

Risk Management in Private Finance Initiative (PFI) Projects in Malaysia

Shamsida Saidin Khaderi¹, Hamimah Adnan¹, Heap-Yih Chong¹ and Nor Azmi Bakhary²

¹Faculty of Architecture, Planning, and Surveying, Universiti Teknologi MARA, Malaysia

²Faculty of Civil Engineering, Universiti Teknologi Mara, Malaysia

Abstract: Numerous types of projects have been procured through Private Finance Initiative (PFI) in Malaysia. Due to complicated nature and risks involved in the projects, the research attempts to address the overview of its risk management. The research objective is to identify the level of awareness in risk management among the relevant participants in the implementation of PFI projects in the Malaysian construction industry. Questionnaire survey was adopted and 34 valid set of questionnaires were received and analysed. The results show that the level of awareness in risk management and knowledge on risks for PFI projects are quite high. An effective risk management protocol should be drafted for future implementation especially to allocate and share the risks involved.

Keywords: Risk Management, Private Finance Initiative, Malaysia

1. Introduction

The Private Finance Initiative (PFI) was launched by the United Kingdom Government in November 1992, with the aim of increasing the involvement of the private sector in the provision of public services. The premises underlying the PFI is that enhanced value for money and cost-effectiveness will result from allowing private and public sectors to concentrate on what it is perceived they each do best. The “straightforward principles are that the taxpayer should have value for money and the risk should be placed with those best able to manage it” (HM Treasury, 1995).

It is axiomatic to the PFI that the private sector will supply better goods and service, at less cost, than its public sector counterpart, although fears have been expressed that securing private finance might be at the expense of a compromise in standards (Terry, 1996). The greater costs effectiveness of the private sector specifically attributed to its capacity to manage better the risks associated with the procurement of goods and services, especially on the smaller scale

projects (Henjeweale et al., 2014). In fact, it is a fundamental requirement for a PFI project that, alongside the demonstration of value for money, the private sector genuinely assumes risk. This may not mean all the risk, and the Government has accepted the goal of optimum risk allocation, rather than transfer for its own sake (HM Treasury, 1995). Against this, however, a substantial minority of bidders appears ignorant of the implications of risk transfer (Hunt, 1996). Once the risks involved and appropriate measures of critical success factors have been identified, further analysis on the suitability and effectiveness of such measures in minimizing the problems and obstacle of the implementation of PFI in Malaysia construction industry. Finding from this research may also provide new insight on the theoretical perspectives on PFI implementation in a contractor perception and also other parties involve.

The research objective is to identify the level of awareness in risk management among the

relevant participants in the implementation of PFI projects in the Malaysian construction industry. This research will enable us to understand the risks involved in the PFI implementation in the construction industry, particularly on contractors' perception. In addition to this, it would illustrate the mechanism that should be applied in managing PFI implementation and performance associated with contractor needs.

2. Risk Management

Risk management is a systematic approach to protect the asset, profit and reputation by reducing possible or severe losses or damages before they occur. Traditional risk management essentially consist of identification, assessment and treatment which are undertaken by the risk manager (Bing L, 2002). For sustainability and continuum, in the public sector service provision, this can be expanded into a six-step process, through a top-down system, involving all participants, as:

- Risk identification
- Risk assessment
- Risk response (retention, avoidance, reduction, transfer)
- Monitor
- Feedback

Apart from qualitative assessment, risk management provides quantitative measure as well (Akintoye, 2002). The research at Glasgow Caledonian University shows quantitative analysis techniques most used, in order of importance, to be sensitivity analysis. Several pieces of software have been developing for risk evaluation. The most popular programmers for project development are spreadsheet based, such as @Risk and Crystal Ball.

3. Actions to minimize risk

There are four possible actions for practical risk management, which strongly depend on organization ability and the potential result of risk impact:

- Avoiding the risk, such as replacing equipment;
- Reducing the impact of the risk, for example, by contingency planning, staff training;
- Transferring the risk through insurance and contract; particularly risk allocation within PFI/PPP projects;
- Retaining the risk, where the impact is minimal

Monitoring and feedback; Public sector managers should monitor risk response effects. Contingency plans; contract implementation and insurance need to kept up-to-date and if physical and/or organizational measures have been implemented to reduce risk, then the effect of these are also monitored.

Contributions of risk management to value for money (VFM); Risk management has systematic and sustainable advantages, which are important for the public sector to fulfill the government long-term commitments and to achieve VFM in project and services provision as follows:

- Systematic risk management can be embedded into the public project procurement process;
- Risk management produces a record procedure which enables the managers to develop a sustainable scheme;
- Through risk management; the public authorities become aware and understand the risks in terms of likelihood of

occurrence, and severity of impact, and the results;

- Risk management can be practiced at qualitative and quantitative levels which are congruent with VFM requirements for non-financial (qualitative) and financial (quantitative) mechanisms;
- Risk management provide regular and ongoing monitoring and reporting of risk with early warning mechanisms;
- Risk management measures encourage accountability in project development as the authority can report the results and explain the action taken to public;
- Risk management provides proactive action to reduce the incidence and impact of risks.

Risk is generally dealt by putting significant emphasis upon the variables in the model for a financial evaluation of a project. This is an essential part of the pre-project development phase for both concessionaires (public and private sector) (Robert, 2006). Even in the complex environment of the PFI schemes, it would be useful to consider a couple of basic definitions of project risk:

“Risk is a measure of the probability and consequence of not achieving a defined project goal” (Kerzner 1995),

“Risks are the issues which might hinder a project from being a success” (Grey 1995).

These widely accepted definitions show that the notion of project risk is inseparable from the notion of project goal and the definition of project success. Consequently, it does seem appropriate to consider, in the first place, what the goal on a particular project is, and how success is to be measured. It has been well justified in the literature that the biggest problem in a project coalition lies in reaching the agreement on these

two issues. Any subsequent discussion about ‘risk transfer’, according to the above definitions, will depend on how well the parties are able to overcome cultural, behavioural and attitude differences towards the common goal and measurement of project performance. This is where the multiplicity of agendas comes into play.

It has been noted that contractual parties have become obsessed by self-guarding their interest ‘risk transfer’ (Williams, 1995) using it as rhetoric as well as a method of responding to project risk. In some cases, transfer risk does not reduce the criticality of the project, it just moves it to another area, but in other cases transfer can increase risk, especially of total failure, quite significantly’ (Clark, Pledger and Needler, 1990). Latham (quoted in Baldry, 1998) articulates experience related to the obsession by risk transfer in PFI construction projects as: “Attempts to pass all risks to the contractor will lead to higher prices and antagonistic atmosphere”.

Another problem was that the private sector became worried about the risks involved in dealing with local government agencies such as local health or education authorities. A PFI contract might last fifteen or twenty years: what would happen to the private-sector provider if the local authorities failed, went bankrupt, and could not pay its bills? (Stewart, 1996).

The issue of risk has been central to the PFI debate all along. The treasury insisted that in order to qualify as a true public-private venture, and not just as a disguised form of borrowing that would have to be recorded as such on the government’s books, PFI ventures would have to reflect real risk for the investor. However, investors have complained that officials have had unrealistic views of what risks the private sector can reasonably bear, and have tried to load them

with all kinds of unaffordable uncertainties. Meanwhile, the public sector officials have resisted any form of risk, specifying contracts in minute detail, and so denying the private operators the freedom they need to manage risk in their own way.

On the other hand, various problems have been encountered in PFI in infrastructure development. One problem is the slow progress in the implementation of PFI e.g. failure of Malaysia's national sewerage project (Abdul Aziz 2001). The various problems occurring are not surprising given the broad range of risks and uncertainties in long-term PFI contract, the multiple participants involved, and the lack of PFI experience and expertise in many countries and regions.

Nevertheless, the trend towards PFI creates an urgent need for a workable and efficient procurement protocol for improved practices in future PFI projects. One critical step in the developments of such a protocol is to identify, analyse and categorize various factors that are critical to the success of PFI in general (Akintoye, 2004).

In Public-private partnership (PPP), both parties should be prepared to share resources and risks in carrying out the mandate of developing public infrastructure if the partnership is to be considered mutual (Molaodi, 2005). There has to be a mutual relationship between the public and the private sector. The partnership would not be beneficial if the situation is not a win-win type.

Amongst others, the reason why UK governments introduce PPP/PFI policy is that such governments would be trying to tackle financial problems in the provision of facilities and improve service delivery in an efficient way. Akintoye (2005) emphasized that there has to be value for money in PPP/PFI initiatives because the purpose of engaging the private sector in the

delivery of public works is for sourcing durable quality service. He further warned that as part of cost-saving mechanism, public authorities should avoid giving small projects to multiple contractors, as that is costly, but should always give the projects to one contractor, whom they would sub-contract. For instance, he said if local authorities want to be refurbish, say 10 primary schools in a given areas, instead of awarding the contract to different.

4. Risk Categories

The literature is in general agreement that risks can be categorized in a number of broad categories (HM Treasury 1995).

1. Design and construction (to cost and to time): This is very similar to the rationale for a design and build procurement contract. The public sector (client) is purchasing a product at a pre-agreed price obtained normally through a competitive or negotiated route. Any future problems caused by specifications, design, and the PFI provider should meet delays.
2. Commissioning and operating: This is the natural progression of the previous risk category and is normally the sole responsibility of the PFI provider. Should the operating costs turn out to be dearer than anticipated this will be borne by the operator. There may be some exceptions in regard to personnel employed in the running of the building. The Health Service may employ medical staff in a health building. Since future maintenance costs of the buildings are the responsibility of the PFI operator, greater consideration in the design and choice of materials should be undertaken by the contractor in order to minimize future life cycle costs.
3. Demand for volume/usage: This is likely to be one of the most contentious categories of risk for the operator. The risk will be varying

according to the type of building (Haywood 1996). In the case of prisons, the risks are not just in anticipating the demand but also on the suitability and acceptability of the product in the future. Other examples are the likely changes in toll charges due to changing government policy. PFI operators should always consider the unforeseen element of risk arising in these categories of projects.

4. Residual value: This is another area of future dispute. Because the problem will not arise until the end of the PFI contract period, little immediate thought appears to have been given to the potential areas of conflict between the parties. The residual value will be influenced by many factors; some, such as the maintenance policy adopted by the operator, but others completely outside the latter's control and caused by changes directly or indirectly in government or local authority legislation or policy. Planning blight is likely to be one of the most serious causes in change of building value. The case for independent risk assessors to evaluate specified outcomes needs to be considered.
5. Technology: Changes in the technical requirements of buildings may result in obsolescence and inefficient functioning of building. Public sector clients are likely to require built in safeguards to their contracts in this respect. Whilst the right of termination of contract may be the preferred solution for them, a procedure, which offers incentives to modernize and upgrade, could be more attractive to both parties (Platt 1996).
6. Regulatory: Problems caused by planning blight have already been discussed. Taxation changes are another area, which could have considerable financial implications on the economic viability of the building. These would also appear best dealt with by independent risk assessors.

5. PFI in the Malaysian Construction Industry

The Private Finance Initiative (PFI) were introduced under the Ninth Malaysian Plan (9MP) will allow the implementation of projects more efficiently and accelerate private sector investment for regional development.

It is not easy to win a PFI contract since the whole process of project development is a complex, time-consuming, and expensive business. The financial risk is high, competition is keen, negotiations are extensive and opportunity costs are considerable. Undertaking PFI projects in Malaysia presents its risks and obstacles. Therefore, the effective application of risk management principles to projects is especially crucial for a successful investment, and risk strategies have to be incorporated in the development of projects. Choosing the right path for a PFI project investment is crucial since each project involves different obligations, and different risk implications. Due to the characteristics of the PFI concept, it is meaningful to study in details the risks associated with its application in Malaysia and to identify the level of awareness in risk management among the relevant participants in the implementation of PFI infrastructure project. The process of risk management consist of three primary activities; risk identification, risk analysis and risk allocation.

The Master Builders Association Malaysia (MBAM) President said the association hoped that with joint efforts from all related parties, project under the 9MP would be effectively carried out. He also hope that the implementation agencies of 9MP projects will due emphasis on open tenders to minimize delayed and abandoned projects. This is because selected builders will require demonstrating their capabilities, track record and competency and adequate financial

reserves and expertise. The provision professional services to the public, the association would take initiatives to upgrade skills and competency levels of the construction workforce through training, especially in information technology (Susan T, 2006)

6. Research Method

In order to explore whether actual differences exist between potential PFI participants a postal questionnaire was devised to measure participants' perceptions of risk. This questionnaire also sought to identify respondents' roles (e.g. quantity surveyor, contractor, etc.); the depth of their involvement; and the kind of projects to which this involvement related.

The first stage in the design of the survey was to highlight the aim of the study and to identify potential areas worthy of investigation, in fact to determine what information was required. It was necessary to construct the questionnaire as 'user friendly' as possible, and accurately work it to

7. Survey on Risk Perception

ensure that it was interpreted correctly, so that consequent common analysis of the questionnaire from the industry would be possible.

This research presents the survey results of the level of risk awareness, sources of risk and risk perceptions in PFI projects. The objectives of the survey are to determine the level of awareness of risk perceptions and to identify the sources of risk and risk allocation for PFI infrastructure projects. The survey questions were divided into three sections; Section A on Respondent's background, Section B on the awareness and knowledge on risk management and Section C on the risk allocation. The survey was used to substantiate results and generate rank order the risks associated with PFI projects.

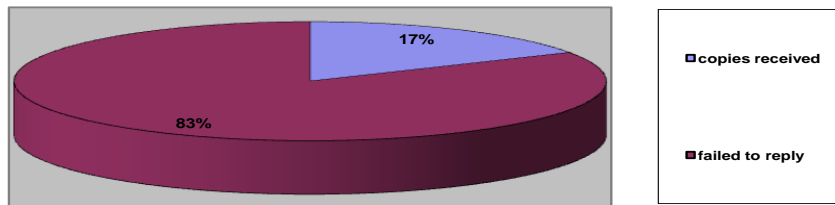


Figure 1: Respondents' Particulars

A total of 34 valid responses out of 200 questionnaires were received which accounts for a response rate of 17%. The reliability of survey results is high because all of the respondents are at top management level and professionals in their companies. The composition of the respondents as 6 from the government agencies, 7 from the concession companies, 11 from the contractors and 10 from the consultants. More

important, all (17%) of them had knowledge on private finance initiative. Figure 1 shows the percentage of questionnaire response.

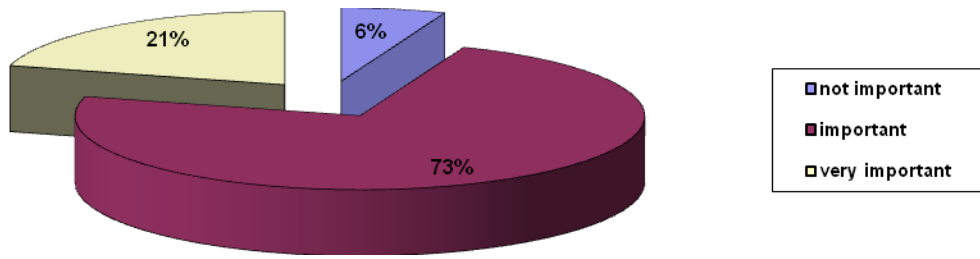
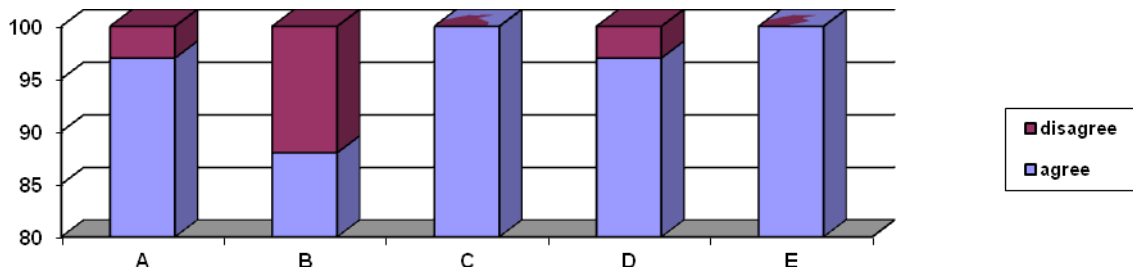


Figure 2: Awareness and knowledge of risk management

Figure 2 shows that 21% and 73% of the respondents responded to very important and important knowledge and awareness in risk management respectively in contrast to 6% of them have responded to not important knowledge respectively in risk management. The above result indicated that the person of the participant in PFI projects do have a high level of knowledge in risk management.



Symbol	Description
A	The strategy of the project achievement
B	Supplement to project management
C	The process of decision making
D	High risk implementation
E	Need a risk management

Figure 3: The roles of risk management

In respect of statements on risk management, Figure 3, shows that, almost 88% of the respondents agreed to the statement that risk management is a supplement to the project management and 100% respondent agree to the statement in the process of decision making. In contrast, only 3% of the respondents disagreed that risk management is a project strategy for achievement of success.

The result shows that the participants from government agencies, concession companies, contractors and consultants, do realize the important of risk management for achieving the project targets and goals.

Figure 6.3 above also shows that a total of 97% of the respondents agreed with the proposition the PFI projects is one of the high risk sector in the construction industry. Only 3% disagreed. Almost all the respondents (100%) agreed that risk management is needed in the implementation of PFI project.

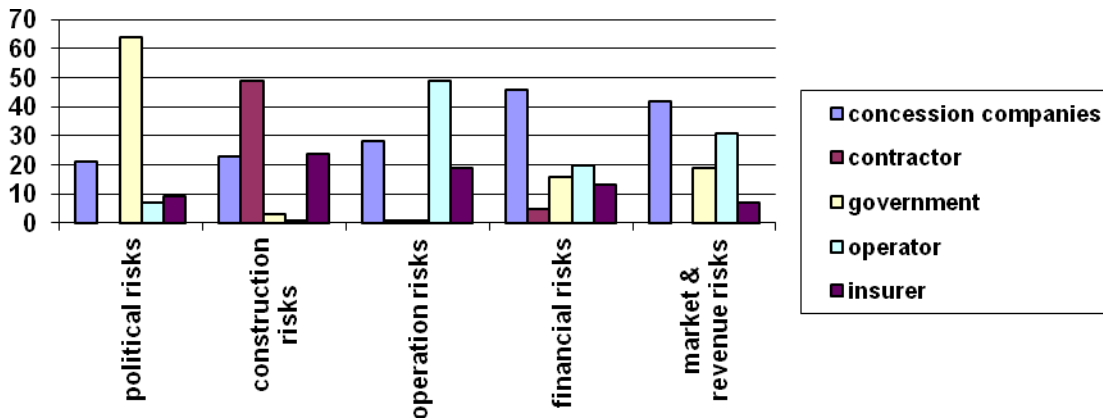


Figure 4: Parties responsible to bear risks under different categories.

Based on Figure 4, it shows that most (64%) of the respondents indicated that the government is the main party who responsible to bear the risks under political risks. This follows by the concession companies (21%). Under the construction risks the main parties who responsible to bear the risks are the contractor (49%), the insurer (24%) and the concession companies (23%). While, the operator (49%) and the concession companies (28%) are responsible to bear the risks under the operation risks. The figure also shows that under the financial risks and the market and revenue risks, the concession companies and the operator are the main parties to bear the risks.

This study also revealed that only 40% of the participants do practice formal risk management in their organizations despite almost (90%) of them agreed on the importance of this process. Although, the level of knowledge in conducting risk management is high, the organizations are still lacking of capable personnel to manage risks. The survey found that more than half (57%) of the participants voted project director as the suitable officer responsible for managing risk in

their organization. 5% of them desired the task to be assigned to the risk manager. This reflects the unavailability of a risk manager in their organizations, who is to lead the organization regarding risk management matters. The second important personnel are the project manager. Therefore, both position i.e. Project director and project manager should have extra knowledge and ability to manage the risks for PFI projects.

7. Discussion and Conclusion

It is important to identify the level of awareness and knowledge of each project participants in risk management and risks associated with PFI projects. After identifying all the related risks and their mitigating measures, it is necessary to analyse or evaluate the criticality of the risks and also the effectiveness of their mitigating measures. Priority should be given to the most critical sources of risk and the most effective mitigating measures. The risks should be allocated to the related parties or participants in order to manage the risks efficiently and effectively. The use of the risk management framework should lead the project participants to

achieve their project's goals successfully in terms of cost, time and quality.

Based on the analysis done, it can be concluded that most of the respondents realized that PFI project is a high-risk sector. Their level of awareness in risk management and knowledge on risks for PFI projects are quite high. They also agreed that PFI projects need risk management. This study also had identified the parties responsible to bear risk under different categories of risks. This issue requires a proper relationship management as to improve the project performance (Zou et al., 2014). The main sources of risks, which had been identified, were delay in approval, problems in land acquisition and compensation, inadequate traffic volume, foreign currency exchange rates and interest rates.

Risk transfer is one of the key aspects for a successful PFI (Javed et al., 2013). Better risk allocation will demonstrate the increasing of value for money. The golden rule of PFI is that risks should be undertaken by the party best able to take the risks. The risk allocation between the public and private sector should be well understood. The risks involved need to be identified as they depend on the characteristics of the particular project.

In conclusion, the continued use and involvement of PFI is able to support the economy growth of the country. The research highlighted an effective risk management is required in dealing with the political risk in the project. The risk should be shared or allocated accordingly in the contract agreement.

References

Akintoye,A, Bing Li, P. J Edward and C. Hardcastle (2004). *Critical success factors for PPP/PFI projects in the UK construction industry*, Glasgow Caledonian University, Scotland UK,

Construction management and economics (June 2005)23, pp.459-471.

Akintoye,A, Bing Li, and C. Hardcastle (2004). *VFM and risk allocation models in construction PPP projects*, Glasgow Caledonian University, Scotland UK, Construction management and economics (sept. 2005)23.

A. Akintoye, Beck, Chinyio E, Asenova D and C. Hardcastle (2001). *Framework for risk assessment and management of PFI projects*, Glasgow Caledonian University, Scotland UK.

Abdul Aziz, A. R (2001). *Unraveling of BOT scheme: Malaysia's Indah Konsortium*. Journal Construction engineering and management, 127(6),pp 457-460.

Clifford Chance limited liability partnership (2000). *BOT/PPP projects-the contractor's perspective*. Construction group.

Ezulike, E. I, Perry, J. G and Hawwash. K (1997). *The barriers to entry into the PFI market*. Engineering, construction and Architectural management. Vol.4, No.3, pp179-793.

Grahame, A (2001). *The private finance initiative*. Research paper 01/117 Dec. 2001- Economic policy and statistics section House of commons library.

Gerard D. W and C. T Ellis (2004). *Main contractor experiences of partnering relationships on UK construction projects*. School of construction and property management, University of Salford, Manchester. Journal of construction management and economic, vol.23, pp 317-325.

Grimsey, D. and Graham, R. (1997). PFI in NHS. Engineering, Construction and Architectural Management. Vol. 4, No. 3, pp.215-231

Hall J. (1998). *Private opportunity, public benefit?*, fiscal studies, Vol. 19 No.2,pp.121-140.

- Hardcastle,C (2006). *The private finance initiative – friend or foe*. Glasgow Caledonian University, Scotland UK.
- John K, Roy M and Sara Wilkinson (2002). *Best value in construction*. Blackwell Publishing.
- Kevin Tan (2006). *Government drawing up PDI framework*. The edge daily. www.theedgedaily.com.
- Robert, I and Svetlana, C (2006). *From PFI to PPP : Is risk understood?*. De Montfort University School of Business, Leicester UK.
- Robert L. K. Tiong, member ASCE (1995). *Competitive advantage of equity in BOT tender*. Journal of construction engineering and management.
- Stewart, Allan (1996). *Seize the initiative!*. Adam Smith Institute (www.adamsmith.org).
- T. A. P Howarth, D.P Brown, P. A Watson and R Davis (2004). *The UK's Private Finance Initiative-an investigation into major contractors' perceptions*. School of Environment & Development, Sheffield Hallam University, City Campus, Sheffield.
- Wikipedia, (2006). *Private finance initiative*. <http://en.wikipedia.org/wiki/pfi>.
- Zhang X, (2005). *Critical success factors for public-private partnerships in infrastructure development*. Journal of construction engineering and management January 2005, pp4-14.
- Henjeweile, C. , Sun, M., Fewings, P. (2014). Comparative performance of healthcare and transport PFI projects: Empirical study on the influence of key factors, International Journal of Project Management, vol 32, No. 1, 77-87.
- Zou, W., Kumaraswamy, M., Chung, J., Wong, J. (2014). Identifying the critical success factors for relationship management in PPP projects. International Journal of Project Management, Vol. 32, No. 2, 265-274.
- Javed, A.A., Lam, P.T.I. , Chan, A.P.C. (2013). A model framework of output specifications for hospital PPP/PFI projects. Facilities, Vol. 31, No. 13, 2013, 610-633.