Tuijin Jishu/Journal of Propulsion Technology
ISSN: 1001-4055
Vol. 45 No. 3 (2024)

Research on the Problems and Countermeasures of Multi-Campus Property Management in Universities -Taking Nanchang University as an Example

A. Chen Xianyang [1], B. Sirinya Wiroonrath [2]

[1] *MBA student at Faculty of Business Administration, Rajamangala University of Technology Thanyaburi Klong Luang, Thanyaburi, Pathum Thani 12110, Thailand*

[2] *Faculty of Business Administration, Rajamangala University of Technology Thanyaburi Klong Luang, Thanyaburi, Pathum Thani 12110, Thailand*

Abstract:- This study examined multi-campus property management in universities, utilizing Nanchang University as a case study. The study sought to 1) Analyze the Impact of Current Property Management Conditions (Plan, Do, Check, Act) on Nanchang University's Policy and Practical Property Management Guidelines, and 2) Determine how Office Equipment, Disputes, Building, Vehicle Problems Significantly Affect them. A systematic survey of 400 NCU stakeholders was used to represent the institution's heterogeneous property management environment. Data is analyzed using statistical methods, including regression.Study results confirm this. 1)The idea that current property management conditions (Plan, Do, Check, Act) affect Nanchang University property management guidelines is validated. The systematic application of the Plan-Do-Check-Act (PDCA) cycle predicted both policy and practical property management recommendations, highlighting its crucial role in guaranteeing efficiency and flexibility ($p = 0.000$).2) The Impact of Property Management Problems (Office Equipment, Disputes, Building, Vehicle) on Nanchang University Property Management Guidelines hypothesis is validated. Property management practices were affected by conflicts, maintenance, and equipment management ($p = 0.000$).

Keywords*:* Multi-campus property management, Plan-Do-Check-Act (PDCA) cycle, Property management guidelines, Strategic planning.

1. Introduction

University property management is important yet understudied. This research examines property management issues at Nanchang University, a major Chinese university. Managing university assets is vital for an optimum teaching environment and efficient resource utilisation. This study analyzes and provides solutions for university property management difficulties.

Nanchang University has numerous campuses, like many large universities. This multi-campus organization has unique property management challenges, including coordinating regulations and processes across locations. Complexity increases due to local conditions, campus user needs, and the sheer size of managing many buildings and assets. Given this, the university's property management strategies determine its administrative efficiency.

This research has two objectives. First, this research examines how the Plan-Do-Check-Act (PDCA) cycle of property management affects Nanchang University's policy and practical property management guidelines. PDCA is a long-standing management method that promotes continuous improvement in organisational processes (Egelie, 2019). This involves developing, implementing, monitoring, and adjusting property management procedures to ensure effective university asset management.

Research Objectives

RO1：

To analyze the impact of the current conditions in property management (Plan, Do, Check, Act) on the policy and practical levels of the property management guidelines at Nanchang University.

RO2：

To investigate how problems in property management (Office equipment, Disputes, Building, Vehicle) significantly affect the policy and practical levels of the property management guidelines at Nanchang University.

Research hypothesis

RH1:

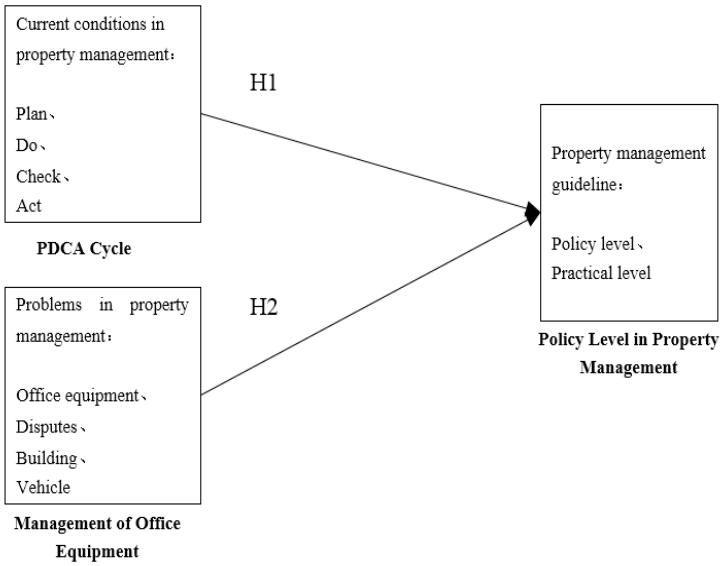
The current conditions in property management (Plan, Do, Check, Act) significantly impact the policy and practical levels of the property management guidelines at Nanchang University.

RH2:

Problems in property management (Office equipment, Disputes, Building, Vehicle) significantly impact the policy and practical levels of the property management guidelines at Nanchang University.

Conceptual framework

Table 1：Research Framework



2. Literature Reviews

Property Management in University Settings

University property management includes a broad variety of actions, responsibilities, and methods to effectively manage and utilize real estate, equipment, and other physical resources. This complex area is crucial to ensure the university's physical infrastructure supports its teaching, research, and community purposes (Zhang, Sun, Hu, Wang, & Wu, 2021).

Maintaining a varied variety of physical assets is important to university property management. This includes the institution's buildings, grounds, equipment, vehicles, and other resources needed for daily operations. To maintain the university's assets functioning, secure, and conducive to activities, maintenance involves regular upkeep, repairs, and upgrades. It also includes strategic space utilisation planning, which allocates and redesigns facilities to meet changing academic and administrative needs.

Multi-Campus University Structure

Multicampus universities are complex and dynamic organizations in higher education. Such universities include Nanchang University. With this organizational structure, a university may operate in many geographically separate places, each with its own unique traits and problems. The multi-campus model is gaining popularity in academic institutions due to many variables (Torre, Alcaide-Muñoz, & Ollo-Lopez, 2019). These considerations include expanding educational programs, needing specialized facilities, and wanting to reach more students. Diversity on campuses drives this strategy. Size, resources, faculty and student makeup, and instructional and research programs all vary (Gassmann, Bader, & Thompson, 2021). Smaller campuses may focus on certain subjects or provide more intimate learning settings, whereas bigger campuses may have more academic departments and research resources. Such variability requires a company-specific management approach, especially in property management. Property management in a multi-campus setting includes several tasks. These duties include maintaining the physical infrastructure, allocating and managing space, supervising equipment and vehicles, and ensuring the facilities' safety and security. In a multi-campus institution, these duties expand and diversify, complicating management.

Plan, Do, Check, Act (PDCA) Cycle

Plan, Do, Check, Act (PDCA) Cycle in University Property Management

The Deming Wheel—the Plan, Do, Check, and Act (PDCA) cycle—is a continuous quality improvement concept. This technique uses four repeating processes for ongoing development and learning. Following are the steps: Plan, Do, Check, Act. At Nanchang University, the PDCA cycle is crucial to improve property management efficiency and effectiveness.

Planning

The PDCA cycle starts with planning. This step includes setting goals and methods to achieve the desired outcome. At Nanchang University, this step defines the procedure. Since the institution has several campuses, planning is essential to synchronize property management among them. This requires analysing property management practises such office equipment administration, conflict settlement, building upkeep, and vehicle management. In this stage, objectives and methods are set to meet each campus's unique difficulties. This step ensures policy and practical property management requirements are followed.

Do

Do is when plans are executed. Nanchang University implements property management measures created during planning. This stage is crucial for testing the intended activities on a smaller scale before implementing them on a bigger one (Le & Thi-Dai Luong, 2022). Pilot initiatives to improve office equipment management or dispute resolution are examples. Data and insights from this stage will influence the PDCA cycle's succeeding phases, which is crucial.

Check

During the Check stage, you will be responsible for monitoring and evaluating the processes and results obtained in comparison to the goals that were established during the Planning. The effectiveness of the property management strategies that were implemented during the Do stage is evaluated during this stage, which is an essential part of the process at Nanchang University. In order to determine whether or not the university's property management goals are being met and whether or not the guidelines are being effectively applied at both the policy and practical levels, it is necessary to conduct a comprehensive analysis of the data and feedback. In this stage, any discrepancies or areas that could be improved are identified, which provides valuable insights for the subsequent stage, which is the Act stage.

Act

Act, also known as Adjust, implements changes. The Check stage findings prompted these adjustments. This period is crucial for Nanchang University's progress. In Check, property management practices are modified and

improved. These enhancements are based on feedback and data analysis. This may need policy changes, new management techniques, or solutions for office equipment, conflict resolution, facility upkeep, or vehicle management. This stage must keep Nanchang University's property management active and responsive to the ever-changing needs and challenges of maintaining several campuses.

Policy and Practical Levels in Property Management Guidelines

Policy Level in Property Management

Policy focuses on ensuring property management meets university goals and beliefs. This involves creating ecologically sustainable practices, using resources efficiently, and maintaining a safe, secure learning and research environment. Policies might include university asset acquisition, maintenance, use, and disposal. Assets include buildings, cars, and office tech.

Practical Level in Property Management

The policy level establishes the theoretical underpinning for these policies, while the practical level implements them. This level focuses on daily operations and maintaining university assets on the ground. These include office equipment management, conflict settlement, facility maintenance, and vehicle management.

Practical duties include resolving conflicts over university property, doing normal maintenance, and ensuring facility efficiency. The university's divisions must collaborate to communicate with contractors and regulatory organizations.

The PDCA cycle in real-time scenarios is crucial to practicality. "Plan" refers to planning for asset use and maintenance, "Do" to executing these plans, "Check" to evaluating their effectiveness, and "Act" to improving efficiency and effectiveness by making any necessary adjustments.

Interplay between Policy and Practical Levels

This article describes the dynamic and interdependent link between policy and practice. Policymaking may be informed and enhanced by practical results and experiences, while policies guide real-world activities. These two components must combine to provide strategic and successful property management.

For instance, frequent arguments over office equipment use may indicate that asset allocation and use regulations need to be reviewed. The challenges of building upkeep may lead to stricter legislative requirements.

3. Research Methodology

In the context of this study, the population under investigation encompasses the whole of administrative and management personnel involved in property administration across many campuses at Nanchang University. This group include professionals at various levels of the organizational structure (Gunawan, Wibowo, & Asikin, 2022). The professionals include a wide variety of roles, including senior administrators who oversee substantial areas of university property, as well as individual campus managers who are responsible for managing property on a smaller, localized level. When considering the intricacy and diversity of managing many campuses, the population is characterized by a wide array of tasks and obligations. These positions include all aspects of property management, allocation of resources, and decision-making procedures.

In order to facilitate the quantitative analysis for the purpose of this inquiry, it was determined that a sample size of four hundred would be sufficient. This decision was reached by finding a middle ground between the constraints of feasibility and the need for a sample that accurately reflects the whole population. According to statistical theory, a larger sample size yields more reliable results that may be extrapolated to a broader population. However, the practical sample size is limited as a result of logistical challenges, including the accessibility of participants and the resources required for data analysis. The sample size of 400 that was chosen provides a solid basis for conducting statistical analysis, including descriptive statistics, correlation analysis, and linear regression. The chosen sample size also guarantees that the procedures of data collection and analysis are feasible.

In the context of this inquiry, the process of data collection is categorized into two fundamental classifications: primary data and secondary evidence. The division is necessary to provide a comprehensive understanding of the challenges faced by Nanchang University in property management across many campuses, as well as to provide feasible remedies for these issues.

4. Research Results

Table 2. Descriptive Statsitics

	Sample	Minimum	Maximum	Mean	Std. Deviation
1.Age(1-5)	400	2	5	3.18	1.109
2.Gender(1-2)	400	1	2	1.43	.496
3.Role at University(1-3)	400	1	3	2.32	.674
4.Length of Association with the University(1-5)	400	1	5	2.57	1.092
5. The implementation of the PDCA (Plan, Do, Check, Act) cycle is evident in the property management at Nanchang University.	400	1	5	3.44	.756
6. Each stage of the PDCA cycle is effectively executed and contributes to the improvement of property management.	400	2	5	3.90	1.057
7. The PDCA cycle positively influences the policy and practical aspects of property management at Nanchang University.	400	1	5	3.48	.983
8. Issues with office equipment, disputes, building, and vehicle management significantly affect the property management guidelines.	400	2	5	3.69	.942
9. These problems impede the efficiency and effectiveness of property management at both policy and practical levels.	400	1	5	3.69	.915

10. Addressing these issues is crucial for the improvement of property management systems.	400	2	5	3.79	.882
11. The property management system at Nanchang University effectively addresses the policy and practical needs of the university.	400	1	5	3.54	.911
12. The property management guidelines are successfully implemented and positively impact university operations.	400	2	5	3.79	.889
13. There is a significant correlation between the effectiveness of property management strategies and the overall operational efficiency of the university.	400	2	5	3.63	1.020
Valid N (listwise)	400				

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	228	57.0	57.0	57.0
	Female	172	43.0	43.0	100.0
	Total	400	100.0	100.0	

Respondent Demographics

The poll was completed by 400 participants, who included a diverse range of ages, genders, university roles, and membership lengths at Nanchang University. The age cohort included people ranging from under 20 to over 50, with a predominant concentration seen within the 21-30 age bracket. The average score of 3.18 and standard deviation of 1.109 provide credence for this. The data analysis revealed a gender imbalance, with a mean value of 1.43 (where 1 denotes male and 2 denotes female), and a standard deviation of 0.496, suggesting a higher representation of males. A variety of positions were present inside the school, including administrative workers, academic members, facilities management staff, and students. The mean value was 2.32, accompanied by a standard deviation of 0.674, suggesting a rather even distribution, but with a little skewness towards the faculty member cohort. There was a range of affiliation durations with the institution, spanning from less than one year to over 10 years. The average term was 2.57 years, with a standard deviation of 1.092. The data presented indicates that the participants had a very short duration of employment.

Implementation and Effectiveness of PDCA Cycle

The study examined the implementation of the Plan, Do, Check, and Act (PDCA) cycle in property management at Nanchang University, along with the effectiveness of its application. The responses indicate that the implementation of the Plan-Do-Check-Act (PDCA) cycle is very evident, as seen by an average rating of 3.44 and a standard deviation of 0.756. The effectiveness of each step of the PDCA cycle was awarded a higher mean score of 3.90 and a standard deviation of 1.057, indicating a widespread perception of successful execution. The influence of the PDCA cycle on the policy and practical parts of property management was awarded a mean score of 3.48 and a standard deviation of 0.983. This suggests that the cycle has a somewhat positive effect.

Impact of Property Management Problems

The respondents assessed the influence of several concerns in property management, including office equipment, disputes, building management, and vehicle management, on management standards. The mean score for these issues was 3.69, with a standard deviation of 0.942. Furthermore, the challenges posed by these obstacles to the attainment of efficiency and effectiveness, both in terms of policy and practical implementation, yielded an average score of 3.69, accompanied by a notably reduced standard deviation of 0.915. This observation was true for both tiers of inquiry. Based on the obtained mean score of 3.79 and standard deviation of 0.882, it is evident that addressing these challenges is crucial for improving property management systems.

The efficacy of a property management system

The evaluation of the property management system yielded a mean score of 3.54 and a standard deviation of 0.911, suggesting that it effectively addressed the policy and practical requirements of the institution. The average score for both the successful implementation of property management regulations and their positive impact on the institution's operations was 3.79, with a standard deviation of 0.889. Furthermore, an assessment was conducted to examine the relationship between effective property management strategies and the overall operational efficiency of the institution. The mean score obtained was 3.63, with a standard deviation of 1.020, in order to ascertain the extent of association.

Table 3. Correlations

		IV1	IV2	DV
IV1	Pearson Correlation	1	.825**	.827**
	Sig. (2-tailed)		.000	.000
	N	400	400	400
IV2	Pearson Correlation	.825**	1	.867**
	Sig. (2-tailed)	.000		.000
	N	400	400	400
DV	Pearson Correlation	.827**	.867**	1
	Sig. (2-tailed)	.000	.000	
	N	400	400	400

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

This section presents the Pearson correlation coefficients obtained from the analysis of survey responses collected from a sample of 400 participants affiliated with Nanchang University. The participants in this study included a range of individuals, including administrative professionals, faculty members, equipment management staff, and students.

The use of Pearson correlation analysis enables the acquisition of significant insights into the interrelationships among the variables under investigation. A Pearson correlation coefficient (r) that approaches 1 or -1, respectively, serves as an indicator of a substantial positive or negative linear association between two variables. Conversely,

a value in close proximity to zero indicates a minimal or nonexistent linear association between the variables. A correlation coefficient in this research, shown by asterisks, shows a statistically significant relationship at the 0.01 level (2-tailed).

The findings of the research indicate that the Pearson correlation coefficient for IV1, which represents the present conditions in property management via the PDCA (Plan, Do, Check, Act) cycle, is.827**. According to the findings, there exists a robust and statistically significant positive association between the two variables, as seen by the strong correlation. The findings suggest that there is a positive impact on both the policy and practical aspects of property management guidelines as the effectiveness and implementation of the PDCA cycle in property management at Nanchang University becomes more proficient. This phenomenon is especially evident when considering the standards pertaining to property management. The reliability of this correlation is also bolstered by the p-value of.000, which underscores the substantial impact of systematic property management procedures on the overall implementation of management standards.

The IV2 variable, which includes property management concerns such as office equipment, disputes, building, and car, has a Pearson correlation coefficient of.867** in connection to the DV. This implies a robust and statistically significant correlation between the two variables, indicating that issues related to office equipment, conflicts, building management, and vehicle management significantly influence the policy and practical aspects of property management at Nanchang University. The robust correlation coefficient suggests that addressing these management concerns might greatly impact the improvement of property management systems' efficiency. This is shown by the strong correlation coefficient.

The analysis demonstrates a Pearson correlation value of.825** between IV1 and IV2, indicating a strong positive relationship between the current conditions in property management and the encountered challenges. The observed correlation suggests a clear correlation between the effectiveness of the PDCA cycle in property management and the ability to effectively address and resolve issues related to office equipment, disputes, building management, and vehicle management.

At a significance level of 0.01 (two-tailed), the correlations between independent variables (IV1), independent variables (IV2), and the dependent variable (DV) exhibit statistical significance. This suggests a substantial level of confidence in the obtained conclusions. The sample size of 400 respondents ensures a robust dataset for analysis, so ensuring that the findings accurately represent the broader population at Nanchang University.

Linear Regression Analysis

The objective of this study was to examine the influence of prevailing conditions in property management, as demonstrated by the Plan-Do-Check-Act (PDCA) cycle, along with challenges in property management, including issues related to office equipment, disputes, building management, and vehicle management, on the effectiveness of property management protocols.

The methodology section of the article provides comprehensive details about the linear regression model used to analyze survey data collected from various stakeholders at Nanchang University. The individuals involved in this context include administrative personnel, faculty members, facilities management personnel, and students. The survey included inquiries aimed at assessing the extent of implementation and effectiveness of the PDCA cycle in property management, as well as the impact of property management concerns on policy and practice.

Table 4. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.889[a]	.790	.789	.34060

a. Predictors: (Constant), IV2, IV1

The model summary reveals a substantial coefficient of determination (R Square =.790), suggesting that the independent variables under investigation may explain about 79% of the variability seen in the effectiveness of property management advice. The robustness and reliability of the model are evident from the high R Square

value, which, when coupled with an adjusted R Square value of 0.789, serves as evidence. The standard deviation of the residuals was determined using the standard error of the estimate, yielding a value of 0.34060. This metric offers a quantification of the standard deviation.

Tavle 5. ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	173.633	2	86.816	748.369	.000[b]
	Residual	46.055	397	.116		
	Total	219.688	399			

a. Dependent Variable: DV

b. Predictors: (Constant), IV2, IV1

IV1-Current conditions in property management：Plan、Do、Check、Act

IV2-Problems in property management：Office equipment、Domputes、Building、Vehicle

DV- Property management guideline：Policy level、Practical level

The analysis of variance (ANOVA) table displays a noteworthy F-value of 748.369, with a p-value of less than.000. This implies that the linear regression model as a whole has a statistically significant predictive potential for the efficacy of property management guidelines at Nanchang University. The fact that the sum of squares due to regression (173.633) is higher than the sum of squares owing to residuals (46.055) provides more evidence that the model is capable of explaining phenomena.

Table 6. Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-.004	.097		-.040	.968
	IV1	.350	.041	.350	8.607	.000
	IV2	.644	.045	.578	14.227	.000

a. Dependent Variable: DV

IV1-Current conditions in property management：Plan、Do、Check、Act

IV2-Problems in property management：Office equipment、Domputes、Building、Vehicle

DV- Property management guideline：Policy level、Practical level

Within the context of the independent variables, the coefficient analysis provided insights into the individual contributions of each variable. IV1 (present circumstances in property management, contained by the PDCA cycle) had an unstandardized coefficient of.350, with a standard error of.041, while IV2 (issues in property management) had a coefficient of.644, with a standard error of.045. Both of these coefficients were based on the mean value of the variables. According to these coefficients, the execution of the PDCA cycle and the existence of property management difficulties both have a substantial effect on the policy and practical elements of property management guidelines. However, the coefficient value for IV2 indicates that it has a more significant impact than the other coefficients.

In addition, the standardized coefficients, also known as beta values, make it possible to compare the relative significance of the independent variables that are included in the calculation. It can be deduced from the fact that the Beta value for IV1 was.350 and for IV2 it was.578 that issues in property management have a more significant impact on the efficiency of property management guidelines than the circumstances that are currently represented by the PDCA cycle.

Table 7. Research Result

Hypothesis	Result	Details
RH1: Impact of Current Conditions in Property Management	Supported	The use of the PDCA cycle is a major predictor of the efficiency of property management guidelines.
RH2: Impact of Problems in Property Management	Supported	Issues related to office equipment, conflicts, building management, and vehicle management have a considerable impact on the efficiency of property management guidelines.

RH1: Impact of Current Conditions in Property Management

According to the first hypothesis (RH1), it was hypothesized that the current conditions in property management, as implemented through the Plan-Do-Check-Act (PDCA) cycle, would significantly impact the policy and practical aspects of the property management guidelines at Nanchang University. The statistical analysis provided empirical support for the aforementioned premise, indicating that the implementation of the Plan-Do-Check-Act (PDCA) cycle significantly influences the effectiveness of property management protocols. The PDCA cycle, a systematic approach to planning, executing, analyzing, and improving property management processes, significantly contributes to the development of policies and the execution of property management at the university.

RH2: Impact of Problems in Property Management

The second hypothesis focused on the impact of challenges in property management, specifically related to office equipment, conflicts, building management, and vehicle management, on the policy and practical aspects of the property management guidelines at Nanchang University. The regression analysis findings further support this theory, demonstrating that the aforementioned factors significantly influence the effectiveness of property management recommendations.

Examples of crucial factors that might potentially hinder the efficiency and efficacy of property management procedures include disputes, the upkeep of buildings and vehicles, and the management of office equipment. The validation of RH2 indicates that a range of challenges and concerns in the field of property management are among the primary factors that might impede the effectiveness of these solutions. This assistance underscores the need of implementing proactive issue detection and resolution methods inside property management systems. These methods are essential to ensure that issues of this kind do not have an adverse impact on the overall management structure.

5. Conclusion

Research result and Comparison with Previous Literature

The findings of the study provided evidence in favor of the premise that the existing circumstances in property management, as implemented using the Plan-Do-Check-Act (PDCA) cycle, have a substantial impact on the content and implementation of property management guidelines. This is consistent with prior research that highlights the significance of well-organized management procedures in property management. The use of the Plan-Do-Check-Act (PDCA) cycle has been identified as a significant indicator of effectiveness in property

management protocols, underscoring its function in enabling ongoing enhancement and adjustment to address changing demands (Xie, Zhang, & Su, 2020).

The research validated that issues in property management, such as office equipment, conflicts, building upkeep, and vehicle administration, significantly influence the efficacy of property management protocols. This observation aligns with other studies that have shown the impact of operational barriers on the effectiveness of property management systems (Zeng, Wu, & Chen, 2023). To ensure the general success of property management systems, it is necessary to address these particular challenges by implementing proactive problem detection and resolution methods (Luming & SUKPASCHAROEN, 2022).

Upon comparing these results with the existing body of research, a number of significant discoveries become apparent. The prioritization of the PDCA cycle as a methodical approach to property management aligns with the suggestions put forward by researchers that advocate for organized management approaches in the field of facilities management (Gu & Zhang, 2021). Furthermore, the recognition of distinct obstacles in property management is consistent with research that emphasizes the significance of tackling operational concerns in order to improve the effectiveness of property management strategies.

This research enhances the wider conversation on university property management by illustrating the interconnectedness of operational difficulties and systematic procedures. Universities may improve the overall efficacy of their management frameworks by including strategic planning and practical problem-solving into their property management strategies (Li, Bai, & Qin, 2022).The findings of the data analysis highlight the need of implementing systematic management procedures and effectively tackling unique property management obstacles in order to enhance property management protocols at Nanchang University. This research offers significant insights for university administrators, facility managers, and legislators that want to enhance property management practices in higher education settings by building upon and building upon existing literature.

Implications of the study

The study emphasizes the need of using structured management protocols, such as the Plan-Do-Check-Act (PDCA) cycle, to effectively guide property management endeavors. The study findings indicate that the use of the Plan-Do-Check-Act (PDCA) cycle significantly impacts property management guidelines at both the policy and practical levels. This underscores the need of using systematic approaches to facilitate ongoing improvement and adaptation in property management methodologies. The PDCA cycle should be recognized by university administrators and facilities managers as a valuable tool for improving organizational resilience and adaptation in response to evolving challenges within the university environment.

The study emphasizes the need of addressing specific obstacles and challenges in property management. The effectiveness of property management practices is strongly impacted by several factors, including challenges related to office equipment, disputes, building maintenance, and vehicle management. This underscores the need of including proactive mechanism for identifying and resolving issues in property management systems. It is essential for university administrators and facility managers to prioritize the identification and resolution of these challenges in order to ensure the effective implementation of property management operations across many campuses.

The study emphasizes the interdependence between property management strategies and their impact on the functioning of universities. The effective management of property is of utmost importance in the preservation and use of university assets, resulting in enhanced operational efficiency and academic excellence. Allocating resources towards improving property management techniques may provide substantial benefits for the whole university community, including students, faculty, personnel, and stakeholders.

Future research

Subsequent studies might delve more into the specific mechanisms via which the PDCA cycle influences the effectiveness of property management. The present research has shown a significant correlation between the use of the Plan-Do-Check-Act (PDCA) cycle and the efficacy of property management protocol. Subsequent

investigations might delve into the complexities of this association. The effective application of the PDCA cycle in university property management contexts may need qualitative research in order to uncover the underlying processes and organizational dynamics that either facilitate or hinder its implementation. Longitudinal studies provide the potential to observe the progression of property management practices over an extended period, examining the adaptation and enhancement of the Plan-Do-Check-Act (PDCA) cycle in response to changing internal and external conditions.

It is important to conduct research in order to examine the impact of emerging technologies on property management within multi-campus universities. Technological advancements in the domains of Internet of Things (IoT), data analytics, and artificial intelligence (AI) provide considerable potential for enhancing the efficiency and effectiveness of property management operations via technology-driven solutions. Subsequent investigations might examine the adoption and use of these technologies in university environments, assessing their influence on decision-making, allocation of resources, maintenance protocols, and operational effectiveness. Moreover, it is possible to conduct comparative studies in order to evaluate the effectiveness of different technological projects within diverse institutional contexts.

Subsequent research might explore the impact of organizational culture and leadership on property management strategies in institutions. The impact of organizational culture on attitudes, behaviors, and traditions pertaining to property management operations is substantial. An investigation of the influence of cultural factors, such as communication patterns, collaborative dynamics, and attitudes towards innovation, on the implementation of property management strategies might provide valuable insights. The investigation of leadership styles and practices has the potential to uncover the impact of effective leadership on the congruence between property management goals and broader institutional objectives.

The increasing globalization of higher education is a valuable opportunity for doing comparative research on property management practices across many cultural contexts and geographical regions. Researchers may examine the property management practices of various institutions to identify cultural disparities and gain valuable insights for developing robust and adaptable property management frameworks.

Acknowledgment

I extend my sincere gratitude to all those who contributed to the completion of this research endeavor.I would like to express my heartfelt appreciation to Miss Sirinya Wiroonrath, my thesis advisor, for her invaluable guidance, encouragement, and unwavering commitment to excellence. Her expertise and mentorship have been indispensable in navigating the challenges of research design, data analysis, and interpretation.

I am deeply indebted to the administration and staff of Nanchang University for their support and cooperation throughout the data collection process. Their willingness to participate and provide insights into the complexities of multi-campus property management has been instrumental in shaping the outcomes of this study.

I would like to express my deepest gratitude to my family for their unwavering love, encouragement, and understanding. Their constant support and belief in my abilities have been the driving force behind my academic pursuits.

I am immensely grateful to everyone who has contributed to this research project in one way or another. Your collective efforts have been instrumental in bringing this study to fruition, and for that, I am truly thankful.

References

[1] Abd Latib, N. A., Ahmadun, M., & Yaakub, F. (2022). Determinants Level of Knowledge and Awareness toward Staff University Technology Mara on Property Hibah Management Practices. *International Journal of Academic Research in Economics and Management Sciences, 11*(10.6007).

[2] Berbegal-Mirabent, J., Rizzo, U., & Rossi, F. (2022). How universities' third mission engagement can support inclusive innovation and sustainable development: Addressing some open questions. *International Journal of Intellectual Property Management, 12*(1), 1.

[3] Egelie, K. J. (2019). Management of intellectual property in university-industry collaborations–public access to and control of knowledge.
[4] Gassmann, O., Bader, M. A., & Thompson, M. J. (2021). *Patent management: Protecting intellectual property and innovation*: Springer.
[5] Gretsch, O., Tietze, F., & Kock, A. (2020). Firms' intellectual property ownership aggressiveness in university–industry collaboration projects: Choosing the right governance mode. *Creativity and Innovation Management, 29*(2), 359-370.
[6] Gu, Y., & Zhang, P. (2021). CHALLENGES IN THE ADMINISTRATION OF SATELLITE UNIVERSITY CAMPUSES IN CHINA-A CASE STUDY BASED ON HARBIN INSTITUTE OF TECHNOLOGY, SHENZHEN. *European Journal of Education Studies, 8*(1).
[7] Gunawan, L. R., Wibowo, G. D. H., & Asikin, Z. (2022). Implementation of Good Governance in the Management of Regional Property in Tourism Areas (Study of Regional Property Management of West Nusa Tenggara Province in Gili Trawangan). *International Journal of Social Science Research and Review, 5*(8), 508-518.
[8] Ivanova, V., Ivanov, O., & Ivanova, O. (2021). Development of approaches to innovation transfer and intellectual property management to ensure enterprise competitiveness. *Eastern-European Journal of Enterprise Technologies, 6*(13), 114.
[9] Kant, L., & Shahid, F. (2022). Managing intellectual property and technology commercialization: Experiences, success stories and lessons learnt—A case study from Vivekananda Institute of Hill Agriculture, India. *The Journal of World Intellectual Property, 25*(1), 143-156.
[10] Kaur, T., & Solomon, P. (2022). A study on automated property management in commercial real estate: a case of India. *Property Management, 40*(2), 247-264.
[11] Le, H. T.-T., & Thi-Dai Luong, T. (2022). Intellectual Property Management: Case Studies of Vietnamese SMEs. *International Journal of Business Strategy and Social Sciences, 5*(2), 70-87.
[12] Li, M., Bai, Y., & Qin, B. (2022). Pros and Cons of University Merger and Development Strategies: A Case Study of Jilin University in China. *Terra Linguistica, 13*(1), 70-83.
[13] Luming, W., & SUKPASCHAROEN, K. (2022). Student Perceptions of Service Quality in a Multi Campues University Management: Evidence of Higher Education in Beijing. *Proceedings of IAC 2022 in Vienna*, 90.
[14] Mubiru, M. B. (2022). Mobility challenges and experiences for students with disabilities in Tanzania universities: dealing with a social inclusion nightmare in property management. *Property Management, 40*(4), 560-580.
[15] Ojetunde, I., Sule, A. I., Kemiki, O. A., & Olatunji, I. A. (2020). Factors affecting the academic performance of real estate students in a specialized federal university of technology in Nigeria. *Property Management, 38*(2), 177-198.
[16] Sanderson, D. C., & Read, D. C. (2020). Recognizing and realizing the value of customer-focused property management. *Property Management, 38*(5), 749-764.
[17] Sergeevna, K. A. Strategic intellectual property management system for universities and scientific organizations for efficient technology transfer.
[18] Støre-Valen, M. (2019). *Digitization of FM: Experiences from Norwegian property managers.* Paper presented at the European Facilities Management Conference 2019.
[19] Torre, R. D. L., Alcaide-Muñoz, C., & Ollo-Lopez, A. (2019). A review of intellectual property management practices using qualitative comparative analysis. *International Journal of Intellectual Property Management, 9*(3-4), 264-286.
[20] Valks, B., Blokland, E., Elissen, C., van Loon, I., Roozemond, D., Uiterdijk, P., . . . Den Heijer, A. (2021). Supporting strategic decision-making on the future campus with space utilisation studies: a case study. *Property Management, 39*(4), 441-465.
[21] VISHNYAKOVA, I. V., NURUTDINOVA, A. R., SABAEVA, E. K., VASILYEVA, E. R., & NELYUBINA, E. A. (2020). The main stages of preparing graduates for intellectual property management. *Asia Life Sciences, 29*(2), 1-9.

[22] Xie, X., Zhang, Q., & Su, H. (2020). *Problems and Suggestions in the Initial Construction of Running Campuses in Different Places.* Paper presented at the Design, Operation and Evaluation of Mobile Communications: First International Conference, MOBILE 2020, Held as Part of the 22nd HCI International Conference, HCII 2020, Copenhagen, Denmark, July 19–24, 2020, Proceedings 22.

[23] Ye, H. (2021). *Intellectual Property Management System of Chinese Universities Based on SAP in Big Data Environment.* Paper presented at the 2021 Second International Conference on Electronics and Sustainable Communication Systems (ICESC).

[24] Zeng, W., Wu, S., & Chen, W. (2023). Studying at a New Remote University Campus: Challenges and Strategies in Students' Sustainable Self-Development. *Sustainability*, *15*(4), 3857.

[25] Zhang, Y., Sun, J., Hu, Z., Wang, W., & Wu, C. (2021). Residents' satisfaction with cultural services provided by property managers in Chinese housing communities. *Social Behavior and Personality: an international journal*, *49*(6), 1-15.

[26] Zhou, H., Yu, J., Ye, J., Huang, J., & Feng, H. (2022). *Developing a Smart Real Property Management System: A Case Study in Hangzhou, China.* Paper presented at the 2022 International Conference on Bigdata Blockchain and Economy Management (ICBBEM 2022).

[27] Zhu, Z. (2023). A Discussion on the Development Status and Predicament of Intellectual Property Higher Education in China:--Taking the Intellectual Property Management Major in Higher Vocational Colleges as an Example. *Journal of Education and Educational Research*, *3*(1), 152-155.