

PFI/PPP TOPIC COVERAGE IN CONSTRUCTION JOURNALS

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The introduction of Private Finance Initiatives and similar procurement systems in construction projects has changed the way the construction industry deals with aspects of projects and their stakeholders. PFI was first introduced in UK in 1992, and since then, the number of projects provided through PFI/PPP has increased greatly in both the UK and worldwide. This paper presents an analysis of what has been written in construction journals about PFI/PPP from the beginning of 1998 to the end of 2003. Four major journals were selected to represent the construction journals (*Journal of construction Engineering and management, Construction management and economics, International journal of project management, and Engineering, construction and architectural management*). The analyses consist of topics salient to PFI/PPP, and include analysis of researchers, research centres, institutions, and countries. Results show that the number of published papers in this area is not comparative with the importance of PFI/PPP and the level of activities associated. The paper identifies a number of research gaps needing to be addressed by the academic community and other research led organizations.

Keywords: PFI/PPP, Construction Management, Journals, Research.

INTRODUCTION

Research publications in the scientific refereed journals represents an important knowledge resource, and a significant way to follow new and updated innovations and development in mostly all areas of research. Consequently, researchers are contending to publish their findings and discoveries in well-known and distinguished journals. Publishing in such journals in most cases equals approval of results and acknowledgement of the quality of the research.

The assessment of the research in these journals depends for the most part upon the peer review process, which is the mechanism through which scholars subject their work to critical inquiry by their peers, and editors of academic journals in construction management use this to assist in determining the worthiness of papers for publication (Altick, 1963). This makes for high competitiveness and shows the scientific ethics with careful deliberation of the research's contents, results and what to add to the knowledge.

Research published with regard to the Private Finance Initiative (PFI) is important both to researchers in this field, and for the construction industry in general, after the recently increased importance of PFI in the development of the construction industry

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and its effect on project stakeholders. This paper reviews the research published in the most renowned construction management journals to show the rate of coverage and the gaps to be addressed by the academic community, with the aim of encouraging more attention to be devoted to developing such procurement systems. It also assesses the impact of the research on the construction industry and on the properties business.

THE IMPORTANCE OF PFI

The idea of private sector participation in providing public services projects is not new (Walker and Smith, 1995). There are many names and terminologies (BOT, BOOT, DBOT, PFI, PPP, ... etc) for almost the same policy of bringing the private sector into the provision of services and infrastructure which, formerly, had always been regarded as primarily 'Public' (RICS, 1995). The PFI procurement system is believed to be a tool for developing the construction industry through innovation and the perfecting process (Al-Sharif and Kaka, 2003). In the UK, PFI has offered a solution to the problem of securing necessary investment at a time of severe public expenditure restraint (Akintola et al, 2003).

The private sector is able to help in financing, building and managing facilities considering value for money with more efficiency of use and cost. In addition, through PFI, the public sector will develop the core services and ensure quality, leaving the facilities design, management and risk to the private sector to deal with. This will provide business continuity and a challenge for the private sector to demonstrate the innovation and commercial skills needed to make such an agreement stable to gain both client and user satisfaction.

Public Private Partnerships (including the Private Finance Initiative) can provide the public sector with better value for money in procuring modern, high quality services from the private sector. The public sector looks to the private sector for expertise, innovation and management of appropriate risks. The private sector looks for business opportunities, a steady funding stream and a good return on its investment. For the partnership to work, each party must recognise the objectives of the other and be prepared to build a good, long- term relationship (DFES, 2004).

The number of deals signed with the PFI type of arrangement is growing; Table (1) shows the growth in numbers and value of signed PFI deals from 1995 to the end of 2003. The PFI project nature of financing and payment mechanism does not allow the comparison of the market size of this system of procurement with the traditional construction procurement systems, although the capital value of the project is used in PFI deals to show the contract present value, it does not reveal the cost of the project or even the total payments.

Year	Number of Signed Projects	Capital Value (£m)
1995	11	667.50
1996	38	1,559.50
1997	60	2,473.70
1998	86	2,706.80
1999	86	2,407.30
2000	108	3,680.40
2001	84	2,150.40
2002	67	7,698.90
2003	47	14,432.10

Total	626	37,776.60
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Table (1) Signed PFI deals (HM Treasury, 2004)

As for the contribution of participation of the private sector in providing projects rather than building them, it seems that PFI is improving the construction industry by overcoming some of the chronic problems such as construction delay and cost overrun (NAO, 2001, 2003). At the same time it represents a substantial percentage of the construction output, as shown in Table (2).

Year	PFI projects Capital Value (m£) (1)	UK Construction Industry output (m£) (2)	%
1998	2,707	68,411	3.96%
1999	2,407	69,294	3.47%
2000	3,680	69,676	5.28%
2001	2,150	71,087	3.03%
2002	7,699	74,090	10.39%
2003	14,432	77,394	18.65%

Table (2) PFI projects value and construction Industry output (Resources, (1) HM Treasury, 2004. (2) DTI, 2004).

The UK government is encouraging the use of PFI/PPP procurement systems in public projects, as evidenced by Alan Milburn Chief secretary to the Treasury saying "I want to outline the Government's approach. Partnerships between the public sector and the private sector are a cornerstone of the Government's modernisation programme for Britain. They are central to the drive to modernise key public services. Such partnerships are here and they are here to stay." (Source, 1999). The use of such ideas is spreading to many countries, both for providing public services projects as a solution to public budget problems and for their other advantages (Ahadzi and Bowles, 2002).

METHODOLOGY AND OUTCOME

According to Wing (1997), the four journals selected, *Construction Management and Economics (CME)*, *Journal of Construction Engineering and Management (JCEM)*, *Engineering, Construction and Architectural Management (ECAM)*, *International Journal of Project Management (IJPM)*, are among the most significant ten construction journals. As a result, publication in one of these journals is a goal for most researchers in the construction research community, and research published in these journals is considered to be of the highest quality and distinguished results.

An extensive review was conducted of all titles and abstracts of papers published in the aforementioned selected journals in the period from the beginning of 1998 to the end of 2003. The electronic version of the journals made the search fast and efficient, and the printed journals provided a reference for any missing data or unclear information on the Internet.

The review consisted of all papers published in the selected journals for the selected period; a concentrated search was applied to the papers titles of PFI subjects, only paper's titles which indicated that the paper was related to the participation of the private sector in providing public projects such as Public Private Partnership (PPP), Private Finance Initiative (PFI), Build- Operate-Transfer (BOT), Build-Operate-Own (BOO), were considered to serve the purpose of this study.

The total of papers published in the four journals was 1314 papers, among them 34 addressed PFI subjects, Figure (1) shows the total number of articles published and the articles about the PFI subjects yearly, which represents 2.6% of the total papers published.

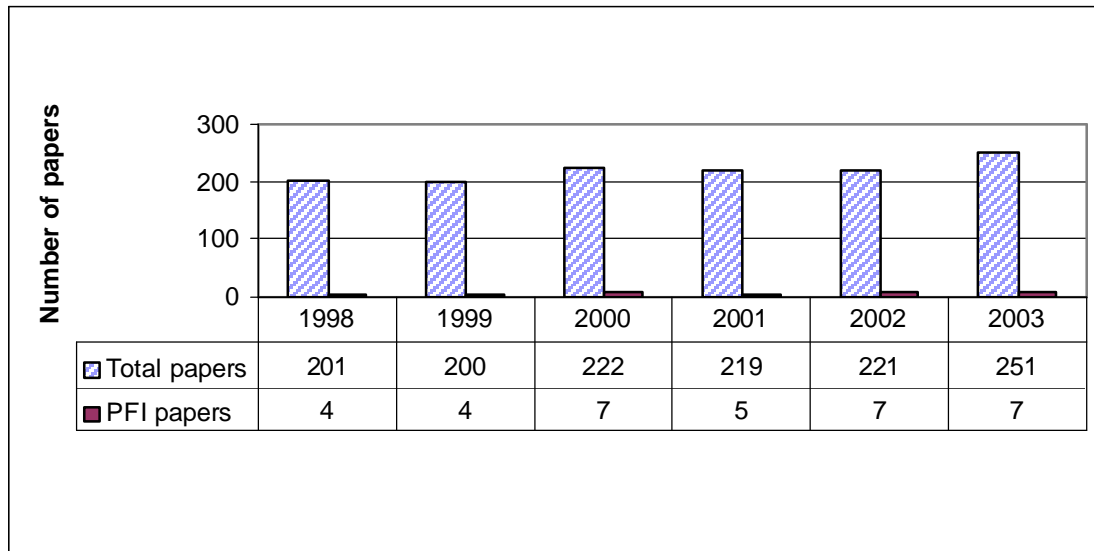


Fig. (1) PFI papers published yearly.

Journals

It should be noted that, the journals surveyed are only a sample of the construction researches journals and although the four-selected journals considered are from the top journals, researchers publish in different journals and conferences. There may therefore be papers published in this subject in many different journals and conferences that are not covered by this study.

The distribution of the research publications by each journal is shown in Fig. (2), the Journal of Construction Engineering and Management (JCEM) published 41% of the published papers (Fig. 3) where as other journals are publishing between 15% and 26% of the published papers.

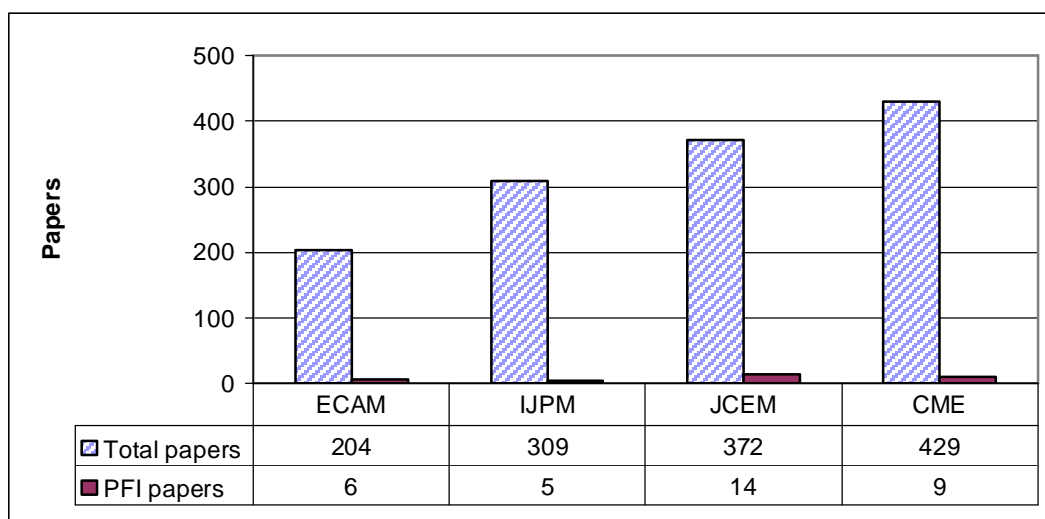


Fig. (2) The total of published paper in each journal between 1998-2003.

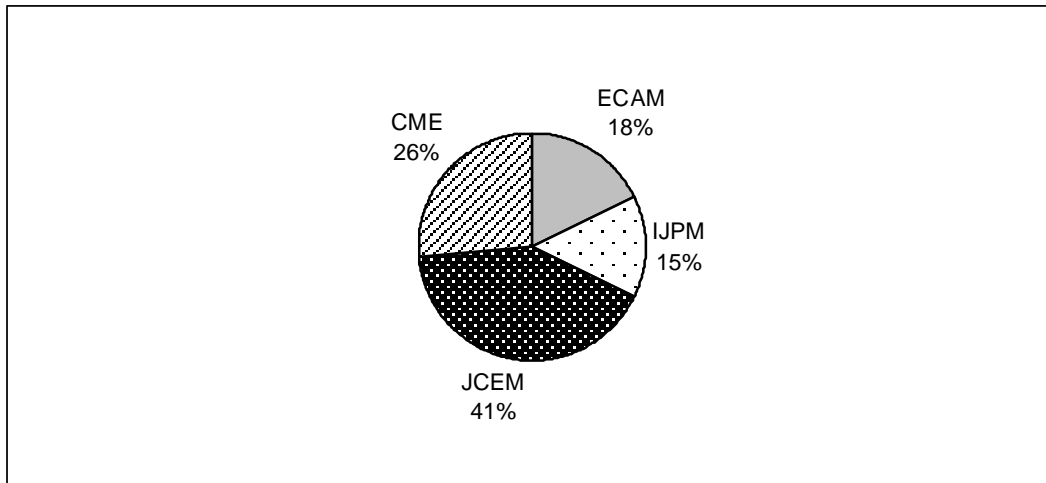


Fig. (3) Percentage of published papers about PFI subjects in each journal.

Research origin

The authors of the published papers are based on ten countries; Table (3) shows that most of the papers surveyed are from Singapore, the USA and Hong Kong. The cooperation between researchers from different countries raises the number of papers from some countries, for example; Ashley from the USA often publishes jointly with Ting and Tiong from Singapore, (they have jointly published 6 papers), and Wang from Singapore contributed with them in five of these papers.

No.	Country	Univ./Inst.	Researchers	Papers
1	Singapore	2	7	14
2	USA	5	8	10
3	Hong Kong	2	8	8
4	UK	3	9	3
5	China	2	2	2
6	Turkey	2	4	2
7	Australia	3	4	2
8	Malaysia	1	1	1
9	Germany	1	2	1
10	India	1	3	1
		22	48	44

Table (3) Researchers' countries.

It is clear that only three papers are from the UK, yet the UK is believed to be the major originator of the PFI concept. This could be a result of the research limitation on four journals, and/or that research centres of construction projects management have other priorities than this subject.

Researchers

The total number of papers was 34, written by 48 researchers from ten different countries. Only 8 researchers contributed more than one paper, as shown in Table (4), for the rest, 40 researchers wrote or participated only on one paper. Four of the researchers who contributed to more than one paper are from the same University (Nanyang Technological University, Singapore), and there was only one researcher from the UK who contributed to two papers.

No.	Researcher	No. Of Papers	Inst. / Univ.	Country
1	R. L. K. Toing	13	Nanyang Technological Univ.	Singapore
2	S. Q. Wang	7	Nanyang Technological Univ.	Singapore
3	S. K. Ting	6	Nanyang Technological Univ.	Singapore
4	D. Ashley	6	Ohio State University	USA
5	M. Kumaraswamy	5	Univ. of Hong Kong	Hong Kong
6	X. Q. Zhang	4	Univ. of Hong Kong	Hong Kong
7	Sudong Ye	4	Nanyang Technological Univ.	Singapore
8	Akintola Akintoye	2	Glasgow Caledonian Univ.	UK

Table (4) Researchers with more than one paper.

Research centres

The numbers of research centres the researchers were working at was 22, and among them only 4 centres produced more than three papers, Table (5) shows that the majority of research centres published only one paper in the field of PFI.

Number of papers published	Number of Research Centres
13	1
9	1
7	1
6	1
2	2
1	16

Table (5) Research centres and published papers

As shown in Table (6), Nanyang Technological University produced 38% of the total papers surveyed, Ohio state University produced 6 papers (in cooperation with others) with only one researcher, two of the top four research centres are from Singapore.

No.	Univ.	Country	Researchers	Papers
1	Nanyang Technological Univ.	Singapore	5	13
2	Univ. of Hong Kong	Hong Kong	6	9
3	National Univ. of Singapore	Singapore	2	7
4	Ohio State Univ.	USA	1	6

Table (6) Research Centres with more than five papers

Paper contents

The words used in titles to describe the participation of private sector in infrastructure and public services projects are different, Build-Operate-Transfer (BOT) is used in 65% of the titles, 82% of those that the used BOT in their titles originated from the Far East. Table (7) shows all terms used in published papers' titles. Others represent titles such as: 'Analysing Asian infrastructure development in Asian mega projects' (Kwak, 2002) and 'Public sector clients-Private sector projects: Transferring the state construction administration' (Zantke and Mangels, 1999). These two papers discuss the participation of the private sector in providing infrastructure and public services projects.

Term	Number of its use in titles
Build Own Operate and Transfer (BOOT)	1
Build Own and Operate (BOO)	1
Build Operate and Transfer (BOT)	22
Private Finance Initiative (PFI)	2
Public Private Partnership (PPP)	2
Privately Financed Projects	4
Others	2

Table (7) Terms used in titles.

The papers contents and subjects discussed are varied since research can take one subject from different perceptions. Grouping topics' subjects was focused on the main subject and Risk management was found to be the most dominant subject researchers discussed, with the majority of 44% of the topics as shown in table (8). Risk management was discussed in papers such as: Foreign exchange and revenue risks: analysis of key contract clauses in China's BOT projects (Wang et al, 2000) and Political risks: Analysis of key contract clauses in china's BOT projects (Wang et al, 1999), but these papers and others could be categorized in different groups of topics. In a survey of journal papers, Themistocleous and Wearne (2000) stated that certain topics could be applied to any one paper.

Main topics	No. Of papers	%
Risk Management	15	44%
Procurement	12	35%
Financial Management	7	21%
	34	100%

Table (8) paper's topics

Keywords are general in most of the papers, for example, build-operate-transfer, risk management, infrastructure, and so on. Themistocleous and Wearne (2000) found that in addition to being too general, some of the keywords were not a good indication of content. Journal of Construction Engineering and Management (JCEM) did not provide keywords until 2002 and later.

The categories selected were to cover the main topic of the paper; it was found that the three categories (risk, procurement, financial) covered all topics of papers. For example, one paper discusses: Concessionaire selection for build-Operate-Transfer tunnel projects in Hong Kong (Zhang et al, 2002) and was key worded in the journal as (Build/operate/transfer; Tunnel construction; Hong Kong), and it could be argued that the paper was better categorised as tendering, prequalification for sub category, and the main category as procurement management.

CONCLUSIONS

The participation of the private sector in financing, building and managing assets is no doubt becoming one of the major construction procurement systems, with the capital value of PFI projects in the UK being 18.65% of the construction industry outcome for 2003; showing how important the PFI market share is. Yet at the same time, only 2.6% of the papers published in the selected journals were in the field of PFI/PPP for the same year, and the average coverage of subjects related to PFI/PPP was only 2.61% of the total papers published in the four selected journals for the last six years. This does not seem comparative with the importance of PFI/PPP and the level of associated activities.

From this paper's authors' analysis, it is clear that East Asia is the origin of most papers, and only three papers originated in the UK. The latter were written by nine authors, two of whom were working in private companies, and the other seven researchers working for two universities. The Far Eastern universities were more active in publishing in the field of PFI/PPP, with four of the top eight research publishing universities being from the Far East. Singapore is the number one country in terms of published research, and the highest number of participating researchers from one country are from the UK, yet the average publication for each researcher was 2 papers for each researcher from Singapore, and 0.33 paper for each from the UK.

In terms of percentages of published papers, the Journal of Construction Engineering and Management (JCEM) published 41% of the papers published in the selected journals and period; American Society of Civil Engineers published this journal, while Construction Management and Economics (CME) which is published in the UK, published 32.18% of the total published papers, the highest rate among the four journals surveyed.

In terms of subjects of the 34 published papers, these varied from different angles of PFI; most of the research was about the risk associated with the PFI/PPP projects and others about particular financial subjects of PFI/PPP and procurement systems. The aim of this paper was to draw attention to the field of PFI/PPP and the need for it to be explored by the academic community and research led organisation. Specifically, the subjects of PFI that need to be addressed are: facilities performance, whole life cycle cost, the role of PFI in assets sustainability, the contractual and financial impacts of long contracts, client and user satisfaction, developing procurement procedures, PFI projects financial modelling, and risk allocation.

Government publications, guidance, and supported researches are abundant, but it is now time to involve academic researchers in this field in order to find solutions and overcome problems which may attract construction firms to bid for PFI/PPP projects and will further ground PFI/PPP research and enhance its quality. This will undoubtedly lead to more efficient PFI/PPP projects in the construction Industry.

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