Factors Affecting Employee Loyalty in Railway Rolling Stock Maintenance Companies in Thailand*

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Abstract

The study's goal was to investigate the levels of employee loyalty (EL) in two Thai railway rolling stock maintenance (RRSM) companies. Simple random sampling was used to obtain a final sample of 118 individuals from October 2021 through December 2021. The research instrument was a questionnaire with an expert IOC value between 0.67 to 1.00 and a questionnaire reliability Alpha (α) average value of 0.82. Descriptive statistics included the mean and standard deviation (SD). SPSS for Windows Version 21 and Multiple Regression Analysis (MRA) was used for the analysis. Results showed that the 118 employee's overall perceptions of their RRSM employers' motivating factors, human resource management, satisfaction, and loyalty were high. HRM's *performance evaluation* had the most significant overall influence on EL. Moreover, from the analysis of the five EL questionnaire items, the most influential item was the *employee's income* as a contributing factor to their EL. This was followed by the *suitability of their work*. Also, it seems the employees had a high level of loyalty to their firms even if a better offer of more money was made. They also indicated a high level of pride in their respective firms.

Keywords: Employee Satisfaction, Motivational Factors, Multiple Regression Analysis, State Railway of Thailand, Thailand

JEL Classification Code: J24, J28, J33, J63, L92

1. Introduction

Numerous studies have explored the importance of *employee loyalty* (EL) and which EL factors play a vital role in an organization's success, competitiveness, and sustainability. One factor that is often studied and discussed is *human resource management* (HRM)

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(Polanant & Rojniruttikul, 2022), which can find its roots in late 19th-century industrialization and the beginnings of women's role within the workforce. With the start of the First World War, women started to play even more significant roles but, to a large degree, were not welcomed by the labor unions in which they worked. Later in the 1920s, large engineering firms and factories started using titles such as 'labor manager' or 'employment manager' (Kaufman, 2019). Later after WWII, many organizations adopted the term 'personnel manager,' which was used for decades worldwide. However, sometime in the middle 1980s, 'Human Resource Management was coined in the USA and spread from there, with the term suggesting that employees were an asset or resource-like machine. However, unlike machines, HRM emphasizes employee commitment (loyalty) and motivation (Zhu & Warner, 2019).

This is consistent with research concerning the Thai tourism sector, in which Ashton (2018) reported that good HRM practices are a significant factor in employee satisfaction and job retention. Tepayakul and Rinthaisong (2018) have added that job satisfaction and employee engagement were essential to Thai higher education's success.

Therefore, the study and understanding of HRM have become increasingly important in organizations because human resources (HR) are the most essential asset within an organization. However, technology has dramatically impacted how people work, and organizations conduct employee management (Kim et al., 2021). Moreover, today HRM has been increasingly important in many groups due to its integration into their overall corporate strategic plan and corporate culture objectives (Alshammari, 2020).

Also, tightly connected to organizational HRM is what *motivational factors* (MF) are involved between the firm and the employee (Polanant & Rojniruttikul, 2022), as numerous studies have taken on the challenge of finding these out as employee turnover or employee retention can be a costly problem with sometimes devastating results to a company's viability and competitiveness.

In Vietnam, Khuong et al. (2020) studied the relationships between HRM on hospitality staff motivation and staff loyalty and determined that *career development, teamwork, compensation, managerial relationships*, and the *employment environment* directly affected *employee motivation*. Also, career training needs to be straightforward, with a development plan focused on achieving higher levels of employee loyalty.

Thus, *employee satisfaction* (ES) is yet another essential factor on the road to achieving *employee loyalty* (EL) (Frempong et al., 2018). In Thailand, Panich et al. (2020) examined employee retention in a large electricity generation firm and reported that *organizational commitment* was most important, followed closely by *job satisfaction* and *organizational culture*.

Similarly, Dhir et al. (2020) connected EL to ES in India. They found that when an organization fits a person to a job and the organization's culture, there was a significant improvement in ES and EL. Also, the authors noted the importance of supervisory support in ES and EL.

Additionally, from the systematic review of the literature on *employee loyalty* (EL), multiple factors have been reported to play a role. These include the staff's work success, types of responsibility, the workplace, job promotion opportunities, and the general nature of their work (Ashraf, 2019). Therefore, organizations must use different approaches to retaining high-performance employees. These include promotions, compensation, incentive creation, job loyalty, and organizational commitment (Frempong et al., 2018).

Finally, the authors were fortunate in 2021 as they were invited to develop their theoretical investigation of employee loyalty in two Thai Railway Rolling Stock Maintenance (RRSM) companies as real-world case studies.

2. Literature Review

2.1. Concepts and Theories Related to Motivational Factors (MF)

2.1.1. Frederick W. Taylor's Principles of Scientific Management (PSM)

In 1911 Frederick W. Taylor, an American engineer, proposed the five *Principles of Scientific Management* (Taylor, 2004). In what has been termed 'harmony,' Taylor believed that relationships between firm management and their workers should be harmonious and polite, as differences between the two groups are never beneficial, with cooperation substituted for competition. Moreover, Taylor saw economic incentives as the most critical factor motivating employees to work. Thus the more work they did, the more money management should pay them.

2.1.2. Douglas McGregor's Theory of Motivation

Douglas McGregor developed two theory styles of motivation (Morse & Lorsch, 1970). McGregor's motivation theories aimed to classify people into two groups (Grigorov, 2020). The first are individuals with an opposing view (Theory X). They are also lazy, dislike work, and avoid responsibility, with low motivation levels (The Enterprise Community Partners, 2020).

The second group is individuals with a positive outlook. Thus, they like love, work, and responsibility and are interested in learning and developing thinking skills. They also have a high level of motivation. Therefore, management is responsible for providing an environment suitable for each member. By keeping Group Y individuals motivated, employee work increases, simultaneously increasing the organization's success.

2.1.3. Maslow's Hierarchy of Needs (MHN) Theory

MHN is a theory put forth by Abraham Maslow that identifies five primary categories of motivational needs, including physiological, esteem, love, safety, belonging, and self-actualization (Hopper, 2020). Maslow begins with the concept that individuals usually tend to want something which depends on what they already have (De Winne et al., 2019; Haque et al., 2014).

Maslow also pointed out that individuals are motivated by a desire to satisfy a specific need, as all humans are social creatures with endless needs. This is consistent with Hanif et al. (2013) in Pakistan. They used MHN to examine Telco worker loyalty and determined that *promotion opportunities*, *financial rewards*, and the firm's

work environment were vital dimensions. Similarly, in South Korea, Rahimi (2020) found that the EL of public organization employees was influenced by *employee empowerment*, *training and development, salary and rewards*, and *career advancement*.

Therefore, the core of MHN is that as needs are fulfilled, they will decrease in strength, and the next level's strength grows. Maslow also reported complete fulfillment of needs is not required before a person jumps to the next level, as partial satisfaction at one level is enough before an individual seeks satisfaction at a higher level (Salanova & Kirmanen, 2010).

2.1.4. Vroom's Expectancy Theory of Motivation (ETM)

In Victor Vroom's seminal work '*Work and Motivation*,' the author determined that a gap existed between industrial psychologists' research and workplace motivation models that could be used by frontline managers (Lloyd & Mertens, 2018). Vroom developed the 'expectancy theory of motivation (ETM),' which formulated *motivation = instrumentality * expectancy * valence*.

However, Lunenburg (2011) has stated that what separated ETM from other motivational works was that ETM focused on the cognitive antecedents that contribute to or detract from personal motivation. Moreover, ETM suggests that behavior develops certain attitudes among staff that lead to actions. Job performance is based on skills, personalities, experiences, abilities, and an employee's knowledge concerning their particular field (Khan et al., 2020). Finally, Vroom stated that the amount of effort an employee puts into his work was all connected to that employee's motivation.

2.1.5. Herzberg's Two-Factor Theory (TFT)

According to Herzberg's TFT, there are two separate and distinct sets of factors that teach job satisfaction and job dissatisfaction. Also, the TFT is known as Herzberg's motivation-hygiene theory or dual-factor theory.

In Myanmar, Thant and Chang (2021) applied Herzberg's TFT and discovered that hygiene factors and other motivators influenced public employee job dissatisfaction and satisfaction. Particularity, interpersonal relationships, personal life factors, the job itself, and recognition significantly contributed to job satisfaction.

Therefore, from the analysis of theory and discussions related to *motivational factors* (MF), six additional observed variables were included in the path analysis. This included *achievement* (x1), *working environment* (x2), *recognition* (x3), *nature of work* (x4), *responsibility* (x5), and *advancement* (x6). Thus, we propose the following two hypotheses:

H1: *Motivational Factors (MF) directly and positively affect Employee Loyalty (EL).*

H2: *Motivational Factors (MF) directly and positively affects Employee Satisfaction (ES).*

2.2. Concepts and Theories Concerning Human Resource Management (HRM)

The critical nature of today's HRM on a firm's sustainability and competitiveness cannot be understated. Numerous contemporary studies have detailed the critical aspects of HRM's success and other aspects leading to HRM failure (De Leeuw et al., 2016). However, managers' opinions on what factors are necessary to constitute HRM success can vary widely, especially in small and medium enterprises (SMEs) (Viitala et al., 2020).

However, most would agree that every organization that wishes to develop itself as a successful business leader must ensure its personnel's quality. Therefore, good HRM departments should be focused on selecting good people with knowledge, skills, and capability.

There is also a strong belief in using *e-HRM* or electronic HRM as a critical success factor in accomplishing these goals. In one study on e-HRM use in Indonesia, Nurlina et al. (2020) determined that e-HRM has the most significant effect on the department's service quality. This is consistent with Florkowski (2018), who reported that the application of organizational e-HRM promoted sustainability due to its ability to reduce adverse social environments and create greater competitiveness.

Another area that HRM management must consider is what form of *compensation* package can be offered to a potential employee. Other research involving IKEA's organizational culture (OC) has indicated that IKEA's compensation and reward system as well as the need for work and life balance make co-workers feel recognized, valued, and cared for, and hence stay loyal (Putra et al., 2019).

Another contributing factor that plays a role in EL through HRM policies is *safety and hygiene practices.* According to multiple studies, employees prefer a comfortable and safe working environment, including cleanliness, comfort, safety, and good employee interrelationships (Susita et al., 2020).

Therefore, from the theory analysis and discussions related to *human resource management* (HRM), three additional observed variables were included in the path analysis. These included *compensation* (x7), *safety and hygiene practices* (x8), and *performance evaluation* (x9). Finally, the following two hypotheses were conceptualized for the research:

H3: *Human Resource Management (HRM) directly and positively affects employee Loyalty (EL).*

H4: *Human Resource Management (HRM) directly and positively affects employee Satisfaction (ES).*

2.3. Concepts and Theories Concerning Employee Satisfaction (ES)

Employee satisfaction or job satisfaction refers to the degree of a person's positive or negative feelings about their job (Karem et al., 2019). This is important because the degree to which staff is satisfied with their job is inversely correlated with work intent. The greater the level of job satisfaction, the more likely the employee will stay longer; the lower the employee's job satisfaction, the lower the work efficiency, resulting in higher turnover and more resignations.

Therefore, from the analysis of theory and discussions related to *employee satisfaction* (ES), an additional observed variable was included in the path analysis. This was *compensation* (x10). Finally, the following hypotheses was conceptualized for the research:

H5: *Employee Satisfaction (ES) directly and positively affects Employee Loyalty (EL).*

2.4. Concepts and Theories Concerning Employee Loyalty (EL)

Loyalty can be identified with faithfulness and trustworthiness (Jha & Mishra, 2019), which can also be thought of in terms of organizational commitment and psychological attachment, with employees and organizations having reciprocal commitments and responsibilities. All organizations' main dimensions of loyalty are social, formal, and psychological.

These ideas are consistent with Samat et al. (2020), who reported on the importance of career development, compensation, job security, and the work environment in EL in Malaysia. Ranked in order were *career development, compensation*, and *job security* significantly influenced EL. Interestingly, the *work environment* was determined not to affect EL. However, Siswanto et al. (2021) in Indonesia reported that although rewards did not have a direct effect on the sample, there was a significant positive effect on EP through employee engagement.

Another aspect that plays a role, especially in younger workers such as in Gen Y, is their sense of *responsibility* (or lack thereof) in the frequency in which they 'job hop' from one company to another (Queiri et al., 2014). Therefore, work values guide individuals toward satisfying their workplace needs.

Therefore, from the analysis of theory and discussions related to *human resource management* (HRM), six additional observed variables were included in the path analysis. These included *work success* (y1), *work environment* (y2),

acceptance aspects (y3), *nature of work* (y4), *responsibility* (y5), and *job position progress* (y6).

2.5. Research Objectives

1. To study the level of employee loyalty in Thai RRSM companies.
2. To find the direct, indirect, and combined influences on Thai RRSM companies' employee loyalty.

3. Research Methods

The study intended to develop a path analysis of factors affecting Thai RRSM companies' employee loyalty. In each company, a questionnaire was employed as the research instrument, which was analyzed with SPSS for Windows version 21 and Multiple Regression Analysis (MRA) software (Askarov & Doucouliagos, 2020).

3.1. Population and Sample

The study's population was 168 employees in the *Asia Engineering & Service (Thailand) Co. Ltd.* and the *TMT Part & Service Company Ltd.* in Samut Prakan and Bangkok, Thailand. The sample size requirement was calculated using a formula from Taro Yamane (Yamane, 1973) using a confidence level of 95%. From this, a sample size of 118 was determined to be sufficient for the research (Singh & Masuku, 2014). Simple random sampling was then used from October 2021 to the end of December 2021 to select each individual at the two companies until 118 had agreed to participate.

3.2. Research Instrument

The tool used for data collection for the study was a questionnaire using closed-ended items. The questionnaire structure contained five parts in total. Part 1 contained demographic and work-related items and questions about each employee.

Part 2 through Part 5 used a five-level Likert agreement scale to assess the opinions of each employee on their motivational factors (MF), the company's Human Resource Management (HRM), their employee satisfaction (ES), and their thoughts concerning employee loyalty (EL). Numerical values for the five-level scale were 4.51 to 5.00, indicating total agreement, 3.51 to 4.50 as some agreement, 2.51 to 3.50 as moderate agreement, 1.51 to 2.50 as little agreement, and 1.00 to 1.50 as no agreement.

3.3. Research Instrument Pilot-Test, Validity, and Reliability Assessment

After the questionnaire's development, three academic experts reviewed each item proposed by the researchers to

assess the questionnaire's content validity (Chuenban et al., 2021). Various studies have suggested that the index of item-objective congruency (IOC) is a good analysis tool for this purpose (Turner & Carlson, 2003). Usually, items with values of ≤ .50 are deleted or revised (Taherdoost, 2016). After this process, the authors were pleased to determine that the final questionnaire had IOC values of 0.67 – 1.00.

Next, the reliability assessment confirmed the survey instrument's usability, accuracy, and reliability. To achieve this, a pilot test/try-out was undertaken using 30 individuals not participating in the final survey. Once again, numerical

values were assigned to each group of items using Cronbach's α, in which Hair et al. (2021) have also suggested that ≥ .8 is good, and α values ≥ .9 are excellent. The study's try-out returned an Alpha α average value of 0.82.

4. Results

4.1. Employee Response Information

Table 1 shows results from Part 1 of the questionnaire, in which 61.90% of the respondents were men and

Table 1: Employee Demographics and Work-Related Information

Employee Demographics	*n*	%
Gender		
Men	73	61.9
Women	45	38.1
Age		
Under 25 years of age	14	11.9
25 to 35 years of age	60	50.8
36 to 45 years of age	35	29.7
46 to 50 years of age	9	7.6
Level of Education		
Elementary school or less	4	3.4
Secondary School Year 3	16	13.6
Secondary School Year 6/Vocational	36	30.5
High School Diploma/High Vocational Certificate	11	9.3
Bachelor's degree	51	43.2
Position		
Maintenance Engineer	19	16.1
Head of Maintenance	48	40.7
Handyman	40	33.9
General Staff	11	9.3
Monthly Income		
15,001 to 20,000 Baht ($428 to $571)	10	8.5
20,001 to 30,000 Baht ($571 to $856)	48	40.7
30,001 to 40,000 Baht $856to $1,142)	47	39.8
40,001 to 50,000 Baht ($1,142 to $1.427)	13	11.0
Work Experience		
less than one year	12	10.2
1 to 5 years of work experience	37	31.4
6 to 10 years of work experience	44	37.3
11 to 15 years of work experience	21	17.8
16 to 20 years of work experience	4	3.4
Total	**118**	**100.0**

relatively young, with 50.80% 25–35 years of age. This was followed by 29.70% being 36–45 years of age. As each firm was dealing with train maintenance, educational levels were somewhat surprising, as 43.20% had obtained a Bachelor's degree. This might be related to the positions of the sample selected, as 40.70% checked their position as 'Head of Maintenance,' which the authors interpret as 'supervisor.' Another 33.90% indicated they were 'handymen.' Salaries were as expected, with 80.50% indicating they had a monthly income of 20,000–40,000 Thai baht ($575–$1,150). Most had

6–10 years of work experience (37.30%), followed by 1–5 years (31.40%).

4.2. Employee motivational factors (MF) analysis results

The mean and standard deviation (SD) analysis of employee MF as separate areas consisted of *achievement* (x1), *work environment* (x2), *recognition* (x3), *nature of work* (x4), *responsibility* (x5), and *advancement* (x6) (Table 2).

Table 2: Mean and SD for Motivational Factors (MF)

Achievement (x1)	Mean	SD	Level
I can complete the assigned tasks within the specified time.	3.82	0.674	High
I can work to achieve our goals.	3.90	0.598	High
I am assigned important tasks by my supervisor.	3.77	0.576	High
Summations	3.83	0.454	High
Work environment (x2)	**Mean**	**SD**	**Level**
The workplace is safe.	3.70	0.731	High
The workplace is clean with no foul odors.	4.01	0.666	High
The workplace is well-ventilated.	3.70	0.719	High
The noise level in the workplace is appropriate.	3.85	0.603	High
Summations	3.81	0.442	High
Recognition (x3)	**Mean**	**SD**	**Level**
I am recognized by my supervisor for my work.	3.79	0.673	High
I am recognized by my colleagues for my work.	3.92	0.601	High
Vendors often request me by name when they require service.	3.96	0.678	High
Summations	3.89	0.507	High
Nature of work (x4)	**Mean**	**SD**	**Level**
My assigned tasks are challenging, and require knowledge and competence.	3.82	0.674	High
The nature of the job is appropriate for my aptitude, knowledge, and abilities.	3.90	0.598	High
I am encouraged to study work-related issues as part of my duties.	3.94	0.664	High
I am allowed to make work decisions in areas I am responsible for.	3.80	0.682	High
My job is essential to the company.	3.89	0.604	High
I always receive feedback and suggestions from people who come to use our service.	3.61	0.625	High
Summations	3.83	0.471	High
Responsibility (x5)	**Mean**	**SD**	**Level**
I make full use of my knowledge and abilities in my work.	3.93	0.675	High
I am allowed to fix and improve work-related items if I find any problems.	3.81	0.678	High
I give my full attention to my work.	3.88	0.624	High
Summations	3.87	0.505	High

Advancement (x6)	Mean	SD	Level
I am given the opportunity and encouraged to study work-related duties.	3.70	0.731	High
I have the opportunity to grow in my work appropriately and fairly.	4.01	0.666	High
I have the opportunity to attend training seminars to increase my knowledge and develop my operational skills.	3.70	0.719	High
Summations	**3.80**	**0.472**	**High**

4.3. Human Resource Management (HRM) Analysis Results

The analysis of mean and SD for HRM is divided into sections, including compensation (x7), safety and hygiene practices (x8), and performance evaluation (x9) (Table 3).

4.4. Employee Satisfaction (ES) and Employee Loyalty (EL) Analysis Results

The analysis of the mean and SD for ES and its related items is presented in Table 4.

4.5. Linearity Testing

In Table 5, the decision coefficient (R^2) is 0.979 which indicates that 97.9% of MF's factors are responsible for

EL, while 2.1% is due to other influences. The test also found that the *working environment* (x2) (*p*-value $\leq$ .01) had the greatest influence on EL, followed by *recognition* (x3) (*p*-value $\leq$ 0.01). The coefficients of the variables in the standard score form (Beta) were x2 = 0.744, x3 = 0.637, x6 = 0.588, x4 = 0.311, x1 = 0.037 and x5 = –0.002, respectively. The results of EL for Thai RRSM companies from the standard scores are as follows:

$$Z = 5.945x1 − 0.448x2 + 0.888x3 − 0.605x4 + 13.210x5 + 0.385x6 \qquad (1)$$

In Table 5, the decision coefficient (R^2) is 0.862, which indicates that 86.2% of MF's factors are responsible for ES, while 13.8% are due to other influences. The test also found that *responsibility* (x5) (*p*-value $\leq$ .01) had the greatest influence on ES, followed by *achievement* (x1)

Table 3: Mean and SD for Human Resource Management (HRM)

Human Resource Management (HRM)	Mean	SD	Level
Compensation (x7)	**Mean**	**SD**	**Level**
The salary you receive is suitable for your knowledge and abilities.	3.76	0.700	High
The salary you receive is suitable for the current economic situation.	3.77	0.729	High
The salary you receive is suitable for the work quality you perform.	3.94	0.707	High
The salary you receive is suitable for the amount of work you perform.	3.67	0.714	High
The welfare you receive from the company is appropriate.	3.91	0.768	High
Summations	**3.81**	**0.515**	**High**
Safety and hygiene practices (x8)	**Mean**	**SD**	**Level**
My company attaches great importance to ministerial regulations and sets standards for managing occupational safety, health, and the work environment.	3.93	0.663	High
My company has set up an appropriate work safety committee.	3.78	0.690	High
My company has stated the responsibility for job safety in everyone's job description and notified each employee to follow it strictly.	3.92	0.615	High
Summations	**3.88**	**0.514**	**High**
Performance evaluation (x9)	**Mean**	**SD**	**Level**
My company has set work indicators and target values consistent with the work achievement goals.	3.56	0.659	High
My company monitors my performance, which is considered in my performance appraisal.	3.66	0.641	High
Assessors have the knowledge, understanding, and ability to assess according to the guidelines and goals set.	3.80	0.573	High
Summations	**3.68**	**0.470**	**High**

Table 4: Mean and SD of the Items for Employee Satisfaction (ES) and Employee Loyalty (EL)

Employee Satisfaction	Mean	SD	Level
The work that I am responsible for is suitable for my knowledge and abilities.	3.82	0.579	High
I am assigned the right amount of work.	3.73	0.590	High
The evaluation criteria used by HRM for consideration of salary and promotion are appropriate and fair.	3.69	0.577	High
My current income, compensation, and benefits are appropriate for my workload.	4.01	0.666	High
I always feel safe about my life and property because of my company's job security.	3.70	0.719	High
Summations	3.79	0.411	High
Employee Loyalty (EL)	**Mean**	**SD**	**Level**
It makes me proud and happy to tell others where I work.	3.85	0.603	High
I am honest and loyal to the company and consider the interests of the company.	3.79	0.673	High
I am proud to hear others say good things about my company.	3.92	0.601	High
I would not consider moving to another company even if I received a better position and salary offer.	3.96	0.678	High
I intend to work with my company until retirement.	3.82	0.674	High
Summations	3.87	0.448	High

(p-value $\leq$ 0.01). The coefficients of the variables in the standard score form (Beta) was $x5 = 13.210$, $x1 = 5.945$, $x3 = 0.888$, $x4 = -0.605$, $x2 = -0.448$ and $x6 = 0.385$, respectively. The results of ES for Thai RRSM companies from the standard scores are as follows:

$$Z = 5.945x1 - 0.448x2 + 0.888x3 - 0.605x4 + 13.210x5 + 0.385x6 \qquad (2)$$

In Table 5, the decision coefficient (R^2) is 0.475, indicating that 47.5% of MF's factors are responsible for EL, while 52.5% are due to other influences. The test also found that *performance evaluation* (x9) (p-value $\leq$ 0.01) had the greatest influence on EL, followed by *safety and hygiene practices* (X8) (p-value $\leq$ 0.01). The coefficients of the variables in the standard score form (Beta) was $x9 = 0.340$, $x8 = 0.283$, and $x7 = 0.184$, respectively. The results of HRM for Thai RRSM companies from the standard scores are as follows:

$$Z = 0.184x7 + 0.283x8 + 0.340x9 \qquad (3)$$

In Table 5, the decision coefficient (R^2) is 0.592, which indicates that 59.2% of HRM's factors are responsible for ES, while 40.8% are due to other influences. The test also found that *performance evaluation* (x9) (p-value $\leq$ 0.01) had the most significant influence on ES, followed by *safety and hygiene practices* (x8) (p-value $\leq$ 0.01). The coefficients of

the variables in the standard score form (Beta) were $x9 = 5.250$, $x8 = 4.049$, and $x7 = 0.141$, respectively. The results of ES for Thai RRSM companies from the standard scores are as follows:

$$Z = 0.141x7 + 4.049x8 + 5.250x9 \qquad (4)$$

In Table 5, the decision coefficient (R^2) is 0.353, which indicates that 35.3% of ES's factors are responsible for EL, while 64.7% are due to other influences. The test also found that *employee satisfaction* (x10) (p-value $\leq$ 0.01) had the most significant influence on El. The results of ES for Thai RRSM companies from the standard scores are as follows: $Z = 0.595x10$.

5. Discussion

Before the study's commencement, the authors became aware of employee turnover issues with two Thai railway rolling stock maintenance (RRSM) companies in Bangkok, Thailand. After the revelations concerning employee turnover and the seemingly troubling issue of employee loyalty within the two firms, onsite meetings with staff revealed past efforts to correct these problems with little to no success. Therefore, the authors were asked to investigate the matter further and determine which factors contributed to employee loyalty.

Table 5: Linearity Testing Results

Motivational Factors for EL	Beta	*p*-value	Result
Achievement (x1)	0.037	0.032*	Influential
Working environment (x2)	0.744	0.000**	Influential
Recognition (x3)	0.637	0.000**	Influential
Nature of work (x4)	0.311	0.000**	Influential
Responsibility (x5)	−0.002	0.941	No Influence
Advancement (x6)	0.588	0.000**	Influential
$F = 868.490$, Sig. = 0.000			
$R = 0.990$, $R^2 = 0.979$, Adjusted R Square = 0.978			
*$p < 0.05$, **$p < 0.01$			
Motivational Factors for ES	**Beta**	***p*-value**	**Result**
Achievement (x1)	5.945	0.000**	Influential
Working environment (x2)	−0.448	0.655	No Influence
Recognition (x3)	0.888	0.376	No Influence
Nature of work (x4)	−0.605	0.546	No Influence
Responsibility (x5)	3.210	0.000**	Influential
Advancement (x6)	0.385	0.701	No Influence
$F = 115.229$, Sig. = 0.000			
$R = 0.928$, $R^2 = 0.862$, Adjusted R Square = 0.548			
**$p \leq 0.01$			
Human Resource Management Factors for ES	**Beta**	***p*-value**	**Result**
Compensation (x7)	0.184	0.022*	Influential
Safety and Hygiene Practices (x8)	0.283	0.004**	Influential
Performance Evaluation (x9)	0.340	0.001**	Influential
$F = 34.396$, sig = 0.000			
$R = 0.689$, $R^2 = 0.475$, Adjusted R Square = 0.461,			
*$p \leq 0.05$, **$p < 0.01$			
Human Resource Management Factors for EL	**Beta**	***p*-value**	**Result**
Compensation (x7)	0.141	0.888	No Influence
Safety and Hygiene Practices (x8)	4.049	0.000**	Influential
Performance Evaluation (x9)	5.250	0.000**	Influential
$F = 55.236$, Sig. = 0.000			
$R = 0.770$, $R^2 = 0.592$, Adjusted R Square = 0.582			
**$p \leq .01$			
Employee satisfaction for EL	**Beta**	***p*-value**	**Result**
Employee satisfaction (x10) for EL	0.595	0.000**	Influential
$F = 55.236$, Sig. = 0.000			
$R = 0.770$, $R^2 = 0.592$, Adjusted R Square = 0.582			
**$p \leq .01$			

The qualitative analysis of the literature further led to the development of a model including motivational factors, human resource management factors, employee satisfaction factors, and factors related to employee loyalty. The further review then led to the development of five primary hypotheses.

After that, simple random sampling was used to identify the survey participants and then ask for their participation in their employer's study on employee loyalty. Due to COVID-19 concerns and for response convenience, the questionnaires were made available online using Google Forms. SPSS for Windows version 21 was used to calculate the mean and SD, while Multiple Regression Analysis (MRA) was used for the hypotheses model. From this process, the following discussion is presented.

5.1. Motivational Factors (MF)

The results revealed that the *working environment* had the most significant overall influence on EL of the six factors investigated. This is consistent with research in Turkey in which the authors Turkyilmaz et al. (2011) determined a strong relationship between public sector employment satisfaction and loyalty to their working conditions and satisfaction.

Interestingly, this finding from our Thai study is that it goes against some other studies' findings in which the *working environment* was stated to have little to no effect on EL. Therefore, we speculate that possibility of the importance of the work environment might be a culturally related issue or possibly an industry-related issue. Due to the nature of railway rolling stock maintenance, we suspect it is industry related as the work environment is far more critical in the hospitality or tourism industries compared to RRSM's known heavy industrial environment and expected difficulties therein (Samat et al., 2020; Susita et al., 2020).

Additionally, Blumenfeld et al. (2006) has reported that motivation development is crucial in learning engagement, with Subramaniam (2009) adding that situational interest plays an essential part as a motivator. Within the workplace, Nicholson (2003) suggested that the 80/20 rule applies when it comes to motivation and that managers will have little success with workers who aren't particularly interested in motivation from external incentives, including extra money. Therefore, the author suggests that employee change comes from within, with outside attempts at change limited in most cases. Furthermore, motivation is both extrinsic and intrinsic, with extrinisic involving the pursuit of rewards and escaping punishment, while intrinsic involves the satisfaction gotten from performing tasks (Prapatsaranon et al., 2022).

Finally, the RSSM company employees viewed *recognition* as an essential factor in their satisfaction and thus loyalty to their employer. This is consistent with Thant and Chang (2021), who established *recognition* as a factor

for Myanmar civil servant satisfaction. In US organizations, Fernandez (2012) stated that employees seek recognition in forms other than financial, which then leads to a cycle of EL, which the employer then reciprocates. Maybe recognition then becomes a form of job security?

5.2. Human Resource Management (HRM)

The results revealed that from the three factors investigated for HRM and its effect on EL and ES, that *performance evaluation* had the greatest overall influence for both EL (X9 = 0.340, *p*-value = 0.001**) and ES (X9 = 5.250, *p*-value = 0.000**). Moreover, it was determined that the high assessment ability factor was most important (mean = 3.80, SD = 0.573).

In a study from Thailand, Ketkajorn et al. (2017) evaliaed 1,128 school administrators' opinions on the effectiveness of educational quality assurance, and reported that HRM, teamwork, and leadership played critical roles. In a smiliar study Ditsuwan and Sukkamart (2022) found that other factors affected educational instutition HRM. These were learning resources, media, technology, innovation, and research.

5.3. Employee Satisfaction (ES)

It was also determined that ES (x10) had a significant role in EL (X10 = 0.595, *p*-value = 0.000**). Moreover, when each of the five ES questionnaire items was reviewed after the analysis, the most influential item was the *employee's income* as a contributing factor to their ES (mean = 4.01, SD = 0.666). This was followed by the *suitability of their work* (mean = 3.82, SD = 0.579).

5.4. Employee Loyalty (EL)

Concerning EL's five questionnaire items, the employees strongly showed their EL by agreeing strongly with the statement, "*I would not consider moving to another company even if I received a better position and salary offer*" (mean = 3.96, SD = 0.678). This was closely followed by, "*I am proud to hear others say good things about my company*" (mean = 3.92, SD = 0.601). Antoncic and Antoncic (2011) commented on the impact of EL on an organization's growth and the essential nature of his work in achieving internal quality and greater business performance. Thus, employee quality, competencies, loyalty, and commitment are critical for business performance achievement.

6. Conclusion and Limitations

The study sought to investigate what factors were most important to employee loyalty in Thai railway rolling stock maintenance (RRSM) companies in the Bangkok

metropolitan area. The path analysis and descriptive statistics analysis determined that the employee's overall perceptions of their RRSM employers' motivating factors, human resource management, satisfaction, and loyalty were at a high level. HRM's *performance evaluation* had the most significant overall influence on both EL and ES. Moreover, when each of the five ES questionnaire items was reviewed after the analysis, the most influential items were the *employee's income* as a contributing factor to their ES. The *suitability of their work* followed this. Also, it seems the employees had a high level of loyalty to their firms even if a better offer for more money was offered. They also indicated a high level of pride in their respective firms.

One limitation of the study is that the sample survey comes from only two firms within the Bangkok metropolitan area. It is also limited by its population being from an industrial sector related to railway rolling stock. It is to be expected that survey items concerning employee loyalty within the hospitality sector or the aviation sector will most probably yield different results.

One interesting aspect that was discovered from the literature review was now age and culture played a role in employee loyalty. For instance, a Gen Y employee in Malaysia might have a different perspective on firm loyalty as compared to a worker of the same age in Berlin, Germany. As such, to what degree is 'job hopping' upsetting a firm's competitiveness, and as a result, a nation's international competitiveness is another topic for future research.

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