



How Can Malaysian Public Universities Make The Most of Their Campus Real Estate? – A Conceptual Framework for Managing Corporate Real Estate

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Abstract: Most university campus buildings have low occupancy rates and high operating and maintenance costs because they are historically designed to fulfil the needs of specific faculties without any utility value. Real estate resources in universities tend to be undermanaged and misunderstood as overhead costs by top-level management. The problems are prevailing within Malaysian public universities. Therefore, it is critical to take a more integrated corporate real estate management (CREM) approach, which is appropriate for public institutions with limited autonomy and strict regulatory oversight. This paper aims to determine key themes of CRE strategies and critical components of CREM alignment for successful implementation within an organisation. A comprehensive literature review was done on CREM at higher education institutions between 1990 and 2021. Then, a summary of several important publications was provided. The discussion of several approaches for coordinating CRE and organisational strategies followed. Because there is still a disconnect between the theoretical framework and the real-world implementations by educational administrators, the gap in Malaysia concerning CREM past research was then discovered. The article concludes by recommending a conceptual framework for CREM implementation in public universities in Malaysia that incorporates CRE strategies, alignment, and portfolio management. In order to enjoy a stream of revenues and support their core business operations, public universities can integrate CREM knowledge while managing their properties and resources. The conceptual framework promotes the overall effectiveness of investment in Malaysian higher education and offers helpful information for public institutions and government organisations involved in education.

Keywords: Corporate real estate management, higher education institution, campus real estate

1. Introduction

There has always been a fascination with how real estate can add value to an organisation's business performance. Corporate real estate (CRE) refers to the lands and buildings owned or leased by a company not mainly in the real estate business (Brueggeman, Fisher, & Porter, 1990). CRE refers to the most efficient use of real estate being part of its operations with the critical distinction that its core business is not real estate. Meanwhile, corporate real estate management (CREM) is the management of an organisation's real estate portfolio by aligning the portfolio and services to the needs of the core business towards maximum added value for the organisation and contributing optimally to the organisation's overall performance (Krumm et al., 2000, p.32). CREM encompasses all property, land, and building classes such as office buildings, retail stores, hotels, manufacturing facilities, distribution facilities, and logistics. It provides a productive setting for businesses to house personnel, manufacture and distribute products, and offer market

services. CREM focuses on connecting real estate to company demands and objectives at all levels of management and taking into account the interests and desires of various shareholders and stakeholders. It's important to note that CREM's content and responsibilities differ from one organisation to the next because each has its approach to achieving its final objectives.

Regardless of the organisation's size, it is rare not to have real estate requirements. Most businesses' profit potential is obvious when matching their real estate demands to their business requirements, whether for revenue or profit growth and capital market facilitator. Understanding CRE strategies and how CREM can aid an organisation's business performance is critical to realising real estate's benefits. However, organisations frequently miss out on the potential to do more than just cut real estate expenditures. While firms may strive to save expenses at all times, the most significant savings are realised when CREM is used to support the organisation's core activities. Many business organisations other than the real estate industry recognised CRE's role in maximising property value and have used CRE knowledge to manage their real estate resources as a strategic financial asset (Langford & Haynes, 2015; Morri et al., 2017; van den Beemt-Tjeerdsma & Veuger, 2016; Van Der Voordt, 2016). CREM's impact on business performance has been demonstrated, mainly in terms of the physical and behavioural environment, financial and human enhancement, functionality, and capital market factors. In higher education institutions, CREM is not a new concept. For an extended period, effective utilisation of university campus buildings has been ignored to a great degree. It has been reported that low utilisation rates and high operating and maintenance expenses contributed to many institutions' worsening financial standing (Rymarzak & Trojanowski, 2015; Rytönen et al., 2015, 2017). According to Manning & Roulac (2001), the demand for university real estate strategy arose in the 1950s/1960s due to various problems, including low utilisation rates and high operating and maintenance costs. In addition, current environmental learning amid COVID-19 requires rapid innovation to support e-learning utilisation.

This article aims to identify themes of CRE strategies and effective CREM aligning for successful implementation within an organisation. This article discusses various CRE strategies and CREM models. However, the study set forth some limitations. The study is limited to higher education institutions, and discussion on existing CREM models seeks to find the gap between the theoretical framework and the practical applications by educational administrators. This study's findings offer a conceptual framework that incorporates themes of CRE strategies and aspects of CREM alignment to match the characteristics of Malaysian public universities. The study is expected to be very valuable to public universities and government education-related organisations in comprehending the concept of corporate real estate management to improve overall business performance and keep up with the competitive worldwide market for higher education.

1.1 Research Methodology

A comprehensive literature search on CREM in higher education institutions was conducted and included dimensions specifically related to this study to address the key aims. The papers were collected from two databases: Mendeley and Science Direct. An advanced keyword search was used to identify documents. The keyword "CORPORATE REAL ESTATE" is combined with either one additional keyword which carries the same meaning: HIGHER EDUCATION, CAMPUS, UNIVERSITY and UNIVERSITIES. **Error! Reference source not found.** shows studies included and excluded at each stage of the selection process based on the PRISMA model (Page et al., 2021).

Table 1 - Searching process method using PRISMA method

Stage	Keyword Search	Mendeley	Science Direct
IDENTIFICATION	"corporate real estate"	1208	178
	"corporate real estate" AND "higher education"	15	28
	"corporate real estate" AND "campus"	19	26
	"corporate real estate" AND "university"	51	149
	"corporate real estate" AND "universities"	17	149
	Total papers selected for 1st scan	102	58
SCREENING	Exclusion 1 (search for duplication and keep peer-reviewed journal articles)		-94
	Total papers selected for 2nd scan		66
	Exclusion 2 (search for CRE strategies, added value and alignment models)		-21
INCLUDED	Total papers selected for final analysis		45

2. Critical Review Of Literature

2.1 CRE Alignment Models

Establishing an effective management control system is vital for organisations of all sizes. CREM research has identified the scope of real estate responsibilities from the literature to maintain a strategic relationship inside the organisation. The traditional role of CRE as a "task-makers" who focuses on managing physical space and handling technical maintenance is the lowest hierarchical order according to Joroff et al. (1993) as cited in van der Voordt (2017). He chronicled the progression of hierarchical order from "task-makers" to "controllers" to "dealmakers" to "intrapreneurs" to "business strategists". Manning & Roulac (2001) divided CREM into five evolutionary eras: "custodial (pre-1970s)", "entrepreneurial (1975–1985)", "administrative (1985–1995)", "managerial (1995–2002)", and "strategic (from 2002 onwards)". The three levels of management define the degree of authority and roles within the organisation. The operations of the organisation are overseen and supervised by a lower-level manager. A middle-level manager, who orders and oversees lower-level managers, generally manages several departments or divisions. They are accountable for achieving the objectives set forth by top-level management, which has the final say within the organisation. The board of directors and chief executives makes up top-level management. Therefore, all businesses must figure out ways to make decisions and evaluate them easier.

Despite CREM's contributions to businesses, effective CREM aligning is still inconsistent. CREM recognition has been hampered by organisational structure, focus, and management changes. Organisations' natures and attributes are likely to differ, resulting in varying reliance on CREM services. CREM may perform successfully in some organisations, but weak relationships with internal consumers make it challenging to place CREM within the organisation. Furthermore, CREM needs to be flexible in providing services but at the same time required to maintain measurable cost-effective solutions. It creates more ambiguity about CREM than a clear definition of its function. As a result, an innovative and robust CREM recognition will refocus and reorganise CREM operations to better adapt to the organisation's demands.

Several models for aligning CRE and organisational strategies have been developed from the literature. CREM was incorporated into most of the proposed frameworks as part of the strategic resources that assist organisations in moving forward. To sustain organisational competitiveness, the developed frameworks blend CREM approaches with strategic management (Heywood & Kenley, 2008; Nourse & Roulac, 1993). It demonstrates how CREM's effectiveness relies on blending real estate value with other organisational activities to achieve an organisation's objective. Peter Krumm (Krumm et al., 2000) proposed a CREM model of organisational and real estate perspective with "general management" and "asset management" viewed as a strategic focus while "facilities management" and "cost control" viewed as operational focus. Ten years later, Den Heijer (2011) keeps the concept by Peter Krumm intact in her studies but adds variables and representatives to include the corporate real estate management context (see Fig. 1). In educational institutions, aligning CRE with the institution entails examining corporate goals and day-to-day learning and teaching activities to decide the best CRE strategy and operational solutions. The linkage between CRE strategies and the institution's strategic plan is essential for a successful CRE implementation in higher education institutions. Den Heijer (2011) suggested that campus managers connect all four stakeholder perspectives in every campus decision. Hence, the job scope for a campus manager includes administrating the physical campus and available resources and adjusting to changing policymakers' goals and demands from students, academic and supporting staff.

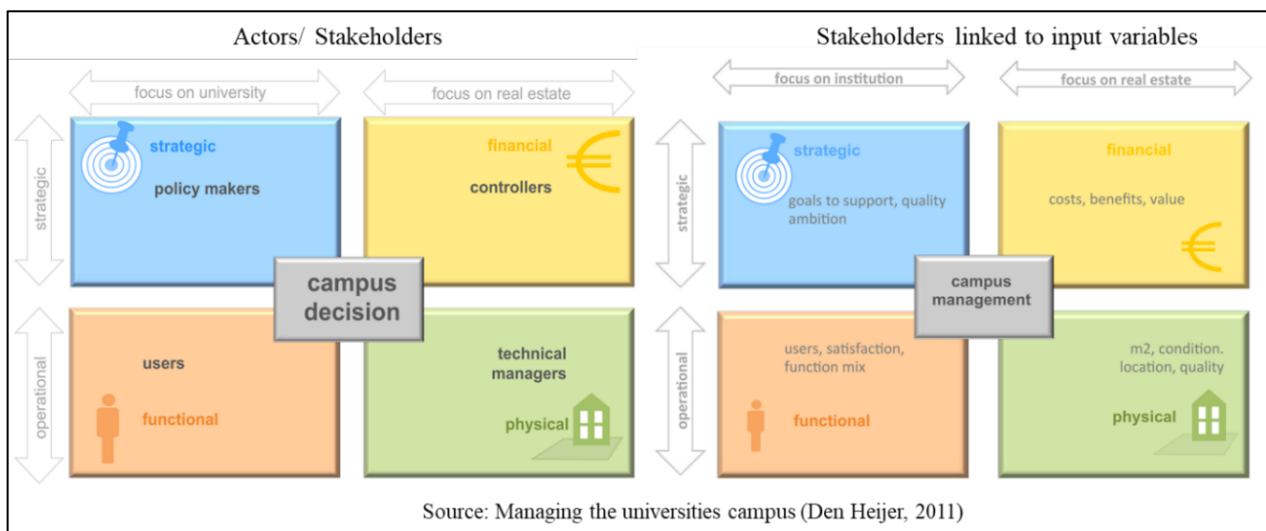


Fig. 1 - Campus decision-making in higher education

Subsequently, Beckers et al. (2015) further indicated two powerful strategies for CRE alignment from the perspective of six management approaches (see **Error! Reference source not found.**). The first is a “control-oriented strategy (A)” comparable to a top-down approach. All support service decisions were centralised tasks emphasising reporting and control under the top-down management model. In a centralised environment, the decisions made by lower-level management are limited. The advantages of centralised organisations are the clarity in decision-making, quicker implementation of policies and projects, and control over the organisation's strategic direction. Hence autonomy in handling real estate decisions and preventing business units' redundancy and mishandling of real estate. The “involvement-oriented strategy (B)” is comparable to the bottom-up approach in which stakeholders are increasingly involved in decision-making. In short, aligning CRE strategies to the core business is highly determined by the type of management approach in an organisation. Although CRE alignment models have been tested at many institutions and organisations, Beckers (2016) believed a gap between the strategies described in strategic reports and the implementation of those strategies in CRE practice.

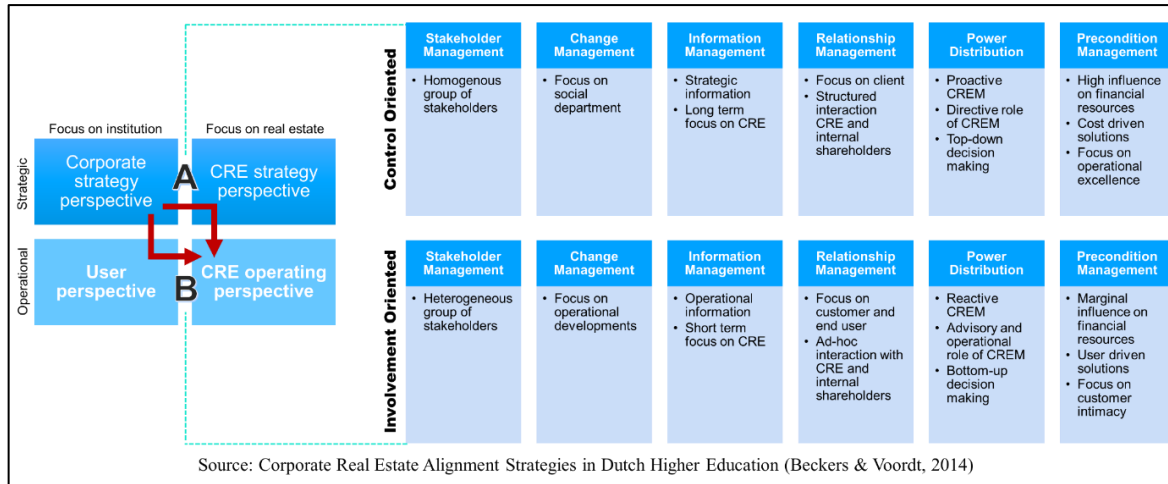


Fig. 2 - Perspective of management approaches towards CRE alignment

2.2 Themes of CRE Strategies

As early as the 1990s, it has been highlighted that there is a need for CREM to take charge when dealing with changes over time to seek for best alternative uses of their real estate (Brueggeman et al., 1990, p.42). Low utilisation and high vacancy rates in academic offices, laboratories, and classrooms led to high operating costs for underutilised space and affected university financial sustainability. Apart from that, classifying campus buildings is also necessary to identify mandatory properties to perform the primary function of teaching and research, commercial properties to generate revenues, and preserve properties for future developments and goals. It is essential to regularly review each real estate resource's suitability to maximise the university's properties' economic value. Assessing existing properties concerning the university's demand, plan, and current market value should be able to conclude the best economical deal. If the current market value is higher than its weight in use, the university shall change the building's function or sell it for additional income.

The added value of CREM ideas grew over time, culminating in a shift in corporate real estate's strategic position. Value can be added by aligning goals and objectives with the business and undertaking portfolio analytics, including size, cost, space, retention, and productivity (Langford & Haynes, 2015). **Error! Reference source not found.** summarises multiple definitions of real estate strategies' added value. (van der Voordt & Jensen, 2021).

Table 2 - Different definitions of added value

Types of Added Value	Definitions of Added Value
Use value	<ul style="list-style-type: none"> quality concerning the needs and preferences of the end-users
Customer value	<ul style="list-style-type: none"> the trade-off between benefits and costs for the customers or consumers
Economic, financial or exchange value	<ul style="list-style-type: none"> the economic trade-off between costs and benefits
Social value	<ul style="list-style-type: none"> connecting people by supporting social interaction, identity and civic pride
Environmental value	<ul style="list-style-type: none"> environmental impact of FM, Green FM
Relationship value	<ul style="list-style-type: none"> for example, getting high-quality services or experiencing a special treatment

Source: van der Voordt & Jensen (2021)

Several themes of CRE strategies have emerged in the CRE literature on how CRE affects corporate performance. This article critically reviewed seven publications scoping on themes of CRE strategies (see Table 3). The selected publications are generally conceptualised with the nine management strategies defined by Tregoe and Zimmerman (1980), namely “(1)products offered”; “(2)market needs”; “(3)technology”; “(4)production capacity”; “(5)method of sale”; “(6)method of distribution”; “(7)natural resource”; “(8)size/growth”; and “(9)return/profit”. All nine areas are significant in driving the organisation's decision-making. Still, Appel-Meulenbroek et al. (2010) suggested that “method of distributions” and “natural resources” be replaced with “increase clients satisfaction”. Other publications from 1990 to 2021 seem to fit into some of the themes described under the seven chosen key publications for CRE strategies.

The first publication is Nourse & Roulac (1993), who analysed the linkages in a business environment and suggested eight strategic driving forces. They have set an excellent standard, and other scholars have embraced their work. Around that same time, de Jonge (1996) in (Krumm & De Vries, 2003) introduced seven elements of added values of real estate strategies. Ten years later, (Lindholm et al., 2006) combined both lists and came out with a model to illustrate how real estate decisions can support core business objectives. Meanwhile, Acoba & Foster (2003) compiled their list, which suffers from the lack of a productivity strategy. The list's flaw is that it bundles potential real estate options for a specific company goal, making it less elaborate. The same can be said about the Osgood (2004) study, despite its widely regarded methods because they best suit the strategic thinking map. The final two publications are selected to represent the contextual study of higher education institutions. Beckers (2016) suggested ten CRE strategies for aligning campus buildings to the evolving developments in higher education. The final publication is (Curvelo Curvelo Magdaniel et al., 2019) which studies the importance of campus management information (CMI) in driving the strategies of universities.

Table 3 - A collective CRE strategies from past studies

Authors	Corporate Strategies	CRE Strategies
Nourse & Roulac, 1993	<ul style="list-style-type: none"> • Products offered • Market needs • Technology • Production capacity • Method of sale • Method of distribution • Natural resource • Size/Growth • Return/Profit 	<ul style="list-style-type: none"> • Occupancy cost minimisation • Flexibility • Promote human resources objectives • Promote marketing message • Promote sales and selling process • Facilitate and control production, operations, service delivery • Facilitate the managerial process and knowledge work • Capture the real estate value creation of business
de Jonge (1996) in Krumm & De Vries, 2003	<ul style="list-style-type: none"> • Revenue growth • Costs reduction 	<ul style="list-style-type: none"> • Increasing productivity • Cost reduction • Risk control • Increase of value • Increase of flexibility • Changing the culture • PR and marketing
Acoba & Foster, 2002	<ul style="list-style-type: none"> • People strategies • Processes • Enabling system strategies 	<ul style="list-style-type: none"> • Real estate acquisition • Space alteration • Organisational structure • Sourcing strategies • CRM • Employee development • Workplace standard • Fee for services/ chargeback system • Info management and IT
Osgood, 2004	<ul style="list-style-type: none"> • Mission and vision • Customers and markets • Product and services • Distinctive competencies • Values and culture 	<ul style="list-style-type: none"> • Quality of space • Cost of space • Quantity of space • Location of space • Technology of space • Practices for providing space
Lindholm, 2006	<ul style="list-style-type: none"> • Revenue growth • Profitability growth 	<ul style="list-style-type: none"> • Increase the value of assets • Reduce cost • Promote marketing and sales • Increase innovations • Increase employee satisfaction • Increase productivity • Increase flexibility
Beckers, 2016		<ul style="list-style-type: none"> • Increase user satisfaction • Support innovation • Stimulate collaboration • Support change

Authors	Corporate Strategies	CRE Strategies
		<ul style="list-style-type: none"> • Support corporate image • Support culture • Support environmental responsibility
Curvelo Curvelo Magdaniel et al., 2019	<ul style="list-style-type: none"> • Occupancy cost minimisation 	<ul style="list-style-type: none"> • Support user activities • Control real estate costs • Control physical risk
		<ul style="list-style-type: none"> • improving quality of place • supporting image • supporting culture • stimulating innovation • stimulating collaboration (competitive advantage) • decreasing costs • increasing the real estate value
		<ul style="list-style-type: none"> • controlling risks (financial goals – profitability) • reducing footprint (sustainable development) • supporting users' activities • increasing users satisfaction • increasing flexibility (productivity)

Among these seven publications, the Lindholm model stands out and brings a selection of real estate strategies that fit under different circumstances. Lindholm's model consists more of what are considered soft facts or the non-financial aspects of CRE performance which is more suitable for a higher education institution. Therefore, this study uses the Lindholm model as the baseline to construct the conceptual framework. Collective themes of CRE strategies that evolved from the literature are then regrouped in Table 1. The new collective themes of CRE strategies can assess the added value of real estate decisions for university campuses.

Table 1 - Possible CRE strategies for Malaysian Public Universities

Corporate Strategies	Themes of CRE Strategies
Revenue Growth	<ul style="list-style-type: none"> • Control real estate costs • Generate income from existing properties • Increase property value
Profitability Growth)	<ul style="list-style-type: none"> • Improve campus user satisfaction and well-being • Support conducive digital learning environment • Promote corporate image and marketing • Support environmental sustainability
Revenue Growth/ Profitability Growth	<ul style="list-style-type: none"> • Empower space and building flexibility • Stimulate innovation and collaboration

2.3 A Conceptual Framework for Malaysian Public Universities

According to Arkesteijn et al. (2015), no alignment model exists to design a real estate portfolio and measure the overall business performance. The review also concludes that we do not have a well-composed CREM application in public institutions. A shortage of comparative research synthesising CREM adoption in public institutions with limited autonomy causes implementation in Malaysia to be questionable. The proposed conceptual framework (see **Error! Reference source not found.**) is a mixture of two key focuses: themes of CRE strategies and components of CRE alignments in higher education institutions. A general pattern was observed after reviewing extensive past research on CRE strategies and CRE alignment. The development of a conceptual framework adopts a strategic CREM approach concerning the long-term sustainability of public universities. Therefore, the study's outcome is helpful for public universities and Government education-related agencies because it supports the collective efficiency of investment in Malaysian higher education.

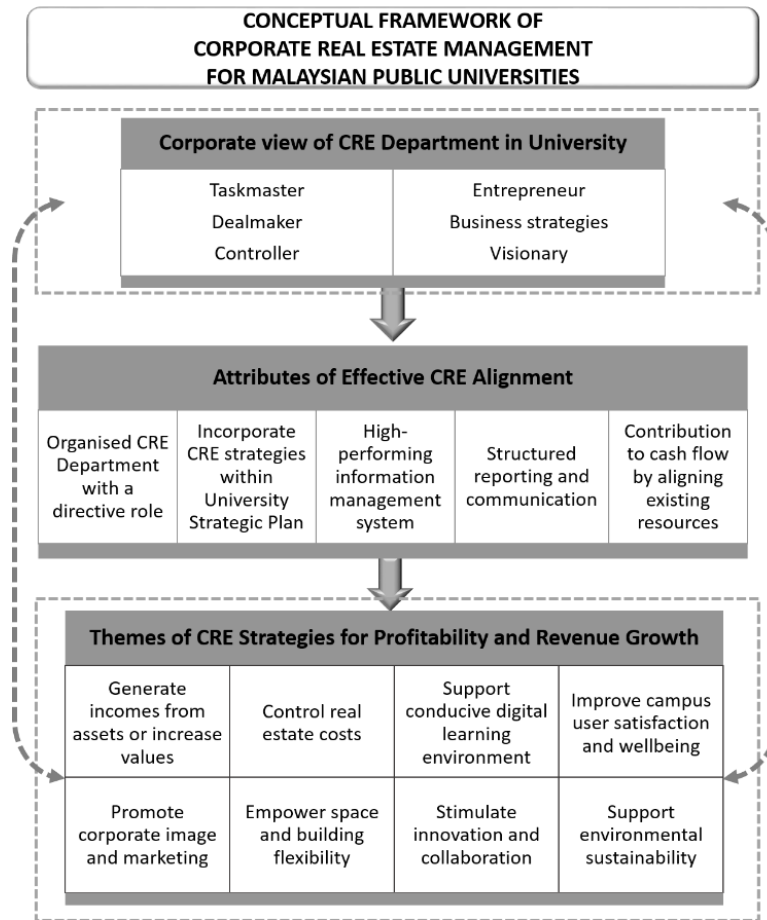


Fig. 3 - Conceptual framework of CREM for Malaysian Public Universities

The first block, “Corporate View of CRE Department” determines the extent of the CREM department’s impact if one exists. Ideally, there are two types of corporate views with their characteristics depending on the CREM department’s position within the macro-organisational structure. As with previous studies, CREM positioning in an organisation has qualities. The “entrepreneur/business strategies/visionary” group usually play a proactive role in CRE and has a directive role in real estate decision-making. This CRE unit strongly influences financial resources and focuses on long-term CRE and operational excellence. Meanwhile, the “task maker/dealmaker/controller” is referred to as a department with a reactive role in CRE. Generally, this CRE unit plays an advisory role in real estate matters. As the unit deals more on the operational level, it also focuses on end-user and customer well-being. Therefore, their CRE strategies mainly emphasise user-driven solutions and customer intimacy. Consequently, separate business units may make their own CRE decisions because the CRE unit lacks a distinct position, causing its operations to be dispersed throughout the organisation.

The strategic approach to campus management emphasises a holistic view of the university campus, which supports the aims of numerous stakeholders participating in and affected by campus decision-making (Curvelo Curvelo Magdaniel et al., 2019). The connection between CRE and overall business strategy has some significant flaws that must be addressed. The parts of a real estate strategy are sometimes given less consideration than they should be. The issue began with senior management’s lack of awareness of the CREM function’s role inside the company (Osgood, 2004). Due to the misconception that they are not in the real estate sector, CREM tends to be misunderstood and fails to be recognised as a valuable resource for organisations. In addition, real estate professionals are overly concerned with facility management’s technical aspects and struggle to convert real estate strategies into revenues. As a result, CREM faces difficulties communicating ideas and demonstrating value to organisations, as well as defining its place inside them. In the end, unable to develop strong relationships between CREM and organisations’ success. Therefore, the first block emphasises the corporate view of CRE to the top management level and their roles in organisational structure. The real challenge for CREM is to strengthen its relationships in order to have a better grasp of its role as an essential corporate resource. In addition, change management is critical in bringing an organisation from unawareness to excellence in making real estate management a vital business tool.

The second block, “Attributes of Effective CRE Alignment”, illustrates critical elements in connecting CRE strategies with organisational strategies that must be focused on to achieve successful implementation in Malaysian public universities. This block also shapes the classification of the two categories of corporate view in the first block.

Understanding the importance of each element is crucial to improving business performance, and an investigation of each element in multiple public institutions will further validate the component. The review concludes with four critical elements of successful CRE implementation, namely:

- (i) Organised CRE department with a directive role
- (ii) Incorporate CRE strategies within University Strategic Plan
- (iii) High-performing information management system
- (iv) Structured reporting and communication
- (v) Contribution to cash flow by aligning existing resources

Although no alignment model exists to design a real estate portfolio and directly measure the overall business performance (Arkesteijn et al., 2015), some aspects can influence business performance. McDonagh & Frampton (2002) suggested six variables that may have a strong indication for improving business performance: “existence of a strategic plan for CRE”, “presence of a separate CRE unit”, “high-performing CREM information system”, “contribution to cash flow from CRE assets”, “CRE considered essential to the organisation” and “accounting information is available on individual properties”. Similarly, another study by Heywood & Arkesteijn (2018) also proposed 12 components of the CREM alignment model, which were later grouped into four categories: “understanding corporate strategy”, “understanding real estate performance”, “making real estate strategy”, and “implementing real estate strategy”. In addition, the real challenge for CRE managers in developing countries is to shift from traditional task-oriented real estate management to more proactive and strategic management by incorporating added value parameters that can improve stakeholders' needs and performance (Amos & Boakye-Agyeman, 2022).

The final block offer guidelines for campus managers to conduct the course of action from strategic to operational decisions in campus management. A collective of CRE strategies from past studies grouped into eight themes suitable for Malaysian public universities.

- (i) Generate incomes from assets or increase values
- (ii) Control real estate costs
- (iii) Support conducive digital learning environment
- (iv) Improve campus user satisfaction and well-being
- (v) Promote corporate image and marketing
- (vi) Empower space and building flexibility
- (vii) Stimulate innovation and collaboration
- (viii) Support environmental sustainability

The higher education landscape has undergone significant transformations. New concepts, including student-centred, research-based, project-based, and outcome-based learning and branding, have been included in the basic tactics used in higher education institutions (Pandita & Kiran, 2020). It shifted from a physical to an online environment, requiring all actors to adopt new technologies. A recent study by Horváth et al. (2022) suggests that the physical workplace strongly bolsters the personal experience and effectiveness of higher education by contributing to its dynamics. Therefore, the traditional corporate real estate model of maximising profit is incompatible with the current university real estate strategy, which aims to maximise the value of university assets by improving the student experience while producing revenue to boost well-being. Implementing CREM will help universities identify further opportunities to improve cash management, such as optimising networking capital across accounts receivable, accounts payable and inventory to shorten the cash-conversion cycle.

According to the survey conducted by CoreNet Global in 2010 and 2016, the top three CRE strategies are consistent, i.e. “cost reduction”, “improving employee productivity and efficiency”, and “enhancing flexibility” (van der Voordt & Jensen, 2018). Another study in the healthcare sector also ranked the top three CRE strategies as “cost reduction”, “productivity”, and “satisfaction” (Van Der Voordt, 2016). In the higher education sector, several studies have indicated the relevance of CRE in accommodating higher education changes (Baxter et al., 2017; Beckers, 2016; Rymarzak & Trojanowski, 2015; Rytönen et al., 2017). However, there is still a gap between the theoretical framework and the practical applications by educational administrators.

A learning space on university campuses is "a physical or virtual context in which learning and teaching occur" (Sankari et al., 2018, p. 120). In the post-COVID era, the physical classroom and educational workplace could once again be a supportive and gratifying aspect. The value and effectiveness of face-to-face instruction should not be undervalued, even though online teaching solutions will support future education. Higher education institutions face a constant challenge in making better use of space, as they are frequently very hierarchical and slow-moving organisations with a vast and ageing real estate portfolio that acts as a space barrier (Valks et al., 2018). The condition of the building (i.e. building obsolescence), the number of building users, and the changing environmental backdrop all influence the gaps between supply and demand for faculty building space (Riratanaphong, 2022). Langford & Haynes (2015) highlights the various methods for CRE practitioners to bring value to businesses not limited to physical space but also through the behavioural environment, such as enhancing productivity, lowering CRE overheads, and lowering attrition rates. Hence, identifying the best solutions for designing space use on university campuses is essential.

McCann et al. (2020) study reveals that universities prioritise student experience and well-being with modern purpose-built student accommodation as a critical element to attract students, thereby driving income and revenue growth strategies. Outsourcing student housing frees up scarce funds for more direct educational activities while lowering expenses and allowing modern purpose-built student housing to be used as a marketing/recruitment tool and a brand enhancer. It also worked as a risk-mitigation tool, allowing universities to react to changing student needs through the careful use of nomination agreements, in which both parties must strike a balance between assurance and flexibility. Therefore, it has been reported that the most common real estate strategy UK universities use is to outsource student housing to save money while also using modern purpose-built student housing as a marketing tool and a brand enhancer (McCann et al., 2020). To sum up, CRE seeks to align asset objectives with organisational objectives to ensure efficient and effective use of assets in the medium/long term. The added value attributes from arrays of CRE strategies are helpful for campus managers to explain the alignment between real estate and organisational strategy to the top management level. The recognition of the CRE Department and its roles in real estate decision-making significantly impact the effectiveness of CRE strategies in the universities. Usually, the “entrepreneur/business strategies/visionary” will focus on operational excellence, and the “task maker/dealmaker/controller” will focus on the customer and end-user.

3. Conclusion and Future Direction

CREM is an excellent deliberate method for a public university to improve its performance. However, this review concludes that we do not have a well-composed CREM application in public institutions. Furthermore, the CRE strategies adopted by Malaysia's higher education sector are under-researched. This article offered a conceptual framework that will be helpful to all stakeholders, including government and regulators, as and when higher education encounters significant challenges. The conceptual framework development is based on collective evidence from worldwide universities. The conceptual framework integrates themes of CRE strategies and attributes of CREM alignment to fit Malaysian public universities' characteristics. The conceptual framework helps guide public universities and Government education-related agencies because it supports the collective efficiency of investment in Malaysian higher education.

From a CRE perspective, the management of campus real estate is about making real estate resources for all rather than for particular purposes, which means utility value is of the utmost importance. Public universities can use their assets to create and sustain a competitive advantage. Therefore, it will be easier for public universities to prepare a revised business plan for strategic investments and business opportunities based on the conceptual framework. Furthermore, successful CREM implementation in Malaysian public universities can tackle many issues whilst contributing to revenue growth and productivity. Future research and data synthesis from this study will be essential in identifying difficulties that act as roadblocks and opportunities that function as facilitators.

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