Constructing the Model for Malaysia's Office Classification

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ABSTRACT

The ability to perform accurate classification or grading of offices is important for the reliable assessment of office stock quality. In Malaysia, research has been ongoing to develop an office classification framework of sufficient calibre to be adopted as a national standard. In the earlier phase, the research had sought to determine the appropriate criteria to be included in the framework; the challenge then was to arrive at the criteria that not only take cognisance of the practices in other countries but at the same time embrace local values and preferences in their details. That phase of the work having being accomplished, the next step is to develop the appropriate office classification (or grading) model. The current paper dwells on this. It discusses three possible approaches to the model construction and provides arguments in favour of one of them.

Keywords: *Criteria, classification framework, office buildings*

Introduction

An effective market performance monitoring of the office sector depends on the ability to assess the quality of office stock. Since data for such an assessment comes from the individual office buildings, the reliable assessment of the stock quality depends on being able to grade office buildings reliably and consistently. A suitable grading tool is therefore imperative. In Malaysia, the need to develop such tool has been motivated by the fact that no model is currently in place as standard for office classification across the country.

Office buildings vary in their feature and quality; in the marketplace, the different qualities that they offer provide investors and tenants with the choices that are available in meeting their specific needs and objectives.

Some backgrounds

In Malaysia, a major concentration of offices lies within the conurbation of Kuala Lumpur and four other major cities of Penang, Johor Bahru, Ipoh and Kuching. Kuala Lumpur seats the Petronas Twin Tower and and boasts by far the largest number of office buildings in the country.

Malaysia has never had a standard model for office classification Over the past thirty years, a number of organisations had independently endeavoured in search of a suitable model. Despite the impetus, which was mainly private-sector driven, the goal of standard national office classification model remained elusive. The findings from a research needs analysis undertaken by the National Property Research Centre in 2006 underscored the need for a national effort to found an acceptable model. It led to the decision by the government to commission a research project to address the office classification issue and find a suitable model. This research initiative is precisely an outcome of that decision.

Currently, the research has proceeded past the major milestones and is heading towards conclusion. As the investigation progressed over the last two years, this research had published a series of papers in conferences and journals to report on interim findings. The current paper is a continuation along the same trajectory with a view to reporting on the outcome from the remaining phase of the work.

n recapitulation, the process of data assembly in this research proceeded through three main stages. First, as part of understanding the problem, an extensive literature review was undertaken on previous works that relate to office classification. This was followed by the field data collection involving visits to selected countries, and then by the local knowledge elicitation exercise. To put this paper in context, a brief summary of the stages involved is first presented.

Review of earlier works

In arriving at the office classification model, the research had needed to address two major challenges: first, what criteria are relevant to the model, and second, how will the classification model be formed using the chosen criteria.

Work commenced with a documentary review of published materials that relate to office classification. Evidence showed that earlier published materials relate mainly to works that focus on some specific aspects of office quality. Examples include works by Bender et al (2000) that dealt with locational issues; Leishman et al (2004) which highlighted factors determining firms' choice of office citing size, business type and type the market they serve as contingent; Hamelink et al (2000) and Jackson et al (2005) on the economic dimension; and Sinou et al (2006), (Wilkinson et al (2006) and Leifer (1998) on the physical dimension.

The next step was to investigate the treatment of office grading among local practitioners. In Malaysia, the earliest initiative appears to have its origin within the City Hall of Kuala Lumpur which, in 1990, introduced a classification guideline that adopts the ratings of 5-star, 4-star and 3-star. Rahim & Co Research followed in 1992 with a similar rating system employing location and facilities provided as the assessment criteria.

Jones Lang Wootton proposed a variant to the model, adopting a formatted marking system with weights assigned to account for location, accessibility, physical features and building services. They classified buildings into Super Prime, Prime A, Prime B, Secondary A, Secondary B and Secondary C. At about the same time, Henry Butcher introduced a model that worked on the weighted scoring of offices based on their main building features; it however ignored the design, building systems and services aspects.

For the treatment of models in other countries, the team visited Singapore, Hong Kong, London, Chicago, Tokyo and Sydney. We found Australia as probably at the forefront of the endeavour in having developed a model based on a structured decision process. Developed by the Property Council of Australia, the model grades office into one of the five categories of Premium, A, B, C or D. Grading involves testing an office against the pre-determined quality standards for all the grading criteria and putting the office on the highest grade that it passes.

In USA, the Building Owners and Managers Association (BOMA) worked on a regime that rated office buildings subjectively based on their competitive ability to attract similar tenants, employing criteria that included rents, building finishes, systems standards and efficiency, building amenities, location/accessibility and market perception. In Singapore, Colliers International and Cushman & Wakefield employed their own criteria for classifying Class A buildings. Colliers International, for example, incorporated location, amenities, building specifications, age and total building area while Cushman & Wakefield also included public transportation, ownership and car park in their model.

In Hong Kong, the Rating & Valuation Department developed the idea around a simple matrix that takes into account mainly the physical building features, professional management and normal parking facilities. Colliers International Hong Kong and Knight Frank Hong Kong had included location, age and rental in the classification in addition to the building features that have been accounted for. Various real estate consultants in Tokyo have adopted a simple measure to classify office buildings. CB Richard Ellis, Japan, DTZ Debenham Tie Leung, KK and Jones Lang La Salle have chosen location and floor area as common criteria. Other criteria that have been included in one or the other companies are the age, building features, accessibility and image. In London, real estate organisations such as Knight Frank and Jones Lang La Salle have chosen location and building facilities as common criteria to classify office buildings. The other criteria that have been included by either of the companies include accessibility, transportation link and market demand.

As alluded to earlier, the efforts came largely from individual organisations working independently towards a grading tool to fulfill their own ends. It appears evident that office classification has not gained enough importance in any country to motivate the search for a standard national model. In this respect, Australia is probably the exception. In the latter's case, the publication of "A Guide to Office Building Quality" by the Property Council of Australia in 2006 represents a major step forward in moving towards a standard national office classification framework.

Drawing on the local input for the selection of quality criteria

The literature survey and the investigation into local and international practices resulted in the identification of twenty seven office quality elements to be considered for their inclusion in the Malaysian model. These elements were therefore to be carried forward to the next stage of the study. The selection was made on the basis of the perceived theoretical significance of the elements as well as the regularity of their occurrences in the many models reviewed. It was now necessary to identify the elements that are locally relevant to serve as criteria the country's office classification model. This called for the participation of the local experts to provide their opinion. The exercise was conducted with two objectives. The first objective was the selection of the elements to form the criteria while the second was to assign weight to the importance of each criterion.

Identification of the locally relevant office quality elements

To generate the input, the experts focus group methodology was adopted. The key feature of this method is the explicit use of the group interaction to produce data and insights that would be less accessible without the interaction found in a group (Morgan 1988:12). The experts were selected from among the major stakeholder groups within the Malaysian property market comprising the tenants, owners and managers of purpose-built offices (PBO) in Kuala Lumpur.

The findings showed an agreement between what are considered relevant in other countries and those that are regarded as relevant locally except for the three quality elements of green building, ample natural lighting and prestige quality access from an attractive street setting. With no elements being newly introduced by the experts, the result was a shorter list to be adopted for the locally-relevant criteria than proposed by the earlier works. The table below presents the comparison.

Factor/*Element*	**International survey**	**Views of local experts**
Location: *Location, Transport Access*	Both	Both
Economic: *Prospect for Rental and Capital Growth*	Both	Both
Physical: *Mechanical, Tenants Risers, Lift, Power, Lighting Power Consumption, Standby Power: Base Building, Building Management, Communications, Hydraulics, Security, Amenities, Parking, Floor Plate Size, Floor Area, Building Age*	All	All
Environment: *Green Building, Energy Saving*	Both	Excluded: *Green Building*
Others: *Expensive View/Outlook, Ample Natural Lighting, Prestige Lobby and Lift Finishes, Prestige Quality Access from an Attractive Street Setting, High Quality Lift Ride, Premium Presentation and Maintenance*	All	Excluded: *Ample Natural Lighting, Prestige Quality Access from an Attractive Street Setting*

Weighing the importance of the quality elements as criteria

The analytic hierarchical process method (AHP) was employed to assign the relative weight to each office quality element. Developed by Saaty (1994, 1996), AHP has been shown to be superior to other multiple-criteria decision-making procedures such as the equal weight averaging model (EWAM) and simple multi-attitude rating technique (SMART) (Kang and Stam, 1994; Wang and Yang, 1998). Importantly, AHP allows for both scoring and weighting of factors.

The technique was applied on a sample involving three groups of the property market stakeholders to derive perceived weights across the office quality elements. The results as presented in table below show some variations in the importance the different groups placed on the determinants with location being ranked as the most important overall (refer to an earlier paper for the detailed percentage breakdown). A summary of the weights and the corresponding ranks appears in Appendix A.

Once the above was achieved, the remaining work was to derive the grading framework through the following process sequence:

Selecting the basis for grading decision rules

↓

Setting the criteria standards

↓

Designing the grading model

↓

Validating the model

Laying down the grading decision rules: the search for a suitable basis

Having arrived at the the important criteria, the next step was to work towards constructing the classification model. This had entailed finding an appropriate basis to use for laying down the decision rules to underlie the constructed model. The deliberation on this problem led the team to consider three alternative bases as possible. They are as follows:

The ‘all weight’ basis

The all weight basis involves assigning an appropriate weight to each criterion of interest based the criterion’s relative importance as a grading parameter. A score is then generated as a product of associating the weight with a building’s presence or non-presence of that criteria element. A building obtains the total score by collecting scores produced by the individual elements that it has. Mathematically:

Score of an office $(Z) = \Sigma w_i x_i$

where:

w_i = weight for ith element

x_i = 1 or 0 depending on whether or not the ith element is present

$\Sigma w_i = 1$

The total score obtained for a particular office building is matched against an earlier constructed grading table thereby establishing the grade that building qualifies for.

The weights can be produced by using the AHP procedure explained earlier.

The “minimum requirement” basis

This approach relies on prescribing the minimum standards on each criterion that applies for a particular office grade. Collectively, the standards form the minimum requirement for that grade. Each criterion is therefore a critical criterion. To qualify for a particular grade, an office must attain the minimum requirement.

A grading exercise using this approach involves a filtering process which starts by testing a building against the standards for the highest grade. The building must pass the minimum requirement in order to stop at that grade; otherwise, it will move to the next lower grade in a cycle that repeats until the right grade has been found.

The hybrid basis

This approach relies on combining the 'must have' (i.e. the minimum requirements) with 'the desirable to have' (the scored factors). For each grade, the included standards are prescribed such that the criteria perform as "must have" while the not-so-critical ones perform as "desirable to have" standards. The "must have" standards impose on a building the quality elements that are compulsory to have in order to be considered for that grade. Each "desirable to have" standard, on the other hand, prescribes the quality element as desirable and contributes to a frequency score. The grade prescribes a minimum frequency score that the desirable elements must collectively attain as that grade qualifier.

This approach is thus a hybrid basis that combines the features found in the all weight and the minimum requirement bases. In essence, a buildings is graded according to whether or not its qualities fulfill all the critical criteria as well as the minimum number of the desirable criteria prescribed for a particular grade.

Review of the bases

The "all weight" basis was first considered. This approach involves first attaching a system of weights to the criteria and then using those weights to generate an overall score for a subject building. An office grade can then be decided for that building based on that total score attaining a level pre-determined for that grade. Deriving the weights is not an issue, as weights are derivable with the Analytic Hierarchy Process (AHP) procedure.

A major difficulty with this approach, however, arises from the fact that its total score depends on the addition of all the scores from the individual elements. Given the number of elements involved, an infinitely large number of possible score combinations are possible to lead to a particular total score. That being the case, it is possible for certain elements to 'pool' together to influence the final outcome and, in doing so, put a building on a grade higher than should be the case just because that building is strong on those elements when in reality it fails on the critical criteria. A possible example of this situation would be an office in physically rundown state but located in premium grade locations (such as around the Petronas Twin Tower) whereby the superiority of the location could more than offset the physical inferiority to place the building in a higher grade tan should be.

The minimum requirement basis, on the other hand, avoids the pitfalls of the all weight basis. By setting the minimum standard for all the criteria, the task of grading an office becomes quite straightforward since a building grade is determined according to the highest grade it can achieve passing all the elements.

A perceived drawback of the minimum requirement basis, however, is its propensity to be inflexible particularly in the treatment of the borderline cases. It makes no room for trade-offs nor any allowance for errors of judgment in cases where it is reasonable to contemplate giving the 'benefits of doubts'. Its rigidity also means that it offers no room to adjust for the fact that some elements do not fit in as a 'must have' but are nonetheless important enough to be considered as 'desirable to have'.

The hybrid basis relies on both the must have and desirable to have elements. A strength of this approach is that it strikes the middle road between the other two approaches and, in doing so, addresses the weaknesses inherent in them. By taking into consideration both the critical and not-so-critical factors, this approach bases its decision on a broader base of information than offered by the minimum requirement basis. At the same time, it overcomes the 'looseness' inherent in the all weight basis, which lessens the arbitrariness in grading. The underlying basis for determining a building grade under this approach is the consideration of the critical factors as against the not-so-critical ones. The critical factor dictates the necessity of certain elements to be present as the minimum required while the not-so-critical factor signifies the importance placed on the contribution of specified elements to grade quality; in combination with other similar elements, its role can make a difference to an office grade but on its own, will not be enough to influence the grading decision.

This hybrid system is deemed to remove such elements of uncertainty since a building must fulfill all the minimum requirements imposed for that particular score to qualify for that grade; it will not attain that grade if it fails on any one of the minimum requirement criteria despite having superior scores on all other criteria. At the same time, it does provide for some flexibility in the grading exercise. It does address the balance between the two differing notions and, more importantly, removes the "arbitrariness" associated with grading an office using an all weight basis.

On the basis of the above arguments, the team offered the view of the hybrid basis as most promising. It was, however, necessary to validate this view for local acceptability. For that reason, the three alternative approaches were submitted to the experts for their views.

Drawing on the knowledge of the local experts

The Expert Focus Group Method was again employed for this stage of the research. A total of 24 panellists were involved. This time the experts asked to validate findings of the team and to provide inputs for the final selection of the standards and setting of the standard parameters.

Which basis to use

For their first task, the experts were presented with the three approaches. They were asked to consider which of the three or any other approaches, if any, was appropriate. The experts arrived at a consensus decision in favour of the hybrid basis. This decision was reached on grounds very similar to those based on by the team.

Setting the criteria standards

The panelists were then given the list of office quality factors to consider for their inclusion as criteria. More specifically, their tasks were to consider whether for a particular grade: (a) a particular factor should be included or not as a criterion, and; (b) if it is to be included, whether it should be a 'must have' or as a 'desirable to have' criterion.

Each criterion was taken one at a time. For each criterion, the object is to determine whether to put it under "must have" (MH) or "desirable to have" (DTH) category. With guidance from the facilitator, the experts panel were asked to deliberate on their choices and subsequently to form a consensus view.

The results resolved to as follows:

Premium grade

To qualify for a Premium grade, an office is required to satisfy 29 "must have" (MH) criteria and at least 7 out of 15 "desirable-to-have" (DTH) criteria. Note that all the DTH criteria come within the Building System and Others criteria.

Grade A

To qualify for grade A, an office is required to satisfy 18 MH criteria and a certain combination of DTHs. For this grade, one (out of 4) location criteria is prescribed as a DTH. In this way, a building does not fail to achieve Grade A just because it fails to satisfy this quality. However, to reflect the fact that location is important (as reflected from AHP analysis earlier), this location DTH is traded against a number of other criteria. The exact number of DTHs needed depends on whether the building possesses this location DTH. If yes, then it only needs 9 of the other DTHs (approximately 50%); if no, then the building needs to have 13.

Grade B
To qualify for Grade B, an office is required to satisfy 9 MH qualities and a certain combination of DTHs. For this grade, three (out of 4) locational criteria are prescribed as DTHs. This leads to a number of possible trade-offs between the locational DTHs and other DTHs. If all the three location DTHs are fulfilled, then the building need not fulfill any of the 11 other DTHs; if instead, it fulfills any two, then it needs to secure at least 3 from other DTHs; if any 1, then 5; if none of the three, then it needs to fulfill all the 11 other DTHs.

Grade C
To qualify for Grade C, an office is required to satisfy 5 MH qualities and at least one of the three DTHs.

Grade D
To qualify for Grade D, an office is required to satisfy 1 MH criterion and at least one of the two DTHs.

Presenting the grading model as a matrix
The classification tool was presented in the form of a matrix. The matrix sets the benchmark against which offices are graded. The building grades are arranged in columns starting with the highest (premium) to the lowest (grade D). In the rows are the criteria together with their corresponding descriptors. Each descriptor plays the role of a standard setter and behaves accordingly depending on whether it has been pre-set as a ‘must have’ or a ‘desirable to have’; if the former, then it acts as a disqualifier where a building fails to meet its standard whereas if the latter, it will flag either a 0 or 1 as score.

Validating the classification model
For the purpose of validation, a number of office buildings were taken from the major cities of Kuala Lumpur, Johor Bahru, Georgetown, Ipoh, Kuching and Kota Kinabalu as sample. These sample offices were graded using the derived model. The same sample was given to several local property experts who were asked to independently determine the building grades based on their own professional judgment. The two sets of grade were then compared. Refer to Appendix B for the details.

The results show different levels of agreement. For Kuala Lumpur and Kota Kinabalu, the derived grading model results in grades that agree almost entirely with the grades achieved most by property experts. For Johor Bahru, Georgetown, Ipoh and Kuching, similar matches obtained, but with the model tending to under-grade relative to the property experts. While the incidence of under-grading is marginal for the first three cities, it appears more pronounced in the case of Kuching. Nevertheless, for all the grading that has been undertaken in this validation exercise, no grade is in such a disagreement that the grading model results in a difference of two grades or more from the property experts’ opinion.

Concluding remarks

As this research draws to its conclusion, the aim of a standard office classification model for Malaysia is almost realised. At the time this paper was written, the grading model has been handed to the authorities and is awaiting clearance from its release to the public. From the point of view of the researchers, useful experience had been learned through this project and meaningful contributions made to the body of knowledge pertaining to the construction of an office grading model. Further model improvements are possible while regular updating becomes necessary over time in line with the need to respond to the dynamics of the property market.

The team is particularly grateful to the National Property Research Centre (NAPREC) for granting the team the opportunity to undertake the project and ultimately to the government of Malaysia for the funding support.

References

Babcock, R. R. (2003). The Tenant/Workplace Equation Part 1, *Buildings*, Jan 2003, 91.1, pp. 50-52.

Ball, J. & Srinivasan, V. (1994). “Using the analytic hierarchy process in house selection”. *Journal of Real Estate Finance and Economics,* Vol. 9, pp. 69-85.

Bender, A., Din, A., Hoesli, M. & Brocher, S. (2000). "Environmental preferences of homeowners: further evidence using the AHP method”. *Journal of Property Investment and Finance,* 18 (4), 445-455.

Bender, A., Din, A., Hoesli, M. & Laakso, J. (1999). “Environmental quality perceptions of urban Commercial Real Estate”. *Journal of Property Investment and Finance*, 17 (3), 280-296.

Bender, A., Hoesli, M. & Laakso, J. (1999). Environmental quality perceptions of urban commercial real estate. *Journal of Property Investment and Finance*, Vol. 17(1).

BOMA Chicago. (2007). *Market Summary Update - end 2006.*

Bottom,C., McGreal, S. & Heaney, G. (1998). The suitability of premises for business use: an evaluation of supply/demand variations. *Property Management*, Vol.16 (3), pp. 134-144.

City Hall of Kuala Lumpur. (1990). *Guidelines for classification of office buildings in Kuala Lumpur.* Building and Planning Control Department, City Hall of Kuala Lumpur, Kuala Lumpur.

Colliers International. (2007). *Singapore Office Property Market Overview.* Singapore: Colliers International Research & Consultancy.

Hamelink, F., Hoesli, M., Lizieri, C. & Brian MacGregor. (2000). Homogeneous commercial Property Market Groupings and Portfolio Construction in the United Kingdom. *Environmental and Planning*, 33, pp.323-344.

Hansen, K. (1996). Less opulence more options: What commercial tenants really want. *Journal of Property Management*, Vol 61(6), pp. 28-32.

Hemphill, L., McGreal, S. & Berry, J. (2002). “An aggregated weighting system for evaluating sustainable urban regeneration”. J*ournal of Property Research,* 19 (4), 353-373.

Henry Butcher. (2001). How the Buildings are Graded, City and Country, The Edge Publications.

Ho, D., Newell, G. & Walker, A. (2005). The importqnce of property-specific attributes in assessing

CBD office building quality. *Journal of Property Investment & Finance*, 23 (5), 424-444.

Hoffman, J., Schniederjans, M. & Sirmans, G. (1990). "A multi-criteria model for corporate property evaluation". *Journal of Real Estate Research,* Vol. 5 No. 3, pp. 285-299.

Hsieh, C.I. (1997). A note on corporate overseas investment decision priorities of Taiwanese direct real estate investors. *Journal of Real Estate Research,* Vol. 13 No. 3, pp. 359-68.

Jackson, C. & White, M. (2005). Challenging Traditional Real Estate Market Classifications for Investment Diversification. *Journal of Real Estate Portfolio Management*, Vol. 11(3), pp.307-321.

Jones Lang Wootton. (2001). Overview of the Klang Valley Property Sector as at 1st Quarter-4th Quarter 2001, Jones Lang Wootton, Kuala Lumpur.

Kang, M. &Stam, A. (1994). "PAHAP: a pairwise aggregated hierarchical analysis of ratio-scale preferences". *Decision Sciences*, 25 (4), 21-35.

Kauko, T. (2003). Residential property values and locational externalities. *Journal of Property Investment and Finance,* Vol. 21, pp. 250-70.

Kitzinger Jenny. (1994). 'The methodology of Focus Groups: the importance of interaction between research participants'. *Sociology of Health and Illness,* 16 (1), 103-121.

Knight Frank. (2007, November). Hong Kong Prime Offices. *Monthly Report November 2007.*

Kohlhoff, J. T. (1994). The work place of the future: Managing through change. *Journal of Property Management*, Vol. 59(1), pp.30-33.

Leifer, D. (1998). Evaluating user satisfaction: case studies in Australasia. *Facilities*, Vol. 15(5/6), pp. 138-142.

Leishman, C. and Watkins, C. (2004). The decision-making behaviour of office occupiers. *Journal of Property Investment & Finance*, Vol. 22(4), pp. 307-319.

Morgan L. D. (ed.). (1993). Successful focus groups: advancing the state of the art. Newbury Park: Sage Publications.

Munroe, L. K. (2003). The Tenant/Workplace Equation part II. *Buildings*, Vol. 91 (1), pp. 50-52.

NAPIC. (2006). *Property Market Report Quarter 4 2006*. NAPIC, Kuala Lumpur.

Ong, S.E. & Chew, T.I. (1996). "Singapore residential market: an expert judgemental forecast incorporating the analytical hierarchy process". *Journal of Property Valuation and Investment,* 14 (1), pp. 50-66.

Rahim & Co Research. (1993). The Klang Valley Office Market – An indication of Trends 1993-2008, Rahim & Co., Kuala Lumpur.

RICS. (2005). *RICS Tenant Satisfaction Index: Tune in to tenants*. RICS, London.

Saaty, T. (1980). The Analytical Hierarchy Process. New York: McGraw-Hill.

Saaty, T. (1996). Multicriteria Decision Making – The Analytical Hierarchy Process, RWS Publications, Pittsburgh, PA.

Schniederjans, M., Hoffman, J. & Sirmans, G. (1995). “Using goal programming and the analytical hierarchy process in house selection”. *Journal of Real Estate Finance and Economics,* Vol. 11, pp. 167-76.

Sinou, M. & Kyvelou, S. (2006). Present and future building performance assessment tools. *Journal of Management of Environmental Quality*, Vol. 17, No 5, pp. 570-586.

Sullivan, E. (2006). Satisfied Customers. *Building Operating Management*, Vol. 53(12), pp.21-26.

The Knowledge: Market Overview October 2007, Colliers International Hong Kong.

Tokyo City Profile Autumn 2007, DTZ Debenham Tie Leung Consulting and Research.

Wang, M. & Yang, J. (1998). “A multi-criteria experimental comparison of three multi-attribute weight measurement methods”. *Journal of Multi-Criteria Decision Analysis*, Vol. 7, pp. 340-350.

Wilkinson, S.J. & Reed, R.G. (2006). Office Building and the environment – the increasing importance of ESD, 12th Annual Pacific Rim Real Estate Conference, University of Auckland, NZ 22-25 Jan 06.

Yang, J. & Lee, H. (1997). “An AHP decision model for facility location selection”, *Facilities, 15* (9), 241-54.

Results from AHP analysis on the perceived importance of office quality elements

Element/Stakeholders	All		Owners		Building Managers		Tenants	
Location	0.399		0.370		0.503		0.481	
Location	0.500	0.200	0.500	0.185	0.500	0.252	0.500	0.241
Transport	0.500	0.200	0.500	0.185	0.500	0.252	0.500	0.241
Economics	0.252		0.416		0.239		0.137	
Rental prospect	0.568	0.143	0.750	0.312	0.500	0.120	0.500	0.069
Capital growth	0.432	0.109	0.250	0.104	0.500	0.120	0.500	0.069
Physical	0.184		0.131		0.162		0.209	
Mechanical	0.105	0.019	0.149	0.020	0.110	0.018	0.086	0.018
Tenant risers	0.043	0.008	0.022	0.003	0.049	0.008	0.045	0.009
Lifts	0.099	0.018	0.127	0.017	0.101	0.016	0.087	0.018
Electrical	0.118	0.022	0.166	0.022	0.116	0.019	0.109	0.023
Standby	0.102	0.019	0.088	0.012	0.120	0.019	0.125	0.026
Building management	0.085	0.016	0.108	0.014	0.061	0.010	0.097	0.020
Communications	0.071	0.013	0.041	0.005	0.089	0.014	0.082	0.017
Hydraulics	0.055	0.010	0.036	0.005	0.050	0.008	0.064	0.013
Security	0.095	0.017	0.095	0.012	0.109	0.018	0.085	0.018
Amenities	0.027	0.005	0.016	0.002	0.015	0.002	0.025	0.005
Parking	0.078	0.014	0.082	0.011	0.088	0.014	0.055	0.011
Floor plate size	0.047	0.009	0.029	0.004	0.031	0.005	0.062	0.013
Floor area	0.049	0.009	0.030	0.004	0.041	0.007	0.058	0.012
Building age	0.024	0.004	0.011	0.001	0.021	0.003	0.019	0.004
Environmental	0.075		0.026		0.045		0.085	
Green building	0.401	0.030	0.167	0.004	0.500	0.023	0.500	0.043
Energy saving	0.599	0.045	0.833	0.022	0.500	0.023	0.500	0.043
Others	0.090		0.058		0.051		0.089	
Expensive view	0.156	0.014	0.076	0.004	0.239	0.012	0.178	0.016
Ample natural lighting	0.133	0.012	0.091	0.005	0.128	0.007	0.138	0.012
Prestige lobby and lift finis	0.139	0.013	0.073	0.004	0.158	0.008	0.157	0.014
Prestige quality access	0.159	0.014	0.133	0.008	0.158	0.008	0.157	0.014
High quality lift ride	0.194	0.017	0.268	0.016	0.158	0.008	0.157	0.014
Premium presentation and maintenance	0.218	0.020	0.359	0.021	0.158	0.008	0.213	0.019
Total	**5.997**	**1.000**	**6.001**	**1.001**	**6.000**	**1.000**	**6.000**	**1.001**

The office quality elements as ranked in terms of their perceived importance

Element	All	Owners	Bldg Managers	Tenants
Location				
Location	*1*	*2*	*1*	*1*
Transport	*2*	*3*	*2*	*2*

Economics				
Rental prospect	*3*	*1*	*3*	*3*
Capital growth	*4*	*4*	*4*	*4*
Physical				
Mechanical	*9*	*8*	*9*	*12*
Tenant risers	*12*	*24*	*21*	*24*
Lifts	*11*	*9*	*11*	*11*
Electrical	*7*	*5*	*8*	*8*
Standby	*10*	*13*	*7*	*7*
Building management	*15*	*11*	*15*	*9*
Communications	*19*	*16*	*12*	*14*
Hydraulics	*22*	*18*	*20*	*19*
Security	*13*	*12*	*10*	*13*
Amenities	*25*	*25*	*26*	*25*
Parking	*16*	*14*	*13*	*23*
Floor plate size	*24*	*23*	*24*	*20*
Floor area	*23*	*22*	*22*	*22*
Building age	*26*	*26*	*25*	*26*
Environmental				
Green building	*6*	*20*	*5*	*5*
Energy saving	*5*	*6*	*6*	*6*
Others				
Expensive view	*18*	*19*	*14*	*15*
Ample natural lighting	*21*	*17*	*23*	*21*
Prestige lobby and lift finishes	*20*	*21*	*16*	*16*
Prestige quality access	*17*	*15*	*17*	*17*
High quality lift ride	*14*	*10*	*18*	*18*
Premium presentation and maintenance	*8*	*7*	*19*	*10*

Summary of grading of sample office buildings in selected cities in Malaysia

Bldg Name City	PREMIUM	GRADE A	GRADE B	GRADE C	GRADE D	Grade derived from study matrix	Notes
KUALA LUMPUR							Eight local consultants participated. Grades derived from study matrix matches the majority of the grades given by the consultants.
Building A*			3	4	1	Grade C	
Building B			1	4	3	Grade C	
Building C	1	5	2			Premium	
Building D		6	2			Grade A	
Building E	2	4	2			Grade A	
JOHOR BAHRU, JOHOR							Two local consultants participated. Grades derived from the study showed a lower rating than the ones given by the consultants
Building A1							
Building B1			2			Grade C	
Building C1	1	1				Grade A	
Building D1		1	1			Grade B	
Building E1		2				Grade A	
Building F1		2				Grade B	
KOTA KINABALU, SABAH							Five consultants participated. Grades derived from the study matches the ones given by the consultants. Though there are differences for some given grades the accuracy of the info as per checklist will have to be reexamined.
Building A2		2	3			Grade B	
Building B2		2	3			Grade B	
Building C2		1	2	2		Grade B	
Building D2			1	2	2	Grade C	
Building E2		3	2			Grade C	
KUCHING, SARAWAK							Three consultants participated. The grades derived from the study showed a lower rating than the ones given by the consultants. The grades derived from the study is one grade lower,
Building A3	1	1				Grade B	
Building B3			2	1		Grade C	
Building C3			2	1		Grade B	
Building D3	1	2				Grade B	
Building E3			3			Grade C	

GEORGETOWN, PENANG							
Building A4			1	2		Grade C	Three consultants participated. The grades derived from the study is one grade lower than the ones given by the consultants
Building B4		2	1			Grade B	
Building C4		2	1			Grade B	
Building D4			3			Grade C	
Building E4			2	1		Grade C	
IPOH, PERAK							Four property consultants partcipated. Grades derived the model match the ones by the consultants. Although there are differences, for some given grades, the accuracy of the information as per checklist will need to be verified.
Building A5			1	3		Grade C	
Building B5			3	1		Grade B	
Building C5			1	3		Grade B	
Building D5			1	1	2	Grade C	
Building E5				2	2	Grade D	

*Actual names have been dropped for confidentiality reason