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CORPORATE REAL ESTATE MANAGEMENT IN SINGAPORE: A BUSINESS MANAGEMENT PERSPECTIVE

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ABSTRACT. Corporate real estate management (CREM) practices in Asia have been a relatively under-researched area compared with those from Europe and North America. This paper represents an attempt to enhance the current knowledge of CREM in Asia. Part I of this study provides a snapshot of CREM practices among Singapore multi-national companies (MNCs) and listed firms. Ninety-seven firms were surveyed on three main business management perspectives: corporate real estate planning, corporate real estate organizational structure and corporate real estate performance. The study found that in general, corporate real estate (CRE) is under-managed among MNCs and listed firms in Singapore. Creating awareness of the importance and relevance of good CREM practices is therefore the most pertinent task. Part II of this paper focuses specifically on CRE performance. A data-driven analytical technique is adopted to study the direct and indirect effects of performance factors on corporate real estate. The results indicate that only corporate real estate planning and the existence of a real estate unit have a direct impact on corporate real estate performance. This finding is both theoretically expected and important. The results reinforces current literature postulations on the importance of strategic planning as the key skills that corporate real estate managers need to be equipped with to meet the challenges ahead.

KEYWORDS: Corporate real estate planning; Corporate real estate organizational structure; Corporate real estate performance

1. INTRODUCTION

Corporate real estate management (CREM) is concerned with the management of land and buildings owned by companies not primarily in the real estate business. Over the last two decades, academic interests in this subject had remained high generating strong empirical evidence of the ability of corporate real estate to enhance corporate wealth and thus firmly establishing the academic and practical significance of research in this subject.

While the CREM practices in Europe and North America is well documented in an annual survey conducted by the Corporate Real Estate Management Research Unit (CREMRU) at the University of Reading since 1993, much less is known about the same in Asia despite the increasing corporate real estate holdings by many multi-national companies (MNCs) in this region as a result of rapid economic development. As such, Part I of this paper attempts to address this void by examining the corporate real estate (CRE) practices of MNCs and listed companies in Singapore. The importance of this study is that it enhances current understanding of corporate real

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estate management practices and promotes best CREM practices by providing evidence from a different business environment. In addition, the study exposes current inefficiencies in Asian corporate real estate practices and thus serves as the impetus for business firms to urgently review the role of real estate in the firm and how its value can be maximized.

The proliferation of corporate real estate research has also been fuelled by the continued domination of real estate on the corporate balance sheet as well as the increasingly complex business environment compelling firms to discover the "hidden" real estate values (Liow, 1999; Carn et al., 1999). Consequently, CRE performance had been a key area of focus for many corporate real estate research (e.g., Veale, 1989; Nourse, 1994; Brounen and Eichholtz, 2005).

For many of the empirical studies on CRE performance, the theoretical propositions are often based upon pioneering studies such as those of Zeckhauser and Silverman (1983) and Veale (1989). Statistical tests are then carried out to test the theoretical propositions of these foundation studies. Based on these observations, Part II of this paper aims first; to review the critical factors influencing CRE performance because it has been more than two decades since the pioneering studies had been carried out. Second, unlike the traditional approach which is based on theoretical considerations, this study adopts a data-driven approach to identify and study the direct and indirect effects of factors on CRE performance. Schaefers (1999) opines that further studies should be conducted to determine their interrelationship and relative impact on corporate real estate performance. Consequently, this study is potentially important as it enhances current understanding of CRE performance by providing insights from another perspective. Further, the knowledge of factors that are current and critical in influencing CRE performance serves as a guide to firms on the allocation of resources to maximize the value of CRE.

The paper begins with a review of current literature on corporate real estate practices and the factors influencing corporate real estate performance. The research methodology used in this study is then discussed. Next, the findings from the study are presented and finally, the paper ends by providing some concluding remarks.

2. LITERATURE REVIEW

2.1. Corporate Real Estate Practices

In an extensive review of existing literature (from 1989 to 2001) on CREM, Manning and Roulac (2001) found a strong orientation towards a narrow financial corporate real estate perspective in current CREM research. A key recommendation by Manning and Roulac (2001) is to broaden the traditional financial focus to include a business management dimension that integrates real estate into the business strategy – real estate strategy implementation sequence of CREM decisions. From the current research, three areas appear important in the light of a business management focus: (a) corporate real estate planning to facilitate the development of CREM strategy that supports the overall business strategy; (b) corporate real estate organizational structure that allows the effective implementation of the corporate real estate strategy; and (c) corporate real estate performance measurement.

Avis et al. (1989) found little evidence of CREM strategic planning amongst firms. Instead, a reactive approach was often adopted to meet property needs. A decade later, a study by Schaefers (1999) showed minimal improvement as planning activities have only been accorded moderate importance in his empirical study on German companies. This is despite the fact that strategic planning has often been rated by managers as one of the top skill requirements for the future (Gibson, 1995; Bon et al., 2003). Similarly, the importance of developing a CREM strategy that is linked to business strategy had also been strongly ad-

vocated by many CREM researchers (e.g., Nourse and Roulac, 1993; Bon, 1994; Carn et al., 1999). Further, there is no lack of strategic planning models in the current CREM literature (e.g., Nourse and Roulac, 1993; Duckworth, 1993; Apgar, 1995). It appears then that while managers believe in strategic planning, there seems to be difficulties when it comes to implementation. Avis et al. (1989) suggest that this could be due to the fact that business and political decisions have short lead times which makes it difficult to accommodate the longer planning period required for property. Another reason for the lack of strategic CREM planning may be due to poor or non-existent property information systems. Many studies had revealed inappropriate and/or inadequate property information systems that tend to gravitate towards accounting rather than decision-making data (Bon, 1994; Carn et al., 1999). The existence of a property information system that supplies adequate and timely information such as business needs, staff requirements, facilities, occupancy costs and market data is essential for facilitating effective strategic planning of corporate real estate (Apgar, 1995). Consequently, Manning and Roulac (2001) recommend more research that would better link corporate real estate databases and analytic tools to key value drivers of business strategies.

The second area of importance for CREM research with a business management perspective relates to the CREM organizational structure. One of the earliest study was carried out by Zeckhauser and Silverman (1983) who found that there are three basic types of CREM structure: decentralized (where management of real estate is the responsibility of each product department), centralized (where all real estate decisions for the firm are made in a centralized department) or a wholly owned subsidiary (where control of some or all of the company's real estate is transferred). Another key study on CREM structure was undertaken by Veale (1989) who classified CREM structures into profit centres and cost centres. Subsequently, many empirical studies on CREM structures had been undertaken based on the frameworks developed by Zeckhauser and Silverman (1983) and Veale (1989) (e.g., Gale and Case, 1989; Teoh, 1992; Kimbler and Rutherford, 1993). While most of the studies had adopted one of the frameworks, Rutherford and Stone (1989) linked the two separate classifications of CREM structure advanced by Zeckhauser and Silverman (1983) and Veale (1989) and found that profit centres appear to be aligned with wholly owned subsidiaries while cost centres appear to be aligned with centralized and decentralized departments. The simple dichotomy of CREM structures into profit centres and cost centres proposed by Veale (1988) however, had produced more controversial results. While Plattner and Ferguson (1987) tend to favour the profit centre alternative as being the most effective, Avis et al. (1989) reveal no clear advantage with either a profit centre or cost centre structure. Similarly, in a recent study by Carn et al. (1999), there was a lack of clear agreement among managers interviewed on real estate as a cost or profit function. This illustrates that corporate real estate may have a different function depending upon industry specific and corporate specific goals (Carn et al., 1999). The study of CREM structures often also involve examining the role of CREM units within the company, i.e., the real estate activities undertaken by the CREM unit. Gale and Case (1989) found that the full responsibility for any real estate activity rarely rests exclusively within the CREM unit. In fact, the study by Carn et al. (1999) showed that the CREM executive is often perceived as a dealmaker whose main responsibility is real estate negotiations and transactions.

Another key area of CREM research is performance measurement. While strategic CREM planning is important to set out the vision of the company and an appropriate CREM structure facilitates the implementation of the strategic plans, the vision however, may not realize without the effective performance measure-

ment that identifies areas of deficiencies and sets corrective actions into motion. In a similar vein, Duckworth (1993) suggests that more attention should be given to the development of tools for monitoring real estate performance. This will enhance understanding of the portfolio and core business, which, in turn, can lead to more strategic decision-making. There are many studies in the current literature that focused on identifying the factors influencing CREM performance. One notable study is by Veale (1989) who put forward and tested seven factors that enhances CREM performance. These include: the presence of a formal, organized real estate unit; the use of management information systems for real estate operations, the use of property accounting methods; the frequency of reporting real estate information to senior management; the exposure of real estate executives to overall corporate strategy and planning; the availability of information and methods for evaluating real estate performance and use; the performance of real estate assets relative to overall corporate assets. However, with the shift away from a narrow real estate perspective, business management concepts and analytical tools are increasingly being used for CREM. One such tool for CREM performance measurement is the Balanced Scorecard defined by Kaplan and Norton (1992). The advantage of the Balanced Scorecard is that it adopts a multiple measure of performance. Specifically, four perspectives of performance are included: financial, customer, internal processes and the organisation's innovation and improvement activities. In essence, it complements the traditional focus on financial measures (which tell the results of actions already taken) by assessing also the firm's potential performance evidence through the organisation's learning capabilities. According to Barkley (2000), Balanced Scorecard places corporate strategy at the centre of performance measurement and makes individual teams directly accountable for achieving stated goals. In his study, Barkley (2001) also demonstrated the relevance of Balanced Scorecard in CREM performance measurement. Similarly, the Balanced Scorecard underpinned the theoretical framework that Amaratunga and Baldry (2003) developed for measuring facilities management performance. The cogency of the Balanced Scorecard approach for measuring corporate real estate performance was demonstrated in a healthcare facility by Amaratunga et al. (2002). The authors argue that the strength of the Balanced Scorecard measurement system is its ability to express the corporate real estate strategy in tangible terms.

2.2. Corporate Real Estate Performance Factors

In the existing literature, many factors have been hypothesized and tested for their relationships with CRE performance. The following discussion highlights the key variables posited in the literature to be related to CRE performance.

Studies in general suggest four types of factors that affect CRE performance:

1) Corporate related factors such as size of firm and existence of real estate unit. In a survey study conducted by Veale (1989), it was concluded that size of firm has little bearing on CRE performance. However, more recently, Schaefers (1999) provided fresh evidence from German companies on size of firm as a factor influencing CRE performance. Firms with greater revenues and that employ more staff adopt a more proactive approach to CRE management. On the contrary, smaller firms do not allocate real estate the necessary managerial attention because the size of management in these firms is somehow limited. While the impact of size of firm on CRE performance is inconclusive, the effect of the existence of a real estate unit on CRE performance had been more consistent. Both Pittman and Parker (1989)

as well as Schaefers (1999) found that having a centralized real estate authority is an important factor in determining CRE performance.

2) Business environment related factors concentrate on the impact of the economic situation in which companies operate on the status of operational property management. Based on Avis et al. (1989), Schaefers (1999) argues that organizations take property matters more seriously and therefore actively when they are under severe economic pressure in their main business. Although Schaefers (1999) failed to establish a relationship between the environment factor and CRE performance, it would nevertheless be interesting to include this variable in this study.
3) Portfolio related factors include size and geographical distribution of real estate portfolio and existence of property database. These factors have been examined for their effects on CRE performance in Veale (1989), Teoh (1992) and McDonagh (2002). Specifically, Boer et al. (2005) showed that firms with a high level of geographical focus had better stock performances. In regard to maintaining a property database, extant literature suggests that many organizations had poor or non-existent property information system. McDonagh (2002) suggests that an improvement in the state of CRE management information systems is a prerequisite to improved CRE performance. While there is broad consensus among CRE researchers on the importance of a property database to enhanced CRE performance, the results from the various studies on the effects of size and geographical distribution of real estate portfolio on CRE performance have been rather mixed. Nonetheless, these two factors will be included in this study for further theoretical testing.
4) Management related factors such as management attitude, preference to lease/own and corporate real estate planning. Management attitude has consistently been found by numerous studies to be a key factor influencing CRE performance (e.g., Gale and Case, 1989; Avis et al., 1989; Teoh, 1992). In particular, the literature finds that senior corporate executives play an important role in promoting CRE management and in inspiring the corporation as a whole to be more responsible towards the asset (Schaefers, 1999). Nourse (1994) conducted a cross-comparison of eleven firms to learn how CRE performance is measured. A key finding was that firms that lease their property perform better because they tend to link their property decisions more closely to strategic needs on a regular basis than those that own. Many CRE researchers (e.g., Nourse and Roulac, 1993; Bon, 1994; Carn et al., 1999) had advocated the development of CRE strategy that is linked to business strategy. However, a recent study by Schaefers (1999) found little evidence of CRE strategic planning amongst German firms. Instead, a reactive approach was often adopted to meet property needs. Manning and Roulac (2001) recommend more research that would better link analytic tools to key value drivers of business strategies.

3. RESEARCH METHODOLOGY

The study utilized a mail survey questionnaire for data collection. The mail survey technique is useful where a study seeks to explore and explain and thus is suited to the exploratory nature of this study. Further, mail surveys do not incur high administrative cost and

allows geographical flexibility and therefore is adopted in this study.

While the mail survey is suitable where the sample size is large, a major disadvantage is the low response rate. To overcome this problem, several measures were adopted. First, the questionnaire was limited to 7 pages and designed in such a way that it was easy to fill. Second, the chief executive officer of each firm was identified and the questionnaires were personally addressed to them to convey the importance of the survey. At the same time, the advantage of addressing the questionnaire to the chief executive officers is that they can effectively identify and delegate the task of completing the questionnaire to the real estate personnel in the firm who can go by many job titles. Third, the questionnaires were sent out in three waves. A week after the first batch of questionnaire was sent, a reminder postcard was followed together with a personal telephone phone call. Where firms have not responded, another set of questionnaire was dispatched two weeks later. Fourth, the survey pack comprised a cover letter explaining the rationale and scope of research, the survey questionnaire and a self-addressed prepaid envelope. Fifth, an offer was made in the cover letter to share the findings as a small "reward" for participating in the survey.

The target population of this study was limited to MNCs and listed companies in Singapore because they were more likely to occupy substantial corporate real estate and provide rich insights into the CREM practices in their companies. The sampling frame for the MNCs was obtained from a publication called "Singapore 1000" while the listed companies in Singapore were obtained from the Singapore Exchange Limited website (www.sgx.com). The "Singapore 1000" identifies Singapore's most successful corporations through an assessment of their annual audited financials. A sample of 714 companies (344 MNCs and 370 listed companies) was selected. The questionnaires were sent out in late 2002. A total of 113 survey questionnaires were received out of which 97 were usable. This represents an effective response rate of 13.6%. The low response rate is characteristic of the mail survey method of data collection. In addition, survey responses are usually not as forthcoming in an Asian environment. Despite this, the large sampling size (714 companies) gives some confidence that sampling error is unlikely to be a major problem (Neuman, 1994).

The literature review earlier provided the theoretical framework for the questionnaire design. The questionnaire was essentially divided into 5 sections:

Section A – Company Profile includes questions on the respondent's job title, the core business of the organization, the number of employees in the firm and the operating environment.

Section B – Real Estate Portfolio comprises questions relating to the number of properties and area of space owned/leased by the firm, location of the properties and preference to lease or own.

Section C – Corporate Real Estate Planning determines if firms are actively involved in corporate real estate planning, the financing options, the analytical tools used for real estate decision-making, the type of information available in the database and the firm's real estate strategy.

Section D – Corporate Real Estate Organisation asks questions relating to the existence of a CREM unit, the reporting structure, size of CREM unit, types of responsibilities and level of centralization/decentralization of real estate decision-making.

Section E – Corporate Real Estate Performance assesses the performance of the respondent firms according to the four perspectives in the Balanced Scorecard, i.e., the customer perspective, the financial perspective, the operational perspective and the innovation and learning perspective. This section also includes a question on the types of key performance indicators used by firms for measuring CREM performance.

3.1. Operationalization of Variables

CRE performance

The Balanced Scorecard technique is used to measure the performance of CRE. Performance in this case is defined by four perspectives: customer, financial, operational and innovation and learning. Although this is a departure from the traditional performance dimensions identified by Veale (1989), the same principle of measuring performance through inputs and processes apply. To this end, original scale items that relate to CRE inputs and process were developed to measure each of the four performance perspectives (please refer to the Appendix). A five-point Likert-type scale is used with end labels 'Strongly Disagree' and 'Strongly Agree'.

Size of firm

This is measured by the number of employees in the firm.

Existence of a real estate unit

The respondents were asked to indicate whether their firms have a formally organized real estate unit.

Environmental uncertainty

The scale items are adapted from Tay (2002). A five-point Likert-type scale is used with the scale label anchors of 'Strongly Disagree' and 'Strongly Agree'.

Size of portfolio

This is measured in terms of the number of properties owned by the firm.

Geographical distribution of real estate

This is measured by the number of areas that the properties occupied by the respondent firms are located. Specifically, the respondents were asked to classify the geographical distribution of properties into four regions, namely, central business district, regional centres, major shopping belt and others.

Existence of a property database

This is measured nominally by the selection between two options, i.e., yes or no.

Management attitude

The respondent firms were asked to rate on a scale of 1-5 to what extent they agree with the statement: "Real estate is not considered important because our organization's core activity is not real estate".

Preference to lease/own

A five-point Likert-type scale is used to measure the preference to lease/own with 1 being strong preference to lease and 5 being preference to own.

Level of CRE planning

Ten original scale items are developed to measure this construct. The scale used is a five-point Likert-type scale with anchor labels of 'Strongly Disagree' and 'Strongly Agree'.

3.2. Reliability and Validity Measures

Reliability concerns the dependability and consistency of an indicator. A reliable indicator is one that produces the same result in repeated trials. The most popular method for calculating the mean correlation coefficient is the use of Cronbach's alpha coefficient. While there are no definite 'rules' in the literature as to what is acceptable in terms of a reliable alpha coefficient, Nunnally's (1978) guidelines are frequently used which suggest that in the early stages of research, such as this one where original scales are developed, modest reliability in the range of 0.5-0.6 is acceptable.

The coefficient alpha and item-to-total correlations were therefore calculated for each of the scales used in the study (see Table 1). Apart from the environmental uncertainty scale which was adapted from Tay (2002), original scale items were developed to measure the constructs CRE planning and each of the four CRE performance perspectives based on the Balanced Scorecard, i.e., the customer, financial, operational and innovation and learning perspectives. In the process of establishing reliability of the measures, some of the scales had to be 'purified' by eliminating certain scale items to improve the alpha score. As the re-

sults in Table 1 show, the co-efficient alphas of the 'purified' scales to be used in this study appear to be sufficiently reliable for further statistical analysis.

Reliability in itself is not a sufficient condition for establishing that the scales used provide an accurate representation of the abstract phenomenon that they were designed to measure. An indicator of any abstract concept needs to be both reliable and valid. The assessment of validity is essentially concerned with the relationship between an indicator and the concept it is supposed to represent. A powerful and widely used method to assess the construct validity of an instrument is exploratory factor analysis. Using this method, construct validity is ascertained by determining whether the various items that constitute each scale form a single empirical factor when factor analysis is carried out. If only one factor emerges, it can be inferred that the measure is unidimensional and hence possess construct validity.

The scales were subjected to an oblimin rotated principal component analysis. With the exception of the CRE planning and innovation and learning scale, each of the factor analyses produced only one significant factor, as indicated by eigenvalues greater than 1.00 suggesting unidimensionality and hence construct validity (see Table 1). Although the innovation and learning scale produced two significant factors, this was expected as this construct is in effect made up of two phenomenon, innovation and learning. As such, there was no need to divide the scale. Similarly, CRE planning is a broad concept and the two factors that were extracted represent the data collection and implementation part of the planning process and hence the scale was left in tact.

4. PART I – OVERVIEW OF CREM PRACTICES IN SINGAPORE

4.1. Company Profile

Using the Singapore stock exchange classification of listed firms, fourteen categories were provided for firms to indicate their area of core business. The largest number of respondents came from the manufacturing industry (25% of total response). A similar 25% of respondent firms did not fit into any of the 14 categories but put themselves under the "Others" category. Another 10% of total response came from multi-industry firms.

4.2. Real Estate Profile

On the average, the MNCs own 2 properties while listed firms own 22 properties. The largest real estate holding come from firms in the finance industry, namely the banks. Their portfolio of properties ranged from residential, commercial to industrial properties. The actual areas owned by these firms were surveyed but due to incomplete reporting, the results are not discussed here. This could be due in part to poor record keeping.

Many CREM researchers have suggested the significance in the correlation between keeping a good real estate record and good corporate real estate management (e.g., Teoh,

Table 1. Scale Statistics

Variables	Factors (Variance)	Alpha	Item-To-Total Correlations
CRE Performance:			
1) Customer	1 (43.15%)	0.6439	0.41 0.36 0.58 0.26 0.42
2) Financial	1 (46.03%)	0.5573	0.53 0.38 0.34 0.17
3) Operational	1 (55.94%)	0.7989	0.62 0.61 0.54 0.55 0.57
4) Innovation & Learning	2 (65.85%)	0.6927	0.63 0.38 0.30 0.40 0.45 0.38
CRE Planning	2 (64.72%)	0.7469	0.677 0.60 0.65 0.45 0.51 0.54 0.58 0.51 0.56
Environmental Uncertainty	1 (55.0%)	0.5593	0.48 0.22 0.44

1992; Dahlmann, 1987). Majority of the firms (74.7%) surveyed keep a record of their real estate value. However, only 38.7% record the real estate value using the current market value. The other 36% of the firms record the value of their real estate by their historic costs. This lack of an updated real estate value greatly impedes the ability of management to make effective operating, planning and development decisions (Gale and Case, 1982).

Corporate real estate literature has often focused on the leasing and buying decisions because it is one of the most important real estate functions of the CRE unit. The survey asked for the respondents' preference towards leasing and buying. 37.5% of the total firms surveyed indicated a strong preference to lease compared with only 10.4% of firms that strongly prefer to own. The common reasons given for a strong preference to lease include:

a) Flexibility and mobility to relocate;
b) Less overheads and interests;
c) No maintenance required;
d) High cost of real estate;
e) Not core activity.

The response from MNCs and listed firms on leasing/ownership preference is markedly different. Only 23.3% of listed firms stated a strong preference to lease but almost half (49.1%) of the MNC's surveyed reported a strong preference to lease. The result is intuitively reasonable given the very nature of MNC's whose continued operations in a particular country depend very much on economic viability and thus the need to remain flexible and mobile by leasing rather than owning property. Similarly, the study by Bon et al. (2003) showed that the share of owned property in total property has fallen from the 60% in 1993 to about 50% in 2002. In the same vein, Brounen and Eichholtz (2005) found real estate ownership to be decreasing over time, possibly due to the gaining popularity of lease alternatives. However, Golan (1999) argues that except where the lease is short term with options for a quick and costless exit, ownership may be more flexible than leasing.

4.3. Corporate Real Estate Planning

A survey by JLW Research (1992) on "Managing Corporate Real Estate in Singapore" found that firms did not engage in systematic planning of corporate real estate. In most of the firms surveyed, there was no periodic review of their real estate portfolio for reuse, expansion or consolidation. A decade later, firms surveyed in this study indicated a moderate level of CREM planning with an average score of 3.0 (score of 1 represents a low level of planning and 5 represents a high level of planning). On the contrary, the results from Europe and North America showed that property strategic plans have been consistently high on the incidence ranking list since 1993 (Bon et al., 2003). In this study, only the Finance firms reported the highest level of planning with a score of 4.2. This is possibly because they have the largest real estate holding.

As mentioned earlier in the literature review, one of the obstacles to better CREM planning is the inadequate information in the databases of firms. Most of the firms surveyed (62.4%) agree that having a property database is very important. However, only one-third of the respondent firms have a computerized property database. These firms also indicate that the information provided in their databases was adequate. In particular, the respondent firms reported that their databases were best in showing purchase cost and lease details but weakest in identifying non-performing properties. Figure 1 shows the performance of various functions in the property database. However, the narrow range of scores hovering around the middle score of 3 may suggest an indifferent attitude amongst respondent firms in the importance of the type of information found in their database.

4.4. Corporate Real Estate Organization

Only less than a quarter (22.7%) of the total firms surveyed has a formal real estate unit in place. A greater percentage of MNCs (27.8%) have formal real estate units com-

pared with listed companies (16.3%). This finding is consistent with a study by JLW Research (1992) which found a general lack of organized structure for administering operational real estate assets among listed firms in Singapore. This indicates that there has been little change in CREM practices of firms in Singapore over the last ten years. On the contrary, the study by Veale in 1989 showed that majority of the firms surveyed in the US (86%) reported having a formal real estate unit. Thus, the development of CREM in Singapore is at best at its infancy stage when compared to CREM in the US.

For those firms with a formal real estate unit, the units have been existence from 2 – 30 years. Similar to Veale's (1989) study, most of real estate units (76.2%) function as departments within the firms. Also, the job title of the real estate unit head varies considerably between organizations. Less than half of the real estate units in the sample report to either the president or executive vice-president. Most of the real estate units report to the financial controller and division vice-president. There is a wide range in the size of the real estate unit. The smallest unit has a single staff while the biggest unit has 155 staff.

Table 2 shows the level of responsibility real estate unit has over a list of activities. The results show that majority of the real estate units have sole or major responsibility over the sixteen activities listed except for financial reporting. The top three responsibilities of real estate units are market analysis, buying/selling real estate and lease negotiation. This finding suggests that the role of real estate unit is not limited to deal-making as found by Carn et al. (1999) in their study. It was further proposed in their study that in the light of rapid technological changes, the principal tasks of the real estate unit should be developing occupancy strategies, formulating reengineering schemes for existing space and designing new space that is flexible to accommodate technological changes. One interesting result is found in the column "None" indicating areas where the CRE unit has no responsibility at all. 14.3% of the respondent firms reported no responsibility in supervising construction and mainte-

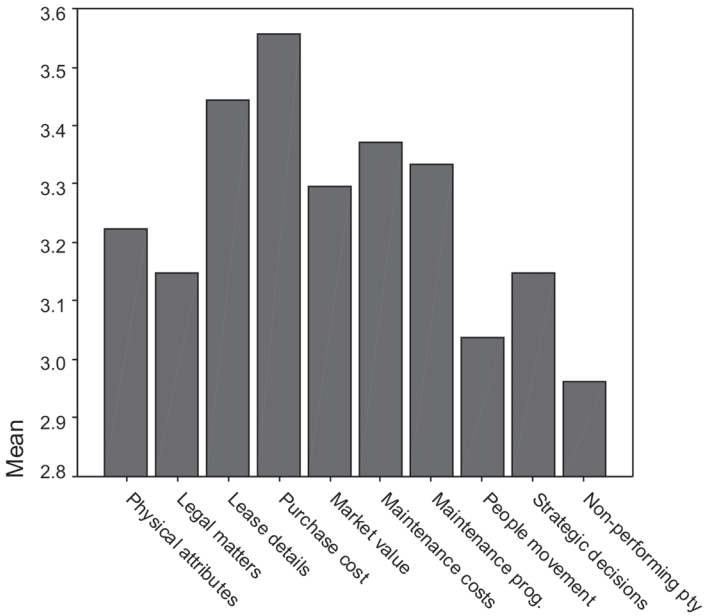

Figure 1. Performance of Functions in Property Database

Table 2. Responsibilities of Real Estate Unit

Real Estate Activities	Sole	Major	Some	None
Preparation of capital budgets	4.8%	52.4%	38.1%	4.8%
Preparation of maintenance budget	14.3%	52.4%	23.8%	9.5%
Buying/selling real estate assets	16.7%	66.7%	11.1%	5.6%
Financial feasibility studies	5.0%	55.0%	35.0%	5.0%
Monitoring performance of existing assets	10.0%	55.0%	30.0%	5.0%
Developing real estate strategy	23.8%	42.9%	33.0%	0.0%
General administration	14.3%	47.6%	28.6%	9.5%
Financial reporting	15.0%	25.0%	55.0%	5.0%
Supervising construction	33.3%	28.6%	23.8%	14.3%
Lease negotiation	38.1%	38.1%	23.8%	0.0%
Lease administration	38.1%	28.6%	23.8%	9.5%
Ensuring health and safety	20.0%	40.0%	30.0%	10.0%
Market analysis	35.0%	50.0%	15.0%	0.0%
Cost control	23.8%	38.1%	38.1%	0.0%
Maintenance supervision	28.6%	38.1%	19.0%	14.3%
Managing external service providers	28.6%	33.3%	28.6%	9.5%

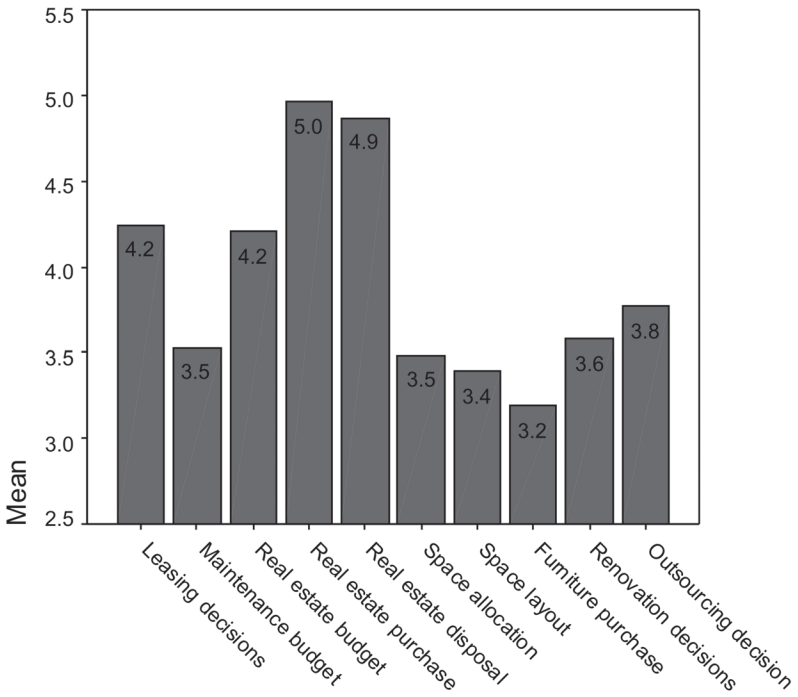

Figure 2. Centralisation/Decentralisation of Real Estate Decision-Making

nance. In these instances, it is conceivable that these would be companies that have outsourced such functions to service providers in these areas. In the facilities management literature, a total facilities management arrangement is increasingly common where the responsibilities such as construction and maintenance are completely transferred to a service provider for a fee. In turn, the client organization's responsibility is focused on performance management of the service providers.

To find out the extent of centralization/decentralization of real estate decisions, the respondent firms were asked to indicate the lowest level (out of six levels) at which a list of 11 real estate decisions can be made on a day-to-day basis. The lower the level, the more decentralized the decision-making. The six levels begin with "individual staff", followed by "department", "branch", "headquarters", "real estate unit" and "board". A score ranging from 1 – 6 is given for each level with the lowest level as 1 and highest level as 6. As such, the higher the score, the more centralized the decision-making for that particular real estate decision. The results shown in Figure 2 indicate that "real estate purchase" and "real estate disposal" decisions have a high degree of centralization. This is in line with the finding of Gibson and Barkham (2001) whose survey of corporate real estate management in the retail sector found that a high proportion of retailers actually engaged in acquisition and disposal activity and this reflects a strong need to have a centralized overview of the way in which the retail portfolio was developing. The most decentralized decisions relate to furniture purchase, space layout, space allocation and maintenance budget allocation.

4.5. Corporate Real Estate Performance

The Balanced Scorecard technique is used to measure the performance of corporate real estate. Performance in this case is defined by four perspectives: customer, financial, operational and innovation and learning. Although this is a departure from the traditional performance dimensions identified by Veale (1989), the same principle of measuring performance through inputs and processes apply. There is general agreement that measuring and comparing CREM performance across different organizations is difficult and that an inputs and process approach is usually the only practical option (McDonagh, 2002).

On a scale of 1-5 (1 represents low performance and 5 represents high performance), the average MNCs and listed companies in Singapore reported moderate CREM performance (3.5) on the customer perspective. Similarly, the CREM financial and operational performances of the average firm were also moderate (3.7 and 3.6 respectively). The CREM innovation and learning performance was the lowest with a score of 3.0. This implies that firms are still very much focused on short term performance. Where benefits are uncertain and some length of time is required before rewards are reaped (e.g., investing in innovative CREM tools), firms tend to be more reserved. Table 3 shows the average CREM performance score of surveyed firms for each of the four perspectives.

Table 3. CREM Performances of Firms

Balanced Scorecard Performance Perspective	Average Score of MNCs	Average Score of Listed Firms
Customer Perspective	3.5	3.4
Financial Perspective	3.8	3.6
Operational Perspective	3.7	3.6
Innovation and Learning Perspective	3.1	3.0

The respondent firms were asked to indicate on a scale of 1-5 (1 for never used and 5 for always used), the use of performance indicators for measuring CREM performance. A list of 15 common indicators was included in the survey questionnaire. In general, there were relatively low scores for all the indicators. At the same time, half of the respondent firms had indicated this question as "Not applicable" to them. This suggests that there is no conscious effort to measure CREM performance among firms in Singapore. There were only 6 indicators that had an average score of more or equal to 3.0 (implying that it was sometimes used). These are:

a)	Usable Space / Net Floor Area	3.4
b)	Number of Complaints	3.3
c)	Unoccupied Space / Usable Space	3.2
d)	Disruption Time	3.2
e)	Net Floor Area / No. of workstation	3.1
f)	Number of Accidents	3.0

5. PART II – A DATA-DRIVEN APPROACH TO CORPORATE REAL ESTATE PERFORMANCE

5.1. A Data-Driven Approach

A path analytic model that is driven by data (rather than by theoretical considerations and thus no a priori hypotheses are formulated) is developed in this study to examine the direct and indirect effects of the variables on CRE performance. Traditionally, regression models are often used to study the determinants of CRE performance. However, a main weakness of such a statistical tool is that it does not allow a representation of additional inter-relationships between the variables and therefore would only provide limited insights. Path analysis allows the correlation between any two variables to be broken-down into a sum of simple and compound paths with some of these compound paths being substantially meaningful indirect effects (Asher, 1976).

The method used in building the path model follows that of Blalock (1971) and Duncan (1975). The standardised regression coefficients (Betas) in a series of multiple regression equations form path coefficients and are used to calculate the direct and indirect effects of independents variables upon the dependent. Indirect effects are calculated as a simple multiplicative measure of value of sequential beta weights. Since the model is regression based with cross-sectional data, the relationships are therefore not causal but should instead be interpreted in terms of bi-directional association.

The model building begins with the inclusion of all variables and constructs measured in the data set using the stepwise selection procedure with the default settings in SPSS of the probability of F-to-enter = .05 and F-to-leave = .10. The sequencing of the choice of dependent variables for each subsequent regression equation was based upon the order of entry of the independent variables in the previous regression model. The choice of independent variables in each regression model was guided by the significance of the F change produced by the entry of each subsequent independent variable.

The results of the data driven path model developed are displayed in the Tables 4 and 5 below and are graphically presented in Figure 3.

5.2. Results and Discussion

The data driven model yielded some interesting associations between the factors and provides some insights into the explanation of CRE performance differences between the firms in the data set. From the results, existence of a real estate unit and CRE planning are the only two factors (out of a total of nine independent variables) that entered the first stepwise regression procedure. This implies that CRE performance is directly and positively influenced by the existence of a real estate unit and CRE planning. A moderately high R-square value (0.42) suggests that these two factors alone explain a significant portion of the variation in CRE performance. The significantly large positive effects of the two factors (beta = 0.77) on CRE performance provide fur-

ther support and confirm the theoretical postulations in the existing CRE literature on CRE performance (e.g., Teoh, 1992; Pittman and Parker, 1989; Duckworth, 1993; Manning and Roulac, 2001). Thus, the finding is both theoretically expected and important.

Apart from the existence of a real estate unit and CRE planning, the other factors had indirect effects on CRE performance. The largest indirect impact (beta = 0.30) came from the factor "Existence of a Property Databse". This is consistent with the literature findings (e.g., Pittman and Parker 1989; Nourse, 1994) and thus advances the position in current literature for a comprehensive property database. The existence of a property database is directly and positively associated with CRE planning and the existence of a real estate unit. The direct relationship between existence of a property database and the existence of a real estate unit is intuitively reasonable. Similarly, it is clear that without a property database, CRE planning will be impeded. Specifically, Duckworth (1993) notes that a significant proportion of organizations do not maintain sufficient information on their real property. Consequently, CRE planning is ineffective and inadequate without the necessary information resulting in poor CRE performance.

The path model yielded 4 other factors that have positive but indirect impacts on CRE performance. They are: size of firm (beta = 0.12), geographical distribution of properties (beta = 0.11), environmental uncertainty (beta = 0.04) and number of properties (beta = 0.03). Although significant, the small betas in these four factors suggest that they are not strongly associated with CRE performance. The results mirror the findings in Veale (1989). However, the results are useful in shedding light on the inter-relationships between these variables. First, the results suggest that the existence of a property database is positively influenced by the geographical distribution of properties. The extent to which the properties are geographically dispersed is in turn related to the number of properties owned by the firm. In essence, this implies that the greater the number of properties owned by the firm (and thus the greater the likelihood of its geographical dispersion), the greater the need for a property database to monitor the CRE performance. Second, the size of firm is directly related to three factors, namely, environmental uncertainty, number of properties and geographical distribution of properties. This result suggests that the bigger the firm, the greater the environmental uncertainty faced by the firm. From the respondent firm profile, firms from the communications and finance industries were the larger firms hiring on average more than 4000 staff. The communications and finance industries are among the most volatile in terms of the business environment. Hence, the association between the size of firms and environmental uncertainty becomes intuitively clear. The direct relationships between geographical distributions of properties, number of properties and size of firm can be easily explained for the bigger the firm, the more likely that it would own more properties and the greater the geographical dispersion of these properties. Finally, the results showed that size of firm has a direct and positive influence on the existence of a real estate unit.

The remaining 2 factors, preference to lease/own and attitude of management were not entered into any of the regression equations. This result is counter intuitive and runs contrary to the findings in the existing literature (e.g., Veale, 1989; Nourse, 1994; Schaefer, 1999). Two explanations may be offered. First, the unexpected findings may be the result of inadequate measurement. The 2 factors were each measured by a single question. The inclusion of more questions to measure the constructs preference to lease/own and attitude of management may yield a more accurate and consistent response. Secondly, the inconsistent results may be due to response bias. In particular, firms surveyed may want to appear positive by indicating the importance of real estate in their firms.

In essence, the results from the data-driven model are largely in congruent with the current literature. Two factors (CRE planning and the existence of real estate unit) were found to be important factors influencing CRE performance. In addition, the model also shed light on (hitherto little known) inter-relationships between the factors. For example, the existence

Table 4. Data Driven Path Model Regressions

Dependents	Independents	Beta	R Square	*F*	Sig. of *F*
CRE Performance	Existence of RE unit	0.39	0.42	14.29	0.000
	CRE Planning	0.38			
Existence of RE unit	Existence of pty. database	0.37	0.31	9.28	0.000
	Size of firm	0.31			
CRE Planning	Existence of pty database	0.43	0.18	9.25	0.004
Existence of Pty Database	Geographical Distribution of Properties	0.39	0.15	7.32	0.010
Size of Firm	Environmental Uncertainty	0.33	0.45	10.87	0.000
	No. of Properties	0.29			
	Geographical Distribution of Properties	0.28			
Geographical Distribution of Properties	No. of Properties	0.43	0.19	9.63	0.003

Table 5. Effects of Independent Variables on CRE Performance

Independent Variables	Direct effect	Indirect effect
Existence of Real Estate Unit	0.39	
CRE planning	0.38	
Existence of Property Database		0.30
Size of Firm		0.12
Geographical Distribution of Properties		0.11
Environmental Uncertainty		0.04
No. of Properties		0.03

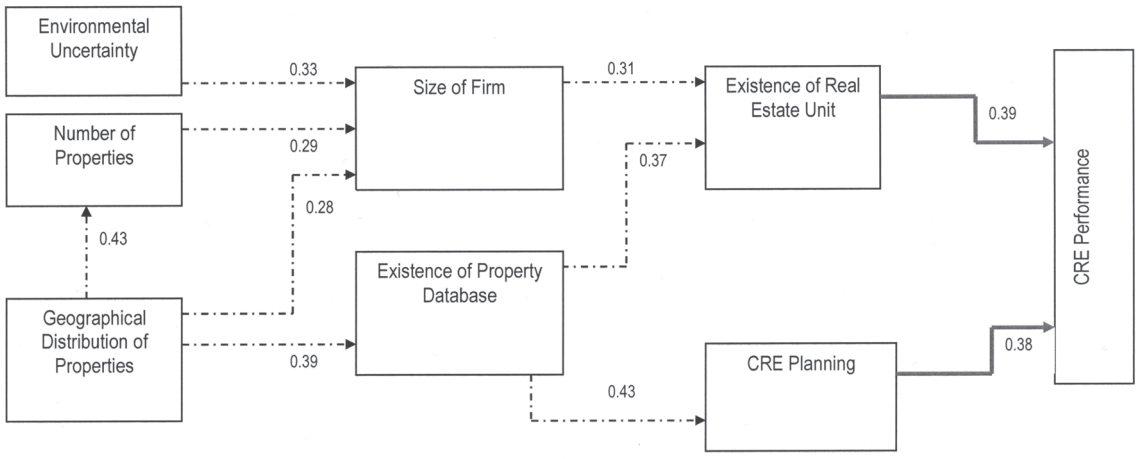

Figure 3. Data-Driven Path Model

of a computerized property database is positively associated with the existence of a real estate unit and CRE planning which in turn directly influence the level of CRE performance in the firm.

6. CONCLUSIONS

This paper has set out to provide a snapshot of CREM practices of MNCs and listed firms in Singapore (PART I) as well as to study the factors that influences corporate real estate performance via a data-driven approach (PART II). It has adopted a business management framework by focusing on three areas of CREM, i.e., planning, organization and performance.

In general, there was a moderate level of planning among respondent firms. While most of the firms noted the importance of having a database, only a third of the respondent firms have a property database. The findings do not augur well for corporate real estate management in Singapore since existing CRE literature has consistently suggested the importance of strategic planning and an updated real estate database for improved CRE performance (e.g., Teoh, 1992; O'Mara, 1997). In addition, the lack of strategic CRE planning in Singapore is further accentuated when compared with developments in Europe and North America where firms have actively been engaged in strategic planning since a decade ago (Bon et al. 2003).

The survey showed that not many firms had a formal real estate unit and those that have tended to organize it as a department within the firm. Again, the results suggest that CREM in Singapore is lagging behind those of the US. A study by Veale (1989) showed that 86% of the firms surveyed have a formal real estate unit. The real estate unit undertakes a range of tasks. The main responsibilities are market analysis, buying/selling real estate and lease negotiation. Decisions such as real estate acquisition and disposal are made centrally. On the other hand, decisions such as furniture purchase, space allocation and layout are decentralized.

The firms surveyed reported moderate performance for all four perspectives of a Balanced Scorecard performance measurement system, i.e., customer, financial, operational and innovation and learning. The innovation and learning perspective received the lowest score among the four perspectives. In addition, the survey found that most firms do not actively measure their CREM performances. The implication of this is the lack control over the performance of corporate real estate. The results are not surprising since there is a general lethargy in strategic planning. Without clearly stated CRE goals developed during the strategic planning process, performance measurement will be meaningless as there will not be a benchmark for measurement. In contrast, Bon et al. (2003) showed high incidences of ongoing performance and performance benchmarking study in their study of CREM practices among firms in Europe and North America.

In sum, CREM practices among MNCs and listed firms in Singapore are still lagging behind those in Europe and US. The fact that not many firms have property databases and formal real estate unit as well as passive performance measurement, suggest the lack of conviction that CREM can contribute to the firm's corporate goals. The implications for CRE managers in Singapore are several. First, creating awareness of the importance of CREM remains the key to a change in attitude towards CRE. Second, results from the path analytic model reinforce the importance of a formally organized real estate unit that specializes in property matters within the firm. The effectiveness of the real estate unit can be enhanced through a property database system. This is particularly important if the firm owns substantial real estate and these are geographically dispersed. Third, CRE performance is directly related to the level of CRE planning. It will be increasingly important for CRE managers to be equipped with strategic plan-

ning and IT skills. In particular, the rapid advancement of IT tools can enhance the firm's competitiveness through the provision of a comprehensive database. This will greatly aid CRE planning and decision-making thus maximizing the value of corporate real estate.

REFERENCES

Amaratunga, D., Haigh, R., Sarshar, M. and Baldry, D. (2002) Application of the Balanced Scorecard Concept to Develop a Conceptual Framework to Measure Facilities Management Performance within NHS Facilities. *International Journal of Health Care Quality Assurance,* 15(4), p. 141–151.

Amaratunga, D. and Baldry, D. (2003) A Conceptual Framework to Measure Facilities Management Performance. *Property Management*, 21(2), p. 171–189.

Apgar, M. (1995) Managing Real Estate to Build Value. *Harvard Business Review*, 73(6), p. 162–171.

Asher, H. B. (1976) *Causal Modeling*, California: Sage Publications.

Avis, M., Gibson, V. and Watts, J. (1989) *Managing Operational Property Assets*, Department of Land Management and Development, University of Reading.

Barkley, L. (2000) Key Performance Indicators: Primary Drivers of Information Systems Design. *Journal of Corporate Real Estate*, 3(2), p. 161–171.

Boer, D., Brounen, D. and Op't Velf, H. (2005) Corporate Focus and Stock Performance International Evidence from Listed Property Markets. *The Journal of Real Estate Finance and Economics*, 31(3), p. 263–281.

Bon, R. (1994) Ten Principles of Corporate Real Estate Management. *Facilities,* 12(5), p. 9–11.

Bon, R., Gibson, V. and Luck, R. (2003) Annual CREMRU-JCI Survey of Corporate Real Estate Practices in Europe and North America: 1993-2002. *Facilities*, 21(7/8), p. 151–167.

Brounen, D. and Eichholtz, P.M.A. (2005) Corporate Real Estate Ownership Implications: International Performance Evidence. *The Journal of Real Estate Finance and Economics*, 30(4), p. 429–445.

Carn, N. G., Black, R.T. and Joseph, S. (1999) Operational and Organizational Issues Facing Corporate Real Estate Executives and Managers. *Journal of Real Estate Research*, 17(3), p. 281–299.

Dahlmann, N.O. (1987) Determining Real Property Assets, In Silverman, R.A. (ed.), *Corporate Real Estate Handbook*, USA: McGraw-Hill.

Duckworth, S. L. (1993) Realizing the Strategic Dimension of Corporate Real Property Through Improved Planning and Control Systems. *Journal of Real Estate Research*, Fall, p. 495–509.

Gale, J. and Case, F. (1989) A Study of Corporate Real Estate Resource Management. *Journal of Real Estate Research,* Fall, p. 23–34.

Gibson, V.(1995) Managing in the Millennium. *Estate Gazette*, May, p. 104–109.

Gibson, V. and Barkham, R. (2001) Corporate Real Estate Management in the Retail Sector: Investigation of Current Strategy and Structure. *Journal of Real Estate Research*, 22(1/2), p. 107–127.

Golan, M. (1999) The Own v Lease Decision – Myth and Reality. *Journal of Corporate Real Estate*, 1(3), p. 241–253.

JLW Research (1992) Managing Corporate Real Estate in Singapore – A Survey, JLW Property Consultants Pte Ltd.

Kaplan, R. S. and Norton, D. P. (1992) The Balanced Scorecard: Measures That Drive Performance. *Harvard Business Review*, Jan/Feb, p. 71–79.

Kimbler, L. B. and Rutherford, R. C. (1993) Corporate Real Estate Outsourcing: A Survey of the Issues. *Journal of Real Estate Research*, 4(3), p. 525–539.

Liow, K. H. (1999) Corporate Investment and Ownership of Real Estate in Singapore – Some Empirical Evidence. *Journal of Corporate Real Estate*, 1(4), p. 329–342.

Manning, C. and Roulac, S. E. (2001) Lessons from the Past and Future Direction for Corporate Real Estate Research. *Journal of Real Estate Research*, 22(1/2), p. 7–57.

McDonagh, J. (2002) Measuring Corporate Real Estate Asset Management Performance. Paper presented at the Seventh PRRES Conference, Canterbury, 21-23 January.

Neuman, W.L. (1994) *Social Research Methods*, Massachusetts: Allyn and Bacon.

Nourse, H. O. and Roulac, S. E. (1993) Linking Real Estate Decisions to Corporate Strategy. *Jour-*

nal of Real Estate Research, Fall, p. 475–494.

Nourse, H. O. (1994) Measuring Business Real Property Performance. *Journal of Real Estate Research*, Fall, p. 431–444.

O'Mara, M. A. (1997) Corporate Real Estate Strategy: Uncertainty, Values and Decision Making. *Journal of Applied Real Property Analysis*, 1, p. 15–28.

Pittman, R. H. and Parker, J. R. (1989) A Survey of Corporate Real Estate Executives on Factors Influencing Corporate Real Estate Performance. *Journal of Real Estate Research*, 4(3), p. 107–119.

Plattner R. H. and Ferguson, J. T. (1987) Profit Centres for Corporate Real Estate. *Real Estate Review,* Summer, p. 80–83.

Rutherford, R. and Stone, R. (1989) Corporate Real Estate Unit Formation: Rationale, Industry and Type of Unit. *Journal of Real Estate Research*, Fall, p. 121–130.

Schaefers, W. (1999) Corporate Real Estate Management: Evidence from German Companies. *Journal of Real Estate Research*, 17(3), p. 301–320.

Tay, L. (2002) Business Performance of Surveying Firms: A Data-Driven Path Model, *Journal of Property Research*, 19(4), p. 327–351.

Teoh, W. K. (1992) Corporate Real Estate Asset Management: The New Zealand Evidence. *Journal of Real Estate Research*, 8(4), p. 607–623.

Veale, P. R. (1988) *Managing Corporate Real Estate Assets: A Survey of US Real Estate Executives*, Laboratory of Architecture and Planning, MIT.

Veale, P. R. (1989) Managing Corporate Real Estate Assets: Current Executive Attitudes and Prospects for and Emergent Discipline. *Journal of Real Estate Research*, Fall, p. 1–22.

Zeckhauser, S. and Silverman, R. (1983) Rediscover Your Company's Real Estate. *Harvard Business Review*, Jan/Feb, p. 111–117.

SANTRAUKA

KORPORACINIS NEKILNOJAMOJO TURTO VALDYMAS SINGAPŪRE: VERSLO VALDYMO PERSPEKTYVA

Linda TAY, Kim Hiang LIOW

Korporacinio nekilnojamojo turto valdymo (KNTV) praktika Azijoje buvo mažai tyrinėjama sritis, palyginti su Europa ir Šiaurės Amerika. Šiame darbe mėginama papildyti turimas žinias apie KNTV Azijoje. Pirmoje šio mokslinio darbo dalyje trumpai apžvelgiama KNTV praktika Singapūro multinacionalinėse įmonėse ir į sąrašus įtrauktose firmose. Buvo apklaustos 97 firmos. Klausimai buvo susiję su trimis pagrindinėmis verslo valdymo perspektyvomis: korporaciniu nekilnojamojo turto planavimu, korporacine nekilnojamojo turto organizacine struktūra ir korporaciniu nekilnojamojo turto rezultatyvumu. Tyrinėjant buvo nustatyta, kad Singapūro multinacionalinėse įmonėse ir į sąrašus įtrauktose firmose korporacinis nekilnojamasis turtas (KNT) valdomas nepakankamai gerai. Todėl geros KNTV praktikos svarbos ir aktualumo propagavimas yra pagrindinė užduotis. Antroje šio mokslinio darbo dalyje daugiausia dėmesio skiriama KNT rezultatyvumui. Siekiant ištirti tiesioginę ir netiesioginę rezultatyvumo veiksnių įtaką korporaciniam nekilnojamajam turtui, buvo pritaikyta duomenimis pagrįsta analitinė technika. Rezultatai rodo, kad korporaciniam nekilnojamojo turto rezultatyvumui tiesioginę įtaką daro tik korporacinis nekilnojamojo turto planavimas ir nekilnojamojo turto padalinys. Ši išvada yra ir svarbi, ir tikėtina teoriškai. Rezultatai patvirtina šiuo metu literatūroje pateikiamas prielaidas, kad strateginis planavimas yra esminis dalykas, būtinas korporacinio nekilnojamojo turto vadybininkams, kad jie galėtų atsakyti į laukiančius iššūkius.

APPENDIX

CRE Performance Scale

Customer Perspective

a) We regularly conduct a survey of staff satisfaction of the workplace
b) We do not regularly review how real estate can meet the needs of the staff *
c) Achieving staff satisfaction is a key goal
d) We constantly strive to minimize disruption time staff due to equipment breakdown, maintenance, etc.
e) We do not have a standard procedure to address staff complaints about the workplace*

Financial Perspective

a) We allocate our real estate budget based on a systematic assessment of needs
b) We do not monitor our maintenance costs*
c) We regularly keep track of our energy costs
d) Real estate has consistently contributed to the cash flow of the firm

Operational Perspective

a) We regularly measure the performance of our service providers whether in-house or outsourced
b) We produce service level agreements for service and supplies
c) We are not able to show what our space utilization is*
d) We have indicators for measuring the cost effectiveness of all services and supplies
e) We do not have up-to-date specifications for our services whether provided in-house or outsourced*

Innovation and Learning Perspective

a) We do not undertake skills audit in order to meet the firm's real estate and facilities needs*
b) We constantly send our real estate staff for skills and knowledge upgrading
c) In our firm, there are many opportunities for 'hall talk' among individuals from different departments
d) We do not conduct benchmarking of our corporate real estate at all*
e) In our firm, there are conscious efforts to encourage new ideas to manage corporate real estate
f) We do not have a budget for innovations in corporate real estate asset management*

(*) Reverse Scoring