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Journal homepage: [www.publishing.globalcsrc.org/jafee](http://www.publishing.globalcsrc.org/jafee)**Financial Sharing in Infrastructure Joint Venture Projects**<sup>1</sup>Norsyakilah Romeli, <sup>2</sup>Faridah Muhamad Halil, <sup>3</sup>Faridah Ismail, <sup>4</sup>Jacqueline Wena Dhelbi<sup>1</sup>PhD student, Universiti Teknologi Mara, [kilaromeli@gmail.com](mailto:kilaromeli@gmail.com)<sup>2</sup>Senior lecturer, Universiti Teknologi Mara, [fammuha@yahoo.com](mailto:fammuha@yahoo.com)<sup>3</sup>Associate Professor, Universiti Teknologi Mara, [farid346@salam.uitm.edu.my](mailto:farid346@salam.uitm.edu.my)<sup>4</sup>PhD student, Universiti Teknologi Mara, [jacqueline\\_wena@yahoo.com](mailto:jacqueline_wena@yahoo.com)**ARTICLE DETAILS****History***Revised format* May 2016*Available Online* Jun 2016**Keywords***Financial Limitation,**Joint Venture,**Infrastructure Project***JEL Classification:***G23, H54***ABSTRACT****Objective:** The purpose of this paper is to identify the financial sharing limitation in contractor's infrastructure project in joint venture implementation.**Methodology:** Using the quantitative method, the questionnaires, constructed based on external and internal variables were distributed to the selected respondents. The analysis of the data is conducted with simple SPSS analysis to identify the mean, median and standard deviation. The ranking of the variables is drawn from the results.**Results:** The outcome of this research has found that the crucial external limitations are penalty to the foreigners and that market legislation requires limitation in the sharing proportion. Meanwhile, for the internal limitation the ownership control and rate fluctuation should be followed with certain marking lines.**Implication:** Thus, this paper stimulates the joint venture contractor to set up the post financial remedial plan once one of the collaborative partners breaches the agreement on the joint venture due financial limitation.

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Corresponding author's email address: [kilaromeli@gmail.com](mailto:kilaromeli@gmail.com)**Recommended citation:** Romeli, N., Halil, F. M. Ismail, F. and Dhelbi, J. W. (2016). Financial Sharing in Infrastructure Joint Venture Projects. *Journal of Accounting and Finance in Emerging Economies*, 2 (1) 27-38.**DOI:** <https://doi.org/10.26710/jafee.v2i1.76>**1. Introduction**

Malaysia's economic development maneuver comprised numerous aspects, including the industries of agriculture, manufacturing, and services (Chan et.al, 2010). However, among the industries that have contributed to the Malaysian gross domestic products, the construction industry currently contributes 4 per cent to the Malaysian Gross Domestic Product (GDP) and is expected to contribute 5.5 per cent to the Malaysian GDP up to 2020 (CITP, 2015). As enacted in the *Rancangan Malaysia ke-11* (RMK 11) and the Economic Transformation Plan of Malaysia (ETP), an amount of MYR 120 billion is allocated

to accelerate the construction of major infrastructure projects. This is to encourage the growth of industry which would eventually serve the community for the next 5 years. The involvement of the government in the construction industry has allowed the joint venture contractors from their respective companies to begin executing the projects. In the perspective of high scale and multi- complex projects, the government believes that, through the joint venture approach, contractors can share the assets, technologies, expertise, competency and culture throughout of the project executions. The favorable connections are extensively translated in the contracts agreement as both parties seek for a win-win situation. Therefore, having the projects done through the joint venture approach can be significant to the industry players as the management and relationships are dissimilar from the conventional practice. According to CIDB (2015), among 5,267 registered joint venture contractors, 10% of it was the foreign contractors that implemented joint venture projects consist of Civil Engineering Contractors 66%, Housing Developer 21%, and Specialist Sub- Contractors 14 %. In 2014, 7,590 of joint venture projects registered to the CIDB have involved a project cost more than 100 million ringgit. The situation unambiguously underlines the current demand for contractor's joint venture in the infrastructure development in Malaysia. Participation from the foreign contractors is considered as the platform for the survival of local contractors as they practice the sharing of resources, managerial pattern and technology adaptation. Nevertheless, a joint venture may be an upheaval factor without a proper economic surveillance as part of financial management during the project's execution.

## 2. Literature review

### 2.1 The Implementation of Infrastructure Joint Venture Projects

The collaboration between two or more partners compliments the inadequacy of each party and integrates knowledge ability to expedite greater productivity. The collaboration strategies are derived from partnering, alliancing and joint venture. In current practice, joint venture involves two or more legally distinct organizations, which cooperate in the decision-making activities of the jointly owned entity (Geringer, 1998; Chan et.al, 2010; Adnan, 2007). The partner's admission to the business venture is reckoned as a successful instrument to improve communication, achieve common goals and project-orientated decision making (Crowley & Hakim, 1995; Chan et.al, 2010). In the construction context, joint venture may come in form of sub- contracting by delivering projects with numerous construction specialists. This includes the government and private joint venture, consultant teaming joint venture, contractor and investor joint venture. From the infrastructure construction perspective, the grueling phase within the project chronology is the planning stage up until the implementation stage (Sears et.al, 2007). Hence, the construction industry requires well expertise and the compatibility of team to accelerate the projects until the projects are handed over to the client. Joint venture execution is different than the conventional types of procurement as contractor's joint venture involves two or more parties to form a joint venture. The strategy is to achieve their business goal, as they opt for high- risk investment by engaging in partnership and joint venture pattern contract. There are various types of the infrastructure development that require joint venture collaboration due to the financial circumstances. Table 1 describes the characteristic times for various phases of infrastructure development accordingly to form the planning phase, design phase and construction phase. Typically, the roads, railway and harbors and commercial projects took the longest planning years among all of the other infrastructure projects. Meanwhile, the industrial types of infrastructure took the least of time for planning phase due to the less complex building in terms of shape and construction methodology.

Table 1: Characteristic times for the various phase of infrastructure development (Howes & Robinson, 2005)

<b>Infrastructure Types</b>	<b>Planning phase (years)</b>	<b>Design Phase (years)</b>	<b>Construction Phase (years)</b>
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<b>Housing</b>	0.5 -6.0	0.5-4.0	0.5-4.0
<b>Health</b>	1.0-5.0	0.5-4.0	0.5-5.0
<b>Education</b>	1.0-4.0	0.5-3.0	0.5-2.5
<b>Law court, civic buildings</b>	1.0-7.0	1.0-3.0	1.5-2.5
<b>Small buildings (eg. general offices, telephone exchange,</b>	0.5-3.0	0.5-2.0	0.5-1.5
<b>Roads, railways and harbors</b>	1.5-10.0	1.0-3.0	0.5-3.0
<b>Water and Sewerage</b>	1.0-4.0	0.5-3.0	0.5-2.5
<b>Industrial</b>	0.5-2.0	0.5-2.5	0.5-2.0
<b>Commercial</b>	1.0-10.0	1.0-4.0	0.5-3.0

During the inception stage, the national budget is provided for the country development, and government acts as the agent who facilitates and monitors the delivery and operation of the projects. From the pre tender stage, the government will request for a development proposal from the Special Purpose Vehicle (SPV) and other name for the contractors joint venture in construction practice, before evaluating the tender according to the government regulations and awarding the tender to the qualified joint venture. As for the SPV, they need to form a joint venture from numerous aptitude contractors with an agreed relational contract apply and prepare the pre- development to bid for the tender. The joint venture contractors choose to share capital; equity, resources, liability, but simultaneously facing the risk which involves paying the borrowed funds to the financier (Howes & Robinson, 2005, Smyth & Pryke, 2008). When the proposal is accepted, the construction needs to start with a financial collaboration with the government and the financier. The financier is conceivably the bank, a private entity that is ready to risk their capital and often expecting to gain from the investment, once the evaluation on the technical and the financial ability of the contractor's joint venture are completed. The concession contracts agree within a stipulated period of time to return the projects to the user, thus requires the SPV to facilitate the maintenance works during the operation of the infrastructure.

## 2.2 Financing the Contractor's Joint Venture in Infrastructure Projects

The main factor that affects the development of the economic in certain countries is the level of the public facilities, provided by the government to the community. The infrastructure consists of the education, health, water; sewerage, power and transportation which require costly technology, foreign expertise, and monetary resources. Financing large scale projects becomes challenging when it comes to securing and raising capital. The contractors have several alternative sources of funding in order to sustain the financial flow and to avoid any dissatisfaction between the collaborative partners (Park, 2008). The methods of financing consist of the sources of increasing capital, international sources of funding, long term and short term projects funding (Gunn, 2005; Park, 2008; Kenley, 2003). Table 2 shows the sources of funding, and contractors prone to use debt for capital, leasing for the machinery and factoring for the materials to finance the projects and to ensure the survival of the joint venture. Some of the joint ventures accumulate the total project capital from venture capitalist, construction banks, World Bank or any other public or private institutions that provided fund for the infrastructure development around the world.

Table2. Sources of Project Funding (Gunn, 2008)

<b>Funding Sources</b>	<b>Types of funding</b>
<b>Increasing capital</b>	1. Stock exchange 2. Issue of securities 3. Venture capital 4. Conventional credit
<b>International sources of</b>	1. Debt securities

<b>funding</b>	2. Project Finance
<b>Long-term funding</b>	1. Bank loan 2. Mezzanine
<b>Short term funding</b>	1. Bank services 2. Commodity credit 3. Factoring 4. Leasing

For Malaysian infrastructure development, the sources of funding must be numerous (Khairudin, 2006). The World Bank (IBRD, IDA) and Asian Development Bank have stated that the most lending and funding to the Asian countries were in the infrastructure projects compare to the agriculture, information and communications technology, and the industry of trade. A sum of 103.6 MYR Billion of lending amount received from the World Bank for the infrastructure development in Malaysia. Table 3 shows the breakdown of the Malaysian infrastructure project with the sum of borrowing in the unit of Malaysian Billion Ringgit. The construction of highway annotates the highest lending amount of 30.6 MYR billion. Meanwhile, the energy development project operated by the TNB Western Energy Company charted the least in borrowing from the World Bank. The data shows that sources of funding are very imperative measure to ensure the financing flow is smooth until the delivery of the projects.

Table 3. Malaysian Lending (The World Bank Report 2015)

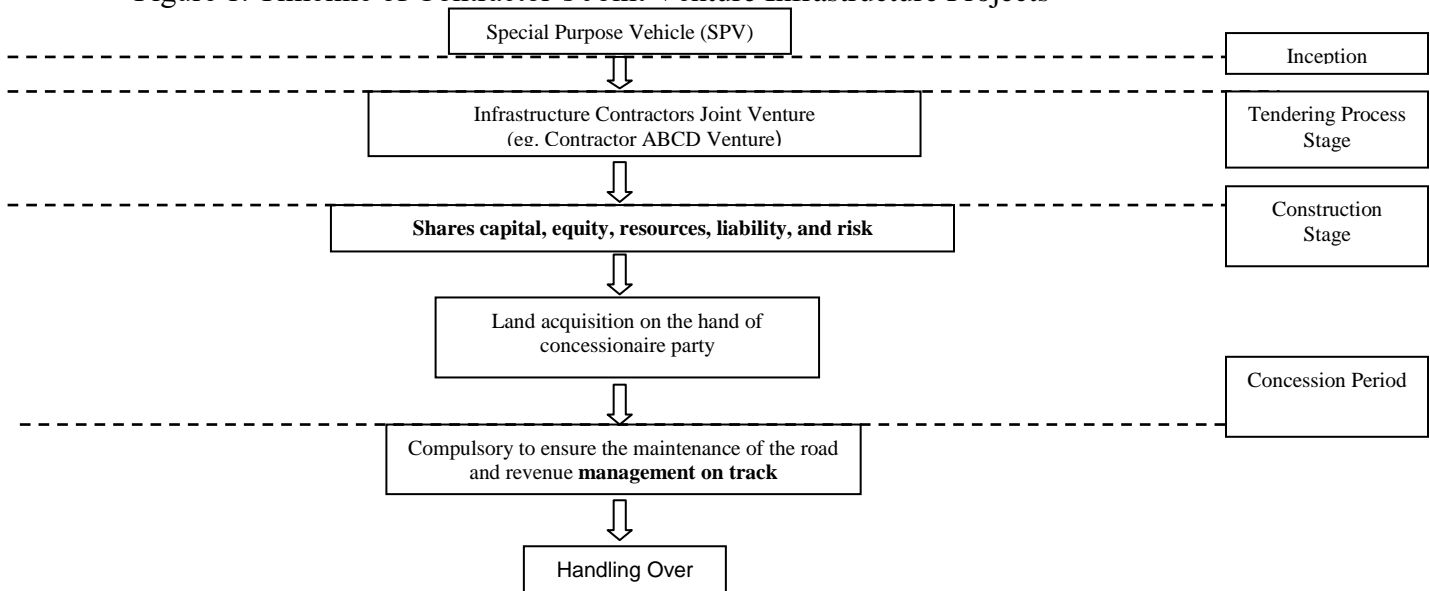
Malaysia	MYR Billion	USD billion	State - owned	Industry
<b>Project Lebuhraya Usahasama Prasarana</b>	30.6	7.0	No	Transport, storage, communications
<b>Pengurusan Air Sarawak Energy BGSM Management</b>	13.5	3.1	Yes	Energy, gas and water
<b>Turus Pesawat</b>	5.3	1.2	Yes	Transport, storage, communications
<b>Malakoff Power Manjung Island Energy</b>	4.9	1.1	No	Energy, gas and water
<b>YTL Power International</b>	4.8	1.1	No	Energy, gas and water
<b>Celcom Networks</b>	4.5	1.0	No	Transport, storage, communications
<b>Tanjung Bin Power TNB Western Energy</b>	4.0	0.9	No	Energy, gas and water
	3.7	0.8	Yes	Energy, gas and water

### 2.3 The Sharing Concept in Infrastructure Contractors Joint Venture

To participate in the joint venture, it becomes the contractors' obligation to allocate major of their resources before the project execution. The sharing concept is retrieved from the intention to implement collaboration strategies. In this situation, contractors have decided to integrate the project with other team which they have trusted. Apart from that, the joint venture permits the collaborative partners to share their main resources, (Adnan, 2007; Muhammad & Torrance, 2005; Chan et.al, 2010) for example,

capital, assets, machineries, human resources and others. The sharing concept basically covers from the technical aspects up to the management aspect, predominantly once the joint venture signed between two or more parties. Figure 1 shows the timeline of the contractor's joint venture infrastructure project, which begins from the inception stage, tendering stage, construction stage, concession period and handing over. The table also indicates the phase where the sharing element starts. Initially, the non-disclosure agreement is signed before the joint venture officially is announced to the public. The agreement has already stated the sharing elements in the contract which covers profit and loss of the joint venture. After the project is awarded to the disclose joint venture, the challenging stage then follows, which is, to manage the resources. The proportions of sharing will be determined and the management will be controlled by the party that is assigned to perform the task. The focus of this study is on the financial sharing among the contractors, which mainly involves the whole organization, from technical to the management team due to the financial stability that boosts the joint venture performance, regardless any department. Apart from the incoming resources, the collaboration ought to consider the impact of sharing, loss and damages which are classified as the most unwanted circumstances in business (Sears et.al, 2007; Gunn, 2005). However, the sharing concept in joint venture is obligated to insert the mentioned elements in the joint venture contract clause.

Figure 1. Timeline of Contractor's Joint Venture Infrastructure Projects



## 2.4 Financial Limitation as the defense mechanism for the contractors

Limitation describes the act of controlling the size or extent, and the act of control on how much of something is allowed for certain activities. In business context, limitation represents the act of allowing quantity or equivalent measurement in certain procedures in the business (Bramford. J et.al, 2005; Atkins. M, 2014). The limitation order is received from the upper management, which covers the management of the business, control of the inflow and outflow of the business and the marketing strategies to the costumers. For construction joint venture projects, the limitation predominantly marks the line between the collaborative partners of ownership and the control of the business movement. As one of the defense mechanisms to the contractors, setting the limitation secures the position of the partners by having a transparent access to the financial cash flows and management. However, a few joint venture formations prefer to keep the business movement flexible without having a limitation. This may lead to the financial problem when handling with the technology that will certainly bring to an additional cost to the joint venture (Sharon, 2011). To secure the financial sharing in the joint venture, contractors select to limit their sharing coverage in the relational contract. Some divergence raise from

the economics perspectives of the SPV as they have allocated all of their assets as stated in the contracts and they need to guard the investment to avoid loss in the investment (Beamish and Lupton, 1999). The limitation is also applied to the responsibilities charged to the collaborative partners (Sears et.al, 2005). Hence, it is crucial to set a boundary within the investment capital to avoid sporadic and accumulated investment which eventually complicates the separation process of the joint venture. The benefits of having the limitation in the joint venture is to boost the performance of the joint venture by avoid the financial dissatisfactions. Financial distribution has unequivocally declared the relational performance of the joint venture, and despite the decision making in the joint venture, economic aspect can be the trickiest predicament to tackle. Managing monetary resources, distributing the financial support and securing profits make up the science of economics that are necessary for the contractors to deal with. Even though major joint venture agreement has justified the proportion of shares in the contracts, not all stakeholders are able to comply with the stipulated clause. In construction, as in other project based-industries, the need for cooperation arises from uncertainty, interdependence and complexity (Shirazi et.al, 1996; Dubois and Gadde, 2002; Smyth and Pryke, 2008). The purpose of forming a joint venture to resolve the financial scarcity's equation is beaten and hence, locating the limitation would be an excellent solution. In the UK case studies Bamford, J, et al. (2004) reported in 1991, the performance of 49 joint ventures and alliances has found that only 51% were successfully subjected to each partner had achieved returns greater than the cost of capital. Meanwhile, as reported by Ma and Voo (2010), Malaysian case study projects have suffered delays in the construction project delivery and overrun costs.

Table 4. Elements of Sharing

<b>Name of Authors</b>	<b>Elements of Sharing</b>			
<b>Smyth and Pryke (2008)</b>	Liability	Asset	Market	Culture
	Profits	Risk	Equity	Managerial Style
	Loss	Human Resource	Capital	
<b>Adnan (2007)</b>	Liability	Asset	Market	
	Profits	Risk	Equity	Culture
	Loss	Human Resource	Capital	Managerial Style
<b>Chan et.al (2010)</b>	Liability	Asset	Market	Culture
	Profits	Risk	Equity	Managerial Style
	Loss	Human Resource	Capital	
<b>Beamish and Lupton (2000)</b>	Liability	Asset	Market	Culture
	Profits	Risk	Equity	Managerial Style
	Loss	Human Resource	Capital	
<b>Sears et.al (2007)</b>	Profits	Asset	Culture	
	Loss	Risk	Equity	Capital
<b>Kale et.al (2001)</b>	Liability	Asset	Market	Culture
	Profits	Risk	Equity	Managerial Style
	Loss	Human Resource	Capital	
<b>Howes and Robinson (2005)</b>	Culture	Asset	Risk	Loss

	Profits	Equity	Capital	
<b>Khairudin et.al (2005)</b>	Liability	Asset	Equity	Loss
	Profits	Risk	Capital	
<b>Gunn (2005)</b>	Liability	Asset	Market	Culture
	Profits	Risk	Equity	Managerial Style
	Loss	Human Resource	Capital	
<b>Atkins, M. (2014)</b>	Liability	Market	Asset	Culture
	Profits	Equity	Risk	Managerial Style
	Loss	Capital	Human Resource	

Cost overrun, increase in borrowing cost and overdue delivery of projects are listed as the common dissatisfactions occurred during the implementation of construction. From the literature review, a few authors have listed the elements of sharing consisted of liability, profits, asset, market, culture, risk, equity, managerial style, loss, human resources, and capital. Table 4 above shows the literature reviews that are retrieved form year 2000 until year of 2014. There are ten (10) numbers of authors that have discussed the elements of sharing in the joint venture projects. The authors, Smyth and Pryke (2008); Adnan (2007); Chan et.al (2010); Beamish and Lupton (2000); Sears et.al (2007); Kale et.al (2001); Atkins, M. (2014) have listed the important elements of sharing are liability, asset, market, culture, profits, risk, equity, managerial style, loss human resource and capital. Meanwhile, Howes and Robinson (2005); Khairudin et.al (2005) have stated that the most important sharing element are culture, asset, risk, profits, equity, capital and loss. The authors' studies have contributed to the literature review in this research. As for the Malaysian construction study, the financial sharing in-depth has yet to be discovered, particularly for infrastructure joint venture.

Figure 1. Most important sharing elements in joint venture listed by the authors

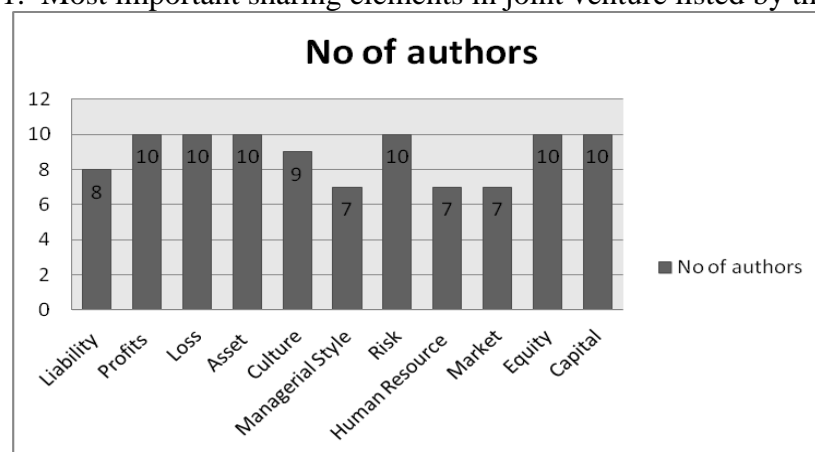


Figure 1 indicates the cross tabulation of number of the authors and the elements of the sharing. The result shows that the important element discussed by the authors from year 2000-2014 are profits, loss, assets, risk, equity and capital. The elements are including the biggest sharing categories, which is from the financial categories. Meanwhile, the sharing elements consist of liability; managerial style, human resource, and market have been listed as less important in comparison to the financial elements. Hence, it is necessary to investigate the limitations in financial sharing to improve the contractor's joint venture performance and help the researchers to enrich the literature review in contractor's joint venture for further studies.

### 3. Methodology

The research methodology adopted in this study is quantitative method. This method is chosen due to its reliability and objectivity. Using the quota sampling methods, the respondents have been chosen according to the criteria required in the study (Sekaran, 2009). From the Construction Industry Development Board (CIDB) a list of joint venture contractors, there are 5 foreign contractors and 5 local contractors that have registered, and have been part of the joint venture projects specialist in the construction of infrastructure in Malaysia for more than 10 years.. The perceptions are needed from both local and foreign contractors due to the various preferences in financial limitation selection. The questions are derived from the literature review by listing the variables suggested from previous studies. The questionnaire preliminarily runs for the reliability to examine the accuracy of the questions to be tested to the sample. Using the Likert scale, the financial limitation measured to identify the contractors' preferences on the financial sharing. The data analysis for quantitative data conducted is SPSS version 16.00. The results are keyed in the data variables sheet, then the data is analyzed for mean, median and standard deviation to investigate the ranking on each element, before the documentation of the final findings.

### 4. Outcome of the Research

#### 4.1 Research Question 1

Table 5. Financial Sharing Limitations in joint venture in infrastructure projects

Item	Financial Sharing Limitation on Contractor's Infrastructure Project Joint Ventures?	Local Contractors			Rank	Foreign Contractors			Rank
		Mean	Median	SD		Mean	Median	SD	
<u>Internal Limitation</u>									
1	Government taxes imposed to the joint venture	4.20	5	1.095	5	4.00	4	0.707	4
2	Fluctuation of exchange rate in the country of the project implemented	4.40	4	0.548	1	4.40	4	0.548	3
3	Insurance various requirement and changes in insurance coverage policy	4.20	5	1.095	4	4.40	4	0.548	2
4	Business strategy and pattern in the collaboration	4.00	4	0.707	2	4.20	4	0.837	5
5	Equity control and ownership that directs to rights of making a decision	3.80	4	0.837	3	4.80	5	0.447	1
6	Client's variation orders in technical's specifications which affects the financial outflows	4.00	4	1.000	6	4.20	4	0.837	6
7	Political stances in the once country affected the management of the internal organizations	4.00	4	1.000	7	4.20	4	0.837	7
<u>External Limitation</u>									
1	Market legislation in the parents country requires several pre requested	4.20	4	0.700	5	5.00	5	0.000	1



condition									
2	Liability of foreignness and responsibilities, paying a penalties	4.60	5	0.548	1	4.20	4	0.447	2
3	Financial risk which loss and damages in the joint venture	4.20	4	0.837	2	3.80	4	0.837	4
4	Cost of additional manpower and expensive technology	4.20	4	0.837	3	4.20	4	0.837	5
5	Loan application process and management from the construction banks	4.20	4	0.837	4	4.40	5	0.894	6
6	Insolvency of one party could jeopardize the collaborations partners	4.40	5	0.894	6	4.20	4	0.447	3
7	Political positions and advantages of the political domination to the business endeavor	4.00	4	1.000	7	4.20	4	0.837	7

Table 5 indicates the financial sharing limitation on the infrastructure joint venture projects between local contractors and foreign contractors. The Likert scale is divided from 1 until 5, as “strongly disagree” to “strongly agree”. After the participants have responded to the questions, the ranking is gathered from the mean, median and standard deviation. For the internal financial sharing limitation, the local contractors have agreed that the fluctuation of exchange rate in the country where the project is implemented requires limitation in sharing especially in contractual documentation. The foreign contractors have agreed on the equity control and ownership that directs to the rights of making a decision which needs concern and action to determine the limitation. Meanwhile, for the external limitation, the local contractors have stated the liability of foreigners, responsibilities, and paying for penalties. The foreign contractors have annotated that market legislation in the host’s country requires several pre requested conditions that is the element of sharing need major limitation. Willingness to carry the responsibilities by both parties is obtained from the result. Local contractors prefer to limit the responsibilities and control in exchange to avoid the risks in the projects. In addition, the local contractors have sensed that responsibilities regarding the penalty on the foreign collaborative partners should be managed by the foreign contractors themselves. For the foreign contractors, they prefer to limit the equity control and ownership because of the dominant character of the host contractors, which have more authority on the rights of making decision in financial issues. Besides that, foreign contractors have agreed that the local contractors should be more responsible on the market legislation within the construction process occurred. Both contractors aware that identifying the financial sharing limitation elements is imperative, hence the research questions 2 are developed.

## 4.2 Research Question 2

Table 6 below indicates the significance of identifying financial sharing limitation on contractor’s infrastructure project joint ventures between local contractors and foreign contractors.

Table 6. Significant of identification Financial Sharing Limitations in joint venture

Item	Significant of	Local Contractors	Rank	Foreign Contractors	Rank
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	<b>identifying financial sharing limitation on contractor's infrastructure project joint ventures?</b>	Mean	Median	Std. Dev		Mean	Median	Std. Dev	
1	The business splitting process easily applicable with the justified boundaries	5.00	5	0.000	1	4.80	5	0.447	1
2	Replaced financial dispute with problem solving approach with the documented limitation as per agreed	4.20	4	0.447	2	4.60	5	0.548	2
3	To prepared with personal indicators before embark into joint venture in future projects	3.80	4	0.837	6	4.60	5	0.577	5
4	As a defend mechanism for the collaboration partners when handling with the future financial disagreement	4.20	4	0.837	5	4.20	4	0.837	6
5	To overcome the consequences of incomplete contracts as the contractual provisions of joint ventures such as options and exit clauses	4.00	4	0.707	4	4.60	5	0.548	3
6	Provides a transparent delivery of resource costs, incentive requirements for advanced technologies and machineries, and wastage	3.60	4	0.548	3	4.40	4	0.547	4

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management

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Both contractors have agreed that the rationale of having the limitation in financial sharing is to make the business splitting process easier with the justified boundaries. The joint venture is all about sharing all of the resources to begin with. However, when the financial crisis in the joint venture occurs, both parties agree that the limitation can secure their position. This shows the preferences in responsibility, ownership and control in collaborative partner.

## 5. Conclusion and Recommendation

As the conclusion for this research, financial sharing limitation can act as the defense mechanism to the contractors as the two parties aim for hassle-free separation after the completion of the project, prior handing over to the client. There is a need for a clear joint venture agreement in proportion of sharing, before implementing the project as it involves mega structure and high scale projects. Any possible risks can be reduced and avoided, if the collaborative partners are aware of their capabilities and responsibilities in order to sustain the performance of the joint venture. The research requires future study in other types of sharing limitations as this study only focuses on the financial sharing.

## 6. Acknowledgement

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