

# Factors Affecting Work Efficiency of Employees of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage)

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## Abstract

The purposes of this research study were 1) to study the levels of work efficiency of the employees of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage), 2) to examine the differences of personal factors and Performance Management Components that affected work efficiency of the employees of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage), and 3) to investigate the Performance Management Components affecting work efficiency of the employees of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage). 282 samples of the study were selected from the employees of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage) through stratified random sampling, using statistical methods including percentage, mean, standard deviation, t-test, variance, and Multi-step regression analysis. The research found that: 1) The overall work efficiency was found at a high level. When considering each aspect, the work efficiency was considered a high level in all aspects; (1) Financial (Mean = 4.10, SD = 0.65), (2) Internal process (Mean = 3.63, SD = 1.08), (3) Customers (Mean = 3.62, SD = 1.03), and (4) Learning (Mean = 3.42, SD = 1.18), respectively. 2) There were differences in work efficiency of the employees of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage) with statistical significance in terms of personal factors, including status, work experiences, and educational level. 3) Work efficiency of the employees of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage) was resulted from the factors of safety in workplace ( $\beta = 0.24$ ), admiration and acceptance ( $\beta = 0.23$ ), training development ( $\beta = 0.22$ ), and policy and administration ( $\beta = 0.23$ ). These equations had the predictive power of 0.69.

**Keywords:** work efficiency, co-operative, Performance Management Components

## 1. Introduction

Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage) is a state-owned enterprise engaged in the dairy processing business. Over the past years, the co-operative exhibited the capacity to compete with other dairy processing companies throughout the country. Historically, the co-operative was conceived amidst the situation of oversupply of raw milk in Nong Pho area of Ratchaburi Province causing a serious problem of product distribution among dairy farmers due to the absence of factories capable for processing raw milk into dairy products. To alleviate such problem, the agricultural association in Nong Pho Sub-district decided to make a petition to His Majesty King Bhumibol Adulyadej, hoping that would help solving the problem. When the petition was accepted, His Majesty the King graciously gave an order to set up a committee panel to supervise the construction of the factory. A certain amount of the royal fund was also granted, along with the money from the people who wished to support the royal project. Since then, the business has been operated as co-operative under the intention and guidance of His Majesty the late King. Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage) has served as the factory producing Pasteurized milk, UHT milk, and other products distributed throughout the country, with the manufacturing capacity that is sufficient for the quantity of raw milk delivered by dairy farmers in Nong Pho and its vicinity. The project effectively relieved the problem of distribution channel of raw milk. Operated in the form of co-operative, the members were the ones who benefited.

The operation of the co-operative gradually became more stable, with an increasing number of members. However, with the ever-changing market competition and the economic volatility of Thailand, the employees of the co-operative are currently lacking the motivation to perform their tasks. That inevitably led to the inefficiency of the operation and the declining competitiveness of Nong Pho Ratchaburi Dairy Co-operative

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Limited (Under the Royal Patronage). It is, therefore, crucial to examine the efficiency and responsiveness to the roles of the employees. [1]. The research study entitled “Factors Affecting Performance of Employees of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage) was aimed at measuring the levels of efficiency performed by the employees of the co-operative and at comparing the differences of personal factors as well as management characteristics that affected the performance of the employees. It is expected that this research will help the executives to understand the needs in terms of motivational factors that can maximize the efficiency of the employees in all departments of the co-operative. When the employees’ needs in terms of motivational factors are addressed, the employees will naturally develop a sense of satisfaction and belonging to the co-operative, and will be willing to dedicate their efforts to perform their roles. This will result in increased performance efficiency and the attainment of the targeted objectives.

## 2. Objectives

2.1. To examine the levels of work efficiency of the employees of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage)

2.2. To compare the differences of personal factors that affect work efficiency of the employees of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage)

2.3. To examine the performance management components affecting work efficiency of the employees of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage)

## Research Hypotheses

From the literature review, the following hypotheses can be formulated.

H1. Work efficiency of the employees of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage) varies according to personal factors.

H2. Performance Management Components have an influence on work efficiency of the employees of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage).

## Literature Review

The researchers have examined the related research studies and designed a framework for this research. The essential aspects of the literature review can be summarized as follows.

### 1. The Concept of Work Efficiency

Somjai Laksana [2]. defined work efficiency of individuals as the completion of the assigned tasks without wasting the time and energy; the performance should be fast and efficient. The staff or personnel with work efficiency are those who are determined to deliver their best performance through effective strategies or techniques that produce maximum outcomes, which are satisfactory in terms of quality and consume minimum costs, energy, and time. Priyaphorn Winganuttraroj [3] suggested that effective team or groups of employees should develop positive feelings among the members. Importantly, the supervisors should realize that most of the problems are caused by work environment and interpersonal relationships. Therefore, the effective teams require crucial conditions, which include 1) responsibility and a sense of belonging to the organization in 3 dimensions: 1. a strong passion to maintain the membership of the organization, 2. a strong determination and willingness to use their efforts for the benefits of the organization, and 3. a faith and acceptance of values and goals of the organization. 2) There is a need to develop an understanding of interpersonal relationships because when individuals feel that they are important and valuable assets, they tend to exchange creative ideas leading to progress of the organization. 3) There is a need to develop skills and competency of the members as well as techniques of working with other members. 4) It is important that the teams are equipped with facilities and are provided with third-party consultants, who collect essential information necessary for improving the performance, giving feedbacks, solving problems, and negotiating conflicts.

From the concepts reviewed, it can be concluded that efficiency refers to a crucial evaluation process of the internal systems of an agency as well as various policies. The evaluation is to identify whether or not the performances and resources are utilized in accordance with the guidelines set out. If the organization operates by the guidelines, consumes less time than expected, and utilizes fewer resources, that organization, to a certain extent, displays the work efficiency. If failed to meet the criteria, that organization reflects the lack of work efficiency.

## 2. The concept of modern management strategies

The researchers focused on applying “Balanced Scorecard” theory, which began in 1990 when Robert S. Kaplan and David P. Norton developed a new approach to measuring balanced organizational performances. Their theory was later published in the United States in 1992 and was embraced by large organizations with complexity of business operation facing with “Chaos Situation” that needed to be solved. Management and evaluation of the operations, therefore, had to take several dimensions into account [4]

Kaplan and Norton [5] stated that BSC was a tool devised for evaluating the operational outcomes and for translating strategies into action, based on the evaluation consistent with the organization and the emphasis on the success of the organization. Pasu Decharin [4] explained that BSC was both an instrument in measurement and evaluation and a management tool that transmutes strategies into action. The Civil Service Commission highlighted the meaning of “Balanced” as the balance of views necessary for organization consideration, which was required for determining Key Success Factors (KSF) and Key Performance Indicators. The aim was to prevent deviation and to allow a complete consideration of the organization from all perspectives to happen, which contributed to the “achievement report of the organization presented in the executive report facilitating the executives to track the progress of the attainment of organizational objectives.” Alongkorn Meesuttha and Smit Satchukorn [6] stated that BSC was multi-dimensional structure used to determine the directions, to implement, and to manage all levels strategically. It was done through the linkage of program objectives, projects or activities, and assessment/evaluation with the organizational strategies.

Kaplan and Norton [5] described the four components of the BSC developed as a tool for organizational evaluation. Those 4 components or perspectives were:

1. Financial Perspective is indicative of outcomes and financial status of the company. Importantly, it reflects the expectations of shareholders or owners in terms of profits or dividends.

2. Customer Perspective is the perspective in which the organization or company must focus on the strategies towards customers’ satisfaction and positive image of the organization.

3. Internal Process Perspective is the view that the organization must focus on delivering the results in various aspects related to the production process, service process, and especially the processes in organizational units as an important strategy leading to customer satisfaction.

4. Learning and Growth Perspective is the perspective in which the organization will be able to have results in production process or excellent services. This demands capable, competent, and creative personnel who are willing to learn and research for new products. Learning and Growth Perspective is, therefore, a crucial foundation of long-term and sustainable success of the organization.

Therefore, the definition of BSC can be summarized as a tool used to evaluate the performance or operation, with different perspectives beyond finance. BSC is also a tool required for the translation of strategies into action to attain organizational objectives and ultimately for creating learning organizations.

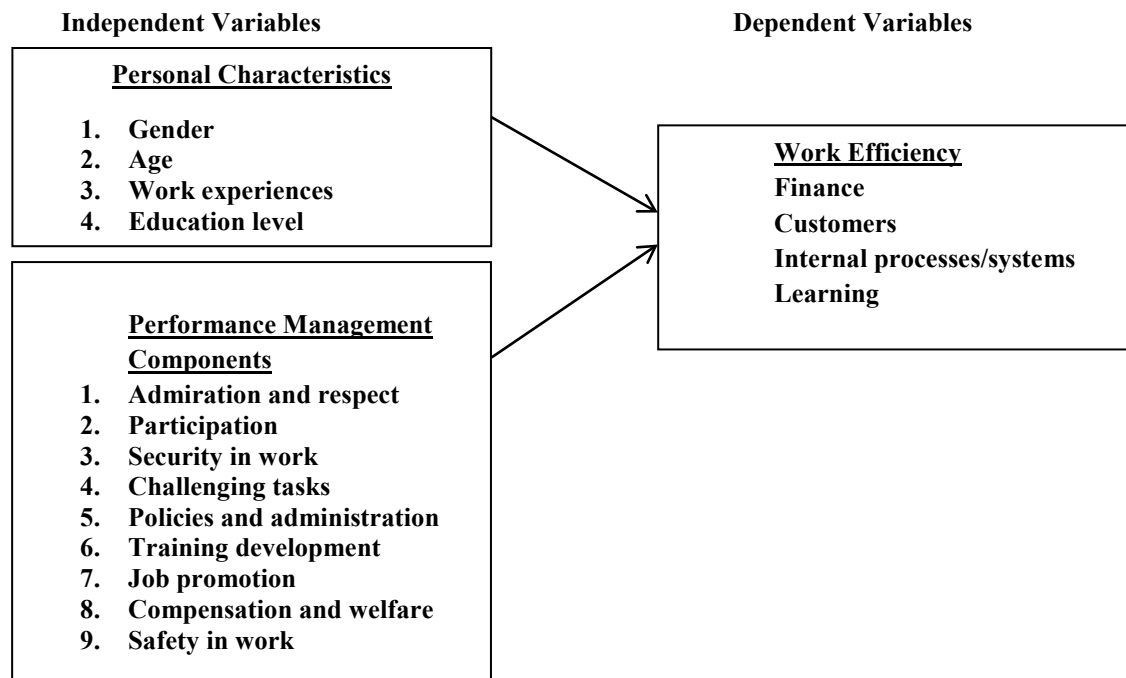
## 3. Theoretical Concepts Concerning Performance Management Components

Supattra Chanrod [7] viewed that performance management components should include: 1. the nature of work, the responsibilities, and the major and minor missions or work processes of different positions 2. amount of works required from the positions 3. specific qualifications suitable for the positions such as qualifications and experiences, and 4. the nature of the work whether or not the machines are required, the complexity of the work, and the operating environment. she discussed the factors that affected the efficiency of the operations of an organization. Those factors should include 1. personal characteristics which generally depends on the factors related to their needs, interests, values, ingenuity and attitudes towards the conditions of work as well as the supervisors 2. the nature of the work which is regarded as a tool to reflect the effectiveness and job satisfaction – the assignment of important tasks or the support for the personnel’s advancement 3. the conditions of work which are indicative of the effectiveness of the organizational structure, policies, attitudes of the management team and staff, and the working atmosphere, and 4. the styles of supervisors or chief executives which reflect the types of the leaders as well as personalities that affect the performance of the subordinates.

To summarize, good performance management components are likened to the internal motivation for the employees leading to good performances, which are rewards for the employees themselves. If the employees

are unable to produce desirable results, they are willing to put more efforts to overcome the dissatisfaction to reward themselves with better quality of work.

From the literature review and related research, the conceptual framework can be summarized as follows.



**Figure 1** Conceptual framework for the research

### 3. Methods

This research study was conducted as quantitative research, employing Survey Research and questionnaire as a tool to collect data from 950 employees of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage). The sample size was calculated using the formula of Krejcie and Morgan [8] with the possibility of 5 percent deviation. Thus, the sample size contained 282 sets in total. Stratified random sampling was used in order to obtain the balanced proportion of each department.

The questionnaire used to collect data in this research study was constructed through the theoretical concepts, related research, and the research conceptual framework. The contents collected by the questionnaire can be divided into 3 parts.

Part 1: Questions about personal characteristics of the respondents, including gender, age, status, work experiences, educational levels, using closed-ended questions in a format of check-lists.

Part 2: Questions on the opinions of the Performance Management Components to find out the extent of opinions concerning the Performance Management Components that influence the work efficiency of the employees. This set of 27 closed-ended questions contain 5-rating scales of check-lists.

Part 3: Questions about the level of work efficiency of the employees of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage). This set of 10 questions contain 5-rating scales of check-lists.

The questionnaire was verified for the validity of the instrument. It was submitted to 3 experts to review its accuracy, content validity, comprehensiveness, and was tried out with 30 participants who were not the actual samples, yet shared certain similarities. The results obtained from the participants at this level were tested for the reliability of the tool using Cronbach's alpha. As a result, the reliability in the aspect of the Performance Management Components was 0.82-0.88 and 0.75-0.83 for the work efficiency of the employees. This proved that the questionnaire was qualified in terms of both content validity and reliability.

Statistics used in data analysis included:

1) descriptive statistics, which analyzed demographic characteristics of the respondents through frequency and percentage (%). The results were then presented in tables with descriptions. Descriptive statistics also analyzed the characteristics of dependent and independent variables, using mean and standard deviation (SD).

2) Inferential statistics were used to compare the mean of the opinions concerning the Performance Management Components that were related to the work efficiency, classified by personal factors, including gender, age, status, work experiences, and education level. The t-test was used for the variables classified into two groups and One Way Analysis of Variance was used for the variables of 3 groups and above. When significant differences were detected, the differences in pairs would be analyzed, using Least Significant Differences: LSD. As for the analysis of the level of work efficiency of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage) based on the factors of the Performance Management Components, Stepwise Multiple Regression Analysis was used.

#### 4. Results and discussion

##### Part 1: Personal Characteristics of the Respondents

The results showed that most of the respondents were females (64.90%), with age range of 20-30 years old (31.20%), single status (43.60%), 4-6 years of work experiences (28.00%), and education level below high school (27.00%).

##### Part 2: The Results from the Analysis of Levels of Opinions Concerning Performance Management Components and Work Efficiency

**Table 1** Performance Management Components of Employees of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage)

Performance Management Components	Mean	SD	Order
1. Admiration and respect	3.69	0.87	2
2. Participation	3.55	0.86	4
3. Security in work	3.79	0.92	1
4. Challenging tasks	3.63	0.93	3
5. Policies and administration	3.48	1.09	5
6. Training development	3.42	1.01	7
7. Job promotion	3.30	1.12	8
8. Compensation and welfare	3.28	1.09	9
9. Safety in work	3.48	1.06	6
<b>Total</b>	<b>3.51</b>	<b>0.99</b>	

From Table 1, it was found that the mean of Performance Management Components in relation with work efficiency of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage) was at a high level ( $\bar{X} = 3.51$ , S.D.= 0.99). The three aspects with the highest means were security in work ( $\bar{X} = 3.79$ , S.D.= 0.92), admiration and respect ( $\bar{X} = 3.69$ , S.D.= 0.87), and challenging tasks ( $\bar{X} = 3.63$ , S.D.= 0.93), respectively.

### Part 3: Results of the Analysis of Opinions on Work Efficiency of the Employees of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage)

**Table 2** Work Efficiency of the Employees of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage)

Work Efficiency	Mean	SD	Order
Finance	4.10	0.65	1
Customers	3.62	1.03	3
Internal	3.63	1.08	2
Learning	3.42	1.18	4
<b>Total</b>	<b>3.69</b>	<b>0.98</b>	

It was found that the overall mean score of the opinions on work efficiency of the employees of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage) was at a high level ( $\bar{X} = 3.69$ , S.D.= 0.98). The mean scores of work efficiency were found at a high level in 4 aspects, including finance ( $\bar{X} = 4.10$ , S.D.= 0.65) internal processes/systems ( $\bar{X} = 3.63$ , S.D.= 1.08) customers ( $\bar{X} = 3.62$ , S.D.= 1.03), and learning ( $\bar{X} = 3.42$ , S.D.= 1.18), respectively.

### Part 4: Work Efficiency of the Employees of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage)

The results can be summarized in a form of table detailed as follows.

**Table 3** Work Efficiency of the Employees of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage) Classified According to Personal Factors

Independent Variables (Personal Factors)	statistics	Dependent Variables (sig)			
		Finance	Customers	Internal Processes/Systems	Learning
Gender	t-test	0.39	0.54	0.19	0.77
Age	ANOVA	0.87	0.08	0.09	0.23
Status	ANOVA	0.18	0.01**	<0.01**	<0.01**
Work Experiences	ANOVA	0.01**	<0.01**	<0.01**	<0.01**
Education Level	ANOVA	<0.01**	<0.01**	<0.01**	<0.01**

The research found that work efficiency of the employees of Nong Pho Ratchaburi Dairy Co-operative Limited was different with statistical significance in terms of personal factors, including status, work experiences, and education level.

### Part 4: Results of the Analysis of Performance Management Components Influencing Work Efficiency of Employees of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage)

Prior to testing the hypothesis, the researchers conducted multicollinearity test of independent variables, by determining the correlation between variables that did not exceed 0.80.

**Table 4:** Multicollinearity Analysis

	Admiration & respect	Participation	Security	Challenging tasks	Policies	Training	Promotion	Compensation	Safety
Admiration& respect	1	0.75	0.65	0.67	0.69	0.72	0.73	0.63	0.70
Participation		1	0.70	0.76	0.72	0.74	0.74	0.67	0.73
Security			1	0.77	0.75	0.71	0.66	0.66	0.71
Challenging tasks				1	0.77	0.75	0.73	0.68	0.76
Policies					1	0.70	0.78	0.76	0.75
Training						1	0.73	0.76	0.70
Promotion							1	0.72	0.71
Compensation								1	0.78
Safety									1

The results of the analysis revealed that the variables to be analyzed were not affected by Multicollinearity and, therefore, were qualified for further multiple regression analysis.

**Table 5** Performance Management Components Affecting Work Efficiency of Employees of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage)

	B	SE.	Beta	t	sig
(Constant)	1.01	0.12		8.21	0.00
Safety in work	0.19	0.06	0.24	3.42	0.00
Admiration and respect	0.22	0.05	0.23	4.54	0.00
Training development	0.18	0.05	0.22	3.36	0.00
Policies and administration	0.18	0.05	0.23	3.28	0.00
<b>R=0.83 R<sup>2</sup> = 0.69 ADJR<sup>2</sup> = 0.68</b>					

The research found that Performance Management Components that influenced work efficiency of the employees of Nong Pho Ratchaburi Dairy Co-operative Limited were resulted from safety in work ( $\beta = 0.24$ ), admiration and respect ( $\beta = 0.23$ ), training development ( $\beta = 0.22$ ), and policies and administration ( $\beta = 0.23$ ). The equation had a predictive power of 0.69.

## 5. Conclusions

### Discussion

Performance management components had certain influences on work efficiency of the employees of Nong Pho Ratchaburi Dairy Co-operative Limited. This finding was consistent with a study of Thawatchakul Yukoldham [9] investigating the factors affecting work efficiency of police officers at Bangmod Police Station, Bangkok. Yukoldham's study found that police officers at Bangmod Metropolitan Police Station had overall opinions concerning the factors influencing work efficiency at a high level. When examining each aspect, it was found that 'room for advancement,' relationships with superintendents and colleagues, and compensation and welfare were considered the factors with a high level of opinions.

To establish the security in career for Nong Pho Ratchaburi Dairy Co-operative Limited, it is important that the employment has to be continued until the employees reach their retirement. They had to be satisfied with their current works and positions and had a sense of security in their works, which would contribute to the

achievements of the goals. Besides, the employees had to be acknowledged by their superintendents with admiration and respects. The colleagues should be open to listen to others' opinions and suggestions to improve the performance. If all performance management components were responded appropriately, the employees' opinions would alter and affect the actual performance. If those components were not addressed to sufficiently meet the demands or expectation of the employees, the level of their opinions tended to decrease. The followings were the essential aspects of the discussion regarding performance management components that influenced work efficiency of the employees of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage).

1. *Admiration and respect.* This aspect influenced work efficiency in a way that employees should receive admiration and respect from their superintendents, co-operation and acceptance from their colleagues, as that would boost self-esteem and encourage the colleagues to enhance the performances. This factor was inseparable from the success in performance and motivation. Somjai Laksana [2] stated that the organizations' achievements or productivity depended largely on motivation through organizational culture, a sense of belonging to or ownership in the organization, and participatory management.

2. *Policy and Administration.* This factor influenced work efficiency. When the organizations had clear policies on administration, appropriate rules and regulations, appropriate resource allocation, effective internal control system, and complaint systems and systems to collect feedbacks from the employees, the employees would develop a sense of belonging to the organizations. That would also contribute to certain behaviors among the employees; they had confidence and faith in the organizations, had discipline in work, adhere by the rules, participate in solving problems and obstacles eagerly and willingly, and had pride and appreciation in organizations. There were certain guidelines on how to effectively improve the administration and management of operations, including the development of organizational culture, personnel management, and motivation building. All these ultimately maximized work efficiency.

3. *Training Development.* This factor influenced work efficiency, as training and development were associated with job positions at a high level. It is, therefore, crucial for the organizations to develop training courses suitable for job positions to enhance work efficiency of the employees. The training should be primarily concerned with the outcomes, so that the trainees focused on the application of lessons learned the training into actual performance. Trainings had to be provided on a constant basis to respond to the rapidly changing information and technology. In other words, the personnel should be equipped with knowledge and skills necessary for effective delivery of performance and at the same time were provided with useful and updated information and technology. Providing the employees with trainings as needed and appropriate for each function could be a mechanism to attain effective and efficient performances in terms of service, resource management, and administration. Worachit Nongkae [10] stated that all these traits related to the knowledge, ability, skills and expertise of the person are essentially derived from the study, training, and the accumulated experience.

4. *Safety at work.* This factor influenced work efficiency of work in a way that strict safety control system was required in all organizations. Each operational process should be monitored and appropriate steps should be taken when accidents in workplace occurred.

## **Suggestions**

### **1. Suggestions for the Application of the Research Results**

1.1 Though work efficiency of the employees of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage) was found at a high level, it is advisable that the Co-operative continue with the development of the employees' efficiency to maximize the overall work efficiency of the organization.

1.2. As the differences in personal factors of gender, age, status, work experiences, and education level contributed to differences in terms of performances with statistical significance, the Co-operative should be more attentive on these personal characteristics. It is important that the Co-operative effectively identify the needs of different age range and respond appropriately to those needs, as that will affect the satisfaction of the employees and their inputs for increased productivity. In regard to education, the employees should be supported with an opportunity to further their education or attend evening classes. The employees with long work experiences with the Co-operative should be rewarded with raised salaries or increased welfare. That could encourage the employees to work for the Co-operative longer.

1.3. Regarding Performance Management Components that influenced work efficiency of the employees of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage), the factors with



statistical significance were safety at work, admiration and respect, training development, and policy and administration. The factors that should be improved were participation in work, security in work, challenging tasks, job promotion, and compensation and welfare, respectively.

## 2. Suggestions for Further Studies

2.1 As the nature of this research is cross-sectional study, it is recommended that a study in the related field should be re-conducted in a certain period of time in the future to investigate the performance management components that will influence work efficiency of the employees of characteristics affecting the efficiency of the employees of Nong Pho Ratchaburi Dairy Co-operative Limited (Under the Royal Patronage).

2.2 As this research study focuses only on quantitative research, qualitative research should be conducted in the future to supplement the in-depths results.

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