

## Analysis of The Malaysian Construction Industry Professional Employee Turnover Antecedents

Siti Hawa Mohd Kasmuri, Zulhabri Ismail\*, Rumaizah Mohd Nordin & Norfashiha Hashim

Faculty of Architecture, Planning and Surveying, Universiti Teknologi MARA, Malaysia

\*Corresponding author: zulhabri@uitm.edu.my

Received 05 September 2021, Received in revised form 08 December 2021

Accepted 10 January 2022, Available online 30 September 2022

### ABSTRACT

*In construction, the successful completion of a project is accomplished through an of efficient project management. All construction-related disciplines working together are responsible for the completion of the project by the stipulated completion date. However, poor professional employees' retention is a significant issue in the construction industry. The objective of this paper is to identify the determinants of employee turnover in the Malaysian construction industry with a focus on professional employees. This study employed a doctrinal research approach consisting of a qualitative research design. Two databases were used, in which four cases were obtained from the Labour Court and 19 cases were obtained from the Industrial Court. Data has been analysed through application of the thematic analysis concept. Findings in this study indicate three main themes of employee turnover determinants in construction industry namely organisation, personal and external determinant. Inconsistencies of finding were found in current data as compared to previous studies including training and development, compensation, stress, job satisfaction and external determinants. Since the data focuses on Malaysia court cases, it is recommended that in the future data from other countries to be included. It is also proposed that a diverse range of industries should be analysed in future studies to arrive at an in-depth conclusion. Finally, recommendation for future studies to include more occupational groups for more generalised findings.*

**Keywords:** Construction Project management; Construction industry; Employee turnover; Construction professionals

### INTRODUCTION

The gross domestic product (GDP) in Malaysia is measured by expenses, economic activity, and income. In order to retain a positive national GDP, it is critical to ensure sustainable investment by maintaining income and providing employment opportunities to the working population. Thus, the contribution of various industries is a crucial element of achieving this target. The economic input of the construction industry is seen as one of the most critical components of GDP. Its year-on-year contribution shows improvement in the previous cycle as shown in FIGURE 1. The financial volume of this industry is promising and continues to play a vital role in the current Malaysia Plan.

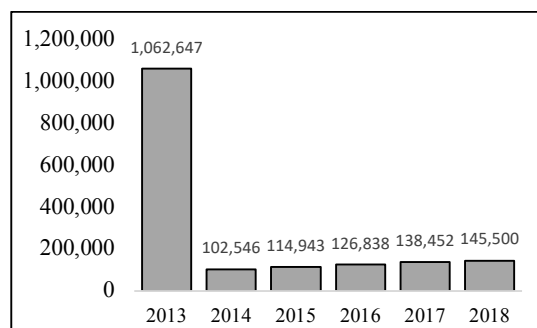


FIGURE 1. Malaysia construction industry GDP contribution  
Source: Department of Statistics, Malaysia (2019)

One of the important roles of the construction industry in the 11<sup>th</sup> Malaysia Plan is that it plays a significant part in the strengthening of infrastructure in support of other economic activities, through the construction and expansion of major roads and highways, such as the Pan Borneo Highway, the Central Spine Road, the Kota-Bharu-Kuala Krai Highway, the East Coast Expressway, and the West Coast Expressway. Execution of these major construction projects requires a high number of construction employees as shown in FIGURE 2.

The projection for employees in the construction industry in the year 2020 is 12,597,000, which represents an increase of 8.24% compared to the year 2015. With this high number of employees, it is difficult to maintain the workforce number needed due to employment related issue. A survey conducted by Construction Industry Development Board CIDB Malaysia in 2015 revealed that 14% of the participants (102 respondents) required welfare improvement, namely benefits, insurance, medical, and basic salary. Moreover, this industry, which is subject to unpredictable occurrences, experiences employment issues regularly (King, Price, & Dainty, 2004). It should therefore be highlighted that employment issues relating to the construction industry require improvement to avoid a high turnover which may harm its contribution to the GDP. Unfortunately, the solution to these issues and its implementation are yet to be determined.

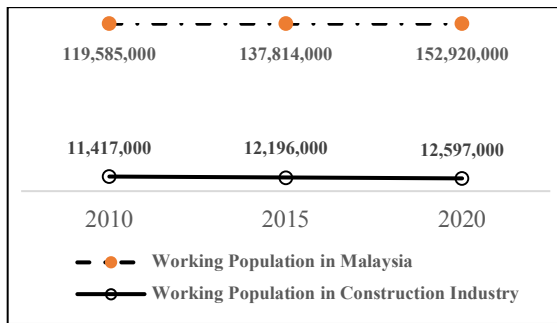


FIGURE 2. Working population of Malaysia, 2010-2020  
 Source: Employment Statistics No. 4/2017, Ministry of Human Resources, Malaysia.

An efficient strategy that focusses on the team members of the project can help to promote sustainability in construction projects through the project success factor (Nguyen & Hadikusumo, 2017). In the Malaysian construction industry, the sustainability element was previously introduced by the CIDB. Through the introduction of initiatives such as the Sustainable Construction Excellence Centre (MAMPAN) and Infrastructure Rating Tool, CIDB Malaysia enhanced the sustainability of construction projects from the early stages of their implementation. One of the success factors in achieving sustainability was thought to be associated with the organisation of resources directly involved in the construction projects. For example, one of the critical success factors in construction projects was efficient site management and supervision (Rahman, Memon, & Karim 2013) by competent personnel (Alaghbari, Kadir, Salim, & Ernawati 2007; Nguyen, Ogunlana, & Lan 2004; Sambasivan, Deepak, Salim, & Ponniah 2017). Hence, the contributions of construction personnel are critical for the completion of construction projects. It is also thought that the identification of early preventive measures during the design and planning phase is essential for achieving sustainability. Therefore, issues relating to the completion of projects by their proposed deadlines can potentially be managed through the continuous improvement of construction personnel retention. Hence, the objective of this paper is to investigate the factors contributing to employee turnover among professionals in the construction industry in Malaysia.

#### LITERATURE REVIEW

Several factors contributing to employee turnover need to be considered in order to improve employee retention. TABLE 1 summarises selected previous recent research between year 2010 – 2018 on employee turnover across various industries worldwide. The determinants of employee turnover based on previous research studies are described in the following sections.

#### ORGANISATIONAL DETERMINANTS IN EMPLOYEE TURNOVER

##### Organisation Management

Organisations depend on an effective management strategy to ensure successful and competitive business performance. To achieve this goal, the organisation requires employees which are its main resource. In most cases, the organisation experiences a high employee turnover due to reasons relating to the management. In these instances, professional employees agree that organisational policy is the reason for turnover however, this opinion has different dimensions in different industries. In instance, the construction industry reacts to policy as a barrier that prevents creativity in the working environment (Yang, Li, Zhu, Li, & Wu 2017). Service industries, on the other hand, react differently by suggesting policy improvements resulting in employee empowerment (Merchant & Whiting 2015). Therefore, the development of organisation policy should consider industry nature and to empower employee as well.

In addition to those outlined above, factors arising from management practice contribute to turnover. This is seen from the perspective of professionals from various industries. As found in the Indian Information Technology (IT) industry, lack of management support to combat workplace bullying may contribute to turnover. This was congruent with the experiences of Brazilian IT employees (Frufrek & Pansanato 2015). This finding on poor management support is extended to the healthcare industry through the roles of flexibility on policy implementation (McGilton, Boscart, Brown, & Bowers 2014). In the construction industry, a similar finding was determined and professionals agreed that this factor is critical (Sang, Ison, & Dainty 2009). Hence, it is thought that an organisation could benefit by addressing these issues to reduce their employees' concerns regarding employment matters, thereby allowing them to contribute effectively to the organisation.

#### HUMAN RESOURCES MANAGEMENT

##### Training and Development

Training is required to meet the needs of employees and also to facilitate organisational operations. According to the study by Fletcher, Alfes, and Robinson (2016), the function of training and career development can influence an intention to remain in post through job satisfaction, employee engagement, and change-related anxiety. Each unit of training provided has a different function (Frufrek & Pansanato, 2015) such as the improvement of an employee's skill to meet the job specification. For instance, skill in homecare is needed in the healthcare industry to ensure efficient operation (McGilton et al. 2014). Due to a lack of training, the employee has a knowledge deficit in relation to the skill, which in turn prompts the intention to leave

(Kaewsri & Tongthong 2011). This view is also prevalent in other industries such as the services, an United States of America (USA Air Force service operation run smoothly through training, which can reduce the intention to leave (Riddel 2010). From a construction industry perspective, a lack of knowledge affects the contribution to work and is regarded as an important factor in turnover (Kaewsri & Tongthong 2011). However, this finding related to the women professionals in Thailand (Kaewsri & Tongthong 2011), and the impact on professionals in other countries may vary and require further confirmation.

The role of career development in employee retention is related. Previous studies involving construction professionals show that the lack of career development opportunities leads to an intention to leave even though it contributes to low weightage (Selvaraj, Hazeen, & Umarani 2012; Selvaraj & Umarani 2012). This factor causes employees to feel that they are underperforming and can influence their decision to leave (Kaewsri & Tongthong 2011). However, recent studies involved professionals in India (Selvaraj et al. 2012; Selvaraj & Umarani, 2012) and Thailand (Kaewsri & Tongthong, 2011) and the effect on construction professionals in other countries is yet to be confirmed.

#### Compensation

Compensation is defined as a monetary return for the work performed by employees in the form of a salary package which includes benefits. Previous research studies have shown the role of monetary compensation as part of the employee retention strategy. The Western perspective on the contribution of monetary compensation to the employees' attitude towards leaving seems similar across various industries such as IT (Frufrek & Pansanato, 2015) and construction (Derycke et al. 2010; Furtado, Batista, & Silva 2011; Hee & Ling 2011; Kaewsri & Tongthong 2011; Selvaraj et al. 2012; Selvaraj & Umarani 2012). Although this view is a significant factor among professionals in various industries (Derycke et al. 2010; Furtado et al. 2011; Hee & Ling 2011; Kaewsri & Tongthong 2011; Selvaraj et al. 2012; Selvaraj & Umarani 2012), healthcare professionals reacted differently (Furtado et al. 2011). Studies involving different occupational groups have found that contribution of compensation factor affected only to certain group of employee (Furtado et al. 2011). Therefore, this view and the impact on other industries should be considered.

The relationship between the employer and employee is maintained through employee engagement. This practice has been used to overcome employee turnover issues (Memon et al. 2018) although the age of employees is a factor which may result in different outcomes (Kiang, Jauhar, & Haron, 2014). Three sub-factors in employee engagement have been identified, namely work-related factors, work environment, and leadership styles.

#### 1. Work Environment

In general, the impact of the work environment on turnover can be seen through the physical, emotional, and cognitive attachment of employees to their job and organisation, and through their energy levels and determination (Memon et al. 2018). Failure to provide a conducive work environment will result in job dissatisfaction and the intention to leave (Kutney-Lee, Wu, Sloane & Aiken 2013). Thus, by improving the working environment, job satisfaction will be enhanced, reducing the intention to leave. Various factors are considered to promote employee job satisfaction levels. For example, the education industry in the USA illustrates how classroom programmes and demographic factors can influence teachers' satisfaction levels (Jeon & Wells 2018). In addition to the satisfaction factor, the work environment can be viewed from different perspectives. For example, in the healthcare industry worldwide, co-workers' attitudes are a critical factor associated with turnover (Dawson et al. 2014; Noguchi-Watanabe, Yamamoto-Mitani & Takai 2016). This is because working in the healthcare industry requires having a good relationship with co-workers and patients, and this can be an influence on employee retention (McGilton et al. 2014). However the view is different in the IT industry where it is not a critical factor, but among the key determinants (Frufrek & Pansanato 2015). This finding shows that people within the workplace influence by the work environment. Furthermore, some studies state that a positive working environment is influenced by senior staff members. Similarly, studies in construction settings have proved that supportive leaders can improve the working environment and reduce the likeliness of turnover (Chih, Kiazad, Cheng, Emamirad & Restubog 2018). A similar view prevails in service industries: if the role of a senior staff member includes improved emotional support, feelings of frustration can be reduced (Merchant & Whiting 2015). Based on these studies, it can be

TABLE 1. Selected Previous Research on Employee Turnover

Authors/Citation	Year	Country	Industry	Sample	Organisation					Personal					External Factor		
					OM	TD	C	PM	EE	JS	S	P	JA	EC	Others		
Barreto, 2017	2017	Peru	Construction	PE												✓	
Chan, 2018	2018	China	Construction	PE	✓												
Chih, 2018	2018	Philippine	Construction	GE				✓									
Ciby, 2016	2016	India	IT	PE	✓												
Dawson, 2014	2014	Australia	Healthcare	PE				✓							✓		
Derycke, 2010	2010	Belgium	Healthcare	PE		✓											
Fletcher, 2016	2016	UK	Mix	MGE		✓											
Frufrek, 2015	2015	Brazil	IT	PE	✓	✓											✓
Furtado, 2011	2011	Portugal	Healthcare	PE		✓											
Gardiner, 2013	2013	Australia	Healthcare	PE				✓									
Hee, 2011	2011	Singapore	Construction	PE		✓											
Heponiemi, 2016	2016	Finland	Healthcare	PE				✓									
Jeon, 2018	2018	USA	Education	PE				✓									
Jones, 2012	2012	UK	Construction	PE											✓		
Kaewsri, 2011	2011	Thailand	Construction	PE		✓											✓
Kay, 2013	2013	Canada	Services	PE				✓									✓
Kiang, 2014	2014	Malaysia	Manufacturing	PE				✓									✓
Kusui, 2017	2017	Japan	Healthcare	MGE													✓
Kutney-Lee, 2013	2013	Pennsylvania	Healthcare	PE				✓									
Leung, 2016	2016	Hong Kong	Construction	PE													✓
McGilton, 2014	2014	Canada	Healthcare	PE	✓												
Memon, 2018	2018	Malaysia	Oil & Gas	PE				✓									
Merchant, 2015	2015	USA	Services	PE	✓												
Noguchi-Watanabe, 2016	2016	Japan	Healthcare	PE				✓									
Riddel, 2010	2010	Pakistan	Services	PE		✓											✓
Sang, 2009	2009	UK	Construction	PE	✓												
Selvaraj, 2012	2012	India	Construction	PE		✓											
Selvaraj et al. 2012	2012	India	Construction	PE		✓											✓
Van-bogaert, 2014	2014	Belgium	Healthcare	PE		✓											
Yang, 2017	2017	China	Construction	PE													✓

PE = Professional Employees, GE = General Employees, MGE = General Employees, GE = General Employees

concluded that a professional employee reacts to the work environment according to various factors. These factors elicit different views within an industry context which require further attention

## 2. Leadership Style Within the Organisation

As mentioned earlier, work environment factors are related to leadership. The quality of leadership also has a direct impact on employee engagement in the organisation. According to a study by Ciby (2016), the leadership function in assisting employee retention is to provide support to subordinates. Leaders sometimes bully employees; as a result, commitment to work is affected and negative feelings appear. Different forms of support can be linked in this circumstance such as leader role in combatting workplace bully. According to a study by McGilton et al. (2014), leader recognition can help nurses to stay organised in situations which involve patients or an emergency in a nursing home. Leaders can also provide support in the form of personal coaching which supplies emotional assistance to employees in a workplace located in a rural area (Gardiner, Kearns, & Tiggemann 2013). Within the healthcare industry employees need leaders who provide guidance and share best practice (Furtado et al. 2011). All of these findings are viewed in the context of professional employees; its impact on other occupational groups may be questionable. However, in the construction industry supportive leadership is expected by non-professional employees to assist in promoting job satisfaction and reduces the likeliness of leaving (Chih et al. 2018). Among construction professionals, an attitude of respect needs to be practised by all parties in employment, whether leaders (Selvaraj et al. 2012) or subordinates (Kaewsri & Tongthong 2011). Thus, it can be concluded that supportive leadership encourages retention across various industries in parts of America, Europe, and in some Asian countries. These findings, however, are unproven in a Malaysian setting, as they have not been previously tested

## 3. Work-related Factor

There is a different view of heavy workload as a contributory factor to turnover. This factor is associated with turnover in the healthcare industry in Finland (Heponiemi, Presseau, & Elovainio 2016) but not in Belgium (Van Bogaert et al. 2014). These inconsistencies are highlighted in similar industry settings. However, the situation in the service industry coincides with the view of Van Bogaert et al. (2014), namely that heavy workload factors do not influence turnover based on personal predictions of working conditions. In addition to setting a heavy workload, some industries require employees to work long hours. For example, the service industry requires employees to work overtime (Kay, Alaries, & Adjei 2013). However, there may be a difference based on gender and women are more likely to experience this factor than men (Kay et al. 2013).

This may be due to family responsibilities and the difficulty of finding a life/work balance (Riddel, 2010; Selvaraj & Umarani 2012). Based on previous research findings, the impact of work-related factors is different based on industry nature. Thus, it requires great attention to family-friendly practice as an approach to balancing work and life, as well as being part of the employee retention strategy.

## Performance Management

In human resource, performance management involves the practice of monitoring the performance of the organisation's employees through (Awais 2016; Castanheira & Story, 2016; Rana & Malik 2014; Rothman & Cooper, 2015). Performance management is carried out yearly and new targets are developed based on the previous performance appraisal (Boxall, Purcell & Wright 2007). The role of performance management in employee retention has been highlighted in few industries. For professional employees in the IT industry, the practice of rewarding performance is regarded as the main strategy in employee retention (Frufrek & Pansanato, 2015). In the healthcare industry, a similar approach is evident when the link between effort and reward is absent (Derycke et al. 2010). Failure to connect these factors results in the intention to leave both the organisation and the profession (Derycke et al. 2010). In this situation, the organisation is encouraged to develop a transparent policy related to performance and promotion, thus improving employee retention (Frufrek & Pansanato, 2015). It can be concluded that this factor contributes to turnover across different industries. However, this observation is yet to be investigated in the construction industry

## Personal Antecedents in Employee Turnover

The personal dimension involves an individual factor that influences employees' reactions to events. Several factors are identified in relation to the issue of employee turnover. The first factor, stress, may include several forms. In the context of the construction industry, stress exists due to physical exhaustion (Leung, Yu, Lin & Chong 2016; Yang et al. 2017) and emotional exhaustion (Yang et al. 2017). In the Hong Kong construction industry, stress is also related to a poor transportation system which directly influences professionals to leave (Leung, Liang, & Chan 2017). If excessive stress occurs, it contributes to the intention to leave (Chan, Leung & Liang 2018) particularly when it is compounded by a reduction in various aspects of performance such as decision-making and lack of critical thinking (Leung et al. 2016). However, the impact in other countries may differ as these findings involve construction professionals in China and Hong Kong.

The second factor mentioned is the employees' satisfaction levels. This factor is said to influence the intention to leave when employees are satisfied with the relevant factors (Riddel, 2010; Selvaraj et al. 2012; Ying-Yi, Kiazad, Cheng, Emamirad & Restubog 2018). Among the relevant factors are those outside work such as life demand

factors in the service industry in Pakistan (Riddel 2010). For the oil and gas industry in Malaysia, professionals show satisfaction with training provided by the organisation (Memon, Salleh & Baharom 2016). In the context of the construction industry, a variety of satisfaction factors are identified. For instance, Hee & Ling (2011) uncover several factors of satisfaction among quantity surveyors including monetary benefits, non-monetary benefits, fitness for work, decision-making flexibility, and sufficient technical knowledge to be competent for work. On the other hand, professionals in India designate working hours, reward and recognition, and management policies as being related to job satisfaction (Selvaraj et al. 2012). The observations of the Malaysian manufacturing industry are slightly divergent; supervisor, co-worker, and job specification factors need to be taken into account in order to achieve employee satisfaction (Kiang et al. 2014). Based on these observations, it is evident that satisfaction factors vary according to the nature of the industry and the culture of the country. Therefore, observations in other countries and industries require further investigation. Furthermore, the relationship between job satisfaction and intention to leave is linked through another factor as well. In general, regardless of industry context, satisfaction can help employee retention through increased commitment (Riddel 2010) and feelings of belonging in relation to the organisation (Memon et al. 2016). The issue of turnover can be diminished by considering all the factors mentioned.

With regard to this factor, the organisation has no right to object to the turnover of its employee because of life plans they wish to pursue. In the service industry in Canada, employees leave because of family matters, for instance the need to take care of children (Kay et al. 2013). As the policies in the organisation regarding leave entitlement have been limited, female lawyers who take leave frequently disrupt organisational operation. Construction industry scholars suggest employees pursuing higher education is the critical reason for leaving (Kaewsri & Tongthong 2011; Selvaraj et al. 2012). Even though the low percentage of its contribution to turnover, its impact to other countries should be explored. In considering personal factors as a determinant of turnover, other factors might be relevant. By considering other aspects – such as industry and country – related factors could be uncovered.

#### External Antecedents in Employee Turnover

Employee turnover is also influenced by external determinants, in which three sub-themes have been identified. The first theme is alternative job in the labour market. In these circumstances, few industries may have limited job alternatives in the labour market. In the Australian healthcare industry for instance, limited job alternatives are the reason nurses choose employment in other professional occupations (Dawson et al. 2014). On the other hand, some industries like construction have many job opportunities. Therefore, this is not the main problem responsible for the intention

to leave, as the labour market has diverse employment opportunities (Jones, Ross, & Sertyesilisik, 2010; Selvaraj et al. 2012). Additionally, current organisations may not be able to fulfil the employee's career plan (Riddel, 2010). Thus, alternative job opportunities in the labour market depend on employment trends. Employees whose career plan cannot be fulfilled in their current employment situation should be considered by the management.

The second sub-theme involves the environment and cultural factors in the industry. This factor, however, is identified as a major contributor by IT professionals in Brazil (Frufrek & Pansanato, 2015). Harassment can be among the reasons related to this sub-theme. Sexual harassment is endemic in some industries because they are male-dominated like the construction industry (Kaewsri & Tongthong 2011). However, industries without gender dominance are also beset by this factor, such as the service industry (Kay et al. 2013). Kusui et al. (2017) found no evidence within their sample in healthcare industry. Healthcare industry employee turnover is influenced by work-related harassment, for instance violence by the patient that may contribute to psychological stress (Kusui et al. 2017). In conclusion, harassment is an element of many of the factors identified and depends on the nature of the industry. Furthermore, environmental and cultural factors can involve discrimination based on company policies. This situation is current in male-dominated industries where women take long statutory leave, in particular maternity leave, thus losing their seniority in the event of promotion (Barreto, Pellicer, Carrión & Torres-Machí 2017). These fairness factors need to be scrutinised in detail since women have no option but to take a leave of absence as part of their life responsibilities. However, the possibility of this factor being an influence in the same way as other factors is arguable and requires further confirmation.

Another factor that is also cited is life security, which is related to crime levels at the workplace. In the Malaysian manufacturing industry engineers have been leaving due to the lack of security even though the rate is low (Kiang et al. 2014). According to this study, it is associated with the crime rate in the area. However, arguably this situation can be different in remote industries, for instance in the case of a construction site that is far from surveillance control.

#### CONCEPTUAL FRAMEWORK

To achieve the objective of this research, a conceptual framework based on previous research studies was proposed. The conceptual framework illustrated in FIGURE 3 was used as the basis to meet the objective of the study. In total, three themes/overall factors were identified, which consisted of organisational (two sub-themes: organisation and human resources management), personal (six sub-themes: stress, employee's ability, job satisfaction, perception, commitment, and other personal reasons), and external (three sub-themes: job alternatives, living environment,

and relationship with stakeholders). In addition, four human resources management (HRM) practices were found to be relevant as employee turnover factors among

the professional employees, which included training and development, compensation, employee engagement, and performance management.

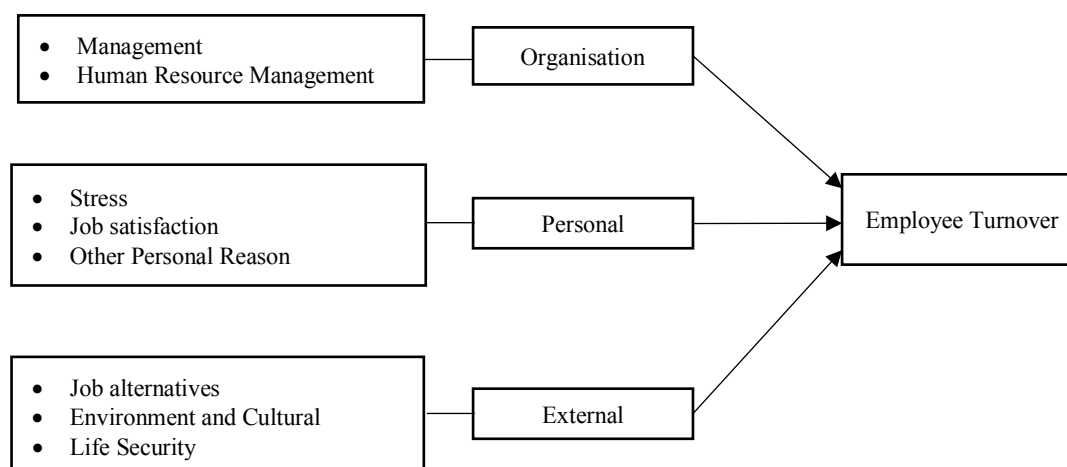


FIGURE 3. Conceptual Framework

#### RESEARCH METHODOLOGY

This research paper employed the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA) method to retrieve the judgement notes and documents from selected court cases. The four stages involved in the PRISMA approach are detailed in the following section.

#### IDENTIFICATION

Issues concerning employment in Malaysia are managed by the Ministry of Human Resources. There are three respective departments under the jurisdiction of the Ministry that manage employment disputes with the assistance of databases. These departments consist of the Department of Labour (DoL), the Department of Industrial Relations, and the Department of Trade Unions. The Labour Market Database (LMD) manages employment disputes from employment regulatory bodies under the jurisdiction of DoL. In addition, the Enforcement Management System Module C (EMSC) and the Industrial Court system (e-IC) manage employment disputes under the jurisdiction of the other two departments. This paper highlights the employment issues that have been previously lodged in these databases.

Two types of documents consisting of published and unpublished documents were utilised in this study. Unpublished documents were used as additional data due to insufficient documents available under the jurisdiction

of DoL. Therefore, in this study, published documents were based on LMD and e-IC, while unpublished documents were based on LMD. Permission to use these data were obtained from the respective bodies in December 2018<sup>1</sup> and March 2019.<sup>2</sup>

#### SCREENING AND ELIGIBILITY

A qualitative approach was utilised as the research methodology in this study. For this study, several search criteria were developed based on the selected databases to search for relevant documents before the commencement of the review process (Bronson & Davis 2012). The purpose of developing the specific inclusion and exclusion criteria was to fulfil the research objectives while excluding irrelevant content. Based on the timeline criteria, two timelines were developed to suit the database information; proceedings obtained between 2007 to 2018 applied for LMD while 2015 to 2019 applied for e-IC. In addition, only judgement notes that were published publicly were included. However, some modifications were performed to obtain unpublished documents based on the document criteria. For this study, only cases involving the construction industry were selected, while other cases in other industries were declined. There were also additional criteria for unpublished documents that required an appeal case regardless of their status in the High Court, in which case the criteria excluded cases without appeal actions.

TABLE 2. The Inclusion and Exclusion Criteria

Criteria	Published		Unpublished	
	Inclusion	Exclusion	Inclusion	Exclusion
LMD	Timeline	2007 – 2018	Below 2007	2007 - 2018 Below 2007
	Document type	Published judgement note	Unpublished judgement note	Unpublished judgement note Published judgement note
	Industry	Construction	Other industry	Construction Other industry
	Occupational Groups	Professionals (under Section 69B)	Non-professionals	Professionals (under Section 69B) Non-professionals
	Case Status	Appeal case with Award	Appeal case without Award	<ul style="list-style-type: none"> <li>• Appeal case regardless of the status in High Court</li> <li>• Non-appeal case</li> <li>• Case without judgement note.</li> </ul>
e-IC	Timeline	2015 – 2019	Below 2015	<ul style="list-style-type: none"> <li>• Case with judgement note</li> </ul>
	Document type	Published judgement note	Unpublished judgement note	
	Industry	Construction	Other industry	
	Occupational Groups	Professionals	Non-professionals	

Additionally, the data obtained from the Labour Market Database were selected based on awards were avoided. The industry criteria used in proceedings with an award, while other types of this study were in line with the research focus on the construction industry.

Review Process

1. Labour Market Database

The cases described in this study were lodged under Section 69B of the Employment Act 1955 (Government of Malaysia, 2012). A list of cases was supplied by the respective department. The data for this study was based on two document types, in which the different workflow

processes are shown in FIGURE 4 and FIGURE 5. The search process for each case was executed using the disputing parties' names (claimant or plaintiff), type, and date of award as well as the civil court case number. Two databases were used, namely the Common Law Journal and Lexis Nexis Legal Research for Academics. Due to insufficient results obtained, additional data from unpublished documents were also used in this study

Application to use these documents was submitted and permission was granted from the respective departments after a series of discussions. The data collection process was performed at the respective department offices in January 2019. For published documents, data obtained from 2007 to 2018 was utilised in this study.

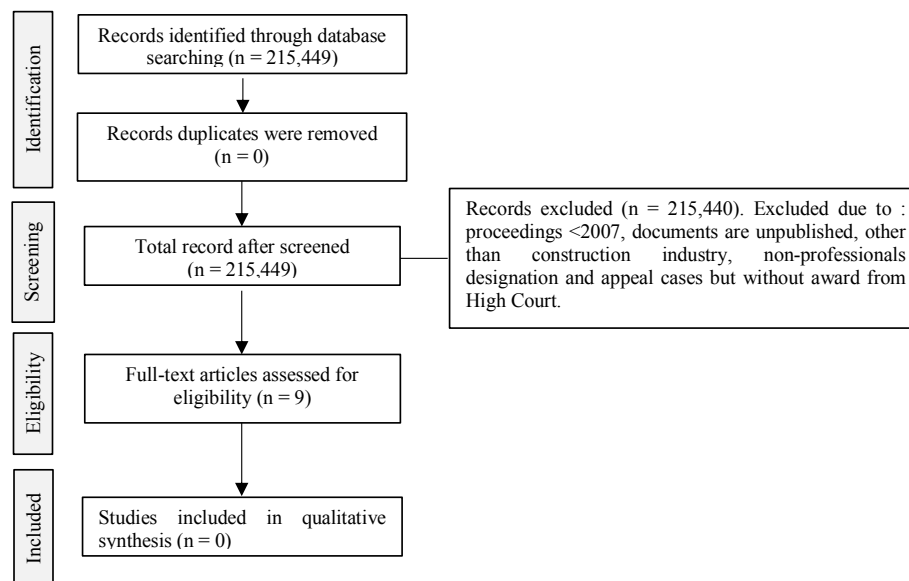


FIGURE 4. The workflow diagram of LMD data (Published Document)



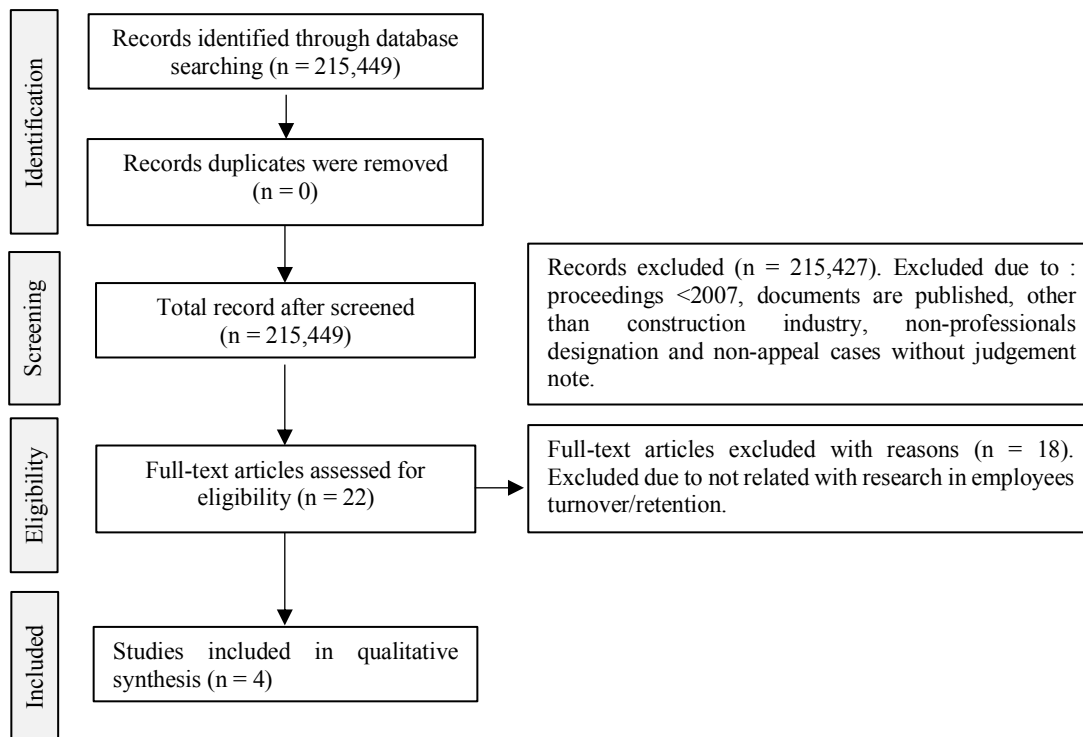


FIGURE 5. The workflow diagram of LMD data (Unpublished Document)

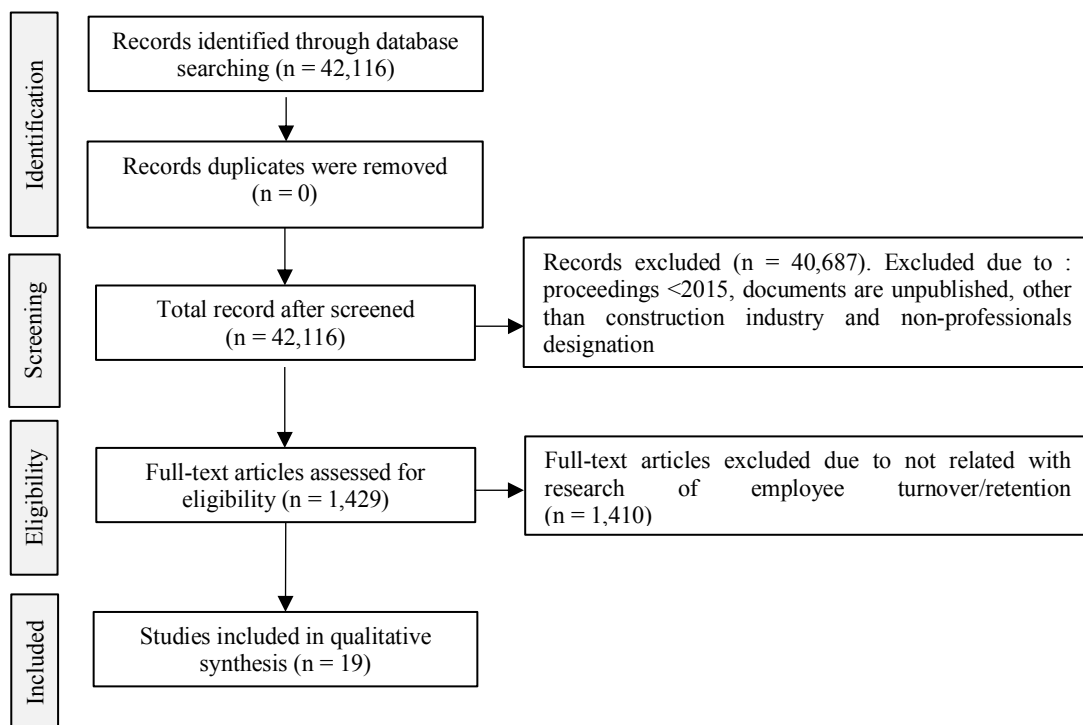


FIGURE 6. The workflow diagram of e-Industrial Court data

A total of 215,440 and 215,426 cases obtained under the published and unpublished document category respectively, were excluded based on the criteria developed previously. Based on the document eligibility, eight and 18 court cases were excluded as they were not in line with the research objective. In the final stage, only four cases were found to be relevant to this study and were selected for analysis and assessment. The cases are coded with “LMD-“ to respect the confidentiality.

## 2. e-Industrial Court

In this study, only the case dismissals issued under Section 20 of the Industrial Relations Act 1967 (Act 177) were considered. These cases were involved in the search process, regardless of whether the employees were protected under the collective agreement. Additionally, attempts were made to obtain cases listed from the respective departments<sup>3</sup>. However, the data cannot be revealed to the public due to privacy issues. Therefore, the search process for the cases was executed manually through the Industrial Court website<sup>4</sup> (e-Industrial Court). The workflow of this process is shown in FIGURE 6. Data from a four-year period (2015-2018) were collected between the 1<sup>st</sup> January 2015 and 31<sup>st</sup> December 2018. Compared to LMD, the e-IC data obtained for a shorter period was sufficient to meet the objective of this study (Xiao & Watson, 2017). The search criteria on this website were limited to words pre-developed by the website administrator and thus the menu consisting of ‘Search Full Award’ was used together with a list of pre-developed codes. The code word used was ‘dismissal’ as it was specifically relevant to the cases lodged under Section 20. The review was initiated by focussing on the names of parties that were associated with construction activities. The search string names used were ‘construction’, ‘engineering’, ‘architect’, ‘industrial’, ‘pembinaan’, and ‘bina’.

A total of 40,687 cases were excluded based on the criteria developed previously. Based on the case eligibility, 1,410 cases were excluded as they were not in line with the research objective. In total, 19 cases were found to be relevant to the study and these cases were subsequently assessed and analysed in the fourth stage. Cases name are coded with “IC” to respect the confidentiality.

### DATA ABSTRACTION AND ANALYSIS

The documents were manually read to identify the contents of the document which matched the search criteria. A thematic analysis technique was used to identify themes related to employee turnover determinants, thereby allowing a summary to be developed (Dixon-Woods, Agarwal, Jones, Young, & Sutton, 2005). For this study, a Computer-Assisted Qualitative Data Analysis (COQDAS)-ATLAS.ti Version

8 was applied for the coding process and development of network-mapping themes.

## FINDINGS

Data has been analysed and three categories of construction professional employee turnover determinants has been developed. The following section elaborates findings accordingly.

### EMPLOYEES’ DEMOGRAPHIC BACKGROUND

Referring to TABLE 3 the major construction discipline involved in employment disputes was engineering, accounting for approximately 40.74% of the cases. This was followed by project management as the second-highest discipline at 29.63%, while quantity surveying and surveying, interior designer and landscape disciplines accounted for 18.52% and 3.7%, respectively.

An analysis of employee position was also carried out to determine the designation of employees involved in the employment cases proceedings. Based on the analysis, it was revealed that assistant quantity surveyors were the highest designations involved in employment disputes, accounting for 11.11% of the cases.

The following sections elaborate employee turnover determinants through the adoption of thematic analysis approach.

### EMPLOYEE TURNOVER DETERMINANTS

#### Organisation Determinants

#### 1. Organisation Management

Among the 23 court case proceedings, three cases were due to organisational management, in which there was a lack of effective communication regarding the organisation’s procedures and policies. For instance, in one particular case there was a lack of proper communication regarding the procedures, whereby the employee misunderstood the content of the Work Ethics Commitment (IC3) document. As a result, the employee refused to endorse the document because the employee was suspicious of the organisation’s behaviour as no prior discussions were initiated regarding the matter. Another issue that surfaced was due to the restructuring of the organisation. In this case, having prior discussions with the employees regarding the restructuring process could have shown that the employees were important to the organisation (IC8), thus making them feel

empowered. Therefore, failure to discuss the restructuring of the organisation with the employees was identified as a factor resulting in employee turnover.

In addition, there was one case that occurred due to a transfer issue. The current information indicates that organisations have the prerogative to transfer an employee even if there was no valid reason provided (IC9). Therefore, it is considered good practice to include the transfer clause in the employment contract

#### Human Resources Management Determinants

##### 1. Performance Management

A total of nine cases which resulted in employee turnover were due to performance management. The result indicates that the managerial level of the organisation should consider effective performance management strategies to evaluate the performance of their employees. For instance, two cases, IC5 and IC6, highlighted the need for improvement in performance management.

In addition, one case identified the importance of the performance evaluation procedure during the probationary period involving new employees (IC14). Hence, a recommendation was proposed to consider the probationary period clause as part of the employment terms in the contract. Subsequently, it was also proposed that this term was communicated to the employees to avoid misinformation. In a separate case, the employment decided that the organisation had the prerogative to determine the status of the employee was not determined at the end of the probationary period (IC15). The court determine the status of employees at the end of their probationary period.

Another issue was related to the suitability of the person evaluating the employee's performance. One case indicated that the employee's immediate superior was deemed to be the most suitable person to perform the evaluation (IC10). Furthermore, it was concluded that only the superiors would be able to provide critical feedback on their subordinates' performance.

The final issue identified in performance management was the lack of proper performance evaluation documentation. For instance, two cases demonstrated the importance of proper performance evaluation documentation (IC15, IC17) which included the preparation of essential documents relating to promotions or any disciplinary actions taken by the organisation.

There were also two cases that specified the performance evaluation management involving employees who were directly involved in the construction project (IC4, IC18). In determining the cause of the construction project failure, all the construction disciplines were expected to bear the responsibility for the project failure based on their field of expertise. Therefore, no single discipline was expected to bear the responsibility alone (IC4). Hence, it is evident that the performance of all the construction disciplines contributes to the success of the project. Furthermore, the client has the right to insist on the replacement of employees in order to improve the construction project performance and meet the expected project deadline (IC18). Interestingly, the findings indicated in IC4 acknowledged the principles of a good conscience, in which fair employment practices should be considered during a performance evaluation.

##### 2. Employee Engagement

Two cases on employee engagement were identified due to their working relationship. In the first case, the poor relationship between colleagues resulted in employee turnover (IC10), while the second case was due to poor working relationships with the superior (IC11), thereby confirming the indirect effect of negative work performance on employee turnover.

#### Personal Determinants

##### 1. Employee Ability and Attitude

Three cases were identified based on the employees' abilities. Overall, the data showed that the employees could negatively affect the organisation through their counterproductive work behaviour. This finding was observed in three cases identified as LMD-U, IC2, and IC19. For instance, the employee was found guilty of embezzling the carnival money entrusted to him by the organisation, thereby indicating that the employee was not transparent in carrying out his work (LMD-U). In the second case, IC2, the employer lodged an action against the employee due to allegations of mismanagement which caused the organisation to shut down. Lastly, in the case of IC19, the employee was found guilty of misusing the organisation's assets for his personal business. These findings indicate that the organisation may need to perform an evaluation of employees to identify and correct negative attitudes and therefore enhance the management of the organisation.

TABLE 3. Court cases content analysis review findings

Discipline	Profession	No. of Employees		%		Case Code	Organisation			Personal			External					
		LMD	e-IC	Total	Designation		Discipline	OM	PM	EE	EA	HI	C	EC	LE			
Engineering	Mechanical and Electrical Engineer	1	-	1	3.70%	40.74%	LMD-E									√		
	Civil & Structural Engineer	-	1	1	3.70%		IC3	√										
	Assistant Engineers	1	-	1	3.70%		LMD-E										√	
	Assistant Instrument Engineers	-	1	1	3.70%		IC11	√	√						√			
	Trainee Engineer	-	1	1	3.70%		IC1										√	
	Engineering Manager	-	1	1	3.70%		IC2			√								
	Engineer	-	1	1	3.70%		IC13				√							
	Process Engineer	1	-	1	3.70%		LMD-T										√	
	Senior Piping Drafter	-	1	1	3.70%		IC7					√						
	Resident Engineer	-	1	1	3.70%		IC6	√										
	Project Engineer	-	1	1	3.70%		IC16										√	
	Project Manager	1	-	1	3.70%	29.63%	LMD-U				√						√	
	Project Management	Property Manager	-	1	1	3.70%		IC12										√
Property & Construction Manager		-	1	1	3.70%		IC14	√										
Construction Manager		-	1	1	3.70%		IC18											
Technical Manager		-	1	1	3.70%		IC15	√										
Production Operations Executive		-	1	1	3.70%		IC10	√	√									
Senior Facilities Services Coordinator		-	1	1	3.70%		IC8	√										
Assistant Quantity Surveyors		3	-	3	11.11%	18.52%	LMD-E										√	
Quantity Surveyors		-	1	1	3.70%		IC5		√								√	
Land Surveyor		1	-	1	3.70%	3.70%	LMD-L			√							√	
Assistant Interior Designer		-	1	1	3.70%	3.70%	IC17				√							
Senior Landscape Architect		-	1	1	3.70%	3.70%	IC19							√				
Total		-	-	27	100.00%	100.00%												

OM=Organisation Management, PM=Performance Management, EE=Employee Engagement, EA=Employee Ability, HI=Health Issue, C=Commitment, EC=Environment & Cultural, LE=Living Environment

## 2. Health Issue

Health issues were also identified as a factor in employee turnover. For instance, as observed in IC7, health problems resulted in poor performance and commitment towards work, and therefore contributed to employee turnover.

## 3. Other Factor

Two cases were shown to be related to commitment, in which the employee turnover occurred as a result of poor commitment to work (IC11). For the second case, IC13, the lack of attachment to the organisation (known as affective commitment) resulted in a lack of feelings of obligation towards his work.

### External Determinants

#### 1. Environment and Cultural

Harassment was also identified as a factor in employee turnover. As shown in IC1, the employee was found guilty of verbally harassing his female colleagues, thereby indicating that gender harassment and poor employee attitudes were the causes of employee turnover.

#### 2. Living Environment

The living environment based on the economic situation was also a factor in determining employee turnover. A total of six cases were found to be associated with unpredictable economic situations caused by two main reasons, namely financial problems and redundancy issues. Three cases, identified as LMD-E, LMD-L, and LMD-T, cited reasons due to financial problems, while LMD-E indicated that the employer failed to comply with the employment contract term and failed to pay the salary as previously agreed. Thus, these factors subsequently affected the employees' motivation to work due to the breaching of the employment contract by the employer. For the LMD-L case, employee turnover was due to financial problems within the organisation. Therefore, the court had ordered that the salary payments were made despite the financial issues faced by the organisation. As for LMD-T, there were problems within the organisation's management, which resulted in them failing to keep their promises and failing to pay the employee termination benefits as previously agreed.

Redundancy was also identified as a factor associated with the living environment. This issue was due to the financial situation of the organisation based on its failure to adapt to the challenging economic conditions. Three cases cited redundancy as the main reason for employee turnover. In IC5, the organisation's action of closing the quantity surveying department resulted in the subsequent termination of employment. Similarly, changes in the building ownership resulted in the need for an in-house property management service as observed in the case of IC12. Another reason was related to the changes in the global oil price (IC16). It is evident that unpredictable economic situations as mentioned

in this study cannot be avoided, and hence the organisation must effectively minimise its capital outflows by removing invaluable resources to sustain itself in the business environment. Unfortunately, in these three cases the best solution was to terminate employees who were no longer of benefit to the organisation.

## DISCUSSION

The objective of the study was fulfilled through the identification of employee turnover determinants with a focus on the construction industry and professionals working in this industry. Data collection was performed based on two databases containing employment disputes in Malaysia, namely the LMD and e-Industrial Court. This study was also based on a proposed conceptual framework developed previously to achieve the study objective. Overall the current findings of the study support the proposed conceptual framework, although attention should be given to the new perspectives identified in this study regarding the determinants of employee turnover involving construction professionals.

### Organisation Determinants

#### 1. Organisation Management

The determinants relating to organisation management are based on three sub-themes. For instance, the organisation's management role was relevant in determining employee turnover as identified for cases IC3, IC8, and IC9. This finding was consistent with previous studies that emphasised the need for effective organisation management to reduce employee turnover issues (Ciby, 2016; Frufrek & Pansanato, 2015; McGilton et al. 2014; Sang et al. 2009) which include the implementation of proper management procedures (Merchant & Whiting, 2015; Yang et al. 2017).

#### 2. Human Resources Management-Performance Management

It was also observed that employee turnover due to performance management was based on a lack of detailed procedures. This finding was in contrast to previous studies in the IT and healthcare industries, in which professional employees were thought to expect a reward in return for their performance (Derycke et al. 2010; Frufrek & Pansanato, 2015). The reason that can be depended is that construction organisations in Malaysia have a lack of procedures that lead to employment disputes; this can be seen through observation of the data. This is substantiated by the pattern of labour court cases in the Malaysian construction industry that have increased for nine years, with 14,003 cases overall in the construction industry and 1,264 cases involving young professionals (Mohd Kasmuri et al. 2018). Therefore, from the perspective of Malaysian construction professionals rewarding performance seems unimportant compared to clear procedures of performance management.

### 3. Human Resources Management-Employee Engagement

Employee engagement was also cited as a factor in two court case proceedings. This finding highlights the importance of the work environment in which positive working relationships within the organisation should be cultivated. Due to reasons such as a colleague's and leader's poor attitude, employees will exhibit poor work performance and consequently decide to leave the organisation. Previous findings have also indicated that the working relationships within the organisation were an important factor in reducing employee turnover (Dawson et al. 2014; Frufrek & Pansanato, 2015; McGilton et al. 2014; Merchant & Whiting, 2015; Noguchi-Watanabe et al. 2016; Ying-Yi et al. 2018). Based on these findings, it can be concluded that positive working relationships link to employee turnover regardless of industry settings and locality.

#### Personal Determinants

As mentioned previously, employee turnover is caused by several personal determinants, in which three factors were identified in this study. The first factor is employee ability which relates to poor attitudes displayed by the employee, also known as counterproductive behaviour. This behaviour causes harm to other employees and the organisation. This finding, however, was not previously described in the framework. Secondly, health issues were identified as a factor that affected employees' performance and commitment to work, thereby resulting in employee turnover. This finding has not been mentioned in previous research, however the association with poor performance (Chan et al. 2018) and physical exhaustion (Yang et al. 2017) would adversely affect the intention to stay. Finally, commitment was identified as a factor, in which the lack of affective commitment was shown to result in employee turnover. As compared to previous studies, all three commitment types were shown to contribute to employee turnover (Riddell, 2010), although their differences did not affect employee turnover directly. In addition, this study showed the indirect relationship between commitment and employee turnover. For employees with poor attitudes, this study substantiates claims by previous research indicating that commitment may influence employee turnover through its mediating role. For instance, commitment may retain employees through the role of employee satisfaction (Riddell, 2010).

#### External Determinants

Based on the literature studies, a variety of perspectives were expressed regarding the external determinants of employee turnover. These include job alternatives, living environment, and other personal reasons, although a different perspective associated with the living environment was highlighted in this study. This study, however, is unable to confirm all the previous findings associated with external determinants. Nevertheless, the new findings identified in

this study provide new insights into employee turnover through the identification of issues such as the organisation's financial problems and redundancy issues.

### CONCLUSIONS

Construction projects require good project management to meet the requirements of the client. Hence, the retention of competent personnel within the organisation is essential for the completion of a project. Several factors affecting employee turnover have been identified in this study and were classified based on organisational, personal, and external determinants. However, the current findings reveal several inconsistencies compared to previous studies concerning aspects such as human resources management (training and development, and compensation), personal (stress and job satisfaction), and external determinants.

Nevertheless, it should be noted that this study has some limitations. Firstly, the literature review described in this study was based on various industries worldwide with different characteristics. Secondly, the data obtained in this study focusses only on professional employees in the construction industry in Malaysia. Hence, the findings from this study can be utilised for the construction industry or other similar industries, although more occupational groups should be considered, to obtain a more generalised outcome.

### ACKNOWLEDGEMENT

The authors would like to thank Universiti Teknologi MARA, Malaysia for supporting this research.

### DECLARATION OF COMPETING INTEREST

None

### REFERENCES

- Alaghbari, W., Kadir, M. R. A., Salim, A., & Ernawati. 2007. The significant factors causing delay of building construction projects in Malaysia. *Engineering, Construction and Architectural Management* 14(2): 192–206.
- Awais, M. 2016. Impact of Human Resource Management Practices (HRM) on performance of SMEs in. *International Journal of Management, Accounting and Economics* 3(11): 699–709.
- Barreto, U., Pellicer, E., Carrión, A., & Torres-Machí, C. 2017. Barriers to the professional development of qualified women in the peruvian construction industry. *Journal of Professional Issues in Engineering Education and Practice* 143(4): 05017002(1-10).
- Boxall, P., Purcell, J. & Wright, P. 2007. *The Oxford Handbook of Human Resource Management*. Oxford: Oxford University Press.
- Bronson, D. E., & Davis, T. S. 2012. *Finding and Evaluating Evidence. Systematic Reviews and Evidence-Based Practice*. (T. Tripodi, Ed.). New York: Oxford University Press.
- Castanheira, F., & Story, J. 2016. Making good things last longer: The role of savoring. *Human Resource Management* 55(6): 985–1000.

- Chan, I. Y. S., Leung, M. Y., & Liang, Q. 2018. The roles of motivation and coping behaviours in managing stress: Qualitative interview study of Hong Kong expatriate construction professionals in mainland China. *International Journal of Environmental Research and Public Health* 15(3): 1–24.
- Chih, Y., Kiazad, K., Cheng, D., Emamirad, E., & Restubog, S. L. 2018. Interactive effects of supportive leadership and top management team's charismatic vision in predicting worker retention in the Philippines. *Journal of Construction Engineering and Management* 144(10): 04018095.
- Ciby, M. 2016. Workplace bullying : Prevalence and effects on turnover intention & physical health among information technology professionals in India. PhD Thesis, Pondicherry University.
- Dawson, A. J., Stasa, H., Roche, M. A., Homer, C. S. E., & Duffield, C. 2014. Nursing churn and turnover in Australian hospitals: Nurses perceptions and suggestions for supportive strategies. *BMC Nursing* 13(1): 1-10.
- Derycke, H., Vlerick, P., Burnay, N., Declaire, C., D'Hoore, W., Hasselhorn, H. M., & Braeckman, L. 2010. Impact of the effort-reward imbalance model on intent to leave among Belgian health care workers: A prospective study. *Journal of Occupational and Organizational Psychology* 83(4): 879–893.
- Dixon-Woods, M., Agarwal, S., Jones, D., Young, B., & Sutton, A. 2005. Synthesising qualitative and quantitative evidence: A review of possible synthesising qualitative and quantitative evidence : a review of possible methods. *Journal of Health Services Research & Policy* 10(1): 45–53.
- Fletcher, L., Alfes, K., & Robinson, D. 2016. The relationship between perceived training and development and employee retention: the mediating role of work attitudes. *The International Journal of Human Resource Management* 29(18): 2701–2728.
- Frufrek, G. L., & Pansanato, L. T. E. 2015. Employee turnover: An analysis of Brazilian software development professionals. *8th IADIS International Conference on Information Systems, IS 2015*, (January 2015), 145–152. 8
- Furtado, L. C. do R., Batista, M. da G. C., & Silva, F. J. F. 2011. Leadership's impact in turnover and career abandonment intention: The Azorean Hospital Nurses Case. *Hospital Topics* 89(3): 51–58.
- Gardiner, M., Kearns, H., & Tiggemann, M. 2013. Effectiveness of cognitive behavioural coaching in improving the well-being and retention of rural general practitioners. *Australian Journal of Rural Health* 21(3): 183–189.
- Government of Malaysia. Employment Act 1955, Attorney General Chambers of Malaysia 2012.
- Hee, C. H. S., & Ling, F. Y. Y. 2011. Strategies for reducing employee turnover and increasing retention rates of quantity surveyors. *Construction Management and Economics* 29(10): 1059–1072.
- Heponiemi, T., Presseau, J., & Elovainio, M. 2016. On-call work and physicians turnover intention: The moderating effect of job strain. *Psychology, Health and Medicine* 21(1): 74–80.
- Jeon, L., & Wells, M. B. 2018. An organizational-level analysis of early childhood teachers' job attitudes: Workplace satisfaction affects early head start and head start teacher turnover. *Child and Youth Care Forum* 47(4): 563–581.
- Jones, S. M., Ross, A., & Sertysilisik, B. 2010. Testing the unfolding model of voluntary turnover on construction professionals. *Construction Management and Economics* 28(3): 271–285.
- Kaewsri, N., & Tongthong, T. 2011. An investigation of women engineers in non-traditional occupations in the Thai construction industry. *Australasian Journal of Construction Economics and Building* 11(2): 1–21.
- Kay, F. M., Alaries, S., & Adjei, J. 2013. Leaving private practice: How organizational context, time pressures, and structural inflexibilities shape departures from private law practice. *Indiana Journal of Global Legal Studies* 20(2): 1223–1260.
- Kiang, L. H., Jauhar, J., & Haron, H. 2014. Brain drain: The determinants of migrant intention of professional engineers in Penang. *International Journal of Organizational Analysis* 7(2014 Special issue): 114–124.
- King, N., Price, A. D. F., & Dainty, A. R. J. 2004. Strategic approaches to managing human relations within construction SMEs. In *20th Annual ARCOM Conference* 1: 505–512.
- Kusui, Y., Yamazaki, T., Yamada, T., Hamada, M., Ueshima, K., Tajima, K., & Sokejima, S. 2017. Worker resignation due to patient nuisance in hospitals: Determinants and prevention. *Archives of Environmental and Occupational Health* 72(1): 10–19.
- Kutney-Lee, A., Wu, E. S., Sloane, D. M., & Aiken, L. H. (2013). Changes in hospital nurse work environments and nurse job outcomes: An analysis of panel data. *International Journal of Nursing Studies* 50(2): 195–201.
- Leung, M., Liang, Q., & Chan, I. Y. S. 2017. Development of a Stressors–Stress–Performance–Outcome Model for Expatriate Construction Professionals. *Journal of Construction Engineering and Management* 143(5): 04016121(1-11).
- Leung, M., Yu, J., Lin, M., & Chong, A. 2016. Effects of Stress and Commitment on the Performance of Construction Estimation Participants in Hong Kong 142(Cox 1993): 1-10.
- McGilton, K. S., Boscart, V. M., Brown, M., & Bowers, B. 2014. Making tradeoffs between the reasons to leave and reasons to stay employed in long-term care homes: Perspectives of licensed nursing staff. *International Journal of Nursing Studies*, 51(6): 917–926.
- Memon, M. A., Salleh, R., & Baharom, M. N. R. 2016. The link between training satisfaction, work engagement and turnover intention. *European Journal of Training and Development* 40(6): 407–429.
- Memon, M. A., Salleh, R., Nordin, S. M., Cheah, J.-H., Ting, H., & Chuah, F. 2018. Person-organisation fit and turnover intention: the mediating role of work engagement. *Journal of Management Development* 37(3): 285–298.
- Merchant, L. V., & Whiting, J. B. 2015. Challenges and Retention of Domestic Violence Shelter Advocates: a Grounded Theory. *Journal of Family Violence* 30(4): 467–478.
- Mohd Kasmuri, S. H., Ismail, Z., Nordin, R. M., Hashim, N., Ndekugri, I. E., & Abd Rahman, M. R. 2018. A Framework for Malaysian Construction Industry Young Professionals (CIYPs) Contractual Employment Contract : A Conceptual Paper. *International Journal of Engineering & Technology* 7(4.22): 120–125.
- Nguyen, H. T., & Hadikusumo, B. 2017. Impacts of human resource development on engineering , procurement , and construction. *Built Environment Project and Asset Management* 7(1): 73–85.
- Nguyen, L. D., Ogunlana, S. O., & Lan, D. T. X. 2004. A study on project success factors in large construction projects in Vietnam. *Engineering, Construction and Architectural Management* 11(6): 404–413.

- Noguchi-Watanabe, M., Yamamoto-Mitani, N., & Takai, Y. 2016. How does collegial support increase retention of registered nurses in homecare nursing agencies? A qualitative study. *BMC Nursing* 15(1): 1–8.
- Rahman, I. A., Memon, A. H., & Karim, A. T. A. 2013. Significant Factors causing cost overruns in large construction projects in Malaysia. *Journal of Applied Science* 13(2): 286–293.
- Rana, M. H., & Malik, M. S. 2014. Impact of human resource (HR) practices on organizational performance: Moderating role of Islamic principles. *International Journal of Islamic and Middle Eastern Finance and Management* 10(2): 186–207.
- Riddel, K. C. 2010. An Analysis of Factors That Influence Air Force Civil Engineer Grade Officer Turnover Intentions. PhD Thesis, Air University.
- Rothman, I., & Cooper, C. L. 2015. *Work and Organizational Psychology*. (G. Davey, Ed.) (Second Edi). London and New York: Routledge.
- Sambasivan, M., Deepak, T. J., Salim, A. N., & Ponniah, V. (2017). Analysis of delays in Tanzanian construction industry: Transaction cost economics (TCE) and structural equation modelling (SEM) approach. *Engineering, Construction and Architectural Management* 24(2): 308–325.
- Sang, K. J. C., Ison, S. G., & Dainty, A. R. J. 2009. The job satisfaction of UK architects and relationships with work-life balance and turnover intentions. *Engineering, Construction and Architectural Management* 16(3): 288–300.
- Selvaraj, K., Hazeen, F., & Umarani, C. 2012. Study on engineers' retention in Indian construction industry. *Applied Mechanics and Materials* 174–177: 2778–2781.
- Selvaraj, K., & Umarani, C. 2012. Retention indicator for engineers migration in construction industry. *Applied Mechanics and Materials* 174–177: 2787–2792.
- Van Bogaert, P., Timmermans, O., Weeks, S. M., Heusden, D. van, Wouters, K., & Franck, E. 2014. Nursing unit teams matter: Impact of unit-level nurse practice environment, nurse work characteristics, and burnout on nurse reported job outcomes, and quality of care, and patient adverse events-A cross-sectional survey. *International Journal of Nursing Studies* 51(8): 1123–1134.
- Xiao, Y., & Watson, M. 2017. Guidance on Conducting a Systematic Literature Review.
- Yang, F., Li, X., Zhu, Y., Li, Y., & Wu, C. 2017. Job burnout of construction project managers in China: A cross-sectional analysis. *International Journal of Project Management* 35: 1272–1287.
- Ying-Yi, C., Kiazad, K., Cheng, D., Emamirad, E., & Restubog, S. L. 2018. Interactive effects of supportive leadership and top management team's charismatic vision in predicting worker retention in the Philippines. *Journal of Construction Engineering and Management* 144(10): 04018095.

## NOTES

- <sup>1</sup> Permission from the Department of Labour Peninsular Malaysia, Headquarters, Ministry of Human Resources, Federal Territory of Putrajaya.
- <sup>2</sup> Permission from the Department of Industrial Relations Malaysia, Headquarters, Ministry of Human Resources, Federal Territory of Putrajaya.
- <sup>3</sup> Discussions took place at the Department of Industrial Relations Malaysia, Headquarters, Putrajaya on 28<sup>th</sup> January 2019.
- <sup>4</sup> The system can be accessed through [www.mp.gov/en/](http://www.mp.gov/en/)