity of waste, expense, or unnecessary effort (Sickles & Zelenyuk, 2019). Efficiency refers to very different inputs and outputs in different fields and industries.

Therefore, efficiency refers to the quality or level of efficiency in any operation. It's about managing the same resources and time for maximum benefit.

Concept of teamwork

In good teamwork, team members must work together where everyone on the team has to put their thoughts, energy, and energy for the job or the success of the job by not being considered as the work of one's only. A good team should create a trusting work environment, trust and relationship with each other which leads to love and unity among the group. Good teamwork should have a good management system or team management with quality members who can work and are responsible for their duties and have effective team leaders with good leadership qualities.

There are four key components of teamwork: leader, member, task, and system. That the leader must have good attributes and leadership. That means intelligent, mature, reasonable, motivated to succeed, have good human relations, get along well with members or colleagues, be friendly, compassionate, selfless, and adhere to human relations principles. There are 4 key factors contribute to effective teamwork: process, resources and context, composition and work design as follows:

1] Process: In the process, there are factors related to the effectiveness of the team as follows;

- Social loafing: It is the behavior of people within the group who prefer to avoid working when working with others. This is to take advantage of other colleagues who work hard and do not use their efforts to benefit the group.

- Team efficacy: This thing means the team's confidence in the ability to succeed in the job (Kritchouw, Roopsing and Sincharu, 2020).

- Specific goals: A successful team must be able to translate common objectives into specific, practical goals and measurable and realistic. Such as this, can help to increase performance.

- Common purpose: To be effective a team must have common objectives. This will help to set the direction and help build the strength and engagement of the members. The objective here is a vision.

- Conflict levels: In this item can explain conflicts that arise within the team are not corrupt. Because if any team has no conflict at all, there will be delays and no enthusiasm. However, the conflict should be at an appropriate level.

2] Context: Resources and environmental or contextual influences contribute to an effective team. The context comprised the climate of trust, performance evaluation and reward systems, leadership and structure, and adequate resources.

3] Composition: This component comprises personality, member flexibility, diversity, abilities of the member, member preferences, size of teams, and allocating roles.

4] Work design: Design is important, taking variables such as freedom into account. and freedom to work with opportunities to use skills and knowledge of various abilities. The formatting of the event can be motivating because it gives members a greater sense of responsibility (Bua-In, 2021).

From literature reviews, the researcher creates a conceptual framework as a figure 1;

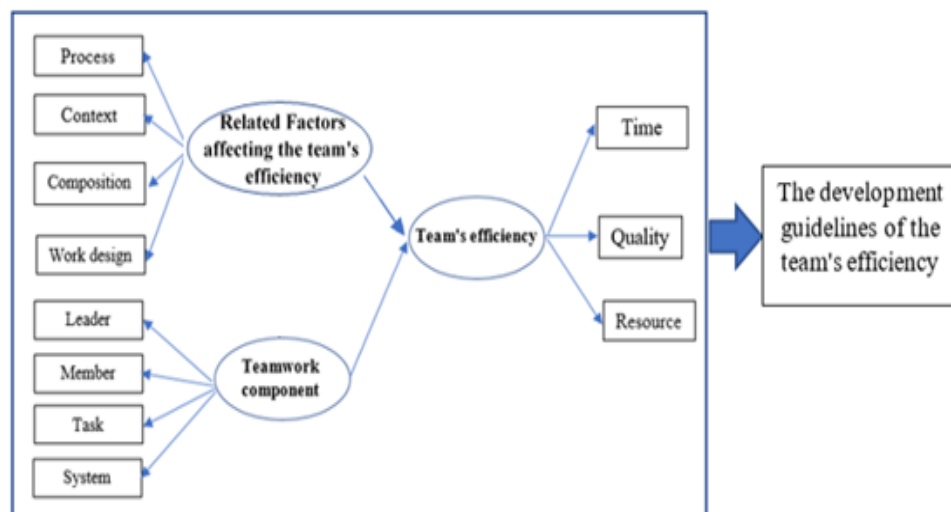


Figure 1: Conceptual Framework

Hypothesis

H1: Related factors have a direct effect on team efficiency

H2: Teamwork components have a direct effect on team efficiency

Methodology

This is quantitative research and the population in the research consisted of 236 persons who work at the King Mongkut's University of Technology North Bangkok Rayong Campus, and this research is collected the data from all populations. A research tool is a questionnaire form and it is checked for content validity by 5 experts whereas the Index of Objective Congruence is between 0.60 – 1.00. It is considered to be consistent with the content and then to determine the

confidence of the instrument by try out methodology with 30 non-populations in this research and alpha Cronbach co-efficiency is equal to 0.98. It shows that research tools have high reliability that can be used to collect data. The data is analyzed by descriptive statistics and inferential statistics as follows frequency, percentage, mean and standard deviation. The hypothesis is tested by multiple regression analysis.

Results

Objective 1. The teamwork efficiency of the personnel of King Mongkut's University of Technology North Bangkok Rayong Campus. The data analysis was shown as follows in table 1.

Table 1 Mean & Standard deviation of the team's efficiency of the personnel of King Mongkut's University of Technology North Bangkok Rayong Campus

Topics of the team's efficiency	$\bar{x}$	S.D.	Interpretation
Time			
The team can complete the work in the specified time.	3.91	0.805	High
The team can complete the work before the scheduled time.	3.88	0.849	High
Quality			
The team can perform the work with quality according to the specified criteria.	3.90	0.762	High
The team can perform the work with quality that exceeds the specified criteria.	3.82	0.814	High
Resource			
Teams can perform quality tasks with limited resources.	3.92	0.809	High
Teams can do quality work with fewer resources available.	3.89	0.580	High
Total	3.88	0.770	High

Table 1 found that; In general, the team's efficiency of the personnel of King Mongkut's University of Technology North Bangkok Rayong Campus was at a high level ($\bar{x} = 3.88$, S.D. = 0.770). When considering each aspect, it was found that the mean of resource issues on item 1 is the highest ($\bar{x} = 3.92$, S.D. = 0.809). While the mean of a quality issue on the second item is minimal ($\bar{x} = 3.82$, S.D. = 0.814).

Objective 2. The teamwork model of the personnel of the King Mongkut's University of Technology North Bangkok Rayong Campus comprises 4 components Leader, Member, Task and System. The data analysis was shown as follows in table 2.

Table 2 Mean & Standard deviation of the attitude toward the teamwork component.

Attitude toward teamwork components	$\bar{x}$	S.D.	Interpretation
Leader	4.00	0.813	High
Members	3.94	0.841	High
Tasks	3.91	0.789	High
System	3.86	0.833	High
Total	3.93	0.594	High

Table 2 found that; In general, the attitude toward teamwork components of the King Mongkut's University of Technology North Bangkok Rayong Campus was at a high level ($\bar{x}$ = 3.93, S.D. = 0.594). When considering each aspect, it was found that the mean of the leader item is the highest ($\bar{x}$ = 4.00, S.D. = 0.813). While the mean of a system item is minimal ($\bar{x}$ = 3.86, S.D. = 0.833).

Hypothesis

H1: Related factors have a direct effect on team efficiency

Table 3 Regression coefficient

Variable	b	S.E. b	β	t	Sig
Constant	-.159	.095	-	-.167	.006
Process	.316	.027	.349	11.210	.000
Context	.245	.030	.264	8.021	.000
Composition	.207	.032	.186	6.458	.000
Work design	.137	.029	.144	4.785	.000

R = .930, R² = .865, R²_{adj} = .862, F = 539.504, p = .000

p-value < .01

Table 3 found that; Related factors have a direct effect on team efficiency at 86.50% a significance level of .01 and the Regression coefficient is equal to .930. From the information presented, the researcher can create a regression equation as a following;

$$Z = .349Z_{\text{Process}} + .264Z_{\text{Context}} + .186Z_{\text{Composition}} + .144Z_{\text{Work design}}$$

H2: Teamwork components have a direct effect on team efficiency

Table 4 Regression coefficient

Variable	b	S.E. b	β	t	Sig
Constant	.680	.182	–	3.757	.000
Leader	.554	.052	.545	10.412	.000
Members	.358	.056	.345	6.250	.000
Tasks	.283	.059	.230	4.720	.000
System	.310	.055	.279	5.520	.000
R = .820, R ² = .672, R ² _{adj} = .669, F = 144.292, p = .000					
p-value < .01					

Table 4 found that; Teamwork components have a direct effect on team efficiency at 67.20% a significance level of .01 and the Regression coefficient is equal to .930. From the information presented, the researcher can create a regression equation as a following;

$$Z = .545Z_{\text{Leader}} + .345Z_{\text{Members}} + .279Z_{\text{System}} + .230Z_{\text{Work design}}$$

Discussion

In general, the team efficiency of the personnel of King Mongkut's University of Technology North Bangkok Rayong Campus is at a high level. It was consistent with the research result of Paoart (2016) found teamwork of government teachers in schools and Expanding opportunities in Mueang Trat District under the Office of Trat Primary Educational Service Area as a whole and each aspect is at a high level. The reason for this may be the team has good planning and it was consistent with the management theories that Atiwiththayaporn (2010) said, good planning helps work quickly and effectively because there was a plan as a guideline.

The teamwork model of the personnel of the King Mongkut's University of Technology North Bangkok Rayong Campus comprises 4 components Leader, Member, Task and System. It was consistent with Keawchaon and Chantuk (2017) found the component of effective teamwork had 4 elements and comprised individual, task, team, and organization. The four components of teamwork are different and similar to the elements of teamwork in this research. The reason for this may be due to different organizational structures and job descriptions.

Related Factors affecting the team's efficiency of the personnel of King Mongkut's University of Technology North Bangkok Rayong Campus. The result found in general, related factors affecting the team's efficiency of the King Mongkut's University of Technology North Bangkok Rayong Campus were at a high level. It was consistent with the research result of

Ngamwuttiwong (2016) found the factors affecting the teamwork of the ad hoc committee and the standing committee were at a high level. It showed that the variable were factors that can affect teamwork.

Development guidelines of the team's efficiency of the personnel of the King Mongkut's University of Technology North Bangkok Rayong Campus found the method for developing team's efficiency of the personnel of the King Mongkut's University of Technology North Bangkok Rayong Campus can use training and workshop. Whereas there must be clearly defined development objectives and a survey of the problems in the organization before development and must evaluate the development results regularly. It was consistent with the research result of Khiinth and Limmanee (2018) found the development of teacher teamwork guidelines for educational institutions under the Education Service Area Office Secondary School District 21 had 5 steps and comprised problem recognition, data collection and analysis, systematic operational planning, implementation of the plan, and assessing results from operations.

The first hypothesis testing found related factors comprised process, context, composition, and work design have a direct effect on team efficiency and according to the research hypothesis. It was consistent with the research result of Ngamwuttiwong (2016) found the factors affecting the teamwork of the ad hoc committee and the standing committee can be categorized into 6 areas: Relationships among colleagues, roles of team members, communication skills, work skills, organizational objectives and targets, and leadership. These factors affect the level of teamwork significantly.

The second hypothesis testing found teamwork components have a direct effect on team efficiency and according to the research hypothesis. It consisted of the research result of Emmanuel O. Boakye (2016) found there was clear evidence that teamwork and other measures of team performance are positively related to organizational performance. The result of the study shows that there was a significant positive impact of teamwork on organizational performance.

The hypothesis showed; Both related factors and teamwork components affect the team's efficiency. The reason may be all factors and all components are important e.g. the leader is one of the teamwork components if we considered we will find in the regression equation the leader was the most important whereas the β value is equal to .545. It shows leader's competency affects the team's efficiency itself.

New knowledge and the effects on society local and communities

From this research we know how to organize the society and communities. Moreover, we know that the staff can learn and has the good relation with each other.

Recruitment, appointment of knowledgeable personnel competency according to job position which is in this issue, it is consistent with society today, whether in the government or private sectors, in order to accept new employees or to find people to work in any position, which is clearly defined. Qualifications of those who come to work must have knowledge. What are your abilities? Initially, it will be checked based on educational qualifications, or inquire about work history or work certificates from other places. In order to confirm that the person who applied to work in that position has the knowledge and competence to do the job or not. All of them are human resources and teamwork.

Suggestions

Although the result showed; Teamwork efficiency is at a high level. But in the composition of teamwork, there are also different levels. Therefore, the management should consider the improvement on a case by case basis. where the element with the least average must be developed first.

The next time should research the other area because the researcher will get the information around and the next research may only study qualitative research. It will help the research get the depth data from individuals in the organization.

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