

## Conference Paper

# Factors Analysis of Employees' *Intention to Stay* in Chemical Manufacturing

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## Abstract

Turnover is an organizational problem that should be kept low by the company, as hiring the employees is costly and time-consuming. There are many available strategies which organizations can use to retain employees. The manufacturing industry in particular has trouble with employee retention, and has developed a number of standard operating procedures to address this issue. This study is focusing on ascertaining three things. First, what factors can lead employees to stay in the manufacturing industry? Second, what is the dominant factor lead employees to stay in the manufacturing industry? Data was taken by questionnaire from 104 respondents out of a total of 146 employees of PT Pamolite Adhesive Industry. The data was then analysed using confirmatory factor analysis with the Partial Least Square (PLS) technique. The results show that there are thirteen factors that contribute to manufacturing employees staying in their jobs, namely: recognition and appreciation factors; financial compensation; relationships with colleagues; relationship with supervisor; initial training; career development; work challenges; working hours; work conditions; workload; safety; health facilities; and job security. Additionally, the descriptive analysis shows that respondents' perceptions of those factors are relatively in good condition, however career development is the dominant factor in shaping the intention to stay amongst manufacturing employees. This study confirms a result study conducted in India which suggested that the intention to stay is determined by a cluster of factors not only by a single factor.

**Keywords:** Intention to Stay, Confirmatory Factors Analysis, Partial Least Square

## 1. Introduction

Employees are the life-blood for the organization (Kossivi, Xu, And Kalgora, 2016). They become the most valuable resources to any organization due to their characteristics that valuable, rare, un-imitable, and organized, (Barney, 1991).

Based on the VRIO framework, human resources is organization resources that maintain sustained competitive advantage for the organization, especially the capable or the best talent. Therefore, organization nowadays should find not only the way to attract the best talent but also the strategy to keep and maintain them as long as possible in the organization. The organization should know what factors determined employees intention to stay in the organization, especially in manufacturing industries

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since industrialization provides a wider scope for employees to mobilize towards better opportunities and creating a deficit in the workforce required in a company (Umamaheswari & Krishnan, 2015).

Research conducted by Kumar & Govindarajo (2014) in five manufacturing companies in India shows the number of key factors that can lead to the intention to stay. These factors vary and vary in each organization or company. The study concluded that there were 21 factors could shape the desire of employees to stay and work in their respective companies (5 companies in India). While Christeen (in Kossivi, Xu, and Kalgora, 2016) identified eight factors leading employees to stay: autonomy, management, conducive environment, social support and development opportunities, compensation, crafted workload, and work-life balance. However, Umamaheswari and Krisnan (2015) who studied ceramic manufacturing employees only found four factors that related with intention to stay (retention): work-life balance & policies, organization commitment, supervisor support, and training & development. All four factors are included in non-monetary factors.

Those studies showed that there are many factors related to employees' intention to stay, not only one factor. We can say that there are a set of factors or a cluster of factors (Fitz-enz, in Kossivi, Xu, dan Kalgora, 2016). Besides, each study has different results of factors related to the intention to stay. There is a variety of findings. However, those results, in general, found that many non-monetary factors are related to intention to stay especially in the manufacturing sector.

PT Pamolithe Adhesive Industry is one of the companies which production uses machines or heavy equipment. PT Pamolite Adhesive Industry is a company that produces chemicals where the chemical raw materials are for the manufacture of Thermosetting Adhesive and Formalin adhesives. PT Pamolite Adhesive Industry can be said as a manufacturing company that has a type of work that is classified as dangerous for its employees. PT Pamolite Adhesive Industry produces chemicals that can endanger the health of even the lives of its employees. With such a high risk, usually, many employees feel worried and choose to leave the company. This can cause the turnover rate to be high.

However, based on the data obtained by the researchers, the turnover rate in this company is relatively low. Based on the results of preliminary observations and interviews with several employees at PT Pamolite Adhesive Industry, researchers found several factors that allegedly could make employees feel at home to continue working for the company. These factors include recognition and appreciation, financial compensation, relationships with colleagues, relationships with supervisors, initial

training, career development, challenges in work, working hours, work conditions, workloads, work safety, health facilities, and job security.

Those factors found in a preliminary study at PT Pamolithe Adhesive Industry seem familiar and similar with the previous study (Kumar & Govindorajo, 2014; Umamaheswari & Krisnan, 2015; and Kossivi, Xu & Kalgora, 2016) that most of those factors mentioned by employees are non-monetary factors related to intention to stay of employees.

Therefore the objective of this study is to find out: 1) what factors that determined employees intention to stay in a chemical manufacturing industry by using previous study instruments (replication of Kumar and Govindorajo study); and 2) find the dominant factors determined the desire of employees to stay in this company.

## 2. Research Methods

This research is quantitative research using confirmatory factor analysis to analyze whether recognition and appreciation, financial compensation, relationships with colleagues, relationships with supervisors, initial training, career development, challenges in work, working hours, work conditions, workloads, work safety, health facilities, and job security are factors determined employees' intention to stay in PT Pamolite Adhesive Industry.

This research is also a replication study of the research conducted by Kumar & Govindarajo entitled "Instrument Development" Intention to Stay Instrument (ISI). But in this study researchers adjusted some factors based on the context.

Respondents in this study were all employees of PT Pamolite Adhesive Industry that selected based on simple random sampling. Out of 146 self-administrated questionnaires distributed to the employees, 104 questionnaires were usable and used in statistical analysis.

## 3. Results

Confirmatory factor analysis aims to find the construct form of the collection of manifest variables, or test a variable on the assumption of the manifest that built it (Ghozali & Latan, 2014). It can be said that confirmatory factor analysis is used to test a variable theory on the manifest or indicators that build it, where the variable is assumed to be only measurable by these indicators. In this study the variable

is Intention to Stay. Confirmatory factor analysis is done using WarpPLS 5.0 for windows.

The results of the confirmatory factor analysis of each factors's item from the data obtained can be seen in Table 1 as follow:

TABLE 1: The Result of Confirmatory Factor Analysis per item Factors

Instrument	Factor	Type (as defined)	Loading Factor	P-Value
X11	Recognition & Reward	Reflective	0,769	<0,001
X12		Reflective	0,867	<0,001
X13		Reflective	0,863	<0,001
X14		Reflective	0,886	<0,001
X21	Financial Compensation	Reflective	0,803	<0,001
X22		Reflective	0,855	<0,001
X23		Reflective	0,862	<0,001
X24		Reflective	0,843	<0,001
X31	Relationship with Coworker	Reflective	0,863	<0,001
X32		Reflective	0,854	<0,001
X33		Reflective	0,847	<0,001
X34		Reflective	0,873	<0,001
X41	Relationship with Supervisor	Reflective	0,872	<0,001
X42		Reflective	0,825	<0,001
X43		Reflective	0,900	<0,001
X44		Reflective	0,872	<0,001
X51	Initial Training	Reflective	0,813	<0,001
X52		Reflective	0,760	<0,001
X53		Reflective	0,825	<0,001
X54		Reflective	0,859	<0,001
X61	Career Development	Reflective	0,811	<0,001
X62		Reflective	0,828	<0,001
X63		Reflective	0,863	<0,001
X64		Reflective	0,890	<0,001
X71	Challenges in Employment	Reflective	0,786	<0,001
X72		Reflective	0,845	<0,001
X73		Reflective	0,880	<0,001
X74		Reflective	0,858	<0,001
X81	Working Hours	Reflective	0,811	<0,001
X82		Reflective	0,721	<0,001

Instrument	Factor	Type (as defined)	Loading Factor	P-Value
X83		Reflective	0,914	<0,001
X84		Reflective	0,826	<0,001
X91	Work Condition	Reflective	0,816	<0,001
X92		Reflective	0,882	<0,001
X93		Reflective	0,851	<0,001
X94		Reflective	0,820	<0,001
X101	Work Load	Reflective	0,771	<0,001
X102		Reflective	0,831	<0,001
X104		Reflective	0,678	<0,001
X111	Work Safety	Reflective	0,793	<0,001
X112		Reflective	0,821	<0,001
X113		Reflective	0,859	<0,001
X114		Reflective	0,859	<0,001
X121	Health Facilities	Reflective	0,822	<0,001
X122		Reflective	0,865	<0,001
X123		Reflective	0,857	<0,001
X124		Reflective	0,863	<0,001
X125		Reflective	0,825	<0,001
X131	Job Security	Reflective	0,851	<0,001
X132		Reflective	0,888	<0,001
X133		Reflective	0,910	<0,001
X134		Reflective	0,850	<0,001

**Source: Results of Research Data Processing, 2019**

From the results of the data above, it can be seen that the reliability indicator of the item forming the dimensional construct or the first factor (X1) up to the 13th factor (X13) after the reduction in item X103 is valid all with the resulting loading factor value > 0.6 and P-Value < 0.001. While the results of confirmatory factor analysis as a whole can be seen in Table 2 below:

From the results of the data above, it can be seen that all dimensions or factor constructs (X1-X13) have significant value at  $P < 0.001$  and a loading factor value > 0.7. With this, it can be concluded that the 13 constructs or factors are indeed formers of the Intention to Stay variable.

TABLE 2: The Result of Confirmatory Factor Analysis

Factor	Type (as defined)	Loading Factor	P-Value
Recognition & Reward	Reflective	0,815	<0,001
Financial Compensation	Reflective	0,789	<0,001
Relationship with Coworker	Reflective	0,751	<0,001
Relationship with Supervisor	Reflective	0,811	<0,001
Initial Training	Reflective	0,741	<0,001
Career Development	Reflective	0,885	<0,001
Challenges in Employment	Reflective	0,821	<0,001
Working Hours	Reflective	0,772	<0,001
Work Condition	Reflective	0,747	<0,001
Work Load	Reflective	0,775	<0,001
Work Safety	Reflective	0,761	<0,001
Health Facilities	Reflective	0,828	<0,001
Job Security	Reflective	0,743	<0,001

Source: Results of Research Data Processing, 2019

## 4. Discussion

### 4.1. Descriptive Analysis

#### 4.1.1. Recognition and Reward

Based on the results of this study, the majority of employees at PT Pamolite Adhesive Industry agree that the recognition and awards given by the company make employees feel at home working and want to continue working. This can be seen from the value of the recognition and award factors which have significant value at  $P < 0.001$  and the value of the loading factor  $> 0.7$ . So that it can be concluded that the factor of recognition and appreciation is one of the forming factors of the intention to stay. This is in line with the theory told by Sastrohadiwiry (2010: 17), Reward (Award) is a form of appreciation given by the company to employees, because these employees have contributed energy and thoughts for the progress of the company to achieve its intended purpose.

#### 4.1.2. Financial compensation

The results of this study indicate that the employees agreed that the salary received had met their expectations. The employees also acknowledged that they were better paid than when they worked in other companies before they worked at PT Pamolite

Adhesive Industry. In addition to granting benefits based on position, PT Pamolite Adhesive Industry also provides fair and routine non-achievement-based benefits to each of its employees such as year-end benefits and holiday allowances.

This can be seen from the value of the financial compensation factor which has a significant value at  $P < 0.001$  and the value of the loading factor  $> 0.7$ . So it can be concluded that the financial compensation factor is one of the forming factors of the intention to stay. The results of this study are in line with the results of research from Odunlade (2012) which states that the amount of salary and benefits has an important effect on employee job satisfaction.

#### 4.1.3. Relationship with Co-Workers

Based on the results of this study, the majority of employees agreed that they will feel comfortable working when their co-workers can be invited to work well together. PT Pamolite Adhesive Industry employees also have good relationships with fellow employees. This can also be seen from the value of the relationship factor with coworkers which has a significant value at  $P < 0.001$  and the value of the loading factor  $> 0.7$ . So that it can be concluded that the factor of relations with coworkers is one of the forming factors of the intention to stay.

This is in line with the opinion of Dewe and Lang (in Kumar & Govindarajo, 2014) which states that the lack of cohesiveness in groups can explain physiological and behavioral results that indicate discomfort in work. Therefore, compactness and cooperation in the working group can also make employees feel at home working.

#### 4.1.4. Relationship with Supervisor

The results of this study indicate that it is not only relationships with co-workers that make them comfortable working, but also their relationships with supervisors. The employee agrees that at PT Pamolite Adhesive Industry itself a supervisor also contributes to supporting the development of his subordinates. This can also be seen from the factor value of the relationship with the supervisor who has a significant value at  $P < 0.001$  and the value of the loading factor  $> 0.7$ . So it can be concluded that the supervisor relationship factor is also one of the forming factors from the intention to stay.

Kottke and Sharafinski (in Kumar & Govindarajo, 2014) state that supervisory supervision can make employees view the extent to which employee supervisor values contribute and supervisors feel concerned about their welfare (employees). In this case,

the supervisor can also be said as a representative or representative of the company itself. When supervisors pay close attention to their subordinates, the employee also feels heeded by the management or the company as a whole.

#### 4.1.5. Initial Training

Based on the results of this study, the majority of employees also agreed that the various types of training held at the start of work or orientation period helped employees adjust to the types of work that exist in PT Pamolite Adhesive Industry. The initial training factor also had significant value at  $P < 0.001$  and a loading factor value of  $> 0.7$ . This shows that the initial training factor is one of the intention to stay factors.

This is in line with the opinion of Carsten & Spector (in the Kumar & Govindarajo, 2014), the lack of initial training and appropriate orientation programs and development is also a major cause of concern for employees to start working. Employees prefer the clarity and security of their jobs (job security). Therefore good initial training can also cause employees to want to continue working for the company.

#### 4.1.6. Career Development

As with initial training, a clear career development program can calm employees when working at the company. The results of this study indicate that if employees agree that at PT Pamolite Adhesive Industry, the management has made a clear career path program, the employee promotion program is based on the achievements and contributions of the employees themselves while working at PT Pamolite Adhesive Industry.

Career development factors also had significant value at  $P < 0.001$  and a loading factor value of  $> 0.7$ . This shows that the factor of career development is one of the intention to stay factors. This result is in line with Dessler's (2014) theory that with clear career planning and development for employees is satisfaction, personal development, and quality work life. The results of this study are also confirmed study conducted by Yarbrough, Martin, Alfred & McNeill, 2016) which finds that career development has a strong correlation and positively correlates with employee job satisfaction and intention to stay. Therefore, companies must have investments in employee career development programs to make employees feel at home working and not easily leaving the company.



#### 4.1.7. Challenges In Employment

Based on the results of this study, the majority of employees agree that the type of work done at PT Pamolite Adhesive Industry requires specialization and high skills. This is because of its relation to production using chemical raw materials. Work in the production section with chemical raw materials is not just anyone can manage it. Because of such work, employees also feel challenged and don't feel bored. While in the office section, employees also feel that the work they are doing is also not monotonous. In one division employees get various kinds of jobs that use modern (computerized) work techniques and manually. For example in the accounting and administration division, employees use manual recording and using computers.

The challenge factor at work also has a significant value at  $P < 0.001$  and a loading factor value of  $> 0.7$ . This shows that the challenge factor in work is one of the intention to stay factors. According to Larson & Laiken (in Kumar & Govindarajo, 2014), work that is simple and routine or carried out repeatedly, results in lower intention to participate and higher absenteeism which results in a high desire to leave work that is.

#### 4.1.8. Working Hours

In this study, the working hour factor also had significant value at  $P < 0.001$  and a loading factor value of  $> 0.7$ . This shows that working hours are one of the intention to stay factors. This is evidenced by the majority of employees who agree that working hours at PT Pamolite Adhesive Industry can be said to be flexible. The employees are also satisfied with the working hours or work schedule set by management. The factory operating hours are Monday to Friday at eight in the morning until four in the afternoon. On Saturdays and Sundays only employees who are scheduled to pick up come to work to pick up raw materials that come at the factory or in the port area. For overtime hours at PT Pamolite Adhesive Industry is divided into several criteria including overtime hours on holidays, overtime hours on regular workdays, overtime hours at rest hours, and over 3 hours overtime on a normal working day. As for the leave of leave at PT Pamolite Adhesive Industry following Undang-Undang No.13/2003 Article 79 paragraph (2) which states that only employees have worked at least 12 months who are entitled to 12 days annual leave. With such provisions, the company has a regulation stating that the company has the authority to refuse leave requests from employees who have

not even worked for one year. If the company gives permission, it is referred to as "off-duty leave". Regarding this, the company can cut the employee's salary proportionally according to the number of absences of the employee.

At PT Pamolite Adhesive Industry employees are also not required to work outside their shifts or working hours. Employees are encouraged to return to their homes after the company's operating hours have ended. This is to maintain the health of employees and avoid fatigue after work. With this policy, employees feel valued by the company and are at home working in the company.

#### **4.1.9. Work Condition**

Work conditions factor also have significant value at  $P < 0.001$  and a loading factor value of  $> 0.7$ . This shows that the factor of work conditions is one of the intention to stay factors. At PT Pamolite Adhesive Industry, the company effectively utilizes the skills and knowledge of employees in various fields of work. When first entering work, new employees are placed in various divisions that have jobs that require skills or knowledge that are not much different. This function is to find the best potential of employee skills and adjust to the career planning that has been previously set.

With the program, employees agree that when they are included in the work, it shows that the company has confidence in the potential they have. The employee agrees if they feel the spirit the next day to return to work at PT Pamolite Adhesive Industry. Employees also feel satisfied with the trust given by the company and make them more comfortable when working in this place than when they worked at the company before they worked at this company.

#### **4.1.10. Workloads**

From the results of this study, it shows that the employees feel that they are not too exploited and burdened with the type of work they are doing. This is because management does not immediately provide new tasks or jobs without guidance from more senior employees or even superiors such as supervisors. Employees say that the initial training they do can help and reduce the workload. With the existence of the program, it is not surprising that employees agree that the work they are doing does not overload them too much.

French & Caplan (in Kumar & Govindarajo, 2014) stated that supervisors tend to submit various kinds of work to their subordinates when the work exceeds the ability of

the employee concerned, then the employee does the work in time and resources that have beyond the assignment given. That creates the role of overload or overloaded workload. An excessive workload can lead to the desire of employees to leave work.

#### **4.1.11. Work Safety**

Based on the results of this study, employees agreed that PT Pamolite Adhesive Industry has an OSH program and a better work safety culture. This was also supported by the HRD statement which stated that the work accident rate at PT Pamolite Adhesive Industry was quite small. The HRD said that if a work accident only occurs one to two times each year, that is also a not-so-fatal accident that makes the employee traumatized to work again.

This is in line with the statement of Aço (in Kumar & Govindarajo, 2014), occupational safety consists of technical, educational, medical and psychological measures used to prevent accidents, either by eliminating unsafe conditions in the environment or instructing or convincing workers from the need to introduce these prevention practices.

#### **4.1.12. Health Facilities**

Similar to work safety, employees agree that the work health of employees is also well-considered. In the work environment, PT Pamolite Adhesive Industry provides health clinics for its employees. It aims to support the health and fitness of employees at work. Every few periods the company also keeps an eye on the health of employees through the clinic. This is because the type of raw materials used for factory production is quite dangerous to the health of employees. With the existence of health facilities in the workplace, employees feel calmer when working in the work environment. Employees also feel cared for by the company with the provision of these health facilities.

Not only does it provide health facilities in the form of clinics, but the company also provides prevention programs such as providing health insurance. Health insurance is in the form of Employment BPJS (Indonesian Health Insurance). With the various health programs provided by the company, employees feel comfortable and are not worried about their health while working at PT Pamolite Adhesive Industry.

#### 4.1.13. Job Security

The job security factor also has a significant value at  $P < 0.001$  and a loading factor value of  $> 0.7$ . This shows that job security factors are one of the intention to stay factors. Based on the results of this study, employees are satisfied with their career provisions and future planning at PT Pamolite Adhesive Industry. In this company, the career path of employees has been determined by management. The management has guaranteed the employee career path program with a clear promotion path and by the skills and competencies that employees have.

The same is true of career development factors, with the existence of career insurance programs and the future of these employees to calm down. Employees are not worried that they will be released at any time by the company.

#### 4.2. Dominant Factors that Form Intention to Stay

Based on the results of confirmatory factor analysis, the highest value of the loading factor is a factor of career development with a 0.855 loading score. This indicates that employees feel more comfortable working at PT Pamolite Adhesive Industry because of a clear and transparent career path and professional planning.

This is in line with the results of the study of Kumar & Govindarajo (2014) which stated that the dominant factor of intention to stay was Career Advancement. In the study, Kumar & Govindarajo used the eigen value and explain variance. The career advancement factor has an eigen value of 1.699 and the explain variance is 6.916. This means that the variance that can be explained by the career advancement factor is 6,916% and the total explain variance value is 69,981%. Moreover, this finding also confirmed Umamaheswari & Khrisnan whose studied ceramic manufacturing employees and found that there are four non-monetary factors correlated with employee retention in a company.

### 5. Conclusion

Based on the results of this study, the following conclusions can be drawn: (1) This study confirmed the 13th factors and instrument of ISI (Intention to Stay Instruments) developed by Kumar and Govindarajo (2014); (2) Career development is the dominant factor in shaping the intention to stay of employees of PT Pamolite Adhesive Industry, since it has the highest loading factors value (0.855) among other factors.

## References

- [1] Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management*, vol. 17, issue 1, pp. 99-120.
- [2] Dessler, (2014). *Fundamental of Human Resource Management* (3<sup>rd</sup> Edition). Upper Saddle River, NJ: Prentice Hall.
- [3] Ghozali, I. and Latan, H. (2014). *Partial Least Squares: Konsep Metode dan Aplikasi Menggunakan Program Warp PLS 4.0*. Badan Penerbit Universitas Diponegoro Semarang.
- [4] Kossivi, B., Xu, M. and Bomboma, K. (2016). Study on Determining Factors of Employee Retention. *Open Journal of Social Sciences*, vol. 4, pp. 261-268, <http://dx.doi.org/10.4236/jss.2016.45029>.
- [5] Kumar and Govindarajo. (2014). Instrument Development "Intention to Stay Instrument". *Asian Social Science*, vol. 10, issue 12.
- [6] Sastrohadiwiryono, B. S. (2010). *Manajemen Tenaga Kerja Indonesia Pendekatan Administrative dan Operasional*. Jakarta: Bumi Aksara.
- [7] Umamaheswari, S. and Krishnan, J. (2015). Retention Factors and Their Relative Significance in Ceramic Manufacturing Industries in India. *Asian Social Science*, vol. 11, issue 13.
- [8] Yarbrough, S., et al. (2016). Professional Values, Job Satisfaction, Career Development, and Intent to Stay. *Nursing Ethics*, vol. 24, issue 6, pp. 675-685, <https://doi.org/10.1177/2F0969733015623098>.