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A STUDY ON SOFTWARE USED BY PROPERTY MANAGEMENT FIRM IN IPOH, PERAK

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ABSTRACT

Property management is the practice of overseeing the built environment to enhance a property's value and ensure it serves its intended purpose. With advancements in technology, the traditional administrative duties of property management have evolved into more strategic market positions. Nowadays, property managers rely on well-equipped computer software to adapt to rapid technological changes. However, despite these advancements, the extent to which property management firms in Malaysia employ property management software remains unclear. Thus, this research aims to investigate the current state of software adoption within property management firms and provide a clearer picture of to what extent property management software has been utilized by following its objective on determine the software used and recommended property management software in Ipoh. An online questionnaire was distributed to 30 respondents from selected property management firms registered under the Board of Valuers, Appraisers, Estate Agents, and Property Managers (BOVAEAP). Quantitative approaches were used, and the analysis was performed using the Statistical Package for Social Science (SPSS) software. The results identified the software currently in use is off-the-shelf software and the most recommended software in property management firm in Ipoh, Perak is CSS Property Management Solution software. This study's findings will be valuable to property managers, future users, and researchers, as it provides concrete guidance and techniques for optimizing the use of software within property management organizations.

Keywords: *property management, software, real estate software*

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INTRODUCTION

Property management is the art and science of overseeing the built environment to increase the building's worth, ensuring that it not only serves the intended purpose for which it was constructed but also benefits from intelligent and responsible property management systems. It is a professionally regulated activity practice in Malaysia under The Valuers, Appraisers, Estate Agents and Property Managers Act 1981 (Act 242) & Rules which legislation that governs and registers property management. Due to advancements in information and communications technology, property management, which initially relied on administrative duties and paperwork, has transformed into more strategic market positions (Halvitigala & Gordon, 2014). According to Kyle, Baird, and Spodek (2000), real estate is the fastest-growing industry, particularly in property management as it has developed into a managerial science. This situation has led to opportunities for practitioners to specialize in specialist fields.

A considerable amount of interest has been attracted to the idea that property management must embrace computers and information technology to manage properties (Halvitigala & Gordon, 2014; Deakin, 1998). Since the widespread availability of personal computers, computerizing property management duties has been a top area for growth for the real estate industry. Among the factors that contributed to these changes is the use of computers that quickly and efficiently acquire a lot of data to help with decision-making and the practical and speedy collection of large amounts of data using computers for decision-support. Hence, property managers need to be competent in technical and communication abilities to make quick decisions. Nowadays, in the modern property management firm, most tasks performed by property managers are supported with well-equipped computer software to help them cope with the rapid changes in technology in the property management sector.

Significant technological advancement in the software sector has occurred in the past three decades. Software is employed in the ICT sector and other sectors such as transportation, healthcare, shipbuilding, defence, construction, and education. Companies that provide goods and services extensively employ software-driven computer and hardware systems (Suh & Oh, 2015). Not only that, but the firm also employs software to enhance its main products or services and its business operations (Liu et al., 2022). Halvitigala and Gordon's study (as cited in Han and Lim, 2001) stated that numerous duties involved in property management are heavily computerized. These include managing rental payments, leasing, managing vacancies, creating notices and circulars, and creating invoices. Dixon (1993) also stated that computerized property management systems are undoubtedly helpful tools because of how quickly and accurately they can evaluate and arrange data to deliver pertinent information. In addition, the organization's and its property managers' efficiency and effectiveness are also improved. Through less repetitive

work, improved cash flow, regular and accurate charge information, and better client responsiveness with superior service, increased efficiency or production resulted in cost reductions. Many pre-written, simple-to-use residential property management software packages on the market today offer varying property management features (Halvitigala & Gordon, 2014).

Besides, according to Jadhav and Sonar (2011), the need for reliable and efficient software products is continually expanding and to satisfy the increasing demand, software companies have been creating various software packages that may be modified and customized to fit the demands of the firm. For example, a study by Razali and Martin (2007) shows that most Malaysian property management organizations use Windows 2000 as their primary operating system for regular office tasks. Their study also stated that property management firms employed standard office programmes including word processing, spreadsheets, and presentations for office productivity. Additionally, specific advanced software has shown high utilization, including document readers, email, web browsers, and statistical tools. Furthermore, most firms have their property valuation system for other software packages. This was brought on by Malaysia's growing number of ICT software vendors.

LITERATURE REVIEW

Computerized Property Management System

Property management is the management or administration that meets the property owner's aims or objectives (Den Berg & Cloete, 2004). With developments in Information and Communications Technology (ICT), residential property management, traditionally dominated by administrative activities, paperwork, and showing properties to prospective tenants, is now changing into a more strategic market position (Dobrain, 2011). This is because the thought that property management should embrace computers and utilize information technology in property management has sparked substantial interest in property research as it can improve the standard of property management (Deakin, 1998). Research by Halvitigala and Gordon (2014) also stated that there is currently a wide range of pre-written and simple-to-use residential property management software packages, each offering slightly different property management services. Among the various property management jobs, a number are highly computerized, that included rental payment management, lease management, vacancy management, notice and circular preparation, and invoice preparation (Han & Lim, 2001). Halvitigala and Gordon (2014) found that small-scale residential property management firms were well-equipped with specially tailored property management software packages and invested much in information technology for future software upgrades. Property management software solutions handled various tasks, including tenant database management, rent roll and payment processing, vacancy management, maintenance

record keeping, financial accounting and reporting, and tenant communication. (Deakin, 1998)

Type of Property Management Software Packages

- Bespoke, Inhouse Software Package

This package is created and developed by the user or someone with basic programming skills for a particular user (Jebreen, 2020). This package also refers to a firm that relies on its IT department to produce software (Dibbern et al.,2004). It entails maintaining records and performing calculations on a spreadsheet or remote database. In general, the breadth of information preserved is limited. According to Den Berg & Cloete (2004), the program's functionality is minimal, the user interface is simple, and it is only utilized by one or two people in the firm. In addition, many firms prefer to build software in-house due to its flexibility, creativity, and strategic value advantages. In general, in-house software encourages businesses to develop more IT-based innovations (Liu et al.,2010). This is because by creating their software, companies can progressively develop their IT knowledge and increase the IT staff's understanding of their industry (Liu et al., 2010; Zhou and Choudhary, 2021). However, Dixon (1993) has a different opinion and definition of in-house package software. He stated that even though this software is created by programmers who work full-time for the firm, this package is not advised to be used. Unless the organization has employees that are thoroughly knowledgeable in a programming language and confident in their ability to put their ideas into effect (Dixon, 1993).

- Bespoke, Outsource Software Packages

A bespoke outsourcing package is also developed for a particular user (Indiana Free Notes, 2023). However, this package depends on third-party vendors to develop some or all its software firm needs (Rajaeian et al., 2017). Rajaeian et al (2017) stated that, unlike in-house software development, outsourcing requires no infrastructure or employees. Some companies will prefer outsourced software packages due to the costs and IT expertise needed for in-house software development. However, Dixon (2003) considered this software can be an expensive method of purchasing software because it needs essential considerations on the firm's financial viability and stability, as well as future updates and maintenance. On the good side, the firm does not have to worry about finding competent experts. This is because the best bespoke software development firm will have a sizable staff of talented and skilled employees that are experts in their respective fields. Without having to go through the recruiting and retraining processes.

- **Off-the-shelf Package**

Off-the-shelf software refers to standardized software packages that are mass-produced, accessible to the public, and ready for use right away (Jebreen, 2020). They provide a comprehensive set of features that help operations run more smoothly. A commercial vendor offers an "off-the-shelf" business system that was created based on a "one product fits all" and best-of-breed idea to satisfy the needs of many (Ranade & Kong, 2020). According to Den Berg & Cloete (2004), they are two types off the shelf software package which is not customizable and customizable programme. These applications have the benefits of being reasonably priced, typically simple to learn, bug and error-free and user-friendly. These programmes are appropriate for small to medium-sized businesses with more demanding needs.

The Evaluation Criteria for Property Management Software

The evaluation of property management software is important in determining the efficiency of any computer system. However, where hardware has already been installed, the options may be limited. Furthermore, if the software is not selected with caution, it can be a particular lead to a costly mistake. although hardware costs have decreased considerably and continue to do so, software costs have risen (Dixon,2003). Some research focuses primarily on the software package's functional and quality aspects and ignores other significant variables such as the vendor, benefits, and costs, technical (hardware and software) requirements, perception, and outcome-related characteristics (Jadhav & Sonar, 2011). The evaluation criteria below are studied based on an adaption of the literature review by Jadhav & Sonar (2011) and could be applied to any software package. The criteria are divided into seven categories as listed below.

- **Functional Criteria**

Criteria relating to the functional capabilities of the software package vary depending on the software package (Sinha, Dey & Amin, 2021). Therefore, Sinha, Dey and Amin (2021) stated that functional criteria are not generalizable. Den Berg and Cloete (2004) stated that the potential user should critically assess the software in this part to see if it meets his or her needs. These criteria define the features, behaviors and operations that the software should exhibit to provide the desired functionality (Den Berg & Cloete, 2004). Functional criteria are a critical aspect of software development, as they serve as a basis for designing, implementing, and testing the software's features and functionalities (Schubert, Tsitsipas & Jeffery, 2018).

- Quality Criteria

Quality criteria in software pertain to a collection of traits and features that ascertain the general quality and effectiveness of a software product (Alnaish, Zakaria & Hasoon, 2022). These criteria are employed to evaluate the functionality, reliability, usability, efficiency, maintainability, and other significant aspects of the software (Jadhav & Sonar, 2011). Jadhav and Sonar (2011) stated that security is a crucial aspect, involving measures implemented to safeguard the software and its data from unauthorized access, data breaches and malicious activities. Reliability is another vital factor, indicating the software's consistent and error-free performance across various conditions (Jadhav & Sonar, 2011). Additionally, efficiency is assessed, focusing on the software's speed, responsiveness, and optimized use of system resources like memory (Precht, Wunderlich & Gómez, 2020). Lastly, documentation plays a significant role, providing clear and comprehensive information to aid users and developers in understanding the software's functionality, design, and usage (Pretch et al., 2020).

- Vendor Criteria

This evaluation involves considering various aspects, including the training offered by the vendor, their maintenance services, and their overall reputation (Jadhav & Sonar, 2011). One important aspect of training is the availability of tutorials to help users learn how to use the software effectively and troubleshooting guides to address any issues that may arise (Papp & Hanussek, 2021). Additionally, organizations may seek references and testimonials from other customers to gain insights into their experiences with the vendor's software and services (Papp & Hanussek, 2021). Lastly, Jadhav and Sonar (2011) also stated the vendor's reputation and experience in the industry are considered to determine their reliability and track record. By carefully evaluating these vendor criteria, organizations can make informed decisions and choose software packages from vendors that best meet their needs and offer excellent support and service (Jadhav & Sonar, 2011).

- Cost Criteria

Cost criteria in software are crucial financial considerations used by organizations to assess the total expenses related to acquiring, implementing, and maintaining a software solution (Jadhav & Sonar, 2011). Making informed decisions about software investments and ensuring their economic feasibility relies on evaluating these criteria (Papp & Hanussek, 2021). Huang (2021) stated that key factors encompassed in cost criteria include licensing and renewal costs, which pertain to recurring fees for subscription-based software license renewal or ongoing subscriptions.

Additionally, maintenance and support costs are essential, encompassing expenses related to software upkeep, such as updates, bug fixes, and technical support (Jadhav & Sonar, 2011).

- Technical Criteria

Technical criteria play a crucial role in ensuring the efficient management of data storage (Jafari & Dinarvand, 2021). Jafari and Dinarvand (2021) pointed out that storage capacity is a key consideration, particularly for applications dealing with substantial data volumes, like databases, file storage systems and cloud-based services. Meeting these technical criteria is essential to guarantee that the software can handle the expected data load while maintaining optimal performance (Jadhav & Sonar, 2011). The choice of storage medium, whether it's solid-state drives (SSDs) or hard disk drives (HDDs), significantly impacts storage capacity, data access speed, and overall software performance (Jafari & Dinarvand, 2021).

- Output Criteria

Jadhav and Sonar (2011) stated that these criteria outline the specific requirements and expectations regarding what the software should produce or display when it performs its operations. One crucial aspect of output criteria is compatibility, which ensures that the software can function seamlessly on different platforms, operating systems, and devices, without encountering major issues (Jadhav & Sonar, 2011). Moreover, the output must be compatible with various web browsers, ensuring a consistent user experience for all users regardless of their chosen browser (Jafari & Dinarvand, 2021). By adhering to these output criteria, software developers can create versatile and user-friendly applications that cater to a broader audience and enhance user satisfaction (Papp & Hanussek, 2021).

RESEARCH METHODOLOGY

This research utilized a quantitative method, employing questionnaires to gather data on the current state of software adoption within property management firms in Ipoh and provide a clearer picture of to what extent software uses has been utilized. The questionnaire solely consisted of closed-ended questions. By using a convenience sampling technique, this research was conducted by distributing the questionnaires among the firm that practices and have experience in property management and are registered under the Board of Valuers, Appraisers, Estate Agents, and Property Management (BOVAEAP) and residing in Ipoh. Ipoh has been identified as the most suitable area for this study to be taken to study the used software used by property

management in Perak. This is because it has been identified that Ipoh has 14 property management firms out of 15 firm in Perak that are registered under Board. The sample size of 30 respondents was taken from 4 selected property management firms. The respondents participating in this study were 30 employees from selected property management firms, including Azmi & Co (Perak) Sdn Bhd., Deone Properties Sdn. Bhd, D. Henry Valuers Realtor and Rahim & Co International Sdn. Bhd. The structured questionnaire consists of 3 sections which are Section A, to captures the background of the respondent according to their demographic characteristic. Next section, Section B will determine and assess the software used by the property management company and Section C will be asked and assessed the recommended software of the respondent's choice. Items for Section B and Section C were modified and adapted from the software packages framework by Jadhav and Sonar (2011). Researchers also employed the Likert Scale to assess criteria in Section B and Section C, and mean values were computed to evaluate the software utilized and the recommended property management software. This analysis was conducted using the Statistical Package for Social Science (SPSS) software. Additionally, frequency and percentage distributions were examined as part of the research process.

ANALYSIS AND FINDINGS

Respondents Background

Table 1 provides a comprehensive overview of the descriptive statistics of the respondents in terms of gender, age distribution and the company they currently work.

Table 1: Descriptive Statistics of the Respondents

Items	Frequency	Percentage (%)
Gender		
Male	13	43.3
Female	17	56.7
Age Group		
20 to 29 years old	9	30
30 to 39 years old	10	33.3
40 to 49 years old	7	23.3
50 and above	4	13.3
Firm Background		
Azmi & Co (Perak) Sdn Bhd	9	30
Deone Properties Sdn. Bhd	12	40
D. Henry Valuers Realtor	2	6.7
Rahim & Co International Sdn. Bhd.	7	23.3

Objective 1: To Determine the Software Used by Property Management Firms in Ipoh

The main objective of this research was to determine the software used by property management firms in Ipoh. SQL Account appears to be the most widely used or familiar software tool in the usage of software in Ipoh as Azmi & Co (Perak) Sdn Bhd and Rahim & Co International Sdn. Bhd. use this software for their daily management. CSS Property Management Solution also shows that respondents who are from Deone Properties Sdn. Bhd firm is familiar with and utilizes this software. Microsoft Excel suggests that it is less commonly used or familiar among the surveyed population. These findings shed light on the popularity and adoption of these software tools, with SQL Account and CSS Property Management Solution being the more prominent choices among the respondents. These findings also suggest a clear preference for off-the-shelf software solutions among the respondents, potentially due to their convenience, availability, and cost-effectiveness. Table 2 below shows the summary of the finding in achieving objective 1.

Table 2: Summary on the Software Used by Property Management Firm in Ipoh

Name of Software Package Used	Property Management Firm		Type of Software
	Firm's Name	Percentage (%)	
CSS Property Management Solution	Deone Properties Sdn. Bhd	33.3	Off-the-shelf
SQL Account	Azmi & Co (Perak) Sdn Bhd Rahim & Co International Sdn. Bhd.	60	Off-the-shelf
Microsoft Excel	D. Henry Valuers Realtor	6.7	Off-the-shelf

The findings present rankings based on average means for different criteria to assess the software used by the property management firm in Ipoh. Technical aspects received the highest average mean (3.8000), followed by Quality (3.7889), Output (3.7667), Cost (3.7000), and Vendor (3.2833). Respondents showed significant agreement with technical aspects, indicating their importance in evaluations. Quality was closely followed in terms of significance, while the vendor criterion obtained the lowest score, suggesting relatively less agreement among respondents. These rankings shed light on the factors deemed most agreed upon by respondents when evaluating the software used in Ipoh. Table 3 shows the average mean in assessing the criteria for the software used by property management firms in Ipoh.

Table 3: Average Mean Criteria for the Software Used by the Firm

No	Criteria	Average Mean	Rank
1	Technical	3.8000	1
2	Quality	3.7889	2
3	Output	3.7667	3
4	Cost	3.7000	4
5	Vendor	3.2833	5

Objective 2: To Determine the Recommended Property Management Software in Ipoh

The findings also highlight CSS Property Management Solution and CMMS Software as the recommended property management solutions in Ipoh. CSS Property Management Solution is particularly favored for its popularity and effectiveness in meeting diverse property management needs, boasting extensive features and a user-friendly interface. Similarly, CMMS Software is well-recommended for its ability to streamline maintenance operations and optimize property management efficiency. Besides, respondents also suggested other solutions like GProp System, Condo Master, and My Living My Life, catering to specific needs. Overall, CSS Property Management Solution and CMMS Software stand out as highly regarded solutions, with additional options available to meet unique requirements. Table 4 below shows the summary of the recommended software recommended by the respondent.

Table 4: Summary on the Recommended Property Management Software in Ipoh

Items	Frequency	Percentage (%)
Recommended Software		
1.CSS Property Management Solution	19	63.3
2. CMMS Software	8	26.7
3. Others	3	10

The findings present rankings of criteria based on average mean scores for the recommended software. Technical received the highest average mean (3.9167), followed by Quality (3.6944), Vendor (3.6000), Output (3.5667), and Cost (3.3833). These rankings provide insights into respondents' prioritization, with technical aspects being highly regarded. Decision-makers can use this information to understand the factors stakeholders prioritize when evaluating the recommended software. Table 5 below shows the average mean in assessing the criteria for the recommended property management software in Ipoh.

Table 5: Average Mean Criteria for the Recommended Software

No	Criteria	Average Mean	Rank
1	Technical	3.9167	1
2	Quality	3.6944	2
3	Vendor	3.6000	3
4	Output	3.5667	4
5	Cost	3.3833	5

CONCLUSION

In conclusion, the study reveals that property management firms in Ipoh exhibit a moderate level of utilization of property management software. The varying adoption patterns indicate that there is recognition among property management firms in Ipoh of the need for efficient and specialized tools but, the level of utilization of property management software is not uniformly high across the board. Factors such as company size, property portfolio and specific requirements influence the selection of software solutions. Increased awareness and education about the advantages of property management software, tailored to the unique needs of the firms, could potentially encourage wider adoption and utilization. By leveraging technology to its full potential, property management firms in Ipoh can streamline their processes, improve efficiency, and deliver better services to property owners and tenants. The findings of this study highlight the current state of property management software utilization in Ipoh and provide insights into areas where further advancements can be made to optimize operations within the industry. These results underscore the importance of modern technology in streamlining property management operations, with a clear preference for off-the-shelf solutions evident among respondents. The study's insights provide valuable guidance to property management firms in Ipoh, aiding them in making informed decisions on software adoption to enhance efficiency and effectively meet the demands of their industry.

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