# MODELLING THE RELATIONSHIP BETWEEN PSYCHOLOGICAL CLIMATE FACTORS AND ORGANIZATIONAL PROFITABILITY IN CONSTRUCTION ORGANIZATION

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# MODELLING THE RELATIONSHIP BETWEEN PSYCHOLOGICAL CLIMATE FACTORS AND ORGANIZATION PROFITABILITY IN CONSTRUCTION ORGANIZATION

**by**

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| | |
|---|---|
| RBV | Resource Based View |
| CRV | Content Validity Ratio |
| EE | Employee Engagement |
| EFA | Exploratory Factor Analysis |
| EI | Employee Involvement |
| HRM | Human Resource Management |
| JA | Job Autonomy |
| JE | Job Engagement |
| OE | Organizational Engagement |
| OP | Organizational Profitability |
| PF | Performance Feedback |
| PC | Psychological Climate |
| RC | Role Clarity |
| ROA | Return On Assets |
| RPE | Revenue Per Employee |
| RR | Reward and Recognition |
| SC | Sense of Contribution |
| SET | Social Exchange Theory |
| SHRM | Strategic Human Resource Management |

| | |
|---|---|
| SM | Supportive Management |
| TD | Training and Development |
| VAPE | Value Added Per Employee |

**MODEL HUBUNGAN ANTARA PERSEKITARAN PSIKOLOGI DAN KEUNTUNGAN ORGANISASI DALAM FIRMA PEMBINAAN**

## ABSTRAK

Kajian ini membangunkan dan menguji model perkaitan perantara yang menerangkan perhubungan antara faktor persekitaran psikologi dan keuntungan organisasi. Model ini diuji dalam konteks pekerja profesional kumpulan syarikat pembinaan G7 di Pulau Pinang, Malaysia. Setelah selesai kajian rintis, dengan menganggarkan kadar maklumbalas sebanyak 25%, sejumlah 980 soal selidik diedarkan kepada 49 syarikat pembinaan. Sejumlah 441 (45%) borang soal selidik telah dikumpulkan. Maklumbalas yang dapat digunakan ialah sebanyak 294, iaitu bersamaan dengan 30% kadar maklumbalas. Menggunakan Pakej Statistik untuk Sains Sosial (SPSS) versi 23, prosedur analisis awal kebagusan penyesuaian pengukuran, yang meliputi penilaian korelasi Item-ke-Jumlah, Cronbach Alpha dan Analisis Faktor Eksploratori telah dijalankan. Akhir sekali, hipotesis yang telah dibangunkan untuk mengkaji hubungan antara pembolehubah dan peranan perantara dalam cadangan model kajian telah diuji. Berdasarkan keputusan, latihan dan pembangunan adalah satu-satunya faktor persekitaran psikologi yang tidak berkaitan dengan penglibatan pekerja. Perhubungan yang positif telah ditemui antara penglibatan pekerja dan keuntungan organisasi. Model ini menjalani ujian perantara dan hasil menunjukkan penglibatan pekerja sepenuhnya atau sebahagiannya menjadi perantara hubungan bagi kesemua faktor persekitaran psikologi dengan keuntungan organisasi, kecuali latihan dan pembangunan. Di akhir kajian, sumbangan teoritikal dan pengurusan dibincangkan.

# MODELLING THE RELATIONSHIP BETWEEN PSYCHOLOGICAL CLIMATE FACTORS AND ORGANIZATIONAL PROFITABILITY IN CONSTRUCTION ORGANIZATION

## ABSTRACT

The study developed and tested a model of mediation association that explains the relationship between psychological climate factors and organization profitability. The model was tested in the context of G7 group of construction companies' professional employees in Penang State, Malaysia. Upon completion of the pilot study, with estimating a response rate of 25%, a number of 980 questionnaires were distributed to 49 participating construction companies to be completed. A total of 441 (45%) questionnaires were collected. The usable responses were 294, implying a response rate of 30%. Utilizing the Statistical Package for Social Sciences (SPSS) 23, the goodness of measure analysis procedures, which include assessments of item-to-total correlation, Cronbach's Alpha and exploratory factor analysis indices were performed as a preliminary analysis. Finally, hypotheses that were developed to investigate the relationship between the variables and the mediator role in the model were tested. Based on the results, training and development was the only psychological climate factor that was not related to employee engagement. A positive relationship was also found between employee engagement and organizational profitability. The model underwent a mediation test and the result demonstrated that employee engagement fully or partially mediates all psychological climate factors and organizational profitability links, except

for training and development. Finally, theoretical and managerial contributions are discussed.

# INTRODUCTION

## 1.1 Introduction

An introduction to the whole research is the content of this chapter. It provides an insight to the research area by presenting general information about the whole study such as the reason for conduction, and how the investigation is undertaken. Sub topics of the chapter consist of: introduction, background, research problem, research objectives, research scope, research questions, rationale for the study, significance of the study, definition of variables, and organization of the research chapters.

## 1.2 Background

Increasing investment and employment in construction sector can be seen globally, in a way that the report published by Oxford Economics as shown in Figure 1.1, predicted that worldwide, infrastructure spending will grow from $4 trillion from that of 2012 to more than $9 trillion per year by 2025. Overall, about $78 trillion is expected to be spent globally between 2014 and 2025 (Oxford Economics, 2016). The market research conducted by Global Construction Perspectives, forecasts that 97.7 trillion USD will be spent on construction globally during the 2010-2020 decade, and the next decade will see a continuing shift towards Asia and other emerging markets where

rising populations, rapid urbanization and strong economic growth are drivers for construction (Oxford Economics, 2017).

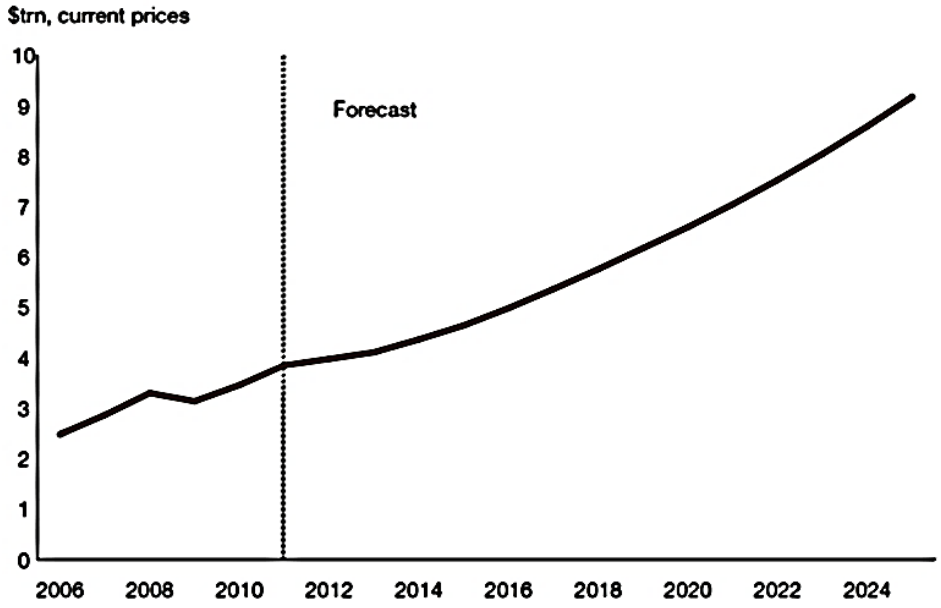


Figure 1.1: Capital project and infrastructure spending Outlook
Source: Oxford Economics (2017)

All these business investments and efforts in construction projects clearly highlight the increasing expectations of higher profitability and emerging new challenges to get ready for. Profitability is generally regarded as an important precondition for long-term business survival and success. In project-based organizations, it is critical to meet or exceed the planned profitability (Laffy and Walters, 2016). Project profitability represents the profit margin on projects and is extremely important especially on fixed-price projects, where project overruns can hit the bottom-line directly. However, due to increasing competition, improved efficiency, and pricing pressure,

construction projects are experiencing greater difficulties in attaining the expected profitability (Chen et al., 2016).

Labor performance has been found as a key to long-term growth (Dellink et al., 2017) and sustainable improvement in profitability (Hu and Liu, 2016). In fact labor performance and profitability are twinned and they both measure the ability of the organization to gain revenue (Laffy and Walters, 2016). Enormous competition, diversification potentials and most of all, shrinking profit margins demand more aggression in profitability of construction projects as in the other industrial contexts (Choi et al., 2013). On the other hand, construction industry compared to manufacturing is subjected to little standardization of work processes and methods. This multi-project industry is known as one of the most employee intensive, fragmented, time and cost overrun industry operating in adverse environmental conditions (Yeheyis et al., 2013), and under complicated public policy and economic impacts (Myers, 2013).

Meanwhile, construction industry is characterized by change and uncertainty (Ball, 2014). A rapidly changing economic environment, changing customer demands, and ever-increasing product-market competition have become the norm for these organizations (Thijssen, 2015). The rate of change in construction organizations is increasing with forces from external environments (e.g., demographic, economic, legal and regulatory, political, social, and technological) posing an unprecedented amount of threat to the profitability and competitiveness of construction organizations (Loosemore and

Lim, 2017). All these issues characterize the construction projects with higher labor inputs and low profitability (Pietrosemoli and Monroy, 2013). Thus, to compete in an ever-changing, increasingly-demanding economic environment, organizations must continually improve their financial performance by reducing input costs, and improving output values.

Today's construction projects are facing with a dynamic global business arena, and researchers agree that the project loss prevention and financial success is extremely important (Fulford and Standing, 2014; Shehu et al., 2014; Myers, 2013). The substantial changes in the business environment and increasing competition mean that organizations attempt to provide improved efficiency at lower costs through innovative processes (Finkel, 2015; Laffy and Walters, 2016). Employees are expected to sustain high quality performance with enhanced efficiency and productivity in virtually continual states of uncertainty and change. So they face with increasing pressure to undertake more work and to work longer hours (Zhou et al., 2015; Finkel, 2015).

Meanwhile, due to the very nature of construction projects such as industry fragmentation, employee turnover, limitations in supply and difficulties on maintaining professional employees, the profitability concept in construction project is very complex and improving it is not easy (Pietrosemoli and Monroy, 2013). Therefore, construction professionals, as industry's strategic resources, have become a serious challenging issue for the industry to prevent the profitability loss (Schleifer et al., 1014; Yoon et al., 2014). With

this disruption of external environments, construction organizations must develop internal strategies which are flexible and inclusive of strategic workforce for their retention and engagement, to boost the profitability (Harter et al., 2002; Laffy and Walters, 2016).

### 1.3 Malaysia in the context

Malaysia is a multi-ethnic and multi-cultural nation with the Malays being the dominant group. The current population of Malaysia is about 31.7 million in 2016, with 50.7% male and 49.3% female. The age distribution of the population in Malaysia shown in Figure 1.2 reflects that the density of population is in working ages.

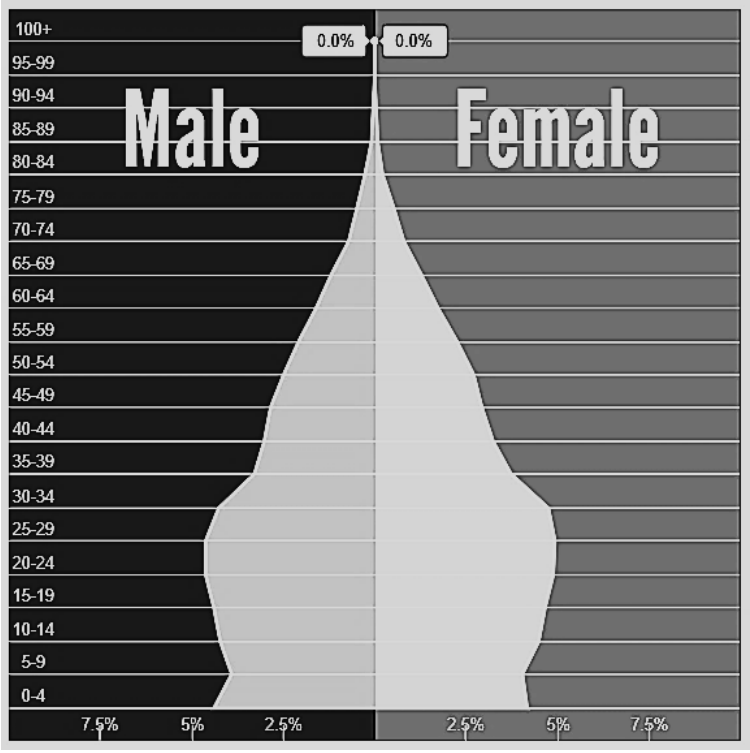


Figure 1.2: Density of population is in working ages in Malaysia
Source: Department of Statistics, Malaysia (DOSM, 2017)

Malaysia is actively working towards achieving a high-income status by 2020. This involves intensive transformation of the economic structure. Looking towards the 2020 target, the challenge is to sustain the impetus of robust growth. Specifically, according to the department of statistics Malaysia (DOSM), this requires average growth of 6.0 per cent in GDP per annum (DOSM, 2017). To achieve this target, the economic sectors including construction industry are to play significant roles.

In line with this target, the 11th Malaysia Plan (11MP) has laid out the Malaysia's government intention to introduce the further usage of information and communications technology (ICT) and innovative technology to ensure green practices are incorporated into developments. The government aims to increase the labor performance and productivity of the construction sector by 1.6 times, from RM39116 per worker in 2015 to RM61939 by 2020. To achieve this, the 11MP urges the sector to adopt construction methods that leverage technology and modernization, as well as increase the capabilities of low-skilled labor. The four construction-related strategies detailed in the 11MP's 'transforming construction' focus area cover enhancing knowledge content, driving productivity, fostering sustainable practices in the construction value chain, and increasing internationalization of the sector (DOSM, 2017).

According to the department of statistics Malaysia, the overall performance of the construction sector in 2015 recorded a positive growth in all key indicators. The gross output in 2015 was RM177.9 billion, an increase of RM86.6 billion as compared to 2010 with compound annual growth rate of

14.3 per cent. The number of persons working in the construction sector in 2015 amounted to 1,290,474 persons as compared to 974,488 persons in 2010 with an average growth of 5.8 per cent.

Women-owned establishments in construction sector accounted for 2,622 establishments with a share of 6.5 per cent and generated gross output of RM6.8 billion or 3.8 per cent share of the total sector in 2015, with a total of 56,822 persons amounting to 4.4 per cent share of the total workforce in the sector (DOSM, 2017). The construction industry development board (CIDB) which is the organization for enhancing capabilities and quality within the construction sector and emphasizing professionalism, innovation and knowledge, also reports that the contribution of the four states of Selangor, Johor, Wilayah Persekutuan, Sarawak, and Pulau Pinang, accounted for 75.6 per cent of the total value of construction work done in 2017 (CIDB, 2017).

In 2016, the number of contractors increased by 5.8 per cent to 72,246 (2015: 68,255 contractors). These contractors were categorized by grade, from Grade 1 (G1) to Grade 7 (G7). Grade G1 to G3 contractors form the largest portion of contractors at 77.3 per cent (55,850 contractors). Grade G4 and G5 contractors accounted for 11.3 per cent (8,154 contractors), while grade G6 and G7 contractors comprises of 10.8 per cent (7,795 contractors) of the total registered contractors. The number of registered foreign contractors does not show any significant change, accounting of only 0.6 per cent (447 contractors).

However, while the Malaysian construction sector plays a key role in the economy through its multiplier effect on other industries, and efficient performance of this industry is an essential building block of the socio-economic development to enable the growth of many other industries, compared to other economic sectors, construction industry keeps experiencing the lowest economic output per unit of labor, known as the labor productivity level (Table 2.1).

For example, according to Malaysia productivity corporation (MPC), construction sector showed RM11.92 revenue per hour which was higher than the RM10.53 recorded in 2014; while Malaysia's national revenue per employee per hour (RPE/h) was reported RM28.55 in that year (MPC, 2017). As a result the industry is facing with financial challenges, and as indicated on Table 3.5, the sectors' contribution to the Gross Domestic Products (GDP) was about 12 times smaller than that of the services sector, about 5 times smaller than that of the manufacturing sector, and about 2 times smaller than each one of the agriculture and mining sectors (DOSM, 2017).

Table 1.1: Construction labor productivity performance

| Main Economic Sector | RM | | |
|---|---|---|---|
| | 2014 | 2015 | 2016 |
| Agriculture | 54,924 | 53,676 | 55,485 |
| Manufacturing | 98,153 | 105,138 | 106,647 |
| Construction | 33,744 | 35,601 | 40,018 |
| Services | 64,246 | 66,328 | 68,166 |

Source: Malaysia Productivity Corporation (MPC, 2017)

Table 1.2: Percentage of the sectors contribution to GDB in 2017

| **Sector** | **Share 2017 (%)** |
|---|---|
| Agriculture | 8.7 |
| Mining | 8.0 |
| Manufacturing | 22.8 |
| Construction | 4.6 |
| Services | 54.4 |

Source: Department Of Statistics Malaysia (DOSM, 2017)

Malaysia's construction projects are suffering from cost overrun that represents the low profitability of the construction organization (Abdul-Rahman et al., 2013). This critical challenging issue in Malaysia is found to be due to the problems from which many have root in demotivated professionals (Muneera, and Naziah, 2015; Oladinrin and Ho, 2015; Razak et al., 2010).

This has been the reason for Malaysia's construction industry to face with a serious HR related challenging issue of professionals retention. Randstad (2014) reported 65 per cent are planning to leave their job in the next 12 months, and the major motive for the professionals leaving was better growth and career opportunities (Durdyev and Ismail, 2016; Razak et al., 2010; Oladinrin and Ho, 2015). This is while, the construction sector as a labor intensive industry, fundamentally relies on the skills of its workforce (Grifell-Tatje and Lovell, 2015; Koetter and Noth, 2013). Accordingly, the Malaysian construction industry is heavy reliant on its professional employees' knowledge and energy to provide the construction industry operations (Koetter and Noth, 2013; CIDB, 2017). In fact the country expects the majority of the

construction works to be carried out by the local professionals (Mohamad et al., 2015; Chin et al., 2018; CIDB, 2018).

Khan et al. (2014) argued that the Malaysian government has to focus on construction sector to qualify for the developed nation status. They add that, improvement of the profitability in Malaysian construction industry employing over one million people is essential to improve construction sector impetus for economic growth. Further, Kang et al. (2015) concluded that, Malaysian construction companies workforce activities need to be done on an atmosphere to gauge professional employees' satisfaction and strive toward creating a more conducive working environment.

In general, while a wealth of literature is available on the problems facing the construction industry globally, and showing a significant positive relationship between HRM practices and profitability (Tay, 2017), comparatively little research has been carried out by academics and practitioners on the human resource related financial performance of the local construction industry. Thus, there is not much information on human resource management (HRM) issues in Malaysia's construction sector. According to Kang et al. (2015), Malaysian construction companies have limited commitments in workforce and employment concerns.

## 1.4 Research problem

Several studies have shown that financial performance in the construction industry as a whole in comparison to other industries is

underachievement, and its continuous declining financial outcome is the most challenging issue in the industry (Hirschman, 2014; Dolage and Chan, 2014; Hashem et al., 2015; Shehu et al., 2014; Myers, 2013). It seems like the declining and unreliable rate of profitability in construction industry is structurally twinned with this industry's project management discipline, and has been a dominant issue that has not been addressed adequately (Myers, 2013; Finkel, 2015). Because, despite construction projects being financially under-performance (Myers, 2013; Hashem et al., 2015), and the importance of identifying the factors that contribute to this situation, it has been overlooked for decades (Dolage and Chan, 2014; Shehu et al., 2014), and the construction projects has lagged due to insufficient research in the area of profitability (Fulford and Standing, 2014).

At the same time, the frequently missing and underachievement of profitability targets had been worrying the construction industry and has made it to search for a way out of the misery (Ball, 2014; Grifell-Tatje and Lovell, 2015). The industry has tried out different measures to have profit targets in control, and came up with employee performance and productivity as a way of addressing the issue due to its direct relationship with loss prevention and project profitability (Marrero et al., 2017; Mulva and Dai, 2012; Koetter and Noth, 2013). Thus, owing to its significance to the profitability of construction projects, employee performance and productivity is regarded as a relentlessly discussed topic in the construction industry by both practitioners and

researchers (Myers, 2013; Hashem et al., 2015; Shehu et al., 2014; Pietrosemoli and; Koetter and Noth, 2013; Choi et al., 2013).

It should be noted that, in an organization, all jobs are not the same and some are more valuable (strategic) than others. Strategic human resource management (SHRM) focuses on strategic capabilities and strategic jobs as the focal point of workforce management system and represents professional employees as the significant potential source of value adding and wealth-creating for businesses (Knies et al., 2015; Becker and Huselid, 2010). Thus, attracting, selecting, developing, retaining and engaging professional employees holding strategic jobs represent a very significant investment for the organizations (Becker and Huselid, 2010).

The relationship between SHRM and a firm's financial performance has been extensively studied in human resource journals and literature, while very little information is available on its application to the construction industry (Langford et al., 2014; Knies et al., 2015). However, the available studies have found poor SHRM, professional employees' disengagement issues causing their impaired performance and productivity, to be the major reasons for cost overruns resulting in profitability drop to be a twinned challenging issue with construction industry (Finkel, 2015; Hashem et al., 2015; Hirschman, 2014).

On the other hand, engagement is emphasized because, disengaged employees can be a serious liability, causing employees to quit, underperform,

impose excess costs, create widespread loss, and negatively impact profitability (Macey and Schneider, 2008; Fulford and Standing, 2014; Shehu et al., 2014; Myers, 2013). This is while firstly, engagement itself is a construct that lacks studies on its antecedent and consequence (Bailey et al., 2017). Secondly, professionals engagement has not been well investigated (Graban, 2016; Saks, 2017). Thirdly, the mechanism through which PC factors affect the OP is absent in the literature (Boedker et al., 2017; Lee, 2015; El-Halwagi, 2017). Finally, there are calls for more scholarly research by developing a conceptualization of engagement as it functions at both job and organizational level of analysis (e.g. Barrick et al., 2015; Sacks, 2017).

To overcome the professional employees' disengagement issues, studies have come up with a desirable psychological climate (PC) to create an atmosphere that satisfies these employees' long term and higher level needs (Fewings, 2013), resulting in highly engaged professionals (Macey and Schneider, 2008; Harter et al., 2002; Saks, 2006; Lee, 2015; Saks,2014), who make a substantive contribution to their agency and may predict organizational financial success and profitability (Hartmann and Rutherford, 2015; Saks, Saks, 2017).

Hence, in order to fill the above mentioned gaps in the literature and based on the resource bases view and social exchange theories, the present study proposes a model which builds on and extends the literature by assuming that implementation of PC factors will provide an opportunity for organizations to achieve higher level of profitability through developing job and

organizational engagement among the professional employees. As such, to what extent the PC factors would enhance the organizational profitability (OP) through employee engagement (EE)? This leads the study to research objectives and questions.

## 1.5 Research objectives

Based on the statement of the problem that has been described above, this study mainly aims to assess the role of PC associated with the profitability of firms through professional employees' job and organizational engagement. More specifically, this study aims to achieve the following four objectives:

1. The underlining assumption of this study is that PC is a concept within the reach and control of contractors and their project management system. Therefore, to confirm the above mentioned argument, the present study seeks to reveal the relationships between PC factors and EE.

2. PC factors affect EE with different strengths. Knowing the PC components that are more influential on employees' attitude and behaviors to engender engagement within them, will help managers in recognizing the priorities, planning, decision making, and better allocation of resources (Hu and Liu, 2016). Accordingly, the study is interested in specifying the components of PC that have the strongest or weakest effect on EE.
3. Since EE has been shown to be instrumental in overall work performance, the study attempts to examine the effect of EE on OP.

4. PC may indirectly affect OP. The study is then interested in affirming the role of EE as the mediator in the link between perceived PC and OP.

## 1.6 Research questions

Theoretically, PC is an antecedent to EE (Lee, 2015; Macey and Schneider, 2008; Crawford et al., 2014) and they both are positively related to OP (George, 2015; Harter, 2002; Patterson et al., 2004). These lines of arguments have brought up such questions that the present study is intended to empirically answer. The questions are:

1) Do PC components have significant positive effect on EE?
2) Which PC factor has the strongest and weakest effect on EE?
3) Is EE significantly and positively related to OP?
4) Does EE mediate the relationship between PC and OP?

## 1.7 Research scope

Garner and Hunter (2013) found that PC relates positively to employees' attitudes and their subsequent behavior towards organizational interests. Thus, the scope of this research is to identify and test potential PC factors that positively affect the employee job and organizational engagement that ultimately result in profitability in construction organizations. In other words, the scope of the research is limited to the construction and their professional employee perception of PC to understand the mechanism that ties PC to OP.

## 1.8 Rationale for study

In old days, a great majority of industries around the world had hardly significant interest in spending or investing money on research and development (R&D) activities (Galbraith, 2015). Characterized with simpler customer requirements, less competition in the market, and limited access to knowledge and expertise, the construction industry specially experienced a little effort in R&D.

However, the last 3-4 decades have marked a total turnaround on the business environment in the wake of technological advancements and communication revolutions, to transform the R&D activity in business into one of the most important area of operations in industries as including construction industry (Mantoux, 2013). Both industrial and academic researchers were focused on the innovation and creativeness of the individuals to explore the enormous potentials in industries.

Research in the construction sector too, helped to find out and show up the true latent potentials within the industry with the innovations and creation of new technologies, tools, equipment developments, performance enhanced material inventions, process reengineering and crew capacity building approaches (Skibniewski and Zavadskas, 2013; Mantoux, 2013). However, the continuous time and cost overrun, declining profitability and comparatively low profitability growth rate, emergent HRM rather than strategic, and the need

to minimize the input and maximize the output, justify the effort in making the attempt in conducting this research.

As explained before, the mechanism through which the PC affect the OP is absent in the literature (Boedker et al., 2017). Besides, findings of the present study reveal the mechanism that explains the relationship between PC and OP of construction firms. Knowing this mechanism can help managers with better allocation of resources to improve the work process leading to better profitability. Also, having engaged workforce is expected boost profitability by enhancing their satisfaction and commitment, lowering intent to quit, reducing absence levels and going extra miles above and beyond task duties (Albrecht et al., 2015; Saks, 2017; Boedker et al., 2017).

## 1.9 Significance of study

Since 1980s, several researchers have conducted studies on the concept of profitability in the construction projects (Hu and Liu, 2016; Naoum, 2016; Ahmad et al., 2016; Altschuld, and Watkins, 2014). Although some studies such as, Naoum (2016) and Sepasgozar et al. (2016) argue that equipment technology represents a major factor to solve the construction industry's profitability problem, but they too, are utilized by employees and therefore, the key source of profitability decline in construction projects was found to be low performance of workforce (Hu and Liu, 2016; Chen et al., 2017).

As a result, the researchers confirmed that professional employees are the major driver of profitability (Boedker et al., 2017). Surveys carried out in

Europe and Australia (Boer et al., 2017), U.S. (Keynes, 2016), China (Liu et al., 2015), Chile (Rivas et al. 2011), Iran (Ghoddousi and Hosseini, 2012), Egypt (Hafez et al., 2014), also identified employee performance as the most important factor that can help to significantly improve the construction companies profitability.

Despite numerous investigations and valuable experiences, construction comparative profitability continued to decline, and delays, cost overruns and comparatively low profitability became the integral part and chronic illness of construction projects (Harris and McCaffer, 2013; Liu et al., 2015).

However, the present study assumes that this may be because, the mechanism through which professional employee affect profitability is still in ambiguity, and if identified, it will help the construction managers to implement a strategy that takes the employees to the point of psychological condition that are ready to go extra miles above and beyond their responsibility. The present study also has theoretical and practical contributions because of its attempt in:

a. *Contributing to the body of knowledge*

   The important part to note in this study is the concept of profitability that requires the employee willingness to stay and perform in the organization. First, the relationship between PC and OP has been repeatedly confirmed in books and articles (e.g. Mollaoglu et al., 2015; Mulva and Dai, 2012; Myers, 2013), but based on literature review to

date, the mechanism through which PC factors affect OP has not been empirically investigated before. Second, the term EE has gained considerable attention in recent years (Macey and Schneider, 2008), but not only the concept remains in need of more empirical research (Saks, 2006; 2014), but also it is absent in engineering and particularly in construction projects literature. This study creates knowledge, by proposing a new model relating the two concepts of profitability and EE to the PC factors.

*b. Producing more substantial evidence by using interdisciplinary focus*

While this study is purported to improve the profitability, the theoretical foundations are heavily drawn from the studies of project management, civil engineering, economics, SHRM, organizational behavior, individual psychology and social psychology. As having an interdisciplinary focus with multidisciplinary interests, this study will have key implications for both theories and practices of those areas. As stated by Sovacool (2014), interdisciplinary approach produces a better and more meaningful contribution to the area of investigation.

*c. Providing practical contribution*

This study highlights the essential function of resources in profitability. Expected profitability is not possible without workforce as essential function resources willingness to stay and perform in the construction organizations. According to Ehrenberg and Smith (2016), the cost of

hiring and training a new employee can vary from 25 per cent to 200 per cent of annual compensation.

Therefore, identification of PC factors which engender EE will provide a helpful tool for construction project management to allocate the financial and manpower resources more effectively towards motivating the employees and better profitability. Findings of this research enable the construction managers to formulate policies in a more strategic way that will lead the employee attitude and behaviors into the direction that assures high profitability. In addition, for the better allocation of resources, the study answers to managers need to know which factors yield the largest returns on profitability.

## 1.10 Organization of research

This research is presented in six chapters. The first chapter provides the study's introduction, background and the importance of profitability in the construction industry followed by the research problem, research objectives, research questions, and research scope. Finally, the rationale for study, significance of the research and definition of terms are presented.

The second chapter provides an overview of the OP, PC, and EE concepts. Further, the chapter describes psychological factors that positively influence OP and EE of construction projects. After the review of literature, multiple hypotheses are established. In summary, chapter two provides the

flesh to the body of this study in which it justifies and supports the subsequent stages of this research exercise.

Chapter Three provides information about the methods and procedures of study used to achieve the objective. This chapter provides background information of research methodologies and justification for the research methodology implemented for this research. This includes explanations and reasons for employing certain type of research design, method, instruments, data gathering method and statistical techniques used in the later stage of this study.

Chapter Four presents the results and findings of the survey, the field study, and the proposed project structure together with its application to the next study. The first important contents in chapter four are the explanations on results of pilot test and then, the results from the analysis of data are interpreted, both statistically and inferentially. All the raw data are analyzed and reported. Prior to data analysis, the purification and validation of the scales will be carried out.

Chapter five discusses the findings of research. The results are interpreted in light of the established theories, and literature review. An elaborate discussion on the findings of this study can be found in this chapter.

Chapter six is the conclusion of the study. This chapter offers recommendations for future research. The contribution and implications of this study also are included in this chapter.

## 1.11 Summary

In an increasingly competitive global business environment, what differentiates one industry from the other is the productivity and profitability. Customers increasingly demand better products in booming business. This current trend affects all category of industry, particularly the construction industry. This highlights studying the factors that could improve the productivity and profitability. Meanwhile, to stay competitive, construction companies must demonstrate high performance of their business operations that would point out to the effectiveness and efficiency of resource allocation and outflow. One of the options is to make the most efficient use of their professional employees at their most important asset. With that spirit in mind, this study is therefore undertaken. This chapter has set out the background of the research. It presents the research aim, objectives and questions and justifies the rationale of the thesis. In addition, the research approach is also introduced in this chapter.

# CHAPTER 2

# LITERATURE REVIEW

## 2.1 Introduction

The central aim of this chapter is to address the issue of developing an effective literature review by proposing a systematic approach that will lead to a quality research. In this chapter, the important concepts that serve as the backbone of the present study are theoretically and empirically discussed, and multiple researches related to the concepts are brought to light. Based on the preceding review of literature, some critical issues are then raised. A framework for factors, EE and project profitability in the construction industry is also introduced and relevant hypotheses are presented for the purpose of statistical testing.

## 2.2 Definition of Terms

Definitions of main variables under investigation from the perspective of the present study are as follows:

*Construction project management* is leading, managing and controlling all construction operations in a way that quality standards and safety requirements are met and construction projects are completed on-time and within budget (Meredith and Mantel Jr, 2011).

*Psychological Climate* is defined as perceptions of employees on how work environments are appraised and represented in terms of their meaning to and significance for individual employees' expectations, opportunities for promotion and their wellbeing in organizations (Munyaka et al., 2017; Patterson et al., 2004).

*Employee engagement* is a workplace approach resulting in the right conditions for all members of an organization to give of their best each day, committed to their organization's goals and values, motivated to contribute to organizational success, with an enhanced sense of their own well-being (Carmeli et al., 2017; Anitha, 2014).

*Job Engagement* is a distinct and unique construct consisting of emotional and behavioral components that are associated with individual role and beyond performance (Saks, 2017; Saks and Gruman, 2014).

*Organizational Engagement* is the desire to remain as a member of a particular organization that is translated in the form of willingness to conform to the organization values and exert effort for the good of the organization as a whole (Saks, 2006; 2017; Saks and Gruman, 2014).

*Organizational Profitability* is ratio of monetary output and input that shows company's ability to generate earnings relative to its expenses and other costs (Myers, 2013).