

Trusted Partner Identification Method Through Trust Values for E-Business (B2B) Supply Chain Integrator- A Qualitative Analysis using Sequential Explanatory Strategy

Norshakirah Ab Aziz, Rohiza Ahmad and Dhanapal Durai Dominic,
Computer and Information Sciences Department, Universiti Teknologi PETRONAS,
Bandar Seri Iskandar, 31750 Tronoh, Perak, Malaysia.

Abstract- Limited trust, cooperation and communication have been identified as some of the issues that hinder collaboration among business partners. There is a need to do a research in ensuring the entire supply chain components collaborates in a socially trustful environment. This study will provide an identification method for selecting trusted trading partners using the trust values identified. For research methodology, mixed methods research using Sequential Explanatory Strategy (SES) applied in this study. However, this paper only discuss on the Qualitative analysis. Besides, the qualitative analysis steps and software used also been presented. As a contribution, Trust proposed model presented in this paper. Then it will be transformed into an IT implementable prototype.

I. INTRODUCTION

Trust can be explained in many ways, according to individual perspectives or filters [1-4], for instance IT, Business, knowledge experience and environment/domain. Trust has been claimed as the important thing in business technology [5-9], and the key factor for business relationship success [8, 10-13]. Indeed e-business needs trust, and without trust, the business relationship will end anytime soon. Trust is needed because it will assure the commitment among others as promised and to have long term business relationship.

True supply chain should seamlessly incorporated all partners[1]. However, is not easy to trust individual or organisation without preferences such as experience, and good record that play a role in the decision making process to select right trading partners. People usually make a decision based on our knowledge and experience. In other words, trust is built from knowledge and experience. Trusted partner may face evaluation process that the assessment criteria is decided by the organization itself which may different between companies. Trust always related to belief, faith on the other party to do what they say or promise or walks the talks.

II. TRUST IN E-BUSINESS

E-business is a vast area of study. Some people use E-commerce, and E-business interchangeably [14]. However,

the terms some differentiated the two by stating that what we see is E-business while E-commerce is the activities behind which are conducted to achieve the goal of the E-business [15]. Basically E-business allows exchange of information between parties or companies (B2B) [16] This gives opportunities for companies to expand worldwide at a small cost, and increase market share.

The relation trust in e-business clearly can be seen in the process exchange of information, products and services between companies across the supply chain. In the conventional way of doing business, a lot of paperwork will be involved when quotation is requested by contractor, order been taken, and final process was made. Duration to deliver the paper work like Request for Quotation (RFQ), Purchase Order (PO), and Invoice to reach the destination take a few days depending the distance of location and mode of delivery[17].

Extensive literature review helps identified the importance of trust values along with characteristic in e-business [1, 3]. However, using modern business-B2B, all the appropriate documents are digitally in just a few seconds delivered rather than physically (conventional way) without any boundaries. The audit trails helps business to be more transparent by tracking the buying and selling process. The trust in e-business contributes to lower cost, fewer errors, and faster turnaround.

Basically E-business is always related to supply chain (SC). However, depends on the industry the companies are involved and the business nature. E-Supply Chain is referred to Electronic Supply Chain [3]. E-Supply chain contains ICT and Knowledge management in order to provide dynamic information that can integrate the entire supply chain components using Information Technology (IT) [1, 3]. E-business systems and processes in Internet technology have an impact on inter-organizational management processes.

Consequently, a major implication of e-business is its impact is on supply chain management[1]. Thus, Malaysian construction industry was selected as domain for this study due to the most complex and stubborn industry in Malaysia[1, 3]. As presented in [1], four core trust values identified which are competence, identification, reliability and openness as in fig. 1.

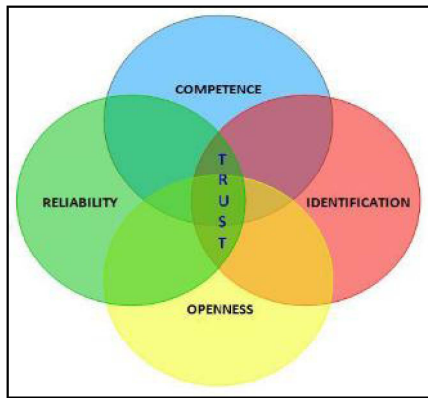


Figure 1. Trust Values

The four trust values ranking and weightage may different from the each domain tested, but the values factor still same.

This paper will discuss on the qualitative study which is on how the qualitative study conducted. The purpose of the qualitative study is mainly to explore in depth and assist in explaining findings from the earlier quantitative study.

III. METHODOLOGY

A. Qualitative Analysis

There are three research methodologies, commonly known to be used by researchers in social research, which are Quantitative, Qualitative and Mixed Methods [1]. However, for this study, the most suitable methodology to be used is Mixed Method. Mixed method consists of quantitative and qualitative methods. Mixed method was chosen due to its ability to handle both quantitative and qualitative types of research questions. Furthermore, for the purpose of this research, the technique used to collect and analyze data as well as interpret findings is the Sequential Explanatory Strategy (SES). Using SES, both data collected in phases or sequentially [1, 3].

The main advantage of SES is to help this study in meeting the research objectives and answers all the research questions by providing stronger inferences [1]. In fact, SES is very useful when unexpected results arise from quantitative study that requires further examination of the results. This study research methodology framework is shown in fig.2. In the fig.2, the qualitative analysis start after the quantitative study (1st phase) was completed as one of the rules of SES method [1, 18, 19]. Once the 1st phase completed, then the qualitative study (2nd phase) will be follow.

Qualitative analysis using SES was done after a quantitative study had been conducted. In other words, SES was carried out in order to confirm the findings from the quantitative study. The quantitative study was conducted earlier and reported in [1], resulted with four trust values being identified as crucial for trusted partner.

For the qualitative study, Grounded Theory (GT) was used to have the depth understanding that cannot achieve in quantitative methods [20, 21] and also famous for information system researchers [22]. This because GT able to explain the result in quantitative findings in more details [23], and derived theory, knowledge founded in data

collection and analysis [24]. The GT process in the collection of data, code data and make connection can see as systematic and structural method. Its allow GT provide evidence, greater details and accurate information.

Usually evidence for GT gathered from interviews, focus group and observation [25], and this study chooses Focus group discussion (FGD) as shown in fig 2. The data collected was composed and analyse using qualitative analytical software (ATLAS.ti). Result from the qualitative and quantitative analysis then used to design the Trust Proposed Model.

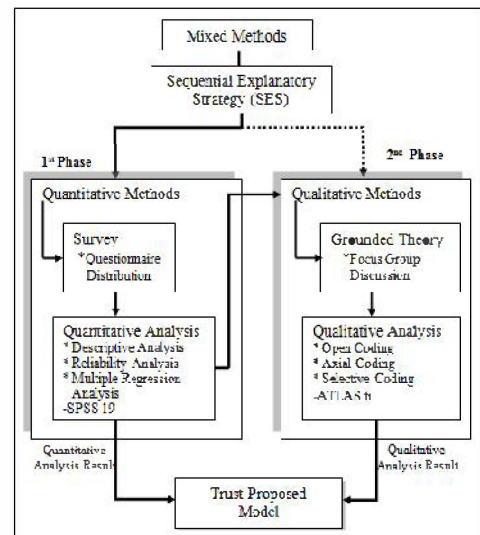


Figure 2. Research Methodology Framework

This study applied SES which the first phase is the quantitative study and follow by the second phase, the qualitative study.

B. Focus group Discussion (FGD)

Using the result from quantitative findings, FGD helps this study further identify each trust values characteristics and their measurement parameters. Especially in the process of how the businesses evaluate their trusted trading partner. At the same time, FGD was chosen to get in depth understanding on the Malaysian Construction Industry supply chain components behaviour, perception, and experiences in the topic discussed which is to provide explanations of the results from the previous quantitative study.

As for the size of the participants, 3 groups were identified with four persons per group. The first group for this research are the Researchers group, and the participants are from Construction Research Institute of Malaysia (CREAM); the second is the contractor and third groups are supplier. This complies with the requirement for conducting FGD which says that FGD conduct in mini groups can range from as few as three depending on the research purposes [1]. According to [26], smaller groups are more appropriate if the aim is to explore complex, controversial, emotional topics, sensitive issue or to encourage details accounts.

Besides, the advantages of small group would be easier to control, and allows participants to contribute insight, experience and observation. In fact, small groups show greater potential [27], because easy to recruit, host and the

setting is more comfortable for the participants [28]. Focus groups of a small size, i.e., three, were successfully used by [29] in his study. Moreover, easy to handle the participants, communication is clearer, more focused and less misunderstanding. For the respondent's profile, they are from senior executives, middle level positions and higher level managerial post.

i. FGD Preparations

There are few things need to be consider before start the FGD session. This included the process of participant selection, moderator, and the confidentiality of information. To conduct FGD, the following steps have been carried out by the researcher.

1. Identify objectives and goal of FGD
FGD result needs to meet the research objective and helps to give an explanation for any unexpected result in quantitative findings.
2. Prepare the FGD transcripts interview question
The interview transcripts designed into three main parts which are, trust values definition and measurement, opinion and experience, and observation on trust in SC.
3. Identify FGD moderator
For moderator, this study used only one moderator in one FGD session. Normally, moderator is someone that has the good personality, able to communicate well in English and Malay, so participants comfortable in expressing taught, idea, knowledge and experience.
4. Identify and recruit FGD participants
The groups of SC components identified are Industry Research Institution, Contractor Company and Supplier Company. For the participants, identified company have right to select their team according to this research respondents profile.
5. Send an FGD Invitation letter to identify groups
An invitation letter needs to be sent to them to explain the objective of the FGD, the ground rule and the confidentiality of information. Then invitation letter also provided with proposed date, time and venue. However, they also can provide their prefer date for the FGD session and inform the identified company on the use of tape or video procedure during the session. Thi purposely to analysing discussion data more accurately with their permission.
6. Follow up FGD invitation (date, time and venue)
The invitation need to be follow up. Besides, to discuss the date, time, venue and the attendance of the participants.
7. Conduct FGD session as agreed
Conduct the session as agreed earlier. The duration of FGD session for this study is only one hour per session.
8. Send email/mail thank you message for the FGD participation.
After completed the FGD session, thank you message need to be sent to all participant. This is purposely to show appreciation on their contribution and participation.

9. Analyze the FGD original transcripts into qualitative analysis software.

Data and information gathered from the FGD then transfer into qualitative software in order to interpret and analyze.

Since this study has three FGD sessions, it conducted in different time, and the process begins with identify the moderator, send an invitation letter, arrangement of the interview date, and follow up feedback. The participants were encouraged to share their idea, opinion, knowledge, experience and observation. The session was recorded on tape, and they also allow writing any valuable information on their transcripts provided that purposely to capture all the interview data accurately.

C. Analysis Steps

Regarding the qualitative analysis steps, all the data collected were composed into the ATLAS.ti in order to be analyzed. To analysed, there are three files created for this study and use three types of coding which are open coding, axial coding and selective coding [21].

The analysis steps started with open coding. Data and information gathered during FGD sessions, then transferred in to the software to be analysed. The steps of analysis start with Open coding; which is regarding the process of generating initial concept or categories from the original data/transcripts. In other words, it about summarising text into the code to represent the phenomenon or event[21]. Generally the raw data need to be interpreted into code, line by line; statement by statement, paragraph by paragraph, story by the story, and incident by incident.

This process was done separately for each FGD group. In fig.3, original transcript is in the left side, was interpreted into codes which located in the right side of the file which known as open coding. The codes were named according to indicators of categories.

For example, the text "*Competence is about achievement of the company, included their work experience, ability, total of successful projects on time, total awards received, good quality, cost within budget and client satisfied*" in quotation margin coded into "*capability + efficiency = competence*" in code margin as shown in Figure 3.

The event explains about how important skills, experience, efficiency, and the ability to perform task physically and intellectually in a business relationship and was coded as '*competence*'. In other words, it about the important of good performance, achievement in business, and experienced in the specialized area.

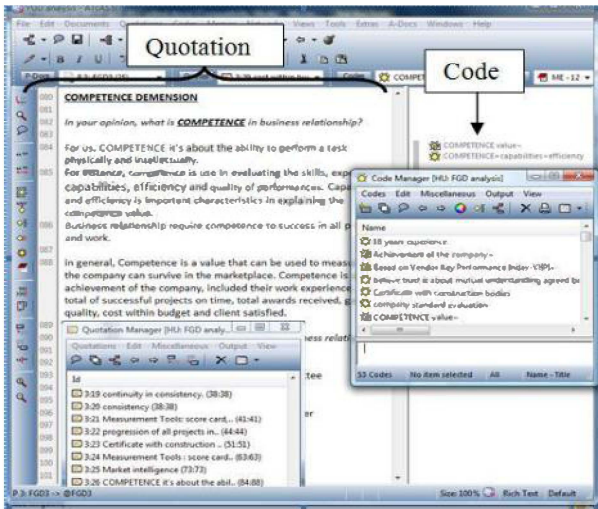


Figure 3. Open coding –ATLAS.ti

Open coding purposely to help in summarise and interpret the original text into concepts and ideas.

Basically after the process of open coding completed, and then the axial coding process start. Axial coding is about making a connection between the codes. Once the connection between codes completed, selective coding process follow. Selective coding is about creating a full story or theory on the events that connected into one network. The network then named as ‘Trust’ as shown in fig.4.

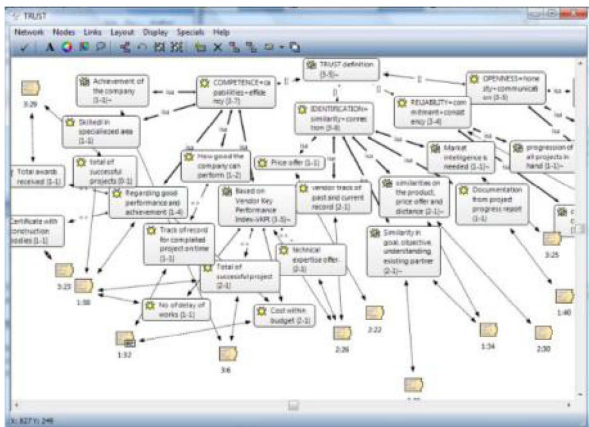


Figure 4. Trust network –ATLAS.ti

Axial coding connects the codes together, and selective coding links the categories into one network called trust.

The three files in ATLAS.ti, then compared to find consistencies and differences. Consistencies between codes in the files shows similar idea on the topic discussed. Quotations and memos help to explain the codes which allows the characteristics each code be identified.

Findings from the qualitative analysis help to create the trust proposed model for this research. Results strongly support a model of four trust values. The four trust values characteristics in fig.5 become as prerequisites for trusted partner selection, which in return influences for integration.

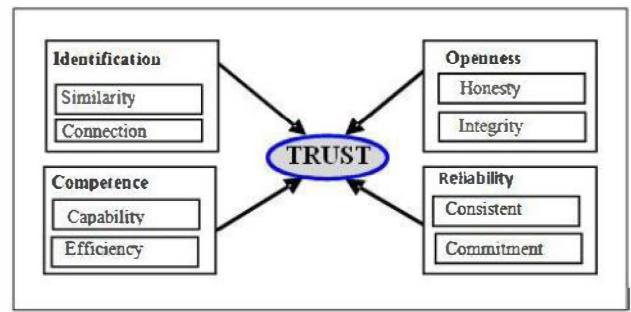


Figure 5. Trust Characteristic Values

Each trust values has their own characteristics which create solid trust for B2B collaboration trustful environment.

IV. CONCLUSION AND FUTURE DIRECTION

This study is an ongoing study. The qualitative analysis result strongly supports findings in the quantitative analysis. The trust characteristics values detail with trust measurement parameter will be transformed into IT implementation prototype. This purposely to shows how the trust score program functioning in business routine. The identification method through trust values can be used as guidelines for anyone to be Integrator in industry. It also can be a good model that can be extended to other industries or business with a similar process. The most important thing is to find the method to identify trusted partners among SC components. The integration in SC highly depends on the collaboration that is built from trusted partners. The collaboration combines or links the entire SC components into one centralized centre or the application can interact with each other. All the transaction can be done easily from the initial/beginning transaction until completed as one full cycle.

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