CHAPTER 4

DATA ANALYSIS

This chapter presents the process involved in the data analysis and the ensuing results, identifies any patterns in the data, and presents that information in a convenient form before an in-depth analysis is conducted. This chapter demonstrates the analysis of the data using simple arithmetic to summarize the data gathered from the questionnaire survey and is comprised of seven parts as follows:

1. Details of survey samples
2. Interpretation of variables
3. The relationship between the two variables
4. The testing of the hypotheses
5. Police officers' backgrounds affecting their performance and satisfaction
6. Pairwise comparison of factors related to police benefits
7. Other suggestions proposed by police officers.

Characteristics of Dataset

Response Rate of the Samples

The questionnaires were distributed to the police officers sampled in the jurisdictions of selected police stations (in four parts of Thailand). The selected police stations are shown in Table 13.

Table 13

Police Stations in Research Study

Police Station	Respondents
Metropolitan area	100
Dindaeng	23
Donmuang	26
Ladkrabang	18
Bangrak	20
Prachachuen	13
Northern area	100
Muang Prayao	24
Muang Chiangmai	34
Muang Nan	15
Muang Lumpang	27

Table 13 (continued)

Police Station	Respondents
Western area	100
Muang Kanchanaburi	23
Muang Ratchaburi	19
Muang Samutsongkhram	33
Muang Phetchaburi	25
Eastern area	100
Muang Chachoengsao	31
Muang Chonburi	35
Muang Nokhonnayok	34
Total	400

All the questionnaires were collected from September 2008 to December 2008. According to the sample size requirement with a total of 400 (see section 3.4.2); thus, it was divided by four since there are four areas studied in this research. A hundred questionnaires were required for each study area; the Bangkok metropolitan area, as well as the Northern, Western, and Eastern regions. In total, 495 questionnaires were surveyed; among which 400 questionnaires contained complete information that can be used for research analysis in order to ensure good quality results.

General Characteristics of the Samples

The general characteristics of the samples include several basic demographic statistics pertaining to the police officers surveyed. The general characteristics and demographic background of the police officers sampled are presented in terms of the number and percentage of respondents, as shown in Table 14.

Table 14

Demographic Background of the Sampled Police Officers

Characteristics	No. of police respondents	Percent
Gender		
Male	367	91.75
Female	33	8.25
Age (Average 35.96, Max. = 59, Min. = 21)		
30 years and lower	85	21.25
31-40 years	207	51.75
41-50 years	84	21.00
51 years and higher	24	6.00
Level of police rank		
Commissioned police officer	78	19.50
Non-commissioned police officer	322	80.50
Type of work		
Clerk/administration	67	16.80
Crime Prevention and Suppression	155	38.80

Table 14 (continued)

Characteristics	No. of police respondents	Percent
Type of work (continued)		
Crime Detection	49	12.25
Crime Investigation	56	14.00
Traffic	73	18.25
Length of service in police station (Average 10.51, Max. = 32, Min. = 1)		
1-5 years	120	30.00
6-10 years	125	31.25
11-15 years	66	16.50
16-20 years	49	12.25
21 years and higher	40	10.00
Overall Length of service (Average 15.79, Max. = 39, Min. = 1)		
1-5 years	48	12.00
6-10 years	47	11.75
11-15 years	125	31.25
16-20 years	85	21.25
21 years and higher	95	23.75
Educational Level		
Secondary school, technical school or diploma	196	49.0
Table 14 Demographic Background of the Sampled Police Officers, Cont'd		
Bachelor's degree	156	39.0
Post-graduate degree	48	12.0

Table 14 (continued)

Characteristics	No. of police respondents	Percent
Marital status		
Single	106	26.5
Married or living with partner	269	67.3
Separated, divorced, or widowed	25	6.3
Monthly household income		
10,000 ฿ or lower	91	22.8
10,001-12,500 ฿	96	24.0
12,501-15,000 ฿	66	16.5
15,001-17,500 ฿	63	15.8
17,501-20,000 ฿	38	9.5
More than 20,000 ฿	46	11.5
Household type		
Single-family house	384	96.0
Multi-family house	16	4.0
Household size (persons/household)		2.3
Children in household		28.5
Ownership of the residence		
Government residence (police dormitory)	293	73.3
Owner occupied	86	21.5
Rented	21	5.3
Car ownership	151	37.8
Motorcycle ownership	209	52.3

As seen from the samples shown in Table 13, there were sixteen police stations selected for the survey; five stations from the Bangkok metropolitan area, four stations from the Northern, and Western regions, and three stations from the Eastern region. The proportion of males and females in the samples are shown, with most of the respondents (91.75%) being male, while only 8.25% are female. Approximately half of respondents (51.75%) were 31-40 years old. The percentage of respondents in the age range "30 years and lower" and "41-50 years" were almost the same (21%), the rest being 51 years and above. The average age of the respondents was 35.96; the minimum age was 22, while the maximum age was 59.

In terms of their ranks, four-fifths were non-commissioned police officers, while only one-fifth were commissioned police officers. In all, 38.8% of the respondents were responsible for crime prevention and suppression, 18.25% for traffic control, while 16.8% were clerks or administrators, 14% were responsible for criminal investigation, and the remaining 12.25% for crime detection. A total of 30% of the respondents had worked in police stations for 1-5 years, almost the same percentage that had worked for 6-10 years (31.25%), while 16.5% and 12.25% had worked for 6-10 years and 11-15 years, respectively. The remainder of the respondents had worked for the force for 21 years and higher (10%). The average length of service in a police station was 10.51 years. Nonetheless, considering their overall length of service in the Royal Thai Police, 31.25% of the respondents had worked for 6-10 years, 23.75% for 21 years and higher, 21.25% for 16-20 years, 12% for

1-5 years, while and the rest (11.8%) had served for 6-10 years. The average length of service of the respondents was 15.79 years.

On the subject of education, 49% of the respondents had completed their secondary education, or had a diploma, or technical certificate, 39% had a Bachelor's degree, while 12% held a Master's degree.

With regard to their marital status, the respondents were comprised of single and married individuals, were living with partner, or were separated, divorced or widowed. The majority of the respondents (67.25%) were married or were living with partner, while 26.5% were single, and only 6.25% were separated, divorced, or widowed. Regarding their monthly household income, it can be seen that 24% of the respondents earned 10,001-12,500 baht, 22.75% received 10,000 baht or less, 16.5% received 12,501-15,000 baht, 15.75% received 15,001-17,500 baht, 11.5% received more than 20,000 baht, while only 9.5% received 17,501-20,000 baht.

Additionally, the characteristics of their households/ families were observed since their socioeconomic background might affect work incentives, as indicated by the fact that that the percentage of single-family households (96%) was higher than that of multi-family households (4%). General information on the respondents regarding household size, residence ownership, car ownership, and motorcycle ownership is shown in Table 14 as well. The average household size was 2.31 persons per household, while 28% of the respondent had children. There were 37.75% of respondents who owned their car, while 52.25% of them had motorcycles. As expected, the percentage of those who owned their own residence (21.5%) was lower than

those who did not (73.25%), whereas only 5.3% of them lived in rented accommodation.

In conclusion, it can be seen that most of the respondents were non-commissioned police officers who were mostly responsible for crime prevention and suppression and had worked for the force for more than 15 years. Almost all of the respondents were male; most were married and had completed their secondary education, having received a diploma, or technical certificate. Half of them were between 31-40 years of age and earned an income of 10,001-12,500 baht. The average family was comprised of 2.3 members.

Interpretation of Variables

The interpretation of the results focuses on the two main variables:

1. Job satisfaction, and
2. Job performance.

All the variables relate to police officers, with data pertaining to the variables being derived from questionnaires distributed to those police officers. The interpretation of the results considers the value of the mean of each variable. The formula is calculated as follows: (Glass & Hopkins, 1996)

$$W = \frac{\text{Range}}{\text{Desired Number of Intervals}}$$

When w = the width of intervals

Range = the difference between the largest observation, X_{max} and the smallest observation, X_{min}

The number of intervals into which the data is grouped is arbitrary. If there are too many classes for the observations' number, the pattern of frequencies will appear erratic. If there are too few classes, the distribution shape is bluntly represented. In this study, five desired numbers of interval are appropriate.

Consequently, $X_{max} = 5$, $X_{min} = 1$, and the desired number of intervals = 5. From the calculation in the above formula, the width of the intervals is 0.8 as demonstrated below.

$$W = \frac{(5 - 1)\ 4}{5\ 5} = \frac{}{} = 0.80$$

The meaning of the intervals is divided into two sets of variables as follows:

Set 1: Job Satisfaction

The criteria regarding consideration of the level of job satisfaction are interpreted as follows:

Value of mean (or $\bar{x}$) = 4.21-5.00	means very high
Value of mean (or $\bar{x}$) = 3.41-4.20	means high
Value of mean (or $\bar{x}$) = 2.61-3.40	means moderate
Value of mean (or $\bar{x}$) = 1.81-2.60	means low
Value of mean (or $\bar{x}$) = 1.00-1.80	means very low

Set 2: Job Performance

The criteria regarding consideration of the level of job satisfaction are interpreted as follows:

Value of mean (or $\bar{x}$) = 4.21-5.00	means the best
Value of mean (or $\bar{x}$) = 3.41-4.20	means good
Value of mean (or $\bar{x}$) = 2.61-3.40	means moderate
Value of mean (or $\bar{x}$) = 1.81-2.60	means poor
Value of mean (or $\bar{x}$) = 1.00-1.80	means very poor

Table 15 and Table 16 provide the data relating to police officers in terms of job satisfaction and job performance.

Reliability Test for Questionnaire Survey

The sample was designed to provide statistically reliable data pertaining to the area under study. The reliability analysis procedure calculates a number of commonly used measures of the scale of reliability and also provides information about the relationships between individual items in the scale (Cronbach, 1951). The reliability of the scale questionnaire was examined, with the following measurements: standardized alpha (α) = 0.83, and 0.84 for job satisfaction and job performance respectively. This test means that each data scale is at a "good level" as these values exceed 0.8. The details are shown in Appendix B.

Results of the Interpretation of Job Satisfaction

Table 15 provides the data pertaining to police officers' job satisfaction. Job satisfaction consists of six factors: payment, the work itself, opportunities for promotion, supervision, work groups, and working conditions.

Table 15

Mean, Standard Deviation, and Level of Police Officers' Job Satisfaction

Variables	Police Officers' Job Satisfaction		
	$\overline{X}$	*SD*	Level
Job satisfaction	2.79	0.31	Moderate
Work Group	3.27	0.46	Moderate
The Work Itself	3.29	0.71	Moderate
Working Conditions	3.04	0.48	Moderate
Supervision	2.73	0.46	Moderate
Payment	2.16	0.51	Low
Opportunities for Promotion	2.10	0.47	Low

As shown in Table 15, the results illustrate that police officers have a moderate level of job satisfaction (2.79). Ranking the mean value from the highest to the lowest factors in terms of job satisfaction, the following results were obtained: the work itself (3.29), work groups (3.27), working conditions (3.04), supervision (2.73), payment (2.16), and opportunities for promotion

(2.10). The first four indicate a moderate level of job satisfaction, whereas the last two indicate a low level of satisfaction (or dissatisfaction).

From the results, it can be interpreted that police officers are satisfied working with their colleagues and they help one another. They are fairly satisfied that police dignity and prestige is equivalent to that in other public agencies. Additionally, the results evidently indicate that police officers are dissatisfied with their salary, as well as with the welfare and fringe benefits received from the Royal Thai Police. Furthermore, they are also dissatisfied with personnel arrangements and transfers as well as the salary level related to promotion.

Results of Interpretation of Job Performance

Table 16 provides the data pertaining to police officers' job performance. Job performance is comprised of seven factors: quality of work, quantity of work, timeliness, efficiency, knowledge and skills relating to the job, judgment ability, and adaptability.

Table 16

Mean, Standard Deviation, and Level of Police Officers' Job Performance

Variables	Police Officers' Job Performance		
	$\overline{X}$	*SD*	Level
Job Performance	3.49	0.36	Good
Job Knowledge and Skills	3.71	0.49	Good
Quantity of Work	3.66	0.55	Good
Adaptability	3.52	0.53	Good
Timeliness	3.49	0.53	Good
Judgment	3.38	0.49	Moderate
Quality of Work	3.34	0.49	Moderate
Efficiency	3.32	0.47	Moderate

As shown in Table 16, the results demonstrate that the job performance of police officers is at a good level of (3.49). Ranking the mean value from the highest to the lowest factors terms of job satisfaction, the following results were obtained: knowledge and skills pertaining to the job (3.71), quantity of work (3.66), adaptability (3.52), timeliness (3.49), judgment (3.38), quality of work (3.34), and efficiency (3.32).

Based on the results, it can be seen that police officers believe in their knowledge and skills to efficiently solve problems, including technical, conceptual, and structural problems. They typically make use of their knowledge, capability, and field of specialization to finish the work they are assigned. Their output is sufficient, in terms of quantity, to satisfy what their

police duties require of them. Moreover, they can adjust to changing and unstructured situations, such as can arise in the course of carrying out their duties as police officers, in an appropriate and expeditious manner. These results also indicate that police officers can complete their assignments on time, adapt to the police system very well, perform tasks quickly, and help save the budget of police stations. The findings show that they regularly make the right decision, and get the job done well, with quality, consistency, and completeness.

The Relationship Between Two Variables

Based on the assumption that police officers' job satisfaction can improve their performance, the relationships between these variables are examined in this section. Figures 12 (a) and (b) present a correlation diagram of police officer's job performance with their level of satisfaction. Table 17 presents the relationship between two variables of the study in the form of a correlation matrix.

(a)

(b)

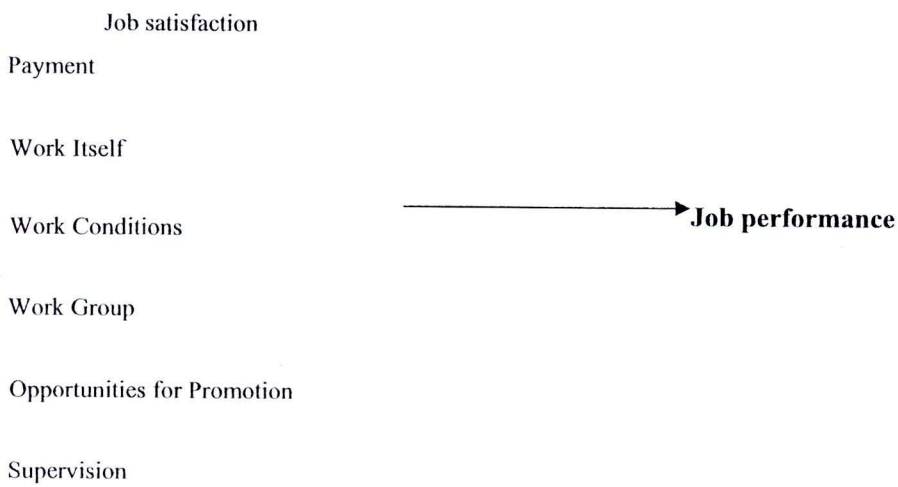

Figure 12 Diagrams showing the correlation among job satisfaction and job performance.

Table 17

Correlation Matrix of Variables

Variables	Job satisfaction	Job performance	sig.
Job satisfaction	1.00		0.73
Job performance	0.09	1.00	

Correlations measure how two variables are related. As shown in Table 17, two variables are not related (sig 0.73). Nonetheless, six factors pertaining to job satisfaction are checked for correlations in Table 18.

Table 18

Correlation Matrix of Six Variables Relating to Job Satisfaction

	Job performance	Job satisfaction					
		Payment	Work Itself	Promotion Opportunities	Supervision	Work Groups	Working Conditions
Job Performance	1						
Job Satisfaction	0.73						
Payment	–0.042	1					
Work Itself	0.255(**)	–0.01	1				
Promotion Opportunities	–0.046	0.906(**)	0.007	1			
Supervision	–0.138(**)	0.366(**)	0.012	0.416(**)	1		
Work Groups	0.238(**)	–0.024	0.756(**)	–0.011	–0.037	1	
Working Conditions	0.124(*)	–0.074	0.566(**)	–0.033	–0.017	0.732(**)	1

*Correlation is significant at the 0.05 level

**Correlation is significant at the 0.01 level

As shown in Table 18, it can be seen that there are four factors involving job satisfaction related to job performance. The work itself, supervision, and work groups are statistically significant at the level of 0.01, while only work conditions are significant at the level of 0.05. They are positively related to job performance, except for the supervision factor; the correlation coefficients consist of the following: 0.255, 0.238, 0.124, and –0.138 for work itself, supervision, work groups and supervision respectively. The increasing level of satisfaction regarding the work itself, work groups, and working conditions leads to an increase in job performance, whereas an increasing level of supervision will result in a decline in their job performance.

There are correlations among factors relating to job satisfaction. Payment is positively related to opportunities for promotion and supervision with a correlation coefficient of 0.906, and 0.366, respectively. This may be due to the fact that ascending the promotional ladder of the police hierarchy will increase the level of satisfaction with regard to the payment factor. The relationship between superior and subordinate can be obliquely related to system of payment in view of the fact that good relations will lead to better circumstances in the workplace, such as providing advice, solutions to problems, giving subordinates a chance to participate, and treating subordinates in a fair and equitable manner. As a result, the police officers' job performance will increase and affect payment. This is supported by the statistical value between the factor relating to opportunities for promotion and

the supervision factor, given that the former bears a positive correlation to the latter (0.416).

The work itself bears a positive correlation to work groups and working conditions, with correlation coefficients of 0.756 and 0.566, respectively. This is due to the fact that tasks and responsibilities of the police are very complicated and multifarious. In order to fulfill these tasks, environment contributes a great deal toward police work, and the support of colleagues is imperative to police officers' satisfaction. Moreover, the analysis supports the hypothesis that the work group factor bears a positive correlation to working conditions (0.732). When the level of satisfaction pertaining to these two factors (work groups and work conditions) increases, the level of satisfaction regarding the work itself will also increase; this is because this factor provides police officers with interesting tasks, opportunities for learning, and the chance to accept responsibility.

Testing of Hypotheses

This section describes the testing of hypotheses using statistical methods. The data set is tested for normality of distribution and homogeneity of variance in order to adopt the suitable most type of statistical approach. In special cases regarding the testing for normality of distribution, samples are standardized and compared with a standard normal distribution. The Kolmogorov–Smirnov test is used to ensure goodness of fit, while the

Leven statistic is applied for the homogeneity of variance test. The six hypotheses to be tested were as follows:

1. Hypothesis 1: Police officers with different level of rank have no different perception about job satisfaction.
2. Hypothesis 2: Police officers with different level of rank have no different perception about job performance.
3. Hypothesis 3: Police officers from different geographical working areas have no different perception about job satisfaction.
4. Hypothesis 4: Police officers from different geographical working areas have no different perception about job performance.
5. Hypothesis 5: Police officers with different types of work assignment have no different perception about job satisfaction.
6. Hypothesis 6: Police officers with different types of work assignment have no different perception about job performance.

Test of Hypothesis 1

Confirmatory analysis was employed to compare two samples in terms of the difference regarding job satisfaction. Hypothesis 1 is as follows: "Police officers of different ranks have no different perception regarding job satisfaction". The hypothesis is comprised of six sub-hypotheses to check whether each factor is different or not. Table 19 shows the results of the hypothesis test.

The six sub-hypotheses are as follows:

1. Hypothesis 1-1: Police officers of different ranks have no different perception regarding "work groups".

2. Hypothesis 1-2: Police officers of different ranks have no different perception regarding the "work itself".

3. Hypothesis 1-3: Police officers of different ranks have no different perception regarding "working conditions".

4. Hypothesis 1-4: Police officers of different ranks have no different perception "supervision".

5. Hypothesis 1-5: Police officers of different ranks have no different perception regarding "payment".

6. Hypothesis 1-6: Police officers of different ranks have no different perception regarding "promotion opportunities".

Table 19

Results of the Testing of Hypothesis 1

Variables	Commissioned Officers ($N = 78$)		Non-commissioned Officers ($N = 322$)		t value	Sig.
	$\overline{X}$	*SD*	$\overline{X}$	*SD*		
Job satisfaction	2.78	0.29	2.80	0.31	−0.43	0.670
Work Groups	3.38	0.46	3.24	0.45	2.51	0.012
The Work Itself	3.36	0.47	3.27	0.76	0.98	0.330
Working Conditions	3.08	0.50	3.03	0.47	0.82	0.410
Supervision	2.65	0.49	2.74	0.53	−1.60	0.110
Payment	2.02	0.45	2.20	0.52	−3.07	0.003
Promotion Opportunities	2.01	0.46	2.13	0.47	−1.99	0.050

From Table 19, it is evident that there are no differences between police commissioned officers and police non-commissioned officers in terms of their satisfaction. Besides, there are no differences in levels of satisfaction with regard to the work itself, working conditions, and supervision at a level of significance of 0.05. However, police officers with different ranks have different perceptions with regard to work groups, payment, and opportunities for promotion at levels of 0.05.

Test of Hypothesis 2

Hypothesis 2 is as follows: "Police officers of different ranks have no different perception regarding job performance". The hypothesis is comprised of seven different sub-hypotheses to check whether each factor is different or not. Table 20 illustrates the results of the testing of hypothesis 2.

The seven sub-hypotheses are as follows:

1. Hypothesis 2-1: Police officers of different rank have no different opinions regarding "Knowledge and Skills".

2. Hypothesis 2-2: Police officers of different ranks have no different opinions regarding "Quantity of Work".

3. Hypothesis 2-3: Police officers of different ranks have no different opinions regarding "Adaptability".

4. Hypothesis 2-4: Police officers of different ranks have no different opinions regarding "Timeliness".

5. Hypothesis 2-5: Police officers of different ranks have no different opinions regarding "Judgment Ability".

6. Hypothesis 2-6: Police officers of different ranks have no different opinions regarding "Quality of Work".

7. Hypothesis 2-7: Police officers of different ranks have no different opinions "regarding Quality of Work".

Table 20

Results of the Testing of Hypothesis 2

Variables	Commissioned Officers ($N = 78$)		Non-commissioned Officers ($N = 322$)		t value	Sig.
	$\overline{X}$	*SD*	$\overline{X}$	*SD*		
Job performance	3.61	0.36	3.47	0.36	3.14	0.002
Knowledge and Skills	3.83	0.47	3.68	0.49	2.63	0.010
Quantity of Work	3.62	0.54	3.66	0.55	–0.71	0.480
Adaptability	3.50	0.53	3.52	0.53	–2.81	0.780
Timeliness	3.54	0.53	3.47	0.52	1.00	0.320
Judgment	3.38	0.49	3.38	0.49	0.04	0.970
Quality of Work	3.77	0.42	3.31	0.46	8.48	0.001
Efficiency	3.62	0.49	3.24	0.43	6.18	0.001

From Table 20, it may be seen that there are differences between police commissioned officers and police non-commissioned officers in terms of performance at a 0.05 level of significance (0.002). Job-related knowledge and skills, quality of work, and efficiency are also factors of which the police officers have different perceptions. On the other hand, the results indicate that there are no differences of opinion regarding four of the factors, such as quantity of work, adaptability, timeliness, and judgment.

Test of Hypothesis 3

Hypothesis 3 is as follows: "Police officers from different areas of the country have no different perception regarding job satisfaction". The respondents were from four geographical areas, including the Bangkok Metropolitan area, as well as the Northern, Eastern, and Western regions. A normality distribution test and homogeneity of variance test were conducted before the Analysis of Variance (ANOVA test or *F* test) was conducted to test hypothesis 3. Table 21 shows he mean and standard error value pertaining to job satisfaction, whereas Table 22 shows the results of the hypothesis test.

Table 21

Mean Values of Satisfaction of Police Officers from Different Areas

Area	Mean	*SE*
Bangkok Metropolitan area	2.686	0.027
Northern region	2.816	0.028
Western region	2.796	0.029
Eastern region	2.857	0.036

Table 22

Results of the ANOVA Test on Job Satisfaction of Police from Different Working Areas

ANOVA	Sum of Squares	*df*	Mean Square	*F*	Sig.
Between Groups	1.605	3	.535	5.890	.001
Within Groups	35.958	396	.091		
Total	37.562	399			

The results in Table 21 indicate that police officers who have worked in the Bangkok Metropolitan area exhibit the lowest level of job satisfaction compared with all the other areas (2.868), whereas the Eastern area exhibit the highest (2.857). The results from the Northern and Western regions are 2.816 and 2.796, respectively. While, the results in Table 22 show that police officers from at least two different working areas have different perceptions regarding job satisfaction since the level of significance (0.001) is less than 0.05. Thus, pairwise multiple comparisons can determine which means differ among different working areas. Range tests identify homogeneous subsets of means that are no different from each other. Pairwise multiple comparisons test the difference between each pair of means, and yield a matrix in which asterisks indicate significantly different group means at an alpha level of 0.05. Table 23 illustrates the results of pairwise multiple comparisons for the testing of hypothesis 3.

Table 23

Results of Multiple Comparisons

(I) Part	(J) Part	Mean Difference (I-J)	*SE*	Sig.
Bangkok	Northern region			
Metropolitan area		–0.131	0.043	0.002*
	Western region	–0.111	0.043	0.010*
	Eastern region	–0.171	0.043	0.001*
Northern region	Bangkok Metropolitan area	0.131	0.043	0.002*
	Western region	0.020	0.043	0.639
	Eastern region	–0.041	0.043	0.343

Table 23 (continued)

(I) Part	(J) Part	Mean Difference (I-J)	*SE*	Sig.
Western region	Bangkok Metropolitan area	0.111	0.043	0.010*
	Northern region	–0.020	0.043	0.639
	Eastern region	–0.060	0.043	0.156
Eastern region	Bangkok Metropolitan area	0.171	0.043	0.001*
	Northern region	0.041	0.043	0.343
	Western region	0.060	0.043	0.156

*0.05 level of significance

As demonstrated in Table 22, the level of job satisfaction of police officers who have worked in the Bangkok Metropolitan are different from that experienced by officers in other areas, including the Northern, Western, and Eastern regions at the level of levels of 0.05. Nonetheless, there is no difference in terms of job satisfactions between the Northern and Western regions, the Northern and Eastern, regions and the Eastern and Western regions.

Test of Hypothesis 4

Hypothesis 4 is as follows: "Police officers from different working areas have no different perception regarding job performance". There are four working areas including the Bangkok Metropolitan area, as well as the Northern, Eastern, and Western regions. A normality distribution test and homogeneity of variance test were also performed before the Analysis of Variance (ANOVA test or *F* test) was conducted to test hypothesis 4.

Table 24 shows the mean value pertaining to job performance, whereas Table 25 shows the results of the hypothesis test.

Table 24

Mean Values of Performance of Police Officers from Different Areas

Area	Mean	*SE*
Bangkok Metropolitan area	3.551	0.039
Northern region	3.446	0.034
Western region	3.490	0.036
Eastern region	3.489	0.036

The results in Table 24 indicate that the perception of police officers who have worked in Bangkok Metropolitan area regarding job performance is at the highest level compared with other areas (3.551), while that of officers in the Northern region is the lowest (3.446). That of officers in the Western region is nearly equal to that of their counterparts in the Eastern region, with a mean of 3.490 and 3.489, respectively.

Table 25

Results of ANOVA test on Job Performance of Officers from Different Working Areas

ANOVA	Sum of Squares	*df*	Mean Square	*F*	Sig.
Between Groups	0.567	3	0.189	1.447	0.229
Within Groups	51.785	396	0.131		
Total	52.353	399			

The results in Table 25 show that police officers from different working areas have no different perception regarding job performance at 0.05 levels of significance. It can be seen that police officers' perception with regarding to job performance is no different among the various areas of operation.

Test of Hypothesis 5

Hypothesis 5 is as follows: "Police officers with different types of work have no different perception regarding job satisfaction". There are five types of work for which officers are responsible, including clerking/administrative duties, crime prevention and suppression, crime detection, crime investigation, and traffic control. A normality distribution test and homogeneity of variance test were performed before the Analysis of Variance (ANOVA test or *F* test) was conducted to test hypothesis 5. Table 26 shows

the mean and standard error value relating to job satisfaction, whereas Table 27 shows the results of the hypothesis test.

Table 26

Mean Values of Police Officers' Satisfaction with Different Types of Work

Area	Mean	*SE*
Clerical/Administrative duties	2.852	0.033
Crime prevention and suppression	2.759	0.023
Criminal detection	2.791	0.037
Criminal investigation	2.880	0.055
Traffic control	2.720	0.036

Table 27

Results of ANOVA Test on Job Satisfaction of Officers with Different Types of Responsibility

ANOVA	Sum of Squares	*df*	Mean Square	*F*	Sig.
Between Groups	1.221	4	0.305	3.317	0.011
Within Groups	36.342	395	0.092		
Total	37.562	399			

The results in Table 26 indicate that the job satisfaction of police officers who are responsible for criminal investigation is at the highest level (2.880), while the satisfaction of those who are responsible for traffic control

is at the lowest (2.720). The job satisfaction of clerks/administrators, as well as those responsible for criminal detection, and criminal prevention and suppression is 2.852, 2.791, and 2.759, respectively.

Based on the results in Table 27, it is clear that police officers responsible for at least two different types of duties have different perceptions regarding job satisfaction since the test level of significance (0.011) is less than the 0.05 level of significance. Therefore, pairwise multiple comparisons can determine which means differ among those with different types of responsibility. Table 28 illustrates the results of pairwise multiple comparisons from the testing of hypothesis 5.

Table 28

Results of Multiple Comparisons

(I) Part	(J) Part	Mean Difference (I-J)	*SE*	Sig.
Clerking/Administration	Crime prevention and suppression	0.093	0.044	0.037
	Criminal detection	0.061	0.057	0.282
	Criminal investigation	–0.028	0.055	0.609
	Traffic control	0.132	0.051	0.010
Crime prevention and suppression	Clerking/Administration	–0.093	0.044	0.037
	Criminal detection	–0.031	0.050	0.527
	Criminal investigation	–0.121	0.047	0.011
	Traffic control	0.039	0.043	0.360
Criminal detection	Clerking/Administration	–0.061	0.057	0.282
	Crime prevention and suppression	0.031	0.050	0.527
	Criminal investigation	–0.090	0.059	0.132
	Traffic control	0.071	0.056	0.206

Table 28 (continued)

(I) Part	(J) Part	Mean Difference (I-J)	*SE*	Sig.
Criminal investigation	Clerical/Administrative duties	0.028	0.055	0.609
	Crime prevention and suppression	0.121	0.047	0.011
	Criminal detection	0.090	0.059	0.132
	Traffic control	0.160	0.054	0.003
Traffic control	Clerking/Administration	–0.132	0.051	0.010
	Crime prevention and suppression	–0.039	0.043	0.360
	Criminal detection	–0.071	0.056	0.206
	Criminal investigation	–0.160	0.054	0.003

As demonstrated in Table 28, the level of job satisfactions of police officers who are responsible for clerical/ administrative duties are different from those involved in crime prevention and suppression, and traffic control at a level of significance of 0.05. The level of job satisfactions of those who in charge of crime prevention and suppression is different that of their colleagues those who are responsible for criminal investigation (sig. 0.011). Furthermore, there is a difference in the level of satisfaction between criminal investigation police officers and traffic police officers (sig. 0.003). Nonetheless, there is no difference in the level of satisfaction between criminal detection officers and other police officers.

Test of Hypothesis 6

Hypothesis 6 is as follows: "Police officers responsible for different types of work have no different perception regarding job performance". Table

29 shows the mean and standard error value relating to job satisfaction, whereas Table 30 shows the results of the testing of hypothesis 6.

Table 29

Mean Values of Performance of Police Officers Responsible for Different Types of Work

Area	Mean	*SE*
Clerical/Administrative duties	3.516	0.043
Crime prevention and suppression	3.478	0.029
Criminal detection	3.501	0.052
Criminal investigation	3.469	0.051
Traffic control	3.521	0.042

The results in Table 29 indicate that the opinion of police officers who are responsible for traffic regarding job performance is at the highest level (3.521), while that of their counterparts who are responsible for criminal investigation is the lowest (3.469). The perception regarding job performance of those involved in clerical/ administrative duries, criminal detection, and criminal prevention and suppression are 3.516, 3.501, and 3.469, respectively.

Table 30

Results of ANOVA Test Regarding the Job Performance of Officers Engaged in Different Types of Work

ANOVA	Sum of Squares	*df*	Mean Square	*F*	Sig.
Between Groups	0.159	4	0.040	0.300	0.878
Within Groups	52.194	395	0.132		
Total	52.353	399			

The results in Table 30 show that police officers engaged in different types of work have no different perception regarding job performance at 0.05 levels of significance.

Factors in Police Officers' Backgrounds Affecting Police Their Performance and Level of Satisfaction

The logistic regression model for police officers' backgrounds and characteristics estimates the probability of a respondent being involved in each level of satisfaction and performance as a function of a certain set of predictor variables, including the socioeconomic characteristics of the respondents and their backgrounds. Each socioeconomic background factor is expected to influence police officers' perceptions regarding the selected level of satisfaction/performance. Multinomial logistic regression analysis is used in this research since the dependent variable Y (each level of

satisfaction/performance) can take on five values, namely very high, high, moderate, low, and very low, for job satisfaction, while it can be the best, good, moderate, poor, and very poor for job performance. Nevertheless, it is necessary to reclassify the five levels of categories into two categories, i.e. lower level, and higher level, in case there is no statistical significance in the multinomial logistic regression model. Therefore, binary logistic regression is applied to examine factors affecting performance and job satisfaction.

For multinomial logistic regression, the dependent variable is coded as 1 through 5, based on the level of satisfaction/performance, while it is coded as 0 if it is at a lower level and 1 if at a higher level for the binary logistic regression model. The individual predictor variable is assessed for inclusion using the entire selection method. In case the variable is not significant at 0.05 and 0.1 level in terms of the Wald statistic, it is still selected and included in the model as long as it has a significant change of -2-LL at the 0.05, and 0.1 level (Log Likelihood statistic). Generally, this method has been shown to be more reliable than the Wald statistic Limited and comprehensive model inputs are also tested for the purpose of improving the performance of the models. The goodness-of-fit tests are assessed in order to ensure the performance of the models. An omnibus test is used for the model coefficient statistical test. It tests the 'overall' significance of the model. This test indicates that the models fit the data well since the significance value is less than 0.05, while Hosmer and Lemeshow's goodness-of-fit statistic are also tested, with the significance level computed from the chi-square distribution. This test indicates that the models fit the data well since the significance value is greater than 0.05. The

advantage of logistic regression is its ability to determine the effect of each predictor variable on the police officers' perception regarding to each level of satisfaction/performance by using log odds (sign, magnitude), and odds ratios.

Background Factors Affecting Police Officers' Satisfaction

The test of model coefficients and Hosmer and Lemeshow's test were used to determine the model's suitability. The results indicate that the model is appropriate in terms of describing factors affecting job satisfaction (Omnibus test: 0.026 level of significance and Hosmer and Lemeshow's test: 0.691 level of significance). Furthermore, the predictor variables were chosen by the Wald statistical method, where all variables have significant changes in -2-LL. The summary of the models is shown in Table 31. Predictor variables with no significance are not shown in the summary table.

All coefficients are tested based on the Wald statistic and the changes in the -2-log-likelihood test. It is observed that INCOME is the only predictor variable to be significant at the level of 0.05 level, whereas the variables–TYPE OF WORK, SIZE, CHILDREN, and RESIDENCE–are significant at a 0.1 level of significance. In order to check the linearity of the variable, SIZE, (this variable is the only continuous variable in the final model) the Box-Tidwell transformation term, SIZE.ln (SIZE) is added into the model and the model-fitting procedure is repeated. If the coefficient of the variable is insignificant at a level of 0.05, then the assumption of linearity of the independent variable is justified.

With respect to the results computed from the logistic model, a positive coefficient for TYPE OF WORK's (only crime detection duty) of model indicates that police officers responsible for crime detection are approximately 3 times (EXP(*B*)=3.301) more likely to be satisfied than those working on the position of a clerk/administrator (reference category).

There are four categories in the INCOME variable which are significant; three categories as 12,501-15,000 ฿, 15,001-17,500 ฿, and 17,501-20,000 ฿ at 0.05 levels, and only one category as more than 20,000 ฿ at a level of 0.1. An increase in the coefficient for each category (INCOME) indicates that the level of job satisfaction increases with an increase in the police respondents' income. The respondents are more likely to exhibit a greater level of satisfaction if they receive a higher income, since the value of odd ratios for each category increases in line with an increase in the income category. This phenomenon is also consistent with previous research.

Table 31

Variables in the Overall Job Satisfaction Model

Variables	*B*	*SE*	Wald	*df*	Sig.	Exp(*B*)
TYPE OF WORK			6.171	4	0.187	
Clerical/Administrative Duries			Reference factor			
Crime Prevention and Suppression	0.442	0.553	0.638	1	0.424	1.555
Crime Detection	1.194	0.726	2.704	1	0.100**	3.301
Crime Investigation	0.618	0.670	0.851	1	0.356	1.856
Traffic Control	-0.175	0.580	0.091	1	0.763	0.840

Table 31 (continued)

Variables	*B*	*SE*	Wald	*df*	Sig.	Exp(*B*)
INCOME			9.927	5	0.077	
10,000 ฿ or lower			Reference factor			
10,001-12,500 ฿	0.809	0.554	2.136	1	0.144	2.246
12,501-15,000 ฿	1.507	0.708	4.536	1	0.033*	4.513
15,001-17,500 ฿	1.523	0.736	4.284	1	0.038*	4.585
17,501-20,000 ฿	4.057	1.345	9.095	1	0.003*	57.791
More than 20,000 ฿	2.041	1.066	3.667	1	0.055**	7.702
SIZE	–0.461	0.273	2.853	1	0.091**	0.631
CHILDREN	0.952	0.559	2.898	1	0.089**	2.590
RESIDENCE			3.954	2	0.138	
Government residence			Reference factor			
Owner occupied	–0.244	0.425	0.331	1	0.565	0.783
Rented	–1.341	0.687	3.810	1	0.051**	0.262
CONSTANT	27.184	6814.362	0.000	1	0.997	97.594

*0.05 level of significance

**0.1 level of significance

With respect to the police respondents' backgrounds, a negative coefficient for the SIZE of the model indicates that those with a large family have less of a chance of being satisfied with their job. The estimated odds ratios indicate that with every increment of one person in a household, the probability of police officers exhibiting a higher level of satisfaction will decrease by 0.631 times or 63% . This may be due to the fact that the living costs will also increase along with an increase in the number of family members. A positive coefficient for CHILDREN indicates that having children in the household will increase the probability of achieving satisfaction by 2.59 times.

As expected, the sign of the coefficient for RESIDENCE in Table 31 is also negative, thus indicating that police officers who live in rented accommodation or do not have their own houses, are more likely to be dissatisfied than those who are living in police dormitories or flats. This may be the reason that they have to pay more in terms of additional costs since a rented residence is located farther away from their station than the police residence with which some officers are provided.

1. Background Factors Affecting Police Officers' Satisfaction Relating to Payment

The goodness-of-fit was assessed by testing model coefficients and using the Hosmer and Lemeshow test, which yielded results of 0.001, and 0.581 levels of significance, respectively. This indicates that the model is suitable for explaining factors affecting their satisfaction pertaining to payment. A summary of the models is shown in Table 32. Predictor variables with no significance are not shown in the summary table.

Table 32

Variables in the Payment Model

Variables	*B*	*SE*	Wald	*df*	Sig.	Exp(*B*)
RANK						
Non-commissioned police officer	1.189	0.639	3.469	1	0.063**	3.285
EDUCATIONAL LEVEL			3.655	2	0.161	
Secondary, Technical school or Diploma level			Reference factor			
Bachelor 's degree	–0.531	0.311	2.919	1	0.088**	0.588
Post-graduate degree	–0.904	0.673	1.805	1	0.179	0.405
MARITAL STATUS			3.405	2	0.182	
Single			Reference factor			
Married or living with partner	0.883	0.505	3.051	1	0.081**	2.418
Separated, divorced, or widowed	0.146	0.816	0.032	1	0.858	1.158
SIZE	–0.664	0.313	4.515	1	0.034*	0.515
CHILDREN	1.460	0.498	8.605	1	0.003*	4.307
MOTORCYCLE OWNERSHIP	–0.719	0.333	4.652	1	0.031*	0.487
CONSTANT	0.308	3.222	0.009	1	0.924	1.360

*0.05 level of significance

**0.1 level of significance

It is observed that the three predictor variables-SIZE, CHILDREN, MOTORCYCLE OWNERSHIP-are significant at levels of 0.05, while three variables-RANK, EDUCATIONAL LEVEL, and MARITAL STATUS-are significant at 0.1 levels of significance. The assumption of linearity of the

independent variable (SIZE.ln (SIZE)) is justified by the test of the continuous variable.

With respect to the results in Table 32 computed from the logistic model, a positive sign of a RANK coefficient in the model indicates that non-commissioned police officers are approximately 3 times (EXP(B) = 3.285) more likely to be satisfied with their salary than commissioned police officers (reference factor). Wage is a significant factor in job satisfaction. Money not only helps people attain their basic needs but is instrumental in providing upper-level need satisfaction (Major & Konar, 1984). This may be the reason commissioned police officers are dissatisfied with their payment when their backgrounds, quality of work, and experience are compared with other organizations and other ranks of police officers.

As expected, for the EDUCATION predictor variable, the coefficient for the EDUCATION is negative, indicating that police respondents who had studied up to the Bachelor's degree level are approximately 60% less likely to be satisfied with their remuneration than those who had studied up to the secondary school, technical school level, or diploma level (reference category).

Generally, it would be anticipated that those with a lower level of education would have been more satisfied with their payment benefits than those with a higher level of education.

With respect to police respondents' backgrounds, a negative coefficient for the SIZE of the model indicates that a large family reduces the chance of officers being satisfied with their job. With every increase of one

extra person in a household, the probability of police officers experiencing a higher level of satisfaction will decrease by 0.515 times or 51.2% of their satisfaction level. This may be because the living costs will also rise in proportion to any increase in the number of family members. A positive coefficient for CHILDREN indicates that having children in the household will increase the probability of achieving satisfaction by 4.307 times.

However, it is more difficult to explain why marital status and motorcycle ownership (MARITAL STATUS, MOTORCYCLE OWNERSHIP) are found to be significant. The results indicate that those who are married or living with partner group are more likely to be satisfied group than the single group. Police officers who have their own motorcycle are more likely to be dissatisfied than those who do not.

2. Background Affecting Police Officers' Satisfaction with the Work Itself

The goodness-of-fit tests were assessed using the test of the model for coefficients and the Hosmer and Lemeshow test, yielding results at levels of significance of 0.009, and 0.914, respectively, thereby indicating that the model is suitable for explain factors affecting their satisfaction on work itself. The summary of the models is shown in Table 33.

Table 33

Variables in the Model Relating to the Work Itself

Variables	*B*	*SE*	Wald	*df*	Sig.	Exp(*B*)
RANK						
Non-commissioned police officer	–0.758	0.451	2.829	1	0.093**	0.469
INCOME			7.420	5	0.191	
10,000 ฿ or lower			Reference factor			
10,001-12,500 ฿	0.879	0.382	5.296	1	0.021*	2.408
12,501-15,000 ฿	0.880	0.476	3.428	1	0.064**	2.412
15,001-17,500 ฿	0.979	0.509	3.700	1	0.054**	2.661
17,501-20,000 ฿	1.495	0.595	6.306	1	0.012*	4.461
More than 20,000 ฿	1.498	0.732	4.189	1	0.041*	4.474
CONSTANT	2.163	2.853	0.575	1	0.448	8.696

*0.05 level of significance

**0.1 level of significance

It is evident that the two predictor variables–RANK and INCOME–are significant. With regard to results in Table 33 a negative coefficient for RANK indicates that non-commissioned police officers are approximately 47% less likely to be satisfied with the contents of work itself than commissioned police officers (reference factor).

All categories in the INCOME variable were significant; three of the categories (incomes of 10,001-12,500 ฿, 17,501-20,000 ฿, and more than 20,000 ฿) were at the level of 0.05, and two of the categories (12,501-15,000 ฿, and 15,001-17,500 ฿) at the level of 0.1. An increase in the coefficient for each category (INCOME) indicates that the level of job satisfaction increases with a corresponding increase in the police respondents' income. This may be

because the content of the work itself is related to income level, whereby the higher the salary they gain, the higher the level of satisfaction with the work.

3. Background Factors Affecting Police Officers' Satisfaction Regarding Promotion

The goodness-of-fit tests were assessed using the test of model coefficients and the Hosmer and Lemeshow test, the results being statistically significant at the levels of 0.029 and 0.319, respectively. This indicates that the model is suitable for explaining factors affecting their satisfaction relating to promotion. A summary of the models is shown in Table 34 below.

Table 34

Variables in the Model Relating to Promotion

Variables	*B*	*SE*	Wald	*df*	Sig.	Exp(*B*)
TYPE OF WORK			9.293	4	0.054**	
Clerical/Administrative Duties			Reference factor			
Crime Prevention and Suppression	−1.082	0.552	3.835	1	0.050*	0.339
Crime Detection	0.209	0.600	0.122	1	0.727	1.233
Crime Investigation	−0.785	0.631	1.547	1	0.214	0.456
Traffic Control	−0.496	0.587	0.713	1	0.398	0.609
SIZE	−0.607	0.330	3.378	1	0.066**	0.545
CHILDREN	1.173	0.540	4.715	1	0.030*	3.232
MOTORCYCLE OWNERSHIP	−0.672	0.363	3.433	1	0.064**	0.511
CONSTANT	5.569	5.539	1.011	1	0.315	262.061

*0.05 level of significance

**0.1 level of significance

It may be seen that the predictor variables–TYPE OF WORK and CHILDREN–are statistically significant at the level of 0.05, whereas the variables SIZE and MOTORCYCLE OWNERSHIP are statistically significant at the level of 0.1. Thus, the assumption of linearity of the independent variable is justified.

With respect to the results computed from the logistic model, a positive coefficient for TYPE OF WORK (with regard to crime prevention and suppression duties only) indicates that police officers who are working in crime prevention and suppression are approximately 0.339 times less likely to be satisfied in terms of promotion than those working in the position of clerk/administrators (reference category).

A negative coefficient for the SIZE of the model indicates that having a large family reduces the chance of achieving satisfaction in terms of their job. With every extra person in a household, the probability of police officers experiencing a higher level of satisfaction will decrease by 54.5% of their satisfaction level. A positive coefficient regarding CHILDREN indicates that having children in their household will increase the probability of experiencing satisfaction by 3.232 times. Police officers who have their own motorcycle (MOTORCYCLE OWNERSHIP), are 51.1% more likely to be dissatisfied than those who do not.

4. Background Factors Affecting Police Officers' Satisfaction Regarding Supervision

The goodness-of-fit tests were assessed using the test for model coefficients and the Hosmer and Lemeshow test, the results being statistically

significant at the level of 0.038, and 0.306, respectively. They indicate that the model is suitable for explaining factors affecting the officers' satisfaction regarding supervision. A summary of the models is presented in Table 35.

From Table 35, it can be seen that the predictor variables–LENGTH OF SERVICE, MARITAL STATUS, and SIZE–are statistically significant at the level of 0.05, while the variables–EDUCATION LEVEL and CAR OWNERSHIP–are statistically significant at the level of 0.1.

The Box-Tidwell transformation term, SIZE.ln (SIZE), and LENGTH OF SERVICE.ln (LENGTH OF SERVICE) are added into the model and the model-fitting procedure repeated. However, the assumption of linearity of the independent variable is justified, since the statistical levels are insignificant.

A negative coefficient regarding the LENGTH OF SERVICE element of the model indicates that an increase in the number of years of service reduces the chance of achieving satisfaction inn their job with regard to supervision. With every increment of one year of service, the probability of police officers achieving a higher level of satisfaction will decrease by 93.4%.

Table 35

Variables in the Model Relating to Supervision

Variables	*B*	*SE*	Wald	*df*	Sig.	Exp(*B*)
LENGTH OF SERVICE	–0.068	0.033	4.365	1	0.037*	0.934
EDUCATIONAL LEVEL			5.164	2	0.076**	
Secondary, technical school or diploma			Reference factor			
Bachelor 's degree	–0.345	0.300	1.320	1	0.251	0.708
Post-graduate degree	–1.125	0.496	5.147	1	0.023*	0.325
MARITAL STATUS			7.034	2	0.030*	
Single			Reference factor			
Married or living with partner	1.056	0.422	6.254	1	0.012*	2.874
Separated, divorced, or widowed	0.344	0.599	0.329	1	0.566	1.410
SIZE	–0.511	0.213	5.745	1	0.017*	0.600
CAR OWNERSHIP	–0.635	0.372	2.906	1	0.088**	0.530
CONSTANT	0.049	3.400	<0.001	1	0.988	1.050

*0.05 level of significance

**0.1 level of significance

As expected, for the EDUCATION predictor variable, the coefficient for EDUCATION (those with a post graduate degree) is negative, indicating that police respondents, who have a post-graduate degree, are 32.5% less likely to be satisfied with suppression than those who have studied in a secondary, technical school level, or diploma degree (reference category).

With regard to the MARITAL STATUS coefficient, the results indicate that those who are married or living together are more likely to be satisfied than those who are single. A negative sign of coefficient for the SIZE of the model indicates that those with a large family have less of a chance of achieving satisfaction regarding their job. With every increase of one extra person in a household, the probability of police officers experiencing a higher level of satisfaction will decrease by 60% Furthermore, police officers who have their own car are 53% more likely to be dissatisfied than those who do not.

5. Background Factors Affecting Police Officers' Satisfaction Regarding Work Groups

The goodness-of-fit tests were assessed using the test for model coefficients and the Hosmer and Lemeshow test, the results being statistically significant at the level of 0.016 and 0.962, respectively. This indicates that the model is suitable for explaining factors affecting their satisfaction relating to their work groups. A summary of the models is presented in Table 36.

There are three categories in the INCOME variable which are significant; two of the categories (incomes of 17,501-20,000, and more than 20,000 ฿) at the level of 0.05, and only one category (incomes of 10,000-12,500 ฿) at 0.1 levels. Increasing of coefficient magnitude for each category (INCOME) indicates that the level of job satisfaction increases in line with increases in police respondents' income.

The respondents are more likely to have a higher level of satisfaction if they have a higher income, since the value of odd ratios for each category increases with an increase in the category of income.

Table 36

Variables in the Model Relating to Work Groups

Variables	*B*	*SE*	Wald	*df*	Sig.	Exp(*B*)
INCOME			13.500	5	0.019*	
10,000 ฿ or lower			Reference factor			
10,001-12,500 ฿	0.713	0.399	3.196	1	0.074**	2.041
12,501-15,000 ฿	−0.104	0.537	0.037	1	0.847	0.902
15,001-17,500 ฿	0.848	0.537	2.490	1	0.115	2.335
17,501-20,000 ฿	1.545	0.621	6.185	1	0.013*	4.688
More than 20,000 ฿	1.741	0.761	5.237	1	0.022*	5.705
CONSTANT	−0.588	3.051	0.037	1	0.847	0.556

*0.05 level of significance

**0.1 level of significance

6. Background Factors Affecting Police Officers' Satisfaction Regarding Work Conditions

The goodness-of-fit tests were assessed using the test of model coefficients and Hosmer and Lemeshow test, the results being statistically significant at the level of 0.049 and 0.105, respectively. This indicates that the model is suitable for explaining factors affecting their satisfaction regarding their work groups. A summary of the models is shown in Table 37 below.

Table 37

Variables in the Model Relating to Working Conditions

Variables	*B*	*SE*	Wald	*df*	Sig.	Exp(*B*)
TYPE OF WORK			4.404	4	0.354	
Clerical/Administrative Duties			Reference factor			
Crime Prevention and Suppression	–0.284	0.563	0.255	1	0.614	0.752
Crime Detection	–1.322	0.800	2.731	1	0.098**	0.267
Crime Investigation	–0.107	0.625	0.029	1	0.864	0.898
Traffic Control	–0.772	0.648	1.420	1	0.233	0.462
MARITAL STATUS			12.108	2	0.002	
Single			Reference factor			
Married or living with partner	–1.733	0.506	11.721	1	0.001*	0.177
Separated, divorced, or widowed	–0.788	0.744	1.120	1	0.290	0.455
INCOME			6.297	5	0.278	
10,000 ฿ or lower			Reference factor			
10,001-12,500 ฿	0.940	0.545	2.973	1	0.085**	2.559
12,501-15,000 ฿	0.058	0.799	0.005	1	0.943	1.059
15,001-17,500 ฿	0.799	0.763	1.097	1	0.295	2.223
17,501-20,000 ฿	1.507	0.861	3.064	1	0.080	4.511
More than 20,000 ฿	1.608	1.082	2.210	1	0.137	4.993
CONSTANT	–3.368	3.544	0.903	1	0.342	0.034

*0.05 level of significance

**0.1 level of significance

It may be observed that only one predictor variable–MARITAL STATUS–is statistically significant at the level of 0.05, while the variables–TYPE OF WORK and INCOME–are significant at the level of 0.1. Thus, the assumption of linearity of the independent variable is justified.

As shown in Table 37, the negative coefficient for TYPE OF WORK in the model (relating to crime detection duties only) indicates that police officers who are working in crime detection are 0.267 times less likely to be satisfied in terms of their work conditions than those working in a clerical/administrative position (reference category). With regard to the MARITAL STATUS coefficient, the results indicate that those who are married or living together are less likely to be satisfied than those who are single. There is only one category in the INCOME variable; incomes of between 10,000-12,500 ฿, that is at the level of 0.05. Any increase in the coefficient for each category (INCOME) indicates that the level of job satisfaction increases in line with an increase in police respondents' income.

Background Factors Affecting Police Officers' Performance

The results of testing the model's coefficients and of the Hosmer and Lemeshow test show that the model is suitable in terms of explaining police officers' behavior, the results being statistically significant at the level of 0.045, and 0.639, respectively. A summary of the model is shown in Table 38. Predictor variables with no significance, however, are not shown in the summary table.

Table 38

Variables in the Overall Job Performance Model

Variables	*B*	*SE*	Wald	*df*	Sig.	Exp(*B*)
TYPE OF WORK			5.227	4	0.265	
Clerical/Administrative Duties			Reference factor			
Crime Prevention and Suppression	–0.539	0.411	1.723	1	0.189	0.583
Crime Detection	–0.497	0.475	1.095	1	0.295	0.608
Crime Investigation	–1.009	0.468	4.658	1	0.031*	0.365
Traffic Control	–0.378	0.447	0.713	1	0.398	0.685
CONSTANT	27.184	6814.362	0.000	1	0.997	639430054962.594

*0.05 level of significance

All coefficients were tested based on the Wald statistic and the changes in the -2-log-likelihood test. It may be seen that only one of the predictor variables–TYPE OF WORK–is statistically significant at the level of 0.05. With regard to the results calculated from the logistic model, a negative coefficient in the model relating to TYPE OF WORK (crime investigation tasks) indicates that police officers responsible for crime detection are less likely to be satisfied with their performance than those working in clerical/administrative position (reference factor).

1. Background Factors Affecting Police Officers' Performance Regarding Quality of Work

The results of the testing of the model's coefficients and of the Hosmer and Lemeshow test show that the model is suitable in terms of explaining the police officers' behavior statistically significant levels of

significance of < 0.001 and 0.454, respectively. A summary of the models is shown in Table 39.

From Table 39, it can be seen that the predictor variables OVERALL LENGTH OF SERVICE, AGE, and RANK are statistically significant at a level of 0.05, while the variables LENGTH OF SERVICE, EDUCATION LEVEL, MARITAL STATUS, and SIZE–are statistically significant at the levels of 0.1. Thus, the linearity of the independent variable tests (LENGTH OF SERVICE, OVERALL LENGTH OF SERVICE, AGE) is justified, since the statistical levels are not statistically significant.

In the model, a negative coefficient for LENGTH OF SERVICE indicates that an increasing number of years in the service results in a concomitant decline in performance with regard to the quality of the work. With every extra year of service, the probability of police officers' perception with regard to their ability to perform at a high level will decrease by 93.4%. As with the AGE variable, with every increase in age of one year, the probability of police officers' perception with regard to their ability to perform at a high level will decrease by 61.1%.

Table 39

Variables in the Model Relating to Quality of Work

Variables	*B*	*SE*	Wald	*df*	Sig.	Exp(*B*)
LENGTH OF SERVICE	–0.051	0.031	2.711	1	0.100**	0.950
OVERALL LENGTH OF SERVICE	0.560	0.245	5.222	1	0.022*	1.751
AGE	–0.493	0.242	4.164	1	0.041*	0.611
RANK						
Non-commissioned police officer	–2.793	0.520	28.792	1	<0.001*	0.061
EDUCATIONAL LEVEL			4.039	2	0.133	
Secondary, technical school or diploma			Reference factor			
Bachelor's degree	–0.512	0.272	3.557	1	0.059**	0.599
Post-graduate degree	–0.711	0.514	1.914	1	0.166	0.491
MARITAL STATUS			4.046	2	0.132	
Single			Reference factor			
Married or living with partner	0.798	0.410	3.784	1	0.052**	2.220
Separated, divorced, or widowed	0.324	0.590	0.301	1	0.583	1.382
SIZE	–0.403	0.225	3.204	1	0.073**	0.669
CONSTANT	12.035	4.949	5.912	1	0.015*	168539.732

*0.05 level of significance

**0.1 level of significance

Surprisingly, the results contradict those pertaining to OVERALL LENGTH OF SERVICE in that with each passing year that overall service increases, police officers will have a 75% greater chance to achieve a higher level of performance. This may be because police officers who are working at the police stations surveyed in this study may not be satisfied with their performance compared to their past performance. A negative coefficient relating to RANK in the model indicates that non-commissioned police

officers are approximately 6% less likely to be satisfied with their performance on quality of work than commissioned police officers (reference factor).

With regard to the EDUCATION predictor variable, the coefficient is unexpectedly, negative in the Bachelor's degree category, indicating that police respondents, who have studied at the bachelor, are approximately 60% less likely to be satisfied with their performance in terms of quality than those who had studied at the secondary, technical school, or diploma level (reference category). The MARITAL STATUS coefficient indicates that those who are married or living together are more likely to be satisfied with their quality of work than those in the single group. Nonetheless, the negative coefficient for the SIZE of the model indicates that those with a large family stand less of a chance of achieving satisfaction regarding their job performance. With every extra person in a household, the probability of police officers' perception regarding their high level performance will decrease by 67%.

Lastly, the test of the model's coefficients and the Hosmer and Lemeshow test are used to determine the model's suitability in terms of evaluating quantity, timeliness, and judgment. The results indicate that there are no statistically significant factors relating to police officer's characteristics with regard to quantity of work, timeliness, and judgment.

2. Background Factors Affecting the Efficiency of Police Officers' Performance

The results of testing the model's coefficients and Hosmer and the Lemeshow test show that the model is suitable enough to explain the police officers' behavior at <0.001, and 0.112 levels of significance, respectively. A summary of the model is presented in Table 40.

Table 40

Variables in the Efficiency Model

Variables	*B*	*SE*	Wald	*df*	Sig.	Exp(*B*)
OVERALL LENGTH OF SERVICE	0.791	0.328	5.818	1	0.016*	2.206
AGE	–0.744	0.324	5.281	1	0.022*	0.475
EDUCATION LEVEL			3.735	2	0.155	
Secondary school, technical school or diploma			Reference factor			
Bachelor's degree	–0.564	0.294	3.684	1	0.055**	0.569
Post-graduate degree	–0.333	0.495	0.453	1	0.501	0.717
MARITAL STATUS			4.068	2	0.131	
Single			Reference factor			
Married or living with partner	0.623	0.412	2.283	1	0.131	1.864
Separated, divorced, or widowed	1.125	0.583	3.725	1	0.054**	3.081
CONSTANT	16.354	6.557	6.221	1	0.013	12663804.014

*0.05 level of significance

**0.1 level of significance

From the results in Table 40, a positive coefficient for the OVERALL LENGTH OF SERVICE of the model may be seen, indicating that, as the number of years of service increases, it is accompanied by an

increase in the efficiency of their performance with every extra year on the force. With every extra person in a household, the probability of police officers' perception of increased performance will increase by 1.2 times. Unpredictably, this result is contrary to the AGE variable, which indicates that every passing year their age increases, there is a 47.5% chance that police officers' will decline.

As regards the EDUCATION predictor variable, the coefficient for the EDUCATION is unexpectedly negative in the Bachelor degree category, indicating that police respondents, who had a Bachelor's degree, are approximately 57% less likely to be satisfied with their performance regarding efficiency than those who have studied up to the secondary, technical school or diploma level (reference category). The MARITAL STATUS coefficient indicates that officers who are separated, divorced, or widowed are more likely to be satisfied with their efficiency than those in the single group.

3. Background Affecting Police Officers' Performance on Job Knowledge and Skills

Results of test of model coefficients and Hosmer and Lemeshow test show that the model is suitable for explaining the police officers' behavior, with 0.048, and 0.640 levels of significance, respectively. The summary of the model is shown in Table 41.

Table 41

Variables in the Model Relating to Job-related Knowledge and Skills

Variables	*B*	*SE*	Wald	*df*	Sig.	Exp(*B*)
GENDER						
Women	1.391	0.701	3.938	1	0.047*	4.018
TYPE OF WORK			5.949	4	0.203	
Clerical/Administrative Duties		Reference factor				
Crime Prevention and Suppression	−1.214	0.582	4.347	1	0.037*	0.297
Crime Detection	−1.408	0.636	4.898	1	0.027*	0.245
Crime Investigation	−1.405	0.629	4.989	1	0.026*	0.245
Traffic Control	−1.034	0.614	2.841	1	0.092	0.355
CONSTANT	1.315	3.099	0.180	1	0.671	3.726

*0.05 level of significance

**0.1 level of significance

All coefficients were tested based on the Wald statistic and the changes in -2-log-likelihood test. It is observed that the two predictor variables–GENDER and TYPE OF WORK–are significant at 0.05 levels. A positive coefficient for the GENDER model indicates that women are 4 times more likely to be satisfied with their performance on knowledge and skills than those are male (reference factor).

With regard to the results calculated from logistic model, a negative coefficient for TYPE OF WORK (crime prevention and suppression, crime detection, and crime investigation) indicates that police officers are less likely to be satisfied with their knowledge and skills than those working in clerical/administrative positions (reference factor), except for those engaged in traffic duty.

4. Background Affecting the Adaptability of Police Officers' in Terms of Performance

The results of testing of the model's coefficients and the Hosmer and the Lemeshow test show that the model is suitable enough to explain the police officers' behavior at 0.039, and 0.786 levels of significance, respectively. A summary of the model is shown in Table 42 below.

Table 42

Variables in the Adaptability Model

Variables	*B*	*SE*	Wald	*df*	Sig.	Exp(*B*)
TYPE OF WORK			5.262	4	0.261	
Clerical/Administrative Duties		Reference factor				
Crime Prevention and Suppression	–0.568	0.406	1.956	1	0.162	0.567
Crime Detection	–0.503	0.470	1.145	1	0.285	0.604
Crime Investigation	–0.933	0.463	4.051	1	0.044*	0.393
Traffic Control	–0.253	0.443	0.325	1	0.569	0.777
CONSTANT	–3.470	2.970	1.365	1	0.243	0.031

*0.05 level of significance

**0.1 level of significance

With regard to the results in Table 42, a negative coefficient in the model pertaining to TYPE OF WORK (crime investigation tasks) indicates that police officers responsible for crime investigation are less likely to be satisfied regarding their adaptability than those working in clerical/administrative positions (reference factor).

Pairwise Comparisons of Benefit-related Factors Relating to Police

Pairwise comparison matrices were applied to derive implicit weights for a given set of decision alternatives. This study defined weight for all the datasets, giving each a percentage of influence. The comparison concerns the relative importance of the defined criteria. This is to create a pairwise comparison matrix in which each factor is evaluated for its importance relative to all other factors in determining the suitability of the benefits concerned. To provide a systematic procedure for comparison, a pairwise matrix is developed by setting out one row and one column for each factor associated with the analysis. The decision maker then provides a rating for each of the cells in this matrix. The pairwise matrix is presented in Table 43 below. This method is used to determine how police officers prioritize such benefits.

The factors for this in-depth analysis of their benefits are as follows:

1. Improve standards regarding police remuneration
    1.1 Improve salary standards
    1.2 Improve salary relating to stepwise promotion
    1.3 Improve basic additional allowance
    1.4 Improve additional allowance for extra responsibilities
    1.5 Allowance for food and other expenses
2. Improve system regarding the right to take leave
    2.1 Leave of absence

2.2 Annual vacation leave

2.3 Sick leave

3. Improve government reserve fund and cooperative police society fund

3.1 Retirement allowance/Pension paid

3.2 Superannuation and gratuities

3.3 Fees for children's tuition and education

4. Improve criteria and standards relating to career and position

4.1 Appropriate training and seminars to improve skills and techniques for service delivery

4.2 Encourage further academic study

4.3 Improve opportunities for career advancement and promotion

4.4 Ensure equity, justice and fulfillment of potential in working environment

5. Improve standard of living

5.1 Existing police residences

5.2 Provide new residences

5.3 Payment of medical service and medical fees for police family

6. Improve job environment for delivering services to public

6.1 Facilities

6.2 Weapons, vehicles and equipment

6.3 Out-of-date materials.

The mode statistic is used for selecting the weight scores relating to each factor. The value that occurs the most frequently in a data set is selected

to represent police officers' opinions regarding factors related to benefits. Since the completed pairwise comparison matrix contains multiple paths by which the relative importance of the criterion can be assessed, it is also possible to determine the degree of consistency in developing ratings. The Consistency Ratio (CI/RI or CR) indicates the probability of consistency that the matrix ratings are randomly generated.

Table 43

Summary of Pairwise Matrix Regarding Benefits

	Payment standard	Leave system	Government reserve fund and police society fund	Criteria and standards re: career and position	Standard of living	Job environment
Payment standard	1.00	5.00	3.00	2.00	4.00	6.00
leave system	0.20	1.00	0.33	0.33	0.50	2.00
Government reserve fund and police society fund	0.33	3.00	1.00	2.00	3.00	4.00
Criteria and standardsre: Career and position	0.50	3.00	0.50	1.00	2.00	3.00
Standard of living	0.25	2.00	0.33	0.50	1.00	2.00
Job environment	0.17	0.50	0.25	0.33	0.50	1.00

This indicated that a matrix with a consistency ratio greater than 0.10 should be reevaluated. A matrix with a consistency ratio within 0.10 is acceptable (Panishakul & Vongwatanalerk, 2003). In this study, the CI/RI Ratio was 0.0269, which means that the weight factors can be used to describe

the influence of such factors. However, the factors relating to police officers' benefits were ranked from the most important to the least important based on the opinions of the respond, the results being shown in Table 44 below.

Table 44

Pairwise Results Relating to Factors' Importance

Factor Related to Benefits	Factor's Importance	
Improve standards regarding police remuneration	0.3879	(38.79%)
Improve government reserve fund and police cooperative society fund	0.2244	(22.44%)
Improve criteria and standards relating to career and position	0.1690	(16.90%)
Improve standard of living	0.0974	(9.74%)
Improve system the right to leave of absence	0.0704	(7.04%)
Improve job environment for delivering services to people	0.0506	(5.06%)

From the results of pairwise comparisons in Table 44, the first priority of police officers is to improve standards regarding remuneration, consisting of improvements in salary standard, salary relating to stepwise promotion, basic additional allowance, improve additional and allowances for extra responsibilities. The second priority is to improve the government reserve fund and the cooperative police society fund, which consists of

increasing the retirement allowance paid, superannuation and gratuities, and tuition fees for children's education. The next priority is to improve the criteria and standards relating to career advancement and promotion, which consist of appropriate training and seminars to improve the skills and techniques needed for service delivery, encouraging further academic study, improving opportunities for advancement in officers' career and promotion, and ensuring equity, justice /fair treatment and potential in their job environment. The next is to improve the standard of living, followed by improvements in the system regarding leave of absence. The respondents' last concern is to improve the working environment for delivering services to members of the public.

Other Suggestions of Police Officers

The respondents provided numerous interesting suggestions for this survey. There were 146 police officers, or 36.5% of the sample, who responded to the open-ended questions requesting their suggestions. There were seven issues raised in their suggestions, which numbered 332 in all, ranked from the most to the least as illustrated in Table 45. The number of suggestions was higher than the number of respondents since some respondents were able to provide more than one suggestions.

Table 45

Issues Raised in Suggestions by the Police Officers Sampled

Suggestions	Frequency of Issue	Percentage
1. Salary, Welfare, and Monetary benefits	115	34.64
Low salary and additional payment	45	13.55
Inappropriateness of welfare provision such as cost of living, allowances, etc.	34	10.24
Insufficient number of flats, dormitories and housing	20	6.02
Slow process regarding reimbursement for fringe benefits such as medical fees, tuition fees for children's education, etc.	16	4.82
2. Improvement of Job Performance	65	19.58
Being service-minded to members of the public	26	7.83
Time schedule for shift work is inappropriate	22	6.63
Need to improve police officers' behavior	15	4.52
Need to amend laws relating to police work	2	0.60
3. Superiors and Supervision	56	16.87
Use of "spoils" system considered unjust and unfair	23	6.93

Table 45 (continued)

Suggestions	Frequency of Issue	Percentage
Lack of care-taking, especially with regard to non-commissioned police officers	16	4.82
The class is divided between superiors and subordinates	10	3.01
Superiors should give subordinates opportunities to participate in job improvements	4	1.20
Superiors must foster the appropriate prepare working mentality	3	0.90
4. Human Resource Management and Development	35	10.54
There should be a clear and transparent process for promoting non-commissioned police officers to commissioned officers.	10	3.01
Lack of an appropriate process of selection, appointment, and transfer (need to "put the right man on the right job")	9	2.71
Lack of sufficient police personnel	6	1.81
Quality of police personnel (work slowly and inefficiently)	6	1.81
Training (need more training)	4	1.20

Table 45 (continued)

Suggestions	Frequency of Issue	Percentage
5. Corruption Issues	26	7.83
Bribery	8	2.41
The buying and selling of job positions	7	2.11
The need to employ appropriate measures to eradicate corruption	6	1.81
No political interference in police administration, especially in the appointment and transfer of police officers	5	1.51
6. Materials and Support System (Logistics)	24	7.23
Inadequacy of materials, such as office stationery, weapons, equipment etc.	12	3.61
A need for modern technology (such as computers, etc.)	10	3.01
Lack of sufficient cars, motorcycles, and fuel	2	0.60
7. Budget and Project Development	11	3.31
Insufficient budget	6	1.81
A need to improve working conditions	5	1.51
Total	332	100.00

Based on the results shown in Table 45, the suggestions of the police officers sampled in this study are grouped into 7 issues as follows:

Salary, Welfare, and Monetary Benefits: The main concern of approximately one-third of the police officers was their dissatisfaction with salary, welfare, and monetary benefits. The respondents stated that salaries were low (13.55%), the provisions regarding welfare benefits unsuitable, such as those relating to cost of living allowances (10.24%), the lack of sufficient flats, dormitories and housing (6.02%), and the slow process involved in the reimbursement of fringe benefits, such as medical fees, tuition fees for children's education etc. (4.82%).

Improvement of Job Performance: The second concern, mentioned by one-fifth of the respondents, was that the Royal Thai Police needed improvement in terms of job performance. These issues consisted of the following: the need to be more service-minded to members of the public (7.83%), inappropriate scheduling of working shifts (6.63%), improvement in police officers' behavior (4.52%), and amendments to laws relating to police work (0.60%).

Superiors and Supervision: The third problem among police officers of all levels (16.87%) involved the performance and supervision of superiors. These problems consisted of the following: use of the spoils system, the lack of fair treatment (6.93%) and the lack of care-taking, particularly among non-commissioned police officers (4.82%). The next issue was the class division between superiors and subordinates (3.01%). This was followed, in descending order, by the view that superiors should give subordinates

opportunities to participate in job improvement (1.20%), and build himself (or herself) up, either ethically, mentally or physically (0.9%).

Human Resource Management and Development (HRM and HRD): The fourth problem concerned human resource management and development (10.54%). The highest concern in this category was the need for transparency in the process pertaining to the promotion of non-commissioned police officers to commissioned officers (3.01). The second category is unsuitability of selection, appointment, and transfer (2.71%), while the next concern was the lack of sufficient police personnel (1.81%). The remaining issues involved the quality of police personnel (for example, in terms of slow and inefficient work) (1.81%) and lack of training opportunities (1.20%).

Corruption Issues: For 7.83% of the respondents, the fifth concern was the issue of corruption. Their concerns consisted of the following: bribery (2.41%), the buying and selling job positions (2.11%), the use of appropriate measures to eradicate corruption (1.81%), and political interference in the administration of the police force, especially in the appointment and transfer of police officers (1.51%).

Materials and Supported System: The next issue involved materials and the support system (logistics) (7.23%). From their suggestions in this regard, the major concern was the lack of materials, such as office stationery, guns, and bulletproof vests (3.61%), followed by the need for modern technology such as computers, communication systems (3.01%), and the need for cars, motorcycles and fuel (0.60%).

Budget and Project Development: The last concern, for 3.31% of the respondents, involved the budget and project development. Some respondents (1.81%) suggested that the police force lacked the requisite budget for new projects. The other concern involved the need to improve working conditions (1.51%).