

Decision-making Bid or Not to Bid in Construction project – UAE

اتخاذ القرار لتقديم عطاء المناقصات او عدم تقديمه في مشاريع الانشاءات بدولة
الامارات العربية المتحدة

by

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of the requirements for the degree of
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Abstract

The definition of bidding in construction filed is the ability of the company to make offers or tenders for a job opportunity. The construction filed. Construction in the UAE accounts for 14% of the UAE's total GDP (Gross Domestic Product). The economy performance can be measured by GDP's indicator. Growth in GDP it means strong economy and high standard of living. This strong relationship between the construction tenders and the country's GDP growth highlights the importance of improving the quality of decision making and bidding strategy in industry filed. This leaves no room for doubt that poor bidding practices contributes in ineffectiveness industry performance. Decision to bid or not to bid is crucial judgment to balance the benefit of the trade-off between the high probabilities to sign the contract and the cost of bidding preparation considering the factors influence the bidding process in order to enhance the organization performance and decision's strategy. Decision to bid / no bid is linked with uncertainty which usually emerged from project feature with dynamic changed situation. Questioners were distributed to 100 Employees of construction companies from different departments, levels and domain such as engineering, top management, consultant, commercial operations, business operations. Sixty seven (67) participants were completed the survey and sent their response. Data have been analyzed by SPSS soft wear, descriptive analysis, Cronbach alpha test to validate the received feedback, correlation test to measure the relationship between identified organization factor and finally liner regression test to predict the changes on dependent variables (decision making bid / no bid) and to support the rejection of null hypotheses H_0 and accept of alternative hypotheses. This study recommend to avoid rule of thumbs in bidding process and to build reputation and competent consultancy.

Key Words: Bidding Process, Bidding decision, Bid / no Bid factors

الملخص

تم تعريف العطاءات في قطاع الانشاءات على انها قدرة الشركة على تقديم عروض أو مناقصات للحصول على فرصة عمل. حيث يمثل قطاع الانشاءات في دولة الإمارات العربية المتحدة 14 ٪ من إجمالي الناتج المحلي لدولة . يمكن قياس أداء الاقتصاد من خلال مؤشر الناتج المحلي الإجمالي. النمو في الناتج المحلي الإجمالي يعني اقتصاد قوي ومستوى معيشة مرتفع. هذه العلاقة القوية بين مناقصات في قطاع الانشاءات ونمو الناتج المحلي الإجمالي في البلاد تبرز أهمية تحسين صنع القرار واستراتيجية تقديم العطاءات المقدمة, هذا مما لا يترك مجالاً للشك في أن تقديم العطاءات الضعيفة تساهم في تدني مستوى أداء الشركات وانعكاسها سلباً على نمو الاجمال المحلي. لذلك فان اتخاذ قرار تقديم العطاءات أو عدم تقديمها هو مطلب أساسي وتحدي صعب لتحقيق التوازن بين احتمالية توقيع عقود المشاريع وتكلفة إعداد العطاءات مع مراعاة العوامل التي تؤثر على عملية تقديم العطاءات من أجل تعزيز أداء الشركة واستراتيجية القرار. يرتبط اتخاذ القرار بتغيرات الغير متوقعة التي تفرزها التغيرات الملازمة للمشاريع . تم توزيع الأسئلة على 100 موظف من شركات البناء من مختلف الإدارات والمستويات والمجالات مثل الهندسة والإدارة العليا والاستشاري والعمليات التجارية الموارد البشرية. سبعة وستين من المشاركين اكمل الاستطلاع حيث تم اجراء تحليل بياني لجميع ردود المشاركين باستخدام برنامج الاحصاء لتأكد من صحة المعلومات ودقتها واختبار ارتباط العوامل والمتغيرات والتنبؤ بفرضيات لدعم او رفض فرضية العدم او قبول فرضيات بديلة. توصي هذه الدراسة بعدم الاعتماد على الخبرة المجردة في تقديم المناقصات والعمل على تحسين استراتيجية اتخاذ القرار من خلال بناء الثقة و اضافة الخدمات الاستشارية والهندسية في مرحلة دراسة وتقديم العطاءات

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Chapter 1: Introduction

1.1 Background

The United Arab Emirates is one of the most tourism countries in whole the world, there are many people looking forward to visit it in all year seasons and occasions, and it is looking at the expectations of many investors around the world because of the regulations and laws in force in the country that guarantee the safety of its security and residents at home. The Government encouraged to diversification of sources of income to compensate the price drop in oil & Gas filed (Mitra & Wee Kwan Tan 2012). United Arab Emirates regimes carry on driving the economy ahead throughout a approach of investment. The UAE keep on to distinguish expansion and development in urbanization during a comparatively youthful and increasing populace, which in require in real estate and arrangement of the construction Industry (Maddison 2013). Further to previous research the construction industries formalize 14% of total GDP in the country (Faridi & El-Sayegh 2006). The construction industries in UAE comply with the market demands and international codes and standards (Maddison 2013). The nature of the construction in the UAE is be different among Emirates which significantly concerned in investment monitoring of the improvements and developments. Generally the construction relying on the financial returns and the difficulty of the project (Albaloushi & Skitmore 2008). As project driven businesses, the probability of construction corporate in addition relies on the method they plan their potential investments; consequently choosing the correct projects is critical (Burke 1999). Generally, contractors might acquire bid chances from a variety of channels: as example from a client who had satisfying business knowledge and experiences previously, also from a recommended person who recognizes the submitted services, maybe from a proposing web application or rely on contractors' own efforts, from clients' website (Lewis 2003). Though the subsequent conditions are interexchange used in the business, requesting to tender, proposal, quotation or offer prices, invitation to Bid , they carve up the similar significance and give details about the work demands and condition to be performed (Cleden 2011).

Tender documents returns to an official document that submit determined directives on demands work, which is released by a client, means the employer's requirement to produce the final product and execute scope of work based on BOQ, specification, drawings, and selected quality of the material within duration of time. Organization' management should understand the condition and clauses, the nature of the project which define the scope of work, role and responsibility of each part, payment term, liability, exclusions and inclusions, insurance, health

and safety requirement, performance bond, schedule of work and program, penalty, variation & claims before deciding to proceed with the bid. The mutual agreement on offer 'Bid' will formulize in a contract between the client and contractor binding all parties.

Many researchers believes that the bidding price is a most important factor in the failure of the construction industry. In the recent years competitive big business industry, each construction corporation face a decision-making impasse and have to take decision however to bid or not bid on a contract or which project to bid on along with entrants. Nevertheless the decision-makers appear to the ending with many several results; a last assessment at all times needs setting diverse factors addicted to studying and consideration loses and benefit of a project (Mohanty 1992).

Project collection stage becomes very important for construction corporate, particular that the construction business changes from other fields in conditions of confusion and is special by low profit margins, high rate of benefit revenue (Park & Chapin 1992). The construction business in UAE illustrates performance over other countries in the region appropriate to the contribution of international expert and project management compact, yet appropriate to the fast outline projects and the massive requires in the construction share market the projects are very hindered with troubles containing the severance of design and construction, weakness of communication between all projects stake holders. The ultimate product for clients of the construction business is displeasure with results in many belongings and higher costs than demands. Usual management approaches be liable to control the construction business, with simple awareness of options that could guide to improved results.

1.2 Problem statement and research rationale

Pricing and submitting the tender of the project is a potential agreement and serious intension of the organization to proceed further, however the choice of an incorrect project might boundary the capital, furthermore avoid the corporate from performing and taking other constructive projects. Consequently, a contractor ought to think about money and time (Halpin Halpin & Senior 2011). Taking in consider there are a variety of problems in the construction business, Park & Chapin (1992) proposed some important philosophies of useful constricting to assist contractors make a gainful business. Examining bidding plans and strategies were the fundamental consideration by researchers (Harris et al. 2006). Decision to bid /or not to bid is crucial judgment to balance the benefit of the trade-off between the high probabilities of getting contract with very low margin could be nick to nick or breakeven cost just to keep the company running and maintain the cash flow or miss the opportunity to sign the contract.

Each construction project is a unique in nature, regardless if the project can be similar or mirror on the drawings, but there will be different in specification, vendor list of the product, location and surrounding area, authority approval, state, duration of the project, client funding the project, consultant and his procedure of monitoring the project, and organization team. Therefore it is scarcity to consider the completed project as a model to estimate for similar project without considering the technical and commercial factors of the project beside the experience in previous project, listen learn and historical information to ensure success trade-off between quotation price and fund in return to have competitor price in order to get the project with reasonable margin profit (Biruk, Jaśkowski & Czarnigowska 2017).

The company's expectations should be balanced with the estimating department's capabilities. The tightness of time and the large number of projects may expose the company to significant losses in the material return, which contributes to the negative impact on the company's reputation. This will be reflected negatively on the work team during the implementation of the project due to budget constraints and deficits. There are organizational factors internally & externally play a significant rule in tendering process. Lowest price is the key factor during the client's evaluation for bidding price which will complicate the tendering and reduce the chance of winning the project (Biruk, Jaśkowski & Czarnigowska 2017).

Estimation department is the most work loaded department in the organization, and the staff work long hours to initiate the tender budget and bill of quantity "BOQ" in very short period to submit the bid on time to the client which will enforce them to have mistaken, and expose them to different levels of risk can start from offer is rejected or in case of acceptance the budget will not be fit to perform the project and will end up with catastrophic consequences. The competencies and experience staff that can be presented the Quantity survivor usually are busy for gathering the information from the drawings provided by the client, arrange take-off of the material, review specification, raise tender clarification, arrange bill of quantity, and get the price from the market. Shortage of information, and un-clear scope of work will affect the efficiency of the project during the execution, cause financial, dispute between the contractor and the employer (Bin Bandi, Abdullah & Amiruddin 2014).

1.3 Research aim and objectives

The eventual aim of this research is narrowed down to identify the organizational factors influence on bidding process, which were extracted from literatures in order to create a useful

decision-making tool / checklist to help and support decision-makers in the construction business. This can be achieved by following objectives:

Identify Factors influence the bidding process. Factors can be classified into external factors and internal factors. External factors related to the client (needs, communication, image, contractual, bidding process nature, financial resource & capacity, client reputation with other contractor, type of the client – public/private, type of contract, term and condition of the contract), competition where the budget of the project is not what the client can pay but it depend what the other contractor can offer for the same scope of work (skills, confidentiality, requirements, malevolence), environment (economic & availability of the work, tax liability, local customs, risk involved in investment and geographical social) and consultant (ability to modify the specification to reduce the cost of the offer, technical clarification, quality of tender design and provided BOQ during tender process, compliance with local authorities). The internal factors related to strategy of the organizational, management, human resource, financial, development, outsource business expansion and continuation, workload, historical information of previous project in term of profit in similar projects, project documentation includes uncertainty for direct & indirect cost estimate, mark-up, fluctuation escalation in raw material price, budget, arrangement of cash flow along the project time frame and procurement strategy.

1.4 Hypotheses development

The study will assume that, there is no relationship between two phenomena or link between independent variable and dependent variable and work to accept or reject the assumption and proof the relationship with a high significant value more than 95%

Null Hypothesis H_{0-1a} : “Decision making Bid or / not to Bid in UAE construction project is not effected by organizational need for work”

Null Hypothesis H_{0-1b} : “Decision making Bid or / not to Bid in UAE construction project is not effected by organizational factor – Strength of firm”

Null Hypothesis H_{0-1c} : “Decision making Bid or / not to Bid in UAE construction project is not effected by organizational factor – Project conditions”

Null Hypothesis H0-1d: “Decision making Bid or / not to Bid in UAE construction project is not effected by organizational factor – Risk”

Null Hypothesis H0-1e: “Decision making Bid or / not to Bid in UAE construction project is not effected by organizational factor – Competition”

Null Hypothesis H0-2: “Decision making Bid or / not to Bid in UAE construction project is not effected by Global IDV- organizational factor”

Chapter 2: literature review

2.1 Overview

These days, the construction sector is facing serious challenges and complexities resulting from a change in the surrounding conditions, which has a significant and direct impact on the quality of the decision. Making a decision is not easy, as you have to balance the chance of profit and not losing during the execution due to major discount or wrong estimation. Decision to reject the tender might badly effect of firm stability. Companies are looking to receive invitation for tender and submit the most competitor offer to win the project in order to continue in the construction industry but these efforts face internal and external challenges and competitors in the same field who are seeking to get the same opportunity and win the project to survive (Egemen & Mohamed 2007). Once the inquiry for tender flooded in the market, company should decide to proceed in the tender or not. If the company decided to participate then they should prepare Bid summary, BOQ, determine the profit and margin, risk, project and environment then the decision will depend on the number of internal and external factor which is vary from company to other (Leśniak, 2015).

The organization's comprehensive bid proposal should be studied well and treated separately from project to project. It different way the proposal considered as lifeline or fresh blood from the organization because it ensures the continuity of the company and its entity. It is fact that the bid proposal can be costly and need enough time to prepared it in proper way. Kerzner (1986) observed that some time bidding proposal can be wasting of time and money for non-winning tender response for proposal for just tendering and not job in hand. The fundamental target for the contractor is to win the project to submit repose for tendering request. Winning project is the success factor of organization in long term goal and stability. Therefor the contractor's company should have develop the strategy of dealing with the bidding proposal receive it on daily basis. Strategy is the focal point for the contractor stability and survival. The strategy can be depend on filtering the proposal request based on the priority, the credibility of the request for proposal, don't consider the losing tender, speculation or gambling in prices for client benefit because it demotivate the efforts of the team and destroy the reputation of organization. Looking for good opportunities that can support the objective of the organization.

Type	Prime Factor	Secondary Factor
Internal Factors	Need for Work	Current workload of projects, relative to the capacity of your firm
		Current financial situation of the company
		Need for continuity in employment of key personnel and workforce
		Current workload in bid preparation
	Strength of Firm	Ability to fulfil tender conditions imposed by the client
		Financial status of your company (working cash requirement of project)
		Experience and familiarity of your firm with this specific type of work
		Possessing enough qualified technical staff to do the job
		Possessing enough required plant and equipment to do the job
		Having qualified subcontractors
		Project resource similarity and its influence on existing projects performance
		Amount of work to be subcontracted relative to the total volume of work
	Project Conditions	Project size (total bid value)
		Terms of payment
		Project type
		Profits made in similar projects in the past
		site condition (Accessibility and space for work)
		Uncertainty related to the construction site condition
		Technological difficulty of the project being beyond the capability of the firm
		Management of similar size projects in the past
	Risk	Rigidity of specifications
		Allowed project duration being enough
		Penalty conditions for not being able to complete the project on time
		Payment conditions of the project creating a risky environment
		Allowed duration for bid preparation being enough
		Availability of required qualified labor within the region
External Factors	Client & Consultant	Current financial capability of the client
		Tendering bond size and bidding documents price
		History of client's payments in past projects (considering delays, shortages)
		Client's attitude, characteristics and stability in needs
		Amount of work the client carries out regularly
		Amount of construction work the consultant has been carrying out regularly
		client financial capacity and its payment policy
		The value of the project advanced payment and its maximum required cash
	Competition	Possible number of competitors passing the requirements
		Desire of qualified contractors to bid and win the project
	Future Market	Market's direction (whether it is declining, expanding, etc.)
		Amount of possible upcoming profitable projects out for tender in near future
		Existing financial conditions indicating a financial risk in near future
		Ratio of your firm's current market share to the expected or aimed share
		Government legislation
		Tax liability
	Project Portfolio	Possible contribution to increase the firm's identity and brand strength
		Possible contribution in increasing firm's market share and dominance in market
		Possible contribution in building long-term relationships with other key parties
		Contribution in maintaining long-term relations with important influence markets
		Possible contribution in improving your firm's staff expertise
		Possible contribution to break into a new market with productive future
		Contribution to firm's future due to value of the completed project to the public

Table # 1 – organizational factors effect decision making quoted from Egemen and Mohamed (2007) & Huanma (2011)

2.2 conceptual frame work

The conceptual frame work divided into different phases and many step in each phase. These phases started from call for tender and end up by winning bid or bid lost. This research will be limited to factors affect the decision making to bid or not to bid but in short narrative it will address the concept of other phases in below descriptive model of Bidding Process.

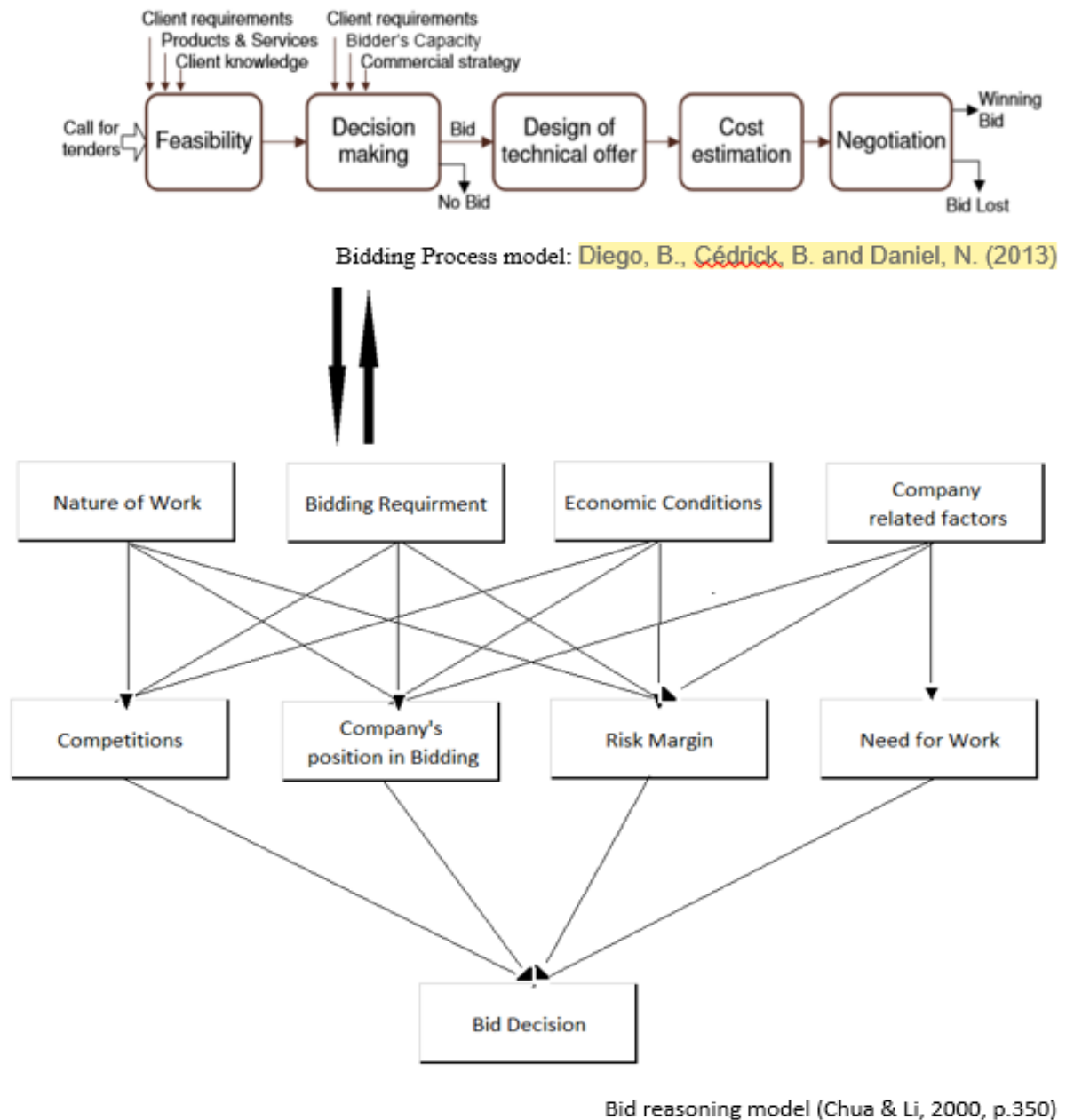


Figure # 1- Conceptual frame work

2.3 Feasibility

In this phase the client will study the idea of the product or services and the possibility to implement or to be undertaken. The assessment study of the resistibility consist of Client requirement, product & Services and Client knowledge. Available technical resource to produce the plane of product & services, location, and customer demand. Assessment of financial investment through bank investment or investors and expected return of investment. Type of industrial and competitive, market demand and expansion of market in the future. Management team or client's representative usually they have enough knowledge to be responsible for technical design, preparing technical qualification, Bill of Quantity, project specification, term and condition of the contract, producing legal document (Diego, B., Cédrick, B. and Daniel, N. 2013).

Call for Tender for document handing over to proceed with the Bidding Process. These documents include the instruction to tender, Term and condition of the project, General and particular specification, addendums if available, tentative quantity, conceptual design, vendor / brand list of material need to be used in the project and millstone achievement. Basic idea of call for tender to distribute the information and get more and more feedback

2.4 Decision making difficulty

Shash (1993) and El-Mashaleh et al. (2014) explicate that contracting companies are struggling for survival and continuity in the face of intense competition and limited opportunities. From this point of view, if the company takes the decision not to participate in the tender, it will lose an opportunity. From different point of view, if the decision is to participate in the tender then the proposal should be considered by the competent staff and expertise, however the value of the decision will be evaluated in the near future after. Incorrect decision will effect on the whole process of the project life cycle and will reduce the company ability to perform the project in reasonable time frame and within the budget. Egemen and Mohamed (2007) illustrate in his research that, management decision making for Bid or not to bid is affected by internal and external factors which may weaken the decision and it also causes fear and hesitation.

2.5 Factors affect the bid/ no bid decision making

Group	Factors	References
Internal Factors - Contractors	Need for Works	Egman & Mohamed (2007) ; El-Mashaleh et al. (2014);Biruk, Jaśkowski & Czarnigowska (2017); Ravanshadnia (2008);Leśniak, 2015
	Strength of firm	Banki, Esmaeeli and Ravanshadnia (2008); Chua and Li (2000);Egman & Mohamed (2007); Huan Ma(2011);Harris et al. 2006;Leśniak, 2015;Opeyemi& Odusami, Rapheal and Adedeji (2016)
	Project conditions	El-Mashaleh et al. (2014), (Oyeyipo et al. 2016);Wanous and Boussabaine(2000), Lowe and Parvar(2004);Drew and Skitmore (1997);Bageis and Fortune (2009);Huan Ma(2011);Harris et al. 2006;Leśniak, 2015
	Risk	Diego, Cédric & Daniel (2013); Dikeman et.al (2007); Al salman (2004);Akwak and laplace (2005);Huan Ma(2011);TAN, S. (2015);Dulaimi et al. (2001)
External Factors - Client - Consultant- Competitors	Payment & Financial Capacity	Egman & Mohamed (2007) ; Mahamid (2013);Mitra & Wee Kwan Tan (2012);Oyeyipo et al. 2016;Egman & Mohamed (2007);Huan Ma(2011);Walraven& De Vries, (2009
	Tender Document	Banki, Esmaeeli and Ravanshadnia (2008);Huan Ma(2011);Harris et al. (2006);Dulaimi et al. (2001)
	Competition	El-Mashaleh et al. (2014), (Oyeyipo et al. 2016); Ward & Chapman (1988), Ahmad (1990), Shash (1998), Wanous et al. (2000), Huan Ma(2011)
	future market conditions & project portfolio	Shash (1998), M. King &Phythian (1992), Cova (2000); Egman & Mohamed (2007);Bageis & Fortune 2009;Huan Ma(2011);Cleden 2011);Leśniak, 2015

Table # 2 identified effecting factors in bidding decision- previous research

2.5.1 Need for Work

It is imperative and urgent need to deal with the current situation of the organization and tender project within market. This effect by the workload to keep the employees busy and the employees are paid for full time work, the resource such as manpower, equipment are not setting ideal without work, so the company can cover the running expense (Egemen & Mohamed, 2007). Number of the projects are offered for tendering in the market, recovery of overhead expense and looking for investment in return all together encourage the company to look for project in order to keep the company running smoothly without flounders. Need for work is a significant variable effect the organization's decision to choice the way for bid

even at the expense of investment in return and high profits. The contractor to reduce the mark-up cost for attractive project, unique and/ or Need for work in the time of crises (Biruk, Jaśkowski & Czarnigowska 2017). Financial situation, cash flow, tender for project, work load, form high opportunity for company stability (El-Mashaleh et al. 2014).

Less opportunity of projects in the market, vacancy in the origination, low turnover, increases thirst of companies for work with low mark-up. Running cost and expenses resulted from project operation, financial transactions with banks, material, staff, equipment, bonds, and overhead are crucial factors and need to be covered by getting new project (Ravanshadnia 2008).

Need for work is important part of organization's strategy and it is the responsibility of company governance to set the objectives and subjective to achieve this vision.

2.5.2 Strength of Firm

It refer to the ability of company to comply with the client tender document and follow the condition of the contract imposed by the client, such as duration of the project, payment term, liquidate damages, bonds, high specification; availability of cash flow to finance the project in case there any payment delay, availability of resource, familiar with the same type of the project, availability of sub-contractor, different source of income (Egemen & Mohamed, 2007). Stability of the company show effects on performance of the company in execution of the project. Strength of the contractor is advantage point in tender evaluation by the client. Strength of the firm has crucial role in Bid/not bid decision and the financial situation of the firm is the fundamental factor in strength of the organization (Chua and Li 2000). Well known and sufficient of experience of the contractor in the industry field and techniques designed to suit the business requirement increase the strength of contractor. Competent resource in the company, tools, equipment and percentage of subcontracted work will be success key factors for any organization to win in the bidding.

2.5.3 Project Conditions

The project condition regulate and explore the capability of contractor to execute the work. The project condition define the scope of work, statement of the project, contract of the project, project size, type of the project if it is under turnkey, design and built, bill of quantity rate, cost plus, moreover it determine the duration, commencement date and completion date, penalty, payment term, performance bond accordingly profit can be expected based on the similar previous projects (Egemen & Mohamed 2007). The capacity of the contractor depend on strength

of available cash flow, availability of competent staff and experience in such field, availability of manpower, availability of equipment, tools and proper techniques to execute the work, and project management skills.

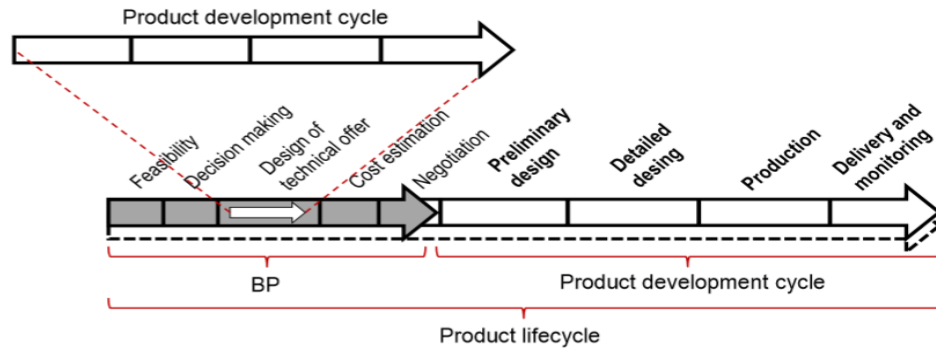
The project management related to proper planning, high level of knowledge, apply proper technique with productive tools and skills for project benefit. Knowledge is known in the particular industry and in case of small contractor does not have enough experience to execute big project, the contractor during the tender process will not be able to expect the issue might he will face during the execution, this poor management could affect the performance at site and end-up with termination of contract with liquidated damages and penalty. Project management in deal with project stockholders looking to lead, change, develop, influenced organization. Expertise are required with talent to influence other and lead team have ability to effect change. Impact cause toward success factors and can increase the tangible benefit, getting project, increase the pay and ensure can be delivered on time. Different researchers and empirical studies had a fingerprint in classifying the importance of factors effect project conditions Wanous and Boussabaine(2000), Lowe and Parvar(2004) and Egemen and Mohamed (2007)

2.5.4 Risk of the Project

(Diego, Cédric & Daniel 2013) Client send inquiry to contractor request to come up with tender commercial proposal in line with project specification include plan for completion the work with required manpower, equipment, and material. Scope of work statement include, background of the project, execution strategy, scope outline, assumption, exclusions, stakeholders, constraints, related project, preliminary risk and opportunity. Contractor should understand the risk in estimation process mainly if the contractor does not has enough experience for similar projects. Bidding process is critical stage because the project management of the contractor should decide to bid or not to bid based on gathering information. Therefore poor gathering, analysis, unclear, absence of contract, undefined of significance, unclear, mess-planning, strict schedule, unrealistic time frame, and underestimating the technical complexity of the system can be source of risk in early stage of the product lifecycle.

Risk related to the Client: different researchers tried to summaries the risk associated by the client can fiscal constancy of the client and his ability to pay for contractor to ensure continuation of contractor services and avoid any disturbance for project cash flow specially if the project is financing via bank's facilities. Poor communication and decision and flow of information during the tender stage, resulted from incomplete design. Unclear product output from client

perspective. High specification project overdesign and mismatch with client proposed budget. Quality of the client and type of the project, where in military project changes are high and negotiation for additional compensation for time and cost implication is very risky. Particular specification and special requirement for client under their authority, for example in UAE Musanada's specification with higher requirement than the project specification, UTT's regulation in Reem Island in Abudhabi has special guide line for their requirement. Therefor if the contractor is not aware about authority guide line, there will be many constrains during the execution of the project and budget of the project will be underestimate. Risk Related to the competition: market direction and ration of the project available for tendering in the local market are determine the nature of the competitors. Contractors would like to keep exciting in the market and can submit their tender commercial proposal with very minimum margin and some cases under the dry cost. This caused a state of confusion between the companies bidding on the tender. Nasty methodology is followed by competitor with the client in tender process, confidentiality of bidding between contractors and client and leak of information Risks related to the environment: Economic, regulatory, geographical and social factors are associated with environment risk. Economical risks related to escalation in price and fluctuation in the market. Increase in the price of raw material resulted to shortage in the material or related to any political and new role and regulation in the foreign as well as local market. Risk associated with legislation and new taxation. Geographical risk associated with the access of the project, wheatear condition and restriction hours to work due to heat restriction. Social risk associated with political situation in the country and the effect on the stability of the area. Internal risk related to company policy and procedure adopted in the company, poor negotiator and shortage of competency staff during tender meeting. Outdated technology used for estimating the project cost. Poor flow of information from top to down in hierarchy structure of the organization and flow of feedback from bottom to top. Risk analysis associated with product life cycle, project management and lesson learn for the project. Risk is upstream process and can be transferred from bidding process in the intimal stage to consequence during the project life cycle related to quality, cost & time constrains. (Diego, Cédrick & Daniel 2013).



Figure# 2 bidding process as initial phase of product life cycle

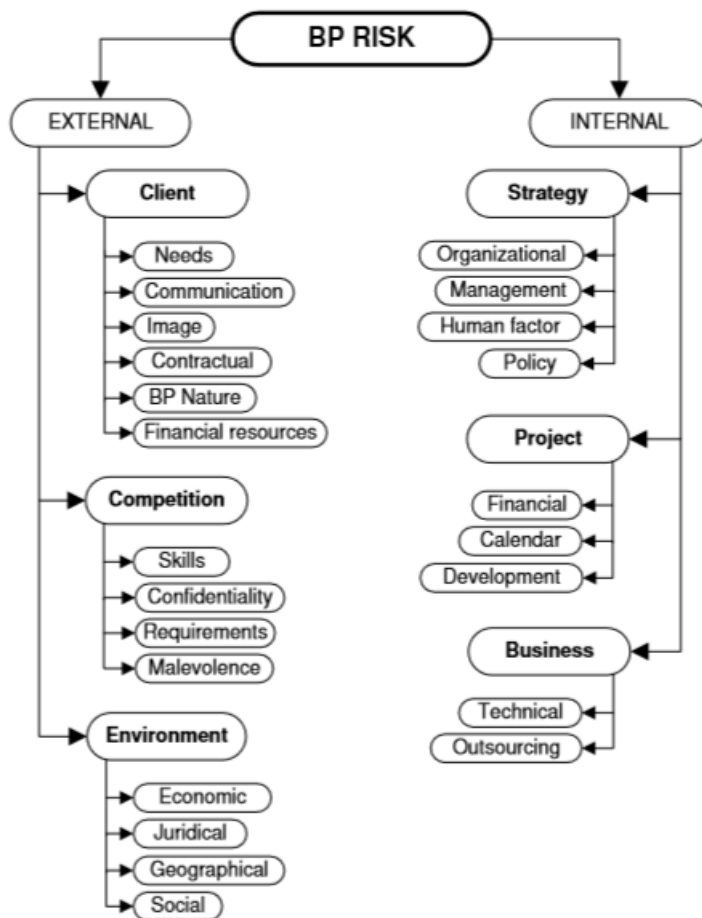


Figure # 3 Bidding Process Risk Mapping (Diego, Cédric & Daniel 2013)

2.5.5 Competition

Competitive bidding open the door for all contractor to submit their quotation price for the same scope of work. The most competitor price will win the project and other will be disqualified. The common practices in tender process the technical tender should be pass prior to proceed with commercial tender. It means that the low price not usually based on proper

competition, it could be wrong estimation or exclude some scope of work. Tendering department of the client should review the submitted proposal in detail, to ensure that the contractor fully understood the scope of work, check the compliance statement of specification, duration of the project, the resource loaded required for the project, quality procedure, and detailed BOQ to verify the inclusion and exclusions (Egemen & Mohamed 2007)

The reasonable bidding can be useful when the value of procurement is high, clear specification in order to compare it apple to apple, where there is adequate number of latent contractor in the field, however the potential supplier should be both technically qualified and keen to win the business, and sufficient time for bidding.

Empirical studies, Wanous & Boussabaine (2000), Egemen & Mohamed (2007), El-Mashaleh et al. (2014) argued the advantage of the ‘competitive bidding’, as the client can select the lowest bid price for his benefit, simplified the bid evaluation method, and the bidding can be open for any contractor in the market and will not be limited to vendor competitors, this will give chance for new contractor to grew up. On the other hand the competitive bidding could lead to low quality of the work and potential risk for the project not identified. Risk of losing the project is probably high, especially when the mark-up is high. Less competitive price will affect the performance of other contractors with higher mark-up, therefore the mark-up should be well studied and to be in line with the market condition (El-Mashaleh et al. 2014)

2.5.6 Client & Consultant of the project.

Failure to settle the payment / overdue resulted from monthly progress payment, variation, change order, Extension of time, and acceleration effect the contractors cash flow and their abilities to finance the project, and it’s impact of the overall supplier, subcontractor committed payment and consequently project progress (Mahamid 2013). Poor financial situation of the client and payment beyond the contractual term and condition of the project cause a domino delay to disrupt a project completely (Mitra & Wee Kwan Tan 2012). Delay in payment to the contractor will affect the contractor ability to perform and such affect project delivery schedule. The payment delay constitutes as material breach of contract and the contractor will not be in apposition to commit or fulfill any contractual obligation. Looking at the statement of account of the client and the history registered for previous project are critical factor to success and May be a life-saving factor to spare companies a loss or unpredicted consequences (Oyeyipo et al. 2016). The amount of construction project the client are carried out regularly is an indicator for

the client stability and characteristic which the contractor is looking out to maintain a strong correlation with the client. It is very important for contractor with medium and small size.

On the other hand, the client usually looking to improve the quality of outcome product by implementing effective systematic performance to eliminate the project overrun and budget and for success operation of completed project, this will increase the contractor budget to comply with the project requirement and gain the client and facility management satisfaction for future relationship

2.5.7 Future Market Conditions

Strategy has two main branches, internal and external analysis. SWOT strengths, weaknesses, opportunity, and threats. Each company has different perception to expand their business, internally strengths can be core competence and the area where the business excels, looking for high turnover, reduce the weakness of the organization and reduce the structure cost and minimize overhead management. Externally, opportunity for hiring high skill competent team, effective management team and implement new technology. Finally threats, where the ability of the company to identify the risk and take the preventive action to minimize the uncertainly related to client perception, current market situation and future expansion and long team relationship (Bageis & Fortune 2009).

Business strategy, includes mission, vision, future plane and customer care. Determine your client's need and expectation, who is your competitor, what your competitive advantage in offering the product in term of warranty, experience, construction methodology which differentiate between the contractor, proper attending during the defect liability period or duration after sale, availability of manpower and equipment, availability of suppliers and sub-contractor, proper arranging and managing of cash flow, financial situation and how you are marketing your business and investment in return (Egemen and Mohamed 2007).

Each company has different concept to maintain the profit by increase price and keep cost the same, keep price the same but lower cost, increase price more than increase cost and lower price less than rate of lowering cost.

2.6 Design Technical Offer

After reviewing the tender documents, the Contractor will be requested to customize his technical offer in a way can present his strategy, terminologies, skills , capability and plan to execute the work. In additional to the document issued by the employer / Engineer for the purpose of submitting a tender, the following documents shall be provided by the tenderer within his bid:

- Methodology statement- an outline statement of the methods proposed for the construction of the work.
- Construction program- a program in the way or network form showing the sequence of construction and completion date for the works or parts.
- Pant Schedule- a list of the major items of plant or equipment to be used on the works together within numbers, types and capacities.
- Resources (Manpower, Equipment) upon which the construction program is based.
- Organization chart – a chart showing the proposed staff and management organization for work and number of supervisor and labors.
- Schedule of Material resource- The proposed sources of main work items, equipment and its country of origin.
- List of inclusion and exclusion for proposed scope.
- The Tenderer is to identify any item which may consider applicable yet not given in the BOQ, quantity and price, to ensure the sufficiency and competency of proposed price

2.7 Cost Data Workbook and Cost Estimation

2.7.1 Modify BOQ

The contractor in construction industry have different forms of data collection, the Common denominator is information in the very important in all construction project and it can be the life blood during the tender stage to estimate the bidding price and response for cost proposal Kwakye, 1997; Nourbakhsh et al., 2012). Many researches focused on the important of information and the fundamental usage of these information in preparing the Bill of Quantity in contraction projects (Atkin, 1995), (Griffith et al., 2000),(Kwakye, 1997),(McDonagh, 1995), (Winch, 2010).

The review presented in Bandi, S et al paper is motivated by the lack of studies which focus on encapsulating the fundamental uses of the BOQ by the contracting organizations. (Bin Bandi, S et al, 2014) Driven by this gap, an effort is initiated with an aim to identify the fundamental uses

of the BOQ by the contracting organizations which are identified as the primary users of the document.

Bill of Quantity of the material required document use in tendering the construction project, itemize, description of the material, cost, term and condition. Quantity can measured by meter, length, Kg, package, and lump sum. BOQ is required design to be completed, and specification should be prepared BOQ issued for tenderer to estimate their cost of carrying out the work and assisting estimator to prepare the cost of construction project. Usually all tendering contractor will price the same BOQ instate of take-off the quantity from drawings and specification by them self.

BOQ can be reference mentioned in the contract as under the term of priority of the document for any additional material or extra work to be carried during the execution of the project, evaluating the variation, estimates, interim valuation and final documents.

Structure of Bill of Quantity

- Preliminaries: refers to contract condition, health & safety, welfare, cost of supervision, insurance
- Specification: refers to description of scope of work , type of the material
- Measured work: it is the main part in the BOQ to measure the quantity of work with the unit price
- Provisional sum: refers to estimated money for work need to be done but not yet identified
- Prime cost: refers to contractor or supplier nominated by the client
- Contingency: refers to some money put a side for additional work not agreed yet
- Schedule of day work sheet: it allows the client to have an idea about unit rate for additional work
- General summary: it is over all the cost of the project

BOQ is organized by cost expert or QS, prepare the tender document, take-off the quantity from drawings, coordinate with supplier in the market to get quotation to estimate the budget, recommended payment based on monthly evaluation, and arrange price outside the vendor to maintain the budget of the project.

Quantity surveyor want to different skills, he can work as accountant to achieve the cost of project, a Legal advisor on contractual issue and dispute and an engineer with good knowledge of construction process.

Preparation of BOQ can be enhanced by using software in quantity take-off and measurement, adopt advance technology, BIM enable professional to plan, form and achieve the building efficiently which help to save time, cost, reduce errors and increase the productivity.

2.7.2 Estimate Cost and determine budget

Cost determination and build up the estimation budget are impeded due to qualitative factors like client's change directive for the priority and looking for acceleration on construction time, contractor's forecast plan for completion of the project and used procurement strategy (Nida, Farooqui and Ahmed, 2008), Nabil 2012, Ibironke 2004, Obiegbu 2004, Oforeh and Alufohai 2006, Anyanwu 2013 and Hakan 2007).

There are 3 components to manage the project cost

- **Estimate cost:** in this part the organization build up and develop the estimate cost for the scope of work, resource required to complete the scope. The proposed estimated cost depends on the historical information, previous budget, data of smellier projects, the contractor's awareness of project's parameter like total quantities, required man-hours for material installation, fixation, testing & commissioning, attend the defect and the value of each activity in BOQ. Estimate the cost of each activity and task which need to be performed, to complete the project, aggregate to upper level till building- up the project budget. Contractor should estimate the risk register and contingency plan to deal up with emerged risk. All these steps reflect how contractor confident about estimate of the budget. The estimate cost usually is not accurate at the beginning and need specialist and supplier interface to estimate the scope of work and the specification of required material. Therefor the proper communication between contractor and client will shrink the uncertainty in the scope and will increase the likelihood of contractor's opportunity to adjust the estimated cost.
- **Determine the budget:** control the timeline for cost, prepare the cash flow curve to know when the money come in to schedule the required resource and delivery of the material.

- **Control Cost:** Keep cost under control and monitor the cost and the cash flow. Gathering historical data from performed similar project for actual cost, percentage of completed of scheduled work, analyses the cost variance.

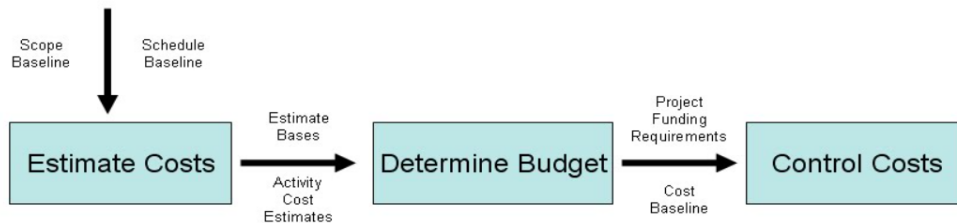


Figure # 4 component to manage project cost

2.8 Negotiation

Discussion took place to decide which the most competent company to run the project is. Usually the discussion carried out between the client/project management and the company representative. The Tenderer discuss his technical offer, how to meet the strategic objectives, how can carried out the work successfully within the reasonable time frame. In addition to raise any technical inquiry, submit the list of exclusions and inclusions.

Contractor need to be able to understand the risks to the cost estimate and he need to be able to articulate the level of confidence he has in the estimate when he is going to submit the final offer.

If the contractor want to reduce the price, then he should consider discussing reducing the scope of work with the Client and further discussion with buyers, quantity surveyor, technical department, procurement prior to submit the final offer.

After intense consideration by the Client, Letter of Award is presented to the winner before proceeding further.

2.9 Price VS Performance

Several empirical studies have come close and agreed the results of selection the contractor based on the lowest price and the effect on the performance price during the whole life cycle of the project.

Walraven & De Vries, (2009) argued that the traditional methodology of the client in the construction industries based on the lowest bidding price and the contractor usually achieved the targeted profit by raising claims, relax the specification of the project, change in vendor list or brands and reduce the quality.

A failure to fulfil the commitment and obligation for job completion and project handing over in agreed time frame, time and cost overrun, poor quality of work can be resulted from ex post contract and performance (Decarolis 2014)

Khan, T. & Khan, A. (2015) claimed that the common procurement system in Pakistan depend on least bidder price for awarding the project which has essential errors of incompetent practice of high participants or competitive with least performance lead to increase the risk and uncertainty of project quality and reasonable cost. In addition to that the lowest bid-methodology system attract unqualified contractor to contribute with lowest offer. Such type of contractor cannot spend more than margin and ultimately the project will delay and the consequences are dire.

2.10 Competition in the industry

Dulaimi et al. (2001) shown that the majority of organization tend to gain tender via competitive process: 84.4% of the participant agreed that more than 75% of the job were got through competitive bidding and other percentage for gain the job via negotiation process. Competitive bidding is a real challenge in front of the contractors because the client is looking for lowest price after approval of technical offer. The construction industry is very competitive environment. This pressure on contractor mark-up profit and margin will have negative effect on the work progress, productivity and the quality of work by looking for cheapest material and oversea unskilled labors. Lowest tender is the fundamental factor to win the tender but it is the key factor for project failure as well (Walraven & De Vries, 2009).

2.11 Varying procurement strategy

Procurement strategy for project consist of different parties, Bidder is one of essential parties for formulating the procurement strategy. Lin, C. & Chen, Y. (2004) explained that procurement strategy started by understanding the client concept, perception, context and problem. Develop procurement approach, which might need to package the scope of work and choose an appropriate form of the contract. The drafted contract cannot be guaranteed for project outcome in construction industry. There are uncertainty and risk need to be expected during the project life cycle. Therefor the proper contract should be drafted considering or anticipate issues can be emerged and likely to deal with it (TAN, S. 2015). Soil report for nature of sand / soil in the project is major risk should be considered at procurement stage and calculate the value of uncertainty to deal with it. No provision for such risk will open the door for claims and dispute.

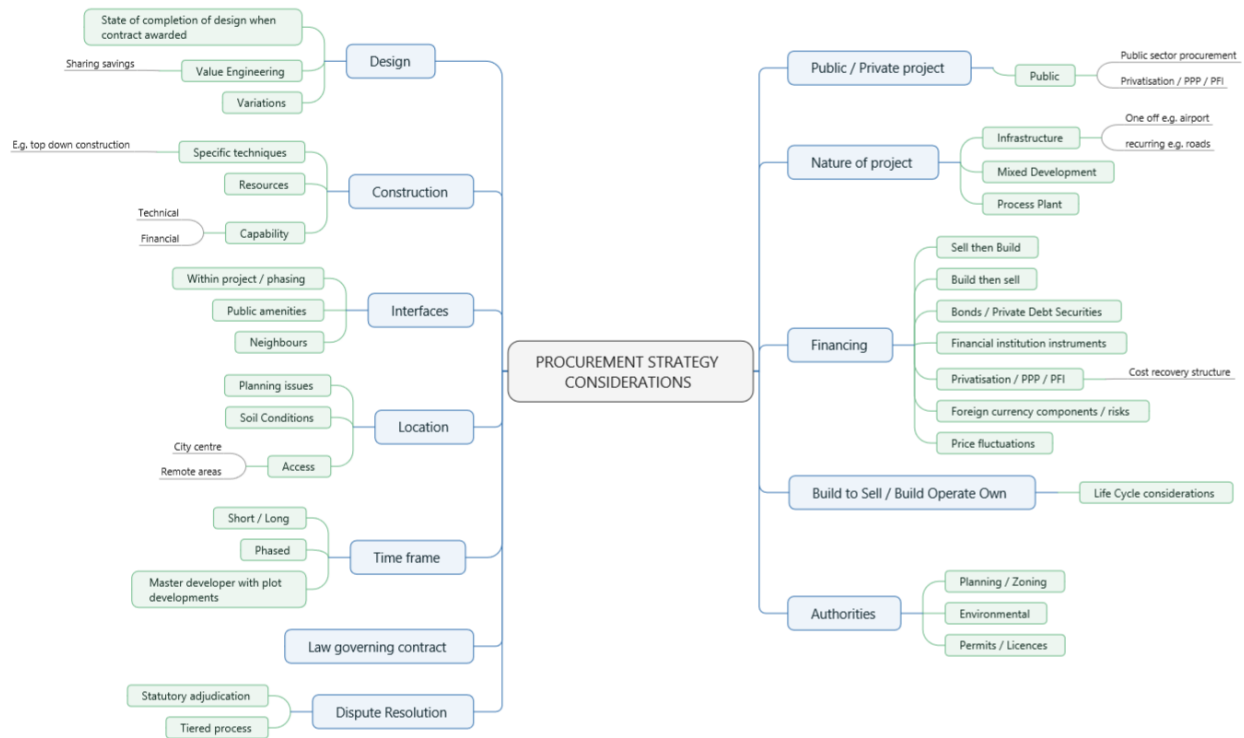


Figure # 5 TAN, S. (2015). Procurement Strategy in Construction Projects

Love, Skitmore and Earl (1998) declares that system followed by the organization is depend on the procurement system to achieve their objectives in the project by assigning different role and responsibilities. In additional, selection of an appropriate procurement method is key factor for project successful. The advantage of competitive bidding the uncertainty and risk in low because the design is completed prior of execution, BOQ is scope of work is scheduled which can be used later in progress payment, variation and dispute case (Fu and Drew 2002). Disadvantage of the competitive method is communication gap between designer and construction team (Brian & Graham 2011).

Chapter 3: Case Study

3.1 Brief of the project – Eclipse Twin Tower- Reem Island

Eclipse Twin Tower- Reem Island the project is a twin towers interlinked with podium and chelates to be developed facing the sea from one side and the main road on back side. Each tower is 18 Floors plus added penthouse, rood and top roof. Total flats in the projects are 416 flats. Client Vison is to provide the highest quality of life with the lowest possible cost. It reflect the high specification of the project. Value of the project is AED 41,000,000.

3.2 Scope of Work

Provide all necessary and required labor, equipment, tools & required by authorities having supervision, applicable taxes, insurance as specified, licenses & permits, review desin, install, testing and commissioning the MEP works (Electrical, A/C, Plumbing & Drainage) maintaining as described in the drawings, general specification, particular specification, bill of quantity, addendums, and any regulations from relevant authorities at tender stage. Cover the maintenance during defect liability period for 12 months from the date of issue of the preliminary taking over certificate of all works as indicated in the tender drawings and specifications, including all works which provisional sum have been allowed.

3.3 Satisfaction of Tender Information:

Condition of the project: by entering into contract agreement, the contractor confirmed his satisfaction of all the tender information, design, calculations and details, and the contractor confirmed his understanding to the full design and its intended and agreed to construction the whole project and deliver it in full, functioning and operable to its best standards of quality as per the provided design.

The contractor undertake correction of any errors if any and complete any missing details deemed to be needed for the achievement design criteria. The contractor confirmed his undertaking into the priced scope his understanding and actions towards compliance with all the governmental requirements procedures, permits, inspections, material, certificates and whatever needed to be done to satisfy the local regulations and obtain the required permit. All the above has been considered, priced and accounted for No Claim of time or cost associated with any of the above is to be approved or considered

This was the weakest link in the contract against the contractor. Original design was prepared in 2006 based on the role and regulation at that time, project implementation started in 2016. The contractor was not in position to review the contract condition due to following reasons:

- Workload and shortage of quantity surveyor.
- Shortage of competent staff with enough experience in the local authority requirement and high raise building.
- Project management used the outdated methodology for estimating the project budget where they considered built- up area and multiply it with estimated factor for MEP services required without considering the project specification and expensive brands specified in project vendor list.

3.4 Effect on the project performance

- Shortage of Manpower required to work in high raise building, lead to engage outsource labor supply to commence the work with double of the budget until they completed the recruitment process from India & Pakistan.
- There was new legislation in the country for recruitment process from India, therefor the source of labor was from Pakistan. Multiculturalism is strongly recommended between the manpower to ensure proper quality of work.
- Bills of Quantities in the documents were constructed as Lump Sum pricing document. The Tenderer is responsible for the accuracy of the quantities.
- Wrong estimation of Overhead & Profit. 35 % profit was reflected on the management report during the tender process. This figure encourage the management to sign the contract with tough conditions. Design verification done after site mobilization to find out the mistakes in the design, confusion in the specification, and new regulation of authority, these reduce the project's profit to 4 % only and bleeding is not stopped.
- Need for work. The contractor accepted the cost breakdown implemented by the consultant for progress payment. This breakdown was for client benefit and the contractor has been exhausted commercially and his cash flow in negative.
- There was no any contingency plan for risk or uncertainty which occurred and increased the project cost and expenses.
- Dispute claims between the contractor and the client

On the other hand, financially the contractor is very strong because he has multiple source of income, and the client payment was on time. It support the contractor not to drift into loss. Moreover the proper communication channel with the client made some leniency in condition of the project to support the contractor and ensure smooth movement of project progress. Moreover the contractor management take more preventative step to support the project with competent technical team looking for the problem and find out alternative solution to reduce the cost but to maintain the high quality and proper performance of the systems. Looking for alternative material submittal and change the vendor list.

Chapter 4: Research Methodology

4.1 Overview of the Research Method

Quantitative research – survey questioner arranged to discuss the participant's response and to understand their point of view in dealing with the factors affect the construction filed in UAE. The questions shared date and explained the issue in order to make base can recognize the perception of participant. Data collected from survey used in statistic program SPSS to verify the validity of data and to test the effect of independent factors on the decision making for bid or not to bid in construction filed in UAE.

4.2. Sampling

The research targeted many construction companies and its employees, subcontractors, and customer analysis assessment progression in United Arabic Emirates within the construction industry. This research paper categorized organizational factors that can have effect of the decision making. In addition of that we should taking in consideration size of company and its technical experiences and know how to bid in the contract.

The selected sample targeted a people with relevant to construction industry, like Developers, project management, Consultant, Main contractor and Sub-contractor. Questioners were distributed to 100 of population working in construction field, levels and domain such as engineering, top management, consultant, commercial operations, business operations. Questionnaires was designed by using on-line google form, to collect date and arranged it for further use by different statistic program SPSS. The respondents were knowing well challenges in the field and familiar with current condition of construction market, subcontractor's agreements, tenders, commercial processes and the definite bid and quote and tendering procedures of each discrete bid and therefore these survey respond had additional definite information of the actual market situations, competitors, resource allocating and project Scope and size in each case. Total population participated by send back their response are 57 employees from different levels. The date has been analyzed by using MS Excel and SPSS software.

4.3 Data collection

Questionnaire the survey designed with 69 questions that defined the organization factors used in the literatures. The research sample were asked to rank the importance of factors as per the experience of participants.

The survey was designed in sample way and categorized to three different sections. The first section was general demographic information related to participant's designation, academic qualification, work place, number of years' experience, value of the project, percentage of jobs obtained through competitive bidding, percentage of rejected bidding invitation, and percentage of jobs obtained through recommendation. Second part, we seek population opinion about the organizational factors enhance decision making on Bid / not to bid in UAE construction projects. The factors are divided into groups, Internal Factors - contractor and External Factors -client, and consultant, environmental. Internal Factors like, Need for work, strength of firm, project condition, risk, and external factors include Client & Consultant, competition, future market condition and project portfolio effect. The respond survey has ability to select one option from a 10 point answers category; "most importance to less importance". 3rd Part include dependent factors of decision making. This part has ten questions. Such as example, the market have strong competition and each company has several competitors, it may be expected that the more competitors are in the market, which will reflect in tendering pricing for the bids and every company will try their best to submit best technical and financial tenders, because the competitors rises the number of tenders of similar construction projects, and thus constricts the competition Concerning the factor "competition in the market" the participant has been asked to rank the importance of competitor as factor to effect of the decision making to bid or not to bid.

The duration of employment in the company were be in multiple rang, first range between Less than 5 year, then 6-10 years, and 11-15 years, then 16-20 years, and finally above 20 years. In addition the participating in survey were asked to specify their department, job description and duration of employment in the end of the questionnaire regarding to the above stated choices.

Chapter 5: Data Analysis

5.1 Descriptive Analysis

The 67 respondents are working in different levels and different department in their companies. They were asked general demographic information related to designation in work place, academic qualifications that participants have, organization the employee for, and years of experience with different type of projects. The feedback obtained from survey and extracted from SPSS, it is illustrated that the higher percentage of designation for participants was senior level e.g. managing directors and project managers / directors with around 45 % and follow with Engineers around 30%, meanwhile the lowest percentage of participants was for Estimation department around 3 % where they are the most important department in this research.

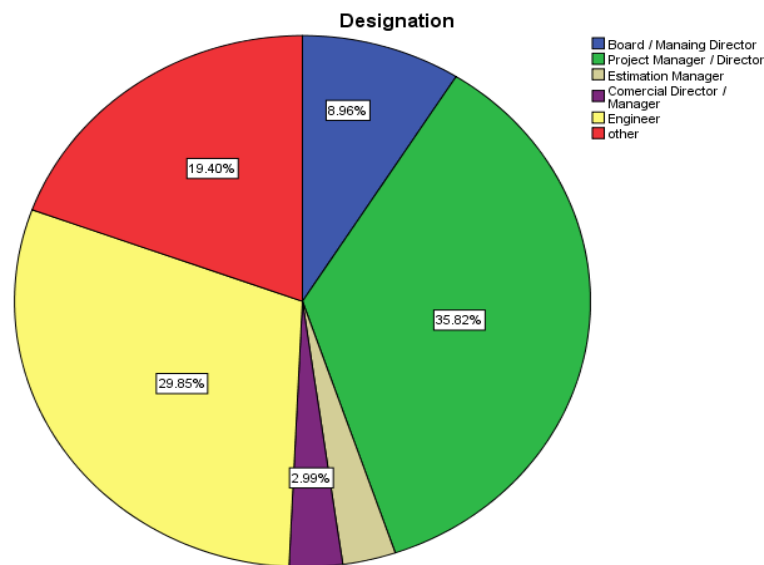


Figure # 6: Responded Candidates' Designation

Most of participants are holding university degree 58 % and there are significant percentage of participants have Master degree in project management and Master of Business administration with 30 %, moreover there are considerable percentage of postgraduate degree around 12%.

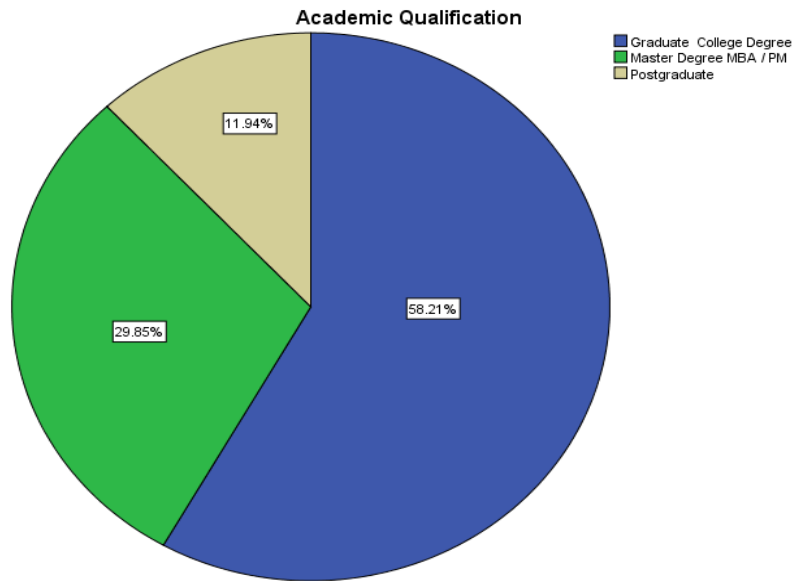


Figure: # 7 Responded Candidates- Academic Qualification

The most respondents collected were from contractor side with 84 % of overall participants. Usually the contractor has potential commit during the bidding process to submit the technical offer based on project specification considering resource requirement and time frame of the project, while the commercial part remain for the provider. The contractor works in line with competitors to submit

the bidding proposal which might be accepted or rejected. This is demonstrated the high percentage of respondents was from the contractor.

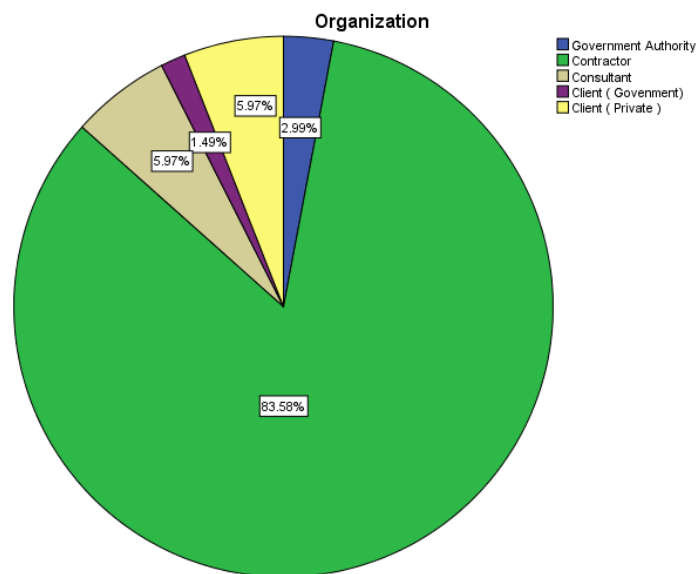


Figure # 8: Responded Candidates- Type of Organization

This variety of experiences that qualify the employee to respond in a logical manner and analysis close to reality, there are 20 % of response with experience between 16-20 years, this percentage will add value to research, equivalent percentage of participants between 6-10 years and 11-15 years with around 35%, follow with 6% for participant with more than 20 years.

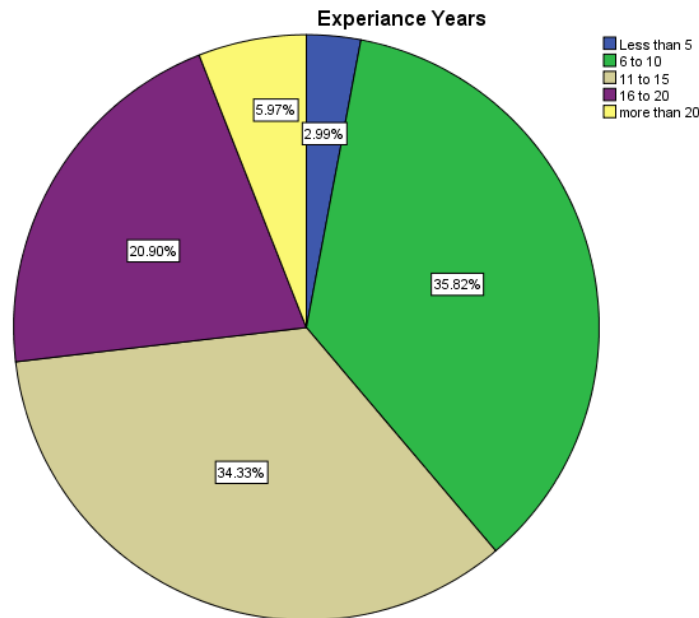


Figure # 9 : Responded Candidates- Years of Experience

High percentage of participants 43 % works in large value of project between 100-500 Million and 30% of respondents work in Mega project with high value more than 500 Million, this type of projects are considered as risky project.

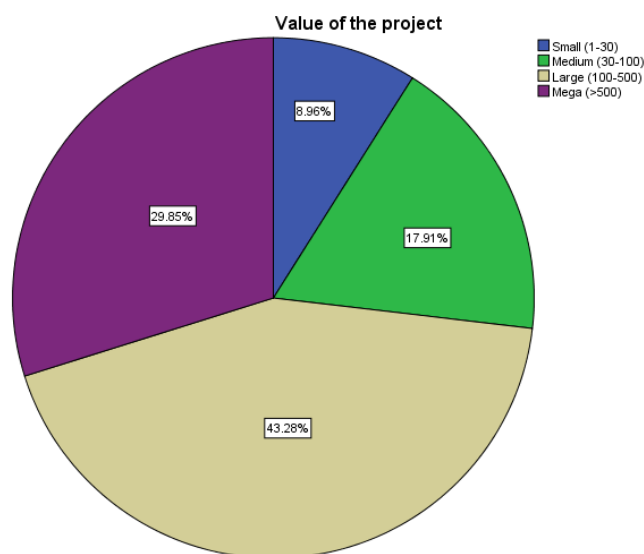


Figure # 10: Responded Candidates- Value of the project

There is a close convergence of views between participants in their belief regarding the percentage of jobs obtained through competitive bidding 31% for both participants between 26% - 50% and 51% -75%

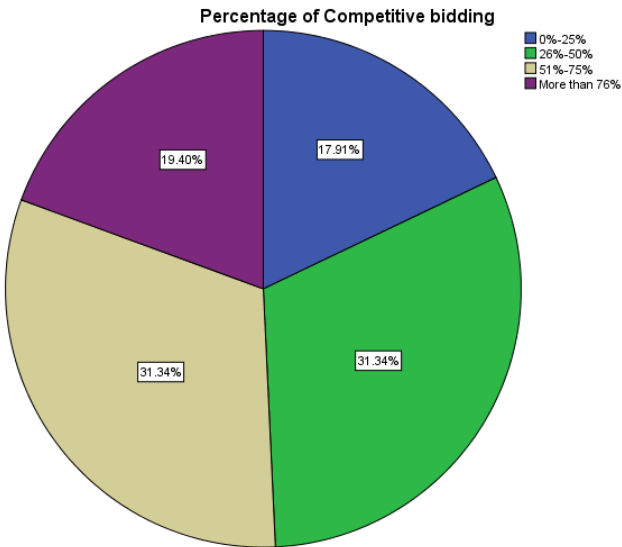


Figure # 11: Responded Candidates- Ratio of Competitive bidding

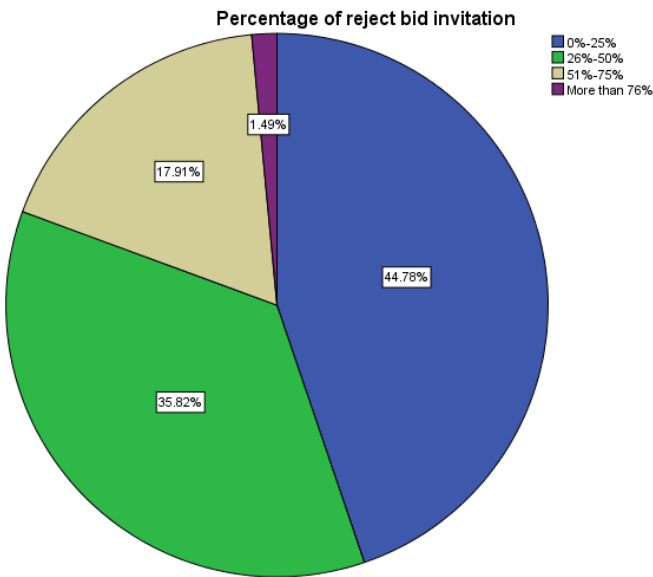


Figure # 12: Responded Candidates- Ration of bid invitation

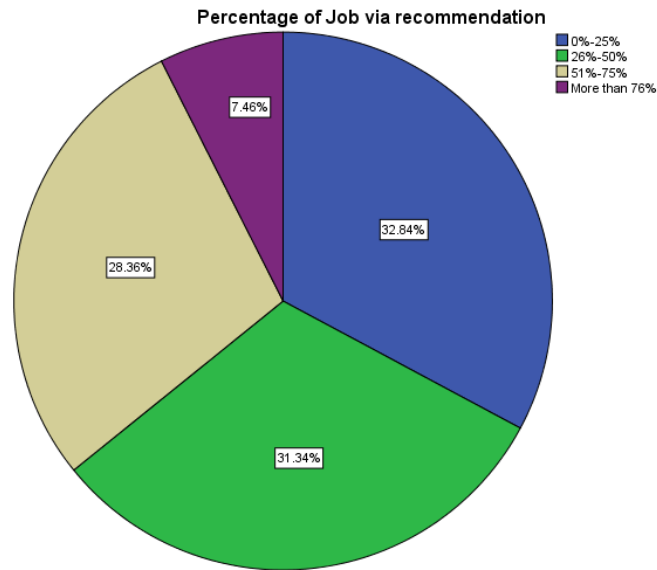


Figure # 13: Responded Candidates- percentage of getting Job via recommendation

5.2 Independent Variable descriptive analysis:

The independent variable is organization factors enhance decision making on Bid /not to Bid in UAE construction projects. There are forty-nine (49) variable grouped in eight (8) Factors cluster, those clusters are Need for work, Strength of firm, Project condition, Risk, Client and Consultant, Competition, Future market, and Project portfolio. Those eight factors formed in scale to measure the level of importance, One (1) refer to least importance toward Ten (10) with most important.

Table # 3 – Descriptive statistic of independent Factors cluster

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
IDV. Need for work	67	16.00	37.00	29.0000	5.18448
IDV. Strength of firm	64	35.00	80.00	59.1094	9.91250
IDV. Project Condition	66	24.00	80.00	55.8636	11.96647
IDV. Risk	66	31.00	70.00	49.8788	10.25448
IDV. Client and Consultant	65	40.00	80.00	59.8462	10.30508
IDV. Competition	67	4.00	20.00	13.8955	3.32636
IDV. Future market	66	25.00	60.00	40.4697	7.32376
IDV. Project portfolio	64	38.00	80.00	57.5937	10.47555
Valid N (listwise)	60				

5.2.1 Need For Work:

The Need for work group is the first scale to measure the significance. Four (4) variables representing by four questions, seek contributor point of view how each variable can effect on decision making to Bid /not to Bid. The answer of contributor ranked on the level of importance scale with 4 points indicates the least important at scale 1 and 40 points indicates the most important at scale 10. The result were analyzed by SPSS. The Mean was 29 as descried on figure 14 with high tendency for Need for work.

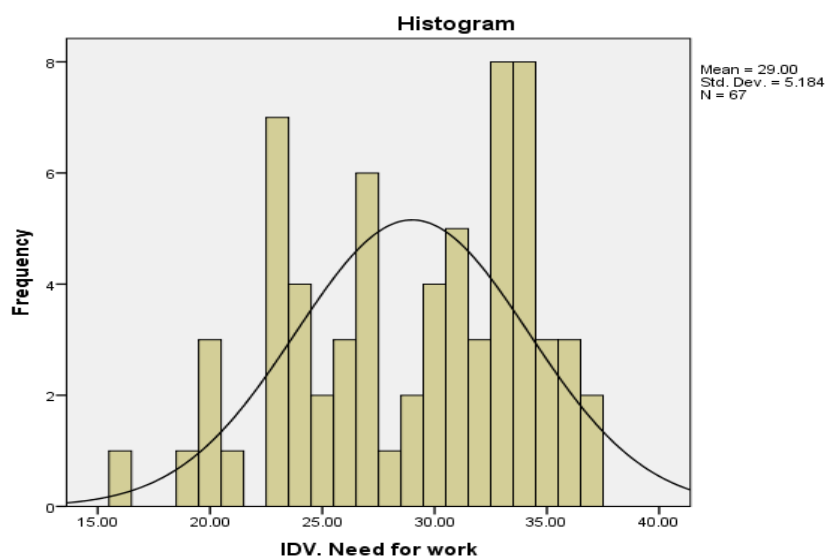


Figure # 14 Histogram IDV Need for work

5.2.2 Strength of Firm:

The Strength of Firm group is the second scale to measure the significance. Eight (8) variables representing by eight questions, seek contributor point of view how each variable can effect on decision making to Bid /not to Bid. The answer of contributor ranked on the level of importance scale with 8 points indicates the least important at scale 1 and 80 points indicates the most important at scale 10. The result were analyzed by SPSS. The Mean was 59.1 as descried on figure 15 which indicate a high degree for the Strength of Firm.

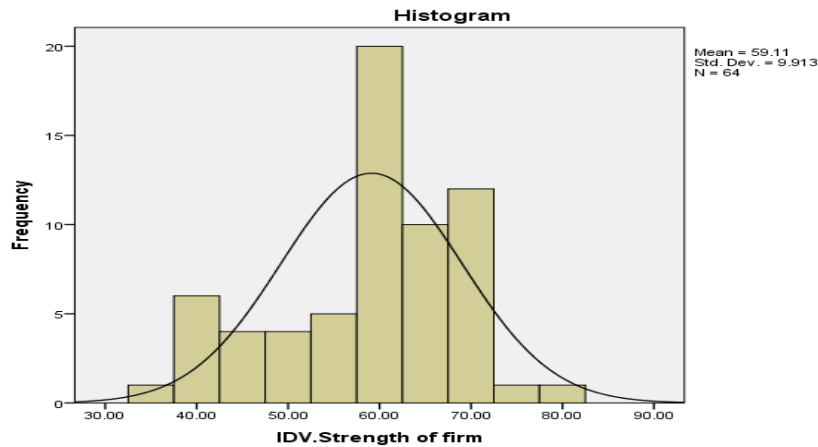


Figure # 15 Histogram IDV Strength of Firm

5.2.3 Project Conditions:

The project condition group is the 3rd scale to measure the significance. Eight (8) variables representing by eight questions, seek contributor point of view how each variable can effect on decision making to Bid /not to Bid. The answer of contributor ranked on the level of importance scale with 8 points indicates the least important at scale 1 and 80 points indicates the most important at scale 10. The result were analysed by SPSS. The Mean was 55.8 as descried on figure 16 which indicate above high degree for the project condition.

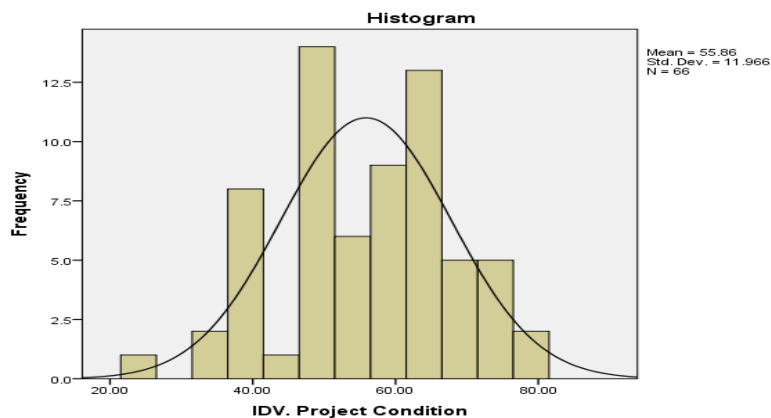


Figure # 16 Histogram IDV Project Conditions

5.2.4 Risk:

The Risk group is the 4th scale to measure the significance. Seven (7) variables representing by seven questions, seek contributor point of view how each variable can effect on decision making to Bid /not to Bid. The answer of contributor ranked on the level of importance scale

with 7 points indicates the least important at scale 1 and 70 points indicates the most important at scale 10. The result were analyzed by SPSS. The Mean was 49.8 as described on figure 17 which indicate above average degree for the Risk group.

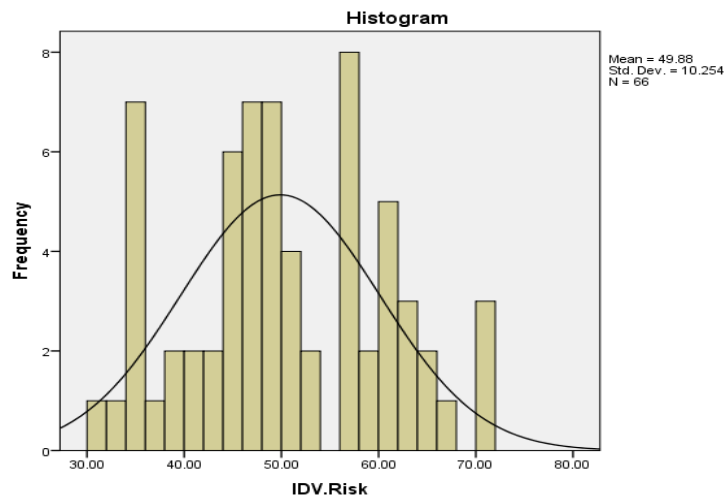


Figure # 17 Histogram IDV Risk

5.2.5 Client and Consultant:

The Client and Consultant group is the 5th scale to measure the significance. Eight (8) variables representing by eight questions, seek contributor point of view how each variable can effect on decision making to Bid /not to Bid. The answer of contributor ranked on the level of importance scale with 8 points indicates the least important at scale 1 and 80 points indicates the most important at scale 10. The result were analyzed by SPSS. The Mean was 59.8 as described on figure 18 which indicate above high degree for the Client and Consultant group.

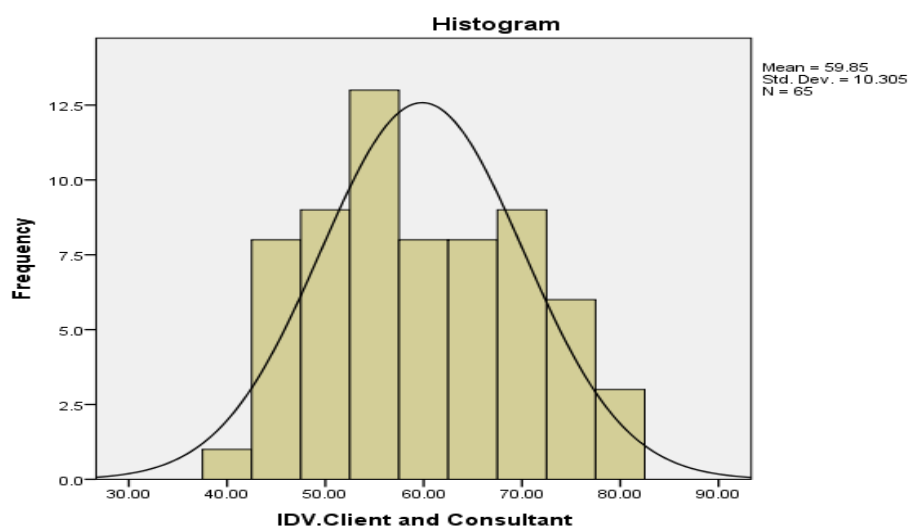


Figure # 18 Histogram IDV Client & Consultant

5.2.6 Competition

The Competition group is the 6th scale to measure the significance. Two (2) variables representing by two questions, seek contributor point of view how each variable can effect on decision making to Bid /not to Bid. The answer of contributor ranked on the level of importance scale with 2 points indicates the least important at scale 1 and 20 points indicates the most important at scale 10. The result were analyzed by SPSS. The Mean was 13.8 as described on figure 19 which indicate high degree for the Competition group.

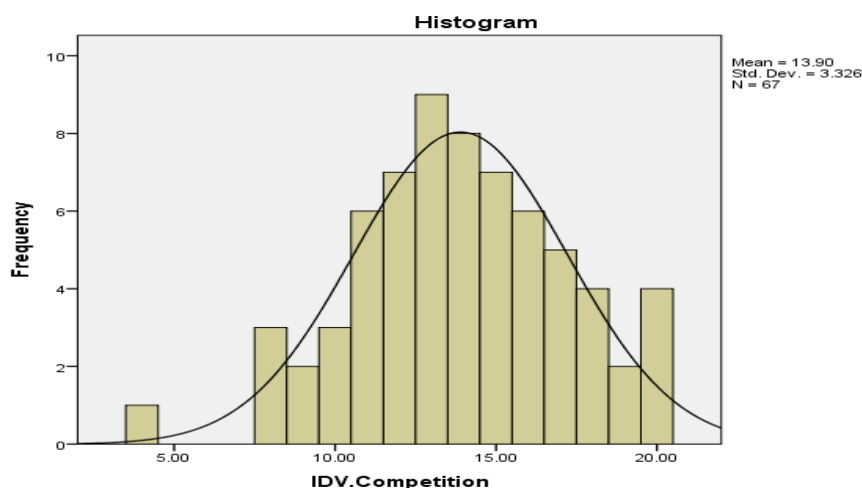


Figure # 19 Histogram IDV Competition

5.2.7 Future market conditions:

The Future market conditions group is the 7th scale to measure the significance Six (6) variables representing by six questions, seek contributor point of view how each variable can effect on decision making to Bid /not to Bid. The answer of contributor ranked on the level of importance scale with 6 points indicates the least important at scale 1 and 60 points indicates the most important at scale 10. The result were analyzed by SPSS. The Mean was 40.4 as described on figure 20 which indicate high degree for the Future market conditions

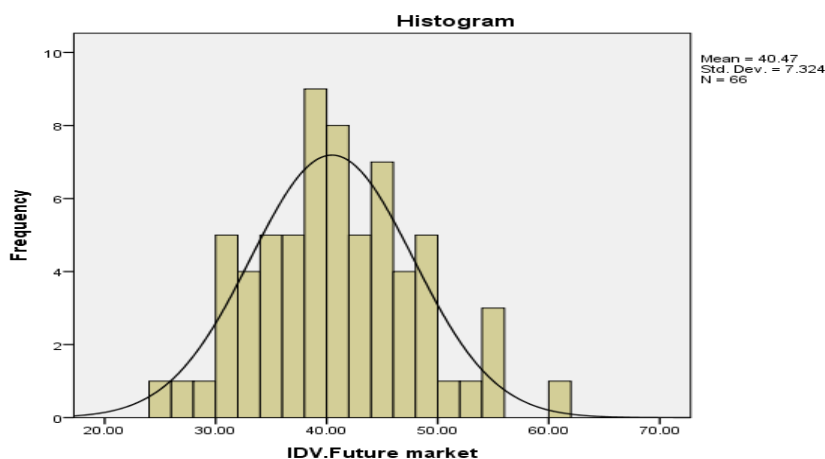


Figure # 20 Histogram IDV Future Market

5.2.8 Project portfolio:

The Project Portfolio group is the 8th scale to measure the significance. Eight (8) variables representing by eight questions, seek contributor point of view how each variable can effect on decision making to Bid /not to Bid. The answer of contributor ranked on the level of importance scale with 8 points indicates the least important at scale 1 and 80 points indicates the most important at scale 10. The result were analyzed by SPSS. The Mean was 57.58 as descried on figure 21 which indicate high degree for the Project Portfolio group.

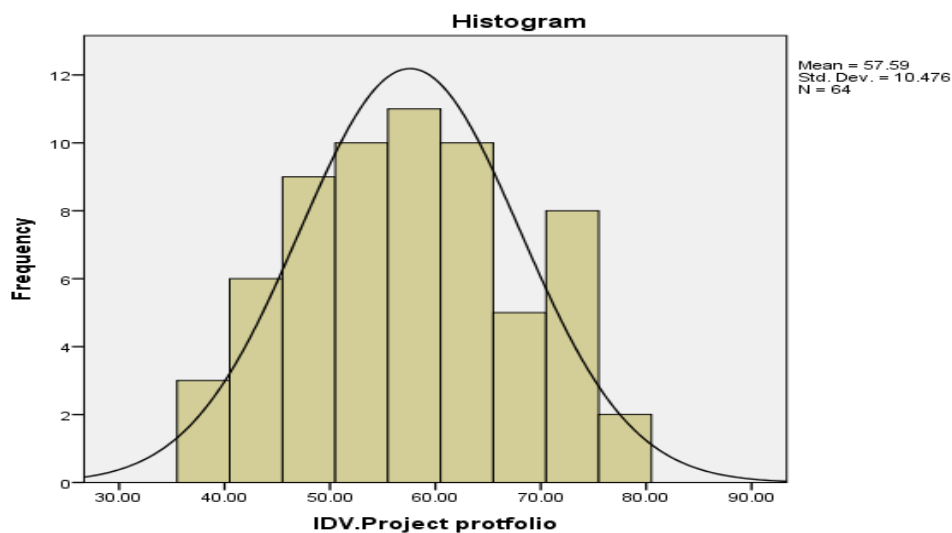


Figure # 21 Histogram IDV Project Portfolio

5.3 Dependent Variable Test

Ten (10) variables representing by ten questions, seek contributor point of view how each variable has been effected by IDV. The answer of contributor ranked on the level of importance scale with 10 points indicates the least important at scale 1 and 100 points indicates the most important at scale 10. The result were analyzed by SPSS. The Mean was 72.7 as descried on figure 22 which indicate high degree for the Project Portfolio group.

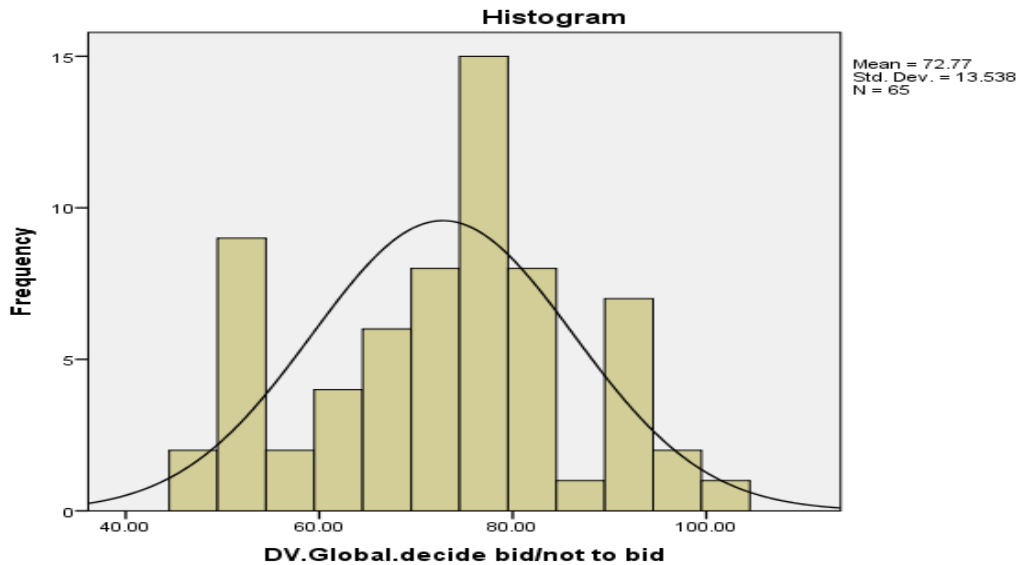


Figure # 22 Histogram DV Global Decision a bid / not to bid

5.4 Reliability and validity

Cronbach's alpha test has been implemented to measure the consistency. First stage was completed by test Cronbach's alpha for independent factors / cluster on each separately and measure the effect on dependent factor / variable. Second stage was completed by test Cronbach's alpha for dependent factor / variable. Third stage, Cronbach's alpha for Global Independent factors. Majority Cluster factors got value higher than 0.7 which mean the results are reliable and there is internal consistency between factors, except one independent factor very close to accepted value with 0.683 "Need for work", suggests that the scale item is unidimensional and does not has significant effect on dependent cluster or it can be due to random selection for scale by the participants.

Furth more the Cronbach's alpha is a coefficient of reliability / consistency

$$\alpha = \frac{N \cdot \bar{c}}{\bar{v} + (N-1) \cdot \bar{c}}$$

N= number of items, C-bar is average inter-item covariance among the items, V-bar equal average variance. Coefficient of reliability can have high value if N or C-bar is increased. Please refer to below tables show the result of Cronbach's alpha used in SPSS.

In final stage, the test on all the items together has shown a value of 0.964, which is to be consider as Excellent reliability as per George and Mallery, (2011), and it reflects a very high internal

consistency in between the various questioned item according to the high level of consistency between the received responses.

First Stage: Test each individual independent factors

Table # 4 Reliability Statistics using Alpha Method for IV factors

IV	Scale Mean if item deleted	Scale variance if item deleted	Corrected item - total correlation	Cronbach's alpha- if item deleted	Cronbach's Alpha
Need for work 1	21.865	17.633	0.43	0.639	0.683
Need for work 2	21.343	17.592	0.41	0.652	
Need for work 3	21.552	16.526	0.551	0.566	
Need for work 4	22.238	15.124	0.483	0.608	
Strength of firm 1	51.51	75.84	0.61	0.79	0.825
Strength of firm 2	51.62	73.6	0.57	0.8	
Strength of firm 3	51.18	78.5	0.58	0.8	
Strength of firm 4	51.23	74.46	0.66	0.78	
Strength of firm 5	51.92	77.85	0.45	0.81	
Strength of firm 6	51.68	75.29	0.66	0.78	
Strength of firm 7	51.84	76.92	0.62	0.79	
Strength of firm 8	52.7	84.41	0.26	0.84	
Project Conditions 1	4862	109.93	0.715	0.862	0.883
Project Conditions 2	48.21	116.1	0.586	0.875	
Project Conditions 3	48.68	112.68	0.612	0.873	
Project Conditions 4	48.96	111.78	0.629	0.871	
Project Conditions 5	49.27	106.97	0.705	0.863	
Project Conditions 6	49.33	107.67	0.724	0.861	
Project Conditions 7	49.06	114.67	0.616	0.872	
Project Conditions 8	48.89	111.88	0.615	0.872	
Risk 1	42.83	80.29	0.674	0.824	0.852
Risk 2	42.63	79.77	0.703	0.82	
Risk 3	42.78	76.87	0.578	0.838	
Risk 4	42.36	75.004	0.601	0.835	
Risk 5	42.92	80.47	0.651	0.826	
Risk 6	42.84	81.97	0.57	0.837	
Risk 7	42.87	79.72	0.566	0.838	
Client & Consultant 1	51.61	84.23	0.615	0.862	0.875
Client & Consultant 2	53.01	81.23	0.513	0.878	
Client & Consultant 3	51.87	81.54	0.711	0.852	
Client & Consultant 4	52.35	81.79	0.706	0.853	
Client & Consultant 5	52.61	83.95	0.652	0.859	
Client & Consultant 6	53.07	82.29	0.649	0.859	
Client & Consultant 7	51.95	83.6	0.673	0.857	
Client & Consultant 8	52.41	82.87	0.62	0.862	
Competition 1	7.09	3.11	0.79		0.883
Competition 2	6.8	3.06	0.79		
Future Market & conditions 1	33.59	37.47	0.585	0.641	0.719

Future Market & conditions 2	33.74	41.05	0.443	0.684	
Future Market & conditions 3	33.48	37.66	0.619	0.634	
Future Market & conditions 4	33.95	39.61	0.452	0.68	
Future Market & conditions 5	33.6	41.81	0.317	0.721	
Future Market & conditions 6	33.96	38.43	0.358	0.718	
Project Portfolio 1	50.34	85.11	0.723	0.914	
Project Portfolio 2	50.34	83.91	0.786	0.909	
Project Portfolio 3	50.53	81.49	0.827	0.905	
Project Portfolio 4	50.1	84.92	0.815	0.907	
Project Portfolio 5	50.37	87.63	0.66	0.919	0.923
Project Portfolio 6	50.29	91.48	0.526	0.929	
Project Portfolio 7	50.51	82.69	0.796	0.908	
Project Portfolio 8	50.64	82.9	0.793	0.908	

Second Stage: Test of each individual dependent factor

Table # 5 Reliability Statistics using Alpha Method for DV factors

Cronbach's Alpha	N of Items
.908	10

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Ensure the employees are paid	64.7538	154.438	.688	.898
Strong financial status is essential feature	64.8154	149.965	.687	.898
Government legislation for recruitment process	66.1385	151.184	.619	.902
Importing materials from overseas manufacturers delay the project	65.8308	150.987	.576	.905
Constrained project budget will limit the resource	65.3692	150.799	.746	.895
Poor's project planning and client estimation	65.4308	139.812	.779	.891

Delay progress payment by the client constrain the contractor ability	65.0615	141.527	.810	.889
Not bidding a constructive project might outcome lost opportunity	65.6154	148.459	.730	.895
Choice of incorrect project might boundary the internal capital	66.0308	156.343	.578	.904
Competitions' approaches and probability	65.8769	156.203	.507	.909

Table 6: Reliability Statistics using Alpha Method. For IDV, DV and Global

Test Stage	Test subject	Test	No of Item	Cronbach's Alpha
1	IV	Need For Work	4	0.683
		Strength of firm	8	0.825
		Project Condition	8	0.883
		Risk	7	0.852
		Client and Consultant	8	0.875
		Competition	2	0.883
		Future Market Condition	6	0.719
		Project Portfolio	8	0.923
2	DV	Decision Bid or/ not to bid	10	0.908
3	IDV Global	All IV Factors	51	0.815
	DV. Global Decide bid/ or not to bid	All DV Factors	10	0.815
4	All Factors	All Factors	61	0.964

5.5 Correlation:

Correlation used to measure the relationship between the identified organizational factors and decision making for bid / or not to bid in construction project. The first stage was between the variable in the same factor group, the second stage was between dependent variable group and independent variable group and the 3rd test conducted between the global dependent group and IDV.

Correlation coefficient is a statistical measure of the degree to which changes to value of one variable predict change to the value of other.

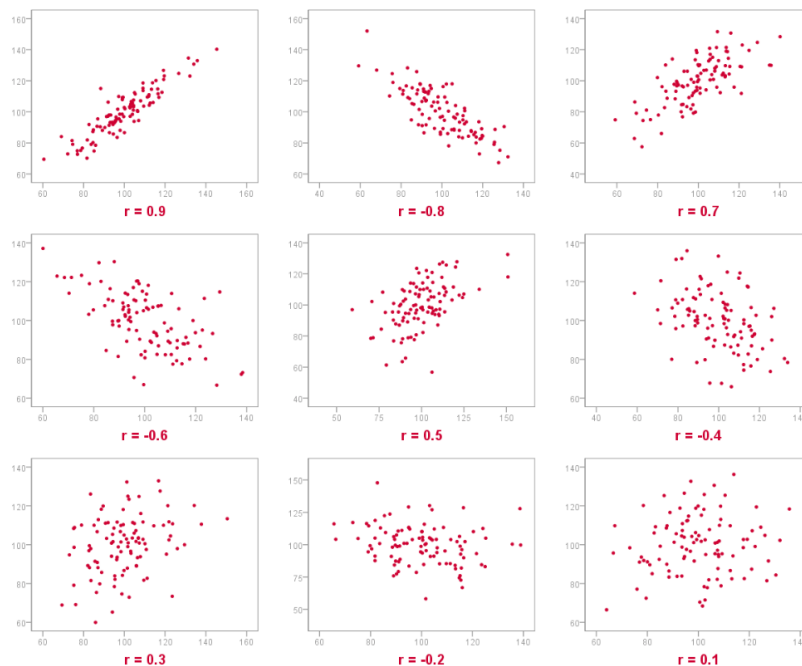


Figure # 23 correlation relationship

The test provides valuable information regarding the strength, significant and direction of relationship in order to accept or reject the null hypotheses. Correlation with -1 indicates strong reverse proportional relationship, it means higher score of one variable, lowering the score of other variable. A correlation with 0 it means there is no liner relationship between the two variable. A correlation with 1 it is the perfect liner relationship. r-value is 0-0.2 is weak relationship, 0.3-0.6 is moderate, and 0.7-1 is strong relationship.

Correlation matrix for all variables are produced through the utilisation of SPSS as follow;

- a) Analyse the factors and global within same factors show that there is interconnection between organization factors (Independent Variable) and correlated with each other with correlated coefficient higher than 0.3 and significant value $p < 0.05$, the correlation is significant and the two variables are linearly

		Correlations								
		IDV. Need for work	IDV.Strength of firm	IDV. Project Condition	IDV.Risk	IDV.Client and Consultant	IDV. Competition	IDV.Future market	IDV.Project portfolio	IDV.Global
IDV. Need for work	Pearson Correlation	1	.500**	.489**	.377**	.323**	.395**	.400**	.421**	.555**
	Sig. (2-tailed)		.000	.000	.002	.009	.001	.001	.001	.000
	N	67	64	66	66	65	67	66	64	60
IDV.Strength of firm	Pearson Correlation	.500**	1	.658**	.671**	.590**	.484**	.485**	.588**	.816**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.000	.000
	N	64	64	64	63	63	64	63	62	60
IDV. Project Condition	Pearson Correlation	.489**	.658**	1	.690**	.558**	.424**	.602**	.561**	.827**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.000	.000
	N	66	64	66	65	65	66	65	64	60
IDV.Risk	Pearson Correlation	.377**	.671**	.690**	1	.688**	.449**	.502**	.613**	.831**
	Sig. (2-tailed)	.002	.000	.000		.000	.000	.000	.000	.000
	N	66	63	65	66	64	66	65	63	60
IDV.Client and Consultant	Pearson Correlation	.323**	.590**	.558**	.688**	1	.334**	.591**	.571**	.812**
	Sig. (2-tailed)	.009	.000	.000	.000		.007	.000	.000	.000
	N	65	63	65	64	65	65	64	64	60
IDV.Competition	Pearson Correlation	.395**	.484**	.424**	.449**	.334**	1	.594**	.301*	.528**
	Sig. (2-tailed)	.001	.000	.000	.000	.007		.000	.016	.000
	N	67	64	66	66	65	67	66	64	60
IDV.Future market	Pearson Correlation	.400**	.485**	.602**	.502**	.591**	.594**	1	.527**	.699**
	Sig. (2-tailed)	.001	.000	.000	.000	.000	.000		.000	.000
	N	66	63	65	65	64	66	66	63	60
IDV.Project portfolio	Pearson Correlation	.421**	.588**	.561**	.613**	.571**	.301*	.527**	1	.801**
	Sig. (2-tailed)	.001	.000	.000	.000	.000	.016	.000		.000
	N	64	62	64	63	64	63	63	64	60
IDV.Global	Pearson Correlation	.555**	.816**	.827**	.831**	.812**	.528**	.699**	.801**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	
	N	60	60	60	60	60	60	60	60	60

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

* Correlation is significant at the 0.05 level (2-tailed).

Table # 7 Correlation between organizations factors (Independent Variable)

- b) Analyse the dependent variable with Independent factors show that variables are correlated with each other with correlated coefficient higher than 0.3 and significant value $p < 0.05$, the correlation is significant and the two variables are linearly

		Ensure the employees are paid	Strong financial status is essential feature	Government legislation for recruitment process	9 materials from overseas manufacturers delay the project	Constrained project budget will limit the resource	Poor's project planning and client estimation	progress payment by the client constrain the contractor ability	bidding a constructive project might outcome lost opportunity	Choice of construct project might boundary the internal capital	Competition's approach and probability	IDV. Need for work	IDV. Strength of firm	IDV. Project Condition	IDV. Risk	IDV. Client and Consultant	IDV. Competition	IDV. Future market	IDV. Project portfolio
Ensure the employees are paid	Pearson Correlation	1	.675**	.407**	.464**	.737**	.563**	.613**	.459**	.376**	.313**	.262**	.546**	.404**	.635**	.612**	.311**	.422**	.556**
	Sig. (2-tailed)		.000	.001	.000	.000	.000	.000	.002	.010	.032	.000	.001	.000	.000	.010	.000	.000	
	N	67	67	67	67	67	67	67	66	66	67	67	67	64	66	66	65	67	64
Strong financial status is essential feature	Pearson Correlation	.675**	1	.345**	.283*	.580**	.570**	.681**	.528**	.399**	.296**	.394**	.649**	.491**	.561**	.562**	.280**	.303**	.608**
	Sig. (2-tailed)	.000		.004	.020	.000	.000	.000	.000	.001	.015	.001	.000	.000	.000	.000	.022	.013	.000
	N	67	67	67	67	67	67	67	66	66	67	67	67	64	66	66	65	67	64
Government legislation for recruitment process	Pearson Correlation	.407**	.345**	1	.431**	.499**	.562**	.593**	.464**	.496**	.394**	.105	.353**	.408**	.440**	.389**	.296**	.420**	.539**
	Sig. (2-tailed)	.001	.004		.000	.000	.000	.000	.000	.000	.001	.399	.004	.001	.000	.001	.015	.000	.000
	N	67	67	67	67	67	67	67	66	66	67	67	67	64	66	66	65	67	64
Importing materials from overseas manufacturers delay the project	Pearson Correlation	.464**	.283*	.431**	1	.484**	.557**	.433**	.566**	.322**	.383**	.257**	.368**	.457**	.654**	.467**	.293**	.451**	.452**
	Sig. (2-tailed)	.000	.020	.000		.000	.000	.000	.000	.008	.001	.036	.003	.000	.000	.000	.016	.000	.000
	N	67	67	67	67	67	67	66	66	67	67	67	64	66	66	66	65	67	64
Constrained project budget will limit the resource	Pearson Correlation	.737**	.580**	.499**	.484**	1	.594**	.646**	.557**	.495**	.356**	.213	.555**	.475**	.642**	.594**	.307**	.460**	.601**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.000	.000	.003	.083	.000	.000	.000	.000	.011	.000	.000
	N	67	67	67	67	67	67	66	66	67	67	67	64	66	66	66	65	67	64
Poor's project planning and client estimation	Pearson Correlation	.563**	.570**	.562**	.557**	.594**	1	.779**	.626**	.381**	.392**	.207	.453**	.279**	.587**	.468**	.381**	.345**	.487**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000	.000	.001	.001	.092	.000	.023	.000	.000	.001	.005	.000
	N	67	67	67	67	67	67	66	66	67	67	67	64	66	66	66	65	67	64
Delay progress payment by the client constrain the contractor ability	Pearson Correlation	.613**	.681**	.593**	.433**	.646**	.779**	1	.630**	.529**	.382**	.258**	.545**	.422**	.573**	.597**	.272**	.420**	.532**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000	.000	.002	.037	.000	.000	.000	.000	.027	.000	.000
	N	66	66	66	66	66	66	66	65	66	66	66	66	63	65	65	64	66	63
Not bidding a constructive project might outcome lost opportunity	Pearson Correlation	.459**	.528**	.464**	.566**	.557**	.626**	.630**	1	.489**	.549**	.305**	.521**	.566**	.667**	.537**	.308**	.433**	.647**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000		.000	.000	.013	.000	.000	.000	.000	.012	.000	.000
	N	66	66	66	66	66	66	66	65	66	66	66	63	65	65	64	66	65	63

Choice of incorrect project might boundary the internal capital	Pearson Correlation	.376**	.399**	.496**	.322**	.495**	.381**	.529**	.489**	1	.403**	.283**	.522**	.536**	.441**	.563**	.331**	.393**	.518**
	Sig. (2-tailed)	.002	.001	.000	.008	.000	.001	.000	.000		.001	.020	.000	.000	.000	.000	.006	.001	.000
	N	67	67	67	67	67	67	66	66	67	67	67	64	66	66	65	67	66	64
Competitions's apporches and probability	Pearson Correlation	.313**	.296**	.394**	.383**	.356**	.392**	.382**	.549**	.403**	1	.264**	.533**	.477**	.462**	.353**	.462**	.462**	.484**
	Sig. (2-tailed)	.010	.015	.001	.001	.003	.001	.002	.000	.001		.031	.000	.000	.000	.004	.000	.000	.000
	N	67	67	67	67	67	67	66	66	67	67	67	64	66	66	65	67	66	64
IDV. Need for work	Pearson Correlation	.262**	.394**	.105	.257**	.213	.207	.258**	.305	.283**	.264**	1	.500**	.489**	.377**	.323**	.395**	.400**	.421**
	Sig. (2-tailed)	.032	.001	.399	.036	.083	.092	.037	.013	.020	.031		.000	.000	.002	.009	.001	.001	.001
	N	67	67	67	67	67	67	66	66	67	67	67	64	66	66	65	67	66	64
IDV.Strength of firm	Pearson Correlation	.546**	.649**	.353**	.368**	.555**	.453**	.545**	.521**	.522**	.533**	.500**	1	.658**	.671**	.590**	.484**	.485**	.588**
	Sig. (2-tailed)	.000	.000	.004	.003	.000	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000	.000
	N	64	64	64	64	64	64	63	63	64	64	64	64	64	63	63	64	63	62
IDV. Project Condition	Pearson Correlation	.404**	.491**	.408**	.457**	.475**	.279*	.422**	.566**	.535**	.477**	.489**	.658**	1	.690**	.558**	.424**	.602**	.561**
	Sig. (2-tailed)	.001	.000	.001	.000	.000	.023	.000	.000	.000	.000	.000	.000		.000	.000	.000	.000	.000
	N	66	66	66	66	66	66	65	65	66	66	66	64	66	65	65	66	65	64
IDV.Risk	Pearson Correlation	.635**	.561**	.440**	.654**	.642**	.587**	.573**	.667**	.441**	.462**	.377**	.671**	.690**	1	.688**	.449**	.502**	.613**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.002	.000	.000		.000	.000	.000	.000
	N	66	66	66	66	66	66	65	65	66	66	66	63	65	66	64	66	65	63
IDV.Client and Consultant	Pearson Correlation	.612**	.562**	.389**	.467**	.594**	.468**	.597**	.537**	.563**	.353**	.323**	.590**	.558**	.688**	1	.334**	.591**	.571**
	Sig. (2-tailed)	.000	.000	.001	.000	.000	.000	.000	.000	.000	.004	.009	.000	.000	.000		.007	.000	.000
	N	65	65	65	65	65	65	64	64	65	65	65	63	65	64	65	65	64	64
IDV.Competition	Pearson Correlation	.311**	.280**	.296**	.293**	.307**	.381**	.272**	.308**	.331**	.462**	.395**	.484**	.424**	.449**	.334**	1	.594**	.301**
	Sig. (2-tailed)	.010	.022	.015	.016	.011	.001	.027	.012	.006	.000	.001	.000	.000	.000	.007		.000	.016
	N	64	64	64	64	64	64	63	63	64	64	64	62	64	63	64	64	63	64
IDV.Future market	Pearson Correlation	.422**	.303**	.420**	.451**	.460**	.345**	.420**	.433**	.393**	.462**	.400**	.485**	.602**	.502**	.591**	.594**	1	.527**
	Sig. (2-tailed)	.000	.013	.000	.000	.000	.005	.000	.000	.001	.000	.001	.000	.000	.000	.000	.000	.000	.000
	N	66	66	66	66	66	66	65	65	66	66	66	63	65	65	64	66	66	63
IDV.Project portfolio	Pearson Correlation	.556**	.608**	.539**	.452**	.601**	.487**	.532**	.647**	.518**	.484**	.421**	.588**	.561**	.613**	.571**	.301**	.527**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.001	.000	.000	.000	.000	.016	.000	.000
	N	64	64	64	64	64	64	63	63	64	64	64	62	64	63	64	64	63	64

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

* Correlation is significant at the 0.05 level (2-tailed).

Table # 8 correlation dependent variable with Independent factors

- c) Analyse the global dependent variable (factor) with Independent factors show that there is interconnection between decision making for bid or not to bid with organization factors (Independent Variable) and correlated with each other with correlated coefficient higher than 0.3 and significant value $\rho < 0.05$, the correlation is significant and the two variables are linearly

		Correlations								
		DV.Global. decide bid/not to bid	IDV.Risk	IDV. Need for work	IDV.Strength of firm	IDV. Project Condition	IDV.Client and Consultant	IDV. Competition	IDV.Future market	IDV.Project portfolio
DV.Global decide bid/not to bid	Pearson Correlation	1	.763**	.353**	.677**	.605**	.692**	.436**	.548**	.740**
	Sig. (2-tailed)		.000	.004	.000	.000	.000	.000	.000	.000
	N	65	64	65	62	64	63	65	64	62
IDV.Risk	Pearson Correlation	.763**	1	.377**	.671**	.690**	.688**	.449**	.502**	.613**
	Sig. (2-tailed)	.000		.002	.000	.000	.000	.000	.000	.000
	N	64	66	66	63	65	64	66	65	63
IDV. Need for work	Pearson Correlation	.353**	.377**	1	.500**	.489**	.323**	.395**	.400**	.421**
	Sig. (2-tailed)	.004	.002		.000	.000	.009	.001	.001	.001
	N	65	66	67	64	66	65	67	66	64
IDV.Strength of firm	Pearson Correlation	.677**	.671**	.500**	1	.658**	.590**	.484**	.485**	.588**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000	.000	.000
	N	62	63	64	64	64	63	64	63	62
IDV. Project Condition	Pearson Correlation	.605**	.690**	.489**	.658**	1	.558**	.424**	.602**	.561**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.000	.000
	N	64	65	66	64	66	65	66	65	64
IDV.Client and Consultant	Pearson Correlation	.692**	.688**	.323**	.590**	.558**	1	.334**	.591**	.571**
	Sig. (2-tailed)	.000	.000	.009	.000	.000		.007	.000	.000
	N	63	64	65	63	65	65	66	64	64
IDV.Competition	Pearson Correlation	.436**	.449**	.395**	.484**	.424**	.334**	1	.594**	.301**
	Sig. (2-tailed)	.000	.000	.001	.000	.000	.007		.000	.016
	N	65	66	67	64	66	65	67	66	64
IDV.Future market	Pearson Correlation	.548**	.502**	.400**	.485**	.602**	.591**	.594**	1	.527**
	Sig. (2-tailed)	.000	.000	.001	.000	.000	.000	.000		.000
	N	64	65	66	63	65	64	66	66	63
IDV.Project portfolio	Pearson Correlation	.740**	.613**	.421**	.588**	.561**	.571**	.301**	.527**	1
	Sig. (2-tailed)	.000	.000	.001	.000	.000	.000	.016	.000	
	N	62	63	64	62	64	64	64	63	64

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

* Correlation is significant at the 0.05 level (2-tailed).

Table # 9 correlation - global dependent variable with Independent factors

5.6 Regression

Regression method used to predict the changes on dependent variable by changes got on the independent variables / cluster. There are simple and multiple liner regression. Simple regression to predict the changes on dependent variable by one independent variable. Multiple regression to predict the changes on dependent variable by various independent variables and check which one has more effect. “R Square, It is the Coefficient of Determination, which is used as an indicator of the goodness of fit”. It shows how many points fall on the regression line. In other words it indicate the percentage of the dependent variables (y-values) are explained by the independent variables (x-values). R square adjusted to be used in multiple liner regression model. Significance F is the P-value of F. If Significance F is less than 0.05 (5%), your model is OK. If it is greater than 0.05, you'd probably better choose another independent variable. F-test used to test the null hypothesis.

The testing results has been summarised in Table 10 & 11 below:

Table # 10

Test no:	factor	R Square	Adj R Square	Std. Error of the Estimate	F	Sig
1	Need for Work	0.125	0.111	12.76	8.986	0.004 ^b
2	Strength of Firm	0.458	0.449	10.084	50.75	0.000 ^b
3	Project Conditions	0.366	0.356	10.78	35.846	0.000 ^b
4	Risk	0.582	0.575	8.887	86.373	0.000 ^b
5	Client & Consultant	0.478	0.47	9.556	55.966	0.000 ^b
6	Competition	0.19	0.178	12.277	14.813	0.000 ^b
7	Future Market	0.3	0.289	11.488	26.567	0.000 ^b
8	Project Portfolio	0.547	0.539	8.78	72.437	0.000 ^b
9	Global IDV	0.665	0.659	7.758	111.086	0.000 ^b

Table # 11

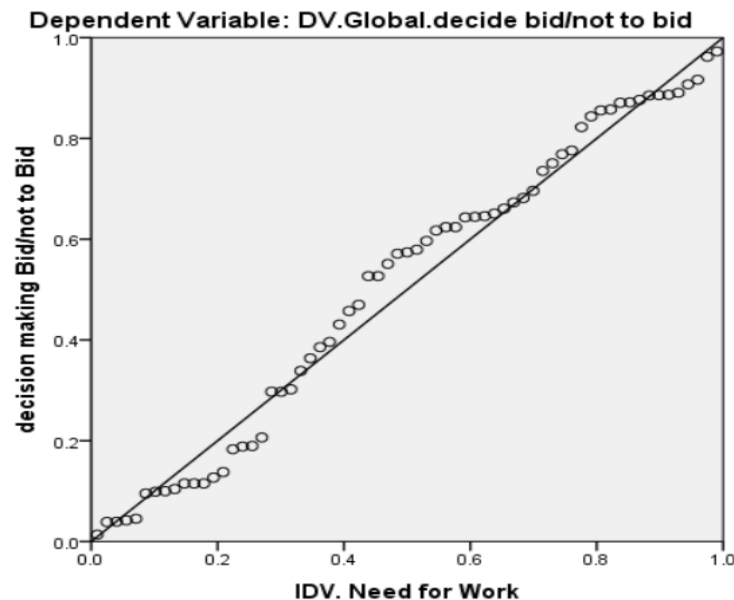
Test no:	factor	Constant	B	Sig	β
1	Need for Work	46.301	0.914	0.004	0.353
2	Strength of Firm	18.716	0.921	0.000 ^b	0.677
3	Project Conditions	35.229	0.682	0.000 ^b	0.605

4	Risk	22.412	1.015	0.000 ^b	0.763
5	Client & Consultant	20.999	0.882	0.000 ^b	0.692
6	Competition	48.368	1.766	0.000 ^b	0.436
7	Future Market	31.94	1.009	0.000 ^b	0.548
8	Project Portfolio	21.028	0.908	0.000 ^b	0.74
9	Global IDV	-4.315	0.211	0.000 ^b	0.815

Test no. 1: Need for work group regression with decision making for bid / not to bid:

The linear regression test to predict the effect of independent factor (Need for work) and changes in dependent factor (Decision making). Significant regression found $F = 8.986$, $p < .004^b$ with an R^2 value of 0.125. The regression analysis has a high degree goodness of fit as described in table # 10. The coefficient of regression $B = 0.914$ and constant factor of 46.301 as shown in Table # 11. Inline to given information, the Regression line slope equation between the Need for work and the decision making can be written as $y = 46.301 + 0.914 * X$, Which means that the decision making enlarged positively by 0.914 units for each change of independent factors.

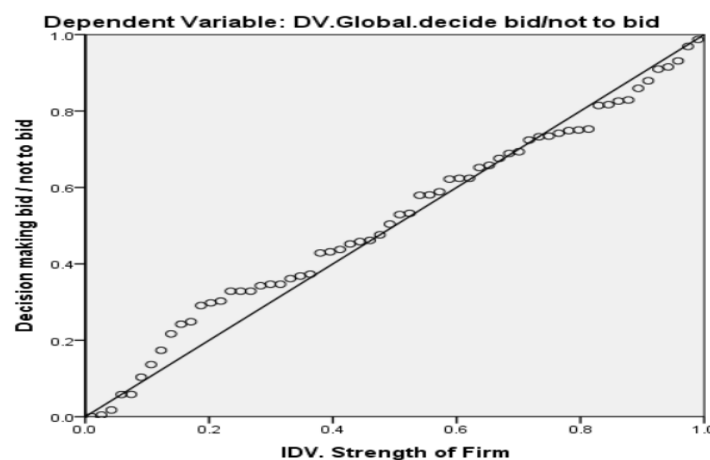
Figure Number 24 below is a graphic representation to the regression line between the IDV-Need for work and DV- Decision making bid / not to bid



Test no. 2: Strength of Firm Group regression with decision making for bid / not to bid

The linear regression test to predict the effect of independent factor (Strength of Firm) and changes in dependent factor (Decision making). Significant regression found $F = 50.750$, $p < .000^b$ with an R^2 value of 0.458. The regression analysis has a high degree goodness of fit as described in table # 10. The coefficient of regression $B = 0.921$ and constant factor of 18.716 as shown in Table # 11. Inline to given information, the Regression line slope equation between the Strength of Firm and the decision making can be written as $y = 18.716 + 0.921 * X$, Which means that the decision making enlarged positively by 0.921 units for each change of independent factors.

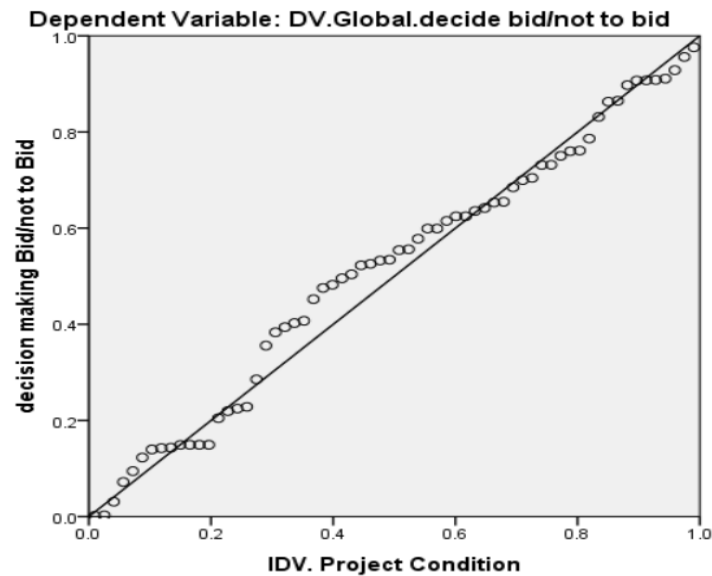
Figure Number 25 below is a graphic representation to the regression line between the IDV-Strength of firm and DV-Decision making bid / not to bid



Test no. 3: Project Conditions Group regression with decision making for bid / not to bid

The linear regression test to predict the effect of independent factor (Project Conditions) and changes in dependent factor (Decision making). Significant regression found $F = 35.846$, $p < .000^b$ with an R^2 value of 0.366. The regression analysis has a high degree goodness of fit as described in table # 10. The coefficient of regression $B = 0.682$ and constant factor of 35.229 as shown in Table # 11. Inline to given information, the Regression line slope equation between the Project Conditions and the decision making can be written as $y = 35.229 + 0.682 * X$, Which means that the decision making enlarged positively by 0.682 units for each change of independent factors.

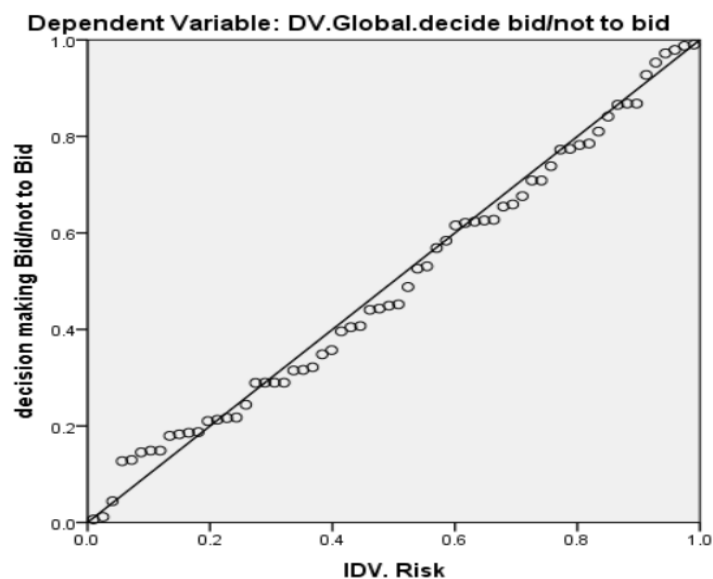
Figure Number 26 below is a graphic representation to the regression line between the IDV-project conditions and DV-Decision making bid / not to bid



Test no. 4: Risk Group regression with decision making for bid / not to bid

The linear regression test to predict the effect of independent factor (Risk) and changes in dependent factor (Decision making). Significant regression found $F = 86.373$, $p < .000^b$ with an R^2 value of 0.582. The regression analysis has a high degree goodness of fit as described in table # 10. The coefficient of regression $B = 1.015$ and constant factor of 22.412 as shown in Table # 11. Inline to given information, the Regression line slope equation between the Risk and the decision making can be written as $y = 22.412 + 1.015 * X$, Which means that the decision making enlarged positively by 1.015 units for each change of independent factors.

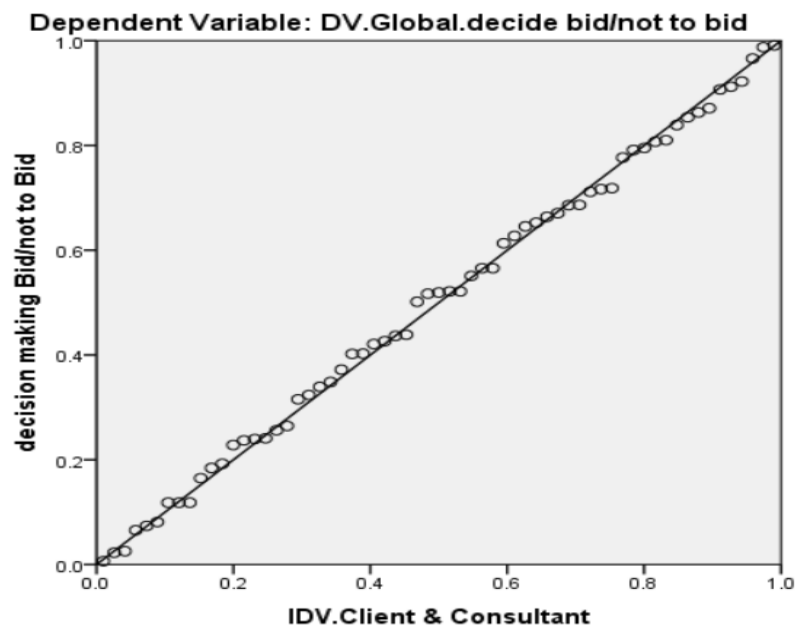
Figure Number 27 below is a graphic representation to the regression line between the IDV-Risk and DV-Decision making bid / not to bid



Test no. 5: Client & Consultant Group regression with decision making for bid / not to bid

The linear regression test to predict the effect of independent factor (Client and Consultant) and changes in dependent factor (Decision making). Significant regression found $F = 55.966$, $p < .000^b$ with an R^2 value of 0.478. The regression analysis has a high degree goodness of fit as described in table # 10. The coefficient of regression $B = 0.882$ and constant factor of 20.999 as shown in Table # 11. Inline to given information, the Regression line slope equation between the Risk and the decision making can be written as $y = 20.999 + 0.882 * X$, Which means that the decision making enlarged positively by 0.882 units for each change of independent factors.

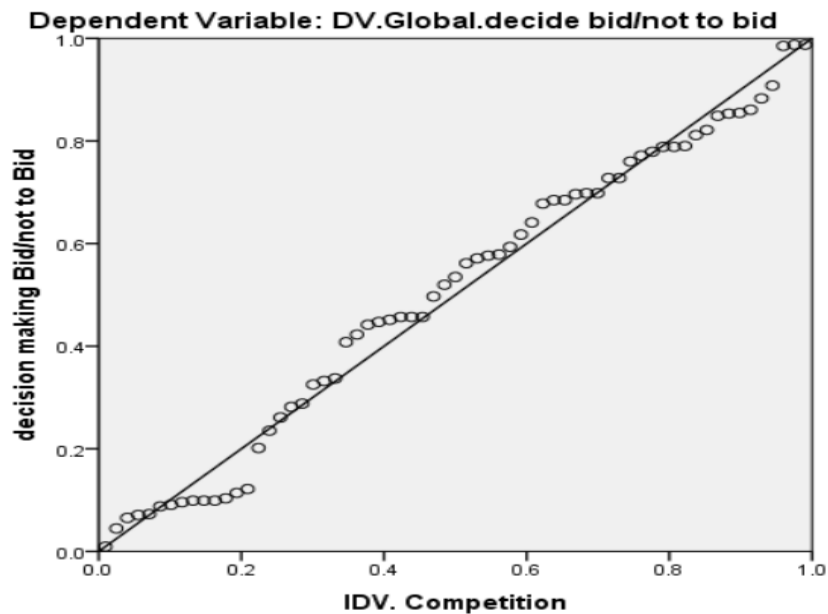
Figure Number 28 below is a graphic representation to the regression line between the IDV-Client & Consultant and DV-Decision making bid / not to bid



Test no. 6: Competition Group regression with decision making for bid / not to bid

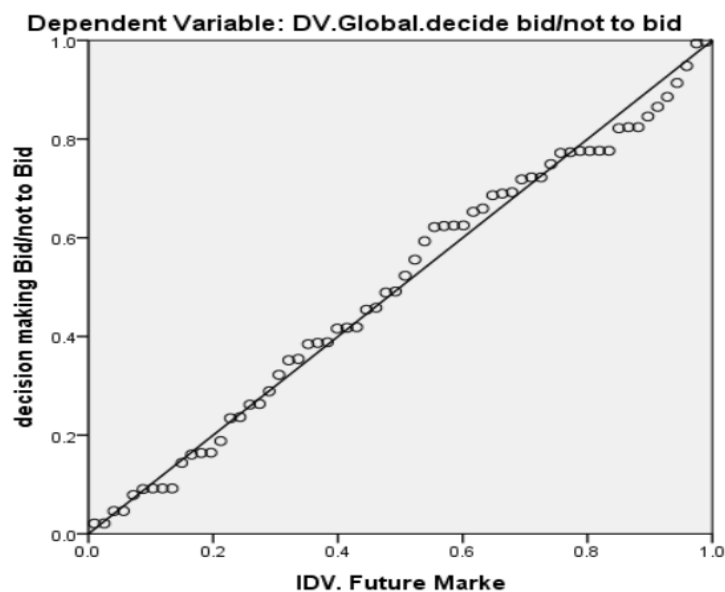
The linear regression test to predict the effect of independent factor (Competition) and changes in dependent factor (Decision making). Significant regression found $F = 14.813$, $p < .000^b$ with an R^2 value of 0.190. The regression analysis has a high degree goodness of fit as described in table # 10. The coefficient of regression $B = 1.766$ and constant factor of 48.368 as shown in Table # 11. Inline to given information, the Regression line slope equation between the Competition and the decision making can be written as $y = 48.368 + 1.766 * X$, Which means that the decision making enlarged positively by 1.766 units for each change of independent factors.

Figure Number 29 below is a graphic representation to the regression line between the IDV-Competition and DV-Decision making bid / not to bid



Test no. 7: Future market Group regression with decision making for bid / not to bid

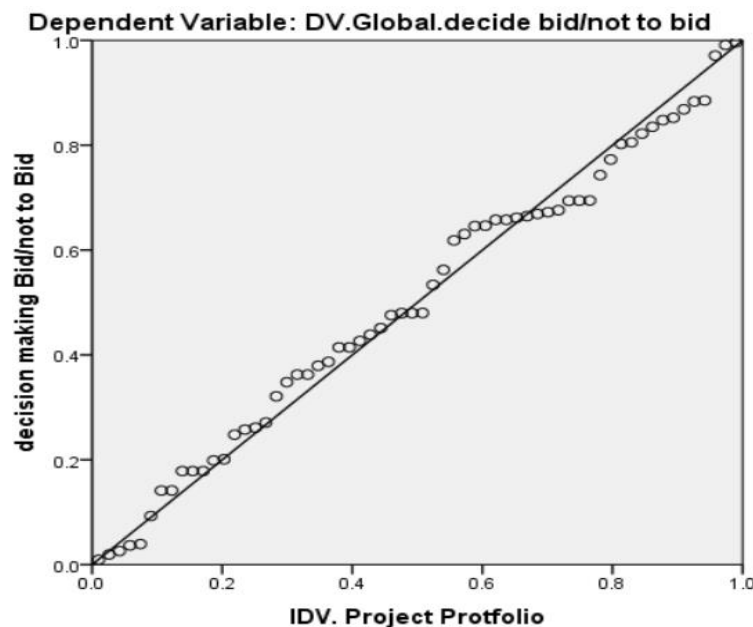
The linear regression test to predict the effect of independent factor (Future market conditions) and changes in dependent factor (Decision making). Significant regression found $F = 26.567$, $p < .000^b$ with an R^2 value of 0.300. The regression analysis has a high degree goodness of fit as described in table # 10. The coefficient of regression $B = 1.009$ and constant factor of 31.940 as shown in Table # 11. Inline to given information, the Regression line slope equation between the Future Market Conditions and the decision making can be written as $y = 31.940 + 1.009 * X$, Which means that the decision making enlarged positively by 1.009 units for each change of independent factors. Figure Number 30 below is a graphic representation to the regression line between the IDV-Future Market and DV-Decision making bid / not to bid



Test no. 8: Project portfolio Group regression with decision making for bid / not to bid

The linear regression test to predict the effect of independent factor (Project Portfolio) and changes in dependent factor (Decision making). Significant regression found $F = 72.437$, $p < .000^b$ with an R^2 value of 0.547. The regression analysis has a high degree goodness of fit as described in table # 10. The coefficient of regression $B = 0.908$ and constant factor of 21.028 as shown in Table # 11. Inline to given information, the Regression line slope equation between the Project Portfolio and the decision making can be written as $y = 21.028 + 0.908 * X$, Which means that the decision making enlarged positively by 0.908 units for each change of independent factors.

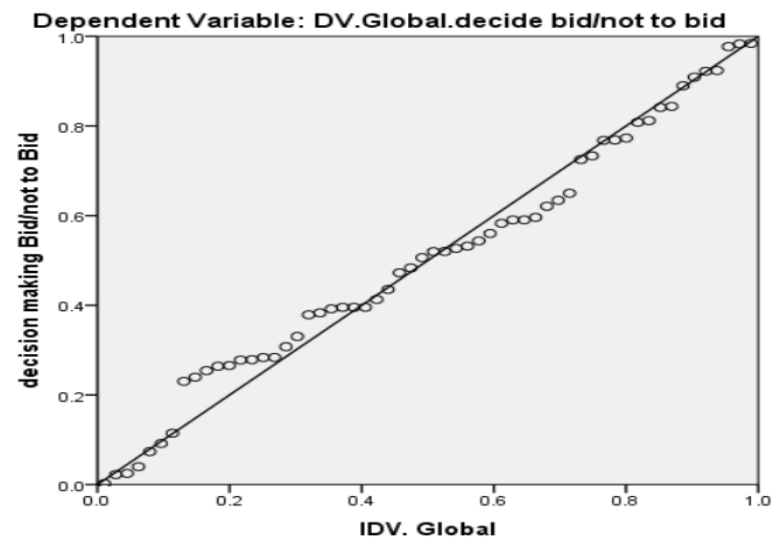
Figure Number 31 below is a graphic representation to the regression line between the IDV-Project Portfolio and DV-Decision making bid / not to bid



Test no. 9: IDV Global Group regression with decision making for bid / not to bid

In order to confirm the Influence of the all IDV Global Factors on DV Global Significant regression found $F = 111.086$ $p < .000$ with an R^2 value of 0.665. The regression analysis has a high degree goodness of fit as described in table # 10. The coefficient of regression $B = 0.211$ and constant factor of -4.315 as shown in Table # 11. Inline to given information, the Regression line slope equation between the Project Portfolio and the decision making can be written as $y = -4.315 + 0.211 * X$, Which means that the decision making enlarged positively by 0.211 units for each change of independent Global factors.

Figure Number 32 below is a graphic representation to the regression line between the Global IDV and DV- Decision making bid / not to bid



Chapter 6: Discussion

6.1 Introduction

In this chapter there will be further discussion will be conducted to link the result analysed in previous chapter mentioned in table # 10 & 11 with the finding in the literature review and test it with the selected conceptual module.

6.2 Hypotheses testing

The null hypotheses testing assumed there is no relation between the independent factors mentioned in previous literature review and empirical studies, therefor liner regression implemented on independent factors individual and global to measure the influence on the decision making to accept or reject the hypotheses and to accept the alternative hypotheses.

Null Hypothesis H_{0-1a} : “Decision making Bid or / not to Bid in UAE construction project is not effected by organizational need for work”

The null Hypotheses assumed that there is no relationship between the Need for work factor which is grouped from (current loaded of projects, current financial situation of the company, need for continuity in employment, current work load in bid preparation). The scale of 4 item has been tested with Cronbach alpha methodology = 0.683 which is considered to be accepted even it is quite below 0.7. Moreover analyse the variable within the same factor show high correlated coefficient higher than 0.3 and significant value $p < 0.05$.

Further test has been conducted, liner regression to predict the influence on the DV (Decision making) as described in section 5, $F = 8.986$, $p < .004^b$ with an R^2 value of 0.125. $y = 46.301 + 0.914 * X$, means that the decision making enlarged positively by value of 0.914 units for each one unit of independent factors increased.

Accordingly The Null Hypotheses H_{0-1a} is rejected. This result can be supported by justification assumed by the contractor to reduce the mark-up cost for attractive project, unique and/ or Need for work in the time of crises (Biruk, Jaśkowski & Czarnigowska 2017)

Null Hypothesis H_{0-1b} : “Decision making Bid or / not to Bid in UAE construction project is not effected by organizational factor – Strength of firm”

The null Hypotheses assumed that there is no relationship between the Strength of firm factor which is grouped from (Ability to fulfil tender conditions, working cash requirement of project, Experience and familiarity of your firm, Possessing enough qualified technical staff, Possessing enough required plant and equipment, Having qualified subcontractors, Project resource similarity and its influence on existing projects performance, Amount of work to be subcontracted) which had been extracted from literature review . The scale of 8 item has been tested with Cronbach alpha methodology = 0.825 which is considered to be highly accepted. Moreover analyse the variable within the same factor show high correlated coefficient higher than 0.3 and significant value $p < 0.05$.

Further test has been conducted, liner regression to predict the influence on the DV (Decision making) as described in section 5, $F = 50.750$, $p < .000^b$ with an R^2 value of 0.458. $y = 18.716 + 0.921 * X$, it means that the decision making positively enlarged by value of 0.921 units for each one unit of independent factors increased. Accordingly The Null Hypotheses $H0-1b$ is rejected

Null Hypothesis $H0-1c$: “Decision making Bid or / not to Bid in UAE construction project is not effected by organizational factor – Project conditions”

The null Hypotheses assumed that there is no relationship between the Project conditions factor and DV (Decision making). This cluster which is grouped from (Project size, Terms of payment, Project type, Profits made in similar projects in the past, Accessibility and space for work, Uncertainty related to the construction site condition, Technological difficulty of the project being beyond the capability of the firm, Management of similar size projects in the past) which had been extracted from literature review . The scale of 8 item has been tested with Cronbach alpha methodology = 0.883 which is considered to be highly accepted. Moreover analyse the variable within the same factor show high correlated coefficient higher than 0.3 and significant value $p < 0.05$.

Further test has been conducted, liner regression to predict the influence on the DV (Decision making) as described in section 5, $F = 35.846$, $p < .000^b$ with an R^2 value of 0.366. $y = 35.229 + 0.682 * X$, it means that the decision making positively enlarged by value of .682 units for each one unit of independent factors increased.

Accordingly The Null Hypotheses $H0-1c$ is rejected

Null Hypothesis H0-1_d: “Decision making Bid or / not to Bid in UAE construction project is not effected by organizational factor – Risk”

The null Hypotheses assumed that there is no relationship between the Risk factor and DV (Decision making). This cluster which is grouped from. The scale of 6 item has been tested with Cronbach alpha methodology = 0.852 which is considered to be highly accepted. The Risk is up-stream process in project life cycle and it is associated with acceptance of the project, and the consequence after winning the project with quality, cost and time constrains. Non achievement or complying with specification, less performance, cost overrun, and over budget (Diego, Cédric & Daniel 2013). Moreover analyse the variable within the same factor show high correlated coefficient higher than 0.3 and significant value $p < 0.05$.

Further test has been conducted, liner regression to predict the influence on the DV (Decision making) as described in section 5, $F = 86.373$, $p < .000^b$ with an R^2 value of 0.582. $y = 22.412 + 1.015 * X$, it means that the decision making positively enlarged by value of 1.015 units for each one unit of independent factors increased.

Accordingly The Null Hypotheses H0-1_d is rejected

Null Hypothesis H0-1_e: “Decision making Bid or / not to Bid in UAE construction project is not effected by organizational factor – Competition”

The null Hypotheses assumed that there is no relationship between the Competition factor and DV (Decision making). This cluster which is grouped from (Possible number of competitor, and desire of qualified contractor to bid and win the project) which had been extracted from literature review. The scale of 2 item2 has been tested with Cronbach alpha methodology = 0.883 which is highly accepted. Because the competitors rises the number of tenders of similar construction projects, and thus constricts the competition concerning the factor “competition in the market”. Moreover analyse the variable within the same factor show high correlated coefficient higher than 0.4 and significant value $p < 0.05$.

Further test has been conducted, liner regression to predict the influence on the DV (Decision making) as described in section 5, $F = 14.813$, $p < .000^b$ with an R^2 value of 0.19 $y =$

48.368+1.766* X, it means that the decision making positively enlarged by value of 1.766 units for each one unit of independent factors increased.

Accordingly The Null Hypotheses H0-1e is rejected

Null Hypothesis H0-2: “Decision making Bid or / not to Bid in UAE construction project is not effected by Global IDV- organizational factor”

The null Hypotheses assumed that there is no relationship between the Global IDV – Organisational factors and DV (Decision making). It has been tested with Cronbach alpha methodology = 0.815 which is considered to be highly accepted. Moreover analyse the variable within the same factor show high correlated coefficient higher than 0.3 and significant value $\rho < 0.05$.

F = 111.086 $p < .000$ with an R2 value of 0.665. Which represent a static evident regression with a high significance and the regression model has a high degree goodness. Regression line slope equation can be written as $y = -4.315 + 0.211 * X$, it means that the decision making positively enlarged by value of: 0.211 units for each one unit of IDV Global factors increased. Accordingly The Null Hypotheses H0-2 is rejected.

The above findings are confirming significant correlation between the organizational factors and the decision making for bid or not to bid and high percentage of ρ support the rejection of null hypotheses H₀ and accept of alternative hypotheses Ha 1 strength of firm factors with correlation coefficient of 0.816 $\rho < 0.05$, Ha 2 project condition factors with correlation coefficient of 0.827 $\rho < 0.05$, Ha 3 Risk factors with correlation coefficient of 0.831 $\rho < 0.05$, Ha 4 global DV with IDV project portfolio with correlation coefficient of 0.740 $\rho < 0.05$.

The above results found to be agreed with literature review finding Egman & Mohamed (2007); El-Mashaleh et al. (2014), (Oyeyipo et al. 2016) Huan Ma(2011).

Table # 12

Test no:	factor	R Square	Adj R Square	Std. Error of the Estimate	F	Sig	Constant	B	β	Cronbach's Alpha
1	Need for Work	0.125	0.111	12.76	8.986	0.004 ^b	46.301	0.914	0.353	0.683
2	Strength of Firm	0.458	0.449	10.084	50.75	0.000 ^b	18.716	0.921	0.677	0.825
3	Project Conditions	0.366	0.356	10.78	35.846	0.000 ^b	35.229	0.682	0.605	0.883
4	Risk	0.582	0.575	8.887	86.373	0.000 ^b	22.412	1.015	0.763	0.852
5	Client & Consultant	0.478	0.47	9.556	55.966	0.000 ^b	20.999	0.882	0.692	0.875
6	Competition	0.19	0.178	12.277	14.813	0.000 ^b	48.368	1.766	0.436	0.883
7	Future Market	0.3	0.289	11.488	26.567	0.000 ^b	31.94	1.009	0.548	0.719
8	Project Protfolio	0.547	0.539	8.78	72.437	0.000 ^b	21.028	0.908	0.74	0.923
9	Global IDV	0.665	0.659	7.758	111.086	0.000 ^b	-4.315	0.211	0.815	0.815

Chapter 7: Conclusion

This chapter summarize the explanation and findings of study objectives with related methodology. In this chapter there will be a set of recommendation, limitation and suggestion for future research

7.1 Study Summary

Converting the estimate to tender is crucial process and it is regular exercise by the contractor prior to proceed further in tendering. This led us to consider the important of improvement the bidding process and study the factors influence the bidding process in order to enhance the organization performance and to improve the quality of decision-making (Oyeyipo et al. 2016).

The Study objective focused in the previous chapters, on the definition of tenders in construction projects and the importance of this sector in playing a key role in achieving the aspiration of the UAE to rely on the construction sector's income and reduce dependence on the petrochemical sector.

This research studied the organizational factors and influence on decision making for bid / not to bid in construction industry. The independent factors classified in 8 groups with 49 different variables Internal and external. 4 groups are below to internal factors which need to be deal with organization's governance to set the strategy to achieve it, this groups are need for work, strength of firm, project conditions, and risk. The external factors are client and consultant, competition, future market and conditions ad project portfolio.

Use SPSS to analyse the collected data from questioner survey to study the their understanding toward the issue, verify the reality, validity, Cronbach alpha, and check the correlation to find out the relationship and liner regression to predict the changes in dependent value based on the changes in independent value. Assume the null hypotheses which supposed to be in contradiction with empirical study and accept or reject the hypotheses. The study found that all factors with high significant value and high correlated coefficient higher than 0.3 and significant value $p < 0.05$. According to above the independent factors are a positive predictor for the decision making, goodness to fit. Moreover according to result shown in table the external factors (competitor, client & consultant, Market conditions, and project portfolio) considered as primer factors which higher influence of the decision making more than the internal factors which considered as secondary factors.

The conceptual frame work highlighted the bidding process in general with brief discussion on each part but if focused on the decision making in details with all factors effect on the decision making. The proposed frame work was a combination from previous study conducted by Diego, B., Cédric, B. and Daniel, N. (2013) and (Chua & Li, 2000, p.350).

Revised conceptual frame work was proposed to include the consultancy services / competency team and procurement strategy.

7.2 Revised Conceptual frame work module

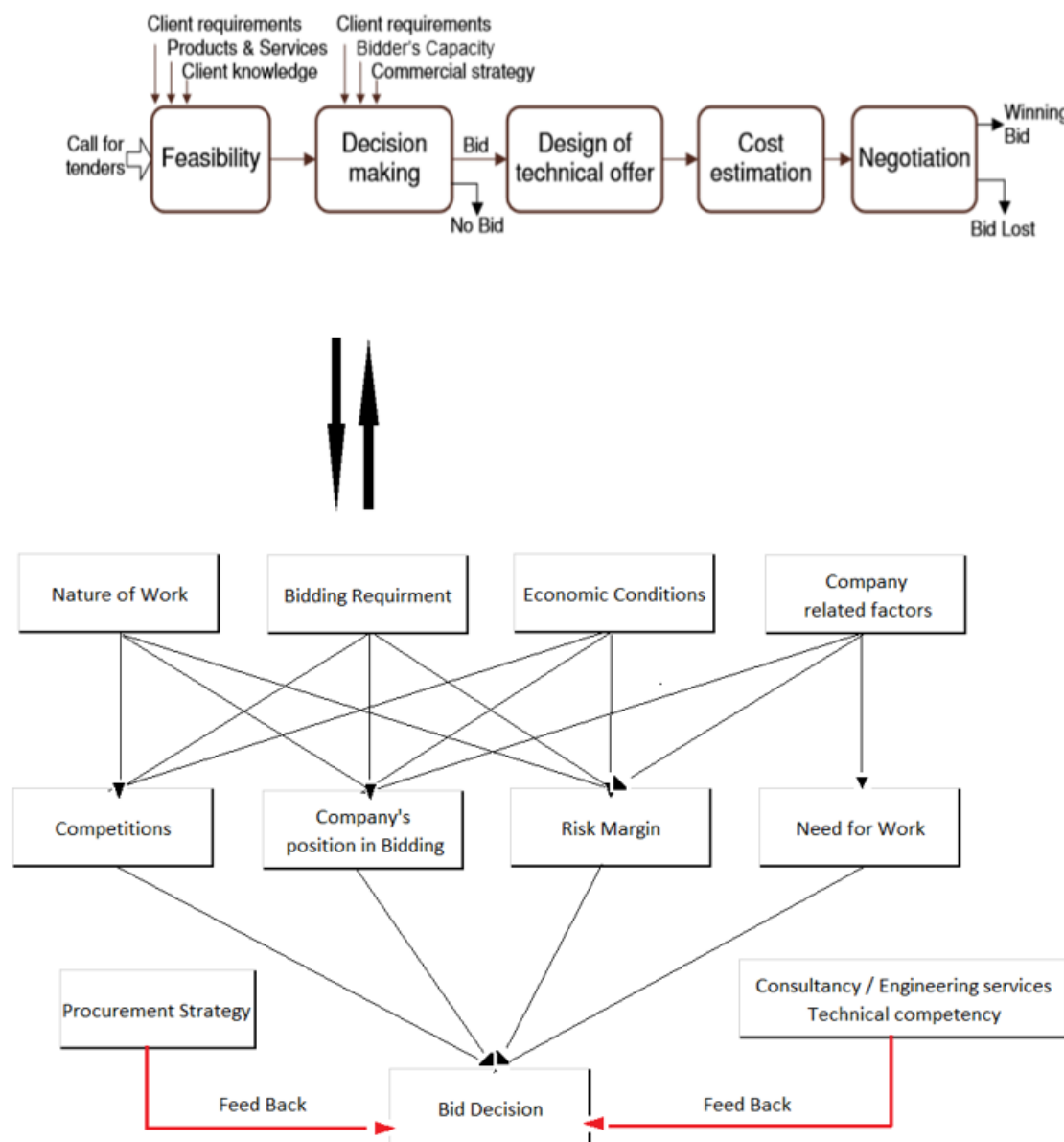


Figure 33: Proposed Revised conceptual module

7.3 Recommendations

The construction market have strong competition and each company has several competitors, it may be expected that the more competitors are in the market, which will reflect in tendering pricing for the bids and every company will try their best to submit best technical and financial tenders

There are many definition and perception of successful project but the traditional classification means to complete the project with time frame and within estimated budget and proper quality for client satisfaction and standard quality (Barclay, 1994).

Hiring consultancy services during the bidding process to review the design and propose a value engineering for mutual benefit between the client and the contractor. The cost of services can be percentage depend on proposed value of engineering value. Relax the specification of the project without compromise the quality of the product and maintain the minimum requirement of authority's approval.

Spear technical competency team within the company to be involve during the tender to highlight technical clarification and clarify the system performance, fit for purpose and long life operation span. Consultancy services should be available to minimize the gap in the technical specification.

Procurement strategy is your views how to approach procurement in first phase. Make Joint-venture with manufacturers available in the project vendor list to propose a value engineering and build-up smart solution with less cost and high performance within the range of their product. The manufacturer is fully aware about the technology of his product the actual cost of material range. This advantage can be used to minimize the technical offer cost for all parties. It will relax the client budget, keep the contractor's price the most competitor and undertake the project for the proposed product / brand.

Strategic partner, it is the most important relationship between the contractors and manufactures. The structure of business strategy will be rely on best & fixed price not effected by escalation in raw material, engineering services, proposal for client discussion and approval, free services after sale. Such relation will enhance the contractor ability to come up with low tender price.

Engage the procurement team in early to stage seek clarification and additional information from the market based on the international price for raw material to avoid any fluctuation in the price

which will be accepted by the client after signing tender document. The involvement of procurement department will be continue during the execution and placing the order to avoid any confusion or conflict in material order.

The mark-up rate depend on the type of product & specification. If the product available with one supplier, then the price will be market rate with high profit. Product with limited supplier then it will be with average profit. In case the product is commonly used by the supplier, then the profit will be very low.

Experience and business perception of a contractor are often deficient to ensure that bidding will provide a good tradeoff between the cost of bid preparation and the benefit of a high probability of winning a money-making contract.

7.4 Limitation:

Most of people are not interested to participate in survey, therefor out of 100 people only 67 were interested to send their feedback. There is no assurance that the participant spent enough time to read carefully, and understand the questioner prior to answer instated of random answering of the questions.

The engineering judgement during the tender could be accepted or rejected by the client because the client would not prefer to engage his technical team during the tender and might will request to discuss any cost saving or value engineering during the execution of the project. In this case the contractor will lose the opportunity to relax the specification or propose any alternative during the tender stage.

Direct connection between manufacturer and client for services after sale, will limit the vendors of manufacture and reduce the opportunity to relax the price based on Strategic partner strategy.

7.5 Future Study.

Since the construction industry is looking for sustainability, green building, Led requirement and Estidama then further study need to be focused on contractor to activate the role of procurement and engineering department in the early stage. There is no accessible research discussed this topic

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FACTORS AFFECTING THE BID/ NO BID DECISION MAKING PROCESS OF SMALL TO MEDIUM SIZE CONTRACTORS IN AUCKLAND. (Huan ma 2011). unitec new zealand.

9 Appendix

Part I: Respondent's General Information

<p>1. Designation:</p> <p> <input type="checkbox"/> Board/Managing Director <input type="checkbox"/> Project Manager / Director <input type="checkbox"/> Estimation Manager / Estimator <input type="checkbox"/> Commercial Director / Manager <input type="checkbox"/> Engineer <input type="checkbox"/> Other (kindly specify): _____ </p>
<p>2. Academic Qualifications</p> <p> <input type="checkbox"/> Graduate (College Degree) <input type="checkbox"/> Master's Degree- MBA / PM <input type="checkbox"/> Postgraduate </p>
<p>3. Organization:</p> <p> <input type="checkbox"/> Government Authority <input type="checkbox"/> Contractor <input type="checkbox"/> Consultant <input type="checkbox"/> Client (Government) <input type="checkbox"/> Client (Private) </p>
<p>4. Experience in Construction</p> <ul style="list-style-type: none"> How many years have you worked in the construction industry? <p> <input type="checkbox"/> less than 5 <input type="checkbox"/> 6 to 10 <input type="checkbox"/> 11 to 15 <input type="checkbox"/> 16 to 20 <input type="checkbox"/> more than 20 </p>
<p>5. What is the Value of these construction projects (AED Millions)?</p> <p> <input type="checkbox"/> Small (1 – 30) <input type="checkbox"/> Medium (30 – 100) <input type="checkbox"/> Large (100 -500) <input type="checkbox"/> Mega (>500m) </p>
<p>6. What is the percentage of jobs obtained through competitive bidding?</p> <p> <input type="checkbox"/> 0%-25% <input type="checkbox"/> 26%-50% <input type="checkbox"/> 51%-75% More than 76 % </p>

7. What is the percentage of rejected bid invitations?

☐ 0%-25% ☐ 26%-50% ☐ 51%-75% More than 76 %

8. What is the percentage of jobs obtained through Recommendation?

☐ 0%-25% ☐ 26%-50% ☐ 51%-75% More than 76 %

Part 2: Organizational Factors Leading to Decision making Bid /not to bid

In this part, we seek your opinion about the organizational factors enhance decision making on Bid / not to bid in UAE construction projects. The factors are divided into groups, Internal Factors - contractor and External Factors - client, and consultant, environmental. The given answers should be according to the following scale:

Levels of importance									
least					most				
1	2	3	4	5	6	7	8	9	10

Please do answer all of the following questions to get meaningful results of the survey

Internal Factors – Contractor

9	Current workload of projects, relative to the capacity of your firm	Need for work
	Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
10	Current financial situation of the company	
	Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
11	Need for continuity in employment of key personnel and workforce	
	Least important 1 2 3 4 5 6 7 8 9 10 Most Important	

12	Current workload in bid preparation	
	Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
13	Ability to fulfil tender conditions imposed by the client	Strength of firm
	Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
14	Financial status of your company (working cash requirement of project)	
	Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
15	Experience and familiarity of your firm with this specific type of work	
	Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
16	Possessing enough qualified technical staff to do the job	
	Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
17	Possessing enough required plant and equipment to do the job	Strength of firm
	Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
18	Having qualified subcontractors	
	Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
19	Project resource similarity and its influence on existing projects performance	
	Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
20	Amount of work to be subcontracted relative to the total volume of work	
	Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
21	Project size (total bid value)	Project conditions
	Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
22	Terms of payment	
	Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
23	Project type	Project conditions
	Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
24	Profits made in similar projects in the past	
	Least important 1 2 3 4 5 6 7 8 9 10 Most Important	

25	site condition (Accessibility and space for work)	
	Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
26	Uncertainty related to the construction site condition	
	Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
27	Technological difficulty of the project being beyond the capability of the firm	
	Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
28	Management of similar size projects in the past	
	Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
29	Rigidity of specifications	Risk
	Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
30	Allowed project duration being enough	
	Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
31	Penalty conditions for not being able to complete the project on time	
	Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
32	Payment conditions of the project creating a risky environment	
	Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
33	Allowed duration for bid preparation being enough	
	Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
34	Availability of required qualified labor within the region	
	Least important 1 2 3 4 5 6 7 8 9 10 Most Important	

External Factors / Client, Consultant, Competitor, environment

35	Current financial capability of the client Least important 1 2 3 4 5 6 7 8 9 10 Most Important	Client and consultant
36	Tendering bond size and bidding documents price Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
37	History of client's payments in past projects (considering delays, shortages) Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
38	Client's attitude, characteristics and stability in needs Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
39	Amount of work the client carries out regularly Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
40	Amount of construction work the consultant has been carrying out regularly Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
41	client financial capacity and its payment policy Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
42	The value of the project advanced payment and its maximum required cash Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
43	Possible number of competitors passing the requirements Least important 1 2 3 4 5 6 7 8 9 10 Most Important	Competition
44	Desire of qualified contractors to bid and win the project Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
45	Market's direction (whether it is declining, expanding, etc.) Least important 1 2 3 4 5 6 7 8 9 10 Most Important	future market conditions
46	Amount of possible upcoming profitable projects out for tender in near future Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
47	Existing financial conditions indicating a financial risk in near future Least important 1 2 3 4 5 6 7 8 9 10 Most Important	

48	Ratio of your firm's current market share to the expected or aimed share Least important 1 2 3 4 5 6 7 8 9 10 Most Important
49	Government legislation Least important 1 2 3 4 5 6 7 8 9 10 Most Important
50	Tax liability Least important 1 2 3 4 5 6 7 8 9 10 Most Important
51	Possible contribution to increase the firm's identity and brand strength Least important 1 2 3 4 5 6 7 8 9 10 Most Important
52	Possible contribution in increasing firm's market share and dominance in market Least important 1 2 3 4 5 6 7 8 9 10 Most Important
53	Possible contribution in building long-term relationships with other key parties Least important 1 2 3 4 5 6 7 8 9 10 Most Important
54	Contribution in maintaining long-term relations with important influence markets Least important 1 2 3 4 5 6 7 8 9 10 Most Important
55	Possible contribution in improving your firm's staff expertise Least important 1 2 3 4 5 6 7 8 9 10 Most Important
56	Possible contribution to break into a new market with productive future Least important 1 2 3 4 5 6 7 8 9 10 Most Important
57	Contribution to firm's future due to value of the completed project to the public Least important 1 2 3 4 5 6 7 8 9 10 Most Important

Dependent Factor Survey – Decision making

58	Company need to ensure the employees are paid for working Least important 1 2 3 4 5 6 7 8 9 10 Most Important	Decision-making Bid Or Not To Bid
59	The contractor strong financial status is essential feature to complete a construction project on time Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
60	Government legislation for recruitment process will create shortage in manpower Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
61	Importing materials from overseas manufacturers sources delays the project due to common mistakes in purchase order made by the contractor Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
62	Poor contractor's project planning and cost estimation will end up with a dispute with the owner to raise the budget Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
63	Progress payments delay by the client constraints the contractor ability to cover the running expenses of a construction site including overheads Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
64	Not bidding a constructive project might outcome in lost opportunities for corporate to create profit, Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
65	Choice of an incorrect project might boundary the internal capital Least important 1 2 3 4 5 6 7 8 9 10 Most Important	
66	Competition's approaches and probability of winning the project Least important 1 2 3 4 5 6 7 8 9 10 Most Important	

Thanks for your time and effort on completing this survey, your participation is greatly appreciated 😊

