

# The Impact of Property Management Services on Tenants' Satisfaction with Industrial Buildings

Arumugam Seetharaman<sup>1</sup>, A. S. Saravanan<sup>2</sup>, Nitin Patwa<sup>3</sup>, Jiann Ming Bey<sup>4</sup>

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## Abstract

In the current competitive marketplace of real estate business, tenant satisfaction measurement is one of the important indicators to monitor competitiveness in industrial property development. It has become an industry standard to measure tenant satisfaction, commonly called customer satisfaction. Customer satisfaction has become the widely used metric to manage customer loyalty (Keiningham, Gupta, Aksoy, & Buoye, 2014). The aim of this research is to determine the impact of property management services on tenants' satisfaction with the three identified variables i.e. facility management, perceived quality and lease management. Structural equation modeling (SEM) is applied to build constructs and test the hypotheses with the collected survey samples. Of the three variables, facility management is the most influential factor that leads to tenant satisfaction with industrial buildings. Next, perceived quality is another important factor that contributes to tenants' pleasure. Compared with these two, lease management fares worse, having the least extensive effect on tenant satisfaction, and could be disregarded. The ultimate impact of tenant satisfaction is about tenant retention and recommendation. The overall findings of this research will potentially help real estate developers to develop a better property management system, leasing program and tenant retention strategy.

**Keywords:** Tenant, Landlord, Customer Satisfaction, Industrial Building, Property Management, Southeast Asia.

**JEL Classification Code:** D02, D10, L80, L85, O18.

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## 1. Introduction

Over the years, tenants have become more demanding in their perceived expectation of leased space. The importance of customer relations to businesses' success is agreed by corporate management, marketing theorists and practitioners (Kennedy & Schneider, 2000). The value contributions of properties can be optimized when property management professionals take responsibility for continuously providing

appropriate facility solutions to business challenges (Then, 2005). Property management also involves tracking information on tenant profiles, occupancy, operating and capital expenses, and revenues (Kaganova & Nayyar-Stone, 2000). Successful property management depends on treating tenants as valuable customers. Determining the preferences of customers allows companies to provide customized products and superior services (Kennedy & Schneider, 2000). We need to capture the essence of customer satisfaction in greater depth to understand the long-term development of the business relationship (Tikkanen & Alajoutsjarvi, 2002).

The question is what the important elements of property management services that tenants are looking for to be satisfied are? Wants and needs theory tells us that landlords should ask tenants the right questions to determine which services they need and can afford (Otto, 1998). Many landlords carry out customer satisfaction surveys to understand the sentiments of their tenants. Tenant surveys have proven to be a valuable tool for tenant retention programs (Birkeland & Beltini, 1995). Landlords should identify the key services valued by the tenants and use the

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1 First Author. Dean of Academic Affairs, S P Jain School of Global Management Singapore. E-mail: seetha.raman@spjain.org

2 Taylor's University Lakeside Campus, School of Communication, Business and Management International College, Taylor's University, Malaysia.

3 Corresponding Author. Assistant Professor. Director of Simulations. S P Jain School of Global Management Dubai. [Postal Address: Block 5, Dubai International Academic City, P O Box 502345, Dubai, United Arab Emirates] E-mail: nitin.patwa@spjain.org

4 Post Graduate Scholar. S P Jain School of Global Management Singapore.

benchmarking results to set goals for improvement opportunities (Muhleback, 1998). Many research studies have been conducted on customer satisfaction-related topics, which mainly focus on one single sector, either facility management or service quality. There is also customer satisfaction research papers related to the consumer products industry. However, the existing research papers have provided limited information about the model of property management services that could lead to tenant satisfaction and renewal.

This research particularly involves the industrial tenants in the manufacturing industry of high-technology products, test laboratories, research and development, data centers, central distribution, e-business, engineering, construction, etc. The empirical study and research model illustrate the essential concepts of tenant satisfaction. The model consolidates the property management services into one model rather than single piecemeal sectors. We also included the latest environmental and sustainability elements that many research papers have discussed separately as individual topics. The research aims to explore the insights of tenants and tries to understand the importance of the property management services that will affect customer satisfaction. The study will be useful for landlords in setting tenant expectations, identifying the key drivers of satisfaction, prioritizing improvement actions and creating a customer-centric culture. Three sectors are identified in this research: 1) Facility Management, 2) Lease management and 3) Perceived quality.

## 2. Research Background

A comprehensive survey of the literature was carried out to review and analyze the relevant completed research in detail. These research papers are related to property management, facility management, customer satisfaction, lease management, service marketing, service quality and research modeling from scholarly journals and other databases. The theoretical development of tenant satisfaction has been conducted under the study model of customer satisfaction and service quality. This literature review exercise examines the major determinants and the impact on the overall property management industry from the holistic perspective of all the key dimensions. It also studies the degree of causality of the variables and the constructs that have not been examined in the existing research.

Some of the preliminary results of the literature review findings are compiled in Table 1. The literature review identifies the dependent variable as 'the impact of property management services on tenant satisfaction with industry buildings'. A few independent variables identified as:

1) facility management services through the quality of the maintenance and condition of the building, the amenities provided in the surrounding areas of the building and the sustainable elements of the building itself.

2) lease management services by providing green leases, rent resolutions, relocation assistance and renewal packages despite past unpleasant experiences.

3) perceived quality in the form of the overall service quality from the landlord, communication with the tenants, capability and knowledge of the landlord's representative and empowerment of the landlord's representative (see Table 1).

**Table 1.** Comparison of empirical studies on the impact of property management services on tenant satisfaction

Details of literature	Inference on the impact of property management services on tenant satisfaction	Importance of the parameters to maintaining tenant satisfaction	Detailed discussion of each parameter	Expectations from tenants of the property management services
Implementing quality property management – the case of Singapore (Chin & Lam, 1999)	Only examined the different types of quality concepts and evaluated the awareness and attitudes towards quality issues	Service quality, relevant knowledge and skills; systems must ensure effective control and smooth operations; environment must be conducive; effective communications	Discussed how to improve via training and some of the quality tools	Provided examples of some of the successful firms concerning service quality as benchmarking
Quality services success: property management development to empowerment (Yap, 2000)	Little attention paid to tenant satisfaction but highlighted that the empowerment could enhance the commitment to service quality improvement	Empowerment, continuous improvement, customer value and customer focus	Strategy of empowerment, the new role, control and training to achieve empowerment	Not analysed

Details of literature	Inference on the impact of property management services on tenant satisfaction	Importance of the parameters to maintaining tenant satisfaction	Detailed discussion of each parameter	Expectations from tenants of the property management services
A proactive property management model that integrates real estate provision and facilities services management (Then, 2005)	Focused on the internal practice of property asset management in an organization for management to allocate resources to the various functional divisions	Strategic facilities planning, strategic asset management, asset maintenance management, facility service management	The research focused on how a landlord can lead to corporate success.	Not analysed
Managing 'keep' factors of office tenants to raise satisfaction and loyalty (Appel-Meulenbroek, 2006)	Study on the effect of office (location and building) 'keep', push and pull factors on satisfaction and loyalty of tenants	Appearance, health and safety, quality of life, extension possibilities, quality demand, flexibility, communication, logistics, efficiency, maintenance, rental contract	Each of the parameters was studied with the degree of correlation with the keep, push and pull factors.	Push/pull factors all seem to be building factors; important keep factors seem to belong both to the building and to the surroundings.
Customer relationship quality in landlord-tenant relationship (Rasila, 2009)	The landlords would want to differentiate themselves from the competitors; major impact on how the entire company is perceived.	Commitment, ethical profile, sharing of information, communication, conflict, the balance of power and personal attributes	The paper introduced a framework of relationship quality attributes and applied these to the case companies.	The framework of 11 relationship quality attributes proved to be problematic in practice. Some of the attributes overlap with each other.
Brand trust: elements and influences on industrial landlord/ tenant relationships (Sullivan, 2012)	The physical attributes of the property are more influential on tenant retentions. Brand trust has some influences on the quality of the relationship, which is partially determined by the level of satisfaction. However, they are not as important as the tangible aspects.	Accessibility, benevolence, communication, competence, conflict resolution techniques, cooperation, coordination, credibility, equality, flexibility, professionalism	Important parameters were assessed through interviews.	Only mentioned the location, building and lease term in brief for renewal but not in detail.
This research paper	Focuses on the detailed study of the core variables. Perceived quality has a significant impact on facility management, lease management and overall satisfaction, which are the new findings.	Tenants have demonstrated a strong inclination for two out of three core variables, which the facility management and the perceived quality of the property management services on tenant satisfaction.	Extensive and detailed discussion of each of the three core variables that would influence property management services' effect on tenant satisfaction.	Three existing core factors were identified and the inference is drawn using an extensive quantitative survey using structural equation modeling (SEM).

### 3. Research Methodology

After identifying the important variables, the empirical study was tested using a survey for data collection for the research model. The quantitative and qualitative method employed is discussed in the section on data collection. Based on the results of the literature review, the initial survey questionnaire was crafted with each of the identified sub-variables. The first pilot test was administered to 20 people from different industries, including company directors, human resource managers, marketing experts, marketing research consultant, tenants and landlords. After receiving

constructive feedback from the pretest, the survey questionnaire was then redesigned with an introduction and more footnotes to explain the intent of the survey and questions. One important question was featured and added at the beginning of the survey to filter out the non-targeted population in order to ensure the quality of the survey results. Several items were changed and sentences were rephrased to simplify the understanding.

The finalized survey questionnaire was then disseminated to 30 people as the second pilot test. The purpose of the second pretest was to use the collected primary data to check the research model via SmartPLS software, which

uses the partial least square technique (PLS). The final survey was conducted after the pretest results indicated the relations of each construct. PLS is discussed in the section on data analysis.

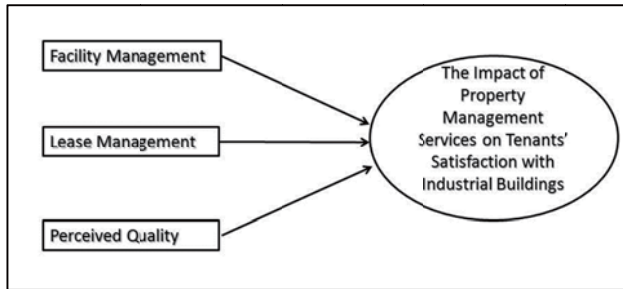


Figure 1. Research framework

## 4. Research Framework and Hypotheses

The research framework was built for this research as shown in Figure 1. The underlying approach to a successful property management service must be tenant-centric; tenant satisfaction is one of the most imperative gauges to measure the level of the service being delivered from the tenants' perspective (Lam, 2007). Customer satisfaction research began in the early 1970s. Much of the research focused more on sales and marketing, fast manufacturing consumer goods (FMCGs), service quality in hospitality, etc.; comprehensive research on property management in the real estate industry is scarce. In consumer research, customer satisfaction has always been defined as 'the degree to which a consumer's pre-purchase expectations are fulfilled or surpassed by the product' (Tikkanen & Alajoutsjarvi, 2002).

The customer satisfaction philosophy then slowly evolved into the service industry of property management. A study found that satisfaction and price are almost always inversely related (Keiningham et al., 2014). Therefore, in this research, we did not impose the price or rent as one of the sub-variables. The rent depends on the market condition and the property location. Olayonwa, Iman and Ismail (2012) explained that the rate of office rent is a function of office quality; a higher class of office quality should have a premium compared with the average market rent for a lower-quality class. Business efficiency and accountability to tenants are the important drivers to foster the continuity of the tenancies and attract new tenants. The impact of satisfying the tenants would be low tenant turnover, full occupancy and few complaints (Gubbay, 1999). Building owners have to be diligent in maintaining full occupancy for the value growth by competitive advantage (Sabolovic, 2008).

The practice of property management has gradually matured in recent years with an emphasis on processes and management. The shifts have recently been towards resource integration to provide a supportive working environment in which the issues of people, process and property are elements of the same problem, seeking a common platform for resolution (Then, 2005). We also translated and grouped these issues into the industry terms of facility management, lease management and perceived quality.

This paper contends that the property management model encompasses the integration of good facility management, lease management and service quality as the custodian to maintain the tenant satisfaction and the impact. The focus of the research is on providing a business perspective on the role of the landlord in facilitating the fulfillment of the business plan.

### 4.1. Facility Management

A major role of facility management covers the reliability, usability and safety of the property managed. Lai (2012) articulated that the main aspects of facility management services include general management (attitude of staff, ability to handle emergency situations), security (initiative of providing assistance, security control and patrol), cleaning (cleanliness of areas like lobbies, washrooms and staircases), repair and maintenance (electrical supply system, flushing water system, elevator system, air-conditioning system) and landscape and leisure (aesthetics and tidiness of plants, environmental protection measures and leisure amenities).

On the other hand, another interpretation as building maintenance management classifies the maintenance aspects (with the performance measurement) into i) functional (management service delivery – reliability, responsiveness, etc.), ii) Technical (maintenance services – cleaning, landscaping, lighting, air-conditioning, lifts, sanitation, washing facilities, etc.) and iii) image (building image – internal and external) (Myeda, Kamaruzzaman, & Pitt, 2011). For example, one of the studies (Lam, 2007) pointed out that nearly a quarter of the respondents were dissatisfied with the temperature in the office and they were disappointed with the lack of control of the temperature in the office. Another study (Oladapo, 2006) highlighted that tenants had a high level of maintenance awareness and responsibility but their satisfaction with the condition of maintenance was just average.

Building owners nowadays strive for cost leadership to make the buy decision by outsourcing the facility management. However, the outsourcing relationships with the service providers face classic principal-agent problems;

the agency theory claims that agents always act opportunistically (Freybote & Gibler, 2011). The trend towards outsourcing enacted duty to the landlord to review the policy, which will ultimately affect the service receivers, who are the tenants (Then, 2005). The way in which facility management is delivered will affect the tenants' business and their willingness to pay and to stay. Customer perceived quality means success for most businesses and good quality increases satisfaction (Rasila & Gersberg, 2007). Otto (1998) suggested that a building owner may include amenities like a child care centre, fitness centre, eateries and joint conference rooms as well as services like a valet service and a free shuttle bus designed to help tenants save money and to impress them. However, the study by Gower, Harris and Cooper, (1996) found that some amenities or facilities for industrial property buildings within science parks in the UK are quite distinctly extraneous, as reported by the tenants.

Since energy consumption is a national concern for most countries, understanding facility energy consumption becomes a critical component from a life cycle decision-making perspective. Facility managers are encouraged to gain a better understanding of the factors affecting energy consumption in facilities, which will lead them to develop energy initiatives for a better overall asset management strategy (Griffina, Thal, & Leach, 2014). The industry strongly believes that green and sustainable building implementation is environment-friendly and can improve the social values to the consumers (Tam, Hao, & Zeng, 2012). There is also a claim that the construction of green buildings is one of the critical efforts to reduce the environmental impacts of the built environment (Cidell, 2009). Although green building features are understood to be more expensive than those of conventional buildings, the empirical results show that green buildings with a green certificate, improved yield and net rental income result in an average increase in the property value of 9.0% (Vimpari & Junnila, 2014). Landlords are also claimed to be the essential contributors to governmental environmental policies by improving the energy performance of their property portfolios (Smid & Nieboer, 2008). A recent signal indicates that both building tenants and landlords are starting to realize the potential of facility management, which can add value to the environmental management (Nousiainen & Junnila, 2008).

In general, a service level below expectation provided by the building facility management is the reason behind dissatisfaction and forces tenants to move out of the building to a better place (Tsang, 2009). From the above discussion, the hypothesis is as follows:

**Hypothesis 1:** Facility management resulting from good service quality (like cleaning, maintenance, landscape, etc.), sustainable environment management with green building or office provision and the surrounding amenities will have a positive impact on tenant satisfaction in industrial buildings.

## 4.2. Lease Management

Lease management usually refers to the administration work of handling rents, legal requirements, lease renewal options, information management, reporting and other lease-related matters. In the current competitive market, tenants are seeking more flexible occupational terms in the lease (Ashuria, 2010). Green leasing is the latest trend in the market and is highly encouraged nowadays. A green lease is interpreted as a lease agreement between landlord and tenant that imposes onuses on both agreed parties to minimize the adverse environmental impact in a few areas like energy, water and waste management. A sustainable and friendly environment is able to create mutual benefits for the business, people and overall environment (Armitage, Murugan, & Kato, 2011).

Whitson (2006) believed that few people ever negotiate a green lease but a green lease inspires landlords to compete for tenants by designing, building and managing green buildings without compromising the service and comfort level while optimizing the initial investment. There are perceived benefits in that a green building is able to improve public relations, revenue and staff retention, but research (Sayce, Sundlberg, Parnell, & Cowling, 2009) has shown that there is no strong support among tenants for green leases. Besides that, there are findings suggesting that a green workplace only offers psychological benefits to occupiers, who feel proud, rather than physical improvements to health and productivity (Kato, Too, & Rask, 2009).

While the flexibility and choice in leasing have improved in recent years, small business tenants' awareness of leasing issues remains weak. The major difference between small business leases and those for medium/large-sized companies is that small business tenants have shorter leases, fewer rent reviews and earlier terminations (Crosby, Hughesa, & Murdoch, 2006). Hence, offering flexibility in rent resolutions, assistance in logistics and renewal packages is crucial for tenants. Ashuria (2010) highlighted that there is always uncertainty in the corporate tenant business, like mergers, acquisitions, downsizing, expansion, restructuring and decentralizing. Constant change is expected in the business world and a thoughtful landlord should provide flexibility in the lease terms to help their tenants manage change. Repackaging the renewal contract,



restructuring the rents and meeting the logistic needs of the tenants at the critical moment are believed to be the kindest gestures to the tenants.

It is believed that the economic crisis will have a great impact on workspace planning (Ashuria, 2010). It was suggested by Muhlebach (2009) that during crisis landlords should try to work with tenants who cannot pay the rent before replacing them, as it will be hard to fill the occupancy during an economic downturn. A few non-direct monetary solutions are proposed to reduce tenants' square footage or to relocate to a smaller space or other buildings (Muhlebach, 2009). Tenants are willing to pay rental premiums with shorter tenancy because the cost of exit falls as the lease length shortens (McCann, 2000). However, this belief is only applicable to the group of tenants who have not invested heavily in the machinery and equipment set up in the building or small business tenants as mentioned. Christersson and Rothe (2012) found that relocation has various impacts that involve not only relocation costs, disruption, different lease features, changes in the environmental footprint and employee reactions, but also changes in the employee satisfaction, productivity, organization dynamics, corporate image and employee turnover. Hence, keeping tenants satisfied with the building and lease term is vital; they will seldom move to other buildings because of the few benefits as the relevant costs for moving, disruption and trouble are relatively high (Romano, 1992). Lease management could be improved by adopting the 'best practice' in the leasing and management of industrial buildings (Jayne, Mackmin, & Syms, 2007).

From the above discussion, the hypothesis is as follows:

**Hypothesis 2:** Lease management resulting from green leasing, which provides rent resolution and moving assistance and offers a good renewal package to compensate for a past unpleasant experience, will have a positive impact on tenant satisfaction in industrial buildings.

### 4.3. Perceived Quality

A fundamental principle of the service concept is the notion of satisfying the customers' needs; it is believed that satisfied customers will eventually boost the firm's bottom line in multiple ways (Myeda et al., 2011). Naudé and Buttle (2000) defined relationship quality as one of the forms of quality encountered by customers in which high relational quality contributes to the customers' perceived quality and thus enhances the long-term relationship. The primary characteristics of any successful partnership embrace commitment, coordination, trust and communication. Singapore Airlines' (SIA) standard of service was

benchmarked to aim for improvement in customer service with other industries, which is one of the two major areas that was identified (Chin & Lam, 1999) and subsequently adopted as the benchmarks for service quality.

Service perceptions are basically customers' judgements that relate to the superiority of a service (Malik, 2012). A common understanding is that landlords are honest and have goodwill towards those whom they classify as important; continuing to share information and communication patterns will also increase the quality of the relationship (Rasila, 2009). A service is not an object but a phenomenon. It is difficult to evaluate the quality of services because of the human involvement. Achieving high tenant satisfaction on the ground is highly individual and depends on personnel who have the good attributes of SERVQUAL regarding tangibility, reliability, responsiveness, assurance and empathy (Kim et al., 2001; Spencer & Hinks, 2007). Hoots (2005) introduced 3R gaps analysis into customer relation management, which are the resource gap, response gap and respect gaps, which could be applied for service improvement.

In order to increase organizational effectiveness to gain a competitive advantage, landlords are advised to embrace empowerment, which will motivate an encouraging level of service quality. Empowerment also enhances management control and has a positive effect on employee productivity and performance (Gerais & Terziovski, 2003). Total quality management (TQM) calls for top management commitment by involving employees in problem solving, decision making and business operation, which requires employee empowerment for quality improvement (Yap, 2000). In addition, knowledge and competency from the landlord's or service provider's representative are crucial in gaining customers' trust. Proper handling of sensitive information, providing superior value, reliable communication and a personal relationship are able to lead to a more enduring relationship (Freybote & Gibler, 2011).

Tenants welcome people who pay careful attention to details, have a more creative approach to avoid inconvenience and are willing to accommodate their changing needs. Tenants also expect their landlord's representative to focus on the customer, have a good response time, make visitations and have good technical and financial backgrounds (Bergsman, 1996). However, due to cost competitiveness, some landlords start to fall into the outsourcing rut of engaging new entrants to the property management service provider, who are not equipped with the necessary experience and resources to offer a professional service (Chin & Lam, 1999). Lai (2012) articulated that the main aspects of facility management services include general management (attitude of staff,

professional knowledge, efficiency in handling complaints, communication and responses to requests).

Gordon and Levesque (2000) suggested that both the perceived value and the service quality dimension should be incorporated into the customer satisfaction model. Landlords desire to satisfy their customers and gain market share by delivering tangible and intangible experiences to their customers. The product and service received reflect the value provided. Good services will literally attain favourable word of mouth to attract potential customers via recommendations. In the long term, landlords will also reap the benefits of lower marketing costs with a good service reputation (Birksa & Southanb, 2007). The outcomes of increased satisfaction are positive reviews generated, growth in new business (bringing in new customers), a growing market share and high renewal rates (Myeda et al., 2011). From the above discussion, the hypotheses are as follows:

**Hypothesis 3:** Perceived quality resulting from service quality, empowerment, knowledge and communication via visitations will have a positive impact on tenant satisfaction in industrial buildings.

**Hypothesis 4:** Perceived quality resulting from service quality, empowerment, knowledge and communication via visitations will have a positive impact on the service quality of facility management.

**Hypothesis 5:** Perceived quality resulting from service quality, empowerment, knowledge and communication via visitations will have a positive impact on the service quality of lease management.

**Hypothesis 6:** Satisfaction will have a positive effect on the overall impact, leading to recommendations and renewals of lease contracts.

#### 4.4. Data Collection

A survey was carried out to collect data. The survey began by stating its objective in order to explain the purpose of the research. A question was asked after this to determine whether the respondent's company has its own building or rents a business space. This question was a screening process to filter out the non-targeted population and to ensure the quality of the survey results. If the respondent's company had its own building, the subsequent page led to the end of the survey with a 'thank you' message. The contents of the survey questionnaire were incorporated into questions on the three core variables identified from the survey of the literature. The survey also posed one non-compulsory open-ended question to gain

qualitative inputs. A summary of the qualitative information is discussed in Section 5.6. The design made the rest of the questions mandatory to prevent incomplete responses.

The survey questionnaire framework was designed in two sections. Section one aimed to collect the demographics of the respondents, the level of influence in the leasing issue, their position and the company information, like the business industry, company size and registered country. Section two revealed the insights of tenants into property management services to achieve satisfaction with industrial buildings. For every latent variable, three to four questions were developed to serve as indicators. A five-point Likert scale was applied with one as 'strongly disagree' and five as 'strongly agree'. The entire survey exercise was carried out through an online survey using Google Docs as the platform.

A few associations in different regions were contacted to raise awareness of this survey for the research. The final questionnaire was then disseminated to about 1500 participants located in various regions from the members of the Singapore Business Federation (SBF), Supply Chain Asia (SCA), Singapore Manufacturing Federation (SMF), Economy Development Board Singapore (EDB), SME Corporation Malaysia, SME Association Australia, SEAANZ Australia, UEAPME Europe and MSME News Network. At the end of the survey, 362 samples were collected, which is about a 24% response rate. Out of these, 247 samples, 68%, were responses from tenants. After a review and check, 246 samples were usable. The following Table 2 summarizes the profiles of the respondents (see Table 2).

**Table 2.** Demographic characteristics of the respondents

Survey participants (n = 247)		
<b>Role in office leasing</b>		
Sole decision maker	11	5%
Key influencer	67	27%
No role	169	68%
<b>Position in the company</b>		
Senior management	70	28%
Middle management	109	44%
Junior management	68	28%
<b>Type of company</b>		
MNC – multinational corporation	147	59%
SME – small or medium-sized enterprise	93	38%
Government body	7	3%
<b>Size of Company</b>		
< 50 employees	70	28%
50 to 199 employees	51	21%
200 to 499 employees	40	16%
500 to 999 employees	38	15%
>1000 employees	48	20%

Industry type		
Chemicals	5	2%
Electronic products	10	4%
Engineering and construction	100	41%
Financial	32	13%
Food and beverage	3	1%
Health care and medical products	10	4%
Information technology	20	8%
Logistic centre	7	3%
Machinery and equipment	6	2%
Others	54	22%
Company registered country		
Australia and Singapore	85	34%
Other Asia Pacific countries	48	20%
Europe and UK	44	18%
Americas and USA	70	28%

## 5. Data Analysis and Results

Structural equation modelling (SEM) is an instrument to test and estimate the causal relationship among latent constructs. SEM applies the multivariate data analysis method, which is widely used in marketing research (Hennig-Thurau, Henning, & Sattler, 2007) due to its capability of testing the linear and additive causal model (Haenlein & Kaplan, 2004). The PLS (partial least square) technique was applied to validate and test the hypotheses using the SmartPLS software (Ringle, Wende, & Will, 2005). The measurement of the outer model stipulates the link between the constructs and the indicators. PLS is suitable for SEM in research projects, particularly when the data distribution is skewed with limited participants (Wong, 2011). The first task is to assess the quality of the measures using the outer model (measurement model) and then to test the hypotheses with the inner model (structural model). The bootstrapping algorithm is then applied to test the significance of the structural paths by generating t-values.

### 5.1. Reliability Validation

Cronbach's alpha and composite reliability scores are the measurement utilized to evaluate the internal consistency and reliability in research. Internal consistency is established when the Cronbach's alpha scores are higher than the recommended value of 0.6 (Hair et al., 2012), in the

acceptable range of 0.5 to 0.8 (Salvucci, Walter, Conley, Fink, & Saba, 1997; Tan, 2009). There are also suggestions in the literature to use composite reliability (Bagozzi & Yi, 1988) as a replacement for Cronbach's alpha. The results in Table 3 show that the Cronbach's alpha values are all greater than 0.6 and the values of the composite reliability scores are close to 0.8 and above. Therefore, the model exhibits high levels of internal consistency in all four latent variables and is demonstrated to be reliable (see Table 3).

Table 3. Reliability validation summary

Overview	AVE	Composite reliability	Cronbach's alpha	R square	LV index variables
Facility management	0.556	0.790	0.601	0.300	4.013
Impact of satisfaction	0.870	0.930	0.851	0.406	3.951
Lease management	0.505	0.798	0.661	0.231	3.717
Perceived quality	0.520	0.812	0.691	0.000	3.995
Tenant satisfaction	1.000	1.000	1.000	0.266	3.972

### 5.2. Convergent Validity Analysis

To check the convergent validity, each latent variable's average variance extracted (AVE) was evaluated. Convergent validity can be interpreted as the degree to which the scores of a measure are related to the scores collected from a similar or different measure. It can also be used to test the construct validity (Fornell & Larcker, 1981; Straub, Boudreau, & Gefen, 2004). In testing the convergent validity, each item's AVE should be 0.50 or higher (Dillion & Goldstein, 1984). Chin, Marcolin and Newsted, (2003) suggested that the loading for each item should be higher than 0.70.

It can be seen in Table 4 that all of the indicators have individual indicator reliability values that are much larger than the minimum acceptable level of 0.4 and close to the preferred level of 0.7. Table 4 shows that all of the AVE values are above the acceptable threshold of 0.5, so convergent validity is confirmed (see Table 4).

Table 5 shows the item-to-construct correlation versus the correlations with other constructs. The results show that the indicators fit into the highlighted constructs only and there is no overlapping with other constructs (see Table 5).



**Table 4:** Reflective outer model results' summary

Construct	Item definition	Loadings (indicator reliability)	AVE	Composite reliability	Cronbach's alpha	R square
Facility management	1. Prefer a sustainable building for a green environment	0.749	0.556	0.790	0.601	0.300
	2. Consider facility management as the most important factor for renewal	0.770				
	3. Willing to pay higher rent for more amenities	0.716				
Impact of satisfaction	14. Willingness to renew the lease and continue to stay	0.937	0.870	0.930	0.851	0.406
	15. Recommend the landlord to others	0.928				
Lease management	4. Willing to pay higher rent for a green lease	0.684	0.505	0.798	0.661	0.231
	5. Expect the landlord to provide rent resolution	0.740				
	6. Willing to accept a good renewal package to compensate for a past unpleasant experience	0.506				
	7. Expect relocation assistance to move into the landlord's building	0.865				
Perceived quality	8. Consider service quality as the most important factor for renewal	0.713	0.520	0.812	0.691	0.000
	9. Prefer to deal with empowered staff	0.757				
	10. Believe staff with in-depth knowledge are more efficient	0.762				
	11. Expect landlord to make visitations	0.646				
Tenant satisfaction	13. Satisfied with a landlord who provides good property management services	1.000	1.000	1.000	1.000	0.266

**Table 5:** Comparison between item-to-construct correlation and correlations with other constructs

Construct	Item definition	Facility management	Impact of satisfaction	Lease management	Perceived quality	Tenant satisfaction
Facility management	Prefer a sustainable building for a green environment	<b>0.749</b>	0.360	0.401	0.387	0.360
	Consider facility management as the most important factor for renewal	<b>0.772</b>	0.314	0.318	0.428	0.353
	Willing to pay higher rent for more amenities	<b>0.716</b>	0.323	0.375	0.410	0.322
Impact of satisfaction	Willingness to renew the lease and continue to stay	0.431	<b>0.937</b>	0.391	0.450	0.613
	Recommend the landlord to others	0.404	<b>0.928</b>	0.420	0.439	0.575
Lease management	Willing to pay higher rent for a green lease	0.510	0.344	<b>0.684</b>	0.307	0.243
	Expect the landlord to provide rent resolution	0.327	0.316	<b>0.740</b>	0.374	0.276
	Willing to accept a good renewal package to compensate for a past unpleasant experience	0.085	0.170	<b>0.506</b>	0.234	0.155
	Expect relocation assistance to move into the landlord's building	0.407	0.371	<b>0.865</b>	0.420	0.297
Perceived quality	Consider service quality as the most important factor for renewal	0.494	0.368	0.324	<b>0.713</b>	0.360
	Prefer to deal with empowered staff	0.388	0.393	0.364	<b>0.757</b>	0.299
	Believe staff with in-depth knowledge are more efficient	0.371	0.385	0.375	<b>0.762</b>	0.271
	Expect the landlord to make visitations	0.304	0.212	0.324	<b>0.646</b>	0.307
Tenant satisfaction	Satisfied with a landlord who provides good property management services	0.463	0.638	0.350	0.431	<b>1.000</b>

**Table 6.** Discriminant validity analysis summary

LV construct	Facility management	Impact of satisfaction	Lease management	Perceived quality	Tenant satisfaction
Facility management	<b>0.746</b>				
Impact of satisfaction	0.448	<b>0.933</b>			
Lease management	0.488	0.434	<b>0.711</b>		
Perceived quality	0.548	0.477	0.480	<b>0.721</b>	
Tenant satisfaction	0.463	0.638	0.350	0.431	<b>1.000*</b>

Note: \* denotes the single-item construct.

**Table 7.** Summary of hypotheses testing results

Hyp no.	Hypothesis description	Path coefficient (b)	T-statistics (T-value)	Significance (one-tailed)	Supported (Y/N)
H1	Facility management -> tenant satisfaction	0.291	3.928	$p < 0.01$	Yes
H2	Lease management -> tenant satisfaction	0.101	1.3244	not supported	No
H3	Perceived quality -> tenant satisfaction	0.224	2.8021	$p < 0.01$	Yes
H4	Perceived quality -> facility management	0.548	9.9246	$p < 0.01$	Yes
H5	Perceived quality -> lease management	0.480	8.0554	$p < 0.01$	Yes
H6	Tenant satisfaction -> impact of satisfaction	0.638	12.5797	$p < 0.01$	Yes

Another step in examining the validity of a construct is to measure the discriminant validity (Gefen & Straub, 2005). Discriminant validity is established when each measurement item exhibits weak correlation with all the other constructs except the one with which it is associated. The square root of the AVE in each latent variable can be used to establish discriminant validity, if this value is larger than the other correlation values among the latent variables (Fornell & Larcker, 1981).

Table 6 shows the square root of the AVE in bold on the diagonal of the table. For example, the AVE value of facility management is 0.556. Its square root becomes 0.746. The number 0.746 is found to be higher than the correlation values in the vertical column for facility management (which are 0.448, 0.488 and 0.548). The same procedures were applied to the other constructs as shown in Table 6. The test suggests that the discriminant validity is satisfactory for the measurement model (see Table 6).

### 5.3. Structural Model Analysis

The model was then put to another test by running the bootstrapping algorithm. Once the bootstrapping procedure (Manski, 1996; Mooney & Duval, 1993) had been completed with the 246 samples, the path coefficients were then examined for the structural model. The software generates T-statistics to check the significance level of the inner and outer models. A large number of subsamples are taken from the original sample to model the unknown population (Hesterberg, Moore, Monaghan, Clipson, & Epstein, 2005). The bootstrap approximates T-values for each of the

hypotheses and the values are tabulated in Table 7. Cowles and Davis (1982) suggested a 5% significance level ( $p < 0.05$ ) to be used as a minimum statistical decision criterion and the results mostly achieved the 1% significance level ( $p < 0.01$ ) (see Table 7).

Of the six hypotheses, five are supported. Hypothesis H1 is supported because the path from facility management to tenant satisfaction is significant ( $b = 0.291$ ,  $p < 0.01$ ). This is due to the fact that tenant satisfaction can be achieved if the facility management is performed properly to the extent required by the tenants.

Hypothesis H2 ( $b=0.101$ ,  $p>0.1$ ) is not supported because many of the tenants are not willing to pay a premium for a green lease. This substantiates the research by Sayce et al. (2009), which found that the new form of contract and its true benefits may not be fully understood by the tenants and there is no strong support among tenants for green leases. On top of that, not many tenants agree that a good renewal package will be able to convince them to stay if they have had a bad experience with the landlord.

Hypothesis H3 ( $b=0.224$ ,  $p<0.01$ ) is supported as tenants see perceived quality as one of the important elements of property management to achieve their expectation. The tenants also validated Hypothesis H4 ( $b = 0.548$ ,  $p < 0.01$ ), which supports the expectation of high quality in a facility management service being greatly dependent on the perceived quality being delivered.

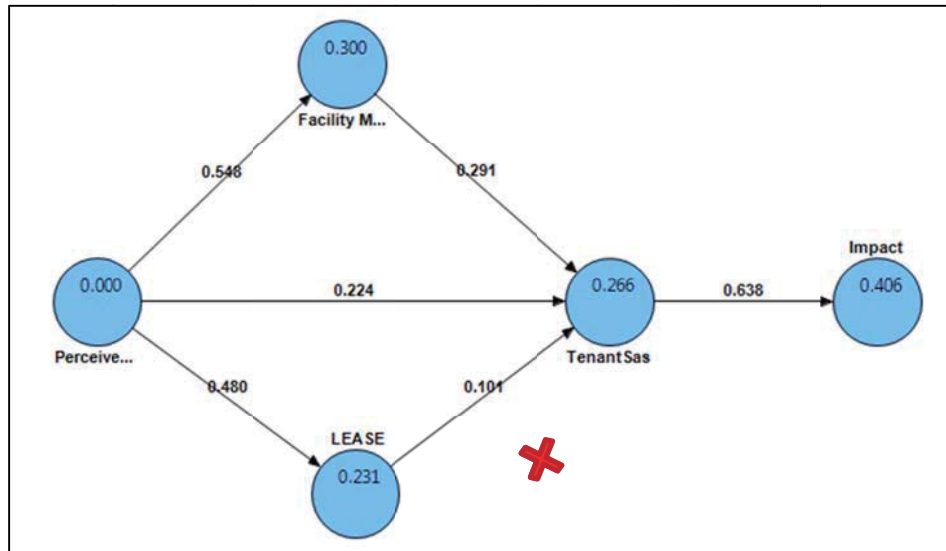
Hypothesis H5 ( $b = 480$ ,  $p < 0.01$ ) is supported because, similarly, the tenants think that perceived quality is the driver behind boosting the entire service level of lease

administration and stimulating flexibility and creativity in lease management from the landlord.

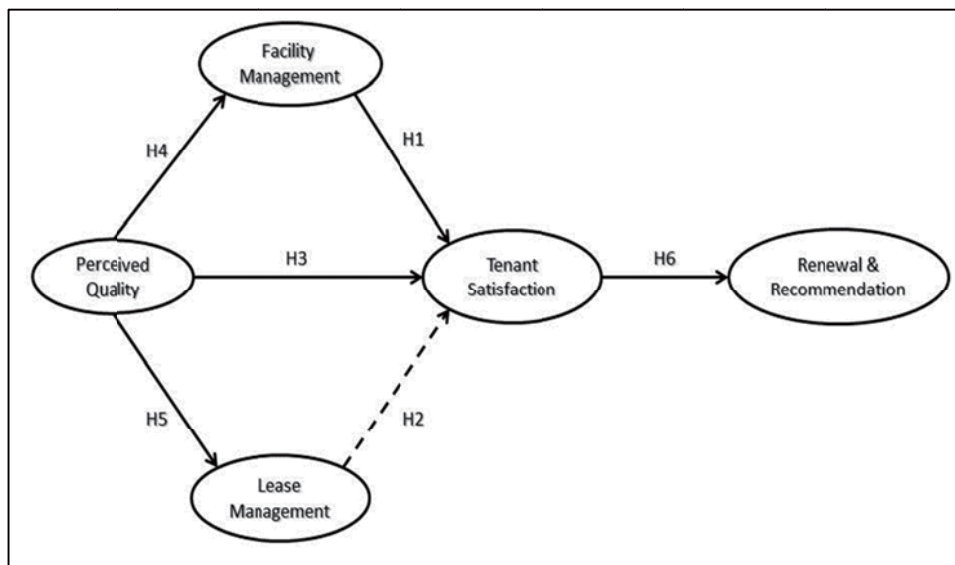
Hypothesis H6 ( $b = 0.638$ ,  $p < 0.01$ ) is strongly supported, which seconds many researchers who found that satisfied tenants will be more than willing to renew the lease and

recommend the high quality of the property management service to others.

Figures 2 and 3 exhibit the results of the PLS structural model analysis (see Figure 2 and 3).



**Figure 2.** Results of the PLS structural model analysis (extracted from SmartPLS)  
The cross represents the one hypothesis that is not supported.



**Figure 3.** Results of the PLS structural model analysis  
Note: A significant relationship is represented with a solid line; an insignificant relationship is represented with a dashed line.

#### 5.4. Assessment of Model Fit

Tenenhaus, Amato and Vinzi, (2004) suggested a widely recognized goodness-of-fit instrument. The goodness-of-fit (GoF) index measures the predictive performance of the measurement model (Henseler & Sarstedt, 2013). It is also referred to as the geometric mean (GM) of the average communality as well as the average  $R^2$  of the endogenous latent variables.

$$GoF = \sqrt{AVE * \bar{R}^2}$$

The GoF value derived from the research model is 0.408. The computed geometric mean of the AVE is 0.690 and the average of  $R^2$  is 0.241, respectively. Since the computed GOF value of 0.408 is greater than 0.36, which is the minimum value recommended by Wetzels, Odekerken-Schröder and Oppen (2009), it shows good enough support to validate the PLS model of this research study.

#### 5.5. Qualitative Analysis

Table 8 summarizes the qualitative inputs from the survey results. This feedback was received in response to the question 'Describe at least one recent incident that affected your satisfaction negatively as a tenant.' A total of 126 cases (51% of the 247 survey participants) were recorded and categorized into 19 groups of similar issues with the three variables of facility management, lease management and perceived quality.

Facility management has the highest concern for 74% out of the 126 incidents in total, providing further evidence for the research model outcome of the highest path coefficient of 0.291 to tenant satisfaction among the three variables. This is followed by perceived quality with 21% and lease management with 5%. The lowest appearance of issues about lease management reflects Hypothesis 2, which is not supported. The findings imply that compared with facility management and perceived quality, lease management has a lower degree of impact on tenant satisfaction overall (see Table 8).

**Table 8.** Summary of qualitative inputs from the survey participants

Highlighted issues by participants	Number of incidents			Qualitative remarks
	Facility management	Lease management	Perceived quality	
Lift/elevator issues	22		2	Breakdown, frequent breakdown, long waiting time, poor maintenance, long repairing time, slow response to the breakdown
Toilet/washroom issues	18			Unhygienic, pipe leakage, poor maintenance, long repairing time
Air-conditioning system issues	12		2	Breakdown, temperature too cold and no control, wasting energy, smelly air duct, slow/no response to the breakdown
Responsiveness and contactability			13	Slow response, long waiting time, no response, no follow-up, long processing time for certain work applications
Electrical power system issues	9		2	Power failure, frequent power failure, slow restoration time, owner not aware because FM is outsourced
Overall maintenance and cleanliness	10			Overall poor maintenance, cleanliness in common area, looks tired and dirty, things break down easily, reluctant to take care
Water seepage/leakage issues	5		1	No permanent solutions, slow response, long repairing time
Car park issues	5		1	No waiting area, frequent barrier breakdown, slow response in solving processing issue and onsite issue
Attitude			4	Bad, hostile, poor treatment, poor understanding
Nuisance in the building	3		1	Frequent false fire alarm; sound test without early notice; poor manage of renovation works
Building facades and image issues	3			Landlord not making financial contribution, affects tenant's company image, poor maintenance
Policy and flexibility		3		Different officers have different standards; landlord draws line in areas (need temporary storage); not allowed to hold small staff event in common space even occupying the entire floor
Security issues	2			Poor service
Lighting issues	1			
Amenities issues	1			Closure of cafeteria
Shuttle bus service	1			Service was terminated
Rent issues		1		Unjustified rent increment
Termite issues	1			
Special issues		2	1	lack of information and communication
	<b>93</b>	<b>6</b>	<b>27</b>	Total qualitative feedback = 126 cases
	74%	5%	21%	% of the overall qualitative feedback
	38%	2%	11%	% of the overall survey participants (247)

## 6. Implication for Management

From the research finding, we can see that the loading factor of the indicator of expectations of landlords' visits is surprisingly low. This leads us to believe that some tenants may not welcome too frequent proactive visitations from their landlord, but rather they expect the owner always to be contactable when issues arise. Next, the loading factor for lease renewal with a good package indicator is also low. This explains that a bad experience in the past hinders the intention to renew despite an attractive package. The research outcome and model provide an overview of the importance of each component. They encourage the top management of landlords to embrace the synergy and cohesiveness among the departments and forgo silos (Bandy, 2003). The intrinsic customer satisfaction with the organization can be studied, which is also important (Dahlsten, 2002) for interdepartmental strategic planning and further monitoring (Coenen, Waldburger, & Felten, 2013) to achieve extrinsic customer satisfaction.

Customer segmentation has to be clearly defined. The willingness to pay extra for the amenities as expected by the shareholders (Feige, Wallbaum, Janser, & Windlinger, 2013) would be dependent on the group of customers. Likewise, for the green lease, green marketing can be used as a complementary method in brand positioning (Eerikainen & Sarasoja, 2013). Hodges (2005) stated that many positive economic effects of green buildings are not apparent immediately. Arguably, a number of factors are debated concerning the continuing adoption of green principles and practices (Roper and Beard, 2006). The research by Reichardt, Fuerst, Rottke and Zietz (2012) demonstrated that certified green buildings command higher rental rates than non-certified buildings.

Besides that, the preventive maintenance for the facilities has to be robust and the corrective maintenance has to be a quick response for system recovery in order to maintain the tenant satisfaction (Lind & Muyingo, 2012). Even a short disruption in the tenant's operation may cause a remarkable profit loss to the business (Ventovuori & Lehtonen, 2006). Prior to having the facility management in place is the new building design; the mechanical and electrical system designs have to be taken into consideration operationally, like lift speed, air-conditioning system control and backup power system. Performance measurement with benchmarking serves as a catalyst in generating innovation in the performance process (Pitt & Tucker, 2008) for landlords to establish a service standard. Environmental knowledge has also become a vital attribute in facility management (Nousiainen & Junnila, 2008). Facility managers are encouraged to redefine their role as one that reinforces business needs, formulates sustainable policies

and brings value to the property management services with a positive impact on the global environment (Roper & Beard, 2006).

Another implication concerns the outsourcing activity, in which the landlord management must understand how and which part of the work is to be outsourced. Without understanding the process, it is difficult to decide which areas can be performed in house and by others. The outsourcing decision should not be executed simply because of costs and benefits, to avoid the daily business operating haphazardly (Farncombe & Waller, 2005). The impact of satisfaction is obvious. Retaining tenants is the utmost concern for building owners to generate revenue by minimizing the cost of vacancies and acquisition without losing the tenants (Sullivan, 2012). On top of that, quality of property management services is also packaged by the owner of the building as the selling point during the property selling transaction (Hui, Lau, & Khan, 2011).

## 7. Limitation and Future Research

This research examines the impact of property management services on tenants' satisfaction with industry building. Similar research could be carried out in future for commercial buildings and other types of buildings, like hospitals and shopping malls, but the populations would then be different. There are pitfalls concerning the measurement of customer satisfaction, in which sometimes customers have the tendency to mitigate satisfaction with unrealistic expectations (Adamson, 1994). The satisfaction ratings are always affected by events with a recency effect. Another area that was not covered in this research is the influence of building characteristics (like size, age, location) and external economic factors on renewal probability. Asser (2004) stated that lease renewals have another aspect that does not relate to human interaction.

Knowing the determinants of customer satisfaction will allow landlords to understand where the operating expenditures should be allocated and prioritized. Further research can be conducted to examine the correlation of an increase in operating expenditures with an increase in customer satisfaction. Furthermore, other than market demand, which leads to a rise in rent, a study of the factors involved in the willingness to pay the premium would be a complement to this research.

## 8. Conclusions

This research reveals the demands from the tenants in property management and the challenges to the landlords to



achieve a high satisfaction level in industrial buildings. The three components, which are facility management, lease management and perceived quality, were meticulously analyzed to understand their degree of influence on tenant satisfaction and how the satisfaction is linked to tenant renewal or recommendation. Sullivan (2012) claimed that the physical attributes of the property are more influential on tenant retentions; in agreement, we also uncovered from this research that the human interaction and the service are equally important. There is a direct correlation between overall tenant satisfaction and satisfaction with property management teams. Keeping the tenant satisfied is as good as keeping the building occupied for business revenue.

The study showed that landlords should be encouraged to establish priorities and define quantifiable benchmarks to improve the property management services. Implementing tenant relations programs like a 'Green Tenants Competition' could be part of the education to encourage green leases. It is always believed that there is a propensity for customers to pay more for something that is superior. Tenants no longer

seek merely shelter in a building, but need spaces enabling innovations and social interaction. It is crucial for industrial landlords to have sufficient information about the tenants, since knowledge of their needs and preferences enables building owners to respond to changes efficiently (Niemi & Lindholm, 2010). The competition for tenants is even more aggressive nowadays. The older buildings and less optimum locations need to compete with new and more technologically advanced buildings, in which the only way to beat rivals within the capability is through quality relationships with the tenants (Rasila, 2009) via superb service quality.

The main intent of this study was to develop a comprehensive understanding of property management services about tenant satisfaction as it applies to business-to-business relationships in industrial buildings. The overall findings of this research will potentially help real estate developers and property managers to develop better property management systems, leasing programs and tenant retention strategies.

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