A Critique of Current Research Methods in Corporate Property Literature

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Abstract

By reviewing the research designs used in 15 studies on private sector operational property management, this paper proposes a methodological framework for property management research within large, non-property organisations. The dichotomy between the explicitly statistical approach and the non-rigorous qualitative methods used in the reviewed studies are discarded. Instead, this paper argues in favour of an eclectic approach, by adopting a qualitative research design, which employs certain elements of the quantitative approach to add rigour to the qualitative studies.

Keywords: operational property, property management, research methods, research design, qualitative analysis

Introduction

A review of the research methods used in corporate property research has shown that there is a clear dichotomy of approaches. On the one hand, there is the explicitly statistical approach, where corporate property issues are given the quantitative treatment, even when the phenomena under investigation would not lend itself to quantitative analysis. In the other approach, corporate property issues are analysed qualitatively without rigour, where research methodology do not seem central to the research findings.

The formulation of an explicit research design, which draws the data collection and analysis methods from both the organisational and real property paradigm, should secure a sound methodological framework for corporate property research. This would incorporate both quantitative and qualitative methods of data collection and analysis, sound sampling and statistical techniques with an acknowledgement of their limitations, and a justification of all techniques employed in the research.

Similarly, corporate property research should incorporate the explicit analysis of qualitative data within large non-property organisations (LNPOs). Such contextual data is critical for a more correct interpretation of quantitative property data, since it provides the critical organisational perspective to operational property issues, when applied in a rigorous, holistic and triangulated manner.

The objective of this paper is to review the research methods in current corporate property literature and propose a methodological framework for property management research within LNPOs. As corporate property is an organisational resource, this paper proposes a rigorous framework for corporate property studies, by merging the investigative traditions of the organisational and real property paradigm.

The Genesis of Corporate Property Research

The management of corporate property within LNPOs is an emerging area of academic specialisation, but comprehensive studies on property related themes are not new. Much has been written on the economics of real property such as the lease or buy decision, and site selection (Nourse, 1989). What is new is the current emphasis on the management of corporate property as a strategic asset.

Historically, property was identified in classical economic theory as one of the three key factors of production, alongside capital and labour. Early writings on the role of property within industrial companies were from the economic perspective and tends towards the anecdotal rather than academic. Many have been Marxist in orientation and are of limited value for the present purposes.

Abrahamson (1993, p 28) stated that in neo-classical economics, the market model was the dominant paradigm. For the economists at least, it would seem that the natural state of the market is based on the study of individuals as opposed to the study of organisations. It is only much later that attempts to understand collective actions appeared in economic theory. These attempts were such notable departures from prevailing economic theory that they were given their own names, such as the Theory of the Firm.

The Theory of the Firm thus pervaded into the economics approach to research. Both had a central role in the early development of management literature, with its assumptions of profit maximisation, perfect markets and complete and certain information. In the late 1960s, management techniques tried to accommodate uncertainty through probability distributions. These led to increasingly complex management techniques which were criticised for disregarding the costs of information.

Although not unified by a single rationale, the *"logical, rational and orderly approach"* prevailed because of its research convenience, despite doubts as to its applicability to the real world (Metcalf and Richards, 1987). Their appeal was also largely based on the effectiveness of the studies rather than their logical consistency (Whitley, 1984), translating managerial issues into complicated technical analysis without resolving them (Toda, 1990).

In the 1970's, researchers explored the implications of relaxing assumptions pertaining to profit maximisation, complete information and the use of simpler but more rational responses to the benefits and costs of information. As the decision-makers' attitudes towards risk were assumed to be expressed in their utility functions, uncertainty and incomplete information were introduced into utility-maximising decision models.

The shift to utility maximisation altered the character of organisational research in the recognition that simpler models could be quite rational. It was the precursor to more explanatory approaches to management behaviour in the 1980s, after the complex quantitative models of the previous decade. This led to the convergence of quantitative and qualitative models of management behaviour. By the late 1980s, both schools were more concerned with explaining the nature of existing management practice, rather than formulating "improved techniques". Strategic management approaches also gained favour with researchers. Unlike conventional management modelling, it does not ignore the existence of the external environment of the organisation and the interaction among the various elements of the organisation.

Early corporate property literature, being, as it were, part of the organisational paradigm, was influenced by the rational and prescriptive approaches favoured at that time in management literature. The LNPO was seen as a closed system where technical efficiency was all important, and as apolitical and rationalistic, believing the economic model is a valid description of corporate behaviour. Thus, in the 1960s, property research was largely approached from a rational economic perspective, focused on a rigorous statistical analysis of issues.

Until relatively recently, the empirical property literature have thus largely ignored the strategic management problems of the business firm, because the micro-economic theory of the firm on which it was initially based, was incapable of analysing it. Bon (1991), drawing from the Austrian school (Carl Menger, 1840-1921 and Von Mises, 1881-1973, *inter alia*) argued that the focus should shift from investment decisions to decisions concerning the use of land and buildings, to wit, the property management rather than the property investment issues.

Due largely to the above reasons, published interest in corporate property management began to develop only in the late seventies. In the 1980s, a number of large-scale studies into the management of properties by large organisations were commissioned. They were followed by smaller surveys into the same phenomenon by a number of researchers. From 1978 to October 1994, there were 10 studies on public sector and 14 on private sector operational property management. Except for one, all the studies pertain to organisations from the US and the UK.

Research Methodology

According to Krippendorf (1980, p 11), the purposes of research methodology are:

a. to describe the logic of the composition of research methods
b. to reveal their powers and limitations
c. to find domains of appropriate application and predict possible contributions to knowledge.

Krippendorf (ibid, p 49) defined a research design as the procedural network of analytical steps through which information is processed. The research design provides to other researchers an account of what data were collected, why they were collected and how they were analysed. It serves as a technical plan, which ensures that the evidence to be collected is pertinent to the research objectives.

Miller (1991) suggested the core elements of research design for a descriptive study would include the following:

a. Statement of the research objectives
b. Selection of the most appropriate type of investigation
c. Identification of the type of information needed to explain the phenomena under study
d. Description of the methods of data collection
e. Identification of the target population
f. Description of the sampling procedure
g. Description of the methods of data analysis

Review of Research Designs in Empirical Property Literature

Sources of literature for this review include unpublished academic or empirical work, doctoral theses, referred journals, commissioned studies, conference papers, surveys by universities, reports and government publications up to October 1994. Although not all the studies were so structured (for example, the Avis *et al* (1989) study dealt with both sectors), for purposes of review, the studies may be usefully grouped into the public and private sector studies, since the critical issues affecting the two sectors can be set apart.

Public sector studies tended to be in the form of reports focused on a particular organisation or homogenous group of organisations, whilst private sector studies tended to be large-scale empirical surveys. Given the specific objectives of this paper, only the research designs from the private sector studies are analysed here (see Ismail (1996) for a fuller treatment).

The list of studies on private sector operational property management and their areas of inquiry are as follows (see Table 1 below):

a) Hubbard (1976)
b) Zeckhauser and Silverman (1981)
c) Veale (1987)
d) Avis et al (1989)
e) Gale and Case (1989)
f) Rutherford and Stone (1989)
g) Pittman and Parker (1989)
h) Redman and Tanner (1989)
i) Glascock et al (1989)
j) Noah (1990)
k) St. Quintin (1991)
l) Debenham Tewson Research (1992)
m) Teoh (1993)
n) Kimbler and Rutherford (1993)
o) Hillier Parker (1994)

Using the format based on the elements of research design discussed earlier, an analysis of the empirical work on corporate property management in the private sector from 1976 to 1994 revealed the following (see Table 2).

Most of the studies surveyed large companies, identified either by their high ranking on various lists or their listings on the Stock Exchange. Almost half of the studies focused on evaluating the current state of operational property management practice. Other objectives included studies on the performance, organisational structure and the use of operational property in different environments.

Most of the studies used either the descriptive or the hypothesis testing method. They either did not analyse the strategic development of the organisation or did so through secondary data. Almost all studies collected both quantitative and qualitative data, and used convenience or purposive sampling, which are both types of non-random sampling. Convenience sampling uses as the sample whatever happens to be available. Purposive sampling involves the researcher using his judgement to select specific elements of the population that are expected to provide the required information. The most common were questionnaire surveys of property executives from the organisations. A small number used the personal interview method and the rest used secondary data. The descriptive studies tended to use questionnaire surveys and personal interviews, whilst those using the hypothesis testing approach tended to use secondary data.

Most of the descriptive studies used basic descriptive statistics to analyse their data. Those using the hypothesis testing method used quantitative techniques such as ordinary least squares regression, chi-squared tests of independence and two-way contingency tables. Virtually all studies used organisations as their unit of analysis. The only exception was one that used property acquisition and disposition transactions.

Criticisms of Current Research Designs in Empirical Property Literature

The full technical information on the sampling procedures used in the studies have not been obtained, other than those stated in the technical supplement to the respective papers. Based on this premise, several comments can be made.

There seems to be a significant degree of uniformity in the research designs adopted in the empirical operational property research area. Analysis of the above studies revealed certain weaknesses in the procedures applied, since all the studies were ostensibly based on random probabilistic sampling.

Firstly, the population was not defined, which suggests an arbitrary population frame. A defined population has at least one characteristic that differentiates it from other groups (Gay and Diehl, 1992, p 127). Secondly, sampling was mainly purposive, curtailing generalisability. This is justifiable for descriptive studies that do not claim generalisability but not for large-scale surveys that do. Although carrying out random sampling across a representative section of the whole population may be costly and probably impossible to undertake, the issue of statistical generalisability was not always explicitly spelt out.

Thirdly, sample size is dictated by the extent of precision required, but generally, a sample size of between 30 and 500 fits most needs, at the 95 percent confidence level (Roscoe, 1975). For descriptive research, the required sample size is at least 10 percent of the identified population, correlational studies at least 30 percent, and causal comparative studies at least 30 subjects per group (Gay and Diehl, 1992, p 140).

Evaluating the investigative methods, some of the studies, which purported to be causal-comparative or correlational studies, did not conform to the conventional minimum statistical standards for their conclusions to be valid. Most of the studies have only managed much smaller sample sizes, bringing into question the validity of their results (see Appendix, Veale, 1989, for a fuller discussion).

Most of the empirical studies did not satisfy the basic tests as outlined above and are thus not generalisable. This finding was conceded by some of the major empirical studies at the outset. Zeckhauser and Silverman (p 114, 1981) stated that the random nature of their

Table 1: Areas of Inquiry of Studies on Private Sector Corporate Property Management

	Empirical Research													
Areas of Inquiry	Hubbard	Zeckhauser	Veale	Avis *et al*	Rutherford & Stone	Pittman & Parker	Redman & Tanner	Glascock *et al*	Gale & Case	St. Quentin	DTR	Kimbler & Rutherford	Teoh	Hillier Parker
Property Info & Reporting		*	*	*		*			*	*	*		*	*
Space Acc. & Management	*	*	*	*	*		*	*	*	*	*		*	
Corporate Strategy			*	*		*			*	*	*			
Organisational Structure	*	*	*	*	*			*	*		*			
Property Performance		*	*	*		*			*				*	
Decision Making			*	*			*				*		*	*
Property Mgmt Activities	*	*	*						*	*		*		
Attitude Towards Property	*		*	*		*			*	*	*		*	*
Corporate Property Function	*	*	*	*	*	*		*	*	*	*		*	
Property Investment Analysis							*	*	*		*		*	
Choice of Tenure							*		*		*			
Maintenance Condition														
Property Running Costs														*
Property Objectives	*	*	*	*		*					*			*
Property Budgeting														
Opportunity Costs of Property				*										
Incentives														
Year of Publication	1976	1981	1987	1989	1989	1989	1989	1989	1989	1991	1992	1993	1993	1994

Table 2: Summary of Research Design of Studies on Private Sector Management

Research Design	Hubbard	Zeckhauser & Silverman	Veale	Avis *et al*	Rutherford & Stone	Pittman & Parker	Pedman & Tanner
Objectives of Study	objectives of corporate property management	state of current property management pratice	state of property management pratice since the HRE survey	state of operational property management in LNPOs	relationship between type, industry & reasons for forming a CPF	factor influencing corporate property performance	decision rules used in the acquisition & disposition of assets
Type of Investigation	descriptive study	descriptive study	descriptive study	descriptive study	hypothesis-testing	hypothesis-testing	descriptive study
Type of Information Collected	qualitative & quantitative	qualitative & quantitative	qualitative & quantitative	qualitative & quantitative	qualitative & quantitative	qualitative & quantitative	qualitative & quantitative
Method(s) of Data Collection	questionnaire survey	questionnaire survey	questionnaire survey	questionnaire survey & personal interviews	questionnaire survey	secondary data from IDRC survey	questionnaire survey
Method(s) of Data Analysis	descriptive statistics	descriptive statistics	descriptive statistics	descriptive statistics	chi-squared tests & contingency tables	ordinary least squares regression	descriptive statistics
Unit of Analysis	organisation	organisation	organisation	organisation	organisation	organisation	organisation
Target Population	US companies from Fortune 500 list	US companies from Fortune 500 list	US companies from Fortune 500 list	public & private sector LNPOs	members of NACORE	campanies from 27 different industries	members of NACORE
No. of Questionnaires Mailed	500	1377	1898	800	794	430	500
Numbers Returned	111	300	284	230	82	105	92
Percentage Response	22%	22%	15%	28%	10.33%	24%	18.4%
Numbers Interviewed	-	-	-	51	-	-	-
Sampling Procedure	purposive	purposive	purposive	purposive	purposive	purposive	purposive
Main Findings	corporate property is not managed for profits	corporate property is not managed as independent assets	corporate property is still undermanaged	operational property in LNPOs is largely reactively managed	no significant relationship between industry & corporate structure	centralised CPF & working relationships are most influential factors	most common decision rule for disposition of assets is cash flow generated by assets

Research Design	Glascock et al	Gale & Case	St. Quentin	DTR	Kimbler & Rutherford	Teoh	Hillier Parker
Objectives of Study	analysis of acquisition & disposition of assets	state of current property management pratice	use of property in different environments	importance of property to LNPOs	issues in outsourcing the cpf	state of current property management practice	finance directors' views of property
Type of Investigation	analytical	descriptive study	descriptive study	descriptive study	descriptive study	descriptive study	descriptive study
Type of Information Collected	quantitative quantitative	qualitative & qualitative	quantitative & quantitative	qualitative & qualitative	quantitative & quantitative	qualitative & qualitative	qualitative & quantitative
Method(s) of Data Collection	secondary data	personal interviews	questionnaire survey	personal interviews	questionnaire survey	questionnaire survey	personal interviews, postal surveys & document analysis
Method(s) of Data Analysis	ordinary least squares regression	descriptive statistics	descriptive statistics	descriptive statistics	descriptive statistics	chi-squared tests	descriptive statistics
Unit of Analysis	transactions	organisation	organisation	organisation	organisation	organisation	organisation
Target Population	-	large firms from 15 industries	Times Top 1000 companies hosp. trusts & privatised businesses	non-property companies from UK Times Top 1000 companies	members of the IDRC	non-property companies listed on the NZ Stock Exchange	LNPOs from the industrial, financial & commercial sector
No. of Questionnaires Mailed	-	-	94 overall	-	164 overall	88	500
Numbers Returned	-	-	69 overall	-	100 overall	-	111
Percentage Response	-	-	73% overall	-	61% overall	75%	22%
Numbers Interviewed	-	30	-	100	-	-	-
Sampling Procedure	70 acquisitions & 9 dispositions	convenience	purposive	purposive	purposive	purposive	purposive
Main Findings	corporate property offers no unique opportunity to earn excess return	significant growth in numbers & influence of corparate property units	no great differences in property management pratice in different business environments	core business efficiency determines operational property management objectives	companies are outsourcing more of their real requirements	CPF success is related to a separate cpf, REIR and attitude towards property	LNPOs can further reduce property costs and improve returns

sampling cannot be assured. Gale and Case (1989) admitted that their sample was not chosen on a random sampling basis. They also accepted that their sample size of 30 was rather small and statistical analysis would be of limited use (ibid., p 33). Glascock et al (1989, p 138) noted that their sample of only nine acquisition transactions lend only limited confidence to their findings on expected returns from property acquisitions, despite their paper having a lot of technical analysis.

Random sampling requires the specification of a population of subjects and then the assurance that each member of the population has an equal chance of being selected for the studies. In social science research, it is normally difficult to procure a 100 percent enumeration of the population, due mainly to lack of information and the expenses of compiling the population frame. Secondly, the possibility of getting equal access to all the elements of the identified population is normally nil. The randomisation procedures in assigning the time for the interview sessions and the subjects for the interviews are also difficult to secure. If the chance of selecting the subjects and the time are not equal, then a systematic bias has occurred which damages the generalisability of the results.

This suggests a non-random sample for social science research, which requires the explicit disclaimer of statistical generalisability of the results beyond the bounds of the study itself. This is however, a statistical restriction and does not restrict a non-statistical generalisation. This point is well established in research design theory - see for example, Cornfield and Tukey (1956, pp 912-913) or Edginton (1966).

Rutherford and Stone (1989) surveyed 850 major companies. Using a hypothesis-testing approach, they concluded that there was no significant relationship between the type of industry and the type of corporate structure.

They, however, admitted that their hypothesis testing approach was invalid. This was due to an insufficient number of expected observations in the cells of the contingency tables to allow the test statistic to be appropriately approximated by a chi-square distribution.

Some of the studies also seemed not to recognise the assumptions of certain statistical techniques. For example, Pittman and Parker (1989) utilised subjective variables in their property effectiveness model. The variables were then inappropriately used for hypothesis-testing and regression analysis to arrive at a seemingly objective correlation of variables. Teoh's (1993) study, although using a hypothesis-testing approach, was based on the assumption that property management performance was dependent on six performance indicators. The indicators were indirect measures of performance. The findings of the study should be taken in that context. Direct measures of performance should be used if a hypothesis testing approach is to be used (see Ackrill et al, 1993, for a fuller discussion).

A clear bias towards quantitative analysis of data was evident, to the extent that the positivist approach was used even for qualitative data. This showed in the tendency for a number of studies to analyse both quantitative and qualitative data using quantitative analysis, which required a conversion of the qualitative data into quantitative dimensions.

This was usually done by operationalising the variables into categorical, perceptual and attitudinal dimensions. The epistemological pitfalls of converting the researcher's qualitative understanding into quantitative data by using proxy indicators are discussed in detail in Ismail (1996).

To summarise, the above weaknesses in recent research on the management of corporate property within LNPOs were consistent with weaknesses identified decades earlier in organisational research. Bain (1966) found that some data used in organisational research in the US and the UK were based on empirically unsound research methods. They include low rate of responses for questionnaires and careless processing of questionnaire data.

Closing Remarks

This paper has reviewed the data collection and analysis methods used in organisational studies and corporate property research. On the premise that an empirical study of social phenomena should not disregard the need to adopt scientific procedures in arriving at its findings, the paper found several common weaknesses in the reviewed studies.

The other finding of this paper is the need for corporate property research to more explicitly acknowledge the influence of the organisational paradigm on the research, in terms of methodology and research phenomena. Issues such as organisational conflict and decision making processes need to be recognised as having a crucial influence on corporate property management practice within LNPOs and not just to test the significance of ratios between two variables.

A common weakness was the sample size and the sampling procedures used. The selection of sample size must be influenced by the information, time and the resources available to a researcher. Even in quantitative studies, the number of sampling units in the population frame conveys no information with regard to the precision or usefulness of the samples. Nevertheless, the sample size must still be chosen with maximum care.

Most of the reviewed studies tended to be broad-based surveys or tested statistical relationships between certain variables. There is a need to move to the next research step, to allow a greater emphasis on studies that carry out an in-depth analysis of corporate property issues from the organisational perspective, in acknowledgement of the organisational context in which corporate property management issues are tackled in practice. It would allow for a greater appreciation of the strategic issues involved.

In closing, it is not useful to argue whether a certain research design in the social sciences is completely scientific. More pertinent is the explicit justification of why the study could not implement the elements of a rigorous research design in *toto*, since all research designs in the social sciences must represent the researcher's compromise, dictated by the many practical considerations in the field. A more useful discussion is whether the research design was effective in achieving the objectives of the research (Keppel, 1991,). The purpose of the formulation of a research design is not to serve as a rigid plan to be followed in every detail, but serves as a series of signposts to keep the research headed on the right track.

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