

Career Development of Young Construction Professionals in New Millennium: Application of Sun Tzu's *Art of War* Principles

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Abstract— The construction industry in the new millennium has shown a variety of challenges for young professionals. It is recognized that early career experience can play a significant part in lifelong professional capability, and the support and knowledge gained during the early years of post-graduate employment can influence future career direction and success. This study was conducted to identify the relevance of military strategies that are mapped with the career development of young construction professionals (Architects, Civil Engineers, Quantity Surveyors and Surveyors) while suggesting strategies to fill the barriers to career advancement. This study is based on the construction industry of Sri Lanka where a substantial number of young graduates enter the field not knowing the proper mechanism to build their future. The data collection was done through questionnaires and semi-structured interviews which were developed based on the Art of War. Data analysis was done by using both qualitative and quantitative techniques. It was identified that young professionals should have the inspiration to acquire the knowledge, skills and abilities of their peers by engaging deep job experience, adopting team member stance through professionalism and connectivity; handling office politics and conflicts effectively; maintaining flexibility and manoeuvrability; networking and soft skills. The outcome of the study elicits that there is a relationship between the tertiary education system and military strategies to the career development of young professionals. Therefore, it is strongly recommended to prepare a strategic agenda for the career development of young professionals by collaboratively working with the academia, industry and professional bodies, which is an important aspect to the individual, as well as to the organisational sustainability.

Keywords: *career development, young construction professional, military strategies*

I. INTRODUCTION

There are wide range of activities and professionals which constitute the construction industry, these include architectural designing and consultancy, quantity surveyor activities, engineering, surveyor activities, manufacturing materials etc...These different ranges of activities require variety of skills and cognitive abilities within the workspace of different professionals (Blokker et al., 2019).

Thus, this proves that the construction industry is a homogeneous field of work and is interlinked to one another. According to Chartered Institute of Building (CIOB, 2006), during the recent decade's the forum of the construction industry has significantly diverse unless otherwise specified that the new forms of contract, methods of measurements, used of new technical tools such as Building Information Modelling, trends to deal with design and build contract, new trends for health and safety and much additional specialization and skills has emerged.

There is a problem in the construction industry as in order to meet the new demand, the current workforce has been changed, but still there has a skill gap of young people whom would be best fitted for the shortage of skill in the industry, thus it would be a threat for the future of the industry (Akintayo & Olubola, 2012). This proves there is a deficit in terms of skill and talent which should be developed by the young professionals joining the construction industry.

Silva, Rajakumara & Bandara (2007) identified that the Sri Lankan construction industry lacks in changing construction workload, unfair competition by overseas contractors, skills scarcities, and higher cost of developing skills.

Contribution of the construction industry for Sri Lankan economic takes the fourth place (Central Bank Report, 2005) so it is important to find the solution for each lapse behind the construction industry.

To mitigate the gaps and flaws courses to hinder the career advancement of young professionals in the construction industry, and to strategically face the specific challenges, application of Art of War strategies are being mapped into the context of career development of young professionals in the Sri Lankan construction industry.

A. Research Questions

Are there any gaps in construction industry for career development of young professionals?

How does the tertiary education learning process relate to the degree of developing careers amongst young professionals?

How can these gaps be filled by implementing the principles of Art of War for career development of young professionals in construction industry?

B. Research Objectives

The primary objective of the study is to identify strategies that could enhance the career development of young construction professionals in Sri Lanka. This integrates and foster significant additions that will help mitigate the problems faced by fresh graduates entering the construction industry through experimental learner cycle and Art of War principals.

C. Specific Objective

To identify the barriers that hinder the career development of young professionals in construction industry.

To identify the relationship between the learning process of the tertiary education system and career development to have stability within the construction industry.

To identify the means by which the art of war principles be used to fulfil the gaps in the development of careers of young professionals.

D. Significance of this Study

The graduate students, whose knowledge base is defined by the system of the tertiary education provided at universities. Thus, it is paramount importance to understand the learning styles of

these students within the university curriculum. Thus, developing their careers based on the learning process provided at the university is significant.

II. LITERATURE REVIEW

Construction Industry in Sri Lankan Context

The human component plays the major role from inception to the end of the projects in Sri Lankan construction industry where it was found to be labour intensive (Widanagamachchi, 2013). The industry contributes significantly in economy of Sri Lanka. The new urbanization patterns and town concepts are being identified and mega projects are being pre planned (Wedikkara and Devapriya, 2000).

Modern Conceptions of Career

Career has significant change during the last decades due to several industrial impacts and demand. The word career has evolved through the traditional terms with 'vocation' or 'occupation'. The modern concepts of career have widely discussed through two forms 'boundaryless career' and subjective career'.(Adekola, 2011).

The modern demands it reveal that careers as the process by which a person's work experiences over time (Low and

Martin, 1995), and "the individually perceived sequence of attitudes and behaviours associated with work-related experiences and activities over the span of the person's life (Dainty, Bagilhole and Neale, 1998).

Career Development

Career development is a process which includes psychological, sociological, educational, economic, and physical and chance factors that connects to outlines the individuals career progression over the work life period (Ling and Lee, 2012).

Garavan (1990) defines career development as a way of accomplishing long-term match between individuals and the organisational goals. Garavan stated that an organisation should pay attention and should make preferable steps to analyse the individual abilities, interest, and plan activities to uplift the employer's career. Actual career development activities differ from firm to firm.

Young Professionals in the Construction Industry

Management of young professional's success within the labour market features a dual effect, which consists of mutual employee benefits, on the one hand, and companies on the opposite (Vanin, 2015). The young specialist receives because of a stable job, worthy material compensation, and thus the likelihood of fulfilment as knowledgeable and personal. The company additionally receives an employee with a high degree of loyalty to the interests of the organization, increasing the productivity of labour specialists, reducing employee revenue, and a full revelation of human talents (Bingham, 2013).

Barriers for Young Professionals in Construction Industry

Bozionelos (2001) determines there are two types of career barriers for construction professional as internal and external barriers. He describes the internal barriers as internal conflicts which hinder the career advancement. (e.g., motivation, self-concepts, skills and career goals, family issues, limited support, and time) and external barriers as "unfair attitudes, sex-role casts and intolerant practices in the workplace that hinders the career development of young construction professionals".

Experimental Learning Theory

Learning from past experiences is one of the greatest skills. Many scholars have shown that the base of each and everything we learn lies in experiences. (Lewin, 1951). The Experiential learning cycle reflects on four modes to grasp and capture and transform the experience (Weinberg and Weinberg, 1990). These four stages include-

Concrete Experience (CE)

Abstract Conceptualization (AC)

Reflective Observation (RO)

Active Experimentation (AE)

In the processes of stage development and individuality is manifested. According to Kolb (1998) he says that development is a multi linear process and it drastically differs from Perry (1996). In Kolb's theory he uses a spiral analogy to show individual change.

Experiential learning is a widely used model in the field of education, it defines experiential learning as "the process whereby knowledge is created through the transformation of experience. Knowledge is acquired by the experiences the learner is exposed to and translating the experience into meaningful learner friendly attributes.

By using the experience, learners are urged and encouraged on a reflection of the things they experienced, and this reflection is used to generate news patterns of thinking, skills, and positive behaviours. (Tener, Winstead and Smaglik, 2001). Chapman et al. (1995) put forward nine features that experiential learning procedures must contain:

A combination mix of theory and practice.

The learning environment should promote individuals to bring out their self-identity through a protected environment

The experiences the learners engage in is meaningful for their progress.

There should be a link between the process of learning and on what they are doing within the context.

Opportunities for reflection.

The students should be embedded with their experience on an emotional level and not proceed with the task for the sake of doing it.

The values and standards of their needs to be re-examined.

The relationship between the students and teachers should be healthy and meaningful and in turn the relationship these two groups have with the learning environment it is set need needs to be fulfilling as well.

The students learning procedures and abilities need to be exposed beyond their comfort zones.

Application of Experimental Learning for Career Development of Young Construction Professionals. Construction industry will seek for professionals with capabilities of managing the resources, achieving the set objectives, heading the projects to success (Jan, 2010). Identifies that traditional curriculums of construction professionals consist with certain gaps in

engineering methods, scheduling, and planning, analysing, and estimating, concepts and theories (Naismith, Robertson and Tookey, 2017).

The tertiary education requires to provide the necessary professional practice for the construction undergraduates in education, experience, and personal attributes (Ayres, 2006). Institutes must draw the attention to prepare the undergraduates the reality of the industry hence identify the new trends and paths to success. Undergoing the current construction educational programmes shows that there are several inclusions as per the new content of the industry (Sturges, 2013).

Sun Tzu's Art of War

The art of war is a book written by a Chinese military general Sun tzu in 400 B.C. This book is categorized into 13 chapters and has been translated and simplified by many scholars for readers to understand it properly (SF Lee, P Roberts, WS Lau, 1996).

These same strategies used can be used for business operating activities as well up to some extent. For this reason, only Sun Tzu's art of war has been more popular with the business entrepreneurs in the modern-day society

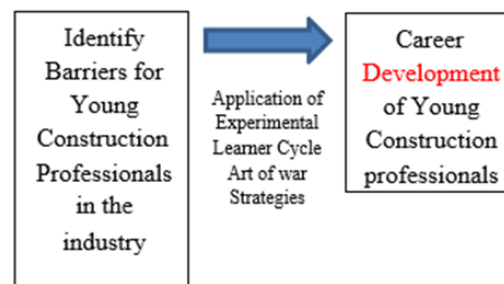
(Ling and Lee, 2012). No matter what the era Suz Tzu's principles has always been revolving around his doctrine which focuses on psychological barriers, environmental disharmony, personal agreement, and organizational contention (Michaelson and Michaelson, 2003).

Application of Military Strategies to Civil Society

Ling and Lee (2012) has identified the fact military strategies can be used for construction operations since it bears a common objective. Just like these most of the scholars have been using Sun Tzu's war strategies for construction activities (Tan, Lee and Lim, 1998). He has also told that practicing these strategies help you in negations which is fruitful for construction professionals. Further from that Lee (2012) have compared military personnel for construction professionals and accordingly commander to manger/management, warfare for competition, army troops for employees and the enemy as competitors.

Sculli (1998) stated the market as the battlefield where firms are fighting to seize consumers by pushing construction professionals to use these military strategies for construction firms. Many literatures have been written according to the strategies of Sun Tzu's Art of War, but a few have focused on marketing strategies (Hee and Gurd, 2010).

Research Gap



The study contributes to identify the barriers of young construction professionals in the industry whom with 1 to 3 year of experience. In addition, to full the barriers above military strategies are used. This also provides a framework to implement an experimental learner program for the tertiary education. It has identified that tertiary education will be the basis for the knowledge of young construction professionals.

III. METHODOLOGY

A. *Conceptual Framework*

Variables of the study for this research was identified as;

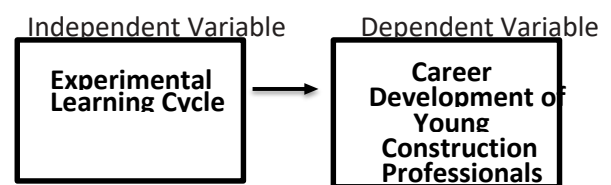


Figure 1- The Conceptual Framework

Source: (Literature review)

Population

Table 1: Stratified Sampling Size

Groups	Age	Percentage	Architects	Civil Engineers	Quantity Surveyors	Surveyors
A	23	6.25%	12	22	16	14
B	24	11.03 %	14	46	42	19
C	25	17.95 %	8	98	48	43
D	26	18.86 %	31	84	54	38
E	27	21.78 %	42	103	52	42
F	28	24.52 %	41	148	39	41
%		100%	148	501	251	197
Final Sample		60	7	28	14	11

Table 2: Population and Sampling

Objective	Population	Sampling	Sampling Technique	Reference
1	All Expertise in the construction Industry (Architect, Civil Engineers, Quantity Surveyors, Surveyors, and Project Managers)	12	Purposive Sampling	Kolb (1984) Stokes (2007)
2	1097	60	Stratified Sampling	Jayawardane and Gunawardena (1998)
3	All Expertise in the	12	Purposive Sampling	Ling and Lee

	construction Industry			(2012)
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Source: (Author, 2021)

This research is based on the construction industry professionals and the data were gathered through target population as the young construction professionals who have just stepped into the construction industry of Sri Lanka. These young professionals are working as Architects, Civil Engineers, Quantity Surveyors and Surveyors within the construction industry. The target population for this study included the young professionals who have just stepped into the industry with an experience of 1 to 2 years within the construction industry

Table 3: Data collection Method

Objectives	Data Collection Method	References	Analysis Method
01	Semi-Structured Interviews	(Wedikkara and Devapriya, 2000)	Frequency Analysis
02	Questionnaire	(Kolb, 1984)	Pearson's Correlation Co-efficient
03	Questionnaire	(Ling and Lee, 2012)	Relative Important Index

Source: (Author, 2021)

IV. RESULTS AND DISCUSSION

The questionnaire, which was finalized through the inventory, elaborates the experimental learning cycle was then distributed and gathered the data from young construction professionals in the industry. Questionnaire was sent to 86 young professionals in the above-mentioned professionals and out of that 60 responses has received.

A. Analysis the Data for Research Objectives

Table 3: Career Development Barriers

Career Development of Young Construction Professionals	No	Barriers	Frequency
	A	Insufficient career preparation	10
	B	Conflict among peers and career demands	8
	C	Not enough work experience	3
	D	Lack of appropriate education	7
	E	Disapproval by significant others	6
	F	Decision-making difficulties	8
	G	Dissatisfaction with career choice	9
	H	Job market constraints	6
	I	Inadequate relationship and networking	8

Source: (Author, 2021)

Objective 01 - To identify the barriers that hinder the career development of young professionals in construction industry.

Objective 02 - To identify the relationship between the learning process of the tertiary education system and career development to have stability within the construction industry.

B. Pearson Correlation analysis

This analysis was best suited hence it is based in covariance and gives the facts on the magnitude of the correlation, as well as direction of the relationship. The below mentioned table displays a correlation between career development of young professional and experience learner cycle with the facts of concrete experience, reflective observation, abstract conceptualization and active experimentation (Tener, Winstead and Smaglik, 2001).

Table 4: Pearson Correlation Analysis

Correlations			
		AIV	ADV
AIV	Pearson Correlation	1	.997**
	Sig. (2-tailed)		.000
	N	60	60
ADV	Pearson Correlation	.997**	1
	Sig. (2-tailed)	.000	
	N	60	60

** . Correlation is significant at the 0.01 level (2-tailed).

Table 5: Strategies for career development

No	Strategy	% of Frequency					Relative Index	Rank
		Very Unimportant	Unimportant	Neutral	Important	Very Important		
1	Career Planning	0	0	5	16	19	0.870	1
2	Strategies to advance in career	1	3	7	13	16	0.800	3
3	Leadership	0	0	7	15	18	0.855	2
4	Flexibility	0	3	9	13	15	0.800	3
5	Relationship and Networking	0	0	12	22	6	0.770	7
6	Information	1	2	4	25	8	0.785	5
7	Office Politics	0	3	12	20	5	0.735	8
8	Handling Conflicts	1	1	9	19	10	0.780	6
9	Leverage	3	4	11	10	12	0.720	9

Source: (Author, 2021)

Objective 3 - To identify the means by which the art of war principles be used for filling the gaps in

the development of careers of young professionals.

V. CONCLUSION AND RECOMMENDATIONS

Determination of barriers which revolves around the young professionals in the construction industry were identified. Semi-structured interviews were conducted with 12 experts who has sound knowledge in field of construction industry. In detailed analysis was carried out and analysis method used was frequently analysis which caters to identify the significant barriers among the table. Significant and a positive correlation between the dependent and independent variables are tested using the descriptive statistics analysing tools. It was determined that the Experimental learning cycle has a positive impact on the career development of young construction professionals. So, the hypothesis was test and alternative hypothesis was taken hence it was revealed from the results that there is a relationship between the variables. The relationship only be prevailed if the value for the significant is less than 0.05 where the table show that vale is (0.000). To examine the final objective of the study, semi structured interviews were conducted from 12 expertise in the construction industry who has sound knowledge on *Art of War* and its application to the industry. Through the literature it was identified the art of war principles in the context of career development. And from the expertise it was revealed that 9 most important strategies which can be useful to enhance the young professionals career development in the context of Sri Lanka. Frequency analysing method was used to analysis the most important strategies and further the context analysis was used to present the data gathered from semi structures interviews. In overview of the study is that, the research objectives are being covered and the strategies to enhance the career development of young construction professionals in the industry are being identified which will help to resolve the research problem clearly.

A. *Recommendations for Short Term*

Application of the proposed Art of War strategies to career development.

Maintaining respectable interpersonal relationships and networking in the industry.

Being flexible in working

Participating to continuous professional development programs

Effectively analysis of construction personnel and organization.

Handling Conflicts

Career advancement through developing soft skills

Taking feedback from expertise on career development.

B. *Recommendations for Long Term*

Implement the experience learner cycle for tertiary education.

Young professionals must cater with leadership qualities

Improvement of Work life balance

Professionals must plan for their goals to achieve.

C. *Limitations and Recommendations for Further Studies*

The study was qualitative in nature where it was focused on the young construction professionals in the industry. Effective career strategies were identified; hence, the fresh graduates can adopt these military strategies to enhance their career development. It was elaborated in the earlier chapters that career advancement is similar to dealing in a war scenario, where winning is a significant factor via strategy to win is required. There also may find some strategies were missing since the interviews were avoid sharing some personals views and strategies which might affect to their competitiveness in the industry. I have identified some further research areas which will increase the pool of knowledge in construction industry. Role of career counselling in tertiary education of Sri Lanka

Application of art of war strategies to construction risk management.

Career advancement of military engineers.

Application of experimental learner cycle to all the constructional studies.

Correlation in career advancement and job satisfaction.

Role of career counselling in tertiary education of Sri Lanka.

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