

## Performance of the District Health Boards within the district health system in Chiang Mai Province, Thailand

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### ABSTRACT

The objectives of this cross-sectional study were to examine the performance of the District Health Boards (DHBs), and to investigate factors affecting DHB performance within the district health system in Chiang Mai Province, Thailand. The samples of the study were 399 participants from the DHBs. The data were collected by using a questionnaire. The collected data were analyzed with descriptive statistics (percentage, mean, and standard deviation) and inferential statistics (stepwise multiple regression analysis). The study's results showed that the overall DHB performance within the district health system was at a moderate level (mean = 3.38, S.D. = 0.79). Among the components, the highest mean was found for setting objectives and plans at a high level (mean = 3.52, S.D. = 0.69), while the lowest mean was found for the evaluation of sustainable work development at the moderate level (mean = 3.17, S.D. = 0.70). Regarding factors affecting the DHB performances, eight co-predictive variables were found: 1) internal communication, 2) DHB potential development, 3) work assignment in teams, 4) community participation, 5) teamwork, 6) management experiences, 7) status of divorce/widow/separation, and 8) participation period in the DHB role. These eight factors could significantly co-predict the performances of the DHBs within the district health system at 65.40%. The results of this study can later be used as data for determining policies and plans for the implementation of the DHBs in Chiang Mai Province, Thailand.

### Key words:

management performance; District Health Board; district health system

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## INTRODUCTION

Changes in health problems and behaviors of people in communities and societies can lead to different consequent problems, such as emerging diseases, non-communicable diseases, and health hazards. To solve these problems, collaboration and participation in the health system management are necessary. Therefore, the policies are emphasized at the district level, called the “district health system”, with the ultimate goal of equality for all people in terms of fundamental public health.<sup>1</sup> The management concept of the district health system is applied for solving public health problems in Thailand with the purpose of promoting people’s self-reliance in terms of health, and the creation of health governance for Thai people’s equality in access to public health services.<sup>2</sup>

The district health system in Thailand is a health system for responding to the needs of local people through the collaboration of many sectors including the government, private, and public sectors under the existing resources to create health fairness for the ultimate goal and the wellbeing and quality of life of people in the districts.<sup>3</sup> However, previous implementation of the system encountered a lot of problems due to laws and guidelines for implementation being different in each area. Moreover, the participatory networks, both the government and private sector, perceived health problems in different dimensions. As a result, the government has issued a law to appoint a leading team for solving problems in the district health system, known as the “District Health Board (DHB)”.<sup>3</sup>

The DHB of Thailand conforms to the World Health Organization definition that the DHB includes people who were appointed or selected to take roles in driving implementation and solving

problems in their responsible districts, or under the district health system. The DHB structure consists of representatives from the district government organizations, the private organizations in the district, and local people in the district<sup>3</sup>. The DHB responsibilities consist of 1) setting plans for targeted works and guidelines for developing quality of life, 2) driving work integration, 3) coordinating and supporting collaboration, 4) giving advice for implementation to develop quality of life, 5) supervising and assessing work implementation, 6) coordinating with organizations, and 7) implementing work as assigned by the Board/the provincial governor. The challenge is that the guidelines for collaborative work of the DHB are unclear as only the structure and responsibilities are determined. Consequently, the DHB at each district implements work differently, leading to different problems and obstacles.<sup>4</sup>

The main problems of the DHB are the ineffectiveness of work collaboration, lack of management potential, lack of participation and coordination among network parties, limitation of budgets, and problems in supervision and assessment. The overall DHB performance was at a moderate level. The problems can cause conflicts in the organizations, and hinder smooth implementation, directly affecting people’s quality of life.<sup>5</sup>

Therefore, the objectives of this study were to investigate the performance of the DHBs and the factors affecting the DHBs within the district health system in Chiang Mai Province, Thailand. The findings of the study will lead to an effective implementation model of the DHBs within the district health system in Chiang Mai Province, Thailand for effectively developing people’s quality of life.

## METHODOLOGY

### *Study Design*

This research was a cross-sectional study and was conducted in Chiang Mai Province. Data were collected from May to June 2023.

### *Population and Samples*

The population included 525 committees of BHBs in 25 Districts, Chiang Mai Province. The sample size was calculated by using the formula for estimation of the finite population mean<sup>6</sup>.

$$n = \frac{NZ^2\sigma^2}{NE^2 + Z^2\sigma^2}$$

$$n = 392$$

Where  $n$  = the sample size

$N$  = the population size ( $N =$

525)

$Z$  = the  $Z$  value at the significance level of 0.05, two-tailed test ( $Z = 1.96$ )

$E$  = permissible error ( $E = 0.05$ )

$\sigma^2$  = population variance calculated from the square of the standard deviation (S.D.) in the implementation model of the district health system in Health Area 2 (the square of S.D. = 9.85)<sup>7</sup>.

As the DHB consists of 21 committees, and our sample size calculations indicate a requirement of at least 392 samples, we can determine a need for  $392/21 = 18.66$  DHBs, approximating 19 DHBs. Thus, the final sample size equals 399, derived from 19 DHBs encompassing 21 committees.

After determining the need for a sample size of 399 from 19 DHBs, we employed the stratified random sampling method to select 19 districts from the total 25 districts of Chiang Mai Province. These 25 districts are categorized into three zones: 7 in the northern zone, 9 in the central zone, and 9 in the southern zone. We utilized the probability proportional to size to draw districts from each of the three zones.

Consequently, there were 5 districts from the northern zone, 7 from the central zone, and 7 from the southern zone, respectively.

The inclusion criteria for the 399 participants were as follows: 1) working in government, private, or community organizations within Chiang Mai Province for more than 6 months, 2) serving on a committee in DHBs, 3) not suffering from severe chronic illnesses that would hinder participation in the research, and 4) being willing to provide information and consent to participate in the study. The exclusion criterion applied if the participant relocated to work in another province.

### *Research Instrument*

The research instrument was the questionnaire designed by the researcher. The questionnaire was developed by applying 1) work regulations of the DHB<sup>3</sup>, 2) the concept of performance management and co-leadership<sup>8</sup>, 3) the concept of integration<sup>9</sup>, and 4) the concept of participation<sup>10</sup>. The questionnaire consisted of six parts, as described below.

Part 1 – Demographic data: There were seven variables in the form of a checklist including gender, age, education, marital status, income, affiliation, and participation period in the DHB role.

Part 2 – Knowledge and understanding about DHB: The concept of work regulation of the DHB<sup>3</sup> was applied in this part. The variable of knowledge and understanding about DHB (ten items) was in a true/false form.

Part 3 – Potentials of the DHBs: The concepts of performance management and co-leadership<sup>8</sup> were applied in this part. There are five variables in this part including management experiences (three items), workload in the organization (three items), management skills (three items), leadership (eight items), and attitude towards DHB work (three items).

Part 4 – Internal work of the DHBs: This part was applied with the concept of integration<sup>9</sup>. There were seven variables in

this part including structure, role, and authority (two items), work assignment in teams (three items), valuing members (four items), internal communication (three items), teamwork (three items), information systems (five items), and adequacy of resources (three items).

Part 5 – External support of the DHBs: This part was applied with the concept of participation<sup>10</sup> and work regulations of the DHB<sup>3</sup>. There were three variables in this part including control and support from the government sector (three items), DHB potential development (four items), and community participation (four items).

Part 6 – Performance of the DHBs: This part was applied with the concept of performance management and co-leadership<sup>7</sup>. This part was considered as the dependent variable and there were six components including credibility and trust in the DHBs (five items), participation in setting objectives and plans (four items), work integration and providing advice (five items), coordination (three items), monitoring (two items), and evaluation of sustainable work development (two items).

Parts 3 to Part 6 of the questionnaires were on a 5-point Likert scale<sup>11</sup>. The results were interpreted according to the mathematical equation of Fisher RA<sup>12</sup> as follows.

Mean 4.21 – 5.00 refers to an opinion in practice and performance in the item at the highest level.

Mean 3.43 – 4.20 refers to an opinion in practice and performance in the item at a high level.

Mean 2.61 – 3.40 refers to an opinion in practice and performance in the item at a moderate level.

Mean 1.81 – 2.60 refers to an opinion in practice and performance in the item at a low level.

Mean 1.00 – 1.80 refers to an opinion in practice and performance in the item at the lowest level.

The developed instrument was tested for content validity by five experts, and the index of item objective congruence (IOC) was found to be 0.85 – 1.00. The Kuder Richardson Coefficient was used to test the reliability of Part 2 while the Cronbach's alpha coefficient was utilized to test the reliability of Part 5-6. The improved questionnaire was tried out with another group of 30 participants who had similar characteristics to the sample group. The results of reliability were found to be 0.80 in Part 2, 0.85 in Part 3, 0.94 in Part 4, 0.93 in Part 5, and 0.93 in Part 6.

### ***Data Collection***

The researchers and the researcher assistant collected the data. Before the data collection, the research assistant was trained and informed about the research objectives, the items, and the method of data collection in order to collect the data using the same approach.

### ***Data Analysis***

The data were analyzed with a computer program at a significance level of 0.05. The descriptive statistics were used to analyze the data in terms of percentage, mean, and standard deviation, while inferential statistics were used to analyze factors affecting the performance of the DHBs by using stepwise multiple regression analysis.

### ***Ethical approval***

The researchers submitted the research proposal to the Human Research Ethics Committee, Naresuan University, and received approval as COA No. 123/2022; IRB No. P2-0318/2564. The approval date was March 11, 2022. Before the data collection started, the participants were informed about the study's objectives, procedure for data collection, and their rights in consenting to complete the questionnaire or refusing to participate in the study. The study did not specify the

participants' names in the questionnaire. The collected data were kept confidential without disclosure, and these data were destroyed after the data analysis, the research report, and the research completion within 1 year. Only the overview of the data analysis results was presented.

## RESULTS

### *Part 1 – Demographic Factors*

The participants were mostly males (55.1%). Most of the participants (35.3%)

were in the age group of 51 – 60 years (mean = 47.71 years, S.D. = 12.24), and graduated at the bachelor's level (51.4%). Most were married (70.9%) and had an average monthly income of 10,001-20,000 (mean = 32,913 baht, S.D. = 22,259.40). The affiliation of the participants was mostly in the public sector (21.8%), and their participation period in the DHB role was mostly in the range of 1 – 3 years (73.4%). (Table 1)

**Table 1.** Demographic factors of the DHBs (n = 399)

Demographic variables	n	%
<b>Gender</b>		
Male	220	55.1
Female	179	44.9
<b>Age</b>		
20-30 years	20	10.0
31-40 years	70	17.5
41-50 years	110	27.6
51-60 years	141	35.4
61 years or higher	38	9.5
(Minimum = 22, Maximum = 82, Mean = 47.71, S.D. = 12.24)		
<b>Educational Level</b>		
Lower than primary education	3	0.8
Primary education	11	2.8
Lower secondary education	17	4.3
Upper secondary education / vocational certificate	20	5.0
Diploma / higher vocational certificate	28	7.0
Bachelor's degree	205	51.4
Higher than bachelor's degree	115	28.7
<b>Marital Status</b>		
Single	80	20.1
Married	283	70.9
Divorced / Widowed / Separated	36	9.0
<b>Average Monthly Income (Baht)</b>		
<10,000	52	13.0
10,001-20,000	97	24.3
20,001-30,000	72	18.0
30,001-40,000	65	16.4
40,001-50,000	53	13.3
>50,000	60	15.0
(Minimum = 600, Maximum = 200,000, Mean = 32,913.00, S.D. = 22,259.40)		

Demographic variables	n	%
<b>Affiliation</b>		
1. Government Public Health Organization		
- District Public Health Organization	50	12.5
- Hospital	16	4.0
- Subdistrict Health Promotion Hospital	84	21.1
2. Government Organization, not in Public Health		
- Administrative organization	65	16.3
- Local / subdistrict administrative organization / municipality	57	14.2
- Educational organization	13	3.3
3. Private organization	27	6.8
4. Representatives of the public sector	87	21.8
<b>Participation Period in the DHB Role</b>		
Less than 1 year	13	3.5
1-3 years	293	73.4
4-5 years	93	23.1
(Minimum = 0.30 Maximum = 5 , Mean = 2.35, S.D. = 1.45)		

## Part 2 – Characteristic Factors and Performance of DHBs

### 2.1 Knowledge and understanding about DHB

According to Table 2, the item with the highest percentage (97.5%) of correct

answers was “The main responsibility of the DHB is work integration or collaboration to develop people’s quality of life in the district”. The item with the lowest percentage (33.6%) of correct answers was “The DHB refers to people who are appointed by the provincial governor”.

**Table 2.** Knowledge and understanding about DHB of the DHB (n = 399)

Items	Correct Answer n (%)	Wrong Answer n (%)
1. The DHB refers to people who are appointed by the provincial governor.	134 (33.6)	265 (66.4)
2. The DHB is authorized in setting targets and guidelines for implementation concerning people’s quality of life in the province.	154 (38.6)	245 (61.4)
3. The main responsibility of the DHB is work integration or collaboration to develop people’s quality of life in the district.	389 (97.5)	10 (2.5)
4. Monitoring and evaluation of work implementation as planned and the projects for developing people’s quality of life are the responsibility of the DHB.	379 (95)	20 (5)
5. The organizations participating in the DHB are different government organizations, state enterprises, and local administrative organizations including heads of subdistricts and villages.	376 (94.2)	23 (5.8)
6. The chairperson of the DHB is the district chief or a person appointed by the district chief in that district.	362 (90.7)	37 (9.3)

Items	Correct Answer n (%)	Wrong Answer n (%)
7. The deputy district chief works as a secretary of the DHB, and has the office of the DHB secretary in the district office.	183 (45.9)	216 (54.1)
8. The district public health office is responsible for disbursement of attendance fees and travel allowances.	246 (61.7)	153 (38.3)
9. The tenure of the DHB is a term of three years. When the term expires, if there is no new committee for replacement, the existing committee members can remain in the positions.	215 (53.9)	184 (46.1)
10. Resignation from the position on the DHB may occur due to death, resignation, or the district chief's order to leave.	318 (79.7)	81 (20.3)
(Minimum = 2 Maximum = 9, Mean = 5.76, S.D. = 1.45)		

### 2.2 Potentials of the DHBs

In Table 3, the potential of each DHB participant is management. It was found that management experience was at a high level (mean = 3.54, S.D. = 0.91), workload in the organization was at a high level (mean = 3.60, S.D. = 0.65), management skills was at a high level (mean = 3.72, S.D. = 0.63), and attitude towards DHB work was at a moderate level (mean = 2.99, S.D. = 0.83).

### 2.3 Internal Work of the DHBs

In Table 3, it was found that the structure, role, and authority was at a high level (mean = 3.66, S.D. = 0.68), work assignment in team was at a high level (mean = 3.57, S.D. = 0.71), valuing

members was at a high level (mean = 3.80, S.D. = 0.71), communication was at a high level (Mean = 3.71, S.D. = 0.67), teamwork was at a high level (mean = 3.77, S.D. = 0.73), information systems was at a high level (mean = 3.47, S.D. 0.67), and adequacy of resources was at a moderate level (mean = 3.13, S.D. = 0.75).

### 2.4 External supports of the DHBS

In Table 3, it was found that control and supervision from the government sector were at a moderate level (mean = 3.33, S.D. = 0.75), DHB potential development was at a moderate level (mean = 3.15, S.D. = 0.79), and community participation was at a moderate level (mean = 3.37, S.D. = 0.83).

**Table 3.** Characteristic Factors of the DHBs (n = 399)

Variables	Mean	S.D.	Level
<b>Potentials of the DHBs</b>			
Management experiences	3.54	0.91	High
Workload in the organization	3.60	0.65	High
Management skills	3.72	0.63	High
Leadership	3.87	0.68	High
Attitude towards DHB work	2.99	0.83	Moderate
<b>Internal work of the DHBs</b>			
Structure, role, and authority	3.66	0.68	High
Work assignment in team	3.57	0.71	High
Valuing members	3.80	0.71	High
Internal Communication	3.71	0.67	High
Teamwork	3.77	0.73	High
Information systems	3.47	0.67	High

Variables	Mean	S.D.	Level
Adequacy of resources	3.13	0.75	Moderate
<b>External supports of the DHBs</b>			
Control and supervision from the government sector	3.33	0.75	Moderate
DHB potential development	3.15	0.79	Moderate
Community participation	3.37	0.83	Moderate

### 2.5 Performance of the DHBs

The results found that the overall performance of the DHB within the district health system was at a moderate level (mean = 3.38, S.D. = 0.79). In each aspect, the highest mean was for participation in setting plans and objectives according to

the implementation goals which was at a high level (mean = 3.52, S.D. = 0.69) whereas the lowest mean was for assessment of sustainable work development which was at a moderate level (mean = 3.17, S.D. 0.70). (Table 4)

**Table 4.** Performance of the DHBs (n = 399)

Components	Mean	S.D.	Level
Credibility and trust in the DHBs	3.34	0.65	Moderate
Participation in setting objectives and plans	3.52	0.69	High
Work integration and providing advice	3.31	0.53	Moderate
Coordination	3.45	0.72	High
Monitoring	3.33	0.75	Moderate
Evaluation of sustainable work development	3.17	0.70	Moderate
<b>Total</b>	<b>3.38</b>	<b>0.79</b>	<b>Moderate</b>

### Part 3 - Factors Affecting Performance of the DHBs

Table 5 demonstrates that the co-predictors had effects on the effective performance of the DHBs within the Health System. The regression coefficient of each independent variable was used to build the equation of performance predictability of the DHBs within the district health system. Eight variables were found in the equation as described below.

- 1) Internal communication had a positive effect on the effectiveness of work performance. When the internal communication changed by 1 unit, the effectiveness of the DHB performance increased by 0.197 units (b = 0.197).
- 2) DHB potential development had a positive effect on the effectiveness of work performance. When the

DHB potential development changed by 1 unit, the effectiveness of the DHB performance increased by 0.108 units (b = 0.108).

- 3) Work assignment in teams had a positive effect on the effectiveness of work performance. When the work assignment in teams changed by 1 unit, the effectiveness of the DHB performance increased by 0.135 units (b = 0.135).
- 4) Community participation had a positive effect on the effectiveness of work performance. When the community participation changed by 1 unit, the effectiveness of the DHB performance increased by 0.188 units (b = 0.188).
- 5) Teamwork had a positive effect on the effectiveness of work

- performance. When the teamwork changed by 1 unit, the effectiveness of the DHB performance increased by 0.149 units ( $b = 0.149$ ).
- 6) Management experience had a positive effect on the effectiveness of work performance. When the management experience changed by 1 unit, the effectiveness of the DHB performance increased by 0.072 units ( $b = 0.072$ ).
- 7) Status of being divorced / widowed / separated had a negative effect on the effectiveness of work performance, compared to single status. When the status of being divorced / widowed / separated changed by 1 unit, the effectiveness of the DHB performance decreased by -0.179 units ( $b = -0.179$ ).
- 8) Participation period in the DHB role had a positive effect on the effectiveness of work performance. When the participation period in the DHB role changed by 1 unit, the effectiveness of the DHB performance increased by 0.101 units ( $b = 0.101$ ).
- These eight factors could co-predict the performance of the DHBs within the district health system at 65.4% with the statistical significance at 0.05. (Table 5)

**Table 5.** The predictors of performance of the DHBs within the district health system (n = 399)

Predictors	R <sup>2</sup>	R <sup>2</sup> Change	b	Beta	s.e. of b	95% CI for b	t	p-value
Internal communication	0.462	0.462	0.197	0.227	0.043	0.12-0.28	4.597	<0.001*
DHB potential development	0.547	0.085	0.108	0.147	0.029	0.50-0.16	3.668	<0.001*
Work assignment in teams	0.584	0.037	0.135	0.163	0.034	0.07-0.20	4.006	<0.001*
Community participation	0.612	0.027	0.188	0.242	0.030	0.12-0.24	6.171	<0.001*
Teamwork	0.627	0.016	0.149	0.185	0.041	0.06-0.22	3.645	<0.001*
Management experiences	0.639	0.012	0.072	0.111	0.022	0.02-0.11	3.242	0.001*
Status of divorce/widow/separation (Reference group = marriage)	0.647	0.008	-0.179	-0.087	0.063	-0.30 - -0.56	-2.864	0.004*
Participation period in the DHB role	0.654	0.007	0.101	0.083	0.037	0.03-0.17	2.705	0.007*
Constant (a) = 0.454, R square = 0.654, Adjusted R Square = 0.646, F = 91.951, p-value <0.001								

\*Significant values < 0.05, tested by stepwise multiple linear regression analysis

The equation for predicting the performance of the DHBs within the district health system could be written in the form of raw scores as follows.

The performance of the DHBs within the district health system = 0.454 + 0.197 (internal communication) + 0.108 (DHB potential development) + 0.135 (work assignment in teams) + 0.188 (community

participation) + 0.149 (teamwork) + 0.072 (management experience) - 0.179 (status of divorce/widow/separation) + 0.101 (participation period in the DHB role).

## DISCUSSION

According to the analysis results on factors affecting the performance of the DHBs within the district health system, it was found that eight predictors could co-predict at 65.40% with a statistical significance level of 0.05. These eight predictors are described below.

**Internal communication** had a positive effect on the performance of the DHBs. It can be explained by the fact that the implementation at the district level depends on collaboration among several organizations to solve the problems of local people, and the implementation has to rely on communication and coordination of internal and external organizations to ensure the effectiveness of the operation. This finding conforms to the study of Lina Zivrbule<sup>13</sup> on internal communication. This previous study found that good internal communication could enhance employee motivation as employees perceived that they were valued, so this increased employee confidence, security, and willingness to participate within the organization. Similarly, Somsak Thojampa et al. studied lessons learned and knowledge synthesis for successfully driving the implementation model of the district health system management at Ban Tak District, Tak Province, in Thailand.<sup>14</sup> This previous study found that the success of the district health system management was related to the communication among the public and the development of a communication system. If the communication and the public relations were not comprehensive and lacked suitable handbooks for each area, there would be lack of connection among other

related works, such as the connection between the district health system and the district health system management learning.<sup>14</sup>

**DHB's potential development** had a positive effect on their performance. It can be attributed to the adequacy of support, training, seminars, and knowledge-sharing, which can create a positive attitude and increase work specialization. Therefore, DHB members should undergo development in thinking skills, management, work methods, and team building for planning directions, goals, and assessments, and creating practitioners' motivation and encouragement.<sup>15</sup>

**Work assignments in teams** had a positive effect on the performance of the DHBs. It can be explained by the fact that good work assignment makes the scope of work clear and matches the aptitude or specialization of the team members. A team with good work assignments according to the team members' aptitude or specialization can increase satisfaction and smoothness of implementation.<sup>16-17</sup> The key to a good work assignment is to authorize the team members sufficiently for them to complete their tasks successfully. Moreover, consideration should be given to the relationship between assigners and assignees as well as in giving importance to professional specialization.<sup>16-17</sup>

**Community participation** had a positive effect on the performance of the DHBs. It can be explained by the fact that a community affects factors of work success. In other words, community paradigm shifts by giving knowledge can change people's awareness and knowledge-sharing.<sup>18-20</sup> This finding is consistent with the previous study on community participation in health services development, implementation, and evaluation.<sup>21</sup> This previous study found that work collaboration in the community had a positive effect at the organizational, community, and individual levels by

enhancing people in the community to love each other and perceive ownership.<sup>21</sup> The district health management team or DHBs should actively engage with local networks that prioritize a community-oriented approach to effectively address the real issues emerging within their area of responsibility.<sup>22</sup>

**Teamwork** had a positive effect on the performance of the DHBs. It can be explained by the fact that team building is for improving work effectiveness and enhancing collaborative work, interdependence, and responsibility, which are the main basic components of teamwork.<sup>23</sup> A team consists of two or more people who take on specific roles. The team members possess specific knowledge, skills, and attitudes, such as a positive attitude towards teamwork, and they should predict other team members' demands by using their own potential and specialization to drive work implementation.<sup>24-25</sup> This finding conforms to the previous study on transformational leadership and teamwork affecting the effectiveness of the DHBs in Health Area 2, which found that teamwork and transformational leadership had an influence on organizational effectiveness.<sup>26</sup>

**Management Experiences** had a positive effect on the performance of the DHBs. It can be attributed to the experience of people at the management level or in managing projects, which depends on various factors such as the ability to assign work, negotiation skills, coordination, understanding one's own role, leadership, experience, ability to cope with changes, team participation, and planning.<sup>27</sup> The success or failure of project management may be influenced by non-support from senior executives, lack of management techniques, lack of work commitment, or the mismatch between work and practitioner. This finding is consistent with the study of Sunee Pattarach<sup>28</sup> on an evaluation of the district health system in Chumphon Province. This study found that network parties had different knowledge of

diseases and health hazards, depending on their experience. Therefore, problem-solving plans did not conform to the needs and demands of people in the area, while the process to drive the development of people's quality of life by the Board representatives resulted from individuals' mindset, work experience, and life experience.<sup>29</sup> Consequently, the DHBs lacked a mutual vision for analyzing or synthesizing problems, or determining the causes, direction, goals, and strategic plans for solving problems together.<sup>30</sup>

**Status of being Divorced/Widowed/Separated** had less effect on the performance of the DHBs than the single status. It can be explained by the fact that people with the status of divorced/widowed/separated may have higher family responsibilities, burdens, and expenses than those with single status. Therefore, people who are divorced/widowed/separated have more life tension than those with single status who are happier and produce better performance.<sup>31</sup> Besides, another study found that single people lead a happy lifestyle.<sup>32</sup>

**Participation period in the DHB role** had a positive effect on the performance of the DHBs. It can be explained by the fact that the DHBs with a longer participation period in managing problems or promoting people's good quality of life will have work experience in devising strategies for dealing with situations, and they are able to transfer their knowledge and experience to other DHB members.

## RECOMMENDATIONS

### 1. *Recommendations for Using the Study Results*

- 1.1 The DHBs should maintain a clear structure and work systems, especially in work assignments,

communication, and teamwork in order to work effectively together.

1.2 The DHBs should support community participation in addressing quality-of-life problems in their own district areas and should welcome opinions or suggestions for solving problems.

1.3 The DHBs should understand the DHB's roles and management skills that are important for work performance.

## **2. Recommendations for Practical Benefits**

The findings of this study are beneficial for determining policies and plans related to the implementation of the DHBs in order to enable collaborative work to provide effective concrete solutions to address problems concerning people's quality of life in the local areas.

## **3. Recommendations for Future Research**

Future research should explore an effective implementation model for DHBs to apply the study results in developing the management of people's quality of life.

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## **LIMITATION AND RECOMMENDATION**

The current study showed results on DHB performance within the district health system in Chiangmai Province, Thailand. The situation in other contexts may be different and could be subject to different criteria and results. These results may not be relevant nationwide, as Thailand has different socioeconomic situations,

lifestyles, and cultures. Despite these caveats, the findings could serve as a baseline for comparison in future studies, especially in Northern Thailand, where recall bias was also a limitation.

## **CONFLICTS OF INTEREST**

The authors reported no potential conflict of interest.

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