Consensus Views on the Success Elements for Extension of Time Claim (EoT) in the Malaysian Construction Industry: A Modified Delphi Study

Norazian Mohamad Yusuwan¹, Hamimah Adnan¹, Zul Zakiyuddin Ahmad Rashid¹, Wan Norizan Wan Ismail¹, Noor Aisyah Asyikin Mahat²

¹Faculty of Architecture, Planning and Surveying, Universiti Teknologi MARA Shah Alam, Selangor, Malaysia
²School of Housing, Building and Planning, Universiti Sains Malaysia

Email: azianyusuwan@gmail.com

Abstract. Producing a good contractual claim is never an easy task. A good claim not only requires fact and evidences but also demands other important elements that complement each other. This paper reports on a Delphi study focusing on identifying the success elements for Extension of Time (EoT) claim specifically in the Malaysian construction industry. Two rounds of a modified Delphi surveys were conducted and consensus was obtained from twelve experts. The Delphi study has successfully elicit experts’ consensus on the elements that perceived to be the most important element in producing a quality EoT claim that may lead to a speedy, successful and amicable settlement of such claim.

1. The Extension of Time (EoT) Claim

Assembling a claim is never an easy task. It should be logically constructed, well-organised and factually convincing to prove that the claimant is innocent while the other party is at fault [1]. The entitlement to extension of time is not simply a matter of producing a list of the events that gave rise to the delays in the construction projects; rather, the contractor must prove how the listed events caused delays and how they impacted the critical path, which then modified the overall duration of the project [2]. The EoT claim can succeed if the contractor can establish causation, liability and damage to each risk event [3]. On a similar note, Abdul-Malak, El-Saadi [4] suggested that to enhance the chances of success in claims, contractors must closely follow the steps stipulated in the contract, provide a breakdown of the alleged additional time, and present sufficient documents. Chappell [5], on the other hand, emphasized that the employer is only bound to meet claims that are based on some express or implied provision of the contract or rule of law, and it is for the contractor to prove the claim. He went on to add that to ensure that his claim will be entertained, the contractor must be able to demonstrate that he has followed the administrative machinery provided in the contract, whereby failure to do so will usually negate his claim.

It is almost impossible to have a construction projects that are free from any contractual claim even if it is successfully executed. The claim document is a medium that provides an opportunity for the claimants to defend and fight for their rights. It is therefore should be readily communicated, understood and remembered [6]. Most importantly, the theme should be the strongest argument in support of the claimant’s theory of recovery, duly supported by relevant facts and evidence. In order for the claim to be success or at least to reduce the likelihood of failure and rejection of such a claim, Hewitt [7] laid out the elements that underlie a successful claim, using the abbreviation CEES; C for Cause; E for Effect; E for Entitlement; and S for Substantiation.
It is utmost important that any claim made should have a cause; the event which has given rise to the claim in which one party to the contract has suffered damages for which it should be compensated by the other party [1][7]. Another vital part of the EoT claim is the demonstration that the delay events had an effect on the progress of the entire project. However, demonstrating the impact of delays on the schedule of a project is perhaps the most challenging task to be performed, especially when there is more than one delaying event [7]-[11]. In term of entitlement, it is a golden rule that the time of completion can only be extended if it is permitted by the contract. Therefore, it is vital for the contractor to check for the entitlement to an extension of time as it may vary depending on the type of contract used. Eligibility under the contract is pointless without compliance. To preserve the contractor’s right to claim, Hewitt [7] emphasised that any conditions precedent to entitlement to an extension of time must be fully complied with, or in the case of non-compliance, a justification has to be made as to why the conditions should not affect the contractor’s entitlement.

In substantiating the EoT claim, it is inherently dangerous to allow facts or assertions to speak for themselves, as the risk is that they will be interpreted in a way that is not intended [12]. Hence, the cause, the effect and the entitlement to an EoT claim not only have to be established and demonstrated, but most importantly, it has to be substantiated. Hewitt [7] referred to substantiation as “proving to a reasonable level that all statements made, points relied on, calculations submitted, and the like are correct”. In order to prove or substantiate the claim, it should contain evidence that shall be true, comprehensive and be of the force of law, and that which the lawyer would use in his trial [7][13].

2.0 Research Method: The Delphi Technique
Since its first application over a half of a century ago, the Delphi technique has gained trust amongst researchers as one of the most powerful techniques in eliciting expert opinions. It has been widely utilised in a diversity of research areas and disciplines such as in information system and technology [14][15], tourism [16], health care, environmental management (Danladi, 2015), business and management as well as engineering and construction [17][18]. Conventionally, this technique has been designed as a group communication process aimed at achieving consensus on a specific issues from a selected panel of experts [19][20]. It involves a systematic technique for obtaining expert consensus on a topic being studied, where the experts are required to participate in a multiple iterations or round of surveys [21]. Feedback received will be analysed, and a new questionnaire will be develop to be distribute to the panel of experts in the next round [22]. Following each round, an anonymous summary of the experts’ inputs from the previous round will be provided to the experts. The experts will have the opportunity to compare it with their previous response, whereby they are given the chance to maintain or to revise their response in light of the overall results. If common survey tries to identify “what is”, the Delphi technique aims to address “what could” or “should be” [19]. In addition, if survey technique is highly dependence on a sample size, it is not so in the case of Delphi technique [15].

Contrary to other method of data collection, the Delphi technique offers several unique features among which are anonymity, iteration with controlled feedback and statistical group response [22]-[24]. The Delphi survey is managed in a totally anonymous way where the panel of experts remain unknown to one another [22][25][26]. As it maintains the anonymity of the participants, it allows participants to freely express their views without any pressure or influence by the others [27][28]. This is the unique characteristic that the Delphi method has in comparison with other method of data collection involving panel of experts such as focus group. The issue of autonomy where one could have a power to driven others in focus group is eliminated in a Delphi method due to its anonymous procedure [29]. Another distinct characteristic of a Delphi technique is that it is iterative in nature. It involves multiple iterations or “round” of inquiry where in each round, participant is provided with feedback that involves new information and expresses the group collective opinion [19][22]. The iterative nature of this method allows participants to rethink and modify their response with the help of the feedback receive from the rest of the experts [25][30]. The questions in a Delphi survey are formulated in such a way that a quantitative and statistical analysis of the answer can be performed [30]. Views from the panel of experts will be statistically analyse and may utilise several approach to report a group response such as the
median accompanied with standard deviation; or frequency distributions [22].

Classically, the Delphi technique begins with an open-ended questionnaire intends to solicit as many opinions as possible from the expert based on their knowledge, experience and expertise on subject or content area [22][28][31]. As the first round aims to identify issues to be addressed in a subsequent round, open-ended type of questions is judged to be the most appropriate as it helps to increase the richness of the data [32]. Over the years since its first introduction, the Delphi technique has gone through a variety of modifications. The techniques has been modified not only to suit with the nature and objectives of the research but also to reach to a specific aims such as to shorten the process and to guarantee the involvement of the participants throughout the rounds [27][33]. Modified Delphi technique normally does not rely on the expert panel to provide answer in the first round. Rather, the researcher will use other means to collect the answers and presents them to the panel of expert to begin the Delphi process [28]. As Avella [28] further explained, among of the approaches use to collect the initial answer include an extensive review of the relevant literature, a series of interviews with individuals within or outside the study panel, and presents the results of a survey to an external group to the Delphi panel.

2.1 Designing the Delphi Study
Taking into account the context of the study and all the constraints, a modified Delphi technique is suited for this research. The choice was made based on aim of this research; identifying the success elements for EoT claim specifically in the Malaysian construction industry. The two Delphi rounds were conducted to accomplish this aim. To complete the Delphi survey seven stages were involved, started with the selection of experts, followed by the questionnaire development process, first round survey, analysis of first round responses, second round survey, analysis of second round responses and ends with the final report on the Delphi survey.

In order to obtain the most reliable and valuable opinions, the panel of experts for the Delphi survey were carefully selected. The panel of experts consisted of industry professionals identified via semi-structured interviews conducted with the practitioners, i.e. the professional architects and Grade G7 contractors. The interviewees were asked to nominate and recommend other experienced figures within the industry who, in their opinion, have sufficient experience and expertise in dealing with EoT claims. Following the identification of the experts for the Delphi survey through nomination by the other practitioners, the candidates was then being shortlisted based on pre-defined criteria. Among of the criteria devised for a Delphi participant are; practitioners having extensive working experience in the construction industry in Malaysia; practitioners having current, recent or direct involvement in dealing with EoT claims, particularly in private funding projects; and practitioners having sound knowledge and experience with regard to EoT claims. In addition to the expertise required, practitioners should have the willingness and ability to participate during the scheduled Delphi process. Initially, 40 experts were identified and invited via email to participate in the Delphi survey. Of 40 experts contacted, only 17 agreed to participate.

2.2 Delphi Round One- Rank & Weight
As this was a modified Delphi survey, the Round 1 questionnaire contained questions with pre-selected items for the panellists to indicate their response. This round was for the panellists to assess the importance of each element in determining the success of EoT claims obtained from the views expressed by the interviewees during the semi-structured interviews and from an extensive literature review, which was later confirmed by the professionals during the pilot test of the questionnaire. Following extensive reviews of previous researches and the semi-structured interviews conducted with industry practitioners, a list of 23 items were listed as elements that contribute to a successful EoT claim. Hewitt [7] simplified the essential elements for a successful claim by using the acronym of CEES: C = cause; E = effect; E = entitlement; and S = substantiation. In this research, Hewitt’s guideline was adapted and modified, with one new category being included. The categories were cause, effect, entitlement, substantiation and a new category, presentation. The cause-element consisted of two (2) items, while the effect-element
consisted of three (3) items. On the other hand, the entitlement-element, substantiation-element and presentation-element consisted of four (4), one (1) and thirteen (13) items, respectively.

Of the 17 experts who initially agreed to participate, only fifteen (15) responded to the first round. Two (2) experts dropped out due to heavy workload commitments during the survey. Table 1 illustrates the personal profiles of the expert panel in the first round of the Delphi survey. The 15 experts represented a wide distribution of professional figures in the construction industry, with five (5) from the client’s organization, six (6) from the consultant’s organization, while four (4) were professionals from the contractor’s organization. The composition of this group of experts was expected to provide balanced views for the Delphi survey.

Table 1. Personal Profiles of the Delphi Participants

| Expert | Current Position    | Level of Education | Years of Experience in Construction Industry | Years of Experience Dealing with EoT Claims |
|--------|---------------------|--------------------|-----------------------------------------------|--------------------------------------------|
| 1      | Project manager     | Master             | 16-20 years                                   | 5-10 years                                 |
| 2      | Director            | Master             | More than 25 years                            | 11-15 years                                |
| 3      | Contract Manager    | Master             | 21-25 years                                   | 11-15 years                                |
| 4      | Contract Manager    | Degree             | More than 25 years                            | 21-25 years                                |
| 5      | Contract Manager    | Degree             | 21-25 years                                   | 11-15 years                                |
| 6      | Contract Manager    | Degree             | 21-25 years                                   | 11-15 years                                |
| 7      | Quantity Surveyor   | Degree             | 16-20 years                                   | 11-15 years                                |
| 8      | Project manager     | Degree             | 16-20 years                                   | 11-15 years                                |
| 9      | Contract Manager    | Degree             | More than 25 years                            | 21-25 years                                |
| 10     | Quantity Surveyor   | Master             | 11-15 years                                   | 5-10 years                                 |
| 11     | Project manager     | Degree             | 21-25 years                                   | 11-15 years                                |
| 12     | Contract Manager    | Master             | 21-25 years                                   | 11-15 years                                |
| 13     | Project manager     | Degree             | More than 25 years                            | 21-25 years                                |
| 14     | Quantity Surveyor   | Degree             | 11-15 years                                   | 11-15 years                                |
| 15     | Planning Engineer   | Master             | 5-10 years                                    | 5-10 years                                 |

2.2 Delphi Round Two- Re-Evaluating the Ratings

Upon completion of the first round of the survey, the scores of each item, as rated by the panellists, were then recorded and analysed with the aid the SPSS software version 20.0, in which the frequency, mean and standard deviation of each item were computed and the results were provided to the panellists in the second round of the survey. The items were ranked in descending order based on the mean scores from 5 - 1 (extremely important to not important at all), which indicate the importance of the elements in determining the success of the EoT claim as perceived by the panel of experts. If there is a tie between the mean score, the standard deviation of the items will be used to break the tie. The tied items with the lowest standard deviation scores will be ranked first. As the standard deviation indicates the dispersion of variables around the mean values, a smaller standard deviation indicates more agreement on a particular item [34][35].

Since this was the final round of the Delphi survey, the consensus measurement for this research was established. Although there are a wide variety of ways to measure consensus in previous studies, Derus [36] proposed two alternatives on how consensus can best be measured: (a) if the number of samples (N) ≥ 35; standard deviation <1.00 (see Seibert [37]), (b) if N<35; consensus is considered to have been achieved on items that received ≥80% of panel agreement on the highest two or three points (see [38-
For this research, an agreement criterion of 80% was established as the minimum level considered for consensus. Those items that attracted below 80% agreement in the two highest scales of importance, i.e. 4 = important, 5 = extremely important, were considered as not important and hence did not require any further consideration. Those items that met the criterion for consensus were concluded to be important as the elements that determine the success of EoT claims. Although there was flexibility on how to establish the percentage of agreement, 80% was selected for this research in order to have a high level of consensus and to add credibility to the results [38].

Finally, after the two rounds of a Delphi survey, out of twenty-three (23) elements, twenty (20) elements received the consensus of the experts as the elements that will influence the success of EoT claims. Two rounds of the modified Delphi survey were considered sufficient for this research due to the following reasons:

a. Standard Deviation: The results from Round 2 showed that the standard deviation for those items that met the experts’ consensus were very close indeed to those of the first round (Table 2). As the standard deviation describes the dispersion of variables around the mean value, a closer standard deviation indicates a high degree of concentration around the mean value and hence, shows a high level of agreement between the experts.

b. No additional comments had been added by the experts in Round 1 and Round 2.

Overall, it was felt that a third round of the Delphi survey would not add to the indicators provided by the first two rounds. Thus, the Delphi survey was terminated at Round 2.

| Item                                                                 | Cause-Elements | Effect-Elements | Entitlement-Elements |
|---------------------------------------------------------------------|----------------|-----------------|---------------------|
| 1. It must be an event or a circumstance that has given rise to the claim (i.e. late possession of site, force majeure, exceptionally inclement weather, etc.). | 4.47 0.833 2 | 4.92 0.289 1 | 4.67 0.487 1 |
| 2. Liability for the event. The responsibility for an event must rest either on the employer, his agents (consultants), or it is a neutral event, which is beyond the control of any parties, i.e. force majeure. | 4.80 0.414 1 | 4.92 0.289 1 | 4.07 0.961 3 |
| 3. Establish link between cause and effect (Delay analysis should demonstrate the effect of the delay event on the contractor’s work programme). | 4.60 0.507 1 | 4.92 0.289 1 | 4.40 0.632 2 |
| 4. The narrative should contain details of the work affected, estimated affected duration, status of the work at the time the event occurs, and the consequences of the events should be well described to demonstrate the cause and effect. | 4.33 0.617 3 | 4.42 0.515 2 | 4.67 0.492 3 |
| 5. In the event of concurrent delay, each delaying event should be analysed individually and collectively. | 4.47 0.516 2 | 4.25 0.622 3 | |

Table 2. Round 1 and Round 2 Results for Elements for a Successful EoT Claim

| Item                                                                 | 1st Iteration | 2nd Iteration |
|---------------------------------------------------------------------|---------------|---------------|
| M | SD | Rank | M | SD | Rank |
|-----------------|----|-----|----|----|-----|
| Cause-Elements  |   |     |    |    |     |
| 1. It must be an event or a circumstance that has given rise to the claim (i.e. late possession of site, force majeure, exceptionally inclement weather, etc.). | 4.47 | 0.833 | 2 | 4.92 | 0.289 | 1 |
| 2. Liability for the event. The responsibility for an event must rest either on the employer, his agents (consultants), or it is a neutral event, which is beyond the control of any parties, i.e. force majeure. | 4.80 | 0.414 | 1 | 4.92 | 0.289 | 1 |
| Effect-Elements |   |     |    |    |     |
| 1. Establish link between cause and effect (Delay analysis should demonstrate the effect of the delay event on the contractor’s work programme). | 4.60 | 0.507 | 1 | 4.92 | 0.289 | 1 |
| 2. The narrative should contain details of the work affected, estimated affected duration, status of the work at the time the event occurs, and the consequences of the events should be well described to demonstrate the cause and effect. | 4.33 | 0.617 | 3 | 4.42 | 0.515 | 2 |
| 3. In the event of concurrent delay, each delaying event should be analysed individually and collectively. | 4.47 | 0.516 | 2 | 4.25 | 0.622 | 3 |
| Entitlement-Elements |   |     |    |    |     |
| 1. Entitlement in the contract; identify the contract provision under which the claim is being made. | 4.67 | 0.487 | 1 | 4.92 | 0.289 | 1 |
| 2. The contractor must be able to demonstrate that he has used his best endeavours to mitigate/minimise the delay. | 4.07 | 0.961 | 3 | 4.92 | 0.289 | 1 |
| 3. Any condition precedents to entitlement should be examined in the claim and the contractor must be able to demonstrate that he has complied with such provisions (e.g. notice requirement). | 4.40 | 0.632 | 2 | 4.67 | 0.492 | 3 |
| Item | Substantiation-Element | 1st Iteration M | SD | Rank | 2nd Iteration M | SD | Rank |
|------|------------------------|-----------------|----|------|-----------------|----|------|
| 1.   | Relevant documents of evidence to support the claim such as correspondence, minutes of meetings, site diaries, weather reports, photographs, etc. should be tagged along for the contract administrator’s reference and verification. | 4.73 | 0.457 | 1 | 4.92 | 0.289 | 1 |
| 2.   | The document of claim must be well and professionally presented to make the assessor’s job as easy and as pleasant as possible. | 4.53 | 0.639 | 1 | 4.67 | 0.492 | 1 |
| 3.   | Make the submission user-friendly such as by providing a clear arrangement and proper labelling to enable the assessor to locate any references, especially when the narrative contains references to other documents of substantiation. | 4.40 | 0.736 | 3 | 4.58 | 0.669 | 2 |
| 4.   | Write the narrative on the assumption that the assessor has no previous knowledge of the project. | 4.20 | 0.861 | 4 | 4.42 | 0.515 | 3 |
| 5.   | Lead the assessor to a logical conclusion. The document of claim must be properly arranged in such a way that it has a beginning, middle, and end. | 4.40 | 0.632 | 2 | 4.42 | 0.515 | 3 |
| 6.   | Make the submission a standalone document by including everything which the assessor will need to refer to. | 4.00 | 0.925 | 5 | 4.33 | 0.492 | 5 |
| 7.   | Use the narrative to explain other documents attached as substantiation or in support of the narrative. | 3.93 | 0.798 | 6 | 4.17 | 0.718 | 6 |
| 8.   | Any wording, titles and the like included in the supporting documents must be consistent with the narrative. | 3.93 | 0.798 | 6 | 4.17 | 0.718 | 6 |
| 9.   | Avoid the use of acronyms and abbreviations. | 3.47 | 0.915 | 13 | 4.00 | 0.603 | 8 |
| 10.  | Avoid the use of legalese and unnecessarily complicated language. | 3.80 | 0.774 | 9 | 4.00 | 0.603 | 8 |
| 11.  | Identify quotations correctly and consistently. | 3.80 | 0.861 | 10 | 4.00 | 0.853 | 10 |
| 12.  | Present the reference material and documents used as substantiation in a separate volume to the narrative. | 3.60 | 1.183 | 12 | 4.00 | 0.853 | 10 |

3. Conclusion
Findings from the Delphi survey with regard to the elements that contribute to the success of EoT claims revealed that the elements of success were closely related to the sufficiency and completeness of the documents to substantiate claims and also the competency of handling claims. Hence, it can be inferred that records and documentation along with the competency of handling claims demand a great deal of attention if a speedy, successful and amicable settlement of EoT claims is to be attained. The chances of success of the EoT claim submitted can be improved if the professionals involved are able to fully grasp what constitutes a good claim. Undeniably, experience is a good teacher, but experience can not only be gained through one’s own experience but also by learning from the experiences of others. A willingness to learn is of the utmost importance as knowledge is expanding by the minute. Knowledge can be enhanced through various ways such as by attending seminars, workshops, conferences, and so on, and these are definitely good ways of building competency. Other than that, in order to be competent in managing claims, it is essential for everyone involved to acquire adequate knowledge not only on technical construction but also to acquire a clear understanding of contractual terms and their implications, as these will influence their behaviour towards contract compliances that might influence the way they handle claims and the chances of success.
Acknowledgement
The authors would like to acknowledge the support of funding from the Ministry of Higher Education of Malaysia under the Fundamental Research Grant Scheme (FRGS) for this research. Special thanks also to the reviewers for their invaluable comments on this paper. Not forgetting that special gratitude is given to those industry practitioners who responded and contributed their valuable input in completing the Delphi survey.

References
[1] Kululanga, G., et al., Construction contractors' claim process framework. Journal of Construction Engineering and Management, 2001. 127(4): p. 309-314.
[2] Chong, H.-Y. and Y.-W. Leong, Legal approach on assessment of contractors entitlement to extension of time. African Journal of Business Management, 2012. 6(14): p. 4815-4823.
[3] Alnaas, K.A.A., A.H.H. Khalil, and G.E. Nassar, Guideline for preparing comprehensive extension of time (EoT) claim. HBRC Journal, 2014. 10(3): p. 308-316.
[4] Abdul-Malak, M.A.U., M.M. El-Saadi, and M.G. Abou-Zeid, Process model for administering construction claims. Journal of Management in Engineering, 2002. 18(2): p. 84-94.
[5] Chappell, D., Building contract claims. 5th. ed. 2011: John Wiley & Sons. 523.
[6] Ansley, R.B., T.J. Kelleher, and A.D. Lehman, Common sense construction law: A practical guide for the construction professional. 2nd. ed, ed. R.B. Ansley, T.J. Kelleher, and A.D. Lehman. 2001, USA: John Wiley & Sons. 454.
[7] Hewitt, A., Construction claims & responses: Effective writing & presentation. 2011: Wiley-Blackwell. 188.
[8] Arditi, D. and T. Pattanakitchamroon, Selecting a delay analysis method in resolving construction claims. International Journal of Project Management, 2006. 24(2): p. 144-155.
[9] Entrusty, Is the contractor still entitled to extension of time when there is concurrent delay?, in Master Builders. 2006: Malaysia. p. 101-103.
[10] Ndekugri, I., N. Braimah, and R. Gameson, Delay analysis within construction contracting organisations. Journal of Construction Engineering and Management, 2008. 134(9): p. 692-700.
[11] Scott, S., R.A. Harris, and D. Greenwood, Assessing the new United Kingdom protocol for dealing with delay and disruption. Journal of Professional Issues in Engineering Education and Practice, 2004. 130(1): p. 50-59.
[12] Carnell, N.J., Causation and delay in construction disputes. 2nd. ed. 2005: Blackwell Publishing. 302.
[13] Chen, C.B. and D.C. Wang, Study on the construction process control claims management. Applied Mechanics and Materials, 2012. 120: p. 385-388.
[14] El-Gazzar, R., E. Hustad, and D.H. Olsen, Understanding cloud computing adoption issues: A Delphi study approach. The Journal of System and Software, 2016. 118: p. 64-84.
[15] Skinner, R., et al., The Delphi Method Research Strategy in Studies of Information Systems. Communications of the Association for Information Systems, 2015. 37.
[16] Konu, H., Developing nature-based tourism products with customers by utilising the Delphi method. Tourism Management Perspectives, 2015. 14: p. 42-54.
[17] Tymvios, N. and J.A. Gambatese, Direction for Generating Interest for Design for Construction Worker Safety-A Delphi Study. Journal of Construction Engineering and Management, 2016. 142(8).
[18] Perrenoud, A.J., Delphi Approach to Identifying Best Practices for Succession Planning within Construction Firms. International Journal of Construction Education and Research, 2018.
[19] Hsu, C.-C. and B.A. Sanford, Delpi Technique, in Encyclopedia of Research Design, N.J. Salkind, Editor. 2012, SAGE Publications.
[20] Chan, A.P.C., et al., Application of Delphi method in selection of procurement systems for construction projects. Construction Management and Economics, 2001. 19(7): p. 699-718.
[21] Hsu, C.C. and B.A. Sandford, The Delphi technique: Making sense of consensus. Practical Assessment, Research & Evaluation, 2007. 12(10): p. 1-8.
[22] Sourani, A. and M. Sohail, *The Delphi Method: Review and Use in Construction Management Research*. International Journal of Construction Education and Research, 2015. 11(1): p. 54-76.

[23] Dalkey, N.C., *The Delphi method: An experimental study of group opinion*. 1969: California.

[24] Awad, M., et al., *Consensus views on the optimum training curriculum for advanced minimally invasive surgery: A delphi study*. International Journal of Surgery, 2018. 53: p. 137-142.

[25] Manoliadis, O., I. Tsolas, and A. Nakao, *Sustainable construction and drivers of change in Greece: a Delphi study*. Construction Management & Economics, 2006. 24: p. 113-120.

[26] Diamond, I.R., et al., *Defining consensus: A systematic review recommends methodologic criteria for reporting of Delphi studies*. Journal of Clinical Epidemiology, 2014. 67: p. 401-409.

[27] Skulmoski, G.J., F.T. Hartman, and J. Krahn, *The Delphi method for graduate research*. Journal of Information Technology Education, 2007. 6(1): p. 1-21.

[28] Avella, J.R., *Delphi Panels: Research Design, Procedures. Advantages and Challenges*. International Journal of Doctoral Studies, 2016. 11: p. 305-321.

[29] Sahari, S., et al., *A review of Delphi technique in developing human capital disclosure index*. Academy of Accounting and Financial Studie Journal, 2018. 22(4): p. 1-9.

[30] Landeta, J. and J. Barrutia, *Peopleconsultation to construct the future: A Delphi application*. International Journal of Forecasting, 2011. 27: p. 134-151.

[31] Custer, R.L., J.A. Searcella, and B.R. Stewart, *The modified Delphi technique-A rotational modification*. Journal of Vocational and Technical Education, 1999. 15(2): p. 50-58.

[32] Powell, C., *The Delphi technique: Myths and realities*. Journal of advanced nursing, 2003. 41(4): p. 7.

[33] Biggs, S.E., et al., *Safety leaders' perceptions of safety culture in large Australasian construction organisation*. Safety Science, 2013. 52: p. 3-12.

[34] DeLany, B.W., *Entry-level job skills needed by wildlife management professionals*, in *The School of Human Resource Education and Workforce Development 2004*, Louisiana State University and Agricultural and Mechanical College.

[35] Hurme, F.E., *Competencies for rural nursing practice* in *The School of Human Resource Education and Workforce Development*. 2007 Louisiana State University and Agricultural and Mechanical College.

[36] Derus, M.M., *Penunjuk kompetensi yang dianggap kritikal untuk pengurus projek dalam Jabatan Kerja Raya*, in *Quantity Surveying Department*. 2012, Universiti Sains Malaysia: Pulau Pinang, Malaysia.

[37] Seibert, M.J., *The identification of strategic management counseling competencies essential for the small buisness and technology development center: A modified delphi strategy*, in *Adult and Community College Education Training and Development Program*. 2004, North Carolina State University.

[38] Thomas, C.K., *The role of the public school superintendent in local economic development*, in *Educational Leadership and Policy Studies*. 2002, Virginia Polytechnic Institute and State University: Virginia.

[39] R.Mirra, D., *The Role of the School Superintendent as a Technology Leader: A Delphi Study*, in *Educational Leadership and Policy Studies*. 2004, Virginia Polytechnic Institute and State University: Virginia.

[40] Davidson, J.W., *The necessary components of a staff development program to prepare teachers to teach secondary online classes: A Delphi study in Educational Leadership and Policy Studies*. 2005, Virginia Polytechnic Institute and State University: Virginia