

## ANTECEDENTS OF HIGH PERFORMANCE ORGANIZATION IN PHARMACEUTICAL INDUSTRY, THAILAND

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### Abstract

Drug or pharmaceutical industry is the business related to enhancement of health security for population. It is therefore essential for economic and social security and growth and this captioned industry tends to highly expand in line with an increase of consumer needs. To become a high performance organization then contributes to the organizational competitiveness and effective internal administration. This research aims to 1) examine the level of variables; transformational leadership, knowledge management, Innovative capability and high performance organization of the pharmaceutical industry in Thailand, 2) explore the influence of the variables; transformational leadership, knowledge management and Innovative capability towards high performance organization of the pharmaceutical industry in Thailand, and 3) develop the high performance organization model of the pharmaceutical industry in Thailand. The mixed research methodology was applied between the quantitative and qualitative terms and the sample group consisted of 320 employees from supervisory to top executive levels of pharmaceutical industry in Thailand. The sample size was calculated based on 20-time criteria of the observed variables with the multi-stage method whereas data collection, for quantitative term, was made through questionnaires that were later analyzed by the structural equation modelling. In view of the qualitative term, an in-depth interview was conducted with the primary informants consisting of employees from supervisory to top executive levels of pharmaceutical industry in Thailand. The research findings revealed that 1) the variables; transformational leadership, knowledge management, innovative capability and high performance organization of the pharmaceutical industry in Thailand were all at a high level, 2) transformational leadership, knowledge management and innovative capability affected the high performance organization of the pharmaceutical industry in Thailand at .05 statistical significance level, and 3) the high performance organization model as developed by the researcher was namely "T K I H Model (T = Transformational Leadership, K = Knowledge Management, I = Innovation Capability, H = High Performance Organization). In addition, the qualitative findings also indicated that to become a high performance organization of the pharmaceutical industry in Thailand, the entrepreneurs should apply innovation management and new technologies for improvement of internal working process, production process and product development to be more effective to substantially create reliability in compliance with the international standard and quality. Furthermore, the qualitative findings also can be further applied as a guideline to define the policy to increase high performance of pharmaceutical industry in Thailand for competitiveness at a national and international level.

**Keywords:** Transformational Leadership/Knowledge Management/Innovative Capability/High Performance Organization/ Pharmaceutical Industry in Thailand.

## 1. INTRODUCTION

Drug or pharmaceutical business is a business that is about strengthening the health security of the population, therefore, it is important to the stability and growth of the economy and society. The pharmaceutical business in Thailand tends to expand more according to the needs of the increasing number of consumers as Thailand has a good public health system, causing the average age of the Thai population to increase significantly. Thailand Development Research Institute (TDRI) has reported that over the past 6 decades, life expectancy of the Thai population has increased by 4.4 months per year, making the average age of the Thai population in 2016 at 75.3 years from 55 years in 1961. This increase in the elderly population will have a positive direct effect on health problems and treatments because the elderly often have various diseases easily due to deterioration of the body and reduced immunity, especially Non-Communicable Disease (NCD) such as diabetes, stroke and heart disease, emphysema, cancer, high blood pressure, etc. These diseases are chronic diseases that cannot be cured. They need for continued treatment and used medical supplies and pharmaceuticals for most of the rest of his life. As a result, these businesses have continued to grow.

Private pharmaceutical manufacturers in the country face intense competition because the Ministry of Public Health and the Comptroller-General's Department set the middle price for drugs as a tool for controlling drug costs, causing government hospital's purchasing in reasonable price. Moreover, the entry of cheap drugs from India and China has lower production costs than Thailand. In addition, private drug manufacturers in the country are still quite disadvantaged to the Government Pharmaceutical Organization (GPO) in terms of production and access to distribution channels.

In domestic market, most of the domestically produced drugs are mainly consumed domestically, accounting for about 95% of total production. However, the progress of Thailand's universal health insurance system, especially the Universal Coverage Scheme, which currently covers 99.78% of the population, reflects the greater opportunity of Thai people in accessing medical care. This will inevitably mean that the drug consumption rate will increase accordingly.

## 2. LITERATURE REVIEW

### 2.1 Impact of Transformational leadership on High performance organization

Transformational leadership refers to a leader who has a process of stimulating and inspiring employees to follow for organizational benefits, detailed as follows: 1) idealized influence, being honored, respected, trusted, and making followers feel proud when working together, 2) inspiration motivation, enthusiasm by creating a good attitude and positive thinking to motivate followers to work in order to achieve the goals of the organization, 3) intellectual stimulation, encouraging followers to realize the problems that arise in the agency, making the follower want to find new ways to solve the problem in the agency, and 4) individualized consideration, giving care to followers individually and making followers feel valued and important (Nguyen, Shen, & Le, 2020; Lasrado, & Kassem, 2019).

## **2.2 Impact of Knowledge Management on High performance organization**

Knowledge management is a mechanism for managing knowledge of an organization to achieve its objectives. It is a method or procedure for implementing various activities that the organization has defined, consisting of knowledge acquisition, knowledge sharing, knowledge application, knowledge creation, knowledge utilization, and knowledge storage. The success of knowledge management and guidelines are often dictated by social mechanisms for effective implementation by employees and groups (Pellegrini, Ciampi, Marzi, & Orlando, 2020; Turkmenda & Tuna, 2020).

## **2.3 Impact of Innovation capability on High performance organization**

Innovation capability is the ability to transform concepts and knowledge into product creation, both processes and systems that are beneficial to the organization (Kerdpitak, Aunyawong, Yen, & Chantranon, 2022; Kerdpitak et al., 2023). It consists of product Innovation, the development of more efficient products to meet the needs of customers more, and process innovation, the development of new operational processes for maximum efficiency to meet the needs of customers and to manage inventory effectively (Muhammed, & Zaim, 2020; Arowwad, Abualoush, & Masa'deh, 2020).

## **2.4 High performance organization**

A high-performance organization is an organization that has a clear plan to support various conditions and situation analysis that can affect work from all viewpoints, enabling the mission to achieve its objectives efficiently and on time, including quality work (Kerdpitak et al., 2023). The organizations must have a good internal management system and personnel with knowledge, ability, and strong commitment to the organization. The employees must commit to the achievement of the objectives of the organization for high work potential and sustainability in long-term work. An efficient work system and team are an important link to the concept of striving for an excellent organization (Bahta, Yun, Islam, & Ashfaq, 2019). An excellent working system is a job design that tasks will be assigned to individuals or teams. On the other hand, an excellent team is an important working basis for leading to an excellent organization. Great teams know their customers well. They also know how their work can continue to improve, can evaluate their work and have the techniques to solve problems. In addition, an excellent team will have the ability to be autonomous. That is, the executives must give the freedom to work with the team as well. Moreover, striving for team excellence is necessary to change work processes and organizational culture for practical results. The key to achieving organizational excellence consists of 1) organizational work process design, 2) organizational structure that is easily adaptable and flexible as well as responds well to customer and environmental changes, and 3) non-hierarchy or giving the power to teams, 4) system to connect different parts of the organization, and 5) Employees' knowledge about operations, financial goals, quality and customer satisfaction (Oyewobi, Windapo, Rotimi, & Jimoh, 2016; Bahta, Yun, Islam, & Ashfaq, 2019).

Therefore, employees must always develop their own work knowledge. An excellent organization is a learning organization. Miller (1987) explains the principles and practices of

striving for an excellent organization by using examples of characteristics of traditional organizations comparing with their changes. So, for high control to high trust organizations, very large organizations using rules or regulations to control the work of employees will cause resistance. Employees are unhappy and work based on only their duties or just follows regulations. They did not use the heart to work and eventually led to conflicts but trusted employees will devote their full energy to the overall performance of the company better (Miller, 1987; Lu, Zhu, & Bao, 2015; Al-Hakim, & Hassan, 2013).

### **3. METHODOLOGY**

This study was a mixed methods research to get the highlight of both quantitative and qualitative methods to better support the quality of the research (Johnson & Turner, 2003). The population was 3,500 supervisors or top executives in Thailand pharmaceutical industry. The quantitative was 320 samples, calculated from 20 times greater than the numbers of observed variables (16x20) (Hair, Ringle, & Sarstedt, 2011). The study started from quantitative research by reviewing the literature and related research on variables of high performance organization consisting of transformational leadership, knowledge management and innovation capability. The data was synthesized and summarized into definition of terms. The indicators of variables according to the research concept were determined. The questionnaire was then constructed according to the 5-level Likert's scale (Likert, 1932), with the validity and reliability tests before collecting data and then statistically analyzing data by using structural equation modeling (SEM).

For qualitative research, the researchers concocted in-depth interviews from 15 managers and executives by using purposive sampling technique. The qualitative data was compiled, categorized, analyzed, interpreted and linked to draw conclusions on the results of the quantitative analysis with more depth, detailed, rational explanation.

### **4. RESULTS**

This study used the analysis of exploratory data to test the relationship between the variables by examining the normal distributions of the 15 observed variables studied in the structural equation model, using the chi-square test ( $\chi^2$ ). If it was found to be statistically significant at the .05 level, it means that such variables were non-normally distributed. On the other hand, if it was found to be not statistically significant (P-value > .50), it means that such variables were normally distributed.

**Table 1: Statistical test of empirical variables (n=320)**

Variable	$\bar{X}$	S.D.	%CV	Sk	Ku	$\chi^2$	P-value
IDEFL	4.318	.670	15.52	-3.353	-2.538	15.679	.000
INSPM	4.361	.619	14.19	-2.928	-4.633	3.034	.000
INTET	4.293	.663	15.44	-2.979	-2.211	13.761	.001
IDVLC	4.263	.739	15.58	-2.943	-3.218	19.016	.000
ACQU	4.186	.728	15.39	-2.641	-1.930	1.697	.005
SHAR	4.304	.670	15.57	-3.119	-3.719	23.565	.000
APPKN	4.285	.634	14.80	-2.490	-1.777	9.359	.009
CREAK	4.358	.654	15.01	-3.447	-2.026	15.984	.000
UTILN	4.346	.681	15.67	-3.716	-2.073	18.103	.000
STORA	4.285	.706	16.48	-3.395	-3.276	22.253	.000
INPDT	4.237	.656	15.48	-2.255	-2.736	12.571	.002
PRCCI	4.223	.684	16.20	-2.558	-2.323	11.937	.003
PROF	4.268	.680	15.93	-2.938	-2.490	14.832	.001
ACCOU	4.073	.733	18.00	-1.945	-1.905	7.412	.025
LRNGR	4.248	.729	15.16	-3.043	-2.404	15.036	.001
CMPRP	4.220	.661	15.66	-2.203	-.728	5.383	.068

Note: chi-square ( $\chi^2$ ) with statistical significance (P-value <.05) indicates a non-normal distribution.

The result of normal score test by chi-square ( $\chi^2$ ) of all empirical variables studied in the structural equation model found that most of the empirical variables in the model were statistically significant ( $p < .05$ ), indicating that they had a non-normal distribution, and only customer perspective (CMPRP) were not statistically significant ( $p > .05$ ), indicating that such empirical variable had a normal distribution.

Such results may cause the problem in an empirical model fit assessment by of the chi-square test ( $\chi^2$ ). The researchers therefore solved by finding the relative chi-square ( $\chi^2$ /degree of freedom). If the value was less than 5.00, it indicated that the model was empirically fit, although the model  $\chi^2$  test was statistically significant ( $p$ -value < .05) (Hair, et al., 2006).

**Table 2: Factor Loadings (n = 320)**

Variables	Factor Loading ( $\lambda$ )	Error ( $\theta$ )	t	R <sup>2</sup>
Transformational leadership (TRFOL)				
Idealized influence (IDEFL)	.67	.54	12.09	.46
Inspiration motivation (INSPM)	.69	.53	12.28	.47
Intellectual stimulation (INTET)	.72	.48	12.86	.52
Individualized consideration (IDVLC)	.79	.45	6.68	.55
$\rho_c = .80$ $\rho_v = .51$				
Knowledge management (KONMAG)				
Knowledge acquisition (ACQU)	.52	.43	9.49	.57
Knowledge sharing (SHAR)	.77	.41	15.27	.59
Knowledge application (APPKN)	.70	.41	13.58	.59
Knowledge creation (CREAK)	.66	.47	12.52	.53

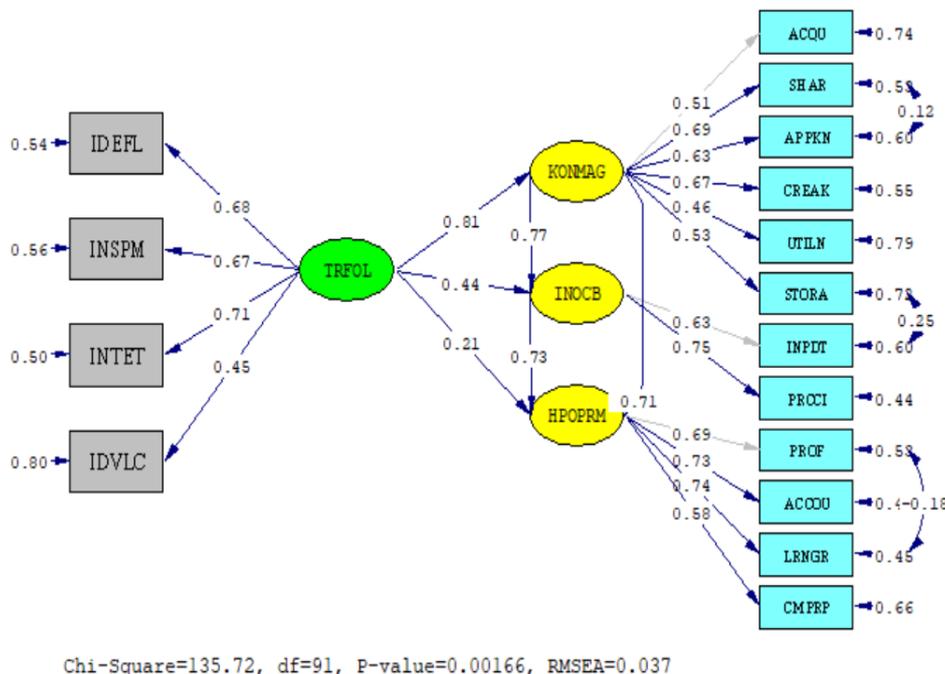
Knowledge utilization (UTILN)	.72	.42	7.52	.58
Knowledge storage (STORA)	.75	.45	9.02	.55
$\rho_c = .87$ $\rho_v = .53$				
Innovation capability (INOCB)				
Product innovation (INPDT)	.85	.18	-	.82
Process innovation (PRCCI)	.55	.19	8.61	.81
$\rho_c = .84$ $\rho_v = .75$				
High performance organization in pharmaceutical industry (HPOPRM)				
Profitability (PROF)	.74	.41	9.71	.59
Work accountability (ACCOU)	.76	.42	14.35	.58
Learning and growth (LRNGR)	.74	.45	13.9	.55
Customer perspective (CMPRP)	.61	.63	11.26	.37
$\rho_c = .81$ $\rho_v = .52$				
Chi-Square=23.08, df=2, P-value=0.00001, RMSEA=0.151				

**Table 3: Measurement Model (n=320)**

Dependent variables	R <sup>2</sup>	Effects	Independent variables		
			Knowledge management (KONMAG)	Innovation capability (INOCB)	Transformational leadership (TRFOL)
Knowledge management (KONMAG)	.65	DE	-	-	.81*(8.38)
		IE	-	-	-
		TE	-	-	.81*(8.38)
Innovation capability (INOCB)	.57	DE	.77*(4.46)	-	.44*(6.10)
		IE	-	-	.32*(4.52)
		TE	.77*(4.46)	-	.76*(7.56)
High performance organization in pharmaceutical industry (HPOPRM)	.74	DE	.71*(6.07)	.73*(5.04)	.21*(4.75)
		IE	.26*(3.29)	-	.33*(3.77)
		TE	.97*(3.93)	.73*(5.04)	.54*(9.03)
$\chi^2 = 135.72$ $df = 91$ $p\text{-value} = .00166$ , $\chi^2 / df = 1.49$ , $RMSEA = .037$ , $RMR = .023$ , $SRMR = .049$ , $CFI = .99$ , $GFI = .95$ , $AGFI = .93$ , $CN = 320.68$					

\* Statistically significant at the .05 level

**Note:** In parentheses, they were the t-value. If the value was not between -1.96 and 1.96, it was statistically significant at the .05 level.



**Figure 1: Adjusted model (n=320)**

The study found that the adjusted structural equation model of the effects of transformational leadership, knowledge management and innovation capabilities on a high-performance Organization in the Pharmaceutical Industry in Thailand was fit to the empirical data at an acceptable level, which was determined from the fit Indexes as follows:  $\chi^2 = 135.72$   $df = 91$   $p\text{-value} = .00166$ ,  $\chi^2 / df = 1.49$ ,  $RMSEA = .037$ ,  $RMR = .023$ ,  $SRMR = .049$ ,  $CFI = .99$ ,  $GFI = .95$ ,  $AGFI = .93$ ,  $CN = 320.68$

## 5. CONCLUSION

From the fit indexes:  $\chi^2 = 135.72$   $df = 91$   $p\text{-value} = .00166$ ,  $\chi^2 / df = 1.49$ ,  $RMSEA = .037$ ,  $RMR = .023$ ,  $SRMR = .049$ ,  $CFI = .99$ ,  $GFI = .95$ ,  $AGFI = .93$ ,  $CN = 320.68$ , depicting the fit between the model and the empirical data at a good level. Therefore, it can be concluded that the structural equation model developed by the researchers is fit to the empirical data at a good level and meets the research objectives.

In addition, direct, indirect and total effects between causal variables affecting high-performance organizations in the pharmaceutical industry in Thailand can be described as follows:

- 1) Transformational leadership (TRFOL) has direct effects on high performance organization in pharmaceutical industry (HPOPRM), with an effect coefficient of .21 and a statistical significance at the .05 level, and innovation capability (INOCB) with an effect coefficient of .44 and a statistical significance at the .05 level, and knowledge management (KONMAG) with an effect coefficient of .81 and a statistical significance at the .05 level. Moreover, it can predict knowledge management (KONMAG) by 65%.
- 2) Knowledge management (KONMAG) has direct effects on high performance organization in pharmaceutical industry (HPOPRM), with an effect coefficient .71 and a statistical significance at the .05 level, and innovation capability (INOCB), with an effect coefficient .77 and a statistical significance at the .05 level. Besides, knowledge management (KONMAG) and transformational leadership (TRFOL) can jointly predict innovation capability (INOCB) by 57 %.
- 3) Innovation capability (INOCB) has a direct effect on high performance organization in pharmaceutical industry (HPOPRM), with an effect coefficient .73 and a statistical significance at the .05 level.

When considering the factors of the variables in the structural equation model, it was found that the standardized factor loadings of all the variables were greater than .40 with values ranging from .52 to .79 and statistical significance at the .001 level. Therefore, it could explain that high performance organization in pharmaceutical industry (HPOPRM) has four factors: profitability (PROF), work accountability (ACCOU), learning and growth (LRNGR) and customer perspective (CMPRP). Transformational leadership (TRFOL) has four factors: idealized influence (IDEFL), inspiration motivation (INSPM), intellectual stimulation (INTET) and individualized consideration (IDVLC). Knowledge management (KONMAG) has six factors: knowledge acquisition (ACQU), knowledge sharing (SHAR), knowledge application (APPKN), knowledge creation (CREAK), knowledge utilization (UTILN), and knowledge storage (STORA). Innovation capability (INOCB) has 2 factors: product innovation (INPDT) and process innovation (PRCCI), respectively.

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