A FRAMEWORK OF FACILITIES MANAGEMENT SERVICE USER INDICATORS THROUGH USER EXPERIENCE TO ACHIEVE SERVICE EXCELLENCE IN WASTE MANAGEMENT SERVICE IN MALAYSIAN LOCAL GOVERNMENTS

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A thesis submitted in fulfilment of the requirement for the award of Doctor of Philosophy in Real Estate and Facilities Management

Faculty of Technology Management and Business
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SEPTEMBER, 2018
DEDICATION

This thesis is dedicated to my dear father and in loving memory of my late mother for their unwavering encouragement, support, prayers and advice which guided me towards this achievement, they have been the source of my inspiration. Not forgetting my siblings and step-mother for their prayers and moral support.
Praise be to Almighty Allah, for giving me life, strength and blessings in my entire life. My life craving desire is achieved through your inspiration, I thank you Allah for sustaining my life throughout this endeavor. I am most grateful to my supervisors in person of Associate Professor Sr. Dr. Rozilah Kasim and Professor Sr. Dr. David Martin @ Daud Juanil for their guidance, positive observations, support, suggestions and assistance throughout the period of my PhD. You have affected my life in a most positive way. Sincerely, the merits goes to my supervisors for their guidance, motivation and objective criticism in the research process, thank you for disseminating such a wealth of knowledge. My sincere appreciation, regards and gratitude also goes to Associate Professor Sr. Dr. Mohd Lizam Bin Mohd Diah and Associate Professor Sr. Dr. Azlina MD Yassin respectively. I sincerely thank you for your guidance and enormous contributions toward the success of this thesis. I really appreciate your unique recommendations and positive contribution which are truly inspiring. My special gratitude goes to Mohammed Ali Backer for your wonderful assistance and contributions rendered during the period of my data collection may Allah reward you abundantly. I wish to thank my loving wife and my Son for their love, support and understanding. I wish to extend my gratitude to my father for the motivation, caring and affection. I can’t thank you enough. You are a shining light in my life. To my late mother may Allah grant Her Jannatul Firdaus, and my brothers, sister and step-mother, uncles and aunties and the whole family, thank you for all your support.
ABSTRACT

Service excellence is a new paradigm in Malaysian local governments that is responsible for waste management including cleaning and garbage collection as part of facilities management services. Urbanisation has created a quest for excellent services which is associated with change in consumption pattern and increase in waste generation in the country. The practice of Service quality has issues, especially in operationalisation. Service users are not satisfied with services on waste management services in the state of Johor. This necessitates empirical study aimed at proposing Framework of Facilities Management service user indicators to achieve service excellence in waste management services Malaysian in local governments.

The methodology involved mixed method and data was collected from service users in five local governments which included Iskandar Puteri City Council, Pasir Gudang Municipal Council, Kulai Municipal Council, Pontian District Council and Johor Bahru City Council in Iskandar Malaysia. Twenty-five interviews were conducted and analysed using Nvivo version 8.0. One thousand seven hundred and fifty questionnaires were administered and SPSS version 23 was used for the analyses. Exploratory Factor Analysis was first conducted out of which seven components emerged; meeting user needs, service promise, dealing with complaints/problems, development & innovation, friendly and helpful service, measurement analysis, equipment & maintenance are used to run Logistic Regression and the result revealed that service users recognized meeting the needs of the service users and it is level of significance is 0.012, understand and correct problems is 0.000, performance measurement to deliver service promise is 0.002, knowledge friendly and helpful is 0.000 because they add more values to waste management services hence most significant indicators for values to be gained. While the result from Nvivo Analyses revealed that to achieve a good service user experience, the local governments needs to focus on the service users, utilise it is service experience and provide personal touch in service delivery, promise on delivery, understand service user needs, customer experience, deals with complaints, enhance it is operational process and measurement analysis. The overall result revealed that customer focus needs to be enhanced, adding personal touch, promise on delivery and dealing with problems and going extra mile on services. It is also discovered that service users preferred pleasant service delivery and handling customer complaints positively improve service user satisfaction. Future study should consider the service providers as the respondents and the study should also be replicated in other local governments. The study would benefit policy makers and local governments.
ABSTRAK

Kecemerlangan perkhidmatan adalah paradigma baru di kerajaan tempatan Malaysia yang bertanggungjawab untuk pengurusan sisa termasuk pembersihan dan pengumpulan sampah sebagai sebahagian daripada perkhidmatan pengurusan kemudahan. Urbanisasi telah mewujudkan usaha untuk mencapai perkhidmatan cemerlang yang dikahtakan dengan perubahan dalam corak kepenggunaan dan menimbulkan peningkatan penjanaan. Amalan kualiti perkhidmatan mempunyai isu-isu, terutama dalam pengoperasian. Pengguna perkhidmatan tidak berpuas hati dengan perkhidmatan pengurusan sisa di Negeri Johor. Oleh itu kajian empirikal diperlukan bertujuan untuk mencadangkan petunjuk pengguna bagi rangka kerja pengurusan kemudahan perkhidmatan untuk mencapai perkhidmatan cemerlang dalam perkhidmatan pengurusan sisa Malaysia dalam kerajaan tempatan. Metodologi yang terlibat adalah kaedah bercampur dan data yang dikumpulkan daripada perkhidmatan pengguna dalam lima PBT di Iskandar Malaysia yang termasuk Majlis Bandaraya Iskandar Puteri, Majlis Perbandaran Pasir Gudang, Majlis Perbandaran Kulai, Majlis Daerah Pontian dan Majlis Bandaraya Johor Bahru. Dua puluh lima temubual dijalankan dan menganalisis menggunakan Nvivo versi 8.0. Satu ribu tujuh ratus lima puluh soal selidik yang telah dijalankan dan SPSS versi 23 digunakan untuk menganalisis sampel. Analisis faktor penerokaan pertama dijalankan mana tujuh komponen muncul; Mesyuarat pengguna memerlukan, jaminan perkhidmatan, menangani aduan/masalah, pembangunan & inovasi, perkhidmatan yang mesra dan sedia membantu, analisis pengukuran, peralatan & penyelenggaraan akan digunakan untuk menjalankan regresi logistik dan hasil telah menunjukkan ianya telah memenuhi keperluan pengguna perkhidmatan dan iaitu pada tahap yang penting 0.012, memahami dan memperbetulkan masalah pada tahap 0.000, ukuran prestasi untuk jaminan perkhidmatan adalah 0.002, mesra maklumat dan sedia membantu adalah 0.000, kerana mereka menambah lebih nilai kepada pengurusan perkhidmatan sisa buangan maka petunjuk lebih ketara bagi nilai-nilai yang akan diperolehi. Manakala hasil daripada analisis Nvivo mendedahkan bahawa untuk mencapai pengalaman pengguna perkhidmatan yang baik, kerajaan tempatan perlu memberi tumpuan kepada pengguna perkhidmatan, menggunakan pengalaman perkhidmatan dan memberikan sentuhan peribadi dalam penyampaian perkhidmatan, jaminan penghantaran, memahami keperluan pengguna perkhidmatan, keperluan pengalaman berkaitan dengan aduan, meningkatkan daya proses operasi dan pengukuran analisis. Hasil keseluruhan mendedahkan bahawa tumpuan pelanggan perlu dipertingkatkan,
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<td>BEF</td>
<td>Business Excellence Framework</td>
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<td>British Institute Of Facilities Management</td>
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<td>BNQP</td>
<td>Baldrige National Quality Program</td>
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<td>CAA</td>
<td>Comprehensive Area Assessment</td>
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<tr>
<td>CROSQ</td>
<td>Caricom Regional Body for Standards and Quality</td>
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<td>DBS</td>
<td>Development Bank of Singapore</td>
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<td>EFQM</td>
<td>European Foundation for Quality Management</td>
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<td>EiLG</td>
<td>Excellence in Local government</td>
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<td>EURO FM</td>
<td>European Facilities Management</td>
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<td>FM</td>
<td>Facilities Management</td>
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<td>FM-SUIF</td>
<td>Facilities Management Service User Indicator Framework</td>
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<td>GTP</td>
<td>Government Transformation Programme</td>
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<td>IFMA</td>
<td>International Facilities Management Association</td>
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<td>IRDA</td>
<td>Iskandar Regional Development Authority</td>
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<td>ISO</td>
<td>International Organization for Standardization</td>
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<td>LG</td>
<td>Local government</td>
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<td>MAFM</td>
<td>Malaysian Association of Facilities Management</td>
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<td>MAMPU</td>
<td>Malaysian Administrative Modernisation and Management Planning Unit</td>
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<td>MBJB</td>
<td>Majlis Bandaraya Johor Bahru</td>
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<td>MDP</td>
<td>Majlis Daerah Pontian</td>
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<td>MHLG</td>
<td>Ministry of Housing and Local government</td>
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<td>MPJBT</td>
<td>Majlis Perbandaran Johor Bahru Tengah</td>
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<td>MPPG</td>
<td>Majlis Perbandaran PasirGudang</td>
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<td>NCSR</td>
<td>National Centre for Social Research</td>
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<td>New Economic Model</td>
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<td>National Institute of Standards and Technology</td>
</tr>
<tr>
<td>NPM</td>
<td>New Public Management</td>
</tr>
<tr>
<td>PCB</td>
<td>Public Complaints Bureau</td>
</tr>
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<td>PTI</td>
<td>Public Technology Institute</td>
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<tr>
<td>QCC</td>
<td>Quality Control Circles</td>
</tr>
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<td>SERVQUAL</td>
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<td>SUEX</td>
<td>Service User Experience</td>
</tr>
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<td>Total quality management</td>
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REFERENCES


Tukiman Aedy Fadly Ramli Dg Shalbia Abdul Ghani Mathumathi Ambigabadi.


(MITIP 2004), Saarbruecken, Germany: German Research Center for Artificial Intelligence.


http://nevillebooth.blogspot.co.uk a-brief-history-of-facilities-management.html.


http://www.bifm.org.uk/bifm/about/facilities.


Drucker, P.F (1993). We need to measure, not count, Wall Street Journal. edited by Rick Best, Gerard de Valence, Craig Langston.


Iskandar Regional Development Authority (2012). Smart City @ Iskandar Malaysia. Global Science and Innovation Advisory Council, Johor Malaysia.


predicting customer retention, recommendation, and share-of-wallet. 


Ministry of Housing and Local government (2012). An Outline of the Local government System in Malaysia:


The Sun (2007). March 5, Kuala Lumpur.


Wild, L., David Booth, Clare Cummings, Marta Foresti, and Joseph Wales. 2015. *Adapting Development: Improving Services to the Poor.* London: Overseas Development Institute.


