

Examining Differences in Motivation Factors between Generation X and Generation Y Construction Professionals in Hong Kong's Registered General Building Contractors

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Abstract This research attempts to examine whether motivation factor differences exist across generation X and Y construction professionals in Hong Kong's registered general building contractors (RGBC). Recent research demonstrated a paucity of studies on motivation factors of construction professionals of different generations. A thorough literature review was conducted to identify the motivation factors of construction professionals. The findings of the literature review form the base for the constitution of a survey questionnaire used to gather attitudes of both generation X and Y RGBC's construction professionals towards the identified motivation factors. 44 generation X and 65 generation Y RGBC's construction professionals returned the survey. The motivation factors of both generation X and Y RGBC's construction professionals are prioritised. By utilising Spearman's rank correlation, this research found that a weak correlation in the rankings of motivation factors exist across generation X and Y RGBC's construction professionals ($\rho = +0.31$). The hypothesis of this research was thus accepted, concluding that generation X and Y RGBC's construction professionals perceive motivation factors differently.

Keywords Motivation, Generation X, Generation Y, Construction Professionals

1. Introduction

1.1. Background

General building contractor is a people-reliant business. It manages thousands of in-house as well as outsourced workers on site for execution of a building development project, so successful operation of general building contractors is dramatically based on efficient people management [1]. One of the critical elements that composes efficient people management is motivation. With booming Hong Kong's construction industry over the past few years, general building contractors have a strong demand for construction professionals. Numerous new generation construction professionals have joined general building contractors. This generation is commonly referred to generation Y. With the generation Y workforce joining the general building contractors as construction professionals, the workplace has become multigenerational since three generations, namely, baby boomer, generation X and

generation Y, have converged in the workplace at the same time.

Public and private sectors typically set age 60-65 as the retirement age, according to Tong et al. [2], so the majority of baby boomer construction professionals will retire from work in the coming years. After the retirement of baby boomer construction professionals, both Generation X and Y construction professionals will become the major part of the construction professionals. Generation Y employees, different from other generation employees, have their own distinctive expectations and view on the corporate workplace [3]. Van Eck and Burger [4] believe the generation Y construction professionals have higher potential productivity since their levels of education are generally higher than that of generation X construction professionals. If the generation Y construction professionals can be adequately motivated, the organisational productivity will be significantly enhanced. A question of whether the factors that motivate generation X to work hard are the same with the factors that motivate generation Y to work hard arises. This question is crucial because high potential productivity can be unleashed if employers are able to recognise what factors can motivate generation Y construction professionals. However, limited research has been conducted on this topic; therefore, research in this regard is needed. General building

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contractors (RGBC) refer to the contractors that are registered as general building contractors in accordance with Building Ordinance (Chapter 123) in Hong Kong. RGBC is a major employer of construction professionals in Hong Kong. This research concentrates the motivation of generation X and Y construction professionals working in RGBC.

1.2. Aim and Objectives

The aim of this research is to examine whether motivation factor differences exist between generation X and Y RGBC's construction professionals. The research objectives are to:

1. Define motivation and generational cohorts, including generation X and Y
2. Review motivation theories and generational theories and evaluate their applications in the construction industry or the workplace
3. Identify and prioritise motivation factors of both generation X and Y RGBC's construction professionals
4. Analyse the priorities to find out whether there are differences between them
5. Discuss why there are differences or no differences between them

1.3. Hypothesis

The hypothesis of this research is that motivation factor differences exist across generation X and Y RGBC's construction professionals.

2. Literature Review

2.1. Motivation of Construction Professionals

2.1.1. Background and Definition of Motivation

Delery and Roumpi [5] state that human resource, which is able to enhance the competitive advantage of organization, is the most valuable organizational resources. Its quality is remarkably affected by motivation since the relationship between job performance and motivation is positive. Aiyetan and Olotuah [6] define motivation as an inner driver that pushes employees towards taking the initiative, continuously modifying solutions to problems and even inspiring others to perform better; Griffin and Moorhead [7], however, prefers describing motivation as an energy to describing it as an inner driver because each human, like a machine, requires fuel to function, but does not require the same type of fuel. Similarly, not every employee is motivated in the same way. Shurrah et al. [8] classify motivation into two types, namely, intrinsic and extrinsic motivation. Both can influence employee in parallel. Intrinsic motivation refers to an individuals' need to pride in something and feel competency, such as enjoyment and curiosity while extrinsic motivation refers to a desire to perform an activity in an effort to obtain explicit rewards, such as money and status, or avoid any punishment.

2.1.2. Motivation Theories in the Construction Industry

Navarro [9] searched various international peer-reviewed journals and conference proceedings about construction, engineering or project management between 1984 and 2009 and found 31 studies related to testing motivation theories in the construction industries of various countries. Navarro's [9] result is summarised in Table 1, which supports that Vroom's Expectancy Theory, Maslow's Hierarchy of Needs Theory and Herzberg's Two-factor Theory are the mainstream of the studies on examination of motivation theories in the construction industry [10,11] and that Vroom's theory is the most influential process theory in motivation research [12].

Table 1. Studies about Testing Application of Motivation Theories in the Construction Industries

Motivation Theories	Numbers of studies	%
Vroom's Expectancy Theory	12	39
Maslow's Hierarchy of Needs	6	19
Herzberg's Two-factor Theory	4	13
Maslow's Hierarchy of Needs and Herzberg's Two-factor Theory	9	29
Remark: Above data are abstracted from Navarro [9].		

In regard to Herzberg's Two-factor Theory, Parkin et al. [13] discovered that the pattern of the motivators and hygiene factors of the surveyed construction practitioners in Turkey, except salary, is generally consistent with Herzberg's theory. Salary is, however, excepted since it was found to be the most influential motivator for these practitioners. Several studies also found that salary was a motivator for the construction professionals in Nigeria [6], the engineers and forepersons in Thailand [14] and Jordan [15]. These findings challenge Herzberg's theory since Herzberg's theory emphasizes salary is not a motivator but a hygiene factor that is not able to enhance motivation.

Furthermore, Ruthankoon and Ogunlana [14] disclosed some motivators and hygiene factors for the engineers and forepersons in Thailand are bi-polar. Status, personal life, recognition are examples. This finding contradicts Herzberg's theory, which believes both motivators and hygiene factors are not polar opposites. Ruthankoon and Ogunlana [14] explain that this contradiction may be because the construction industry has many unique characteristics, such as temporary employment, tight schedule, labour-intensity and 3D (danger, dirt and difficulty), which especially impact employee motivation. Herzberg's theory, thus, is occasionally not applicable to the construction industries of some countries.

2.1.3. Motivation Themes for Classification of Motivation Factors

Motivation themes, which are composed of the motivation factors that have similar characteristics or nature, are commonly used to classify the motivation factors to be

analysed in studies about the motivation of employees [16]. Table 2 summarises the motivation themes adopted in nine studies published in the past twelve years about the motivation of construction professionals. Among these studies, the motivation themes adopted by Herman and Poon [17] and Herman et al. [18] are the latest and well explained and have the most themes, so this research mainly bases on these motivation themes and also refers the motivation

themes adopted in other eight studies to develop the motivation themes to be used in this research for classifying the motivation factors to be explored. The motivation themes developed in this research are physical and material provisions, growth and advancement opportunity, work nature, relations with others and fairness in organizational practices.

Table 2. Motivation Themes Adopted in the Reviewed Literature

Sources	Samples	Motivation themes adopted
[8]	Construction project managers in Jordan	Compensation, personal development, empowerment, general working conditions task and interpersonal interaction
[11]	Construction practitioners in Turkey	Economic, physical, organisational and socio-psychological factors
[16]	Construction practitioners in Canada	Job security, work objectivity, perceived equity, work climate and employee development
[17,18]	Quantity surveyors in Malaysia	Physical and material provisions, growth and advancement opportunity, work nature, relations with others and fairness in organizational practice
[19]	Local and foreign construction practitioners in Korea	Economic, social and psychological factors
[20]	Construction professionals in the UK	Drive, goal, relationship and incentives
[21]	Quantity surveyors in South Africa	The five needs indicated in Maslow's Hierarchy of Needs Theory
[22]	Construction professionals in Hong Kong	Affective commitment, Job performance and Job satisfaction

Table 3. Identified Motivation Factors of Construction Professionals

Factor no.	Motivation factors	Sources									
		[1]	[6]	[8]	[11]	[13]	[14]	[15]	[16]	[19]	[21]
MF1.1	Salary	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MF1.2	Job security	✓					✓	✓	✓	✓	✓
MF1.3	Performance-based financial incentives	✓	✓	✓					✓	✓	
MF1.4	Working conditions		✓		✓		✓		✓	✓	
MF1.5	Fringe benefits	✓	✓						✓	✓	
MF1.6	Resources to complete tasks			✓	✓			✓	✓		
MF2.1	Possibility of growth		✓	✓			✓	✓	✓	✓	✓
MF2.2	Personal learning	✓		✓	✓				✓	✓	
MF2.3	Encouraging and corrective feedback	✓					✓	✓	✓		✓
MF2.4	Responsibility		✓			✓	✓	✓		✓	
MF2.5	Job autonomy							✓	✓	✓	✓
MF3.1	Enjoyment from work	✓	✓			✓	✓	✓	✓		✓
MF3.2	Sense of achievement	✓	✓			✓	✓		✓	✓	
MF3.3	Challenge from work							✓	✓	✓	✓
MF4.1	Relationship with others	✓	✓	✓		✓	✓	✓	✓	✓	✓
MF4.2	Sense of recognition		✓	✓		✓	✓			✓	✓
MF4.3	Supportive supervision	✓			✓		✓	✓	✓		
MF5.1	Company policy		✓				✓		✓	✓	

2.1.4. Motivation Factors of Construction Professionals

Motivation factors are the factors that are able to motivate an individual to work harder [23]. The motivation factors of construction professionals vary with their experience [8,13] and culture [19]. For example, sense of achievement become more motivational to the project managers in Jordan when their levels of experience increase [8]. Herman and Poon [17] even point out the motivation factors of construction professionals vary with project stage as different project stages have different natures of work. Therefore, Al-Abbadi and Agyekum-Mensah [15] believe that not every construction professional is motivated in the same way. Nonetheless, the nationality of construction professionals does not affect their motivation factors because no major differences in motivation factors were found between local and foreign construction practitioners in Korea [19] and local and Chinese construction practitioners in Algeria [24]. Also, the gender of construction professionals in Melbourne does not impact their motivation and demotivation level [25]. Moreover, there is no relationship between working hours and motivational levels of construction professionals in Melbourne but a positive relationship between working hours and demotivation levels of construction professionals in Melbourne [1,25]. Through reviewing ten studies concerning investigating the motivation factors of construction professionals in different regions and countries, eighteen motivation factors of construction professionals are identified. In Table 3, these identified motivation factors and their sources are listed. A factor number is assigned to each motivation factor in Table 3 for easy reference.

The motivation themes for classification of the identified motivation factors of construction professionals were previously developed. MF1.1-1.6 are classified into physical and material provisions; MF2.1-2.5 are classified into growth and advancement opportunity; MF3.1-3.3 are classified into work nature; MF4.1-4.3 are classified into relations with others; and MF5.1 is classified into fairness in organizational practices.

i. Physical and material provisions (MF1.1-1.6)

Kazaz et al. [11] note that this theme contains a wide range of physical and material provisions obtained in the workplace. The factors under this theme can be found in the physiological needs of Maslow's Hierarchy of Needs Theory and hygiene factors of Herzberg's Two-factor Theory. Moreover, the performance-based financial incentives are in line with Vroom's Expectancy Theory. Bowen et al. [21] believe financial provisions have higher effectiveness than working condition, in term of the motivation of quantity surveyors.

ii. Growth and advancement opportunity (MF2.1-2.5)

This theme is composed of all factors that are beneficial to growth and advancement opportunities of construction professionals. Herman et al. [18] give some examples. Providing corrective feedback can help construction

professionals have a higher quality of work. Having a higher degree of autonomy and more responsibilities can help construction professionals to be ready for a higher position. Although the factors under this theme do not contribute to construction professionals' immediate benefits, each construction professional would like to have growth and advancement opportunity so as to get a job promotion, higher salary and more financial incentives and fringe benefits in future. This theme is in line with Vroom's Expectancy Theory.

iii. Work nature (MF3.1-3.3)

This theme comprises several motivation factors concerning job itself [18]. The job itself is critical in determining whether construction professionals are fulfilled with their current jobs. If the jobs are challenging and exciting, construction professionals may be satisfied with their jobs and in turns, are motivated to work. The esteem of Maslow's Hierarchy of Needs Theory and motivators of Herzberg's Two-factor Theory contain one or more motivation factors related to the work nature.

iv. Relations with others (MF4.1-4.3)

This motivation theme pertains to the relationship with those who are contacted in the workplace, such as the management, supervisors, peers, subordinates and other organisations [18]. Supervision, providing psychological and physical assistance, and recognition from others are dependent upon the relationship with others, so these two factors are also categorised into this theme. Woo and Soetanto [20] indicate that maintaining a good relationship with others and support from others can create a happy working environment, which is beneficial to the mental health of employees and leads to lower work pressure.

v. Fairness in organisational practices (MF5.1)

This motivation theme, which is concerned with the degree of fairness perceived in organisational practices [16], aligns Adam's Equity Theory. The motivation of construction professionals is subject to equity in the workplace. Equal organisational practices can be reflected in company policies. Company policies determine which elements contribute to promotions of construction professionals, whether fair treatment and equal opportunities in term of wages, fringe benefits, job duties and development, are ensured in organisation and whether the reasonable time is allocated to finish the assigned tasks. These company policies affect employees' sense of fairness.

2.2. Generation X and Y RGBC's Construction Professionals

Haeberle et al. [26] state different generational cohorts have their own group of aspirations, characteristics and perceptions on work, including job satisfaction, the effectiveness of recognition and of reward systems, job expectations and work value, which in turn influence their perception on motivation factors. Similarly, different

generational cohorts of RGBC's construction professionals have different employee perceptions in the workplace. Only little research about different generational cohorts of RGBC's construction professionals has been conducted. Thus, most of the literature review of generational cohorts in the workplace and generation X and Y in particular are of a general nature.

According to Mannheim's Theory of Generations, generation is defined as an identifiable group of people growing up in the same period and thus shares influential life and historical events at critical developmental stages [23]. It is common to divide employees into five generational cohorts, namely, veterans, baby boomers, generation X, generation Y and generation Z, but there is no unanimous view in the existing literature concerning the birth years that constitute generations X and Y. Despite various ranges of birth years of generation X and Y in eight studies as shown in Table 4, majority of the studies accept generation X was born from around 1965 to 1980 (i.e. 55-40 years old as of year 2020), and generation Y was born from around 1980 to 2000 (i.e. 40-20 years old as of year 2020) [3,23,27]. Therefore, this research also defines generation X as those born from 1965 to 1980 and generation Y as those born from 1980 to 2000. Based on these definitions, Hong Kong's population of generation X and Y are approximately 1.74 million and 2.07 million respectively as in mid-2019 [28].

Table 4. Ranges of Birth Years of Generation X and Y in Different Studies

Sources	Generation X	Generation Y
[3]	1965 – 1980	1980 – 1999
[23]	1965 – 1981	1982 – 2000
[27]	1965 – 1981	1982 – 2000
[29, 30]	1965 – 1976	1977 – 1995
[31]	1960 – 1980	1980 – 1995
[32]	1961 – 1980	1981 – 2000
[33]	1966 – 1976	1980 – 2000

2.2.1. Differences between Generation X and Generation Y Employees

As previously mentioned, generation X and Y have their own generational perspectives on work. These unique generational perspectives, including perspectives on motivation, are based on their unique characteristics. Moreover, their unique characteristics are dramatically influenced by historical events at their developmental stages, according to Mannheim's Theory of Generations. Before looking at how generation X and Y's perspectives on motivation is shaped by their unique characteristics, it is important to note their unique characteristics as well as significant historical events in Hong Kong.

2.2.2. Characteristics of Generation X and Y Employees

Although Sir MacLehose, the Governor of Hong Kong, launched a serial of social reforms from 1971 to 1982, these

reforms did not have an immediate effect [34]. Generation X lived stressful lives and experienced instability during a series of large-scale riots in 1967. Generation X was grown up as latchkey kids since their living conditions were poor and their parents had to leave their children at home to earn a living [3,27,30,32]. Generation X was used to live independently, which is considered by Bejtkovsky [30] as the most influential experience in the development stage of generation X. This experience develops their independence and self-reliance in the workplace. They prefer working independently to working in a group or team and are not good at interpersonal skills [3]. Kapoor and Solomon [3] also believe generation X is acquainted with multi-tasking and is willing to work on simultaneous tasks as long as the management authorises autonomy to them. Apart from growing up independently, generation X is grown up in a state of instability as mentioned. They prefer status quo rather than a change. Therefore, they resist the change in company policy and job-hopping.

According to Yep and Lui [34], the living conditions of generation Y in Hong Kong had been gradually improved because MacLehose's reforms have taken effect and China has opened its door to the world in the 1980s although they experienced a serial of unstable and uncertain historical events and milestones: Sino-British Negotiations over Hong Kong between 1982 and 1984, Mass Migration Wave between 1980s and 1990s, Handover of Hong Kong from Britain to China and Asian Financial Crisis in 1997. Generation Y is described as a global generation as people from generation Y under the influence of globalisation have similar attributes and characteristics no matter where they come from [30]. In particular, the generation Y in Hong Kong, an international city, absorbs cultures from the world [35]. Utterly different from generation X, generation Y is raised by helicopter parents, paying overwhelming attention to problems, needs and experiences of their children [30], and is used to have group assignments and activities in school [33], so generation Y develops we-oriented and team-oriented characteristics. In the workplace, they have high favour in teamwork but lack work independence [33]. Generation Y was raised with advanced technology [3,23,27,33]. As technology advances rapidly, they are familiar with acceptance and adaption of changes. They feel comfortable with change in company policy and job-hopping [3] and even pursue job challenges and new opportunities [23]. According to Ho [35], generation Y grew up with instant messaging and social networking and hence is also named as the net generation. They expect instant acknowledgement and feedback in the workplace [3].

2.2.3. Motivation Factors of Generation X and Y Employees

From the above review of characteristics of generation X and Y employees, it is noted that characteristics of generation X and Y employees are by no means similar as they grew up with different socio-economic conditions.

Hence, Smola and Sutton [36] believe the motivation factors of generation X and Y employees are also different. However, Wong et al. [23], Murray et al. [27], Bejtkovsky [29] and Montana and Petit [37] found generation X and Y employees have more similarities than differences in term of motivation factors. For example, Wong et al. [23] found no notable difference in three motivation factors occurs between generation X and Y employees: ease and security, immersion and personal growth while generation Y employees are less motivated by power than generation X employees. Bejtkovsky [29] lists five key motivation factors of both generation X and Y employees and four of them are the same, viz, attractive salary, opportunities for growth, flexible modes of work and self-development and improvement. Montana and Petit [37] lists six key motivation factors of both generation X and Y employees and five of them are the same, viz, attractive salary, opportunities for growth, self-development and improvement, respect from co-workers and opportunity to do exciting work. The only difference is that generation Y is motivated by working well with others, which matches with the generation Y characteristic.

Van Eck and Burger [4] researched motivation factors of

generation Y quantity surveyors in South Africa. Bejtkovsky [29], Yusoff and Kian [33], Montana and Petit [37], Kultalahti and Viitala [38] and Kultalahti and Viitala [39] also conducted researches on motivation factors of other generation Y employee groups. Table 5 compares the results of all these researches. In general, some factors motivating generation Y quantity surveyors in South Africa correspond with the motivation factors of the other generation Y employee groups, namely, salary (MF1.1), possibility of growth (MF2.1) and relationship with others (MF4.1). Both generation Y quantity surveyors in South Africa and electrical and electronics employees in Johor, Malaysia are motivated by a sense of recognition (MF4.2). Only generation Y quantity surveyors in South Africa is motivated by supportive supervision (MF4.3). Apart from the motivation factors of construction professionals previously identified, two new motivation factors (MF3.4 and MF3.5) are discovered in this comparison, as shown in Table 5. General generation Y employees are motivated by flexibility at work (MF3.4), which includes flexible modes of work and working hours [38,39,29] and work-life balance (MF3.5) [38,39]. Both motivation factors are classified into 'work nature' under the motivation themes developed previously.

Table 5. Comparison of Top Five Motivation Factors of Generation Y Employees

Motivation factors	Generation Y employee groups				
	Quantity surveyors in South Africa [4]	General employees in Czech [29]	Electrical and electronics employees in Johor, Malaysia [33]	Graduates from Fordham University, USA [37]	General employees from around the world [38,39]
MF1.1	✓	✓	✓	✓	
MF1.3		✓			
MF1.4			✓		
MF2.1	✓	✓	✓	✓	✓
MF2.2		✓		✓	
MF3.1			✓	✓	✓
MF3.2			✓		
MF3.4*		✓			✓
MF3.5*					✓
MF4.1	✓			✓	✓
MF4.2	✓		✓		
MF4.3	✓				
MF5.1			✓		
<i>Remark: * represents these factors are newly discovered motivation factors</i>					

3. Methodology

3.1. Research Method

This research is to examine the motivation factor differences between the generation X and Y RGBC's construction professionals, so gathering data about the rankings of motivation factors of both generation X and Y

construction professionals is required. This kind of data can be quantified, so questionnaire survey is adopted in this research. A questionnaire is developed from the literature on the motivation of construction professionals and general generation X and Y employees in literature review. The questionnaire comprises three sections.

Section I – General Information is to gather demographic

data, such as types of construction professionals and age ranges of construction professionals. These nominal data are asked so that the respondents can be classified into either generation X or generation Y RGBC's construction professionals.

Section II – Attitudes of Construction Professionals towards Motivation Factors is to measure attitudes of the RGBC's construction professionals towards the motivation factors. Eighteen motivation factors of construction professionals (MF1.1 – 3.3 and 4.1 – 5.1) and two motivation factors of general generation Y employees (MF3.4 and 3.5) were previously identified. And, for classifying these total twenty motivation factors, the motivation themes were previously developed. In Section II, the respondents are required to express how much they agree or disagree with these factors and themes motivating them to work harder. Likert scale is used for expression of the level of agreement. The Likert scale for this Section is set as 5-point: Strongly disagree, Disagree, Neutral, Agree and Strongly agree.

Section III – Follow-up Questions contain four open-ended questions at the end of the questionnaire requesting respondents to provide the most important, least important, most typical motivation factors with reasons and to provide a motivation factor not mentioned in the questionnaire.

To ensure the respondents will find it not complicated to finish the questionnaire, a pilot survey was conducted with two generation X and two generation Y RGBC's construction professionals before distribution of the questionnaire. All of them expressed the questionnaire is not difficult and time-consuming to rate each of the twenty motivation factors. Hence, the questionnaire remains unchanged. The final questionnaire is demonstrated as below.

Section I - General Information

Please select and fill in the most appropriate answer for each question.

What is your gender? *

☐ Male

☐ Female

What is your age range? *

☐ 19 - 40 years old

☐ 41 - 55 years old

☐ 56 years old or above

What is the highest degree or level of school you have completed? If currently enrolled, highest degree received. *

☐ Master's degree or above

☐ Bachelor's degree

☐ Sub-degree (Associate Degree / Higher Diploma)

☐ Diploma / Higher Certificate

☐ High school graduate

Which construction professionals do best describe your profession? *

☐ Project Manager

☐ Structural Engineer

☐ Building Engineer

☐ Building Services Engineer

☐ Quantity Surveyor

☐ Other: _____

Which of the followings professional bodies are you a corporate member of? (optional question; you may check more than one)

☐ HKIA

☐ HKIE

☐ HKIS

☐ HKICM

☐ RIBA

☐ IStructE

☐ CIBSE

☐ RICS

☐ CIOB

☐ Other: _____

What type of project does your company mainly work on? *

☐ New construction works

☐ Alterations and additions works

☐ Fitting out works

☐ Maintenance works

How much experience do you have in the Construction Industry? (number of years) *

☐ 1 - 5 years

☐ 6 - 10 years

☐ 11 - 15 years

☐ 15 - 20 years

☐ More than 20 years

Section II - Attitudes of Construction Professionals towards Motivation Factors

Please select the appropriate answer for each question to express how much you agree or disagree with below factors and themes that are able to motivate you to work harder.

Physical and material provisions *

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Salary	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Job security	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Performance-based financial incentives (i.e. bonus)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Working conditions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fringe benefits	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Resources to complete tasks	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Growth and advancement opportunity *

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Possibility of growth	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal learning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Encouraging and corrective feedback	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Responsibility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Job autonomy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Work nature *

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Enjoyment from work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sense of achievement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Challenge from work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Flexibility at work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Work-life balance	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Relations with others *

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Relationship with others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sense of recognition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Supportive supervision	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Fairness in organisational practices *

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Company policy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section III - Follow-up Questions

Below are optional questions. Your response are EXTREMELY VALUABLE. I would be most grateful if you could provide response with me. Thank you very much.

Q1. Among the above 20 motivation factors, which one is the most important motivation factor to you? Why?

Your answer

Q2. Among the above 20 motivation factors, which one is the least important motivation factor to you? Why?

Your answer

Q3. Based on your experience and view, among the above 20 motivation factors, which one is the most typical motivation factor that everyone would be influenced? Why?

Your answer

Q4. Is there any factor motivating you at work that is not listed above? How does this factor motivate you?

Your answer

3.2. Research Population and Sample Size

The population of this research is all generation X and Y construction professionals employed by RGBC. According to Vocational Training Council [40], building work contractors and decoration, repair and maintenance contractors respectively employed 3,659 and 1,034 construction professionals as in September 2017. These types of firm are considered as RGBC. Hence, the population of generation X and Y RGBC's construction professionals is the numbers of construction professionals employed by building work contractors plus the numbers of construction professionals employed by decoration, repair and maintenance contractors. i.e. the population is 4,693. According to Singh and Masuku [41], the sample size for this research population (4,693) is 98 when the population proportion is 0.50, the confidence level is 95% and the precision level is $\pm 10\%$. Also, random sampling is adopted in this research.

3.3. Questionnaire Distribution

Most of the RGBC's construction professionals are able to and are required to use the internet for business operation, so the online survey is adopted in this research. The questionnaire was published on Google Form. The online survey was conducted from 7 December 2019 to 20 December 2019. No comprehensive contact list is available for the RGBC's construction professionals. Even if some qualified construction professionals can be found on the online directories of professional bodies or registration boards, their contacts are not provided on these online

directories. Therefore, the hyperlink for the questionnaire was spread out via email and Instant messaging to the researcher's classmates, friends and colleagues, and they were invited to forward the hyperlink for the questionnaire to those appropriate people they know.

3.4. Method of Data Analysis

After the data was gathered, statistical analysis is conducted for analysis of the collected data. Descriptive statistics is applied for the demographic data collected in Section I. A comparative analysis is applied to the questions in Section II. To generate the rankings of motivation factors of both generation X and Y RGBC's construction professionals, the collected data are firstly separated into two sets of data, according to the generations of the respondents that are asked in Section I. One set is the motivation factors of generation X respondents. Another set is the motivation factors of generation Y respondents. Both sets of data are then processed in the same way to convert the ratings into rankings as follows.

1. The respondents' level of agreement on each motivation factor is scored as below: +1 = Strongly disagree; +2 = Disagree; +3 = Neutral; +4 = Agree; and +5 = Strongly agree.
2. For each factor, a mean was calculated based on weightings from (+1) being 'Strongly disagree' to (+5) being 'Strongly agree'.
3. Each motivation factor is ranked according to their means.
4. Priority is achieved by giving the priority '1' to the motivation factor with the largest mean, '2' to the motivation factor with the second-largest mean and so on.

The rankings of twenty motivation factors of generation X and Y respondents are generated. To discover whether the difference in the rankings of motivation factors exists between the generation X and Y respondents, the rankings of the motivation factors between the generation X and Y respondents are tested by using Spearman's rank correlation (ρ) because this non-parametric test is to measure the difference in rankings between two groups of respondents' scoring a number of factors [42]. Spearman's rank correlation is presented mathematically as below:

$$\rho = 1 - \frac{6 \sum di^2}{N(N^2 - 1)} \quad (1)$$

Where:

di = the difference in ranking between each pair of factors
 N = number of factors

The research hypothesis is that motivation factor differences exist across generation X and Y RGBC's construction professionals. By implication, the null hypothesis is that motivation factor differences do not exist across generation X and Y RGBC's construction

professionals. The coefficient (ρ) always is between 1.0 and -1.0. The closer ρ is to ± 1 , the stronger the likely correlation. A perfect positive correlation is +1, and a perfect negative correlation is -1. Saunders et al. [43] specify the absolute values of ρ as: $\pm 0.00-0.19$: very weak correlation; $\pm 0.20-0.39$: weak correlation; $\pm 0.40-0.59$: moderate correlation; $\pm 0.60-0.79$: strong correlation; and $\pm 0.80-1.00$: very strong correlation. Thus, if the resulted ρ is equal to or less than ± 0.39 , the hypothesis will be accepted, and the null hypothesis will be rejected.

4. Data Analysis

4.1. Return of Questionnaire

After the two-week-response period of the online survey, a total of 158 RGBC's construction professionals were invited to participate in the survey. 113 of them completed the online survey. The response rate is 71.52%. Because all questions in the online survey were set as compulsory, no incomplete questionnaire was received. The proportion of generation X and Y respondents is a critical aspect that was considered for statistical analysis as this research attempts to compare the generation X and Y RGBC's construction professionals. Table 6 demonstrates the respondents' age group and also classifies their respective generations. As the number of baby boomer respondents (only four respondents) is not representative, so the data from baby boomer respondents are not considered in this research.

Table 6. Number of the Respondents by Age Group

Age Range	Generation	Respondents	Percentage (%)
56 years old or above	Baby boomer	4	3.54
40 - 55 years old	X	44	38.94
19 - 40 years old	Y	65	57.52
	Total	113	100.00

4.2. Demographic Data of the Respondents

This section presents the findings from Section I of the questionnaire survey, which attempts to collect the demographic information of the respondents. This information is critical in providing readers with a basic understanding of the respondents. This research attempts to compare the generation X and Y RGBC's construction professionals, so the collected data including demographic data are separated into two sets of data, according to their generations, for comparison and analysis. One set of data is from the respondents of generation X RGBC's construction professionals (40 - 55 years old). Another set of data is from the respondents of generation Y RGBC's construction professionals (19 - 40 years old). Accordingly, the following demographic data of the generation X and Y respondents are separately presented in Table 7.

Table 7. Demographic Profiles of the Respondents

Demographic data	Generation X		Generation Y	
	N	%	N	%
Gender				
Male	27	61.36	36	55.38
Female	17	38.64	29	44.62
Education				
Master's degree or above	14	29.55	18	27.69
Bachelor's degree	20	43.18	34	52.31
Sub-degree (associate degree / higher diploma)	10	20.45	10	15.38
Diploma / higher certificate	3	6.82	3	4.62
High school graduate	0	0.00	0	0.00
Occupation				
Project manager	16	36.36	7	10.77
Structural engineer	7	15.91	12	18.46
Building engineer	4	9.09	16	24.62
Building services engineer	7	15.91	13	20.00
Quantity surveyor	10	22.73	17	26.15
Other	0	0.00	0	0.00
Professional Qualification				
Yes	26	59.09	30	46.15
No	18	40.91	35	53.85
Type of Building Work				
New construction work	16	36.36	22	33.85
Alterations and additions work	15	34.09	25	38.46
Fitting out work	9	20.45	11	16.92
Maintenance work	4	9.09	7	10.77
Construction Experience				
1 – 5	0	0.00	32	49.23
6 – 10	1	2.27	20	30.77
11 – 15	4	9.09	10	15.38
15 – 20	17	38.64	3	4.62
More than 20	22	50.00	0	0.00

4.3. Factors Motivating the Generation X Respondents

The data gathered from Section II of the questionnaire survey regarding the level of agreement on the factors that are able to motivate the generation X respondents to work hard are presented in Table 8. Based on the data in Table 8, mean is calculated and demonstrated in Table 9. The motivation factors are prioritized from highest to lowest mean in Table 9.

A general observation from Table 8 indicated that no respondent expressed disagreement or strong disagreement on the twenty motivation factors identified in this research, except working conditions (MF1.4) and challenge from work (MF3.3). In other words, the majority of the motivation factors have an influence on the respondents to a certain extent. Three respondents disagreed on working conditions

(MF1.4) as a motivation factor. As mentioned in the literature review, generation X was raised as latchkey kids and are adapted to live in poor conditions, so they may think working conditions (MF1.4) have no influence on their motivation. On the other hand, eight respondents disagreed on challenge from work (MF3.3) as a motivation factor. In Question 2 of Section III of the questionnaire survey concerning the reason for the least important motivation factors, five respondents addressed they may lose their jobs if being unable to overcome challenges. Generation X respondents are highly concerned about job security (MF1.2), which is the second important motivation factor for them. Challenge from work (MF3.3) has a conflict with job security (MF1.2), so eight generation X respondents disagreed that challenge from work (MF3.3) is a motivation factor and probably regarded it as a source of pressure.

Table 8. Generation X Respondents' Level of Agreement on Motivation Factors

Motivation factors	Strongly disagree (+1)		Disagree (+2)		Neutral (+3)		Agree (+4)		Strongly agree (+5)	
	N	S	N	S	N	S	N	S	N	S
MF1.1	0	0	0	0	8	24	17	68	19	95
MF1.2	0	0	0	0	11	33	12	48	21	105
MF1.3	0	0	0	0	16	48	10	40	18	90
MF1.4	0	0	3	6	9	27	22	88	10	50
MF1.5	0	0	0	0	11	33	21	84	12	60
MF1.6	0	0	0	0	11	33	21	84	12	60
MF2.1	0	0	0	0	29	87	15	60	0	0
MF2.2	0	0	0	0	15	45	29	116	0	0
MF2.3	0	0	0	0	19	57	21	84	4	20
MF2.4	0	0	0	0	27	81	15	60	2	10
MF2.5	0	0	0	0	19	57	17	68	8	40
MF3.1	0	0	0	0	15	45	26	104	3	15
MF3.2	0	0	0	0	18	54	13	52	13	65
MF3.3	0	0	8	16	17	51	19	76	0	0
MF3.4	0	0	0	0	20	60	19	76	5	25
MF3.5	0	0	0	0	13	39	18	72	13	65
MF4.1	0	0	0	0	6	18	38	152	0	0
MF4.2	0	0	0	0	19	57	19	76	6	30
MF4.3	0	0	0	0	8	24	31	124	5	25
MF5.1	0	0	0	0	22	66	13	52	9	45
Remarks: • N represents the number of respondents that express the level of agreement on that motivation factor. • S represents the score that is equal to the N multiplied by the weightings from (+1) being 'Strongly disagree' to (+5) being 'Strongly agree'.										

Table 9. Prioritised Motivation Factors of the Generation X Respondents

Factor no.	Motivation Factors	Mean	Rank*
MF1.1	Salary	4.25	1
MF1.2	Job security	4.23	2
MF1.3	Performance-based financial incentives	4.05	3
MF1.5	Fringe benefits	3.89	4
MF1.6	Resources to complete tasks	4.02	4
MF3.5	Work-life balance	4.02	6
MF4.3	Supportive supervision	3.34	7
MF1.4	Working conditions	3.66	8
MF3.2	Sense of achievement	3.66	8
MF4.1	Relationship with others	3.43	10
MF2.5	Job autonomy	3.75	11
MF3.1	Enjoyment from work	3.73	12
MF4.2	Sense of recognition	3.89	13
MF5.1	Company policy	3.25	13
MF2.2	Personal learning	3.66	15
MF2.3	Encouraging and corrective feedback	4.00	15
MF3.4	Flexibility at work	3.86	15
MF2.4	Responsibility	3.70	18
MF2.1	Possibility of growth	3.93	19
MF3.3	Challenge from work	3.70	20
Remark: * sorted from highest to lowest mean			

Aiyetan and Olotuah [6], Ruthankoon and Ogunlana [14] and Al-Abbadi and Agyekum-Mensah [15] found salary (MF1.1) is a highly ranked motivation factor for construction professionals. Bejtkovsky [29] and Montana and Petit [37] also found salary (MF1.1) is a top-ranked motivation factor for general generation X employees. This research is no exception. Salary (MF1.1) is the most influential motivation factor for generation X respondents. This finding violates the belief of Herman and Poon [17] that construction professionals would rather have intrinsic motivation than extrinsic motivation. The rationale behind the salary (MF1.1) as the most important motivation factor to generation X respondents can be understood through Question 1 of Section III of the questionnaire survey in regard to the reason for the most important motivation factors. Seven respondents stated salary is an essential element for living. One respondent emphasized he/she regarded the amount of salary as an index of recognition of ability. The higher salary he/she earns, the higher the ability he has. Moreover, 38 respondents answered in Question 3 of Section III of the questionnaire survey that based on their experience and view, salary (MF1.1) is the most common motivation factor that everyone would be influenced among the twenty motivation factors because they believe that everyone needs money for living and fulfil his material desire.

Salary (MF1.1) is a motivation factor belonging to the motivation theme of physical and material provisions. Apart from salary (MF1.1), other motivation factors with respect to the motivation theme of physical and material provisions are highly ranked by the generation X respondents, occupying the top five places. Job security (MF1.2) ranks second; performance-based financial incentives (MF1.3) ranks third; fringe benefits (MF1.5) ranks fourth and resources to complete tasks (MF1.6) ranks fifth. The priority of motivation factors of generation X respondents reflects that materialism has a strong influence on their motivation. If being satisfied in term of physical and material provisions, generation X respondents will be motivated to provide more effort.

As mentioned in the literature review, general generation X employees are much motivated by opportunities for growth [23,29,37] and improvement and self-development [29,37]. However, all motivation factors with respect to the motivation theme of growth and advancement opportunity have lower rankings in this research: job autonomy (MF2.5) ranks eleventh, both personal learning (MF2.2) and encouraging and corrective feedback (MF2.3) rank fifteenth; responsibility (MF2.4) ranks eighteenth and possibility of growth (MF2.1) ranks nineteenth. In this research, almost 60% of the generation X respondents have obtained professional qualifications, and almost one-third of them have a master's degree or above. Therefore, they have no demand for personal learning. Also, most generation X

employees have promoted to a position as possible they can and have no energy to continuously climb the career ladder [23]. The opportunities for advancement are limited, so the motivation factors about the motivation theme of growth and advancement opportunity have less influence on the generation X employees.

4.4. Factors Motivating the Generation Y Respondents

The data gathered from Section II of the questionnaire survey regarding the level of agreement on the factors that are able to motivate the generation Y respondents to work hard are presented in Table 10. Based on the data in Table 10, mean is calculated and demonstrated in Table 11. The motivation factors are prioritized from highest to lowest mean in Table 11.

A general observation from Table 11 indicated that no respondent expressed disagreement or strong disagreement on the twenty motivation factors identified in this research, except challenge from work (MF3.3). Same as the generation X respondents, five generation Y respondents rejected challenge from work (MF3.3) as a motivation factor. However, the reason for rejecting challenge from work (MF3.3) by the generation Y respondents is different with the reason for rejecting challenge from work (MF3.3) by the generation X respondents. The generation Y respondents ranked job security (MF1.2) as the second least important motivation factor, so challenge from work (MF3.3) has no conflict with job security (MF1.2). In Question 2 of Section III of the questionnaire survey with regard to the reason for the least important motivation factors, two generation Y respondents noted they have no benefit for overcoming challenges, so they are not motivated by challenge from work (MF3.3).

Work-life balance (MF3.5) is the most influential motivation factors for generation Y respondents. Both Kultalahti and Viitala [37] and Kultalahti and Viitala [38] agree general generation Y employees are highly influenced by work-life balance (MF3.5). Three respondent notes that work is merely a part of life. More time that could be spent on vacation, family and personal hobby can motivate the generation Y respondent to work harder.

Generation Y respondents were much concerned about relations with others because relationship with others (MF4.1) and supportive supervision (MF4.3) are respectively ranked second and third in the importance of motivation factors. The characteristics of generation Y was discussed. Generation Y is collectivistic as they have been used to work in a team environment since their critical development stage. They have high favour in teamwork, so the generation Y respondents highly rated the motivation factor regarding the motivation theme of relations with others, including relationship with others (MF4.1) and supportive supervision (MF4.3).

Table 10. Generation Y Respondents' Level of Agreement on Motivation Factors

Motivation factors	Strongly disagree (1)		Disagree (2)		Neutral (3)		Agree (4)		Strongly agree (5)	
	N	S	N	S	N	S	N	S	N	S
MF1.1	0	0	0	0	9	27	31	124	25	125
MF1.2	0	0	0	0	30	90	24	96	11	55
MF1.3	0	0	0	0	6	18	42	168	17	85
MF1.4	0	0	0	0	1	3	52	208	12	60
MF1.5	0	0	0	0	15	45	39	156	11	55
MF1.6	0	0	0	0	12	36	42	168	11	55
MF2.1	0	0	0	0	10	30	50	200	5	25
MF2.2	0	0	0	0	8	24	36	144	21	105
MF2.3	0	0	0	0	8	24	43	172	14	70
MF2.4	0	0	0	0	12	36	38	152	15	75
MF2.5	0	0	0	0	11	33	49	196	5	25
MF3.1	0	0	0	0	17	51	17	68	31	155
MF3.2	0	0	0	0	13	39	34	136	18	90
MF3.3	0	0	5	10	25	75	26	104	9	45
MF3.4	0	0	0	0	9	27	35	140	21	105
MF3.5	0	0	0	0	10	30	16	64	39	195
MF4.1	0	0	0	0	6	18	33	132	26	130
MF4.2	0	0	0	0	6	18	50	200	9	45
MF4.3	0	0	0	0	5	15	37	148	23	115
MF5.1	0	0	0	0	24	72	29	116	12	60
Remarks: • N represents the number of respondents that express the level of agreement on that motivation factor. • S represents the score that is equal to the N multiplied by the weightings from (+1) being 'Strongly disagree' to (+5) being 'Strongly agree'.										

Table 11. Prioritised Motivation Factors of the Generation Y Respondents

Factor no.	Motivation Factors	Mean	Rank*
MF3.5	Work-life balance	4.25	1
MF4.1	Relationship with others	3.71	2
MF4.3	Supportive supervision	4.17	3
MF1.1	Salary	4.17	4
MF3.1	Enjoyment from work	3.94	5
MF2.2	Personal learning	3.98	6
MF3.4	Flexibility at work	3.92	7
MF1.3	Performance-based financial incentives	4.20	8
MF1.4	Working conditions	4.09	8
MF2.3	Encouraging and corrective feedback	4.05	10
MF3.2	Sense of achievement	3.91	11
MF2.4	Responsibility	4.22	12
MF4.2	Sense of recognition	4.08	12
MF1.6	Resources to complete tasks	3.60	14
MF1.5	Fringe benefits	4.18	15
MF2.1	Possibility of growth	4.45	16
MF2.5	Job autonomy	4.31	17
MF5.1	Company policy	4.05	18
MF1.2	Job security	4.28	19
MF3.3	Challenge from work	3.82	20
Remark: * sorted from highest to lowest mean			

Salary (MF1.1), which ranks fourth, has a higher ranking than the motivation factors under the motivation theme of growth and advancement opportunities. Both Murphy [44] and Lee and Hogg [45] explain built environment graduates can work in either contracting organizations or engineering consultants. If desiring to earn a higher salary, they will work in contracting organizations. If being eager to have more training and learning, they will work in construction consultants. Since the generation Y respondents prefer salary (MF1.1) to the motivation factors concerning the motivation theme of growth and advancement opportunities, they would naturally work in RGBC. Same as those 40 generation X respondents, 32 generation Y respondents answered in Question 3 of Section III of the questionnaire survey that based on their experience and view, salary (MF1.1) is the most typical motivation factor that everyone would be influenced among the twenty motivation factors because they believe money is an essential element for living.

Job security (MF1.2) is ranked as the second least influential motivation factor for generation Y respondents. According to Census and Statistics Department [46], the unemployment rate of the construction sector is 4.1% to 5.0% between 2016 and 2019. The low unemployment rate supports the explanation of Al-Abbadi and Agyekum-Mensah [15] that job security (MF1.2) does not have a remarkable impact on motivation if the unemployment rate is low since construction professionals are not afraid of losing their jobs.

Willingness to change is a typical characteristics of generation Y [27,32] but the generation Y respondents, same as the generation X respondents, placed challenge from work (MF3.3) as the least important motivation factor. One generation Y respondent revealed in Question 2 of Section III of the questionnaire survey about the reason for the least important motivation factors that he/she is not willing to take up challenges because his/her supervisor does not appreciate his/her effort on overcoming challenges.

Hypothesis Testing: Difference in Rankings of Motivation Factors across the Generation X and Y Respondents.

Table 12 shows differences in rankings of motivation factors between the generation X and Y respondents. Spearman's rank correlation (ρ) is used to test whether the difference in the ranking of motivation factors exists between the generation X and Y respondents.

Put 924 from Table 12 into $\sum di^2$ and 20 into N ,

$$\rho = 1 - \frac{6 \sum di^2}{N(N^2 - 1)} \quad (2)$$

$$\rho = +0.31$$

The resulted ρ is +0.31, indicating that there is a weak correlation in the ranking between the motivation factors of the generation X and Y respondents, according to the absolute values of ρ mentioned in the Methodology. High ranking by the generation X respondents to the motivation factors does not correspond to high ranking by

the generation Y respondents to the same factors. Thus, the hypothesis can be accepted, concluding that generation X and Y RGBC's construction professionals perceive motivation factors differently.

Table 12. Generation Y Respondents' Level of Agreement on Motivation Factors

Motivation Factors	Generation X ranks	Generation Y ranks	di	di^2
MF1.1	1	4	3	9
MF1.2	2	19	17	289
MF1.3	3	8	5	25
MF1.4	8	8	0	0
MF1.5	4	15	11	121
MF1.6	4	14	10	100
MF2.1	19	16	3	9
MF2.2	15	6	9	81
MF2.3	15	10	5	25
MF2.4	18	12	6	36
MF2.5	11	17	6	36
MF3.1	12	5	7	49
MF3.2	8	11	3	9
MF3.3	20	20	0	0
MF3.4	15	7	2	4
MF3.5	6	1	5	25
MF4.1	10	2	8	64
MF4.2	13	12	1	1
MF4.3	7	3	4	16
MF5.1	13	18	5	25
			Total di^2	924

As mentioned in the literature review, many hold a stereotype that generation X and Y are entirely different in term of motivation factors as generation X and Y have different characteristics. However, there are insufficient empirical studies to support this stereotype. The result of this research supports this stereotype. Generation X and Y RGBC's construction professionals approach motivation differently. Mannheim's Theory of Generations is applicable in explaining this research result. The generation X and Y RGBC's construction professionals grew up with entirely different socio-economic conditions and experienced different historical events; they, hence, developed their own unique value systems, which, in turn, influence their attitudes towards motivation. The generation X RGBC's construction professionals grew up in poor living conditions and unstable environment. Their parents lived from hand to mouth, lacking any security in living. Consequently, when becoming adults, the generation X RGBC's construction professionals place heavy emphasis on the physical and material provision to avoid the adverse childhood experiences. On the contrary, the generation Y RGBC's construction professionals grew up in relative affluence and low-unemployment-rate environment. There were many job opportunities as Hong Kong's economic conditions

continued to improve. Thus, when becoming adults, the generation Y RGBC's construction professionals do not heavily focus on material and physical provision but emphasize work nature and relations with others. These different attitudes towards motivation across generation X and Y RGBC's construction professionals can also be observed in below comparison of priority of motivation factors between the generation X and Y respondents.

The generation X respondents placed salary (MF1.1) as the most influential motivation factor while the generation Y respondents placed work-life balance (MF3.5) as the most influential motivation factor. Through analysing the response to Question 1 of Section III of the questionnaire survey with respect to the reason for the most important motivation factors, this difference could be understood. The generation X respondents informed they have heavy family burdens, so they unavoidably earn more money to raise their families. However, the generation Y respondents do not have heavy family burdens and were grew up in relative affluence and low-unemployment-rate environment, so they do not emphasize salary (MF1.1) as much as the generation X respondents.

In comparing the top five motivation factors across generation X and Y respondents, vast motivation factor differences across generation X and Y respondents can also be found. All top five motivation factors to generation X respondents belong to the motivation theme of physical and material provision while only one of the top five motivation factors to generation Y respondents belong to the motivation theme of physical and material provision. This supports the indication of Kappor and Solomon [3] that generation Y employees have fulfilled the lower levels of Maslow's Hierarchy of Needs (i.e. physical and material provision) and hence pursues higher levels of Maslow's Hierarchy of Needs (i.e. work nature and relations with others).

The generation X respondents ranked job security (MF1.2) as the second most important motivation factor. By contrast, generation Y respondents ranked it as the second least important motivation factor. There are some reasons for this contrast:

1. Most of the generation Y respondents are junior professionals. There are many job opportunities for junior professionals.
2. Hong Kong has achieved full employment. They can easily obtain a job in other industry even if they cannot get a job in the construction industry.
3. The generation Y respondents do not have heavy family burdens.

5. Conclusions

Through the literature review, eighteen factors motivating construction professionals were identified in the studies related to investigating the motivation factors of construction professionals, as presented in Table 3. Furthermore, the additional two factors motivating general generation Y

employees are also identified in the studies in respect to exploration of the motivation factors of general generation Y employees, as demonstrated in Table 5. These total twenty motivation factors were categorized into five motivation themes according to their natures.

113 RGBC's construction professionals returned the questionnaires. 38.94% of them are generation X while 57.52% of them are generation Y. And, the rest of the respondents are baby boomers. The rankings in motivation factors of generation X and Y RGBC's construction professionals are presented in Table 9 and 11 representatively. A general observation indicated that no respondent expressed disagreement or strong disagreement on those twenty motivation factors, except working conditions (MF1.4) and challenge from work (MF3.3). In other words, almost all motivation factors have an influence on the respondents to a certain extent. For generation X respondents, salary (MF1.1) is the most influential motivation factor. Seven generation X respondents expressed salary is an indispensable element for living. For generation Y respondents, work-life balance (MF3.5) is the most influential motivation factor. Three generation Y respondents emphasized that work is just a part of life. Challenge from work (MF3.3) is the least influential motivational factor for both generation X and Y respondents. Both generation X and Y respondents expressed that no award can be received for overcoming challenges from work.

By using Spearman's rank correlation to test the hypothesis that there are differences in motivation factors of both generation X and Y RGBC's construction professionals, this research found that a weak correlation in the rankings of motivation factors exists across generation X and Y RGBC's construction professionals because the ρ is +0.31. Thus, the hypothesis can be accepted, concluding that generation X and generation Y RGBC's construction professionals perceive motivation factors differently.

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