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Treating the Tenant as a Customer: can good service improve real estate performance?

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Abstract

Customer Relationship Management (CRM) theory suggests that good customer service results in satisfied customers, who in turn are more likely to remain loyal and recommend the service provider to others. Applied to real estate, this theory implies that landlords should see a return on any investment in the service they give to tenants, in the form of increased lease renewal rates and fewer void periods, achieved without compromising rents. This paper examines determinants of occupier satisfaction, and investigates the relationship between occupier satisfaction and property performance, using measures such as capital growth, income return, lease renewal rates and total return. The analysis is based upon a pilot study using occupier satisfaction responses from around 2500 interviewees based in multi-tenanted offices, shopping centres and retail warehouses on out-of-town retail parks in the UK. The analysis is being extended to cover a larger sample for the author's PhD. Part 1 of the analysis examines occupier satisfaction, whilst Part 2 considers its impact on property performance.

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Theory and Literature Review

Service Quality and Customer Satisfaction

Many attempts have been made to define quality in customer service, and the consensus is that excellent customer service cannot be defined in absolute terms; rather it is a function of the performance of the supplier and the expectation of the customer. In manufacturing, a common definition of quality is “Conformance to Requirements” with a performance standard of zero defects (Crosby 1979). This idea can be applied to real estate when considering the functionality of the building and whether it meets the needs of the occupier, but is harder to apply to property *management* performance.

One of the earliest attempts to formalise the definition of quality in service performance was made by Kano et al. (1984) who devised a model in which “attributes of quality” are classified according to their impact on a customer: what a customer would expect or how the attribute would influence a customer’s satisfaction. Perhaps the most widely used method of measuring service quality is to obtain customers’ opinions using questionnaires based on the SERVQUAL scale. The original model included ten determinants of service quality: Access, Communication, Competence, Courtesy, Credibility, Reliability, Responsiveness, Security, Tangibles and Understanding (Parasuraman et al. 1985). These were later condensed into five dimensions: Tangibles (physical facilities, equipment and appearance of personnel), Reliability (ability to perform the promised service dependably and accurately), Responsiveness (willingness to help customers and provide prompt service), Assurance (knowledge and courtesy of employees and their ability to inspire trust and confidence), and Empathy (caring individualized attention the firm provides its customers (Parasuraman et al. 1988). SERVQUAL-style questionnaires are the most widely used method of measuring customer satisfaction, but there are other approaches involving, for example, interviews, focus groups, and seeking feedback by eliciting complaints and compliments.

Commercial Property Management as a Service to Occupiers

The tasks involved in property management and the job titles of property professionals vary from organisation to organisation. McAllister (2012a) describes the roles and the typical hierarchy of property managers, asset managers and portfolio or fund managers. In the context of this paper, and the treatment of tenants as customers, any of the activities of property professional which impact on occupiers are relevant, but the main tasks under consideration here are those which McAllister ascribes to property managers – “the day-to-day functions such as service charge functions, tenant liaison, inspection and monitoring” - as well as dealing with lease events, procurement of services, facilities management, maintenance issues, contract negotiation, rent collection and reviews, and perhaps aspects of workspace design and fitting out. In carrying out these tasks, the property manager must focus on the needs of the occupier and have processes which are designed to achieve efficient delivery of service.

Variants of SERVQUAL have been devised for real estate service quality measurement. RESERV is a model designed to measure satisfaction with Real Estate Brokerage (Nelson & Nelson 1995). It uses the five dimensions of SERVQUAL plus an additional two: Professionalism and Availability. SERVPERF is a variant of SERVQUAL which focuses on perception of performance (Cronin Jr & Taylor 1992). Other dimensions used in various models include Credibility, Security, Competence, Accessibility, Communication, Understanding, Courtesy, Consulting, Offering, Clout, Geographics and Price in addition to - or as variants of - SERVQUAL’s five dimensions (Westbrook & Peterson 1998; Van Ree 2009). The inclusion of Price as one of the dimensions allows an explicit assessment of the extent to which value for money affects responses. PROPERTYQUAL is a model designed to investigate occupier satisfaction with purpose-built office buildings, and uses SERVQUAL’s five dimensions plus some property-specific ones: Cleanliness, Building services, Signage, Security, Parking and Building aesthetics (Baharum et al. 2009).

In the UK property industry, the findings from focus groups have provided guidance to help property owners and managers achieve customer satisfaction. Regular tenant-association meetings are held at many multi-occupancy buildings and estates, allowing occupiers and property managers to share opinions and discuss issues. Findings from such discussions between occupiers and managers enabled Edington (1997) to create a framework to help real estate organisations become more customer-centric. The steps involve:

- Defining the Customer
- Researching what the customer wants
- Creating a Mission for the Organisation
- Leadership, Empowerment, Training and Communication
- Process Improvement and information management
- Measuring success and benchmarking

The Real Service Best Practice Group uses a similar approach to defining best practice in property ownership and management, with building blocks encompassing *Service strategy, Customer Solutions, People and Leadership, Supply Chain Management, Operations and Measurement*. The validity of the framework is then assessed using customer satisfaction questionnaires. Such an approach is used, too, by the Property Industry Alliance and CORENET GLOBAL UK in annual surveys to assess the satisfaction of occupiers of UK Commercial Property (Anon 2012).

The broad consensus amongst the differing methods of assessment of service quality is that occupier satisfaction depends upon property owners and managers behaving professionally, being empathetic to the needs of occupiers and empowered to deal promptly and effectively with requests. In addition to the prerequisites of giving good value-for-money and showing flexibility, the importance of good communication and a good relationship with occupiers is evident from research on customer service quality.

The Service – Profit Chain

The mechanisms by which excellence in customer service affects profit are considered to be through increased loyalty of customers, turning customers into advocates who recommend the service company through word-of-mouth or public compliments and through enhanced reputation (Rust et al. 1994; Keiningham et al. 2003; Timothy L Keiningham et al. 1999; Söderlund & Vilgon 1999). This concept is known as the “service-profit chain” (Heskett et al. 1997) and the idea has been applied to real estate by Edington, who adapts a “marketeer’s representation of customer service, the ‘ladder of loyalty’” to form a ladder of retention showing the stages and activities involved in converting a prospective occupier into an advocate or “magnet occupier” and the rewards to the property owner (Edington 1997).

Several studies have been able to demonstrate links between customer service, customer satisfaction, customer loyalty and the reputation of a company or brand in various industries (Gale 1992; Rust & Zahorik 1993; Zeithaml et al. 1996; Bolton & Drew 1991; Rust et al. 1994; Williams & Naumann 2011; T L Keiningham et al. 1999). Nevertheless quantifying the benefits of relationship marketing is difficult, as researchers on the 1970s PIMS programme (profit impact of market strategy) discovered (Buzzell & Gale 1987; Phillips et al. 1983; Jacobson 1990), not least because of the difficulty in “control[ling] for unobservable factors influencing profitability [which] both biases and exaggerates the effect of strategic factors” (Jacobson 1990; Jacobson & Aaker 1987) and the “myriad factors and influences in marketing”(Gummesson, 2004).

Quantifying the benefits of relationship marketing in real estate is difficult too. Property performance depends upon many factors, including the property itself, its location, age and state of repair, its specification and amenities as well as the way it is managed. “Controlling for confounding factors, randomness and time-varying risk preferences presents major challenges in estimating whether there are statistically significant differences between property asset managers in terms of income and capital growth” (McAllister 2012). The purpose of this study is to attempt such an undertaking.

The Links between Revenue, Reputation, Retention and Recommendation in Real Estate¹

Figure 1 shows a conceptual framework for the interactions between occupiers and landlords, and indicates how customer service quality, customer satisfaction, loyalty and advocacy could affect the performance of a property and the profitability of a real estate company. The framework considers the decisions that an occupier makes in renting commercial space in three main stages:

Stage 1: Understanding Occupiers' Requirements

Initially, a potential tenant wishes to rent office, retail, industrial or other business space and has preliminary discussions with Landlord X (typically via their leasing agent). The potential occupier may have approached the landlord for a number of reasons, including learning of the availability of a desirable property with an appropriate specification, in a convenient location at a fair price (Sanderson 2014). Such reasons have little to do with customer service, although the reputation of the landlord or a prior relationship might affect whether a potential occupier makes that initial enquiry. The subsequent step, whether or not the lease gets signed, will be influenced by the customer's satisfaction with the leasing process, and whether the customer feels able to trust the landlord.

Stage 2: Occupancy until lease break or expiry, at which time the occupier decides whether or not to renew the lease

Once an occupier has moved in to the premises, s/he will have contact with the owner or agent, and satisfaction with that relationship may influence whether or not the occupier renews the lease at lease-break or expiry. A satisfied occupier is more likely to remain, whereas an occupier who is dissatisfied with the service s/he has received during tenure is less likely to renew the lease.

Stage 3: Advocacy and recommendation (or dissatisfaction and detraction) – the opinions expressed by occupiers to acquaintances and the wider world, which contribute to the landlord's or managing agent's reputation, and may affect the decisions of other potential occupiers

An occupier who is satisfied with the relationship and service received may recommend the landlord or agent to other associates seeking to rent premises. In this way, good customer service could help to minimise voids, and a landlord with a good reputation may be able to charge a rental premium.

Conversely, an unhappy occupier may spread negative messages about the landlord, leading to more of the landlord's properties remaining un-let (an increased void rate). Profit should be inversely proportional to the void rate, and voids may start a downward spiral, particularly in a retail environment where empty units deter shoppers thus reducing footfall and profits for other retailers.

¹ The relationship between Reputation, Occupier Retention and Revenue in Real Estate is the rationale for the work of RealService and RealService Best Practice Group and the key tenet of its founder and Managing Director Howard Morgan

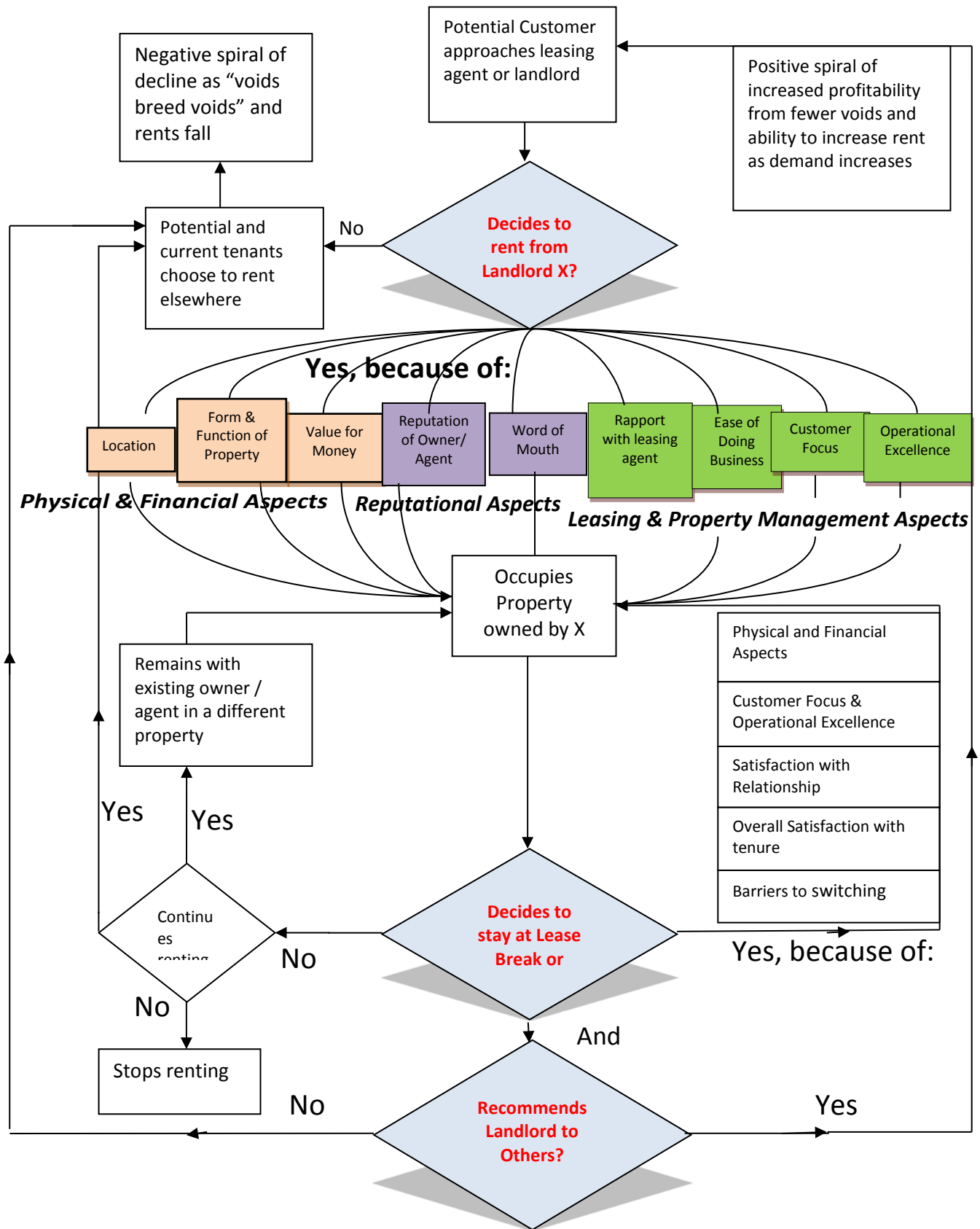


Figure 1: Conceptual Framework positing links between customer service & property performance

Factors affecting Occupier Satisfaction and Loyalty

According to Wilson, Leckman, Cappucino, & Pullen (2001), the customers of corporate real estate organisations value responsiveness and flexibility, an understanding of their customers' needs and accountabilities, professionalism, reliability, accessibility, risk management, ease of doing business and competitive pricing. Using their PROPERTYQUAL scale, Baharum, Nawawi, & Saat (2009) found that occupiers believe cleanliness, security and building services to be the most important property-specific aspects of property management. From a service perspective, reliability and responsiveness were found to be of most importance to occupiers.

Another factor which is of importance to occupiers is management of service charges, with competitive pricing of services and accurate and timely budgets and reconciliations (Tucker & Pitt 2010; Forrester & Edwards 2011; Noor & Pitt 2009; Eccles et al. 2011; White 2013; Hedley 2009). Adherence to the RICS Code of Practice for Management of Service Charges in Commercial Property (Forrester & Edwards 2011), whilst not mandatory, gives reassurance to occupiers that the money they pay for services is being managed responsibly.

Occupiers are more likely to renew their lease if the benefits outweigh the costs, therefore it is crucial that owners and property managers deliver good value for money and that this is appreciated by the occupiers. Wilson, Leckman, Cappucino, & Pullen (2001) describe some "value added services" which property managers can provide, such as giving strategic advice, supporting the customer's organisational strategy, enabling the achievement of economy of scale, providing an integrated service and / or electronic service delivery. They mention the importance of defining the correct performance indicators to avoid "spending energy on minor concerns" and the need to determine which business processes are truly adding value. Another area for adding value is that of sustainability; eco-certified buildings tend to be cheaper to run and also to provide a more comfortable and productive working environment for occupants, with fewer days lost through sickness (Miller et al. 2009).

Aspects of property management which "keep, push or pull" office occupiers have been assessed for their impact on satisfaction and loyalty (Appel-Meulenbroek 2008) although the study was small, and considered 'intention to renew lease' rather than actual renewal rate. Most of the factors relate to physical aspects of the property or its hinterland, but the paper emphasises the need for CRM processes "to keep satisfaction at such a level that it invokes loyalty" and increases 'retention equity'. "Keep Factors" were found to include building services, scope to extend, flexibility and locational factors that would generally have been considered when choosing the property initially, such as proximity to a city, accessibility and availability of parking. "Push factors" are those which encourage defection, whereas pull factors are those which result from a competitor attracting a customer away from the original supplier. Push and pull factors were found to relate to building maintenance, the quality of fittings, internal climate and the appearance of the building, so Appel-Meulenbroek advises that a landlord should endeavour to keep buildings up-to-date.

The criteria upon which the Swedish Real Estate Barometer is established are environment, location, premises, service, value-for-money, malfunction, adjustment and image. Westlund et al. (2005) found that customer satisfaction and other indicators from the SREB show significant correlations with measures of real estate company profitability, but the links appeared to be mainly through reputation rather than lease renewal.

In switching suppliers ('defecting'), there are various costs: procedural, financial & relational (Gee et al. 2008). For occupiers of commercial property, the main barriers to switching relate to the costs and amount of upheaval involved, so the decision not to renew a lease will not be made lightly, but however excellent the service quality and however satisfied the customer, there will always be some "customer defections" (Venkateswaran 2003). Occupiers' businesses may fail, large corporations may decide to rationalise their use of space or need to relocate for other commercial reasons.

In their study into switching behaviour and loyalty to property service suppliers Levy & Lee (2009) categorised the main reasons for switching suppliers as: core service failure, external requirements, relationships, change in client's requirements, attraction by competitors and pricing. Although "core service failure" was found to be one of the key

issues, when something does go wrong with a service encounter, it can actually provide an opportunity to rectify the problem and in so doing to strengthen the relationship with the customer; by over-compensating for the initial problem a service provider may exceed the customer's expectations and gain loyalty (Hart et al. 1990; Michel & Meuter 2008). This is termed the "service recovery paradox" and Magnini, Ford, Markowski, & Honeycutt Jr (2007), investigating the effects of prior service failures, found that in certain cases it is possible that customer satisfaction after a service failure can indeed be higher than before. Relevant factors include whether the failure was deemed to be outside the control of the service provider, the severity of the failure and the length of the customer-supplier relationship. A simple but sincere apology and demonstration of empathy may be all that is needed to compensate for mistakes (Levy & Lee 2009). This possibility of recovery from service failure highlights the importance of eliciting complaints from occupiers. If a dissatisfied customer makes a complaint it gives the service supplier an opportunity to rectify it and to repair the relationship (Gee et al. 2008).

However, it should be borne in mind that whilst barriers to switching may reduce occupier 'defections', if an occupier has to make "Hobson's Choice", choosing lease renewal as "the lesser of two evils" the advantage of a retained customer may be more than offset by damage to reputation and a reluctance by other potential occupiers to sign a lease with the property owner.

If a property owner is able to increase the loyalty of its customers, Monte Carlo simulations have shown that a small increase in lease renewal rates can lead to a large increase in profit.¹ Correlations between aspects of customer service, overall satisfaction of occupiers and actual renewal rates (Kingsley Associates 2004) found lease renewal rates to be 17.9% higher for those with 'good' or 'excellent' satisfaction compared with 'poor' or 'very poor'. Renewal rates were 12.3 % higher for occupiers who rated highly their satisfaction with property management, and 28.5% higher for those that rated their overall satisfaction 'excellent' compared with those rating it 'very poor'.

According to IPD data, in the UK only about one-third of office leases that expired in 2008 were renewed (Hedley 2009) and this figure fell to just 20% in 2011 (IPD & Strutt & Parker 2012). Around half of office tenants exercised their break clause in 2011. Lease renewal rates for UK commercial property were highest in retail, lowest in the office sector with industrial renewals being approximately midway between the other two sectors. These figures will vary with the economic cycle, and in a downturn a company which occupies several properties may choose to vacate one simply because its lease is the next to expire, regardless of satisfaction with the management of the property. Shops, in particular, are likely to be affected by the trend towards on-line retailing, with total store numbers in the UK predicted to fall by 22%, from 281,930 in 2013 to 220,000 in 2018 (Centre for Retail Research 2013). Where occupiers do have viable businesses however, shorter lease lengths should make the impact of superior customer service and customer satisfaction more noticeable on lease renewal rates.

Customer Relationship Management theory emphasises the importance of building a good relationship with customers, in order to understand their needs and win their loyalty (Matzler et al. 1996; Reichheld & Sasser Jr 1990). The British Council of Shopping Centres has published a Customer Care Guide advising shopping centre managers how to look after their customers – emphasising the relationship with store managers, not just shoppers (Morgan et al. 2012). According to Appel-Meulenbroek (2008), in corporate property management, "retaining a tenant requires more relationship efforts than competing through offering a good price / quality ratio [alone]". Such "relationship efforts" depend upon feedback from occupiers so that service suppliers understand what they are perceived to be doing well and what aspects of property management could be improved from the occupier's perspective. For such feedback to be beneficial, property managers and occupiers must be open and honest, willing to give and receive constructive criticism without fear of retribution.

¹ Unpublished commercial findings (Batterton, IPD.)

Assessing Occupier Satisfaction to Improve Service Quality

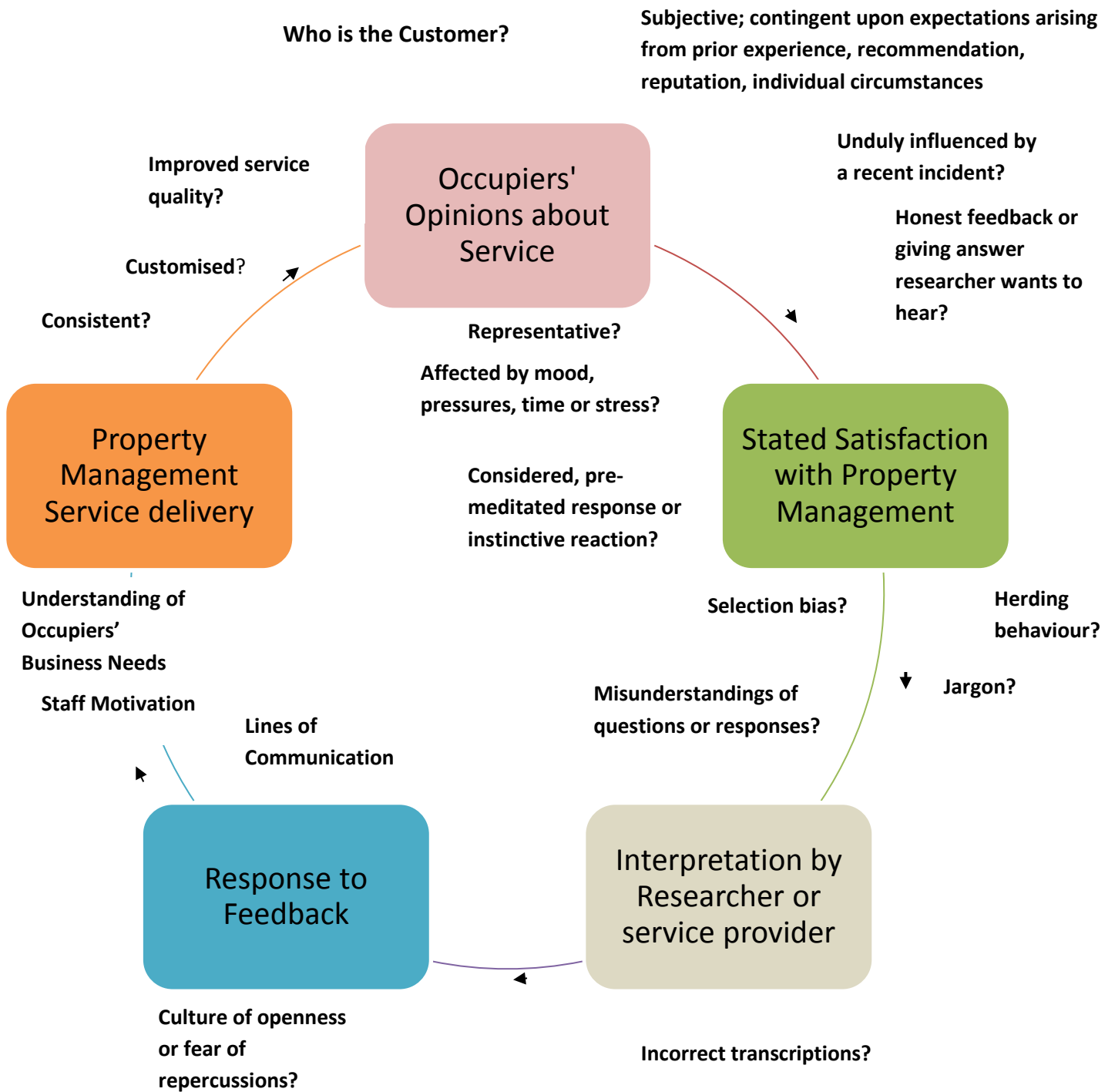


Figure 2 Aspects to Consider when investigating Occupier Satisfaction with Property Management Service

Figure 2 depicts a feedback loop in which occupiers rate their satisfaction with property management, and the ratings and opinions are used to improve service delivery. However, interpreting findings from such studies is not straightforward as there is scope for misunderstanding questions and responses, and the answers given may not reflect the genuine opinions of respondents nor necessarily be representative of the views of all occupiers.

Occupiers' Opinions about Service

When asking customers for feedback about satisfaction with property management service, the first question to consider is “Who is the customer?” Where a property is leased by a small enterprise – an independent retailer, for example, or a small business with few employees – the opinions of the leaseholder will be of most value, although the views of the employees about aspects such as the comfort and maintenance of the property and its facilities may also be relevant. Where the property forms just one of many rented by a large organisation, the property director may have views about administrative aspects of property management, such as lease and service charge documentation, and ease of obtaining a license to make alterations, but may have no experience of working in the property and may be unaware of local issues. Therefore, in order to get meaningful feedback, it is crucial to ask people who have the requisite knowledge and authority to give accurate, representative responses.

However well-intentioned respondents are, as Parasuraman, Zeithaml, & Berry, (1985) demonstrated in devising SERVQUAL, their perception of service and their level of satisfaction will depend upon their expectations. Expectations are formed from prior experience or from recommendations, as well as individual circumstances relating to the cost of the service, and perceived value for money. Opinions are, by definition, subjective, and those of one respondent may not represent the views of all occupiers. A further complication is that opinions given on a particular day may be unduly influenced by the mood of the respondent, the pressure they are under or by a recent incident which may prejudice their recollection of the service they generally receive (Oliver 1993).

Stated Satisfaction with Property Management

Even if respondents do have genuine opinions about their perception of customer service quality, they may not express these opinions clearly and honestly. There is the potential for sample bias because those who are willing to respond to customer satisfaction surveys may be those who are more altruistic than the norm and responses may be affected by ‘courtesy bias’ giving the answers they believe the researcher wants to hear (Pawson & Sosenko 2010). The employees with the time to reply to questionnaires may not be the decision-makers in the organisation so answers may not be representative of the views of the lessee. Jargon might be used in a questionnaire, and respondents may be unwilling to admit to ignorance of terminology. If feedback is being given by a group, for example during a tenant meeting or focus group, herding behaviour might occur, with respondents being unwilling to voice ‘outlying’ opinions. This can lead to the situation where a customer who appears to be satisfied “defects” soon afterwards, particularly where respondents express less than “complete satisfaction” (Jones & Sasser 1995; Reichheld 1996).

Interpretation by Researcher or service provider

Lizieri (2003) discusses problems which may beset research into occupier satisfaction, and the validity of findings from case studies. The design of questionnaires may reflect the “researcher’s preconceptions” thereby “contaminating the responses”. Similarly, the “perceptual filters” of the researcher may contort the findings from analysis of questionnaires, and the conclusions from case studies may not have wider applicability or validity.

Response to Feedback

The value of occupier satisfaction studies, and the extent to which the service provider acts upon findings, will depend upon the culture within the organisation. An over-emphasis on receiving a high stated satisfaction score can lead staff to beseech or morally blackmail customers into ticking the top boxes, regardless of their actual satisfaction, to “fix the score rather than fixing the store” (Pruden & Vavra 2013). Targets for satisfaction scores with perverse incentives can lead to an over-emphasis on trivialities and neglect of important aspects of service. Williams & Whybrow (2013) describe staff at a call centre cutting callers off mid-sentence in order to meet the company target of answering calls within three rings! As well as ensuring the focus is on aspects that are of greatest importance to

occupiers (Martilla & James 1977; Vavra 2002), organisations must be open to constructive criticism and use it to improve service.

Property Management Service delivery: Attitude, Behaviour, Skills and Motivation of Property Owners and Managers

For an organisation to aspire to excellence in customer service it is important that senior managers should lead by example, and that the organisation should have appropriate “Values” that are not merely statements on the organisation’s website or in its Annual Report, but which are understood, embraced and applied by all members of staff (Williams & Whybrow 2013; RealService Ltd 2010; Morgan et al. 2012). Property managers need to be motivated and enthusiastic about giving excellent customer service and should have customer-focused processes to make life as easy as possible for occupiers.

Customer Relationship Management is likely to be much more successful if the service delivery staff are ‘sympathique’ and personable. The London 2012 Olympics was famous for the 70,000 volunteer Games Makers who were trained to give good customer service by applying the “London 2012 Hosting Actions” summarised by the mnemonic I DO ACT – exhorting staff to be Inspirational, Distinctive, and Open, Alert, Consistent and part of the Team (LOCOG 2011). These actions can be applied by property managers, who, “having been recruited for their attitude, must be given the tools and authority to do their job: appropriate training to ensure they have the knowledge and skills they need and suitable back-up if they encounter an issue they cannot deal with” (Sanderson 2012). They need to understand the business needs of their occupiers, and, as far as is feasible, to deliver a customised service tailored to the needs of each. Processes should be geared towards the convenience of occupiers, and property managers should have the authority to make decisions quickly.

In her study of customer relationship quality between landlords and tenants in Finland, Rasila (2010) found that occupiers place great emphasis on relevant and timely communication. Interviewees felt that response times were unacceptably long, believing that they should receive an immediate response to requests for information. Respondents felt it was crucial for a landlord to understand the strategic needs of the occupier whilst wanting to keep the sharing of information to a minimum and not to be inundated with “excessive operative information”. This disparity may be hard to reconcile, although as relationship bonds are forged between owner / property manager and occupier, there may be scope for increasing mutual understanding through informal, social channels and “affective loyalty”¹ (Freybote & Gibler 2011).

Since property management is so dependent upon the calibre and knowledge of staff, to prevent unwanted defections, it is important to keep experienced and highly valued employees happy (Levy & Lee 2009). In a study of reward management practices amongst real estate companies Azasu (2012) investigates the extent to which various perks and incentives are used to reward managers and non-management staff, finding that many give performance-related and / or annual bonuses, and that managers are often given profit shares or stock options. Similarly, several members of RealService Best Practice Group² make performance related bonuses dependent upon customer satisfaction scores. As Azasu points out, however, “it is not always easy to hold individuals accountable in service industries”, and there is the risk that such a bonus structure might fail to curb the “opportunistic behaviour ... predicted by agency theory”.

Agency theory is also applicable to the use of third parties to supply property management services such as mechanical and electrical repairs, cleaning, security, telephony and internet service providers, staffing of reception

¹ Affective loyalty arises from socially oriented, relational trust whereas calculative or pragmatic loyalty arises because it is mutually beneficial or because of bonds such as contractual ties and barriers to switching (Freybote & Gibler 2011)

² RSBPG private communications and findings from interviews conducted during Best Practice Index Verification Meetings

and help desks etc. These suppliers are agents of the principal, the property owner¹ and it is important that the interests of all parties are aligned to ensure the suppliers can be trusted to deliver the service that is expected by the owner and occupiers. In their study of Trust in Corporate Real Estate outsourcing relationships, Freybote & Gibler (2011) assert that trust complements contracts and monitoring, and, together with reputational risk, can act to mitigate opportunistic, self-interested behaviour. They discuss how trust can be enhanced by membership of professional organisations such as RICS and Corenet Global as such accreditation is perceived as a guarantee of quality and that certain standards will be adhered to.

The remainder of the paper is split into two parts. Part 1 investigates determinants of occupier satisfaction, whilst part 2 examines the relationship between occupier satisfaction and property performance.

¹ In fact the property owner / property manager relationship may also be beset by principal agency problems if management is outsourced and contracts are “incomplete” (Williamson 2002) i.e. all contingencies not pre-empted by appropriate service level agreements and inadequate monitoring of performance

Part 1: Research into Occupier Satisfaction

This working paper describes the analysis which is being carried out into determinants of occupier satisfaction and the relationship between occupier satisfaction and the financial performance of commercial property. The first part of the research consists of a quantitative analysis of satisfaction scores obtained from 2500 interviews with occupiers of offices, stores in shopping centres and retail warehouses on out-of-town retail parks. These interviews were conducted during 2003 – 2012 by RealService Ltd on behalf of major UK landlords.

The Data

Interviewees were asked to rate their satisfaction with various aspects of the management of their property and of the property itself using an ordinal response scale '1' (low) to '5' (high). The actual questions asked and aspects included varied from property to property, because each property was studied as a standalone project. Each interview consisted of between 10 and 30 questions, according to what the landlord commissioning the research wanted to discover. In total, around 200 different questions were asked, so these had to be condensed to around 30 core categories, such as satisfaction with communication, satisfaction with internal climate (HVAC – heating, ventilation and air-conditioning) etc.

Pivot tables were used to group all responses for a single respondent as a row on a spreadsheet, with each of the core categories forming a column, and to obtain mean occupier satisfaction ratings for each property. The advantage of using mean ratings in the quantitative analysis is that they are a continuous variable, making their use more legitimate for certain statistical techniques. Analysis using individual responses is of questionable legitimacy, since it is not clear whether the ordinal responses can be treated as numerical integers – is a rating of '4' twice as good as a rating of '2' for example? Whilst the interviewees were asked to use a scale of '1' – '5', they were also instructed that the labels associated with these ratings were 'very poor' (or 'very dissatisfied'), 'poor', 'average', 'good' and 'excellent'. Is a satisfaction rating of 'good' twice as high as a rating of 'poor'? By splitting the data file into mean ratings and individual responses, it is possible to see whether both methods give similar results, and thereby cast light on the validity of conducting a quantitative analysis of ordinal response data.

The statistical analysis was carried out using Excel and SPSS. Techniques employed included assessing descriptive statistics such as means and investigating whether the data approximated a normal distribution. The summary figures are shown in Table 1, from which it can be seen that each measure of occupier satisfaction exhibits negative skewness (scores clustered at the higher end) apart from satisfaction with the image of the property. The kurtosis values vary, some positive (the distribution being somewhat peaked in the centre with longer, thinner tails than a normal distribution) and some negative (a flatter peak than a normal distribution). Several statistical techniques, particularly those testing hypotheses, rely on significance levels which are based on normally distributed data. With negative skewness and positive kurtosis, the distribution of data can be transformed to achieve a distribution which more closely resembles normality by applying the transformation $Trans_var = \log_{10}((Max_val + 1) - Var)$, where $Trans_var$ is the transformation of the original variable Var , and Max_val is the maximum value of Var . An example of where this helps to achieve a more normal distribution is shown below the table.

Whilst the distribution of the transformed "satisfaction with property management" variable is more normally distributed, it still does not attain the 0.05 level of significance for the two tests of significance shown.

Table 1: Descriptive Statistics

	Amenities and Toilets	Approvals and Documentation	Building	Cleaning	Communication	CSR and Values	Customer service	Health and Safety
N Valid	1852	1066	1583	3228	3596	3449	1921	2447
Missing	1899	2685	2168	523	155	302	1830	1304
Mean	3.43154	2.95227	3.54706	4.07892	3.74464	3.27629	3.49276	4.11949
Skewness	-.589	-.211	-.578	-1.047	-.844	-.541	-.672	-1.075
Std. Error of Skewness	.057	.075	.062	.043	.041	.042	.056	.049
Kurtosis	-.408	-.870	-.124	1.197	.604	-.246	.155	1.214
Std. Error of Kurtosis	.114	.150	.123	.086	.082	.083	.112	.099

		HVAC and Lighting	Image	Landlord performance	Lease Renewal	Leasing process	Lifts and escalators	Location and Vicinity
N	Valid	1156	1383	1921	1041	320	943	2174
	Missing	2595	2368	1830	2710	3431	2808	1577
	Mean	3.24551	1.78514	3.63309	3.56400	3.14017	3.74293	3.63305
	Skewness	-.458	.749	-.736	-.419	-.607	-.903	-.555
	Std. Error of Skewness	.072	.066	.056	.076	.136	.080	.052
	Kurtosis	-.463	-.721	.838	-.786	-.417	.947	-.042
	Std. Error of Kurtosis	.144	.131	.112	.151	.272	.159	.105

		Maintenance	Marketing and events	Occupier website	Overall Occupier Satisfaction	Overall property management	Parking and public transport	Reception
N	Valid	2036	2441	70	3543	3393	2064	1953
	Missing	1715	1310	3681	208	358	1687	1798
	Mean	3.66873	3.31761	2.91658	3.85671	3.76239	3.28709	3.34159
	Skewness	-.667	-.398	-.265	-.718	-.912	-.116	-.355
	Std. Error of Skewness	.054	.050	.287	.041	.042	.054	.055
	Kurtosis	.132	-.320	.008	1.358	.623	.518	-.077
	Std. Error of Kurtosis	.108	.099	.566	.082	.084	.108	.111

		Refuse and Recycling	Renovation	Rent Value	Responsiveness	Security	Service Charge Value	Signage
N	Valid	1061	301	775	3219	3460	922	2014
	Missing	2690	3450	2976	532	291	2829	1737
	Mean	4.09888	3.03008	2.92318	3.76455	3.67336	2.78906	3.10528
	Skewness	-1.202	-.327	-.340	-.838	-.698	-.280	-.302
	Std. Error of Skewness	.075	.140	.088	.043	.042	.081	.055
	Kurtosis	1.632	-.520	-.163	.325	-.167	-.372	-.300
	Std. Error of Kurtosis	.150	.280	.175	.086	.083	.161	.109

		Tenant mix	Understanding needs	Security Health and Safety	Customer Focus and Service	Bldg Amenities HVAC Renovation	Rent and Service Charge
N	Valid	1695	3237	3530	3706	2357	996
	Missing	2056	514	221	45	1394	2755
	Mean	3.43033	3.63886	3.74282	3.57907	3.16012	2.83941
	Skewness	-.596	-.605	-.934	-.651	-.096	-.369
	Std. Error of Skewness	.059	.043	.041	.040	.050	.077
	Kurtosis	.211	.004	.563	.421	.766	-.060
	Std. Error of Kurtosis	.119	.086	.082	.080	.101	.155

Tests of Normality

		Kolmogorov-Smirnov ^a			Shapiro-Wilk		
Mean		Statistic	df	Sig.	Statistic	df	Sig.
Y	Overall property management	.122	173	.000	.950	173	.000
	Trans_Sat_PM	.071	173	.032	.979	173	.012

a. Lilliefors Significance Correction

		Overall Occupier Satisfaction	Overall property management	Parking and public transport	Reception	Refuse and Recycling	Renovation	Rent Value	Responsiveness	Security	Service Charge Value	Sign age	Tenant mix	Understand needs
Amenities and Toilets	Pearson Correlation	.232	.277	-.157	.313	.228	-.037	.044	.237	.377	.105	.214	.113	.260
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.571	.295	.000	.000	.011	.000	.000	.000
	N	1827	1689	1670	1736	397	242	564	1523	1833	583	1666	1517	1539
Approvals and Documentation	Pearson Correlation	.131	.108	.057	.037	.380	.304	.136	.176	-.025	.306	.073	.021	.128
	Sig. (2-tailed)	.000	.001	.123	.295	.001	.003	.000	.000	.448	.000	.048	.632	.000
	N	938	934	741	794	75	93	667	957	896	762	745	531	911
Building	Pearson Correlation	.172	.034	.079	.071	.209	-.045	.008	.051	.005	.070	.037	.032	.040
	Sig. (2-tailed)	.000	.184	.003	.007	.009	.487	.849	.066	.861	.078	.171	.280	.144
	N	1559	1491	1421	1427	154	246	622	1291	1470	641	1396	1163	1320
Cleaning	Pearson Correlation	.316	.371	-.019	.244	.321	.150	.023	.309	.312	.197	.212	.097	.330
	Sig. (2-tailed)	.000	.000	.385	.000	.000	.010	.534	.000	.000	.000	.000	.000	.000
	N	3166	3033	2010	1934	945	296	726	2768	3176	835	1988	1680	2778
Communication	Pearson Correlation	.472	.692	-.015	.213	.268	.218	.161	.585	.417	.279	.232	.078	.646
	Sig. (2-tailed)	.000	.000	.498	.000	.000	.000	.000	.000	.000	.000	.000	.002	.000
	N	3428	3337	1951	1846	1057	260	747	3192	3344	891	1906	1605	3210
CSR and Values	Pearson Correlation	.407	.536	-.033	.237	.297	.158	.207	.408	.358	.162	.228	.141	.473
	Sig. (2-tailed)	.000	.000	.142	.000	.000	.007	.000	.000	.000	.000	.000	.000	.000
	N	3331	3197	1982	1901	1055	293	755	3006	3325	845	1968	1664	3022
Customer service	Pearson Correlation	.470	.533	.016	.252	.213	.255	.208	.535	.381	.264	.242	.170	.558
	Sig. (2-tailed)	.000	.000	.526	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	1853	1796	1638	1732	385	241	642	1662	1861	729	1648	1398	1677
Health and Safety	Pearson Correlation	.258	.237	-.039	.112	.168	. ^a	.083	.213	.179	.108	.119	.105	.247
	Sig. (2-tailed)	.000	.000	.156	.000	.000	.	.149	.000	.000	.058	.000	.000	.000
	N	2430	2416	1323	1187	1008	1	303	2222	2377	308	1260	1282	2332
HVAC and Lighting	Pearson Correlation	.285	.260	-.017	.195	.338	. ^a	.108	.219	.206	.150	.247	.201	.228
	Sig. (2-tailed)	.000	.000	.600	.000	.001	.	.017	.000	.000	.001	.000	.000	.000
	N	1132	1042	935	1013	100	1	485	1017	1149	482	943	721	922
Image	Pearson Correlation	-.260	-.194	.006	-.163	-.114	-.124	-.071	-.189	-.207	-.143	-.195	-.230	-.194
	Sig. (2-tailed)	.000	.000	.836	.000	.177	.032	.154	.000	.000	.002	.000	.000	.000
	N	1365	1303	1380	1349	141	301	410	1047	1366	477	1354	1258	1150
Landlord performance	Pearson Correlation	.571	.480	.001	.214	.193	.349	.302	.454	.319	.331	.202	.226	.497
	Sig. (2-tailed)	.000	.000	.979	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	1782	1661	1553	1597	366	259	626	1622	1702	737	1532	1269	1639
Lease Renewal	Pearson Correlation	.256	.182	-.167	.169	.133	.057	.114	.151	.191	.098	.166	.129	.168
	Sig. (2-tailed)	.000	.000	.000	.000	.192	.440	.013	.000	.000	.030	.000	.000	.000
	N	1034	1001	936	1017	98	186	471	872	1021	493	946	766	899
Leasing process	Pearson Correlation	.215	.255	.215	.099	.403	. ^a	.317	.159	-.119	.230	.076	.447	.364
	Sig. (2-tailed)	.001	.000	.012	.218	.428	.	.000	.005	.128	.002	.406	.315	.000
	N	246	229	137	158	6	1	149	306	164	184	123	7	296
Lifts and escalators	Pearson Correlation	.251	.171	.088	.225	.169	. ^a	.097	.199	.143	.073	.216	.223	.196
	Sig. (2-tailed)	.000	.000	.010	.000	.003	.	.164	.000	.000	.296	.000	.000	.000
	N	928	834	846	825	313	1	207	831	926	208	813	831	796
Location and Vicinity	Pearson Correlation	.264	.151	.202	.131	.168	.264	.136	.130	.127	.127	.221	.271	.131
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	.001	.000	.000	.000

	N	2127	2052	2031	1924	485	301	658	1752	2098	720	2012	1691	1839
Maintenance	Pearson Correlation	.312	.317	.035	.135	.287	.341	.195	.409	.262	.336	.212	.102	.313
	Sig. (2-tailed)	.000	.000	.155	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	1989	1887	1652	1608	430	247	654	1764	1997	761	1661	1369	1693
Marketing and events	Pearson Correlation	.383	.432	.123	.138	.139	. ^a	.179	.267	.168	.152	.300	.228	.376
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.	.001	.000	.000	.006	.000	.000	.000
	N	2382	2373	1327	1178	1007	1	318	2204	2382	329	1287	1312	2321
Occupier website	Pearson Correlation	.487	1.000	. ^a	. ^a	. ^a	. ^a	. ^a	.250	.487	-.299	. ^a	. ^a	.011
	Sig. (2-tailed)	.001	.	.	.	.	.	.	.037	.000	.280	.	.	.962
	N	46	2	1	1	1	1	1	70	50	15	1	1	22
Overall Occupier Satisfaction	Pearson Correlation	.1	.524	.083	.302	.204	.194	.245	.423	.374	.287	.303	.388	.509
	Sig. (2-tailed)	.	.000	.000	.000	.000	.001	.000	.000	.000	.000	.000	.000	.000
	N	3543	3344	2040	1931	1057	298	735	3064	3418	835	1991	1679	3098
Overall property management	Pearson Correlation	.524	.1	.051	.229	.282	.216	.165	.591	.423	.232	.214	.092	.658
	Sig. (2-tailed)	.000	.	.024	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	3344	3393	1964	1864	1053	272	724	2988	3268	831	1928	1625	3091
Parking and public transport	Pearson Correlation	.083	.051	.1	.063	.064	-.044	.179	-.009	-.068	.016	.051	-.002	-.012
	Sig. (2-tailed)	.000	.024	.	.007	.157	.449	.000	.718	.002	.689	.022	.924	.612
	N	2040	1964	2064	1827	489	301	571	1662	2008	639	1969	1689	1754
Reception	Pearson Correlation	.302	.229	.063	.1	.184	.016	.075	.168	.292	.048	.322	.203	.232
	Sig. (2-tailed)	.000	.000	.007	.	.000	.787	.062	.000	.000	.203	.000	.000	.000
	N	1931	1864	1827	1953	403	300	628	1580	1929	699	1824	1552	1685
Refuse and Recycling	Pearson Correlation	.204	.282	.064	.184	.1	.265	.175	.237	.213	.346	.205	.122	.211
	Sig. (2-tailed)	.000	.000	.157	.000	.	.360	.180	.000	.000	.006	.000	.009	.000
	N	1057	1053	489	403	1061	14	60	1002	1054	62	476	456	1012
Renovation	Pearson Correlation	.194	.216	-.044	.016	.265	.1	.331	.342	.162	.413	.182	.013	.291
	Sig. (2-tailed)	.001	.000	.449	.787	.360	.	.004	.000	.005	.000	.002	.839	.000
	N	298	272	301	300	14	301	73	193	293	121	298	249	223
Rent Value	Pearson Correlation	.245	.165	.179	.075	.175	.331	.1	.185	.086	.457	.179	.180	.232
	Sig. (2-tailed)	.000	.000	.000	.062	.180	.004	.	.000	.020	.000	.000	.000	.000
	N	735	724	571	628	60	73	775	702	730	701	586	392	659
Responsiveness	Pearson Correlation	.423	.591	-.009	.168	.237	.342	.185	.1	.306	.356	.228	.095	.564
	Sig. (2-tailed)	.000	.000	.718	.000	.000	.000	.000	.	.000	.000	.000	.000	.000
	N	3064	2988	1662	1580	1002	193	702	3219	2982	828	1620	1356	2935
Security	Pearson Correlation	.374	.423	-.068	.292	.213	.162	.086	.306	.1	.176	.188	.173	.370
	Sig. (2-tailed)	.000	.000	.002	.000	.000	.005	.020	.000	.	.000	.000	.000	.000
	N	3418	3268	2008	1929	1054	293	730	2982	3460	836	1990	1682	3003
Service Charge Value	Pearson Correlation	.287	.232	.016	.048	.346	.413	.457	.356	.176	.1	.154	.088	.259
	Sig. (2-tailed)	.000	.000	.689	.203	.006	.000	.000	.000	.000	.	.000	.073	.000
	N	835	831	639	699	62	121	701	828	836	922	651	418	792
Signage	Pearson Correlation	.303	.214	.051	.322	.205	.182	.179	.228	.188	.154	.1	.216	.247
	Sig. (2-tailed)	.000	.000	.022	.000	.000	.002	.000	.000	.000	.000	.	.000	.000
	N	1991	1928	1969	1824	476	298	586	1620	1990	651	2014	1660	1713
Tenant mix	Pearson Correlation	.388	.092	-.002	.203	.122	.013	.180	.095	.173	.088	.216	.1	.130
	Sig. (2-tailed)	.000	.000	.924	.000	.009	.839	.000	.000	.000	.073	.000	.	.000
	N	1679	1625	1689	1552	456	249	392	1356	1682	418	1660	1695	1497
Understanding needs	Pearson Correlation	.509	.658	-.012	.232	.211	.291	.232	.564	.370	.259	.247	.130	.1
	Sig. (2-tailed)	.000	.000	.612	.000	.000	.000	.000	.000	.000	.000	.000	.000	.
	N	3098	3091	1754	1685	1012	223	659	2935	3003	792	1713	1497	3237

	Amenities and Toilets	Approvals and Documentation	Building	Cleaning	Communication	CSR and Values	Customer service	H&S	HVAC/ Lighting	Image	Landlord performance	Lease Renewal	Leasing process	Lifts and escalators	Location and Vicinity	Maintenance	Marketing and events	Occupier website
Amenities and Toilets	1	.082	.082	.368	.284	.334	.331	.177	.310	.157	.216	.471	.177	.323	-.082	.220	.174	.183
		.027	.002	.000	.000	.000	.000	.000	.000	.000	.000	.000	.043	.000	.001	.000	.000	.207
	1852	724	1364	1837	1756	1807	1645	1146	1021	1228	1530	956	131	901	1756	1540	1152	49
Approvals and Documentation	.082	1	.152	.069	.103	.160	.085	.103	.100	-.065	.148	.128	.261	.256	.061	.171	.194	.254
	.027		.000	.039	.001	.000	.014	.031	.014	.126	.000	.002	.000	.000	.081	.000	.000	.255
	724	1066	821	895	1027	932	829	441	607	556	874	553	262	284	826	799	455	22
Building	.082	.152	1	.202	.014	-.011	.022	.125	.189	-.045	.096	.060	.098	.125	-.017	.061	-.001	1.000
	.002	.000		.000	.582	.675	.431	.000	.000	.123	.001	.062	.130	.004	.515	.032	.984	.
	1364	821	1583	1470	1493	1453	1296	852	937	1186	1286	970	242	533	1515	1226	801	2
Cleaning	.368	.069	.202	1	.305	.278	.310	.201	.298	.	.254	.221	.026	.144	.114	.384	.234	.341
	.000	.039	.000		.000	.000	.000	.000	.000	.207	.000	.000	.744	.000	.000	.000	.000	.015
	1837	895	1470	3228	3106	3078	1861	2123	1143	1371	1701	1022	163	925	2097	2021	2131	50
Communication	.284	.103	.014	.305	1	.484	.575	.273	.244	.	.501	.172	.239	.207	.122	.349	.345	.188
	.000	.001	.582	.000		.000	.000	.000	.000	.186	.000	.000	.000	.000	.000	.000	.000	.118
	1756	1027	1493	3106	3596	3347	1868	2434	1128	1281	1853	989	317	925	2042	1960	2420	70
CSR and Values	.334	.160	-.011	.278	.484	1	.540	.197	.195	.	.474	.230	.318	.175	.146	.272	.389	.142
	.000	.000	.675	.000	.000		.000	.000	.000	.199	.000	.000	.000	.000	.000	.000	.000	.307
	1807	932	1453	3078	3347	3449	1873	2362	1107	1347	1784	1022	205	910	2076	1924	2414	54
Customer service	.331	.085	.022	.310	.575	.540	1	.233	.251	.	.541	.235	.299	.284	.132	.353	.317	.795
	.000	.014	.431	.000	.000	.000		.000	.000	.210	.000	.000	.000	.000	.000	.000	.000	.000
	1645	829	1296	1861	1868	1873	1921	1121	1001	1190	1590	950	155	838	1741	1620	1128	49
Health and Safety	.177	.103	.125	.201	.273	.197	.233	1	.114	-.015	.192	.020	.146	.159	.103	.192	.212	^a
	.000	.031	.000	.000	.000	.000	.000		.002	.656	.000	.653	.211	.000	.000	.000	.000	.
	1146	441	852	2123	2434	2362	1121	2447	736	872	1014	503	75	831	1323	1086	2327	1
HVAC and Lighting	.310	.100	.189	.298	.244	.195	.251	.114	1	-.078	.224	.272	.146	.164	-.044	.226	.071	.191
	.000	.014	.000	.000	.000	.000	.000	.002		.033	.000	.000	.069	.000	.161	.000	.057	.183
	1021	607	937	1143	1128	1107	1001	736	1156	745	889	691	156	545	1036	981	717	50
Image	-.157	-.065	-.045	.207	-.186	-.199	-.210	-.015	.	1	-.210	.	.544	-.132	-.181	-.162	-.137	^a
	.000	.126	.123	.000	.000	.000	.000	.656	.078		.000	.135	.	.343	.001	.000	.000	.
	1228	556	1186	1371	1281	1347	1190	872	745	1383	1082	777	5	593	1378	1108	891	1
Landlord performance	.216	.148	.096	.254	.501	.474	.541	.192	.224	.	1	.195	.329	.215	.136	.315	.281	.182
	.000	.000	.001	.000	.000	.000	.000	.000	.000	.210		.000	.000	.000	.000	.000	.000	.142
	1530	874	1286	1701	1853	1784	1590	1014	889	1082	1921	892	300	775	1651	1456	1012	67
Lease Renewal	.471	.128	.060	.221	.172	.230	.235	.020	.272	.	.	1	.276	.070	-.168	.089	.164	^a
	.000	.002	.062	.000	.000	.000	.000	.653	.000	.135			.001	.183	.000	.008	.000	.
	956	553	970	1022	989	1022	950	503	691	777	892	1041	143	360	1036	898	506	1
Leasing process	.177	.261	.098	.026	.239	.318	.299	.146	.146	.544	.329	.276	1	.340	.235	.062	-.121	-.212
	.043	.000	.130	.744	.000	.000	.000	.211	.069	.343	.000	.001		.131	.002	.444	.510	.382
	131	262	242	163	317	205	155	75	156	5	300	143	320	21	180	155	32	19
Lifts and escalators	.323	.256	.125	.144	.207	.175	.284	.159	.164	.	.215	.070	.340	1	.257	.199	.162	.448
	.000	.000	.004	.000	.000	.000	.000	.000	.000	.132		.183	.131		.000	.000	.000	.001
	901	284	533	925	925	910	838	831	545	593	775	360	21	943	847	790	822	50
Location and Vicinity	-.082	.061	-.017	.114	.122	.146	.132	.103	-.044	.	.136	.	.235	.257	1	.169	.280	^a
	.001	.081	.515	.000	.000	.000	.000	.000	.161	.181		.168	.002	.000		.000	.000	.
	1756	826	1515	2097	2042	2076	1741	1323	1036	1378	1651	1036	180	847	2174	1756	1315	1
Maintenance	.220	.171	.061	.384	.349	.272	.353	.192	.226	.	.315	.089	.062	.199	.169	1	.155	.326
										.162								

	.000	.000	.032	.000	.000	.000	.000	.000	.000	.000	.000	.008	.444	.000	.000		.000	.021
	1540	799	1226	2021	1960	1924	1620	1086	981	1108	1456	898	155	790	1756	2036	1070	50
Marketing and events	.174	.194	-.001	.234	.345	.389	.317	.212	.071	-.137	.281	.164	-.121	.162	.280	.155	1	.a
	.000	.000	.984	.000	.000	.000	.000	.000	.057	.000	.000	.000	.510	.000	.000	.000		.
	1152	455	801	2131	2420	2414	1128	2327	717	891	1012	506	32	822	1315	1070	2441	1
Occupier website	.183	.254	1.000	.341	.188	.142	.795	.a	.191	.a	.182	.a	-.212	.448	.a	.326	.a	1
	.207	.255	.	.015	.118	.307	.000	.	.183	.	.142	.	.382	.001	.	.021	.	.
	49	22	2	50	70	54	49	1	50	1	67	1	19	50	1	50	1	70
Overall Occupier Satisfaction	.232	.131	.172	.316	.472	.407	.470	.258	.285	.260	.571	.256	.215	.251	.264	.312	.383	.487
	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.001	.000	.000	.000	.000	.001
	1827	938	1559	3166	3428	3331	1853	2430	1132	1365	1782	1034	246	928	2127	1989	2382	46
Overall property management	.277	.108	.034	.371	.692	.536	.533	.237	.260	.194	.480	.182	.255	.171	.151	.317	.432	1.000
	.000	.001	.184	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.
	1689	934	1491	3033	3337	3197	1796	2416	1042	1303	1661	1001	229	834	2052	1887	2373	2
Parking and public transport	-.157	.057	.079	-.019	-.015	-.033	.016	-.039	-.017	.006	.001	.	.167	.215	.088	.202	.035	.123
	.000	.123	.003	.385	.498	.142	.526	.156	.600	.836	.979	.000	.012	.010	.000	.155	.000	.
	1670	741	1421	2010	1951	1982	1638	1323	935	1380	1553	936	137	846	2031	1652	1327	1
Reception	.313	.037	.071	.244	.213	.237	.252	.112	.195	.	.214	.169	.099	.225	.131	.135	.138	.a
	.000	.295	.007	.000	.000	.000	.000	.000	.000	.163	.000	.000	.218	.000	.000	.000	.000	.
	1736	794	1427	1934	1846	1901	1732	1187	1013	1349	1597	1017	158	825	1924	1608	1178	1
Refuse and Recycling	.228	.380	.209	.321	.268	.297	.213	.168	.338	-.114	.193	.133	.403	.169	.168	.287	.139	.a
	.000	.001	.009	.000	.000	.000	.000	.000	.001	.177	.000	.192	.428	.003	.000	.000	.000	.
	397	75	154	945	1057	1055	385	1008	100	141	366	98	6	313	485	430	1007	1
Renovation	-.037	.304	-.045	.150	.218	.158	.255	.a	.a	-.124	.349	.057	.a	.a	.264	.341	.a	.a
	.571	.003	.487	.010	.000	.007	.000	.	.	.032	.000	.440	.	.	.000	.000	.	.
	242	93	246	296	260	293	241	1	1	301	259	186	1	1	301	247	1	1
Rent Value	.044	.136	.008	.023	.161	.207	.208	.083	.108	-.071	.302	.114	.317	.097	.136	.195	.179	.a
	.295	.000	.849	.534	.000	.000	.000	.149	.017	.154	.000	.013	.000	.164	.000	.000	.001	.
	564	667	622	726	747	755	642	303	485	410	626	471	149	207	658	654	318	1
Responsiveness	.237	.176	.051	.309	.585	.408	.535	.213	.219	.	.454	.151	.159	.199	.130	.409	.267	.250
	.000	.000	.066	.000	.000	.000	.000	.000	.000	.189	.000	.000	.005	.000	.000	.000	.000	.037
	1523	957	1291	2768	3192	3006	1662	2222	1017	1047	1622	872	306	831	1752	1764	2204	70
Security	.377	-.025	.005	.312	.417	.358	.381	.179	.206	.	.319	.191	-.119	.143	.127	.262	.168	.487
	.000	.448	.861	.000	.000	.000	.000	.000	.000	.207	.000	.000	.128	.000	.000	.000	.000	.000
	1833	896	1470	3176	3344	3325	1861	2377	1149	1366	1702	1021	164	926	2098	1997	2382	50
Service Charge Value	.105	.306	.070	.197	.279	.162	.264	.108	.150	.	.331	.098	.230	.073	.127	.336	.152	-.299
	.011	.000	.078	.000	.000	.000	.000	.058	.001	.143	.002	.030	.002	.296	.001	.000	.006	.280
	583	762	641	835	891	845	729	308	482	477	737	493	184	208	720	761	329	15
Signage	.214	.073	.037	.212	.232	.228	.242	.119	.247	.	.202	.166	.076	.216	.221	.212	.300	.a
	.000	.048	.171	.000	.000	.000	.000	.000	.000	.195	.000	.000	.406	.000	.000	.000	.000	.
	1666	745	1396	1988	1906	1968	1648	1260	943	1354	1532	946	123	813	2012	1661	1287	1
Tenant mix	.113	.021	.032	.097	.078	.141	.170	.105	.201	.	.226	.129	.447	.223	.271	.102	.228	.a
	.000	.632	.280	.000	.002	.000	.000	.000	.000	.230	.000	.000	.315	.000	.000	.000	.000	.
	1517	531	1163	1680	1605	1664	1398	1282	721	1258	1269	766	7	831	1691	1369	1312	1
Understanding needs	.260	.128	.040	.330	.646	.473	.558	.247	.228	.	.497	.168	.364	.196	.131	.313	.376	.011
	.000	.000	.144	.000	.000	.000	.000	.000	.000	.194	.000	.000	.000	.000	.000	.000	.000	.962
	1539	911	1320	2778	3210	3022	1677	2332	922	1150	1639	899	296	796	1839	1693	2321	22

- *. Correlation is significant at the 0.05 level (2-tailed).
- ** Correlation is significant at the 0.01 level (2-tailed).
- a. Cannot be computed because at least one of the variables is constant.

Table 2: Correlations between measured variables

As can be seen from the correlation matrix, all the variables shown are highly correlated, apart from the image of the building. Occupier ratings for overall satisfaction with property management is particularly highly correlated with aspects of property management such as communication, responsiveness, understanding of occupiers’ needs and also with the proxy for the landlord’s reputation “corporate social responsibility and corporate values”. The sample size is sufficiently large that the results are all statistically significant.

Creating Likert-type scales for occupier satisfaction

Although most respondents were asked to rate their satisfaction with property management and their overall satisfaction, in order to shed light on occupier satisfaction, and to triangulate the stated levels of satisfaction, this research explores occupier satisfaction further by creating scales using satisfaction with aspects of the property and property management. Scores from these scales can then be used as the independent variable in probit or logistic regressions to investigate the likelihood of lease renewal.

Scale: Overall Satisfaction

Using raw data, including means and individual responses

		N	%
Cases	Valid	2651	70.7
	Excluded ^a	1100	29.3
	Total	3751	100.0

a. Listwise deletion based on all variables in the procedure.

Listwise deletion of cases is used to create the scale, which means that almost one third of the data is excluded from the analysis, because of missing fields. This scale, comprising 5 items, shows high reliability (Cronbach’s Alpha > 0.8), and all the items are highly correlated. Removing the item “corporate social responsibility and values” (a measure of the reputation of the landlord), increases the reliability of the scale by a negligible amount.

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.856	.859	5

	Mean	Std. Deviation	N
Communication	3.87034	.877897	2651
Responsiveness	3.81029	1.009374	2651
Understanding needs	3.69789	.948280	2651
CSR and Values	3.43208	.941082	2651
Overall property management	3.89396	.853547	2651

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Communication	14.83422	9.055	.721	.554	.813
Responsiveness	14.89427	8.776	.642	.424	.834
Understanding needs	15.00667	8.707	.720	.536	.812
CSR and Values	15.27248	9.659	.528	.289	.862
Overall property management	14.81060	9.014	.760	.594	.805

Including an additional item, Satisfaction with value for money for rent &/or Service charge, reduces number of cases substantially, because fewer surveys included this question or fewer respondents answered.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.841	.838	6

It also reduces the reliability of the scale substantially as alpha increases if it is removed.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Communication	16.21929	11.659	.723	.565	.794
Responsiveness	16.33799	11.438	.718	.543	.794
Understanding needs	16.49505	11.635	.699	.502	.798
CSR and Values	16.73493	12.838	.548	.312	.829
Overall property management	16.34863	12.197	.706	.548	.799
Rent and Service Charge	16.99345	14.398	.331	.129	.865

The same applies if building features are included in the scale, although to a lesser extent.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.847	.838	6

Item Statistics

	Mean	Std. Deviation	N
Communication	3.72542	.910475	1581
Responsiveness	3.64528	1.012295	1581
Understanding needs	3.49886	.960224	1581
CSR and Values	3.24434	.905737	1581
Overall property management	3.65281	.857837	1581
Bldg Amenities HVAC Renovation	3.16993	.527497	1581

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Communication	17.21122	10.467	.740	.577	.798
Responsiveness	17.29136	10.284	.669	.466	.814
Understanding needs	17.43778	10.265	.726	.550	.801
CSR and Values	17.69230	11.307	.579	.338	.831
Overall property management	17.28383	10.717	.748	.574	.798
Bldg Amenities HVAC Renovation	17.76670	14.189	.299	.100	.868

Splitting file to examine individual responses only and means only

Reliability Statistics

Mean	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
N	.844	.848	5
Y	.942	.943	5

Item Statistics

Mean		Mean	Std. Deviation	N
N	Communication	3.89819	.870727	2499
	Responsiveness	3.85209	.998932	2499
	Understanding needs	3.73953	.933861	2499

	Overall property management CSR and Values	3.92555 3.46119	.847361 .943049	2499 2499
Y	Communication Responsiveness Understanding needs Overall property management CSR and Values	3.41242 3.12309 3.01338 3.37468 2.95350	.871375 .931778 .924007 .787063 .765240	152 152 152 152 152

Item-Total Statistics

Mean		Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
N	Communication	14.97835	8.672	.705	.532	.799
	Responsiveness	15.02446	8.453	.619	.395	.823
	Understanding needs	15.13701	8.372	.704	.514	.798
	Overall property management	14.95100	8.626	.744	.571	.790
	CSR and Values	15.41535	9.251	.507	.267	.851
Y	Communication	12.46464	9.449	.884	.807	.920
	Responsiveness	12.75397	9.280	.845	.735	.928
	Understanding needs	12.86368	9.404	.827	.690	.932
	Overall property management	12.50238	9.808	.916	.850	.916
	CSR and Values	12.92356	10.581	.759	.587	.943

Creating a scale with more items to measure overall occupier satisfaction:

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.816	.821	15

	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Communication with occupiers	.695	.794
Responsiveness to requests	.733	.792
Cleanliness of the building?	.391	.813
Value for money for rent?	.560	.799
Value for money for service charge?	.668	.788
Documentation	.483	.801
Building maintenance	.328	.809
Office configuration	.225	.821
Entrance Lobby	.397	.818
Security and reception	.304	.821
Signage	.310	.805
Understanding needs	.507	.795
Customer service	.706	.789
CSR and Values	.542	.800
Leasing process	.259	.822

These items also form a coherent scale, and deleting individual items has little effect on the scale's reliability.

Factors Underlying Overall Occupier Satisfaction

In order to be able to carry out regressions with overall satisfaction as dependent variable, the relevant independent variables need to be chosen. Because there is high multicollinearity between the various items measured in the occupier satisfaction studies, coefficients obtained from OLS regressions would be highly unreliable. Principal components analysis is a data reduction technique which can be used to combine the items into underlying factors; by selecting a small number of such factors which together account for most of the variance, and by using Varimax rotation, the resulting factors will be orthogonal and can be used in regression analyses and in structured equation modelling. These techniques enable the underlying factors which have greatest impact on occupier satisfaction to be identified.

Principal Components Analysis using the data sample from RealService

The structure of the data was explored using Principal Components Analysis. The data is suitable for PCA, as shown by the KMO value of 0.737 and a non-significant Bartlett's test¹.

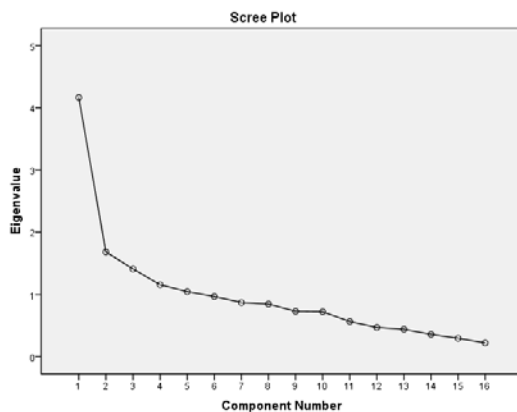
KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.737
Bartlett's Test of Sphericity	Approx. Chi-Square	308.001
	df	120
	Sig.	.000

Communalities

	Initial	Extraction
Communication with occupiers	1.000	.668
Responsiveness to requests	1.000	.728
Cleanliness of the building?	1.000	.521
Value for money for rent?	1.000	.685
Value for money for service charge?	1.000	.645
Documentation	1.000	.493
Building maintenance	1.000	.473
Location	1.000	.381
Office configuration	1.000	.646
Entrance Lobby	1.000	.652
Security and reception	1.000	.654
Signage	1.000	.456
Understanding needs	1.000	.531
Customer service	1.000	.606
CSR and Values	1.000	.647
Leasing process	1.000	.680

Extraction Method: Principal Component Analysis.
Total Variance Explained



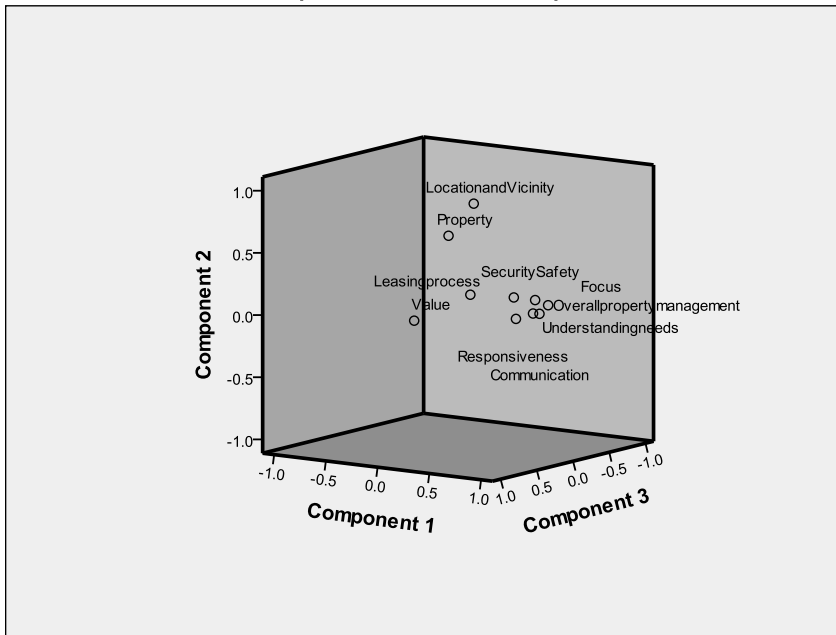
In this example, the scree plot indicates changes of gradient after 1 and 2 components so Catell's scree test would imply retaining either 1 or two components. Kaiser's Criterion of retaining only those for which the eigenvalue is greater than 1.0 would indicate that 4 components should be retained.

Different combinations of variables were used to see which resulted in factors which could be identified with physical constructs. PCA requires Listwise removal of data (i.e. cases in which any fields are missing are excluded). Therefore, in order to increase the sample size, variations in the analysis were attempted, involving grouping some items together, for example assessing the impact of treating value for money for rent and service charge as a single item.

¹ KMO should exceed 0.6 for factorability (p. 183 Pallant, 2010)

A three component solution is shown below:

Component Plot in Rotated Space



Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.401	44.006	44.006	4.401	44.006	44.006	3.931	39.312	39.312
2	1.258	12.575	56.582	1.258	12.575	56.582	1.350	13.503	52.815
3	.959	9.589	66.171	.959	9.589	66.171	1.336	13.356	66.171
4	.823	8.229	74.400						
5	.729	7.290	81.690						
6	.589	5.887	87.577						
7	.408	4.079	91.656						
8	.354	3.537	95.193						
9	.328	3.277	98.471						
10	.153	1.529	100.000						

Extraction Method: Principal Component Analysis.

Component Matrix^a

	Component		
	1	2	3
Security Health and Safety	.596	-.397	.383
Customer Focus and Service	.890		
Bldg Amenities HVAC Renovation	.415	.323	.584
Rent and Service Charge	.467	.346	
Understanding needs	.816		
Responsiveness	.741		
Overall property management	.861		
Location and Vicinity		.605	.430
Leasing process	.404	.649	-.480
Communication	.820		

Extraction Method: Principal Component Analysis.
a. 3 components extracted.

Rotated Component Matrix^a

	Component		
	1	2	3
Security Health and Safety	.676	-.378	
Customer Focus and Service	.839		
Bldg Amenities HVAC Renovation			.753
Rent and Service Charge	.305	.428	
Understanding needs	.784		
Responsiveness	.742		
Overall property management	.862		
Location and Vicinity			.750
Leasing process		.882	
Communication	.834		

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.

From this we can identify three components, which together account for 66% of the variance of the items.

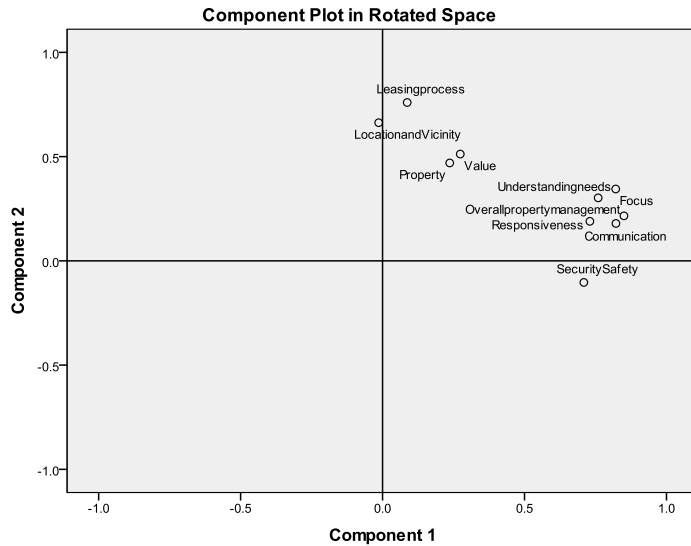
Component 1: Property Management

Component 2: Financial and Legal

Component 3: Property & Location: Physical characteristics

- Property Management** = 0.676 Security Health and Safety + 0.839 Customer Focus and Service + 0.305 Rent and Service Charge + 0.784 Understanding needs + 0.742 Responsiveness + 0.862 Overall Property Management + 0.834 Communication
- Financial and Legal** = 0.882 Leasing Process + 0.428 Rent and Service Charge – 0.378 Security Health and Safety
- Property & Location** = 0.753 Bldg Amenities HVAC Renovation + 0.75 Location and Vicinity

Parallel Analysis indicated that only two components should be retained since a randomly generated matrix of 10 variables and 133 respondents produced only two components with eigenvalues smaller than those shown in the table above. Therefore the analysis was repeated using two components, as shown below.



From this, it can be seen that the items cluster such that the property itself, the location and vicinity, and legal and financial issues (value for money for rent and service charge, and the leasing process) form one component, whilst aspects of property management form a second.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.401	44.006	44.006	4.401	44.006	44.006	3.824	38.237	38.237
2	1.258	12.575	56.582	1.258	12.575	56.582	1.834	18.345	56.582
3	.959	9.589	66.171						
4	.823	8.229	74.400						
5	.729	7.290	81.690						
6	.589	5.887	87.577						
7	.408	4.079	91.656						
8	.354	3.537	95.193						
9	.328	3.277	98.471						
10	.153	1.529	100.000						

Extraction Method: Principal Component Analysis.

Component Matrix^a

	Component	
	1	2
Security Health and Safety	.596	-.397
Customer Focus and Service	.890	
Bldg Amenities HVAC Renovation	.415	.323
Rent and Service Charge	.467	.346
Understanding needs	.816	
Responsiveness	.741	
Overall property management	.861	
Location and Vicinity		.605
Leasing process	.404	.649
Communication	.820	

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

Rotated Component Matrix^a

	Component	
	1	2
Security Health and Safety	.709	
Customer Focus and Service	.821	.345
Bldg Amenities HVAC Renovation		.470
Rent and Service Charge		.512
Understanding needs	.759	.302
Responsiveness	.730	
Overall property management	.850	
Location and Vicinity		.663
Leasing process		.760
Communication	.822	

Extraction Method: Principal Component Analysis.
 Rotation Method: Varimax with Kaiser Normalization.
 a. Rotation converged in 3 iterations.

1. **Property Management** = 0.709 Security Health and Safety + 0.821 Customer Focus and Service + 0.759 Understanding needs + 0.730 Responsiveness + 0.850 Overall Property Management + 0.822 Communication
2. **Physical and Financial** = 0.345 Customer Focus and Service + 0.470 Bldg Amenities HVAC Renovation + 0.512 Rent and Service Charge + 0.302 Understanding needs + 0.663 Location and Vicinity + 0.760 Leasing Process

Regressing Overall Occupier Satisfaction on these components as independent variables, the first component, property management, can be seen to play a much larger role in occupier satisfaction than does the second component. Of course, the fact that occupiers have chosen to rent their property means that they were satisfied, at least initially, that it would meet their needs, but the regression highlights the importance of excellent property management in overall occupier satisfaction. The R² value means that the two components account for 48% of the variance in overall occupier satisfaction.

Model Summary^b

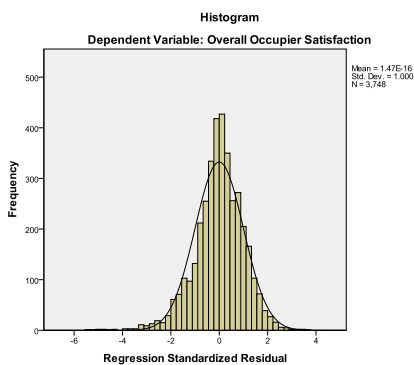
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	N
1	.692 ^a	.479	.471	.410470	129

a. Predictors: (Constant), PCA Component 2, PCA Component 1
 b. Dependent Variable: Overall Occupier Satisfaction

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.148	.262		4.378	.000
	PCA Component 1	.127	.015	.616	8.418	.000
	PCA Component 2	.049	.026	.138	1.885	.062

a. Dependent Variable: Overall Occupier Satisfaction



Residuals show positive kurtosis but a reasonably normal distribution so standard errors are believable, although the standardised coefficient for the second component does not quite attain 5% significance

For shopping centres, little data was available to obtain values for the second component so the sample is small. When offices were analysed alone, the regression gave greater explanatory power:

$N=124$; $\beta_1 = 0.916$; $\beta_2 = 0.102$; $R^2 = 0.942$

Both coefficients are statistically significant, and the results emphasise the importance of occupier satisfaction with property management.

Model Summary^b

Imputation Number	Type	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
0 Original data	Offices	1	.971 ^a	.942	.941	.148831

a. Predictors: (Constant), PCA Component 2, PCA Component 1

b. Dependent Variable: O_Sat_Scale

ANOVA^b

Imputation Number	Type	Model		Sum of Squares	df	Mean Square	F	Sig.
0 Original data	Offices	1	Regression	43.535	2	21.768	982.706	.000 ^a
			Residual	2.680	121	.022		
			Total	46.215	123			

a. Predictors: (Constant), PCA Component 2, PCA Component 1

b. Dependent Variable: O_Sat_Scale

Coefficients^a

Imputation Number	Type	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
				B	Std. Error	Beta		
0 Original data	O	1	(Constant)	-.236	.097		-2.436	.016
			PCA Component 1	.201	.006	.916	36.542	.000
			PCA Component 2	.040	.010	.102	4.085	.000

a. Dependent Variable: O_Sat_Scale

Part 2: Quantitative analysis of the relationship between occupier satisfaction and property performance

This analysis is a pilot study to explore relationships between occupier satisfaction and property performance using data for a sample of properties from a single large UK property company. The sample represents approximately 10% of the company's UK Portfolio.

Measures of Property Performance

The most widely used measures of property performance are capital appreciation, income return and total return.

Capital Appreciation

Capital appreciation (or capital gain, CG) is the increase in value of a property CV, and to enable comparisons between properties, it is usually expressed as a percentage. Annual capital appreciation is the percentage increase in capital value over a 1-year period:

$$CG = (CV_{t+1} - CV_t) * 100 / CV_t$$

Capital value, however, is subjective, being determined by an appraisal process (Mallinson & French 1999). Unless the property was bought and sold at the start and end of the year, actual values for capital appreciation depend upon the skill and experience of the surveyor carrying out the valuation, with reference to recent sales prices of comparable property. Because actual transactions involving comparable property, in terms of location, specification, age and condition are likely to be few and far between, valuations are subject to a margin of error.

Formulae used by appraisers include the DCF (discounted cash flow) technique of obtaining the net present value (NPV) of future rental income and capital costs to assess the worth of a property - the Income Approach to Property Valuation (Baum et al. 2011). However the results depend upon what discount rate is chosen. Another way to obtain a probability distribution of the likely returns from property, and hence its worth, is to run Monte Carlo simulations using a range of values for the variables (Hoesli et al. 2006). In part, disparities arise because valuations are carried out for different purposes, for example to raise money to finance a purchase or to assess the value of a portfolio or fund; the former may depend upon a high value to enable the purchaser to borrow money whereas the latter may depend upon demonstrating that it is "well researched ... using sound methodology" (Levy & Lee 2009).

Surveyors in the UK use the "RICS Valuation – Professional Standards Guide" (also known as the "Red Book") to assess the market value of a property. Market value is defined as "the estimated amount for which an asset or liability should exchange on the *valuation date* between a willing buyer and a willing seller in an arm's length transaction, after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion." The appraiser must have regard to the "highest and best use" of the property, i.e. the use which would maximise its value, regardless of its current use.

Whereas **Value** is the estimate of the price that would be achieved if the property were to be sold in the market, potential buyers and sellers may have different opinions as to the **Worth** of a property i.e. the sum they would be willing to pay or accept for the property. Perception of worth depends upon individual circumstances, such as the differing return requirements (discount rates) of different investors. A developer may be able to achieve a higher rate of return by selling a property and investing the money in a new development, whereas another investor may achieve their business objectives and required returns from rental income from the property. Perception of worth also depends upon opinion about future rental income and occupancy rates, which may be distorted by market inefficiencies¹ such as information asymmetry. Actual sale prices and rents paid by occupiers are also affected by the supply of and demand for property, and a valuation will be subject to uncertainty and may not equal the price achieved if the property were actually sold (Ball et al., 2001 p.283).

¹ a market is said to be efficient if prices "fully reflect" available information (Fama 1970)

Income Return

The net income from a property is equal to the rent received minus the management costs and other expenditure on the property, such as refurbishment, rates payable. Annual income returns are generally expressed as a percentage of the appraised capital value at the start of the year, although investors can also calculate returns as a percentage of the price paid for the property, which may have been bought several years ago. As mentioned above, the NPV of the predicted stream of rental income is used to determine the worth of a property, but lease durations have reduced in response to occupiers' demands for flexibility, and rent review clauses are no longer necessarily "upward-only", so it is harder for property investors to predict the income return that will be generated. Rent-free periods and other incentives can also make it harder to determine income return from headline rents (Crosby & Devaney 2013).

Total Return

Total Return comprises the **net capital growth** of the property (i.e. increase in market valuation or actual sale price after capital expenditure) and the **net rental income** from the property (rent minus operational expenditure).

Total Return = net Capital Growth + net Rental Income

In order to compare the financial performance of different properties, with differing capital values and rents it is usual to measure the **yield** of the property i.e. the annualised rents of a property expressed as a percentage of the property value.

Aggregate measures of Property Performance

If "good customer service" does affect property performance, it might not be evident at an individual property level, because many factors determine rental income and capital growth. However, the impact of good customer service might be apparent when looking at the performance of the property company as a whole, particularly if good service increases occupier retention and demand through improved reputation and word-of-mouth or other recommendation. Therefore a supplementary approach to investigating the relationship between customer service and property performance is to examine company-level metrics. Such measures might include **overall vacancy levels** within the portfolio, **mean rents** and **mean yields**, and the **capital appreciation** of assets. The relative performance of different companies could be assessed after benchmarking against sector averages from the IPD universe. Another potential metric is the **share price** of listed REITs or other real estate companies; these could be compared with one another, and with the FTSE or other appropriate index as part of an investigation into occupier satisfaction and the reputation of owners and managing agents.

Data used for this part of the research:

Occupier Satisfaction Data:

Occupiers were interviewed either face-to-face or by telephone during the period 2002 – 2012. Interviews lasted around 30 minutes and included both qualitative and quantitative questions. The quantitative aspects included in this part of the research are overall occupier satisfaction, satisfaction with property management and satisfaction with value for money for rent and service charge.

- Overall occupier satisfaction scores - mean ratings from occupiers at each property giving ordinal responses on scale of 1 (low) -5 (high). The number of occupiers interviewed at each property ranged from 2 (in small offices) to more than 30 (in large shopping centres). The mean rating is the average of the scores given by each respondent at a property.
- Occupier Satisfaction with Property Management scores - mean ratings from occupiers at each property giving ordinal responses on scale of 1 (low) -5 (high). In some cases occupiers were asked about satisfaction with their landlord rather than satisfaction with property management, in which case this value was used in the analysis instead.
- Occupier satisfaction with Value for Money – used in some of the analysis as a control to see whether it has a significant effect on relationships between occupier satisfaction and property performance.

Property Performance Data:

Financial performance data for the properties was supplied by IPD, with the permission of the landlord concerned.

- Income Return (IncRet) for each property for the year of the satisfaction study and for each of the next five years.
- Compounded five-year income return for each property.
$$\text{FiveYearIncRet} = ((1 + (\text{IncRet}/100)) * (1 + ((\text{IncRet}_{+1})/100)) * (1 + ((\text{IncRet}_{+2})/100)) * (1 + ((\text{IncRet}_{+3})/100)) * (1 + ((\text{IncRet}_{+4})/100)))$$

To compare returns where there is data for fewer than 5 years, rather than compounding for only 2, 3 or 4 years, the adjusted five year income return is calculated by assuming the income return for a particular year equals that of the preceding or subsequent year.

- Excess Total Return for each property for the year of the satisfaction study and for each of the next five years; (excess total return obtained by subtracting the sector average return from the total return for the year concerned).
- Compounded five-year excess total return for each property.
- $$\text{FiveYearDiffTotRet} = ((1 + (\text{DiffTotRet}/100)) * (1 + ((\text{DiffTotRet}_{+1})/100)) * (1 + ((\text{DiffTotRet}_{+2})/100)) * (1 + ((\text{DiffTotRet}_{+3})/100)) * (1 + ((\text{DiffTotRet}_{+4})/100)))$$
- Where no data exists, for example because it relates to the future, it is assumed that the return equals the sector average i.e. zero excess return.
- Rent Passing divided by Estimated Rental Value for each property. This is used as a proxy for proportion of maximum rent achieved, to reflect occupancy rates and rent concessions during incentive periods. It will be affected by the rent review cycle – how recently a review has taken place – but the research hypothesis is that properties with highly satisfied occupiers are likely to have higher occupancy rates (i.e. lower void rates) and fewer occupiers paying concessionary rents.
- Five year mean Rent Passing / ERV.

Relationship between Occupier Satisfaction and Measures of Property Performance:

Combining all asset classes into a single data sample for analysis

Table 1 shows the descriptive statistics for the sample. These show that the data is not normally distributed, since skewness and kurtosis values are not zero¹. Most of the property performance figures show positive skewness, meaning that values are clustered towards the lower values. Conversely, measures of occupier satisfaction all exhibit negative skewness, meaning that scores are clustered towards higher values. All values of kurtosis are positive, meaning that the distribution is clustered in the centre, with relatively long thin tails (p. 57 Pallant, 2010). Non-normal kurtosis produces an underestimate of the variance of a variable, but this should not matter if the sample size exceeds about 100 (p. 80 Tabachnick & Fidell, 2013). Further analysis shows that removing extreme outliers does have a noticeable effect on the mean values of some of the variables used in the analysis. For example, the Mean Adjusted-Five-Yr-IncRet changes from 1.504 (4 s.f.) to a 5% Trimmed Mean of 1.336, and the mean overall satisfaction changes from 3.792 to a 5% Trimmed Mean of 3.802. The five year mean total return (adjusted for sector average returns) changes from 1.053 to a 5% Trimmed Mean of 1.030. In other words, the sample mean five-year total return exceeds the IPD sector averages by 5.3% whereas removing the top and bottom 5% of the sample reduces the excess five-year total return to 3%.

Table 1: Descriptive Statistics

	N	Min	Max	Mean	Std. Dev	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Year	321	2002	2012						
Overall Sat	316	2.500	5.000	3.792	0.392	-0.337	0.137	0.296	0.273
Understanding Needs	309	1.000	5.000	3.619	0.564	-0.818	0.139	1.243	0.276
Val Rent	148	1.500	4.500	3.095	0.501	-0.057	0.199	0.885	0.396
Sat Prop Mgmt	309	2.000	5.000	3.810	0.541	-0.718	0.139	0.166	0.276
IncomeRet	240	-0.346	42.925	6.072	3.458	5.634	0.157	55.704	0.313
INCRETplus1	258	-24.074	57.053	6.381	4.823	5.341	0.152	65.243	0.302
INCRETplus2	229	-0.309	103.566	7.287	9.030	8.12	0.161	74.522	0.32
INCRETplus3	199	-0.046	155.604	8.226	14.267	7.955	0.172	70.271	0.343
INCRETplus4	165	-11.167	155.604	7.157	12.108	11.368	0.189	139.922	0.376
INCRETplus5	88	-1.135	46.553	6.320	5.191	5.49	0.257	41.977	0.508
Five-Yr-IncRet	264	1.046	14.327	1.381	1.038	11.184	0.15	128.822	0.299
Adjusted-Five-Yr-IncRet	269	1.000	29.854	1.504	1.915	13.325	0.149	187.886	0.296
Mean-IncRet	266	1.118	89.787	6.829	7.065	9.92	0.149	106.963	0.298
DIFF-TOT-RET	238	-50.915	84.768	0.945	13.080	1.413	0.158	9.015	0.314
DIFF-TOT-RET-PLUS1	254	-45.555	54.664	0.703	11.246	0.801	0.153	4.969	0.304

¹ A normal distribution has a kurtosis value of 3, but SPSS subtracts 3 from the kurtosis value before giving the result (p. 79 Tabachnick & Fidell, 2013)

DIFF-TOT-RET-PLUS2	225	-50.915	66.903	0.805	13.479	0.665	0.162	4.504	0.323
DIFF-TOT-RET-PLUS3	192	-50.013	66.903	1.110	14.850	0.438	0.175	3.176	0.349
DIFF-TOT-RET-PLUS4	158	-50.915	66.903	0.946	15.295	0.41	0.193	3.405	0.384
DIFF-TOT-RET-PLUS5	130	-31.278	66.903	1.144	14.222	1.192	0.212	3.947	0.422
Five-Yr-DiffTotRet	257	0.235	3.827	1.053	0.370	3.36	0.152	22.997	0.303
Mean-Diff-Tot-Rec	256	-28.741	39.941	0.899	7.688	0.344	0.152	4.843	0.303
VAC-PROXY	237	0.109	1.269	0.872	0.148	-0.853	0.158	3.349	0.315
VAC-PROXY-PLUS1	242	0.267	1.562	0.899	0.146	-0.028	0.156	2.867	0.312
VAC-PROXY-PLUS2	213	0.020	1.571	0.916	0.164	-0.271	0.167	5.014	0.332
VAC-PROXY-PLUS3	178	0.304	1.571	0.920	0.169	0.355	0.182	2.76	0.362
VAC-PROXY-PLUS4	144	0.421	1.571	0.926	0.169	0.535	0.202	2.123	0.401
VAC-PROXY-PLUS5	116	0.050	1.425	0.912	0.202	-0.801	0.225	3.647	0.446
Mean-Vac-Proxy	264	0.619	1.269	0.909	0.115	0.424	0.15	0.698	0.299

The following graphs show the distributions for the measures of occupier satisfaction used in this pilot study:

Figure 1: Distribution of Mean Occupier Overall Satisfaction Scores

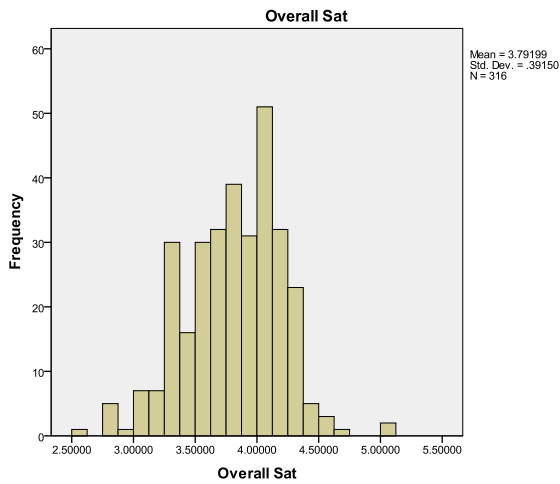


Figure 3: Distribution of Mean scores for Satisfaction with Understanding Needs

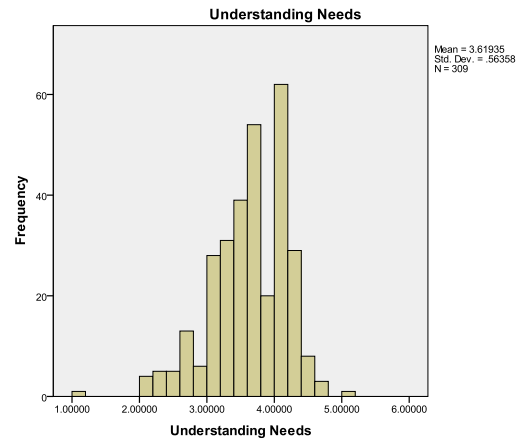
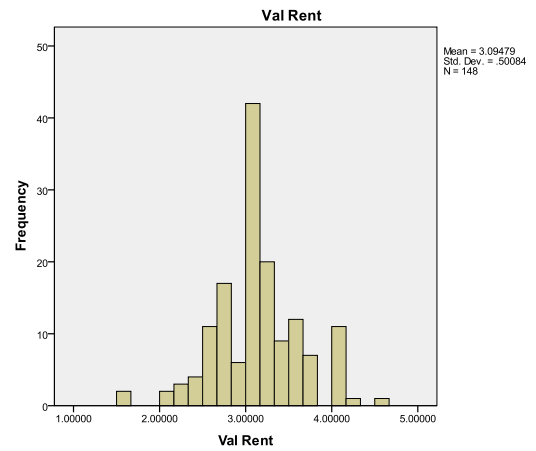
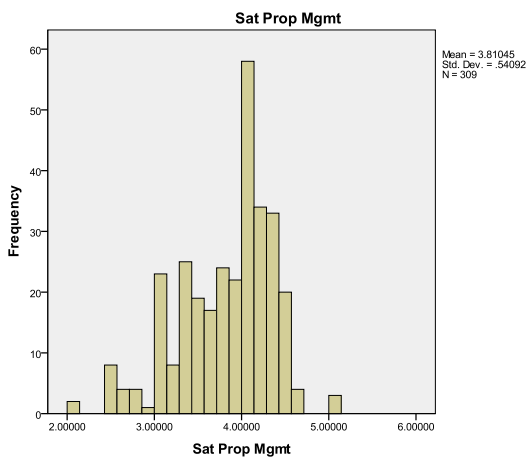


Figure 4: Distribution of Mean Scores for Satisfaction with Value for Money

Figure 2: Distribution of Mean Scores for Satisfaction with Property Management



Correlations between occupier satisfaction and measures of property performance

Tables 2 and 3 show the correlations between measures of occupier satisfaction and property performance for the combined sample. From Table 2 it can be seen that there are significant correlations between occupiers' overall satisfaction, their satisfaction with property management and their satisfaction with property managers' understanding of occupiers' needs. Overall satisfaction also shows strong correlation with excess five-year total return. In other words, properties where occupiers are highly satisfied have a greater total return after controlling for sector average returns for the 5-year period concerned. Of course, correlation does not imply causation, and occupiers could be highly satisfied because the property suits their needs whilst simultaneously appreciating in value because of its location, for example.

Table 3 shows that there is not a significant correlation between occupier satisfaction and income return, however. It seems likely that providing excellent property management costs more, thereby reducing net income return. The return on investment would appear to come through increased capital appreciation contributing to the increased total return.

When answering questions about satisfaction with rent, respondents are unlikely to express high levels of satisfaction as this would be a signal to the owners that they could charge a higher rent. This can be seen from the mean ratings in Table 1, where the mean satisfaction for value for money is 3.1, compared with around 3.7 for the other aspects of satisfaction. The sample size for this is also less than half that for the other aspects, both because respondents are less willing to answer the question and owners are less willing to pose it. The correlation between satisfaction with property management and the five year total return after controlling for the effect of occupiers' satisfaction with value for money increased from 0.045 to 0.058. Both are small figures, but an indication of the effect satisfaction with rent can have on stated satisfaction with other aspects.

Table 2: Correlations

		Overall Sat	Understanding Needs	Val Rent	Sat Prop Mgmt	Five-Yr-DiffTotRet	Mean-Diff-Tot-Rec
Overall Sat	Pearson Correlation	1	.594**	.141	.728**	.173**	.141*
	Sig. (2-tailed)		.000	.087	.000	.006	.026
	N	316	309	148	309	252	251
Understanding Needs	Pearson Correlation	.594**	1	.195*	.715**	.054	-.019
	Sig. (2-tailed)	.000		.019	.000	.397	.766
	N	309	309	145	302	247	246
Val Rent	Pearson Correlation	.141	.195*	1	.121	-.100	.036
	Sig. (2-tailed)	.087	.019		.145	.292	.704
	N	148	145	148	147	114	113
Sat Prop Mgmt	Pearson Correlation	.728**	.715**	.121	1	.045	-.004
	Sig. (2-tailed)	.000	.000	.145		.482	.949
	N	309	302	147	309	249	248
Five-Yr-DiffTotRet	Pearson Correlation	.173**	.054	-.100	.045	1	.874**
	Sig. (2-tailed)	.006	.397	.292	.482		.000
	N	252	247	114	249	257	256
Mean-Diff-Tot-Rec	Pearson Correlation	.141*	-.019	.036	-.004	.874**	1
	Sig. (2-tailed)	.026	.766	.704	.949	.000	
	N	251	246	113	248	256	256

** . Correlation is significant at the 0.01 level (2-tailed).

* . Correlation is significant at the 0.05 level (2-tailed).

Table 3: Further Correlations

		Overall Sat	Sat Prop Mgmt	IncomeRet	Five-Yr-IncRet	Adjusted-Five-Yr-IncRet	Five-Yr-DiffTotRet
Overall Sat	Pearson Correlation	1	.728**	.054	.006	.027	.173**
	Sig. (2-tailed)		.000	.404	.926	.660	.006
	N	316	309	239	262	266	252
Sat Prop Mgmt	Pearson Correlation	.728**	1	.081	.021	.032	.045
	Sig. (2-tailed)	.000		.214	.733	.606	.482
	N	309	309	235	257	261	249
IncomeRet	Pearson Correlation	.054	.081	1	.696**	.782**	.578**
	Sig. (2-tailed)	.404	.214		.000	.000	.000
	N	239	235	240	238	240	235
Five-Yr-IncRet	Pearson Correlation	.006	.021	.696**	1	.887**	.657**
	Sig. (2-tailed)	.926	.733	.000		.000	.000
	N	262	257	238	265	264	252
Adjusted-Five-Yr-IncRet	Pearson Correlation	.027	.032	.782**	.887**	1	.610**
	Sig. (2-tailed)	.660	.606	.000	.000		.000
	N	266	261	240	264	270	254
Five-Yr-DiffTotRet	Pearson Correlation	.173**	.045	.578**	.657**	.610**	1
	Sig. (2-tailed)	.006	.482	.000	.000	.000	
	N	252	249	235	252	254	257

** . Correlation is significant at the 0.01 level (2-tailed).

Figure 5: Distribution of Five-Year Compounded Income Returns

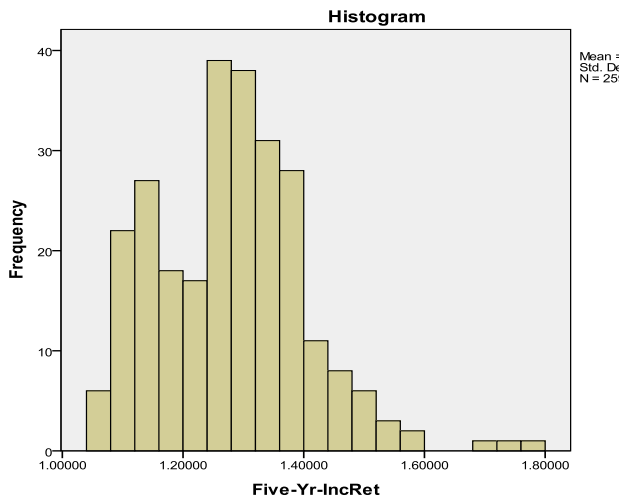


Figure 7: Distribution of Five-Year Compounded Excess Total Returns

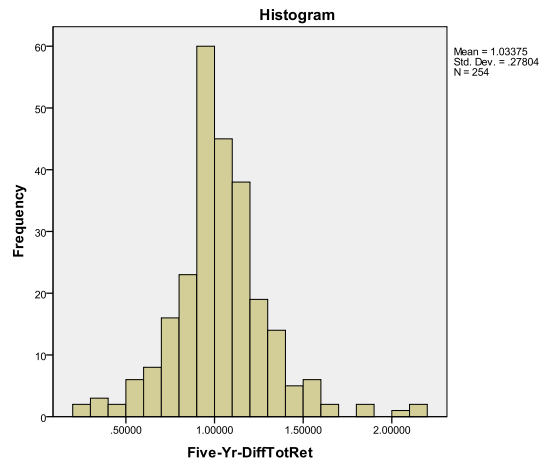


Figure 8: Comparison with Normality

Figure 6: Comparison with Normality

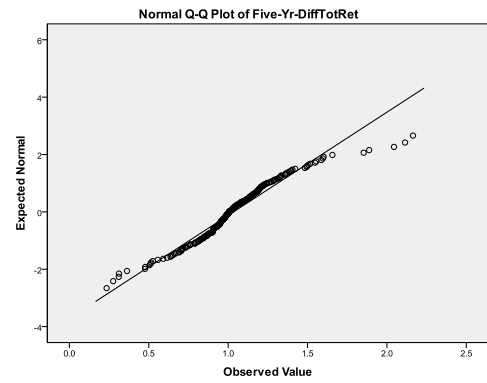
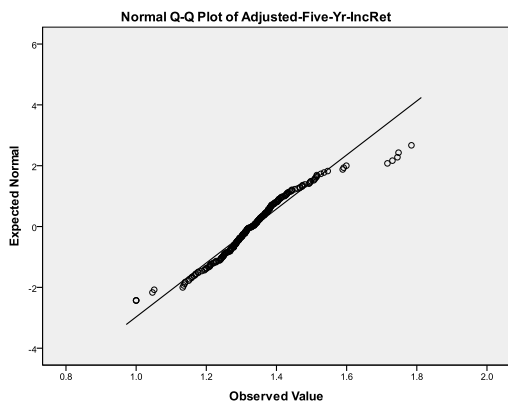


Table 4 gives mean performance values for the five-year total return and the occupancy proxy for each of the four quartiles of occupier satisfaction. Group 1 comprises properties in the lowest quartile of overall occupier satisfaction, whilst group four comprises those in the top quartile for satisfaction. These quartiles are adjusted to take sector into account. As can be seen from the table, the mean five-year total return increases as occupier satisfaction increases, and the result is highly significant (sig = 0.006 in ANOVA table). However the results for the occupancy proxy are less conclusive, although a trend towards increased occupancy is apparent from the mean results for the lowest through to the highest quartiles.

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
Five-Yr-Diff-Tot-Ret	1	57	0.989	0.269	0.036	0.918	1.061	0.311	1.597
	2	68	0.996	0.304	0.037	0.922	1.069	0.235	1.888
	3	63	1.032	0.268	0.034	0.965	1.100	0.477	2.114
	4	64	1.191	0.542	0.068	1.056	1.327	0.669	3.827
	Total	252	1.053	0.373	0.024	1.007	1.099	0.235	3.827
Mean-Vac-Proxy	1	57	0.903	0.128	0.017	0.869	0.937	0.675	1.269
	2	69	0.917	0.109	0.013	0.891	0.943	0.619	1.179
	3	66	0.891	0.100	0.012	0.866	0.915	0.642	1.147
	4	68	0.922	0.119	0.014	0.893	0.951	0.687	1.229
	Total	260	0.909	0.114	0.007	0.895	0.922	0.619	1.269

Figure 9: Five Year Total Return as a function of Occupier Satisfaction Quartiles

		Sum of Squares	df	Mean Square	F	Sig.
Five-Yr-Diff-Tot-Ret	Between Groups	1.707	3	.569	4.243	.006
	Within Groups	33.257	248	.134		
	Total	34.964	251			
Mean-Vac-Proxy	Between Groups	.039	3	.013	1.010	.389
	Within Groups	3.319	256	.013		
	Total	3.359	259			

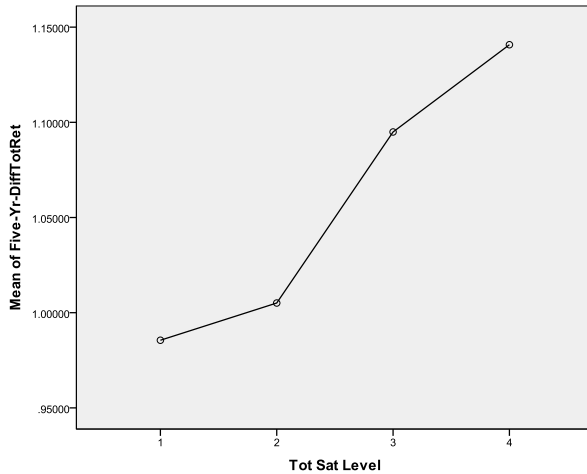


Figure 9 shows the mean five-year return (adjusted for sector average returns) for properties where occupier satisfaction is in the bottom quartile (Tot sat Level = 1), second quartile, third quartile and top quartile (Tot Sat Level = 4). For this graph, the quartiles were not adjusted for sectors, so the values differ slightly from those in Table 4, but the same trend is apparent. The graph highlights the effect of occupier satisfaction on five-year total return – greater satisfaction correlates strongly with greater total return. In fact the methods of calculating the five-year income returns and total returns tend to underestimate the returns for properties with higher occupier satisfaction. This is because a conservative approach is used to estimate future returns. For future total returns the return is assumed to equal that of the sector average, i.e. zero excess return, whereas the fact that the portfolio exceeds the IPD average by 3 – 5% renders this a probable underestimate. Similarly future income returns are taken to equal those for the closest year for which data is available, which does not make allowance for things like rent reviews. These assumption would not matter if occupier satisfaction were time-invariant, but in the sample used for this analysis satisfaction increases slightly in the more recent years, so the returns for properties with higher satisfaction, which tend to be the more recent ones, are likely to be higher than the values used in this analysis.

Tables 5-8 show the results of independent samples t-tests, comparing the mean values of various measures of property performance for properties where occupier satisfaction is above a certain threshold with values for properties where occupier satisfaction is below the threshold. In tables 5 and 6, the threshold for mean overall occupier satisfaction is 3.8, whilst in tables 7 – 8 the threshold is 4.0. From table 5 it can be seen that for each of the performance measures, the values are higher for the group with higher occupier satisfaction. However, Table 6 shows that only the five-year total return reaches the statistical significance level of 95%, meaning that there is only a 5% probability of the result occurring by chance. Levene’s Test shows a significance level greater than 0.05 in each case, so equal variances can be assumed for the two groups, but only Five-yr-DiffTotRet has a 2-Tailed Sig of 0.05¹. Selecting a higher cut-off value for mean occupier satisfaction at a property, it can be seen from Tables 7 and 8 that property performance is greater for properties where occupier satisfaction exceeds 4, but this time the difference is significant for some of the other variables too, including the occupancy proxy (Vac-Proxy) and the total return for the property (the excess total return after subtracting the IPD average return for the sector and year when occupier satisfaction was obtained). However the effect size is fairly small:

Eta squared = $t^2 / (t^2 + N1 + N2 - 2) = 0.023$ for the five year total return. A value of 0.01 is considered a small effect whilst 0.06 is a moderate effect (p 243. Pallant, 2010).

¹ Actually 0.052

Table 5: Independent Samples t-Test: Group Statistics

	Overall Sat	N	Mean	Std. Deviation	Std. Error Mean
IncomeRet	>= 3.80000	137	6.295	3.986	0.341
	< 3.80000	102	5.784	2.595	0.257
Five-Yr-IncRet	>= 3.80000	147	1.417	1.379	0.114
	< 3.80000	116	1.331	0.220	0.020
DIFF-TOT-RET	>= 3.80000	135	1.194	13.565	1.167
	< 3.80000	101	0.397	12.489	1.243
Five-Yr-DiffTotRet	>= 3.80000	140	1.094	0.425	0.036
	< 3.80000	112	1.002	0.290	0.027
VAC-PROXY	>= 3.80000	135	0.885	0.147	0.013
	< 3.80000	100	0.855	0.150	0.015
Mean-Vac-Proxy	>= 3.80000	147	0.919	0.109	0.009
	< 3.80000	113	0.895	0.119	0.011

Table 6: Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
IncomeRet	Equal variances assumed	0.008	0.931	1.128	237	0.26	0.511	0.453	-0.381	1.403
	Equal variances not assumed			1.197	233.176	0.232	0.511	0.427	-0.330	1.351
Five-Yr-IncRet	Equal variances assumed	2.403	0.122	0.664	261	0.507	0.086	0.129	-0.169	0.341
	Equal variances not assumed			0.743	155.331	0.458	0.086	0.116	-0.142	0.314
DIFF-TOT-RET	Equal variances assumed	0.222	0.638	0.462	234	0.644	0.797	1.726	-2.602	4.197
	Equal variances not assumed			0.468	224.126	0.64	0.797	1.705	-2.563	4.158
Five-Yr-DiffTotRet	Equal variances assumed	0.694	0.406	1.954	250	0.052	0.092	0.047	-0.001	0.185
	Equal variances not assumed			2.036	244.287	0.043	0.092	0.045	0.003	0.181
VAC-PROXY	Equal variances assumed	1.052	0.306	1.526	233	0.128	0.030	0.020	-0.009	0.068
	Equal variances not assumed			1.522	211.026	0.13	0.030	0.020	-0.009	0.068
Mean-Vac-Proxy	Equal variances assumed	0.394	0.531	1.729	258	0.085	0.025	0.014	-0.003	0.052
	Equal variances not assumed			1.709	229.653	0.089	0.025	0.014	-0.004	0.053

Table 7: Group Statistics

	Overall Sat	N	Mean	Std. Deviation	Std. Error Mean
IncomeRet	>= 4.00000	95	6.546	4.615	0.473
	< 4.00000	144	5.768	2.395	0.200
Five-Yr-IncRet	>= 4.00000	101	1.479	1.661	0.165
	< 4.00000	162	1.318	0.195	0.015
DIFF-TOT-RET	>= 4.00000	94	2.882	13.877	1.431
	< 4.00000	142	-0.491	12.417	1.042
Five-Yr-DiffTotRet	>= 4.00000	95	1.126	0.467	0.048
	< 4.00000	157	1.009	0.296	0.024
VAC-PROXY	>= 4.00000	94	0.896	0.141	0.015
	< 4.00000	141	0.857	0.151	0.013
Mean-Vac-Proxy	>= 4.00000	102	0.924	0.110	0.011
	< 4.00000	158	0.898	0.116	0.009

Table 8: Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
IncomeRet	Equal variances assumed	0.789	0.375	1.705	237	0.09	0.777	0.456	-0.121	1.676
	Equal variances not assumed			1.513	127.723	0.133	0.777	0.514	-0.239	1.794
Five-Yr-IncRet	Equal variances assumed	7.393	0.007	1.222	261	0.223	0.161	0.132	-0.099	0.420
	Equal variances not assumed			0.97	101.722	0.334	0.161	0.166	-0.168	0.490
DIFF-TOT-RET	Equal variances assumed	0.018	0.893	1.949	234	0.052	3.373	1.731	-0.037	6.783
	Equal variances not assumed			1.905	183.666	0.058	3.373	1.770	-0.120	6.866
Five-Yr-DiffTotRet	Equal variances assumed	1.038	0.309	2.437	250	0.016	0.117	0.048	0.022	0.212
	Equal variances not assumed			2.193	140.407	0.03	0.117	0.053	0.012	0.223
VAC-PROXY	Equal variances assumed	2.726	0.1	1.979	233	0.049	0.039	0.020	0.000	0.078
	Equal variances not assumed			2.007	208.575	0.046	0.039	0.019	0.001	0.077
Mean-Vac-Proxy	Equal variances assumed	0.201	0.654	1.793	258	0.074	0.026	0.014	-0.003	0.054
	Equal variances not assumed			1.814	223.997	0.071	0.026	0.014	-0.002	0.054

Analysing Asset Classes Separately:

Tables 9-11 show that the mean overall occupier satisfaction for these samples is highest for shopping centres and lowest for retail parks. The same findings apply to occupier satisfaction with property management. Independent samples t-tests with Levene's test for equality of variances shows that the differences in mean satisfaction levels for the three asset classes are significant, (see Appendix A).

Table 9: Offices: Descriptive Statistics^a

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Overall Sat	104	2.500	5.000	3.726	.424	-.075	.237	.702	.469
Sat Prop Mgmt	102	2.000	5.000	3.652	.540	-.245	.239	.251	.474

Table 10: Retail Parks: Descriptive Statistics^a

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Overall Sat	64	2.750	4.470	3.580	.402	-.033	.299	-.799	.590
Sat Prop Mgmt	62	2.140	4.580	3.393	.568	-.096	.304	-.739	.599

Table 11: Shopping Centres: Descriptive Statistics^a

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Overall Sat	148	3.170	5.000	3.930	.303	-.205	.199	.312	.396
Sat Prop Mgmt	145	3.160	5.000	4.100	.327	-.660	.201	.445	.400

Analysis of Variance Calculations

Effect on 5-Year Total Returns

The properties were grouped according to mean occupier satisfaction into four groups (approximately corresponding to quartiles) and Analysis of Variance was carried out to test if there were significant differences in measures of property performance between the groups.

Figures 10 - 12 show how the five year total return changes for properties in each quartile of occupier satisfaction. The ordinate shows the difference between the return achieved and the sector average. For offices, properties with occupier satisfaction above the median show greater five year total return than those below the median, although there is an anomalous result for the top two quartiles, perhaps because the difference in occupier satisfaction between these quartiles is very small, or because the sample size is fairly small, or because of the numerous other confounding factors affecting property returns.

Offices where occupier satisfaction is in the lowest quartile actually underperform the IPD office average (adjusted 5-year total return < 1.0). For retail parks, the increasing trend is clear, but only those properties for which occupier satisfaction is in the top quartile outperform the IPD benchmark, doing so by 7.5%. The trend for shopping centres is also one of correlation between financial performance and occupier satisfaction; again only properties where satisfaction is in the top quartile significantly outperform the market.

Figure 10: Five Year Total Return as a function of Occupier Satisfaction Quartiles for Offices

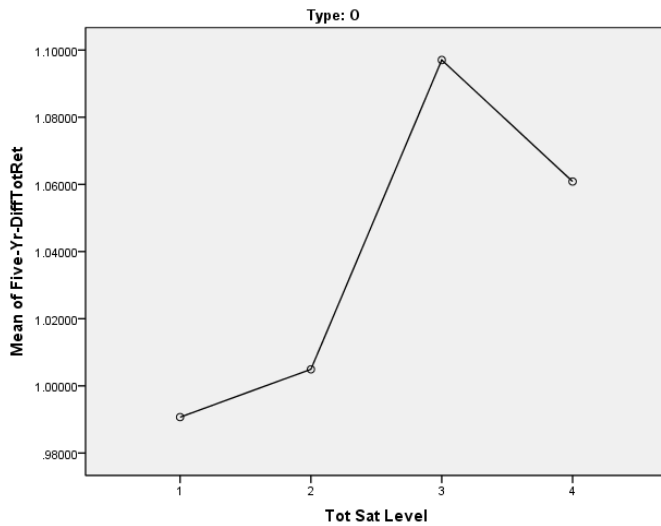


Figure 11: Five Year Total Return as a function of Occupier Satisfaction Quartiles for Retail Parks

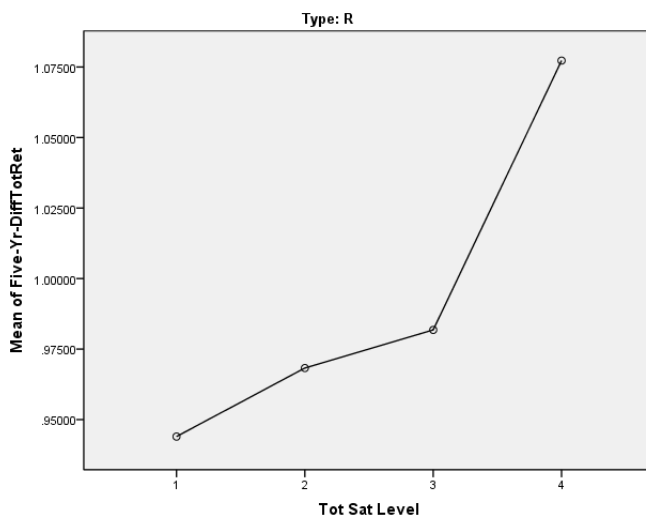
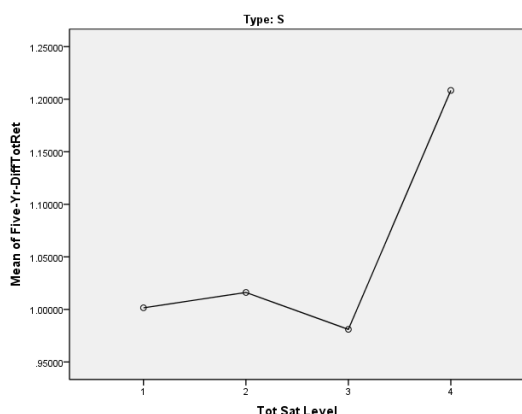


Figure 12: Five Year Total Return as a function of Occupier Satisfaction Quartiles for Shopping Centres



Comparison of Means using Independent Samples t-Tests

The asset classes were analysed separately to see the effect upon five year total return according to whether occupier satisfaction levels were above or below the mean for the sector.

Table 12 shows that the mean five-year total return for offices where occupier satisfaction exceeded the mean value of 3.7 (from Table 9) was 22% above the IPD benchmark whereas it was 3% below the benchmark for offices where occupier satisfaction was below average. Tests showed that equal variances can be assumed (Levene’s Test sig > 0.05) and that the difference in five-year return is significant (sig = 0.028). Table 13 shows the t-test results for warehouses on retail parks. In this case, retail parks where mean occupier satisfaction exceeded 3.6 (the mean value for the sector – see Table 10) was 3% above the IPD benchmark whereas it was 5.5% below the benchmark for offices where occupier satisfaction was below average. In this case, independent samples t-tests found that the results are not statistically significant at the 95% level, i.e. it is possible that they could occur by chance. Table 14 gives the results for shopping centres, and t-tests show that the difference between the two groups is statistically significant in this case. The mean five-year total return for shopping centres where occupier satisfaction exceeded the mean value of 3.9 (from table 11) was 8% above the IPD benchmark whereas it was 3% below the benchmark for shopping centres where occupier satisfaction was below average.

Table 12: Offices Group Statistics

	Overall Sat	N	Mean	Std. Deviation	Std. Error Mean
Five-Yr-DiffTotRet	>= 3.700	43	1.221	.643	.098
	< 3.700	39	.969	.302	.048

Table 13: Retail Warehouses Group Statistics^a

	Overall Sat	N	Mean	Std. Deviation	Std. Error Mean
Five-Yr-DiffTotRet	>= 3.600	21	1.030	.141	.031
	< 3.600	14	.949	.224	.060

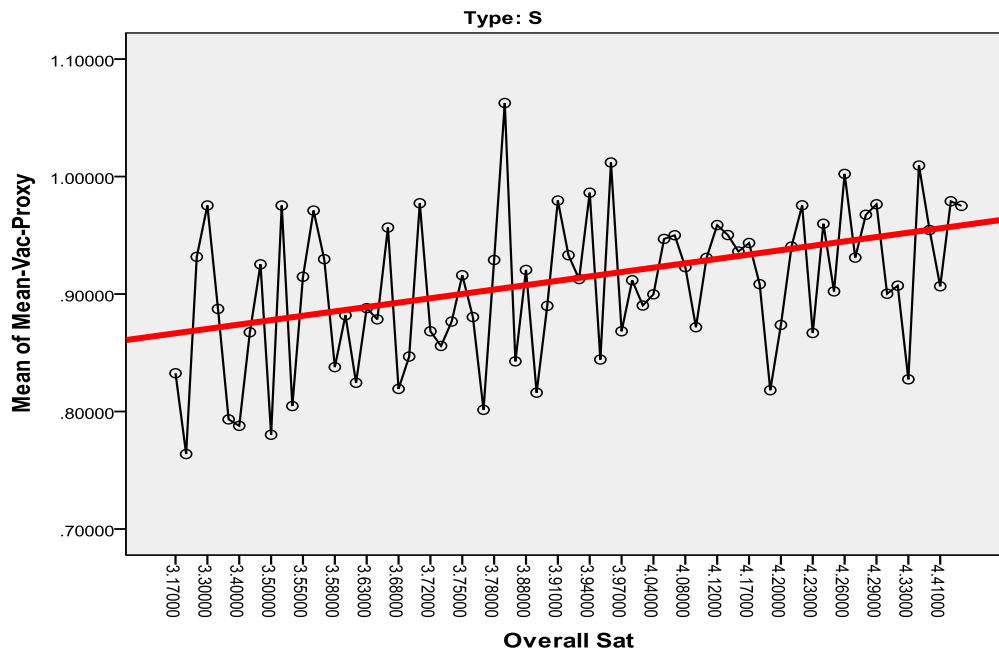
Table 14: Shopping Centre Group Statistics^a

	Overall Sat	N	Mean	Std. Deviation	Std. Error Mean
Five-Yr-DiffTotRet	>= 3.900	84	1.081	.300	.033
	< 3.900	51	.967	.265	.037

Effect on Rent Passing / ERV

ANOVA calculations were carried out to see the effect on occupancy levels of occupier satisfaction. The five year average values of Vac-Proxy (=rent passing/ERV) were calculated for properties in which occupier satisfaction grouped according to quartile. The results for offices are counter-intuitive, implying that a higher proportion of ERV is achieved for offices in which occupier satisfaction is in the lowest quartile. The results for retail parks are inconclusive, whereas those for shopping centres indicate that where occupier satisfaction is in the lowest quartile, rent passing is only around 75% of ERV whereas it reaches 92-93% for higher levels of occupier satisfaction. The variance in Mean-Vac-Proxy (the occupancy proxy) is evident from Figure 13.

Figure 13: Occupancy Proxy versus Occupier Satisfaction for Shopping Centres



From Figure 13 it can be seen from the trend line how occupancy increases with increased occupier satisfaction in shopping centres, but the volatility of the data is apparent.

Effect on Income Return

Figures 14 – 16 show the five year income return¹ as a function of the occupier satisfaction quartiles, for the sectors separately.

For offices, apart from a spike for the second highest occupier satisfaction quartile, income return appears little affected by occupier satisfaction. Income return is the net figure, after management costs are taken into account, so it seems possible that higher gross income achieved from higher occupancy and perhaps greater rates of lease renewal may be offset by increased property management costs in the offices concerned. The benefits of increased satisfaction appear to accrue from greater total return rather than greater income return. For retail parks, the negative correlation between occupier satisfaction and income return may at first sight indicate the possibility of over-investment in property management costs for retail parks. However, the benefits accrue from greater total return, as seen in Figure 11. Also, there was more missing data on income return for the retail parks with lower occupier satisfaction so the findings might be affected by the small sample size (see Caveats, below). For shopping centres, there does appear to be a correlation between income return and occupier satisfaction. It does seem plausible that a prime shopping centre with good footfall is able to offer good returns for both retailers and centre owners, so part of the occupier satisfaction may be because the retailers are satisfied with

¹ Where data is unavailable for a year, for example because of extrapolation into the future, it is assumed that income return is the same as the nearest year for which data is available

their financial performance relative to other retailers, which may be reflected in the scores they give to overall satisfaction.

Figure 14: Five Year Income Return as a function of Occupier Satisfaction with Property Management Quartiles for Offices

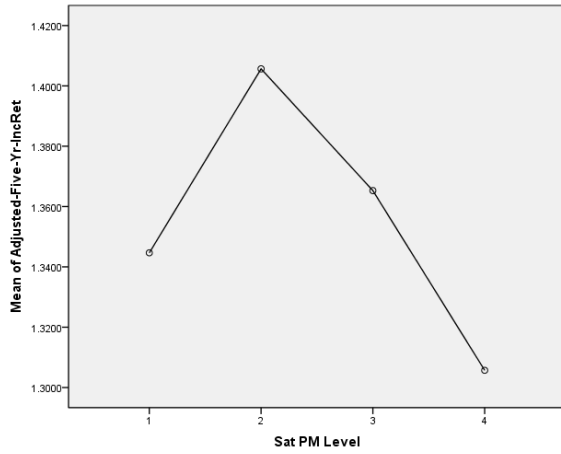


Figure 15: Five Year Income Return as a function of Occupier Satisfaction Quartiles for Retail Parks

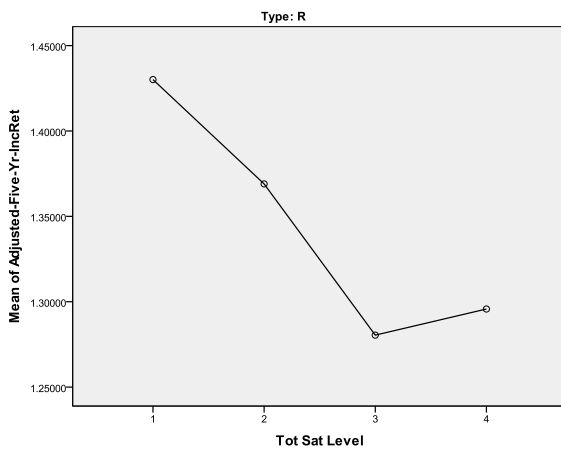
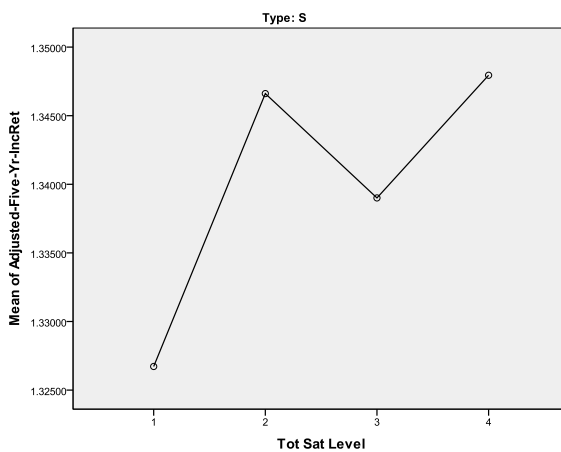


Figure 16: Five Year Income Return as a function of Occupier Satisfaction Quartiles for Shopping Centres



Key Findings and Conclusions

1. Adjusted five year total return does show correlation with occupier satisfaction for the sample as a whole, and for the individual asset classes.
2. Income return shows a variable relationship with occupier satisfaction, according to the sector – positive correlation for shopping centres but inconclusive for offices and seemingly negative for retail parks in the sample studied. Income return is the net figure, after management costs are taken into account, so it seems possible that higher gross income achieved from higher occupancy and perhaps greater rates of lease renewal may be offset by increased property management costs in the offices or retail units concerned. The benefits of increased satisfaction appear to accrue from greater total return rather than greater income return.
3. The fact that the total returns exceed the IPD sector averages for the sample as a whole indicates that a company that takes occupier satisfaction seriously does appear to benefit as a whole, perhaps from improved reputation or from occupiers who need to move premises choosing to rent with the same landlord or have the same property manager. However, the performance could be the result of astute investment in properties / locations where there is high demand.
4. The data represents a fairly small sample from a single landlord. A much larger sample is needed from a variety of owners / investors to confirm or refute the findings of this pilot study.

Assumptions / Confounding Factors / Caveats

1. Data was collected from the databases of IPD and of RealService. Some properties had different names or numbers so there was the potential for error, and also meant that some performance data was missed.
2. In some cases there were several IPD entries referring to different units within a retail park or different phases of a shopping centre. Judgment had to be exercised to decide the most appropriate values to use. Generally the values used were those for the property with the greatest floor space, but in some case an average of the values was used instead.
3. The variable VacProxy (= Rent Passing/ERV) was used as a proxy for occupancy rate, since vacancy rates were not available. It represents an indication of the fraction of achievable revenue being generated and takes into account incentive or rent-free periods as well as vacancies. It is not clear from the raw data how incentives / rent-free periods are accounted for – see Crosby & Devaney (2013).
4. Returns show great volatility – expenditure may be spread across more than one year, or may take place one year to reap benefits the following year. For this reason, five year compounded returns were chosen as a more appropriate measure.
5. Occupier feedback for some properties is based on just one or two respondents, especially for offices. Generally for retail, the number of respondents is much higher – say 30 – so the mean occupier satisfaction for such properties is less volatile.

Appendix A: Analysis demonstrating that the mean differences between satisfaction levels in different sectors are significant:

Group Statistics

Type	N	Mean	Std. Deviation	Std. Error Mean
Overall Sat O	104	3.7264	.4238	.042
S	148	3.930	.3029	.025

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Diff	95% Confidence Interval of the Difference		
										Lower	Upper
Overall Sat	Equal variances assumed	7.480	.007	-4.439	250	.000	-.203	.046	-.293	-.113	
	Equal variances not assumed			-4.193	174	.000	-.203	.048	-.299	-.108	

Equal Variances NOT assumed (Levene's Stat sig < 0.05)
 There is a significant difference between means (Sig 2-tailed < 0.05)

Group Statistics

Type	N	Mean	Std. Deviation	Std. Error Mean
Overall Sat O	104	3.726	.424	.042
R	64	3.580	.402	.050

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
										Lower	Upper
Overall Sat	Equal variances assumed	.370	.544	2.213	166	.028	.146	.066	.016	.277	
	Equal variances not assumed			2.241	138.915	.027	.146	.065	.017	.275	

Equal Variances ARE assumed (Levene's Stat sig > 0.05)
 There is a significant difference between means (Sig 2-tailed < 0.05)

Group Statistics

Type	N	Mean	Std. Deviation	Std. Error Mean
Overall Sat S	148	3.930	.303	.025
R	64	3.580	.402	.050

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Overall Sat	13.442	.000	6.955	210	.000	.349	.050	.250	.448
Equal variances assumed			6.229	95.276	.000	.349	.056	.238	.461
Equal variances not assumed									

Equal Variances NOT assumed (Levene's Stat sig < 0.05)

There is a significant difference between means (Sig 2-tailed < 0.05)

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