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The 5th International Conference of Euro Asia Civil Engineering Forum (EACEF-5)

Competitive aggressiveness of contractors: A study of Indonesia

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Abstract

High level of competition are considered to be a major challenge for contractors. As such, 'winning the competition' is an important goal for contractors in running their businesses. Contractors need to be aggressive in competition to respond to their competitors' actions and gain competitive advantage against their business rivals for survival and growth. This study aims to clarify the issue of competitive aggressiveness of contractors by identifying its key factors. Semi-structured interviews were carried out with 19 top managers of contracting companies in Indonesia, in order to explore the concept of contractors' competitive aggressiveness. The qualitative data collected during the interviews were analysed using an inductive thematic analysis method. The analysis resulted in identifying five key factors of contractors' competitive aggressiveness: 1) acting as a problem solver for clients; 2) being different compared to competitors; 3) building and maintaining clients' confidence in the company's trustworthiness and reliability; 4) maintaining good relationships with clients; and 5) positioning on markets that are concerned about quality. Based on these findings, contractors will be able to establish an appropriate strategy to allow them to be aggressive in competition.

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Keywords: contractors; business; competition; strategy; competitive aggressiveness

1. Introduction

Construction companies tend to apply prudent and conventional management behaviour in their businesses in many ways [1]. In Indonesia, the construction industry is considered one of the country's most attractive and promising industries [2, 3]. However, although the construction industry is developing very quickly, the local contractors are not prepared to meet the needs of the overall construction industry. According to Wirahadikusumah and Pribadi [4], a majority of contractors in Indonesia have only poor to fair performance. Orozco, Serpell, Molenaar and Forcael [5]

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mentioned that a construction company requires an effective competitive strategy to be able to survive in this highly competitive and globalized era. Indonesian contractors should focus on developing effective strategies to improve their performance and to improve their competitiveness.

Competitive aggressiveness has been operationally defined as ‘the efforts of a company to outperform the competitors directly and vigorously [6, 7]. Competitive aggressiveness is characterized by reactions or responses to the competitors’ actions and the exploitation of the strength of the company compared to the competitors [6-8]. A competitively aggressive company will continuously assess the condition of competitors, therefore the weaknesses of competitors can be identified and its own strengths can be featured. Ferrier [9] found that a company’s competitive aggressiveness is influenced by the ability of its top management team to observe and to catch the hints from the relevant business environment. Likewise more opportunities can be obtained directing organizational innovation in order to outperform the competitors[10].

Contractors have been considered as project based firms (PBFs) that run their business on the basis of projects [11-15]. As PBFs, contractors build the projects merely at the specific request of the clients, therefore the service that they provide is unique for every client[13]. In this particular condition, contractors are characterized by a temporary project’s organization existing within a permanent firm’s organization [11-15]. In carrying out their activities, contractors need to manage both business and project by considering their different characteristics. Business processes mainly involve repetitive activities while projects usually include temporary and unique activities[11]. Volpe and Volpe [16] identified two main challenges required if a company is to be successful in the contracting business: i) to win the competition to get the project and ii) to deliver the project successfully.

Orozco, Serpell, Molenaar and Forcael [5] found that leadership, contract management, health and safety management, and financial issues are the important factors to take into account if contractors want to outperform their competitors. In addition, entering the international market has been considered as a contractor’s strategy to deal with the construction market changes [17], to avoid a domestic market recession [18] and to counter the domestic business cycle [19]. It was also found that competitive aggressiveness of contractors is influenced by some factors such as experience in bidding, support of government to enter the international market, and global and domestic demand [20, 21].

Considering the specific business nature of contractors, their competitive aggressiveness should be implemented in a particular way. Although several studies on competitive aggressiveness have been carried out in many sectors of business, there is very little discussion of competitive aggressiveness in the construction literature and even less for contractors. Previous research focused mostly on competitive advantage, rather than competitive aggressiveness.

The aim of this study is to explore competitive aggressiveness of contractors, as well as to identify key factors of competitive aggressiveness based on the experiences of contractors in Indonesia. This study is designed to bridge the gap in construction research in this field. The study is based on the experiences of Indonesian contractors. The results of this study will provide a better understanding about how contractors should behave in competition and then based on this understanding; will guide those contractors in defining effective strategies to outperform their competitors.

2. Competitive Aggressiveness

2.1. Competitive aggressiveness in general context

Competitive aggressiveness has been considered as a company’s efforts to outperform its competitors directly and vigorously [6]. Competitive aggressiveness is characterized by reaction or response to the competitors’ actions, as well as exploiting the strength of the company compared to its competitors [6-8]. A competitively aggressive company will continuously assess the condition of its competitors, therefore the weaknesses of competitors can be identified and its own strength can be featured. Then more opportunities for business success can be obtained [22].

Competitive aggressiveness has been translated into several practical aspects such as aggressive in price competitions, introducing innovative products that outperform competitors’ products, haunting the competitors in the market, and bringing special surprises to the market, etc. [23]. Particularly Tsai, Chuang and Hsieh [10] suggested organizational innovation should be directed to master competitors’ strategies in order to outperform those competitors.

In addition, Lin [24] proposed social integration of a firm’s top management team will positively influence competitive aggressiveness because this social integration will promote several positive contexts such as better communication, opportunity to share information and better conflict resolution etc. Ferrier [9] found that a company’s

competitive aggressiveness is influenced by the ability of its top management team to observe and to catch the hints, however small, from the business environment.

2.2. Competitive aggressiveness in construction

By adopting the definition of competitive aggressiveness as discussed earlier, contractors' competitive aggressiveness is defined as contractors' efforts to outperform their competitors. Orozco, Serpell, Molenaar and Forcael [5] mentioned that a construction company requires an effective competitive strategy to be able to survive in this highly competitive and globalized era. Furthermore, in accordance with the nature of contractors as PBFs, in which their business is reliant upon project related contracts, they found that leadership, contract management and health and safety management are the three main factors that need to be considered, in order to outperform competitors. Leadership is a driver of other factors; contract management was associated to the issues of project cost, project time and customer relations, etc.; while health and safety management influences project performance, health and safety issues, as well as relations with society, etc.

Another contractors' strategy to overcome the competitors in order to be awarded a project is through competitive bidding, in which contractors are faced with a dilemma: their bid should be high enough to make a profit but a high bid decreases the chance of winning the contract [25]. Therefore contractors need to implement appropriate strategy in bidding. Tan, Shen and Langston [26] mentioned contractors need to use a more comprehensive strategy rather than just low-price strategy in bidding. Even though their study found the most effective competition strategy is a low bid, they introduced other aspects that needed to be considered to win the competition such as: high tech, management innovation, sustainable practice, partnership, etc. Related to bidding strategy, Fu, Drew and Lo [20, 27] found bidding experience influences the contractors' bidding competitiveness. Their study shows contractors with more experience in bidding prepare more competitive bids compared to inexperienced contractors.

After reviewing the literatures, this study posits that there is very little discussion about competitive aggressiveness of contractors in the construction literature. There is no study that comprehensively explores the competitive aggressiveness of contractors.

3. Research Methods

The main aim of this study is to identify the key factors of competitive aggressiveness for Indonesian contractors. However, due to the lack of previous research in the area, an exploratory approach was found necessary to explore the implementation of competitive aggressiveness by contractors and to identify the key factors contributing to successful competitive aggressiveness. The data collection process and the relevant conclusions are explained below.

3.1. Sample

The judgemental sampling technique was adopted to choose the potential participants. According to Quinlan [28], judgemental sampling determines the criteria for potential participants by considering the capacity of participants to provide proper information related to the issues under investigation.

Table 1 The Profile of Interviewees

Position	Experience (years)	Position	Experience (years)
Company Size X Large		Company Size L	
President Director	22	President Director	27
Vice President Director	27	President Director	31
Director	24	Director	28
Director	23	Branch Manager	27
General Manager	20	Manager	18
Corporate Secretary	26		
Company Size M		Company Size S	
President Director	21	Director	18
Director	21	Director	27
Director	21	Director	11
General Manager	15	Branch Manager	23

Top managers of contracting companies are chosen to be interviewed because they are intensively involved in

planning, developing and implementing regulations, policies and programs of their companies; therefore, they are the most knowledgeable persons about the condition of their companies, and all strategic information available to them.

The profile of interviewees and their companies can be seen in Table 1. The sizes of contracting companies are grouped under four classes based on the number of permanent employees in the following manner: small (less than 100 employees), medium (100 to 500 employees), large (500 to 1000 employees) and extra large (more than 1000 employees).

3.2. Data collection

Face to face semi-structured interviews were conducted with 19 top managers of contractors in Indonesia during July to September 2013. An interview guide was prepared and supplied to their interviewees by e-mail prior to their interviews. The questions in the interview guide were prepared to explore the implementation of competitive aggressiveness in contractors. The questions in this part of the interview were explored based on several references such as: four characteristics of competitive aggressiveness pattern [9], entrepreneurial orientation [22], and organizational innovativeness [10], and entrepreneurial orientation items [29].

The interviews were conducted in the interviewees' offices with consideration of their convenience and time efficiency. The format and sequence of questions did not always expressly follow those outlined on the interview guide and varied depending on the flow of the conversation. Moreover, extra questions were asked in cases where the interviewees mentioned issues which appeared to be important and relevant to the topic of the interview. The interviewer guided the conversations and made sure the focus stayed on the topic. The duration of each interview varied between 60 to 90 minutes. The interviews were audio-recorded and then fully transcribed before data analysis.

3.3. Data Analysis

Thematic analysis with a 'bottom up' approach was used to develop key factors of competitive aggressiveness. Thematic analysis is a method for analysing data to identify themes that are related to the research question. There are two ways to implement thematic analysis: inductive or the 'bottom up' approach and deductive or the 'top down' approach. The inductive approach is data driven, in which themes are identified mainly based on the data, while the deductive approach is driven by the related theory to identify themes [30].

Following the principles of the 'bottom up' approach, the following processes were carried out to analyse the data and identify the key factors of competitive aggressiveness.

1. The analysis started by reading the transcript twice, which enabled the researcher to be familiar with the data and to catch initial ideas from the data.
2. It was followed by the coding stage. The first coding was done manually by examining the transcripts carefully line by line. Sentences and paragraphs that indicated a potential pattern of key factors were highlighted manually. In this stage, the researcher tried to code as many phenomena as possible that emerged from the interviews.
3. The next step was refining the coding process and re-categorizing the codes into appropriate nodes using NVivo 10 software. Nodes in thematic analysis are considered as themes which, in this study, are used as key factors of competitive aggressiveness in this study. In this stage, the initial list of key factors was generated across the data set, and the provisional name and flexible definition for each key factor started to be created.
4. Refining the coding process, re-collating the codes into appropriate themes and reviewing the name and definition of each theme were continuously done to check whether the factors worked in relation to the entire data set or not. This stage involved three rounds using NVivo 10 software. As a result, new themes have been found and some existing themes have been dropped, combined, re-named and re-defined in each round. Finally the list of key factors of competitive aggressiveness for Indonesian contracting companies was identified.

After the key factors are found, the next step is to validate the finding. Angkananon [31] suggested expert review as one of the ways to validate the finding of research by asking for opinions, suggestions, and comments from experts. Then, based on the inputs from those experts, the findings can be evaluated and refined [32]. Ramirez [33] proposed a subject matter expert review approach in order to choose the experts to validate the finding of research. This approach uses experts who have a broad and deep insight into the subject under study but they are not considered as prospective respondents of the study. Such experts can be found from several sources such as the government, academia, or professional organizations.

Ten academics were used as subject matter experts to review the competitive aggressiveness key factors. They were interviewed and asked to make comments and suggestions on those key factors. All these experts are with construction management background that work as senior lecturers in Indonesian universities and have more than 15 years' experience in teaching and research. They also have experience of working with the construction industry, whether with a contractor, a consultant or a developer. During the interviews, each key factor was discussed in detail, the experts being asked to provide constructive criticisms on the key factors. Based on the inputs and comments from the ten experts, the key factors were refined

4. Competitive aggressiveness of contracting companies

In the initial stage of analysis, seven key factors were identified, and then refining the coding and re-collating the codes and reviewing the name of each key factor followed. At this stage, some factors were dropped, some were combined, and new factors were found. Finally, 5 themes were identified as key factors of competitive aggressiveness for contractors. Then, the flexible definition of each key factor is started to be created based on the codes under each node. Lastly, the definitions were reviewed and refined until the final definitions were identified.

Then these 5 key factors were reviewed and refined based on the comments and inputs from the experts. Several important comments and suggestions were gathered from the experts. One important comment that resulted in significant change related to the key factor "positioning in a particular market". Experts considered this attribute did not reflecting the true meaning of the enquiry. As a result, the term 'market concerned about quality' was used instead of 'particular market'.

Based on the comments and suggestions from the experts, the attributes and definitions of key factors were refined. Finally five key factors (CA1 to CA5) together with their definitions were assigned. Each key factor and some particular issues which emerge from the interviews are presented below.

CA1 Acting as problem solver for clients: helping clients to seek the best way to solve a client's problems such as technical, financial or other problems.

Contractors seek to provide useful information for the clients and to help clients to solve their problem. Clients are generally ignorant of the issues related to construction, so contractors need to provide useful information for the clients to increase their benefits by, for example, explanation of a building design, or guiding them in the selection of building materials. In addition, clients sometimes face problems such as tax issues or payments due. In these cases, contractors are required to help their clients to find the best solutions.

CA2 Being different compared with competitors: the company is able to offer something different from its competitors through specialisation in particular projects, such as irrigation, hotels, airports etc., as well as innovation, such as construction methods, materials, etc.

To win the competition, a contractor needs to provide something new and different from its competitors. Having qualified human resources, an established financial condition, advanced equipment, reliable technology and expertise in particular projects are all considered as the advantages of contractors, making them superior to their competitors. A strong commitment to serve clients, such as after maintenance period service, is another important point helping to beat the competition.

CA3 Building and maintaining client confidence in the company's trustworthiness and reliability: the company is trusted by clients for its reliability and honesty, such as making continuous improvements, not cheating and being on time, etc.

Client confidence is the key for the contractor to get repeat orders from previous clients. Repeat orders are considered by almost all contractors as a major source of projects. Client confidence can be built and maintained through clients' satisfaction with the contractor's performance in previous projects. In fact, clients are satisfied because the contractor did not attempt to deceive them and was reliable in meeting the client's demands. Always meeting project specifications, having commitment to complete the project even if accepting a loss, and continuously improving the company's performance to complete the projects are some examples of contractors' efforts to satisfy their clients. This key factor is considered as more important than offering low prices for getting projects.

CA4 Maintaining good relationships with clients: the company keeps in touch with clients to establish long term relationships with the main aim of getting repeat orders

Similar to CA3, repeat orders are the main source of projects for most contractors, thereby maintaining good

relationships with existing clients is considered important, a job which is usually done by the firm’s marketing department. Good relationships with existing clients started from the client’s trust to the contractor; this relationship can then be developed and maintained.

CA5 Positioning on markets that are concerned about quality: the company promises better quality than cheaper priced competitors; therefore, it does not worry about being abandoned by a client simply because it offers a relatively higher price.

Contractors do not become involve in a ‘price war’ competition where other contractors lower their bids to an unreasonable level in order to obtain the project. A quality-oriented contractor declares that it does not worry about being regarded as an expensive contractor because it has loyal clients that are more concerned about quality than price.

Further investigation into the relationships between key factors was carried out in order to gain a better understanding about these key factors and to find out how they contribute one to each other. The relationships between key factors were examined through coding density function in NVivo 10 software. The relationships between key factors were defined when the codes had been coded in more than one node. For example: the statement of one participant contractor: *Finally the owner appreciates us, the owner thinks ‘I am more confident with this contractor, because it can help me to anticipate what will happen in the future, therefore I prefer to put my trust in this contractor’* has been coded in CA1 (acting as problem solver for clients) as well as building and maintaining client confidence in the company’s trustworthiness and reliability (CA3). It means the contractor’s efforts to help clients to solve the problem will reinforce its image as a trustworthy and reliable contractor”.

After the relationships between key factors were examined, it was found that key factors CA1, CA3, CA5 and CA2 were supporting one another. However the relationship between CA4 (maintaining good relationships with clients) with other key factors was not found. The relationships between key factors are depicted in Figure 1. This relationship shows that contractor’s efforts to help clients to solve a problem (CA1) will build that company’s image of being trustworthy and reliable (CA3). After clients have this positive image, the contractor has a chance to position itself in a market that is more concerned about quality rather than price (CA5). Consequently, the contractor will not engage in unfair competition by bidding an unrealistically low price only because it needs to get a project. In this particular case, the contractor will build a different and positive image compared to the competitors (CA2).

When considering CA4 as an independent key factor to other key factors, it was argued that maintaining good relationships with clients is an important factor to be considered however this factor does not affect the client’s trust in the contractor. Maintaining good relationships with clients is directed to clients in order to keep a particular contractor in mind, so that when clients have other projects, they will hopefully be back to this contractor.

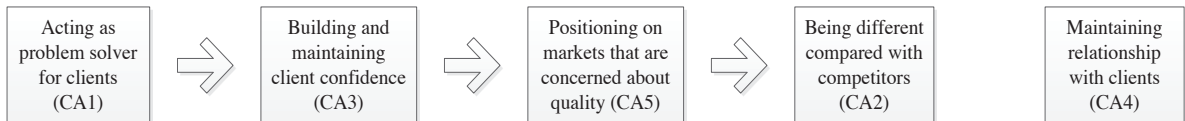


Fig.1 key factors for competitive aggressiveness

5. Conclusion

The implementation of contractors’ competitive aggressiveness of contractors has been explored through the experience of contractors in Indonesia. In this context, 5 key factors of competitive aggressiveness that are particularly associated with the circumstances of contractor businesses have been identified. When these key factors were explored further, the uniqueness was found in contractors’ competitive aggressiveness. It is shown that contractor’s competitive aggressiveness is carried out through various attempts to approach projects’ owners and to build client trust. This strategy is in accordance with the nature of PBFs which deliver a specific and unique project based on client’s order, therefore, a good relationship with the client and strong element of contractors- client trust are important. This strategy also supports a contractor’s expectation to receive projects from existing client’s repeat orders as well as projects from new clients as a result of word of mouth.

This paper improves the understanding of competitive aggressiveness specific to Indonesian contractors. Based on this understanding, contractors can come up with an appropriate strategy to get and stay ahead of the competition. The findings also provide a new insight into construction-focused research. Future research will focus on the development

of a model for measuring the level of competitive aggressiveness of contractors based on the key factors identified.

References

- [1] P. S. Chinowsky, "Construction Management Practices Are Slowly Changing," *Leadership & Management in Engineering*, vol. 1, no. 2, pp. 17, 2001.
- [2] A. Widjajanto, K. S. Pribadi, and A. Suraji, "The Construction Sector of Indonesia," in 17th Asia Construct Conference, New Delhi, India, 2011.
- [3] S. P. Pamulu, "Strategic Management Practices in the Construction Industry: a Study of Indonesian Enterprises," School of Urban Development, Faculty of Built Environment and Engineering, Queensland University of Technology, Australia, 2010.
- [4] R. D. Wirahadikusumah, and K. S. Pribadi, "Licensing Construction Workforce: Indonesia's Effort on Improving the Quality of National Construction Industry," *Engineering Construction and Architectural Management*, vol. 18, no. 5, pp. 431-443, 2011.
- [5] F. A. Orozco, A. F. Serpell, K. R. Molenaar, and E. Forcael, "Modeling Competitiveness Factors and Indexes for Construction Companies: Findings of Chile," *Journal of Construction Engineering and Management*, vol. 140, no. 4, 2014.
- [6] G. T. Lumpkin, and G. G. Dess, "Clarifying the Entrepreneurial Orientation Construct and Linking It to Performance," *Academy of Management Review*, vol. 21, no. 1, pp. 135-172, 1996.
- [7] G. T. Lumpkin, and G. G. Dess, "Linking two Dimensions of Entrepreneurial Orientation to Firm Performance. the Moderating Role of Environment and Industry Life Cycle," *Journal of Business Venturing*, vol. 16, pp. 429-451, 2001.
- [8] C. E. Helfat, "Know-How and Asset Complementarity and Dynamic Capability Accumulation: The Case of R&D," no. 5, pp. 339, 1997.
- [9] W. J. Ferrier, "Navigating the Competitive Landscape: the Drivers and Consequences of Competitive Aggressiveness," *Academy of Management Journal*, vol. 44, no. 4, pp. 858-877, 2001.
- [10] M. T. Tsai, S. S. Chuang, and W. P. Hsieh, "Using Analytic Hierarchy Process To Evaluate Organizational Innovativeness In High-Tech Industry."
- [11] D. M. Gann, and A. J. Salter, "Innovation in Project-Based, Service-Enhanced Firms: the Construction of Complex Products and Systems," *Research Policy*, vol. 29, pp. 955-972, 2000.
- [12] P. Barrett, and M. Sexton, "Innovation in Small, Project-Based Construction Firms," *British Journal of Management*, vol. 17, no. 4, pp. 331-346, 2006.
- [13] F. Blindenbach-Driessen, and J. van den Ende, "Innovation in Project-Based Firms: the Context Dependency of Success Factors," *Research Policy*, vol. 35, no. 4, pp. 545-561, 2006.
- [14] D. Dvir, A. Sadeh, and A. Malach-Pines, "Projects and Project Managers: the Relationship between Project Managers' Personality, Project Types, and Project Success," *Project Management Journal*, vol. 37, no. 5, pp. 36-48, 2006.
- [15] P. M. Bosch-Sijtsema, and T. J. B. M. Postma, "Cooperative Innovation Projects: Capabilities and Governance Mechanisms," *Journal of Product Innovation Management*, vol. 26, no. 1, pp. 58-70, 2009.
- [16] P. Volpe, and P. J. Volpe, *Construction Business Management*: Wiley, 1991.
- [17] S. H. Han, D. Y. Kim, H. S. Jang, and S. Choi, "Strategies for Contractors to Sustain Growth in the Global Construction Market," *Habitat International*, vol. 34, no. 1, pp. 1-10, 2010.
- [18] W. Jung, S. H. Han, H. Park, and D. Y. Kim, "Empirical Assessment of Internationalization Strategies for Small and Medium Construction Companies," *Journal of Construction Engineering and Management - ASCE*, vol. 136, no. 12, pp. 1306-1316, 2010.
- [19] A.-R. Abdul-Aziz, and S. S. Wong, "Exploring the Internationalization of Malaysian Contractors: the International Entrepreneurship Dimension," *Construction Management & Economics*, vol. 28, no. 1, pp. 51-61, 2010.
- [20] W. K. Fu, D. S. Drew, and H. P. Lo, "The Effect of Experience on Contractors' Competitiveness in Recurrent Bidding," *Construction Management & Economics*, vol. 20, no. 8, pp. 655, 2002.
- [21] Z. Y. Zhao, and L. Y. Shen, "Are Chinese Contractors Competitive in International Markets?," *Construction Management & Economics*, vol. 26, no. 3, pp. 225-236, 2008.
- [22] M. Hughes, and R. E. Morgan, "Deconstructing the Relationship between Entrepreneurial Orientation and Business Performance at the Embryonic Stage of Firm Growth," *Industrial Marketing Management*, vol. 36, pp. 651-661, 2007.
- [23] J. Hussain, K. Ismail, and C. S. Akhtar, "Linking entrepreneurial orientation with organizational performance of small and medium sized enterprises: A conceptual approach," *Asian Social Science*, vol. 11, no. 7, pp. 10p., 04 / 01 / 2015.
- [24] H.-C. Lin, "Building Competitive Advantage: the Roles of Upper Echelons and Competitive Aggressiveness." pp. Y1-Y6.
- [25] H. J. Kim, and K. F. Reinschmidt, "Effects of Contractors' Risk Attitude on Competition in Construction," *Journal of Construction Engineering & Management*, vol. 137, no. 4, pp. 275-283, 2011.
- [26] Y. Tan, L. Shen, and C. Langston, "Contractors' Competition Strategies in Bidding: Hong Kong Study," *Journal of Construction Engineering & Management*, vol. 136, no. 10, pp. 1069-1077, 2010.
- [27] W. K. Fu, D. S. Drew, and H. P. Lo, "Competitiveness of Inexperienced and Experienced Contractors in Bidding," *Journal of Construction Engineering & Management*, vol. 129, no. 4, pp. 388, 2003.
- [28] Quinlan, *Business Research Methods*: Cengage, 2011.
- [29] G. T. Lumpkin, C. C. Coglisier, and D. R. Schneider, "Understanding and Measuring Autonomy: An Entrepreneurial Orientation Perspective," *Entrepreneurship Theory and Practice*, vol. 33, no. 1, pp. 47-69, 2009.
- [30] V. Braun, and V. Clarke, "Using Thematic Analysis in Psychology," *Qualitative Research in Psychology*, vol. 3, no. 2, pp. 77-101, 2006.
- [31] K. Angkananon, M. Wald, and L. Gilbert, "Issues in Conducting Expert Validation and Review and User Evaluation of theTechnology Enhanced Interaction Framework and Method."
- [32] X. Meng, S. Ming, and M. Jones, "Maturity Model for Supply Chain Relationships in Construction," *Journal of Management in Engineering*, vol. 27, no. 2, pp. 97-105, 2011.
- [33] C. Ramirez, "Strategies Review in Questionnaire Design," in Question Desing, Evaluation and Testing Conference, Charleston, SC, 2002.