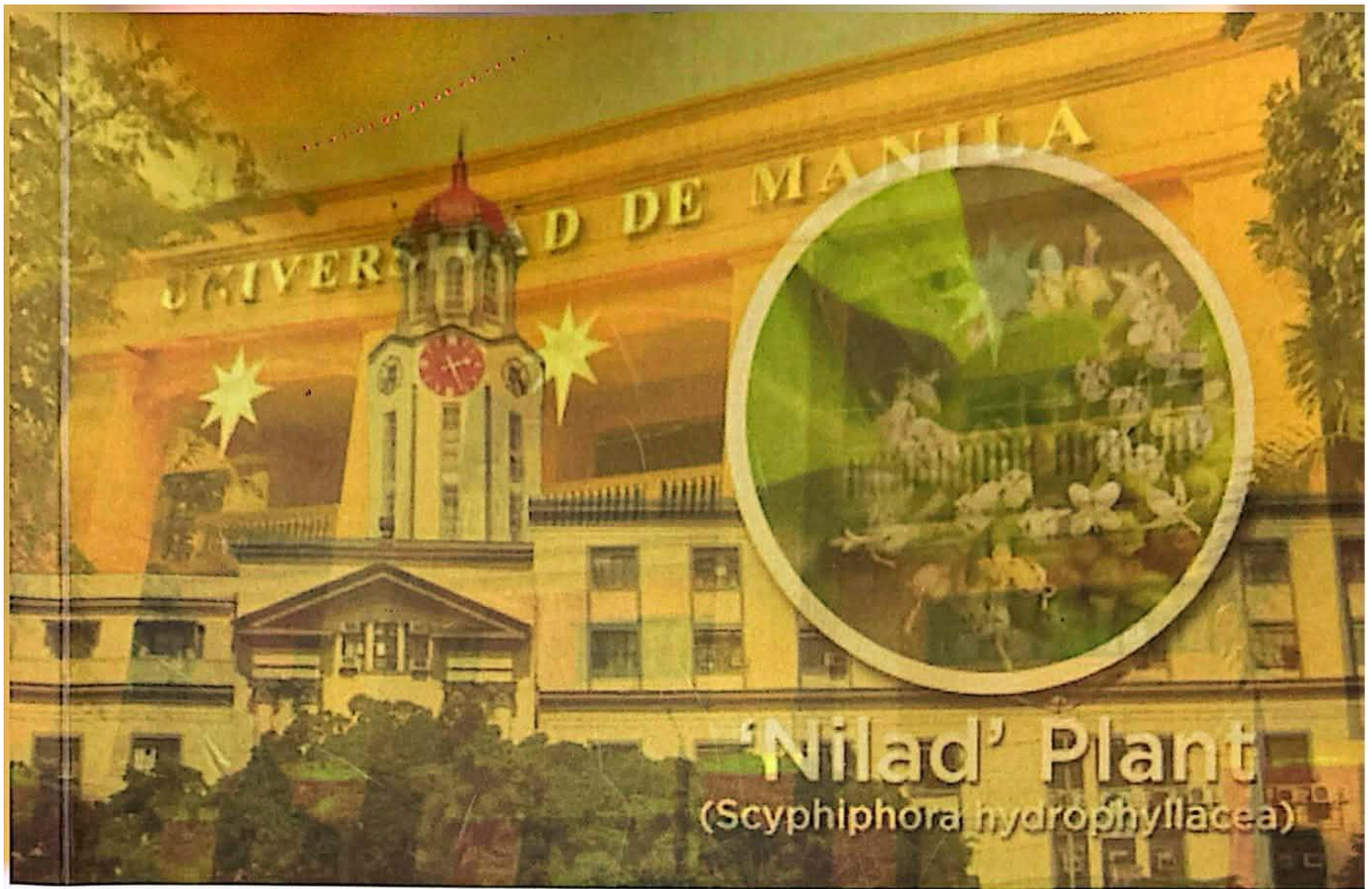




A Multidisciplinary Journal of Universidad de Manila



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FOREWORD



With great pleasure and a deep sense of responsibility, I present to you the Volume 2, Issue No. 2 of the NILAD, the Universidad De Manila's Multidisciplinary Journal. As the Director of Research, I am deeply honored to introduce a publication that demonstrates our institution's commitment to academic excellence, innovative research, and interdisciplinary collaboration.

In an era when knowledge transcends traditional boundaries, the need for a platform that encompasses a broad range of academic disciplines has never been greater. NILAD is designed to serve as such a platform, bringing together diverse scholarly perspectives to foster a comprehensive understanding of the complex issues that define our world today. This journal is named after the resilient plant "nilad," which flourished along the banks of the Pasig River, representing growth, adaptability, and the rich historical roots of our city, Manila.

Our contributors come from a variety of backgrounds, each bringing unique perspectives and rigor to their research. NILAD encapsulates the interdisciplinary ethos that underpins the Universidad De Manila's academic philosophy, spanning the sciences, humanities, social studies, and technology. This journal not only reflects the intellectual vibrancy of our faculty and students, but it also serves as a source of knowledge for the larger academic community.

The path to the second issue of NILAD was one of dedication, collaboration, and unwavering commitment. I am deeply grateful to our editorial board, peer reviewers, and all contributors for their dedication and unwavering pursuit of excellence. Their efforts guarantee that each article published in this journal meets the highest standards of academic integrity and scholarly merit.

As we embark on this exciting new chapter, I hope that NILAD inspires, challenges, and engages its readers. May it become a pillar of scholarly discourse, pushing the boundaries of knowledge and encouraging a culture of inquiry and innovation.

Thank you for joining us on this journey. Let us continue to cultivate the spirit of discovery and intellectual curiosity that NILAD represents.


LEILA R. GANO, PhD.
Director
University Research Center



MESSAGE FROM THE

University President



Congratulations on the release of the second volume, issue number 2 of the NILAD Journal!

As a multidisciplinary journal, NILAD is gradually evolving into a powerful platform for disseminating scholarly research conducted by UDM faculty and students. This journal's work has far-reaching implications for our city and country. NILAD has evolved into a more dynamic and responsive organization by showcasing high-impact research across multiple disciplines.

A lively research journal is a sign of a genuine higher education institution (HEI). UDM is preparing for Level 2 accreditation after obtaining Level 1 accreditation from the Association of Local Colleges and Universities-Commission on Accreditation (ALCUCOA) and receiving the Academic Excellence Award for exceptional board passing rates over the previous three years. The dynamism displayed by NILAD demonstrates UDM's commitment to achieving HEI status. This journey requires extensive research to address diverse issues within academia, industry, and the community.

In this post-pandemic era, the value of research has grown even more apparent. The changes in how we manage emerging infectious diseases, community resources, and academic institutions' future planning demonstrate the importance of research. Research informs policy, emergency management programs, and decisions about health, family, and career. Through thought-provoking and insightful research, we can drive change and respond to current challenges with vigor and unity.

The NILAD Journal will play an important role in this transformational process, challenging existing systems to discover what is good and true in today's world. NILAD reflects our society's evolving nature by providing a platform for diverse studies on a wide range of topics.

I am fully committed to ensuring that the UDM NILAD Research Journal continues to be a beacon of pioneering research, propelling UDM to become an influential voice of change and a premier higher education institution.



MA. FELMA CARLOS-TRIA, Ed.D.
University President

MESSAGE FROM THE

Vice President for Academic Affairs



Congratulations to the University Research Center (URC) on the publication of the second issue of the NILAD, UDM's flagship research journal.

The University places a premium on world-class and scholarly research outputs from a variety of disciplines. We encourage creative collaborations aimed at achieving UDM's dreams and aspirations for the city, country, and, most importantly, the youth of Manila.

UDM received level 1 accreditation from the Association of Local Colleges and Universities-Commission on Accreditation (ALCUCOA), demonstrating the dynamism of NILAD Journal and ensuring compliance with the National Higher Education Research Agenda. This achievement strengthens UDM's research practices to meet the required typology of a university. UDM recently signed a Memorandum of Agreement, which resulted in the launch of the adoption of Barangay 790, Zone 86 Santa Ana Manila. This community provides an ideal environment for conducting multidisciplinary research that can be featured in NILAD. Thus, NILAD serves as a repository of wisdom and knowledge, strengthening UDM's mission, vision, and core values.

In light of this, I encourage all faculty members to conduct high-impact research and immerse themselves in a variety of research pathways, resulting in a kaleidoscope of knowledge that will strengthen UDM's educational brand. It's past time to foster a culture of research excellence at the University, with unwavering integrity and a commitment to the illumination of truth, all for the glory of God.

Good luck to the URC team with all of your research activities. Be an innovator who can transform the lives of all University stakeholders. Continue your work by adhering to the highest ethical research standards and remaining steadfast in carrying out your sworn duties and responsibilities.

Again, please accept my heartfelt congratulations!

RONALD A. HERRERA, PhD.
Vice-President for Academic Affairs



MESSAGE FROM THE

Editor-in-Chief



It is with great pleasure and a sense of profound responsibility that I present to you Volume 2, Issue No. 2 of the NILAD Journal of the Universidad De Manila's Multidisciplinary Studies. As we continue to navigate through an era marked by unprecedented challenges and remarkable resilience, this issue is a testament to the unwavering dedication and scholarly commitment of our contributors.

In this edition, we are honored to feature seven meticulously researched articles that span a diverse range of disciplines, reflecting the multidisciplinary essence of our journal.

Firstly, the article "Situational Leadership Styles Among Academic Heads Amidst the Covid-19 Pandemic" by Amalfi B. Tabin, Jr., Jose M. De Leon, Virginia I. Berganio, and Flordeliza V. Garcia provides an insightful analysis of how academic leaders have adapted their leadership approaches in response to the unique challenges posed by the pandemic. Their findings offer valuable perspectives on leadership flexibility and crisis management within educational institutions.

Next, Christine A. Moreno, Noami DS. Solano, and Iserlohn Peter M. Lim contribute two significant articles. The first, "The Effectiveness of National Covid-19 Vaccine Information Drive Campaign as Adopted by Local Government of San Juan in Increasing the Vaccine Confidence of Residents," evaluates the impact of localized information campaigns on public health behavior, a crucial element in our fight against the pandemic. Their second article, "The Effectiveness of QC Safe Cycling and Active Transport Ordinance to the Cyclists and Pedestrians' Safety," examines the implications of local transport policies on the safety and well-being of urban residents, highlighting the importance of policy in public safety.

Vanessa V. Martinez's research on "Flower Color and Structure Preference of Butterfly on Feeding" delves into the fascinating world of entomology and ecology, offering new insights into the feeding behaviors of butterflies and their ecological preferences. This study enhances our understanding of biodiversity and its conservation.

Remigio V. Gancia's article, "Training and Development Needs of Graduate School Faculty of Universidad De Manila towards Enhanced Professionalism in the Workplace," addresses the critical issue of faculty development. His research underscores the necessity of continuous professional growth to maintain educational excellence.

Flordeliza M. Rubio, Rubirosa V. Sicat, Yolanda B. Balaguer, Arthur M. Guerrero, and Jennifer B. Garcia explore the evolving landscape of educational resources in their article "Going Beyond E-Book Engagement for Students: A Motivation in Utilizing the Library of Universidad De Manila." This work investigates student engagement with digital resources, emphasizing the evolving role of libraries in the digital age.

Lastly, the article "UDM Library E-Book: Pathways to Functional Information System" by Clarissa R. Navarro, Rubirosa V. Sicat, and Flordeliza M. Rubio presents a comprehensive overview of the development and implementation of functional information systems in academic libraries. Their findings highlight the importance of technological advancements in enhancing information accessibility.

As we publish this issue, we extend our deepest gratitude to all our contributors, reviewers, and editorial team members whose unwavering dedication has made this publication possible. We hope that the articles presented herein will inspire further research and contribute significantly to the body of knowledge in their respective fields.

We invite you, our readers, to engage with these articles, reflect on the insights they provide, and join us in celebrating the spirit of scholarly inquiry and academic excellence.




R. CIDON P. BERNARTE, DLM
Editor-In-Chief

MESSAGE FROM THE

Managing Editor



It is with great pride and enthusiasm that I welcome you to the latest edition of the NILAD Journal, the official publication of Universidad De Manila. As the Managing Editor, it is my honor to oversee the production of this multidisciplinary journal, which serves as a testament to the vibrant research culture within our university.

Initially, I approached this role with some hesitation due to my background in advanced technology. However, the eagerness and dedication of our contributors quickly transformed my hesitance into a profound commitment. Embracing this challenge has been a significant part of my growth and development, and I am proud to contribute to the advancement of research innovation at Universidad De Manila.

My responsibilities as Managing Editor encompass a wide range of tasks, from editing and content curation to layout design and ensuring adherence to the high standards set by the University Research Council (URC) of UDM. Each piece of content is meticulously reviewed and refined to ensure it meets our rigorous standards of excellence.

The process involves collaborating with various departments and colleges to meet article submission deadlines, editing content pieces, creating cohesive layouts, and maintaining consistency in style and presentation. Our goal is to produce a journal that not only presents cutting-edge research but also does so in a visually appealing and reader-friendly format.

The success of NILAD is a collective achievement. It is the result of the hard work and dedication of our contributors, editorial team, and the wider university community. Your contributions are the cornerstone of NILAD's success, and I am deeply grateful for your ongoing support and commitment.

I am particularly proud of our dynamic layout design, which guides readers through the content with visual interest and clarity. By adhering to key design principles such as alignment, effective layout, unique design, space, and visual hierarchy, we ensure that each article is presented in a manner that enhances its impact.

Thank you for your continued support and contributions to NILAD. Together, we will continue to uphold the high standards of our multidisciplinary journal and promote the rich intellectual landscape of Universidad De Manila.

Silvia C. Ambag, DEM
Managing Editor
NILAD, Multidisciplinary Journal of Universidad De Manila
Universidad De Manila



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About the NILAD Journal

NILAD is the Universidad De Manila interdisciplinary, peer-reviewed publication. It is concerned with developing and producing new knowledge and innovations throughout Arts and Sciences, Business and Management, Criminal Justice, Education, Engineering and Technology, Health Sciences, and Law. Furthermore, the Journal considers new insights and innovations that would help enhance, advance, and progress the disciplines and research grounded in a local context but have global resonance.

NILAD is open to various perspectives, disciplines, strategies, and philosophies. The Journal encourages a range of techniques for empirical research (qualitative, quantitative, and mixed methodologies), as well as high-quality systematic reviews and meta-analyses.

Aims and Scope

NILAD publishes original research articles, systematic reviews, policy briefs, and meta-analyses in the following areas:

- Arts and Sciences
- Business and Management
- Criminal Justice
- Education
- Engineering and Technology
- Health Sciences
- Law
- Public Administration

Situational Leadership Styles Among Academic Heads amidst the Covid-19 PandemicAmalfi B. Tabin, Jr.¹, Jose M. De Leon¹, Virginia I. Berganio¹ and Flordeliza V. Garcia¹¹Universidad De Manila

Abstract - The study aimed to identify the situational leadership styles adopted by academic heads in selected local universities and colleges (LUCs) in Metro Manila during the COVID-19 pandemic. Utilizing the Situational Leadership Style Summary/Self-Assessment (SLSS), the research examined how these leaders adapt their styles to align with their team members' needs and workplace variables. Situational leadership theory posits that no single leadership approach is universally applicable; instead, it suggests four distinct styles: Telling (Directing), Selling (Coaching), Participating (Facilitating), and Delegating (Observing), chosen based on the maturity and competence of the employees or teams. The study employed a descriptive survey methodology, administering the SLSS questionnaire to gather data. Both descriptive and inferential statistical methods were used to analyze the responses and address the research questions.

Keywords - *Situational Leadership, Academic Heads, COVID-19 Pandemic, Metro Manila, Leadership Styles*

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Introduction:

The COVID-19 pandemic, first identified in Wuhan, China, has profoundly disrupted global life for over two years. This crisis has posed unprecedented challenges for organizational leaders worldwide, compelling them to devise and implement adaptive strategies. Higher education institutions, characterized by their multifaceted missions of teaching, research, and societal contribution, faced significant upheaval, necessitating swift and effective leadership. Academic leaders were tasked with managing large educational communities, addressing the diverse needs of students, faculty, staff, and broader society in a rapidly changing environment (Dumulescu & Muțiu, 2021).

Globally, governments and societies have encountered an extraordinary situation due to the pandemic, which has precipitated a widespread crisis impacting various aspects of life, including family, education, health, work, and the dynamics between leaders and followers (Hinojosa et al., 2020; Aslam et al., 2021; Parveen et al., 2022a). Organizational leaders have played a critical role in shaping employee experiences during and after the pandemic, adapting to new realities and ensuring effective communication, which significantly influences performance, behavior, and mental health (Ngoma et al., 2021; Wu & Parker, 2017; Saleem et al., 2020; Parveen et al., 2022b).

Situational Leadership, an adaptive leadership approach, encourages leaders to assess their team members and workplace variables, selecting the leadership style that best aligns with their goals and circumstances. Ken Blanchard emphasizes that modern leaders must go beyond positional power, demonstrating multiple leadership styles to meet organizational and employee needs. During crises, employees exhibit varying levels of readiness to handle situations, and situational leaders must match their leadership style to the followers' readiness level to enhance productivity and competitiveness (Mujtaba & Sungkhawan, 2009).

The Situational Leadership model, originally introduced as the "Life Cycle Theory" by Hersey and Blanchard in 1969, was inspired by research on successful leadership, including the Ohio State University studies, Blake and Mouton's Managerial Grid, and Reddin's 3-D model. The model posits that effective leadership

styles evolve with followers' maturity, necessitating leaders to adapt their styles to the developmental level of their team members (Hersey & Blanchard, 1969; Blanchard & Hersey, 1996; Hersey, Blanchard, & Johnson, 1996, 2001). This flexibility is essential for managing diverse workplace factors and relationships effectively (Kenton, 2020).

This study investigates the situational leadership styles of academic heads in selected local universities and colleges in Metro Manila during the COVID-19 pandemic, employing the Situational Leadership Model by Hersey and Blanchard. Recognizing the critical role of leadership in crises, the researchers, former deans, highlight the importance of adaptive leadership styles in achieving institutional vision and mission. The model outlines four leadership styles: Delegating (low-task, low-relationship), Participating (low-task, high-relationship), Selling (high-task, high-relationship), and Telling (high-task, low-relationship), each suited to different levels of follower maturity.

The research aims to provide insights into how academic leaders in higher education adapted their leadership styles in response to the challenges posed by the COVID-19 pandemic, contributing to a deeper understanding of effective leadership in times of crisis.

Statement of the Problem:

The primary objective of this study is to determine the situational leadership styles of academic heads in selected local universities and colleges in Metro Manila. Specifically, the study seeks to answer the following research questions:

1. What is the profile of the respondents in terms of the following demographic characteristics:
 - 1.1 Sex;
 - 1.2 Age;
 - 1.3 Number of years in the position; and
 - 1.4 Highest educational attainment?
2. What is the situational leadership style of the respondents using the Situational Leadership Model by Hersey and Blanchard in terms of:
 - 2.1 Directing (Telling);
 - 2.2 Coaching (Selling);
 - 2.3 Supporting (Participating); and
 - 2.4 Delegating?
3. Is there a significant relationship between the demographic characteristics and the situational leadership styles of the respondents?
4. What training program may be crafted based on the findings of the study?

Methodology

This study employed a descriptive research design to investigate the situational leadership styles of academic heads in selected local universities and colleges (LUCs) in Metro Manila during the COVID-19 pandemic. The descriptive approach is suitable for providing a detailed and accurate portrayal of the leadership styles and demographic characteristics of the respondents.

The study targets 23 academic heads from various LUCs in Metro Manila. These individuals are responsible for managing educational programs, faculty, and students, making them well-positioned to provide insights into their leadership approaches during the pandemic.

Survey methods were used to gather data from the respondents. The primary instrument for data collection was the Situational Leadership Style Summary/Self-Assessment (SLSS) questionnaire. This tool is designed to assess the respondents' preferred leadership styles—Directing (Telling), Coaching (Selling), Supporting (Participating), and Delegating—according to the Situational Leadership Model by Hersey and Blanchard. The questionnaire also collected demographic data, including sex, age, number of years in the position, and highest educational attainment.

Both descriptive and inferential statistics were employed to analyze the collected data. Descriptive statistics, such as frequencies, percentages, means, and standard deviations, were used to summarize the demographic characteristics of the respondents and their reported leadership styles. This provides a clear picture of the distribution and central tendencies within the data.

Inferential statistics were utilized to examine the relationships between the demographic characteristics and the situational leadership styles of the respondents. Techniques such as correlation analysis and regression analysis were applied to determine if significant relationships exist between variables. This analytical approach helps in understanding how factors like age, sex, tenure, and educational attainment influence leadership style preferences.

The results of the statistical analyses inform the development of a tailored training program aimed at enhancing the leadership capabilities of academic heads in LUCs. This program is designed based on the specific needs and characteristics identified in the study, ensuring that it is relevant and effective in addressing the leadership challenges posed by the pandemic and similar crises in the future.

Results and Discussion

On the profile of the respondents

Table 1:
Profile of the Respondents

Demographic	Frequency	Percentage
<i>Gender</i>		
Male	16	69.6
Female	7	30.4
Total	23	100%
<i>Age</i>		
26 - 30	4	17.4
31 - 35	4	17.4
36 - 40	1	4.3
40 - 45	5	21.7
46 - 50	3	13
51 - 55	3	13
56 - 60	1	4.3
61 - above	2	8.7
Total	23	100%
<i>Number of Years in the Position</i>		
1 - 3	17	73.9
4 - 6	3	13
7 - 10	1	4.3
11 - above	2	8.7
Total	23	100%
<i>Highest Educational Attainment</i>		
Doctorate Degree	9	39.1
Master's Degree	6	26.1
Master's Degree with Doctorate units	6	26.1
Bachelor's Degree with MA units	2	8.7
Total	23	100%

The results indicate a higher proportion of male academic heads (69.6%) compared to female academic heads (30.4%). This gender distribution reflects existing literature on gender disparities in leadership positions within higher education, where males often outnumber females (Madsen & Andrade, 2018).

In terms of age, the majority of the respondents are within the 40-45 age group (21.7%), followed by the 26-30 and 31-35 age groups, each comprising 17.4% of the sample. This distribution suggests that many academic heads are in their early to mid-career stages. This aligns with research indicating that individuals typically attain leadership roles in academia in their 40s and 50s (Hargrove, 2021).

Regarding tenure, a significant majority (73.9%) of the academic heads have been in their positions for 1-3 years. This may imply a trend of relatively recent appointments to leadership roles, possibly accelerated by the challenges and restructuring necessitated by the COVID-19 pandemic. Previous studies suggest that crises often precipitate leadership changes and the appointment of new leaders to manage emerging challenges (Dirani et al., 2020).

Educational attainment among the respondents is relatively high, with 39.1% holding doctorate degrees and a combined 52.2% holding master's degrees with or without doctorate units. This high level of educational attainment is consistent with the qualifications typically required for academic leadership positions (Altbach, 2015). The significant proportion of leaders with advanced degrees underscores the importance of formal education in leadership roles within higher education institutions.

The demographic profile of the academic heads participating in this study highlights several important trends and considerations. The gender disparity observed aligns with broader patterns in academic leadership, where males often occupy a larger proportion of leadership roles. This disparity calls for ongoing efforts to promote gender equity in leadership within higher education (Madsen & Andrade, 2018).

The age distribution and tenure data suggest a trend toward younger and relatively new leaders. This could be a response to the unprecedented challenges posed by the COVID-19 pandemic, requiring fresh perspectives and innovative approaches to leadership (Dirani et al., 2020). The high educational attainment of the respondents aligns with the literature emphasizing the importance of advanced academic qualifications for leadership roles in higher education (Altbach, 2015).

The demographic characteristics of the academic heads in this study provide a context for understanding their situational leadership styles. The relatively high educational qualifications and recent appointments suggest a cohort of leaders who are well-equipped academically but may be navigating their roles in a dynamic and challenging environment. This demographic context is crucial for interpreting the leadership styles and the effectiveness of different situational leadership approaches in managing the complexities of higher education during the COVID-19 pandemic.

On the situational leadership style of the respondents using the Situational Leadership Model by Hersey and Blanchard

Table 2:
Situational Leadership Style of the Respondents Using the Situational Leadership Model by Hersey and Blanchard

Situational Leadership Style	Frequency	Percent
Directing	4	17.4
Coaching	13	56.5
Supporting	5	21.7
Delegating	1	4.3
Total	23	100

The situational leadership styles of the respondents, as assessed using the Situational Leadership Model by Hersey and Blanchard, are presented in Table 2. The analysis reveals a predominance of certain leadership styles among academic heads in local universities and colleges in Metro Manila during the COVID-19 pandemic.

The Coaching leadership style is the most prevalent among the respondents, with 56.5% utilizing this approach. This style involves high levels of both task-oriented and relationship-oriented behaviors, aiming to explain decisions and provide supportive guidance. This is particularly effective for followers who have some competence but lack commitment or confidence, making it highly relevant during the uncertainties of the pandemic when employees might need both direction and support (Blanchard & Hersey, 1996). The predominance of the Coaching style aligns with Heifetz, Grashow, and Linsky's (2009) emphasis on adaptive leadership, which is crucial in times of crisis to help teams navigate complex and rapidly changing circumstances.

Almost 22% of the respondents employ a Supporting leadership style, emphasizing shared decision-making and less direct task oversight. This style is suitable for followers with moderate to high competence but variable commitment. The moderate use of this style indicates that a significant portion of academic heads rely on collaborative and facilitative approaches, fostering a supportive environment during challenging times. Supporting leaders help create an inclusive environment where team members feel valued and empowered to contribute to problem-solving efforts, as highlighted by Yukl (2012).

Seventeen percent of the respondents adopt a Directing leadership style, which involves giving explicit directions and closely supervising tasks. This style is suitable for followers with low maturity and competence (Hersey & Blanchard, 1969). The relatively low frequency of this style suggests that few academic heads perceive their teams to be at a low readiness level requiring such direct oversight. This is consistent with the need for more participative and supportive leadership during crises, where the focus is on guiding and supporting team members through uncertainty.

Only 4.3% of the respondents use a Delegating leadership style. This style involves low task and low relationship behaviors, giving responsibility to followers with high competence and commitment (Hersey et al., 2001). The low frequency of this style suggests that most academic heads do not perceive their teams as fully autonomous and capable of independent task management without oversight during the crisis. Northouse (2018) suggests that delegating is less suitable in high-stress situations where followers require more guidance and support.

The predominance of the Coaching leadership style among academic heads aligns with findings from leadership research that highlight the importance of adaptive and supportive leadership during crises. Coaching is particularly effective in environments where followers face stress and uncertainty, as it combines clear guidance with emotional support (Heifetz, Grashow, & Linsky, 2009).

During the COVID-19 pandemic, the need for leaders to provide both direction and support has been critical. Leaders who adopt a Coaching style can effectively address the dual challenges of maintaining operational continuity and supporting their team's well-being. This approach resonates with Heifetz et al. (2009), who argue that adaptive leadership is crucial in times of crisis, enabling leaders to help their teams navigate complex and rapidly changing circumstances.

The use of the Supporting leadership style by a significant minority of respondents indicates an emphasis on collaboration and shared decision-making. This style is effective in fostering a sense of ownership and commitment among team members, which is vital in sustaining motivation and performance during prolonged crises (Yukl, 2012). Supporting leaders help create an inclusive environment where team members feel valued and empowered to contribute to problem-solving efforts.

The minimal use of the Delegating style reflects the high demands for active leadership involvement during the pandemic. Given the heightened uncertainty and the need for cohesive and coordinated responses, few academic heads perceive their teams as fully capable of operating independently. This finding is

consistent with research by Northouse (2018), which suggests that delegating is less suitable in high-stress situations where followers require more guidance and support.

The analysis of situational leadership styles among academic heads in Metro Manila reveals a predominant use of the Coaching style, emphasizing the need for supportive and directive leadership during the COVID-19 pandemic. The significant presence of the Supporting style further underscores the importance of collaborative approaches in managing crises. The limited use of the Delegating style highlights the ongoing need for active leadership involvement in navigating complex challenges. These findings align with existing leadership literature and provide valuable insights for developing targeted leadership training programs to enhance crisis management capabilities in higher education institutions.

On the significant relationship between the demographic characteristics and the situational leadership styles of the respondents

Table 3:
Significant Relationship between the Demographic Characteristics and the Situational Leadership Styles of the Respondents

Variable	χ^2 value	df	p - value	Decision
Sex	7.74	3	0.520	Accept Ho
Age	21.66	21	0.443	Accept Ho
Years in Position	14.38	9	0.109	Accept Ho
Highest Educational Attainment	11.09	9	0.269	Accept Ho

The results indicate that there is no significant relationship between the demographic characteristics (sex, age, years in position, highest educational attainment) and the situational leadership styles of the respondents. All p-values are greater than the significance level of 0.05, leading to the acceptance of the null hypothesis for each variable.

The χ^2 value for sex is 7.74 with a p-value of 0.520. This suggests that gender does not significantly influence the leadership style adopted by the academic heads. This finding aligns with Eagly and Johannesen-Schmidt (2001), who posited that while there are some gender differences in leadership styles, these differences are not substantial enough to dictate a leader's style in all contexts.

The χ^2 value for age is 21.66 with a p-value of 0.443. This indicates that age is not a significant factor in determining the situational leadership style. Research by Ng and Feldman (2010) suggests that while age can influence leadership perspectives and approaches, it is not the sole determinant of leadership style. Other factors such as individual personality, organizational culture, and situational demands play more critical roles.

The χ^2 value for years in position is 14.38 with a p-value of 0.109. This result shows that the length of time an academic head has been in their position does not significantly affect their chosen leadership style. Yukl (2012) notes that while experience can enhance a leader's effectiveness, it does not necessarily alter their inherent leadership style, which is often more closely related to their underlying traits and competencies.

The χ^2 value for highest educational attainment is 11.09 with a p-value of 0.269. This indicates no significant relationship between educational attainment and situational leadership style. According to Bass (1990), while higher education can provide leaders with more tools and knowledge, it does not fundamentally change their leadership style, which is shaped by a combination of personal attributes and situational factors.

Eagly and Johannesen-Schmidt (2001) found that while there are some gender-based tendencies in leadership approaches, such as women being more transformational and men more transactional, these

tendencies do not significantly impact the overall leadership style in a given context. The lack of significant relationship between sex and leadership style in this study supports this view.

Ng and Feldman (2010) propose that while age can influence leadership through accumulated experience and wisdom, it is not a primary determinant of leadership style. This study's findings that age does not significantly correlate with leadership style reinforce the idea that leadership is more situational and context-dependent rather than solely age-dependent.

Yukl (2012) highlights that leadership effectiveness can improve with experience, but the fundamental style of leadership is influenced by more stable personal attributes and situational demands. The absence of a significant relationship between years in position and leadership style in this study supports this assertion.

Bass (1990) argues that educational attainment can enhance a leader's skills and knowledge but does not inherently alter their leadership style. The findings of this study, which show no significant relationship between educational attainment and leadership style, align with this perspective.

The analysis indicates that demographic characteristics such as sex, age, years in position, and highest educational attainment do not significantly influence the situational leadership styles of academic heads in local universities and colleges in Metro Manila. These findings suggest that leadership styles are more likely influenced by other factors, including individual personality traits, organizational culture, and the specific situational context. This underscores the importance of focusing on these broader aspects when developing leadership training programs aimed at enhancing situational leadership capabilities in higher education institutions.

On the training program that may be crafted based on the findings of the study

Based on the results of the study, which identified the predominance of the Coaching leadership style among academic heads in local universities and colleges (LUCs) in Metro Manila during the COVID-19 pandemic, a comprehensive training program can be crafted to enhance situational leadership capabilities. This program aims to develop and refine the leadership skills necessary to effectively navigate crises and adapt to varying situational demands.

The training program, titled "Enhancing Situational Leadership Capabilities in Higher Education," is designed with several key objectives in mind. Firstly, it seeks to develop an understanding of the Situational Leadership Model by Hersey and Blanchard among academic heads. Secondly, it aims to enhance their ability to assess the readiness level of their team members accurately. Thirdly, the program provides tools and techniques for effectively applying the four situational leadership styles: Directing, Coaching, Supporting, and Delegating. Additionally, it fosters adaptive leadership skills that can be applied in various crisis situations and encourages self-awareness and continuous improvement in leadership practices.

The program is structured into five comprehensive modules. The first module introduces the Situational Leadership Model, offering an overview of its historical context and development by Hersey and Blanchard. Participants will engage in interactive sessions and case studies that highlight each leadership style, providing a foundational understanding of the model.

In the second module, participants will learn to assess the readiness levels of their team members. This module includes tools for evaluating competence and commitment, practical exercises to apply these assessments, and role-playing scenarios to practice these skills in a controlled environment.

The third module focuses on applying the situational leadership styles. It delves deeply into the Coaching style, which is the most prevalent among the academic heads studied. Participants will explore techniques for balancing task orientation with relationship orientation and strategies for effective communication and support. Additionally, this module addresses using the Directing style in low-readiness situations, collaborative methods to enhance Supporting style practices, and empowering high-readiness teams through the Delegating style. Group discussions and feedback sessions will facilitate the practical application of these styles.

The fourth module addresses adaptive leadership in crisis. Participants will learn principles of adaptive leadership, techniques for leading through uncertainty and change, and real-world examples and lessons from the COVID-19 pandemic. Crisis simulation exercises will provide an opportunity to practice adaptive leadership skills, and reflection sessions will allow participants to learn from their crisis leadership experiences.

The fifth and final module focuses on self-awareness and continuous improvement. Participants will develop self-awareness as leaders, using tools for self-assessment and reflection. They will create personal leadership development plans, engage in peer coaching and mentorship opportunities, and set goals for continuous improvement.

To ensure engagement and practical application, the training program employs a combination of instructional methods. These include interactive lectures and presentations, case studies, role-playing and simulation exercises, group discussions, workshops, self-assessment tools, and reflection activities. Peer coaching and feedback sessions will further reinforce learning.

Evaluation of the training program's effectiveness will be achieved through pre- and post-training assessments to gauge knowledge and skill improvement, participant feedback through surveys and focus groups, observation of leadership behaviors in real-world settings, and follow-up sessions to reinforce learning and address ongoing challenges. Continuous improvement of the program will be based on participant feedback and observed outcomes.

The proposed training program aims to equip academic heads with the skills needed to effectively lead their institutions through crises and adapt to various situational demands. By focusing on the predominant Coaching leadership style while also strengthening capabilities in Directing, Supporting, and Delegating, the program fosters adaptive, resilient, and effective leadership in higher education. The integration of interactive and practical training methods ensures that participants can apply their learning directly to their leadership roles, ultimately enhancing the overall leadership effectiveness within their institutions.

Conclusions and Recommendations

The study provides several important insights into the situational leadership styles of academic heads in selected local universities and colleges in Metro Manila during the COVID-19 pandemic.

The demographic profile of the respondents reveals a predominance of male academic heads, constituting 69.6% of the sample, with females making up 30.4%. The age distribution shows a diverse range, with the most represented age groups being 40-45 years and 26-30 years, highlighting both relatively younger and mid-career leaders. Most respondents have been in their positions for 1-3 years, indicating a relatively recent transition to leadership roles. In terms of educational qualifications, a significant portion of the respondents hold advanced degrees, with 39.1% having a Doctorate degree, and a total of 52.2% holding a Master's degree or a Master's degree with Doctorate units.

The predominant leadership style among the academic heads is the Coaching style, used by 56.5% of the respondents. This style, which involves high levels of both task-oriented and relationship-oriented behaviors, is particularly effective in providing guidance and support during times of uncertainty. Other leadership styles identified include Supporting (21.7%), Directing (17.4%), and Delegating (4.3%).

Statistical analysis indicates no significant relationship between the demographic characteristics (sex, age, years in position, and highest educational attainment) and the situational leadership styles of the respondents. This suggests that these demographic factors do not significantly influence the leadership styles adopted by academic heads, aligning with existing literature that emphasizes the importance of situational and contextual factors in leadership effectiveness.

Based on these findings, several recommendations are proposed to enhance the leadership capabilities of academic heads in higher education. Institutions should invest in comprehensive leadership development

programs that focus on situational leadership, particularly emphasizing the Coaching style, which has proven to be the most prevalent and effective in the current context. Encouraging and supporting more women to assume academic leadership positions is also crucial. This can be achieved through targeted leadership development programs and mentorship opportunities for female faculty members, aiming to address the gender imbalance observed in the study.

Given the relatively short tenure of most academic heads, ongoing support and development opportunities are essential to help them adapt and grow in their roles. This includes regular training and professional development sessions tailored to the unique challenges and demands of academic leadership. Additionally, promoting continuous education and advanced degrees among academic leaders can further enhance their skills and knowledge, providing incentives such as scholarships or professional development credits.

The proposed training program, "Enhancing Situational Leadership Capabilities in Higher Education," should include modules on the Situational Leadership Model, assessing team readiness, applying different leadership styles, adaptive leadership in crisis, and fostering self-awareness for continuous improvement. Implementing this program will equip academic heads with the necessary skills to effectively lead their institutions through crises and adapt to various situational demands.

To ensure the effectiveness of these training programs, it is important to establish mechanisms for evaluation and feedback. This includes pre- and post-training assessments to gauge knowledge and skill improvement, participant feedback through surveys and focus groups, and observation of leadership behaviors in real-world settings. Continuous improvement of the training programs should be based on this feedback, ensuring they remain relevant and effective in addressing the evolving needs of academic leaders.

Incorporating crisis management and adaptive leadership training into the leadership development programs is also essential. The COVID-19 pandemic has underscored the need for leaders who can navigate uncertainty and lead their teams through crises effectively. By focusing on these recommendations, higher education institutions can strengthen the leadership capabilities of their academic heads, ensuring they are well-equipped to handle current and future challenges. This will ultimately contribute to the resilience and effectiveness of educational institutions, fostering a more adaptive and supportive leadership culture.

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The Effectiveness of National Covid-19 Vaccine Information Drive Campaign as Adopted by Local Government of San Juan in Increasing the Vaccine Confidence of Residents

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Abstract - This descriptive-correlational research aims to describe the vaccine confidence of residents, identify the personal and social factors affecting their confidence, and evaluate the effectiveness of the local government's information drive campaign in increasing vaccine confidence. The study also examines the correlation and significant relationship between selected demographics, such as age and socioeconomic status, and residents' vaccine confidence. A total of 60 residents, aged 18 and above and eligible for vaccination, participated in the study. Data were collected using a five-part validated survey questionnaire distributed through convenience sampling. The majority of respondents were female, aged 18-25, with a monthly income ranging from PhP 10,001 to PhP 29,999, and had received a booster shot. The study found that residents are generally confident in vaccines, with their confidence influenced by various personal and social factors. Furthermore, the information drive campaign was effective in increasing vaccine confidence. The null hypotheses were accepted at $p < .05$, indicating no significant relationships between the specified demographic profiles and vaccine confidence.

Keywords - Vaccine Confidence, COVID-19, Information Drive Campaign, Vaccine Hesitancy, Public Health Communication

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Introduction

The onset of the COVID-19 pandemic marked one of the most challenging periods in recent human history. Declared a Public Health Emergency of International Concern (PHEIC) by the World Health Organization in January 2020, the outbreak was classified as a pandemic by March 2020 due to the rapid increase in cases globally. Since its emergence, the pandemic has led to over 220 million confirmed cases and 4.5 million deaths worldwide (Johns Hopkins University, 2021). In the Philippines, more than two million cases have been recorded, with nearly 30,000 deaths reported by the Department of Health. The pandemic has not only posed significant health risks but also severely impacted the economy, particularly in the National Capital Region, which is the economic hub of the country.

In response, the Philippine government initiated a mass vaccination campaign starting in February 2021, aiming to achieve herd immunity by vaccinating 50 to 70 million Filipinos within the year (Tomacruz, 2021; Ngo et al., 2022). Vaccines have historically been effective in preventing diseases and saving millions of lives annually. For instance, vaccination programs have significantly reduced the incidence of diseases such as measles, poliomyelitis, hepatitis B, and influenza, averting an estimated 2-3 million deaths each year. Despite the success of these programs, vaccine hesitancy remains a critical challenge. The World Health Organization identified vaccine hesitancy as one of the top ten threats to global health in 2019, driven by concerns about vaccine safety, efficacy, side effects, and misinformation (WHO, 2019).

In the Philippines, vaccine hesitancy is a significant issue. According to an OCTA Research survey, only 25% of respondents aged 18 and above were willing to receive the COVID-19 vaccine (CNN Philippines, 2021). To combat this hesitancy, the Philippine government launched the National COVID-19 Vaccine Information Drive Campaign. The campaign, spearheaded by the Department of Health (DOH) in collaboration with the Presidential Communications Operations Office (PCOO) and the Interagency Task Force for Emerging Infectious Diseases (IATF-EID), includes initiatives like "BIDA Solusyonsa COVID-19"

and "RESBAKUNA: Kasangga ng Bida." These campaigns aim to provide accurate information, counter misinformation, and increase public confidence in vaccines. Local government units, including the City of San Juan, have adopted these information drive campaigns to enhance vaccine confidence among residents (Benati & Coccia, 2022).

The theoretical foundation of this study is the Theory of Planned Behavior, proposed by Icek Ajzen. This theory, which has been extensively used to understand health behaviors, suggests that an individual's intention to perform a behavior is influenced by their attitude towards the behavior, subjective norms, and perceived behavioral control (Piltch-Loeb & DiClemente, 2020). The theory posits that individuals assess the advantages and disadvantages of performing a behavior, such as receiving a vaccination, by considering factors like the perceived risk of disease, the benefits of vaccination, the credibility of information sources, and social and cultural influences (Hasija et al., 2022).

This research aims to provide valuable insights into the vaccine confidence of San Juan residents and assess the effectiveness of the local government's information campaign. By examining personal and social factors that influence vaccine acceptance, the study seeks to offer recommendations for improving future vaccination efforts (Wang et al., 2022).

Statement of the Problem

The COVID-19 pandemic has underscored the critical importance of vaccination in controlling the spread of the virus and mitigating its impact on public health. Despite the proven efficacy and safety of COVID-19 vaccines, vaccine hesitancy remains a significant challenge. To address this issue, the Philippine government launched the National COVID-19 Vaccine Information Drive Campaign, which was adopted and implemented by local governments, including San Juan City. This campaign aims to increase public confidence in vaccines by providing accurate information and countering misinformation. This study seeks to evaluate the effectiveness of the information drive campaign and understand the factors influencing vaccine confidence among San Juan residents.

The study aims to answer the following research questions:

1. How confident are the residents in the efficacy and safety of COVID-19 vaccines?
2. How effective are the COVID-19 vaccine information drive campaign strategies, as adopted by the local government, in increasing the vaccine confidence of residents of San Juan?
3. What strategies can be added to further improve the National COVID-19 Vaccine Information Drive Campaign?

Literature Review

Building trust, empowering healthcare professionals, and involving communities and individuals are three critical measures identified by the Center for Disease Control and Prevention (2021) as essential to bolstering confidence in COVID-19 vaccines. Building trust involves providing transparent access to information regarding the authorization, approval, manufacturing, distribution, allocation, and administration of COVID-19 vaccines. Continuous updates about the benefits, safety, side effects, and efficacy of vaccines are crucial. To combat misinformation and its negative effects, the government should utilize social media platforms, allies, and trusted messengers.

Empowering healthcare personnel is also vital as they are key partners in building vaccine confidence. This can be achieved by fostering a culture of vaccination confidence within healthcare systems and medical practices, and by enhancing healthcare professionals' abilities to engage in empathetic vaccine conversations, address myths and common questions, provide tailored vaccine information, and employ motivational interviewing strategies. Engaging communities and individuals requires two-way communication to build trust and collaboration. This can involve empowering vaccine recipients to share their personal stories and reasons for vaccination within their communities and collaborating with trusted messengers—such as faith-based and community leaders—to disseminate culturally relevant messages and materials (Denison et al., 2023).

Piltch-Loeb and DiClemente (2020) identified five crucial elements that influence individuals' perceptions of vaccination uptake: awareness of health risks, availability, affordability, and acceptability of the vaccine, and vaccination skepticism. This skepticism is often driven by entrenched belief systems, including individual liberty, religious convictions, "natural" health practices, and concerns about adverse health effects. Addressing vaccine hesitancy involves targeted community communication and cultural sensitivity. Tailoring counter-messages to address specific belief systems within communities can be most effective in enhancing vaccine uptake (Carcelen et al., 2022).

Buttenheim (2021) offered strategies for engaging communities and promoting COVID-19 vaccination. These include forming partnerships with community organizations that have established connections with their target populations, customizing messages to specific audiences, and understanding the concerns, motivations, and trust sources of different groups. Messages should be tailored to address the information needs of specific audiences, which may differ from the perceptions of communicators (Lin et al., 2022).

Vergara (2021) highlighted the persistent issue of vaccine hesitancy in the Philippines, attributing it to social traumas like the Dengvaxia controversy and geopolitical issues. The Dengvaxia incident in 2016, which resulted in over 600 deaths, primarily among children, severely damaged public trust in vaccines. The lack of accountability and legal repercussions for government agents or vaccine manufacturers has continued to impact public confidence. Additionally, Filipinos' low net trust in Chinese COVID-19 vaccines exacerbates vaccine hesitancy.

Surveys by Social Weather Stations (2021) and Pulse Asia Research Inc. (2020) provide data on public trust in the government's assessment of COVID-19 vaccines. Social Weather Stations found that 51% of adult Filipinos were confident in the government's evaluation of the vaccines, while 31% were doubtful, and 17% were not confident. Confidence in the government's assessment was correlated with willingness to vaccinate, primarily driven by personal protection and prevention against COVID-19. Conversely, Pulse Asia's survey revealed that 47% of Filipinos were unwilling to get vaccinated due to safety concerns, with only 32% willing and 21% undecided (Atinga, Koduah, & Abiir, 2022).

A study by Faasse and Newby (2020) conducted in Australia during the early stages of the pandemic found that higher levels of outbreak concern and media attention correlated with increased health-protective behaviors and vaccination intentions. Psychological and demographic factors such as being male, younger age, and low levels of outbreak fear were associated with lower participation in health-protective behaviors.

Loomba et al. (2020) discovered that misinformation about the COVID-19 vaccine decreased vaccination intent in the US and UK. They found that older age groups in the US were more susceptible to misinformation. Similarly, Paul et al. (2021) identified that high levels of mistrust in vaccination benefits and concerns about potential side effects were significant predictors of vaccine hesitancy, particularly among ethnic minorities, low-income groups, and those with lower levels of education.

Roberto et al. (2021) explored vaccine confidence among educational stakeholders, finding that 54% approved of vaccinations while 46% disapproved. Reasons for vaccination included government mandates, personal protection, and influence from family or job requirements. Hesitancy was attributed to fears of genetic modification, skepticism about vaccine safety, and media coverage of vaccine concerns. Jabar et al. (2021) emphasized the importance of trust in government, trust in vaccines, and access to vaccine-related information as predictors of vaccination intention. Maulana et al. (2021) highlighted that efficacy, safety, and long-term immunity were the most preferred attributes in vaccines, with no correlation found between demographic profiles and willingness to vaccinate.

These studies provide a comprehensive overview of vaccine confidence and hesitancy, highlighting the importance of trust, accurate information, and cultural sensitivity in promoting vaccination uptake. The insights from these studies serve as a meaningful guide for improving public health communication and vaccination efforts.

Methodology

The study used a descriptive-correlational research design, which aims to systematically describe a population, phenomenon, or situation. Descriptive research design involves obtaining information to describe variables and their relationships accurately. This study aims to describe the demographic profile of the respondents, including age, gender, education, and socioeconomic status. Additionally, it seeks to reveal the personal and social factors affecting vaccine confidence and determine the effectiveness of the information drive campaign adopted by the local government in increasing vaccine confidence (McCombes, 2019). The study also investigates the relationship between selected demographic profiles, particularly age and socioeconomic status, and vaccine confidence among San Juan residents.

The study was conducted in San Juan, Metro Manila, involving a total of 60 respondents. The participants were residents of San Juan, aged 18 years and above, and eligible for COVID-19 vaccination. The sampling method used was convenience sampling to ensure that the data collection process was feasible and manageable.

The researchers designed a survey questionnaire to gather the necessary data. The questionnaire, a widely used research instrument, involves presenting a series of questions to respondents to collect information systematically (Smith & Johnson, 2022). The content of the questionnaire was derived from various related literature and studies relevant to the research investigation. The questionnaire is divided into five parts: Demographic Profile, Vaccine Confidence, Personal and Social Factors, Effectiveness of the Information Drive Campaign, and Suggested Strategies. To ensure clarity and comprehension, the questionnaire was also translated into Filipino.

The data gathering process involved distributing the survey questionnaire to the selected respondents. The researchers ensured that the questions were relevant and aligned with the research objectives. The respondents were informed about the purpose of the study, and their participation was voluntary. The researchers collected the completed questionnaires for data analysis.

The collected data were analyzed using descriptive and inferential statistical methods. Descriptive statistics, such as frequencies, percentages, and means, were used to summarize the demographic profile of the respondents and their levels of vaccine confidence. Inferential statistics, specifically correlation analysis, were employed to determine the relationships between demographic variables (age and socioeconomic status) and vaccine confidence. This approach allowed the researchers to identify significant factors influencing vaccine confidence and evaluate the effectiveness of the information drive campaign.

Results and Discussion

On the confident are the residents in the efficacy and safety of COVID-19 vaccines

Table 1:
Confidence of Residents in Vaccine

Statements	Weighted Mean	Verbal Interpretation
I am confident in the safety and efficacy of COVID-19 vaccines.	4.73	Strongly Agree
I am confident that COVID-19 will not cause any severe adverse reactions.	4.65	Strongly Agree
I have had previous experience with vaccination programs.	4.67	Strongly Agree
Vaccination is free and accessible to me.	4.72	Strongly Agree
I do not believe in negative information about the COVID-19 vaccines.	4.70	Strongly Agree

It can prevent the transmission of COVID-19 in the community.	4.75	Strongly Agree
I did not have any practical issues or concerns with the vaccination processes - from registration to actual vaccination.	4.73	Strongly Agree
OVERALL MEAN	4.71	Strongly Agree

The data presented in Table 1 indicate a high level of confidence among San Juan residents in the COVID-19 vaccines. The overall mean score of 4.71, interpreted as "Strongly Agree," demonstrates strong agreement with the statements related to vaccine confidence.

The respondents expressed strong confidence in the safety and efficacy of COVID-19 vaccines, with a weighted mean of 4.73. This high level of confidence aligns with the findings of the Centers for Disease Control and Prevention (2021), which emphasize the importance of providing transparent information about vaccine safety and efficacy to build public trust.

With a weighted mean of 4.65, respondents strongly agreed that COVID-19 vaccines would not cause severe adverse reactions. This is consistent with Piltch-Loeb and DiClemente (2020), who noted that awareness of health risks and accurate information can significantly influence vaccine uptake.

The respondents' previous experience with vaccination programs (weighted mean of 4.67) suggests a positive history of vaccination, which can contribute to current vaccine confidence. This supports the idea that familiarity with vaccination processes can enhance trust in new vaccination efforts (Denison et al., 2023).

The statement that vaccination is free and accessible received a weighted mean of 4.72, indicating strong agreement. This finding is crucial as accessibility and affordability are key factors in increasing vaccine confidence, as highlighted by Piltch-Loeb and DiClemente (2020).

Respondents strongly agreed (weighted mean of 4.70) that they do not believe in negative information about COVID-19 vaccines. This is an important finding as it suggests that the information drive campaign has been effective in countering misinformation, aligning with strategies recommended by the Center for Disease Control and Prevention (2021) and Buttenheim (2021).

The highest weighted mean (4.75) was for the statement that vaccines can prevent the transmission of COVID-19 in the community. This underscores the perceived effectiveness of the vaccine in controlling the pandemic, which is a critical factor in vaccine acceptance (Benati & Coccia, 2022).

The respondents also strongly agreed (weighted mean of 4.73) that they did not encounter practical issues during the vaccination process. Smooth and efficient vaccination processes are essential for maintaining high vaccine confidence (Smith & Johnson, 2022).

The findings of this study indicate a very high level of vaccine confidence among San Juan residents, influenced by factors such as the perceived safety and efficacy of the vaccines, accessibility, and effective communication strategies that counter misinformation. The strong agreement across all statements suggests that the information drive campaign adopted by the local government has been successful in increasing vaccine confidence. These results align with existing literature emphasizing the importance of trust, accessibility, and accurate information in promoting vaccine uptake.

On the effectiveness of COVID-19 vaccine information drive campaign strategies

Table 2:
The Effectiveness Of COVID-19 Vaccine Information Drive Campaign Strategies

Statements	Weighted Mean	Verbal Interpretation
The local government is proactive in adopting the vaccine information drive campaign.	4.70	Strongly Agree
The vaccine information campaign has increased my knowledge of vaccines.	4.73	Strongly Agree
The vaccine information campaign has successfully reached me through various platforms, especially on social media.	4.72	Strongly Agree
The vaccine information campaign has corrected the misinformation and lies about the safety and efficacy of vaccines.	4.65	Strongly Agree
The vaccine information campaign has designed informational materials that are understandable, clear, and concise.	4.75	Strongly Agree
The vaccine information campaign has answered the frequently asked questions about vaccines.	4.68	Strongly Agree
The vaccine information campaign has provided the latest updates about the ongoing vaccination program.	4.67	Strongly Agree
OVERALL MEAN	4.70	Strongly Agree

The data presented in Table 2 demonstrate a strong positive perception among residents of San Juan regarding the effectiveness of the local government's COVID-19 vaccine information drive campaign. The overall mean score of 4.70, interpreted as "Strongly Agree," indicates a high level of satisfaction with the campaign's strategies.

The statement "The local government is proactive in adopting the vaccine information drive campaign" received a weighted mean of 4.70. This suggests that residents perceive the local government as actively engaged in promoting the vaccine information drive. This finding aligns with the recommendations by the Center for Disease Control and Prevention (2021) that emphasize the importance of proactive governmental efforts in building vaccine confidence.

The statement "The vaccine information campaign has increased my knowledge of vaccines" received a weighted mean of 4.73, indicating that the campaign effectively educated residents about vaccines. This supports the notion that informative campaigns are crucial in enhancing public understanding and acceptance of vaccines (Piltch-Loeb & DiClemente, 2020).

Residents strongly agreed (weighted mean of 4.72) that the campaign successfully reached them through various platforms, especially social media. This finding highlights the importance of utilizing diverse communication channels to disseminate vaccine information, consistent with strategies suggested by Buttenheim (2021) and Lin et al. (2022).

The statement "The vaccine information campaign has corrected the misinformation and lies about the safety and efficacy of vaccines" received a weighted mean of 4.65. This indicates that the campaign effectively addressed and corrected misinformation, which is essential for building public trust and confidence in vaccines (Benati & Coccia, 2022).

The highest weighted mean (4.75) was for the statement "The vaccine information campaign has designed informational materials that are understandable, clear, and concise." This suggests that the quality of informational materials significantly contributed to the campaign's effectiveness. Clear and concise communication is vital for ensuring that the public accurately understands vaccine information (Smith & Johnson, 2022).

Residents strongly agreed (weighted mean of 4.68) that the campaign answered frequently asked questions about vaccines. Providing accurate answers to common queries is crucial for addressing concerns and reducing hesitancy (Piltch-Loeb & DiClemente, 2020).

The statement "The vaccine information campaign has provided the latest updates about the ongoing vaccination program" received a weighted mean of 4.67, indicating that timely updates were appreciated by residents. Keeping the public informed with current information helps maintain transparency and trust (Denison et al., 2023).

The findings from this study show that the local government's COVID-19 vaccine information drive campaign in San Juan was highly effective in increasing vaccine confidence among residents. The strong agreement across all statements suggests that the campaign was successful in educating the public, addressing misinformation, and utilizing various platforms to reach a wide audience. These results are consistent with existing literature that emphasizes the importance of proactive government efforts, clear communication, and the use of multiple channels to disseminate information effectively.

On strategies can be added to further improve the National COVID-19 Vaccine Information Drive Campaign

Table 3:
Suggested Strategies of Residents for further Improvement of the Information Drive Campaign

Suggested Strategies	Frequency	Percentage
Provide information about incentive-based interventions such as privileges extended to vaccinated individuals.	53	88%
Provide more information on sanctions and disadvantages of being unvaccinated.	47	78%
More focus on combating misinformation and disinformation about vaccines	39	65%
Promote the vaccination process through dialogue-based interventions such as house-to-house campaigns	21	35%
Info campaigns that are more focused on unvaccinated individuals	50	83%
Promote the information campaign to a much wider audience through television and media platforms	47	78%
Post more tangible posters and promotional materials about vaccine information on public spaces	32	53%
Info campaigns should be more focused on presenting scientific data that supports vaccine efficacy	18	30%
<i>(multiple response, n=60)</i>		

The data in Table 3 provide insights into residents' suggested strategies for improving the COVID-19 vaccine information drive campaign. These suggestions highlight areas where the current campaign can be enhanced to further increase vaccine confidence and uptake.

The most frequently suggested strategy, with 88% of respondents endorsing it, is to provide information about incentive-based interventions such as privileges for vaccinated individuals. This aligns with the findings of Denison et al. (2023), who emphasize that incentives can significantly motivate individuals to get vaccinated. Incentives can include access to certain services, reduced restrictions, or other benefits that make vaccination more attractive.

Seventy-eight percent of respondents suggested providing more information on the sanctions and disadvantages of being unvaccinated. This strategy can create a sense of urgency and emphasize the consequences of not getting vaccinated, which is crucial in driving vaccine uptake. Piltch-Loeb and DiClemente (2020) highlight that understanding the risks and consequences of being unvaccinated can influence individuals' decisions.

Sixty-five percent of respondents believe that more focus should be placed on combating misinformation and disinformation about vaccines. This aligns with the literature that emphasizes the negative impact of misinformation on vaccine confidence and the need for accurate and reliable information to counteract these effects (Buttenheim, 2021; Benati & Coccia, 2022).

Thirty-five percent of respondents suggested promoting the vaccination process through dialogue-based interventions such as house-to-house campaigns. These personalized approaches can address individual concerns and provide tailored information, fostering trust and vaccine acceptance (Carcelen et al., 2022).

Eighty-three percent of respondents recommended that information campaigns focus more on unvaccinated individuals. This targeted approach can address the specific reasons for vaccine hesitancy among this group and provide them with the information they need to make informed decisions (Paul et al., 2021).

Promoting the information campaign to a wider audience through television and media platforms was suggested by 78% of respondents. Utilizing various media channels can enhance the reach and impact of the campaign, ensuring that more people receive the necessary information (Lin et al., 2022).

Fifty-three percent of respondents suggested posting more tangible posters and promotional materials in public spaces. Visible and accessible information can reinforce the campaign's messages and reach individuals who may not engage with digital platforms (Smith & Johnson, 2022).

Finally, 30% of respondents suggested that information campaigns should focus more on presenting scientific data that supports vaccine efficacy. Providing robust scientific evidence can enhance credibility and trust in the vaccines, addressing concerns and misconceptions (Piltch-Loeb & DiClemente, 2020).

The suggestions provided by the residents of San Juan highlight key areas for improving the COVID-19 vaccine information drive campaign. The strategies emphasize the importance of incentive-based interventions, clear information on the consequences of being unvaccinated, combating misinformation, personalized communication, targeted approaches for unvaccinated individuals, wider promotion through media, tangible promotional materials, and the presentation of scientific data. These insights are consistent with existing literature and provide a comprehensive approach to enhancing vaccine confidence and uptake.

Conclusions and Recommendations

The study aimed to determine the confidence of San Juan residents in the efficacy and safety of COVID-19 vaccines and to assess the effectiveness of the local government's adoption of the national COVID-19 vaccine information drive campaign. Based on the findings, several conclusions can be drawn.

The study revealed a high level of vaccine confidence among San Juan residents. The overall mean score of 4.71, interpreted as "Strongly Agree," indicates strong confidence in the efficacy and safety of COVID-19 vaccines. The residents expressed high confidence in the vaccines' ability to prevent severe adverse reactions and appreciated the accessibility and free availability of the vaccines.

Residents also strongly agreed that they do not believe in negative information about COVID-19 vaccines, which suggests that the information drive campaign has been effective in countering misinformation. This is supported by the literature, which highlights the importance of accurate and reliable information to combat misinformation. Additionally, the highest level of agreement was for the statement that vaccines can prevent the transmission of COVID-19 in the community, underscoring the perceived effectiveness of the vaccine in controlling the pandemic.

In terms of the effectiveness of the COVID-19 vaccine information drive campaign strategies, the overall mean score of 4.70 indicates strong positive perception among residents. The proactive adoption of the campaign by the local government, the increase in residents' knowledge about vaccines, and the effective use of various platforms, especially social media, were highly appreciated. This aligns with recommendations that emphasize proactive governmental efforts and the use of diverse communication channels to build vaccine.

The study also highlighted areas for further improvement of the information drive campaign. Residents suggested strategies such as providing information about incentive-based interventions, more information on the sanctions and disadvantages of being unvaccinated, and a greater focus on combating misinformation and disinformation about vaccines. These suggestions are consistent with the literature, which underscores the importance of incentives, clear information on the consequences of being unvaccinated, and combating misinformation to enhance vaccine confidence.

Residents also recommended promoting the vaccination process through dialogue-based interventions, focusing information campaigns on unvaccinated individuals, wider promotion through television and media platforms, and posting more tangible posters and promotional materials in public spaces. These personalized and targeted approaches can address specific reasons for vaccine hesitancy and ensure that the campaign reaches a broader audience.

Based on the study's findings, several recommendations are proposed to enhance the COVID-19 vaccine information drive campaign and increase vaccine confidence among residents:

The local government should continue its proactive approach in implementing and improving the vaccine information drive campaign. Continuous efforts to engage with the community and provide up-to-date information are essential. Information about incentive-based interventions should be prominently featured in the campaign. Incentives such as privileges for vaccinated individuals can significantly motivate residents to get vaccinated. The campaign should provide more information on the sanctions and disadvantages of being unvaccinated. Highlighting the risks and consequences of not getting vaccinated can create a sense of urgency and drive vaccine uptake.

Greater focus should be placed on combating misinformation and disinformation about vaccines. Utilizing trusted messengers and clear, accurate information can counteract false narratives and build public trust. Promote the vaccination process through dialogue-based interventions, such as house-to-house campaigns. Personalized communication can address individual concerns and provide tailored information to foster trust and vaccine acceptance. The campaign should focus more on unvaccinated individuals, addressing their specific reasons for hesitancy and providing them with the information they need to make informed decisions.

Utilize a variety of media channels, including television and social media, to reach a broader audience. Wider promotion can ensure that more people receive the necessary information about the vaccination program. Increase the visibility of vaccine information by posting more tangible posters and promotional materials in public spaces. Accessible and visible information can reinforce the campaign's messages and reach individuals who may not engage with digital platforms. Include more scientific data that supports

vaccine efficacy in the campaign materials. Providing robust scientific evidence can enhance credibility and address concerns and misconceptions about the vaccines.

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The Effectiveness of QC Safe Cycling and Active Transport Ordinance to the Cyclists and Pedestrians' Safety

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Abstract - The COVID-19 pandemic significantly impacted daily life, prompting governments to limit public transportation and enforce health measures to curb virus transmission. Recognizing the need for alternatives, the Philippine government directed local government units to support active transportation. In response, the Quezon City local government implemented the QC Safe Cycling and Active Transport Ordinance, which facilitated the development and maintenance of active transport infrastructure. This study investigates the ordinance's effectiveness in ensuring the safety of cyclists and pedestrians. A total of 60 respondents, including 30 cyclists and 30 pedestrians from Barangay Greater Lagro, Quezon City, participated in this descriptive research. The findings indicate that active transport infrastructure is well-maintained and serves its intended purpose. The study concludes that the QC Safe Cycling and Active Transport Ordinance effectively enhances road safety for cyclists and pedestrians and promotes the continued use of active transportation beyond the pandemic.

Keywords - *Active Transportation, Cyclist Safety, Pedestrian Safety, QC Safe Cycling Ordinance, Public Health Measures*

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Introduction

The COVID-19 pandemic significantly altered daily life and commuting patterns. The rapid spread and nature of the virus necessitated restrictions on public transportation to enforce health precautions and limit transmission. Consequently, many individuals shifted from public transit to active transportation, which relies on non-motorized means powered by human physical exertion, such as cycling and walking (Larouche, 2018). Active transportation offers numerous benefits, including increased physical activity, reduced air and noise pollution, and lower greenhouse gas emissions, contributing to both human health and environmental sustainability.

As countries began to lift lockdown measures, the encouragement of active transportation emerged as a strategy to complement the limited capacity of public mass transit (Figg, 2021). Governments supported this shift by constructing infrastructure to accommodate active transport users and ensure their safety, such as expanding pedestrian lanes and establishing pop-up bike lanes (Perez et al., 2017).

In the Philippines, the COVID-19 pandemic had a profound impact on commuters, many of whom relied on public transit systems like tricycles, jeepneys, UV Express, and trains. These systems, already overcrowded before the pandemic, were further restricted to prevent super-spreader events, prompting the government to limit their capacity (Siy, 2020). In response, many Filipinos adapted by walking, cycling, or using electric scooters and bikes. The national government issued Joint Administrative Order No. 2020-0001 to promote active transportation and ensure public safety during and after the pandemic.

This study aims to evaluate the effectiveness of the QC Safe Cycling and Active Transport Ordinance in improving the safety of cyclists and pedestrians in Quezon City. The focus is on the perceptions and experiences of cyclists and pedestrians in Barangay Greater Lagro, Quezon City. This location was chosen due to its size, separation from major roads, and suitability for active transportation.

The study's objectives include assessing the impact of the ordinance on road safety, evaluating the effectiveness and reliability of the Quezon City government's initiatives to promote active transportation, and providing localized insights and recommendations for improving active transport infrastructure (Campos-Garzón et al., 2023). The study is grounded in Richard Gregory's theory of top-down processing, which posits that individuals interpret new information based on prior knowledge and experiences (Gregory, 1970). This theory is relevant as the ordinance's implementation influences residents' perceptions and behaviors regarding active transportation (Gençer & Yıldırım, 2022).

Statement of the Problem

This study aims to evaluate the effectiveness of the Quezon City Safe Cycling and Active Transportation Ordinance in enhancing the safety of cyclists and pedestrians. Specifically, the study seeks to address the following questions:

1. How effective is the Quezon City Safe Cycling and Active Transportation Ordinance in ensuring the safety of cyclists and pedestrians?
2. How do cyclists and pedestrians perceive the effectiveness of the Quezon City Safe Cycling and Active Transportation Ordinance in terms of their safety?
3. What recommendations can be proposed to further enhance the effectiveness of the Quezon City Safe Cycling and Active Transportation Ordinance for the safety of cyclists and pedestrians?

Literature Review

Active transportation, encompassing walking, cycling, and other non-motorized means of transport, is highly beneficial for maintaining physical activity and reducing overall mortality, as noted by Litman (2021). It contributes to improved general well-being and is the least polluting mode of transportation. Economically, it serves as an affordable option for many underprivileged individuals who rely on walking and cycling for their daily commutes.

Active transportation can substantially save energy by substituting short urban trips characterized by high emissions due to cold starts and congestion. However, it exposes cyclists and pedestrians to air pollution and raises safety concerns regarding motorized vehicles. These issues can be mitigated through proper equipment and sensible government policies (Myrovali & Morfoulaki, 2022).

The COVID-19 pandemic severely impacted public transportation, leading to a drastic decline in ridership. According to Bird, Kriticos, and Tsivanidis (2020), the pandemic forced a sharp reduction in public transit use, with Google Mobility reports indicating up to an 80% decrease in attendance at transportation venues globally. This situation prompted many to adopt active transportation modes like walking and cycling. However, the added curfews and outdoor time restrictions significantly affected accessibility to jobs and social services, potentially increasing unemployment and limiting access.

Brooks, Tingay, and Varney (2020) highlight opportunities for active transportation during the pandemic, noting that social exclusion measures restricted public transportation. In densely populated cities, governments encouraged active transportation to meet minimal physical activity requirements and adhere to social distancing guidelines. The UK, for example, saw a significant rise in walking and cycling as alternative transportation methods. Government initiatives, such as free seminars to improve cycling skills and confidence, further supported this shift. Proper government actions in implementing active transportation projects and policies ensure safety and promote the social narrative that these modes are safe and effective in reducing COVID-19 infections.

In the Philippines, active transportation was initially met with resistance from policymakers who cited safety, weather conditions, and the frequency of typhoons as major concerns (Siy, 2020). Despite the existence of the National Transport Policy emphasizing active transportation since 2017, substantial actions were only taken during the COVID-19 pandemic. Social distancing measures limited public transportation availability, leading many Filipinos to walk or cycle. The government responded by building bike lanes and expanding

sidewalks, supported by Joint Administrative Order 2020-0001, which united national departments and local government units in constructing protected bike lanes and walkways (Abante & Bendaa, 2021).

Public support for active transportation is strong in the Philippines. A survey by Social Weather Stations (SWS) (2021) found that 87% of respondents agreed that prioritizing bicycles, pedestrians, and public transportation over cars would benefit urban streets. This support was consistent across demographics and regions, indicating broad public approval for active transportation initiatives.

Globally, active transportation has gained traction due to its sustainability and effectiveness. In Germany, the pandemic lockdown period saw an increase in cycling and walking (Kolarova et al., 2021). The Dutch study by Blocken et al. (2020) recommended maintaining a greater social distance when people move in the same direction to avoid the slipstream of saliva droplets. Pisoni, Christidis, and Cawoodb (2022) highlighted the impact of travel distance on the choice of active transportation, noting that shorter distances are more conducive to walking or cycling.

Studies by Ek, Wrell, and Andersson (2021) and Ozbilen, Slagle, and Akar (2021) further emphasized health, environmental concerns, and safety as key factors influencing the choice of active transportation. Despite safety concerns related to COVID-19 exposure, long-term adoption of active transportation was not significantly hindered, as found by Haas, Faber, and Hamersma (2020). They projected an increase in cycling and walking post-pandemic.

Camea and Castro (2016) identified intrinsic motivation, attitudinal beliefs about physical fitness, and adaptability as crucial factors for promoting walking. They noted that socioeconomic status, travel patterns, gender, age, and employment status also influence active transportation adoption. Ganiron (2017) argued for the integration of active transportation facilities into the broader public transportation system in the Philippines, emphasizing the need for comprehensive infrastructure, including drainage, delineators, lighting, public storage, and rest areas.

The literature underscores the importance of active transportation as a sustainable response to the COVID-19 pandemic. It highlights the necessity for government involvement in promoting and supporting active transportation infrastructure and policies to ensure the safety and well-being of users. Continuous research and updated data are essential for understanding the effectiveness of active transportation and addressing the evolving challenges posed by future pandemics.

Methodology

The study utilized a cross-sectional descriptive research design. Descriptive research is a study design that methodically strives to gather data to describe a phenomenon, circumstance, or population (McCombes, 2019). A cross-sectional design collects data at a specific point in time to provide a snapshot of a population or phenomenon. In this case, the research aimed to explore how the QC Safe Cycling and Active Transport Ordinance impacts the safety of cyclists and pedestrians.

The study was conducted among residents of Misa de Gallo cor. Flores de Mayo Street, Barangay Greater Lagro, Quezon City, who engage in active transportation and use the available transport infrastructures. The respondents included 30 cyclists and 30 pedestrians, totaling 60 participants. This specific locale was chosen due to its significant use of active transportation and the implementation of the ordinance in the area. The study utilized a purposive sampling technique, selecting respondents who are residents of the specified locale and active users of the transportation infrastructure. This method ensured that the sample accurately represented the population affected by the ordinance.

Data were collected using a survey questionnaire, which gathered pertinent information about the respondents' demographics, their use of active transportation post-pandemic, and their perceptions of the ordinance's effectiveness in promoting active transportation. A five-point Likert scale was used to gauge respondents' views on the state of active transportation infrastructure and the ordinance's effectiveness in ensuring safety. The primary research instrument was a survey questionnaire, which, according to Smith and Johnson (2022), is a research tool used to collect data by presenting a series of questions to

respondents. The survey questionnaire was designed to suit the study's requirements and translated into Filipino to ensure comprehensibility for all respondents.

The data collected from the survey were meticulously recorded, analyzed, and interpreted using statistical methods. Frequency and percentage distribution were used to describe the demographic characteristics of the respondents. The weighted mean was employed to analyze the Likert scale responses, providing a clear measure of central tendency for the perceptions and evaluations of the respondents.

Results and Discussion:

On the effectiveness of the Quezon City Safe Cycling and Active Transportation Ordinance in ensuring the safety of cyclists and pedestrians

Table 1:
Effectiveness of the Quezon City Safe Cycling and Active Transportation Ordinance in Ensuring the Safety of Cyclists and Pedestrians

Statements	Weighted Mean	Verbal Interpretation
Surface is smooth without bumps or holes.	3.25	Neutral
Adequate lighting at night.	3.52	Effective
Enough space.	3.25	Neutral
It reaches and passes through commercial districts such as malls, government offices, and so on.	4.22	Very Effective
There are signages that prevent obstructions.	3.37	Neutral
There is no pooled water after the rain or flood because of adequate drainages.	3.23	Neutral
OVERALL WEIGHTED MEAN	3.47	EFFECTIVE

The overall weighted mean of 3.47 suggests that the respondents generally perceive the Quezon City Safe Cycling and Active Transportation Ordinance as effective. However, the effectiveness varies across different aspects of the infrastructure.

The respondents rated the smoothness of the cycling and walking surfaces as neutral, with a weighted mean of 3.25. This indicates that while some areas may have smooth surfaces, others might have bumps or holes that need to be addressed. A smooth surface is crucial for the safety and comfort of cyclists and pedestrians. Improving the surface condition can enhance the overall effectiveness of the ordinance, as noted by Litman (2021).

Adequate lighting at night received a weighted mean of 3.52, which is interpreted as effective. This indicates that the infrastructure is well-lit, which is essential for safety during nighttime. Proper lighting helps prevent accidents and increases the sense of security among users, aligning with the findings of Brooks, Tingay, and Varney (2020).

The adequacy of space was rated neutral, with a weighted mean of 3.25. This suggests that the available space might be sufficient in some areas but inadequate in others. Adequate space is vital for avoiding congestion and ensuring safe movement for both cyclists and pedestrians. This finding highlights the need for consistent space allocation across different areas, supporting the observations by Siy (2020).

The ordinance was rated very effective in ensuring that cycling and walking paths reach and pass through commercial districts, with a weighted mean of 4.22. This high rating indicates that the infrastructure effectively connects residential areas to commercial hubs, encouraging more people to use active transportation for daily commutes and errands. This supports the findings of Bird, Kriticos, and Tsivanidis (2020) that accessibility significantly impacts the viability of active transportation.

The presence of signages to prevent obstructions received a neutral rating, with a weighted mean of 3.37. This suggests that while there are some signages, they may not be sufficient or consistently placed. Effective signages are crucial for guiding users and preventing accidents, as emphasized by Myrovali and Morfoulaki (2022). Improving the placement and visibility of signages could enhance the overall safety and usability of the active transport infrastructure.

Adequate drainage, ensuring no pooled water after rain or floods, was also rated neutral, with a weighted mean of 3.23. This indicates that drainage systems may not be effectively preventing water accumulation in all areas. Proper drainage is essential to maintain safe and usable pathways for cyclists and pedestrians. Addressing drainage issues can significantly improve the infrastructure's effectiveness, as highlighted by Smith and Johnson (2022).

In conclusion, the study finds that the Quezon City Safe Cycling and Active Transportation Ordinance is generally effective in ensuring the safety of cyclists and pedestrians, as indicated by the overall weighted mean of 3.47. However, improvements are needed in specific areas such as surface smoothness, space adequacy, signage, and drainage to enhance the infrastructure's overall effectiveness. Addressing these issues will further promote the use of active transportation and ensure a safer environment for cyclists and pedestrians.

On the perceive the effectiveness of the Quezon City Safe Cycling and Active Transportation Ordinance in terms of safety

Table 2:
Perceive The Effectiveness of the Quezon City Safe Cycling and Active Transportation Ordinance in Terms of Safety

Statements	Weighted Mean	Verbal Interpretation
There are only minimal instances where there is crowding.	3.83	Effective
There are no obstructions.	3.18	Neutral
Social distancing is observed.	3.88	Effective
Cyclists and pedestrians are staying in their own lanes.	3.75	Effective
Cyclists and pedestrians do not spit or sneeze while using active transport infrastructures.	3.62	Effective
The users feel safe when passing through.	3.90	Effective
OVERALL WEIGHTED MEAN	3.69	Effective

The study aimed to assess the perceived effectiveness of the Quezon City Safe Cycling and Active Transportation Ordinance in ensuring the safety of cyclists and pedestrians. The findings from the survey reveal various perceptions of the infrastructure's effectiveness.

The overall weighted mean of 3.69 suggests that respondents generally perceive the Quezon City Safe Cycling and Active Transportation Ordinance as effective in terms of safety. The responses to individual statements provide further insights into specific aspects of the ordinance.

Respondents rated the minimization of crowding as effective, with a weighted mean of 3.83. This indicates that the infrastructure helps prevent congestion, allowing for safer movement of cyclists and pedestrians. Effective management of crowding is crucial for maintaining social distancing and ensuring safety, especially during the COVID-19 pandemic. This aligns with the findings of Brooks, Tingay, and Varney (2020), who emphasize the importance of avoiding crowding in active transportation environments.

The rating for the absence of obstructions was neutral, with a weighted mean of 3.18. This suggests that while some areas are clear, others may still have obstacles that hinder safe passage. Removing obstructions is essential for preventing accidents and ensuring a smooth flow of traffic for both cyclists and pedestrians, as highlighted by Myrovali and Morfoulaki (2022). The presence of obstructions remains a concern that needs to be addressed to enhance the overall effectiveness of the ordinance.

The observation of social distancing received a weighted mean of 3.88, indicating that the ordinance effectively promotes social distancing measures. This finding is consistent with public health guidelines aimed at reducing the spread of COVID-19. According to Pisoni, Christidis, and Cawoodb (2022), maintaining social distancing in public spaces is a critical component of pandemic response efforts.

The effectiveness of cyclists and pedestrians staying in their own lanes was rated as effective, with a weighted mean of 3.75. This suggests that the infrastructure effectively separates different types of users, reducing the risk of collisions and enhancing safety. Proper lane discipline is essential for ensuring a safe and orderly flow of traffic, as noted by Litman (2021).

Behavioral compliance, such as cyclists and pedestrians not spitting or sneezing while using the infrastructure, was rated effective, with a weighted mean of 3.62. This indicates good adherence to hygiene practices, which is important for maintaining a healthy environment. Ensuring behavioral compliance helps reduce health risks associated with the spread of infectious diseases, as emphasized by Smith and Johnson (2022).

The highest rating was for the perception of safety, with a weighted mean of 3.90. This suggests that users generally feel safe when using the active transport infrastructure. A strong sense of safety is critical for encouraging the use of active transportation. Siy (2020) highlights that user confidence in safety measures is essential for the success of active transportation initiatives.

The findings indicate that the Quezon City Safe Cycling and Active Transportation Ordinance is generally perceived as effective in ensuring the safety of cyclists and pedestrians. Key areas of effectiveness include minimizing crowding, observing social distancing, maintaining lane discipline, and overall user safety. However, the presence of obstructions remains an area that requires improvement. These results are consistent with existing literature emphasizing the importance of clear pathways, social distancing, and user behavior in promoting safe active transportation.

On the recommendations to further enhance the effectiveness of the Quezon City Safe Cycling and Active Transportation Ordinance for the safety of cyclists and pedestrians

Based on the findings of the study, several recommendations can be made to further enhance the effectiveness of the Quezon City Safe Cycling and Active Transportation Ordinance for the safety of cyclists and pedestrians.

Improving Surface Conditions

One of the key areas identified for improvement is the condition of the cycling and walking surfaces. The study revealed that respondents had a neutral perception regarding the smoothness of these surfaces, with some areas experiencing bumps and holes. To address this issue, it is recommended that regular maintenance and prompt repair of the active transport pathways be prioritized. Ensuring a smooth and even surface will prevent accidents and enhance the overall comfort and safety of users. According to Litman (2021), well-maintained surfaces are essential for effective active transportation infrastructure.

Enhancing Signage and Removing Obstructions

The presence of obstructions received a neutral rating, indicating a need for improvement. Effective signage is crucial for guiding users and preventing accidents. The local government should invest in installing more visible and clear signage that directs cyclists and pedestrians and informs them about potential hazards. Additionally, a systematic approach to regularly inspect and remove obstructions from the pathways should be implemented. Myrovali and Morfoulaki (2022) emphasize that clear pathways are fundamental for the safety of active transport users.

Increasing Space Allocation

Adequate space for cyclists and pedestrians was another area with a neutral rating. To address this, it is recommended to re-evaluate and redesign certain sections of the infrastructure to provide more space for active transport users. Expanding the width of bike lanes and pedestrian walkways where possible will reduce congestion and improve safety. Ensuring that there is enough space for users to comfortably navigate will also encourage more people to use these modes of transportation (Siy, 2020).

Improving Drainage Systems

Respondents indicated concerns about drainage, with a neutral rating for the absence of pooled water after rain. To mitigate this, it is crucial to improve the drainage systems along active transport routes. Proper drainage will prevent water accumulation, which can pose safety hazards and discourage the use of these pathways. Regular assessment and maintenance of drainage infrastructure will ensure that pathways remain dry and safe to use in all weather conditions (Smith & Johnson, 2022).

Strengthening Behavioral Compliance

Behavioral compliance, such as adherence to hygiene practices, received a positive rating, but there is always room for improvement. Continued public education campaigns emphasizing the importance of hygiene, such as not spitting or sneezing on pathways, can further enhance safety. Promoting respectful and responsible behavior among users will contribute to a healthier and more pleasant environment for all (Brooks, Tingay, & Varney, 2020).

Increasing Public Engagement and Feedback

To ensure that the ordinance continues to meet the needs of the community, it is important to engage with the public and gather their feedback regularly. Public consultations, surveys, and forums can provide valuable insights into the effectiveness of the current infrastructure and areas that require improvement. Engaging with the community will also foster a sense of ownership and cooperation, which is essential for the successful implementation of any public policy (Pisoni, Christidis, & Cawoodb, 2022).

Promoting the Benefits of Active Transportation

Finally, to encourage more people to adopt active transportation, it is essential to promote its benefits effectively. Public awareness campaigns highlighting the health, environmental, and economic benefits of cycling and walking can motivate more residents to choose these modes of transportation. Emphasizing the role of active transportation in reducing traffic congestion and pollution can also garner broader public support for the ordinance (Litman, 2021).

Enhancing the effectiveness of the Quezon City Safe Cycling and Active Transportation Ordinance requires a multifaceted approach that addresses infrastructure, behavior, and public engagement. By focusing on improving surface conditions, enhancing signage, increasing space allocation, improving drainage, strengthening behavioral compliance, and promoting active transportation benefits, the local government can ensure a safer and more effective active transport system for cyclists and pedestrians.

Conclusions and Recommendations

The study evaluated the effectiveness of the Quezon City Safe Cycling and Active Transportation Ordinance in ensuring the safety of cyclists and pedestrians. Based on the findings, several important conclusions can be drawn.

Firstly, the Quezon City Safe Cycling and Active Transportation Ordinance is generally perceived as effective by the residents. The overall weighted mean of 3.69 indicates a positive reception, suggesting that the ordinance has significantly contributed to the safety of cyclists and pedestrians. Specific aspects, such as minimizing crowding, observing social distancing, maintaining lane discipline, and the general perception of safety, received high ratings. These findings reflect the ordinance's success in creating a safer environment for active transportation users.

However, the study also highlighted areas needing improvement. Respondents gave neutral ratings to the condition of cycling and walking surfaces, the presence of obstructions, and drainage systems. These areas require attention to enhance the overall safety and usability of the active transportation infrastructure. Addressing these issues is crucial for maintaining the positive impact of the ordinance.

Behavioral compliance among cyclists and pedestrians, such as adhering to hygiene practices and staying in designated lanes, was rated positively. This indicates good user behavior, which significantly contributes to the effectiveness of the ordinance. Ensuring continuous public education and promoting respectful and responsible behavior can further enhance safety.

The importance of continuous public engagement and feedback was also underscored by the study. Regular public consultations, surveys, and forums can provide valuable insights into the community's needs and concerns. Engaging with the public fosters a sense of ownership and cooperation, which is essential for the successful implementation and sustainability of public policies.

Based on these conclusions, several recommendations are proposed to further enhance the effectiveness of the Quezon City Safe Cycling and Active Transportation Ordinance.

Firstly, improving surface conditions should be a priority. Regular maintenance and prompt repair of cycling and walking surfaces are essential to prevent accidents and ensure a smooth, comfortable journey for users. Implementing a systematic maintenance schedule can help address issues such as bumps and holes. As Litman (2021) notes, well-maintained surfaces are essential for effective active transportation infrastructure.

Enhancing signage and removing obstructions is another critical area. Increasing the visibility and clarity of signage will guide cyclists and pedestrians effectively, reducing the risk of accidents. Additionally, a systematic approach to regularly inspect and remove obstructions from pathways should be implemented. Clear pathways are fundamental for the safety of active transport users, as emphasized by Myrovali and Morfoulaki (2022).

Increasing space allocation is also recommended. Re-evaluating and redesigning certain sections of the infrastructure to provide more space for active transport users can reduce congestion and improve safety. Expanding bike lanes and pedestrian walkways will ensure that there is enough room for safe movement. Proper space allocation is crucial for the effectiveness of active transportation systems, as noted by Siy (2020).

Improving drainage systems is essential to prevent water accumulation after rains, ensuring that pathways remain dry and safe to use. Regular assessments and maintenance of drainage infrastructure should be prioritized. Proper drainage is crucial for maintaining the usability of active transport routes, as highlighted by Smith and Johnson (2022).

Strengthening behavioral compliance through continuous public education campaigns is also important. Promoting respectful and responsible behavior among users will contribute to a healthier and more pleasant environment. Emphasizing the importance of hygiene practices and lane discipline will enhance safety and user satisfaction.

Increasing public engagement and feedback through regular public consultations, surveys, and forums is crucial for the ordinance's success. Engaging with the community will help identify areas for improvement and foster a sense of ownership and cooperation among residents. Public engagement is essential for the sustainable implementation of public policies, as emphasized by Pisoni, Christidis, and Cawoodb (2022).

Promoting the benefits of active transportation through public awareness campaigns can encourage more residents to adopt cycling and walking. Highlighting the health, environmental, and economic benefits of active transportation can motivate more people to choose these modes of transportation. Effective promotion can significantly increase public support for active transportation initiatives, as noted by Litman (2021).

Lastly, collaborating with various stakeholders, including government agencies, non-governmental organizations, and community groups, can enhance the implementation and effectiveness of the ordinance. Joint efforts can lead to better resource allocation and more comprehensive solutions. Collaborative efforts are essential for addressing the complex needs of active transportation systems.

By addressing these recommendations, the Quezon City government can further improve the safety and effectiveness of its active transportation infrastructure, encouraging more residents to choose cycling and walking as viable and safe modes of transportation.

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Flower Color and Structure Preference of Butterfly on FeedingVanessa V. Martinez¹¹Universidad De Manila

Abstract - This study investigates the preferences of *Papilio demoleus* and *Idea demoleus* butterflies for flower color and floral structure in the butterfly garden at Universidad de Manila. The research involved two flower types: Lantana camara and Ixora coccinea, representing clustered flower structures, and Catharanthus roseus and Tabernaemontana pandacqui, representing single flower structures. To examine color preference, three varieties of Lantana camara were used: pure yellow, pink and yellow, and pure white. Observations were conducted over three days, with thirty-minute sessions each day. Results indicated that the butterflies showed a strong preference for the pure yellow Lantana camara in terms of color. In terms of floral structure, both butterfly species preferred feeding on clustered flowers. The study suggests that the high nectar content of the preferred flower color and structure influences the butterflies' detection, learning, and development of specific feeding preferences.

Keywords - *Butterfly feeding preference, flower color, floral structure, Papilio demoleus, Idea demoleus*

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Introduction

Butterflies play a crucial role in their ecosystems by interacting with host plants throughout their life cycles. They lay their eggs on host plants and use them as a food source for their larvae. Some butterfly species have specific host plant preferences, which are critical for their survival and reproduction. Adult butterflies rely on plants for food, primarily in the form of flower nectar. However, some butterflies also consume pollen and the juices of rotting fruits (van der Kooi & Kelber, 2022). Butterfly feeding behavior is influenced by their elongated sucking mouthpart (proboscis), their acute sense of smell, and their ability to detect a wide color spectrum. This ability allows them to be selective when visiting flowering plants as a nectar source.

Nectar is a complex sugar solution produced by plant glands and is composed mainly of glucose, fructose, and sucrose, along with amino acids and lipids. Nectar provides the necessary energy, while flower pollen offers protein, lipids, and vitamins, essential for butterfly nutrition and survival. The detection of chromatic (color) and achromatic (brightness) cues plays a significant role in how butterflies and other pollinators recognize flowers. According to Braga (2023), butterflies and other pollinators use these visual signals to locate and select flowers that offer optimal feeding opportunities.

The structure and color of flowers significantly influence butterfly behavior and feeding preferences. Different flowers offer varying amounts of nectar, which can affect butterfly visitation rates. Studies have shown that butterflies exhibit preferences for specific flower colors and structures, which are influenced by the availability of nectar and the ease of access to it (Matoušková, Štenc, & Janovský, 2023). Vegetation structure and the presence of nectar-rich plants play crucial roles in attracting butterflies and supporting their populations.

Research by Han et al. (2022) highlights that the abundance and diversity of butterflies are influenced by factors such as light availability, vegetation structure, and the richness of nectar-producing plants. These factors are essential for creating microhabitats suitable for butterfly conservation and management. The importance of habitat quality and the role of floral diversity in supporting butterfly populations are also emphasized in studies by Wong, Pichersky, and Peakall (2023), who discuss the need for effective conservation strategies in urban and suburban environments.

Moreover, flower color and structure play significant roles in butterfly feeding behavior and habitat selection. Butterflies tend to prefer flowers that provide high nectar rewards and are easily accessible. The variation in flower color and structure can attract different butterfly species, contributing to the overall biodiversity and ecological balance within an area (Somanathan & Balamurali, 2023). Understanding these preferences is crucial for designing gardens and landscapes that support butterfly populations.

This study investigates the flower color and structure preferences of *Papilio demoleus* and *Idea demoleus* butterflies in the butterfly garden at Universidad de Manila. The research aims to determine how these butterflies select flowers based on color and structure and to evaluate the impact of these preferences on their feeding behavior. By examining the interactions between butterflies and flowers, this study contributes to our understanding of butterfly ecology and provides insights into effective conservation practices.

Literature Review

The decline in butterfly populations has been a growing concern due to the loss of floral sources and habitat destruction. Kolkman, Dopagne, and Piqueray (2022) emphasize that sown wildflower strips offer promising opportunities for butterfly conservation. These strips provide a necessary habitat for butterflies by offering a continuous supply of nectar and suitable host plants, which are critical for their survival. The implementation of wildflower strips is beneficial as it provides the structure and color diversity needed for butterfly feeding. The study notes that these strips can significantly enhance the local butterfly populations by providing a reliable source of nectar from plants such as *Medicago sativa*, *Lotus corniculatus*, and *Centaurea species*.

In contrast, Saldivar, Romero, and Wilson (2022) reveal that the diversity of nectar plants in community habitats supports the needs of butterflies, including migratory species like *Vanessa cardui*. Their study highlights the importance of diverse floral resources in supporting both resident and migratory butterflies by offering continuous nectar availability along migration routes. This is crucial for maintaining butterfly populations and supporting their breeding and feeding behaviors.

Santana et al. (2022) discuss how flower color and retention play a significant role in attracting pollinators, including butterflies. Changes in flower color can directly affect pollination efficiency and butterfly behavior. The study shows that butterflies exhibit strong preferences for flowers that undergo color changes, which signal nectar availability. For instance, *Lantana undulata* displays a change from yellow to white as flowers age, indicating to butterflies the optimal time for nectar collection. This dynamic color change enhances the attractiveness of flowers to butterflies, thereby increasing their foraging efficiency.

Hashim et al. (2022) explore the integration of butterfly pea flowers (*Clitoria ternatea*) in monitoring and preserving butterfly habitats. The butterfly pea flower is rich in aromatic compounds and anthocyanins, which are attractive to butterflies. The study emphasizes the importance of public awareness and conservation efforts to protect butterfly habitats and improve their feeding processes. By understanding the chemical and structural attributes that attract butterflies, better conservation strategies can be developed to enhance butterfly populations.

Albor et al. (2022) investigate the role of flower phenology and color in mediating plant-pollinator interactions within diverse flowering communities. They found that flower traits, such as color and phenology, are crucial in facilitating pollinator interactions and reducing competition among plants. The study provides insights into how different plant species co-flower and share pollinators, thereby supporting a diverse and stable butterfly population.

The literature underscores the critical role of flower color and structure in butterfly feeding preferences and conservation. The presence of diverse floral resources, both in terms of structure and color, is essential for supporting healthy butterfly populations. Effective conservation strategies should focus on creating and maintaining habitats that provide a continuous supply of nectar and suitable host plants. By doing so, the conservation of butterflies can be significantly improved, ensuring their survival and ecological contributions.

Methodology

The experiment was conducted in the butterfly garden at Universidad de Manila, a project funded by the Commission on Higher Education (CHED) and led by Professor Alma Nacua. The garden, located on the rooftop of the old Mehan building, is covered with a green mesh to create a controlled environment for the butterflies (Fig. 1.1). Various plants are grown in this garden to serve as nectar sources, including *Lantana camara*, *Catharanthus roseus*, *Tabernaemontana pandacacui*, and *Ixora coccinea*.

Plant and Butterfly Identification

The study focused on the flower color and structure preferences of butterflies during feeding. The plants used to examine color preferences included three varieties of *Lantana camara*: pure yellow, a combination of pink and yellow, and pure white (Fig. 1.2). To study the preferences for flower structure, *Lantana camara* and *Ixora coccinea* were classified as clustered flowers, while *Catharanthus roseus* and *Tabernaemontana pandacacui* were considered small single flowers (Fig. 1.3). The identification of these flowering plants was based on the morphological atlas by Madulid. The two butterfly species studied were *Idea leuconoe* and *Papilio demoleus* (Fig. 1.4), identified using the atlas by Baltazar.

Experimental Procedures

The study aimed to determine the feeding preferences of the butterflies *Idea leuconoe* and *Papilio demoleus* based on flower color and structure. The butterflies' interaction with host plants, including egg-laying and larval feeding, was also considered. Adult butterflies rely on nectar as their primary food source, with some species also consuming pollen and the juice of rotting fruit (van der Kooi & Kelber, 2022).

To assess flower color and structure preferences, the researcher observed the butterflies for 30 minutes each day over three consecutive days (July 10, 11, and 12) from 1:00 to 1:30 pm. During these sessions, the frequency of feeding on the different colors of *Lantana* flowers and the various flower structures was recorded.

Statistical Analysis

The data collected from the observations were carefully recorded and analyzed. The primary statistical treatments included frequency counts and percentage distributions to summarize the data. The weighted mean was calculated to determine the average preference of the butterflies for each flower color and structure. This approach provided a comprehensive understanding of the feeding behavior of the butterflies in relation to the variables studied.



Figure 1.1. Butterfly Garden Set-up in Universidad de Manila

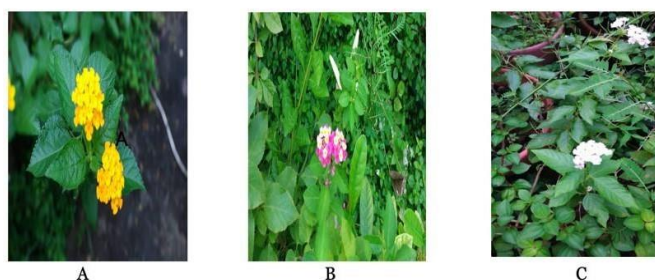


Figure 1.2. *Lantana camara* with pure yellow colour (A), mixture of pink and yellow colour (B) and with pure white colour (C)



Figure 1.3. Flower structure as clustered (A) *Lantana camara* and (B) *Ixora coccinea*; as small single flower (C) *Catharanthus roseus* and (D) *Tabernaemontana pandacaqui*



Figure 1.4. Two species of butterfly in the garden. (A) *Papilio demoleus* and (B) *Idea leuconoe*

Results and Discussion

On the Flower Color Preference on Feeding

The observations from the study revealed clear preferences in flower color by the butterflies *Papilio demoleus* and *Idea leuconoe*. Over the three days of observation, both species showed a marked preference for the pure yellow flowers of *Lantana camara* over the combinations of pink and yellow, and pure white flowers (Figures 2.1 and 2.2).

For *P. demoleus*, the average number of feedings on the pure yellow flowers was 18, significantly higher than the average of 5.67 feedings on the pink and yellow combination, and only 0.67 feedings on the pure white flowers (Table 1). Similarly, *I. leuconoe* demonstrated a strong preference for the pure yellow flowers, with an average of 10 feedings, compared to 2.33 feedings for the pink and yellow combination, and no feedings on the pure white flowers (Table 2).

These findings align with existing literature on butterfly feeding preferences. For instance, *Agraulis vanillae* also shows a preference for yellow *Lantana camara* flowers, which highlights the significance of color in attracting butterflies (Mukherjee & Hossain, 2022). The study by Quinn at Pomona College further supports this, indicating that pollinators prefer yellow flowers over red ones for nectar extraction from *L. camara*. This suggests a broader trend among butterflies favoring yellow-colored flowers for feeding (Kalamani et al., 2022).

Interestingly, not all yellow flowers universally attract butterflies. For example, in an experiment with various colored artificial flowers filled with nectar, the butterfly *Pieris napi* visited each color equally when nectar was present in all, but developed a preference for the color of the flower that consistently contained nectar when only one color was filled (Dell'Aglio, McMillan, & Montgomery, 2022). This demonstrates that butterflies can learn to associate certain colors with nectar availability.

The preference for yellow *L. camara* flowers is likely due to the copious amounts of nectar found at the base of the ovary, making them particularly attractive to butterflies (Popovic, Golubovic, & Nowicki, 2022). The ability of butterflies to detect and remember nectar-rich flowers underscores the role of sensory modalities in their feeding behavior.

In conclusion, the preference of *P. demoleus* and *I. leuconoe* for yellow *L. camara* flowers highlights the importance of flower color in butterfly feeding behavior. This preference is supported by the higher nectar content in yellow flowers, aligning with the broader trend of color preference observed in other butterfly species. Understanding these preferences can inform the design of butterfly gardens and conservation strategies to support butterfly populations.

Table 1:
Number of Feeding of *Papilio demoleus* on the Different Color Hues of Lantana Camara Flowering Plant Within Three Days

Lantanacamara Hues	Day 1	Day 2	Day 3	Average
Pure Yellow	16	21	17	18
Combination of Pink & Yellow	7	6	4	5.67
Pure White	0	1	1	0.67

Table 1 presents the number of feedings by *Papilio demoleus* on the different color hues of Lantana camara flowering plants over three days. The data show a clear preference for pure yellow flowers, with 16 feedings on day 1, 21 on day 2, and 17 on day 3. In contrast, the combination of pink and yellow flowers received significantly fewer feedings, with 7 on day 1, 6 on day 2, and 4 on day 3. This indicates a consistent preference for pure yellow flowers over the three-day observation period, while the combination of pink and yellow saw a decreasing number of feedings.

This preference for pure yellow flowers by *P. demoleus* highlights the role of color in attracting butterflies. Studies have shown that butterflies use both color and smell to locate and select flowers for feeding. The preference for yellow may be linked to the higher visibility and potentially greater nectar reward that these flowers offer (Mukherjee & Hossain, 2022).

Comparative studies on other butterfly species also support these findings. For example, research on the swallowtail butterfly's feeding behavior revealed a preference for the natural reddish to orange-colored flowers of *Hemerocallis fulva* over hybrid yellow-colored flowers, suggesting that natural flower colors often attract more pollinators (Kalaman, et al. 2022). However, it is important to note that not all yellow flowers are universally preferred by all butterfly species.

In an experiment with artificial flowers of different colors, *Pieris napi* butterflies visited each color equally when all flowers contained nectar. However, when only one color had nectar, the butterflies developed a preference for that color, demonstrating their ability to learn and associate specific colors with nectar rewards (Dell'Aglio, McMillan, & Montgomery, 2022). This suggests that butterflies can adapt their preferences based on their experiences with nectar availability.

The preference for yellow *L. camara* flowers by *P. demoleus* may be attributed to the higher nectar content typically found in these flowers, making them more attractive to the butterflies. Studies have shown that the nectar content at the base of the ovary in yellow *L. camara* flowers is significantly higher compared to other colors (Popovic, Golubovic, & Nowicki, 2022).

The study reveals a strong preference for pure yellow Lantana camara flowers by *Papilio demoleus*, highlighting the importance of flower color in butterfly feeding behavior. This preference is likely influenced by the higher nectar content in yellow flowers, aligning with broader trends observed in other butterfly species. Understanding these preferences can inform the design of butterfly gardens and conservation strategies to support butterfly populations effectively.

Table 2:
Number of Feeding of *Idea leuconoe* on the Different Color Hues of Lantana Camara Flowering Plant Within Three Days

<i>Lantanacamara</i> Hues	Day 1	Day 2	Day 3	Average
Pure Yellow	10	12	8	10
Combination of Pink & Yellow	2	2	3	2.33
Pure White	0	0	0	0

Table 2 presents the number of feedings by *Idea leuconoe* on the different color hues of Lantana camara flowering plants over three days. The data clearly show a strong preference for pure yellow flowers. On day 1, there were 10 feedings, day 2 saw 12 feedings, and day 3 had 8 feedings. This consistent high score indicates that pure yellow flowers are highly attractive to *I. leuconoe* butterflies. In contrast, the combination of pink and yellow flowers received significantly fewer feedings, with only 2 on both days 1 and 2, and 3 on day 3. Notably, pure white flowers did not attract any feedings over the observation period.

These results underscore the importance of flower color in attracting butterflies. The preference for pure yellow flowers by *I. leuconoe* aligns with findings from other studies that have shown certain colors, particularly yellow, to be more enticing to butterflies (Mukherjee & Hossain, 2022). This preference may be linked to the higher visibility and potential greater nectar reward that yellow flowers offer.

The study's results support the broader understanding of butterfly feeding behavior and habitat preference. According to Han et al. (2022), flower color and structure significantly influence butterfly feeding habits and microhabitat selection. The diversity and abundance of butterfly species are closely tied to the availability of preferred nectar sources and the structural complexity of their habitats.

Butterflies like *I. leuconoe* select feeding sites based on a variety of factors, including flower color, light availability, and the richness of nectar plants. The consistent preference for yellow flowers suggests that these flowers may offer more abundant nectar, which is crucial for butterfly feeding and energy needs (Han et al., 2022). The structure of the vegetation also plays a vital role, as it affects the butterflies' ability to locate and access nectar efficiently.

Moreover, the findings indicate that environmental factors such as light availability and the specific arrangement of plants can impact butterfly feeding behavior. Ensuring that butterfly gardens and conservation areas provide a variety of brightly colored flowers, particularly yellow, can enhance the attractiveness of these habitats to butterflies. This approach supports the maintenance and growth of butterfly populations by providing essential resources (Han et al., 2022).

In conclusion, the study reveals a strong preference for pure yellow Lantana camara flowers by *Idea leuconoe*, highlighting the significant role of flower color in butterfly feeding behavior. This preference is likely influenced by the higher nectar content and visibility of yellow flowers. Understanding these preferences is essential for designing effective butterfly gardens and conservation strategies that support butterfly populations.

Figure 2.1 Feeding preference of *Papilio demoleus* to flower color of *Lantana camara*

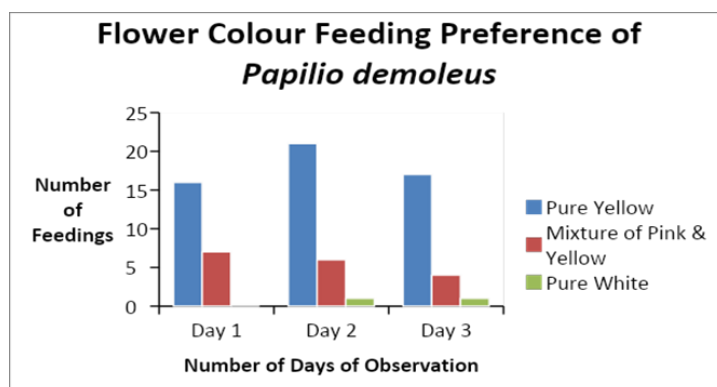


Figure 2.1 illustrates the feeding preferences of *Papilio demoleus* for the different flower colors of *Lantana camara* over a three-day observation period. The data demonstrates a clear preference for pure yellow flowers compared to the combination of pink and yellow flowers and pure white flowers.

On Day 1, *Papilio demoleus* showed a significant inclination towards pure yellow flowers, with 16 feedings recorded. The combination of pink and yellow flowers attracted only 7 feedings, while the pure white flowers were almost entirely overlooked, with just one feeding. This trend continued on Day 2, where the number of feedings on pure yellow flowers increased to 21, while feedings on the combination of pink and yellow flowers decreased to 6. Again, the pure white flowers received minimal attention, with only one feeding recorded. On Day 3, the pure yellow flowers attracted 17 feedings, the combination of pink and yellow flowers received 4 feedings, and the pure white flowers were entirely ignored.

The consistent preference for pure yellow flowers suggests that *P. demoleus* is particularly attracted to this color. This preference can be attributed to several factors, including visual cues and potentially higher nectar rewards associated with yellow flowers. Mukherjee and Hossain (2022) reported that butterflies are highly responsive to bright colors like yellow because their visual systems are adapted to detect these colors more effectively. The bright yellow color likely stands out more vividly against the background, making it easier for butterflies to locate and choose these flowers for feeding.

Furthermore, the moderate attention given to the combination of pink and yellow flowers, and the negligible interest in pure white flowers, aligns with findings by Kalaman et al. (2022). They noted that butterflies often prefer more vibrant and contrasting colors, which may signal the presence of ample nectar. The data suggests that not all colorful flowers are equally attractive to butterflies; rather, specific colors like yellow may provide better visual signals for locating nectar.

The observed preference for pure yellow flowers by *P. demoleus* indicates the importance of flower color in the foraging behavior of butterflies. This behavior supports the hypothesis that visual cues play a crucial role in the feeding preferences of butterflies, which have likely evolved to maximize their foraging efficiency by targeting flowers that offer the most nectar rewards.

Figure 2.2 Feeding Preference of *Idea leuconoeas* to flower color of *Lantana camara*

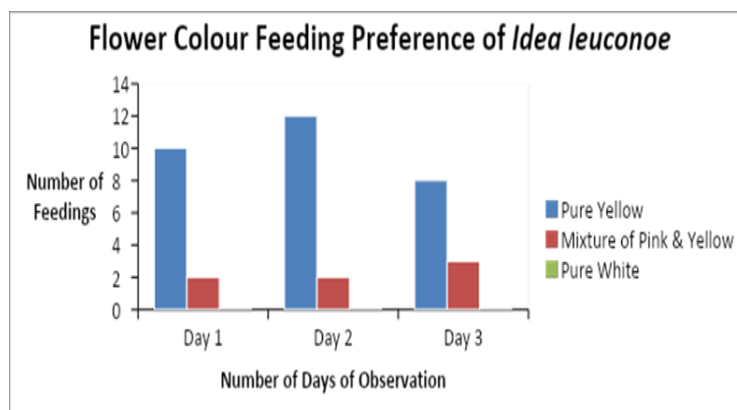


Figure 2.2 illustrates the feeding preferences of *Idea leuconoe* for different flower colors of *Lantana camara* over a three-day observation period. The data indicates a marked preference for pure yellow flowers compared to the combination of pink and yellow flowers and pure white flowers.

On Day 1, *Idea leuconoe* displayed a significant preference for pure yellow flowers, with 10 feedings recorded. In contrast, the combination of pink and yellow flowers only attracted 2 feedings, and the pure white flowers did not attract any feedings. On Day 2, the trend remained consistent, with 12 feedings on pure yellow flowers, 2 feedings on the combination of pink and yellow flowers, and no feedings on pure white flowers. On Day 3, pure yellow flowers received 8 feedings, the combination of pink and yellow flowers attracted 3 feedings, and once again, pure white flowers were completely ignored.

This consistent preference for pure yellow flowers by *Idea leuconoe* suggests a strong attraction to this color. Previous studies, such as those by Mukherjee and Hossain (2022), have highlighted that butterflies are generally drawn to bright and vibrant colors, with yellow being particularly enticing due to its visibility and association with high nectar content. The visual appeal of yellow flowers likely makes them easier for butterflies to locate and select for feeding.

The low number of feedings on the combination of pink and yellow flowers and the absence of feedings on pure white flowers further corroborates the findings of Kalaman et al. (2022), who noted that butterflies exhibit a preference for certain colors over others when foraging. This preference is likely driven by the need to optimize nectar intake, as bright colors can signal the presence of more abundant nectar resources.

In conclusion, the feeding behavior of *Idea leuconoe* as shown in Figure 2.2 underscores the importance of flower color in influencing butterfly feeding preferences. The preference for pure yellow flowers suggests that visual cues play a critical role in foraging decisions, enabling butterflies to maximize their energy intake by selecting flowers that are likely to offer higher nectar rewards.

On the Flower Structure Preference on Feeding

The clustered flowers of *Lantana camara* and *Ixora coccinea* were significantly preferred over the small single flowers of *Catharanthus roseus* and *Tabernaemontana pandacaqui* by both *Papilio demoleus* and *Idea leuconoe* (Figures 3.1 & 3.2). The data shows that *P. demoleus* had an average of 24 feedings on the clustered flower structures compared to an average of only 2.67 feedings on the small single flower structures (Table 3). Similarly, *I. leuconoe* showed an average of 16 feedings on clustered flower structures versus an average of 1.33 feedings on small single flower structures (Table 4).

This preference can be attributed to the higher levels of sucrose, glucose, and fructose present in the nectar of clustered flowering plants like *L. camara* (family Verbenaceae) and *I. coccinea* (family Rubiaceae). Studies have shown that these sugar components are critical in attracting butterflies due to their energy-rich composition (Kolkman, Dopagne, & Piqueray, 2022). In contrast, the small single flowers of *C. roseus* and *T. pandacaqui* (family Apocynaceae) contain lower levels of these sugars, which may make them less attractive to butterflies.

The distinct preference for clustered flowers can be explained by various floral characteristics such as flower size, nectar composition, fragrance, color, and shape. Butterflies are known to select flowers that maximize their nectar intake efficiency, which is critical for their energy needs and reproductive success (Saldivar, Romero, & Wilson, 2022). The structure and abundance of flowers in clustered formations provide easier and more efficient foraging opportunities for butterflies.

Furthermore, the preference of butterflies for certain floral traits underscores the importance of these traits in pollination and reproduction. The larger and more conspicuous flowers of *L. camara* and *I. coccinea* not only attract more butterflies but also enhance the probability of successful pollination. This interaction between butterflies and their preferred flowers highlights the co-evolutionary relationship between the two, which is vital for the conservation of butterfly species and their habitats (Santana et al., 2022).

The findings of this study provide valuable insights into the feeding behaviors and preferences of butterflies. It can be concluded that butterflies have the potential to detect the amount of nectar in flowers, which significantly influences their flower structure preference. Understanding these preferences can help in the development of butterfly conservation strategies and the design of butterfly gardens that support their feeding and reproductive needs (KC, 2023).

Table 3:
Number of Feeding of *Papilio demoleus* with Reference to the Structure of the Flowers Observed within Three Days

Flower Structure	Day 1	Day 2	Day 3	Average
Small Single Flower	4	2	2	2.67
Clustered Flower	24	25	23	24

Table 3 presents the number of feedings by *Papilio demoleus* with reference to the structure of the flowers observed over three days. The data reveal that *P. demoleus* significantly preferred clustered flowers over small single flowers. On day 1, there were 24 feedings on clustered flowers, increasing slightly to 25 on day 2, and then a slight decrease to 23 on day 3. In contrast, the number of feedings on small single flowers was minimal.

This finding aligns with the understanding that different butterfly species are influenced by the structure of flowers when choosing their feeding sites. Clustered flowers, such as those of *Lantana camara* and *Ixora coccinea*, provide an abundant and accessible nectar source, which is highly attractive to butterflies. The structural characteristics of these flowers allow for easier access to nectar, making them more favorable for feeding compared to the small single flowers of *Catharanthus roseus* and *Tabernaemontana pandacqui* (Kolkman, Dopagne, & Piqueray, 2022).

The preference for clustered flowers can be attributed to several factors including the origin of the plants, flower size, flower color, and plant type in relation to the corolla tube and length of butterflies. These factors are crucial for the pollination and reproduction of butterflies, as they directly impact the efficiency of nectar extraction and energy intake (Saldivar, Romero, & Wilson, 2022).

Furthermore, the findings underscore the importance of floral diversity in supporting butterfly populations. Clustered flowers offer a large number of flowering plants suitable for butterfly propagation and population growth. This diversity in floral structure and preference is critical for maintaining butterfly diversity and highlights the need for conservation efforts that focus on providing a variety of flowering plants (Santana et al., 2022).

P. demoleus shows a distinct preference for clustered flowers, likely due to the higher nectar availability and easier access provided by these structures. This preference indicates that butterflies can detect the amount of nectar in flowers, which plays a significant role in their feeding behavior. Understanding these behaviors is essential for developing effective butterfly conservation strategies and enhancing floral environments to support butterfly populations (KC, 2023).

Table 4:
Number of Feeding of *Idea leuconoe* with Reference to the Structure of the Flowers Observed within Three Days

Flower Structure	Day 1	Day 2	Day 3	Average
Small Single Flower	1	2	1	1.33
Clustered Flower	18	16	14	16

Table 4 presents the number of feedings of *Idea leuconoe* with reference to the structure of the flowers observed over three days. The data reveal that *I. leuconoe* exhibited a marked preference for clustered flowers compared to small single flowers. Specifically, on day 1, there were 18 feedings on clustered flowers, which decreased slightly to 16 feedings on day 2, and further to 14 feedings on day 3. In contrast, the number of feedings on small single flowers was significantly lower throughout the observation period.

The preference for clustered flowers can be attributed to several factors, including the size and number of flower strands. Clustered flowers provide a more abundant and accessible nectar source, which can support a higher number of feedings (Stavenga, 2023). This structural characteristic makes clustered flowers more attractive to butterflies, as they can efficiently extract nectar from multiple flowers in a single feeding session. This efficiency is particularly important for butterflies like *I. leuconoe*, which need to maximize their energy intake to support their high metabolic rates.

The observed preference aligns with the findings of previous studies that highlight the importance of floral structure in butterfly feeding behavior. According to Santana et al. (2022), butterflies are more likely to visit flowers that offer easier access to nectar, which is often found in clustered flower structures. These structures allow butterflies to feed more efficiently, thus supporting their nutritional needs and enhancing their overall fitness.

Furthermore, the data suggest that the density and arrangement of flowers in a cluster can influence the feeding patterns of butterflies. Clustered flowers not only provide a larger surface area for feeding but also ensure that butterflies can access multiple nectar sources without expending excessive energy (Saldivar, Romero, & Wilson, 2022). This is crucial for maintaining the energy balance and survival of butterflies in their natural habitats.

In conclusion, *I. leuconoe* demonstrates a clear preference for clustered flowers, likely due to the higher nectar availability and easier access provided by these structures. This preference underscores the importance of considering floral structure in butterfly conservation and habitat management efforts. Providing a variety of clustered flower species can help support healthy butterfly populations by ensuring adequate nectar resources are available (Stavenga, 2023).

Figure 3.1 Feeding Preference of *Papilio demoleus* with Reference to the Flower Structures

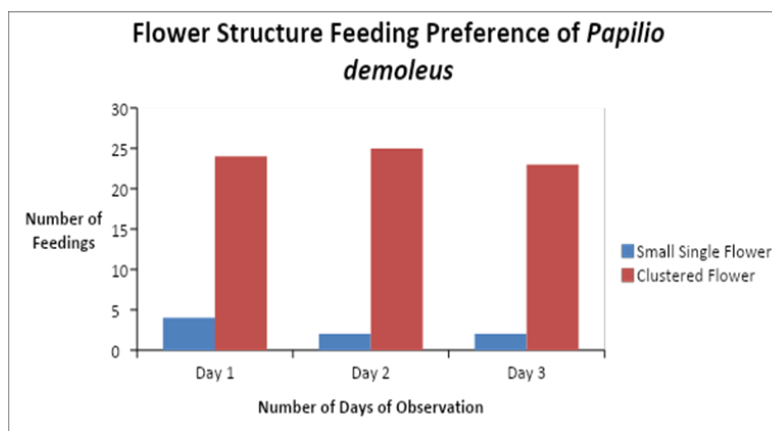


Figure 3.1 illustrates the feeding preference of *Papilio demoleus* with reference to the flower structures of *Lantana camara* and *Ixora coccinea* (clustered flowers) versus *Catharanthus roseus* and *Tabernaemontana pandacaqui* (small single flowers). The data clearly show a strong preference for clustered flowers over small single flowers.

On day 1, *P. demoleus* exhibited 24 feedings on clustered flowers compared to only 2 feedings on small single flowers. This trend continued on day 2, with 25 feedings on clustered flowers and 2 feedings on small single flowers. On day 3, the pattern remained consistent, with 23 feedings on clustered flowers and 3 feedings on small single flowers.

The marked preference for clustered flowers can be attributed to several factors, including the higher availability of nectar and easier access provided by these floral structures. Clustered flowers tend to have a larger surface area and multiple nectary sites, which allow butterflies to feed more efficiently and

effectively (Stavenga, 2023). This efficiency is crucial for *P. demoleus*, which requires significant energy intake to support its high metabolic demands.

Furthermore, the composition of nectar in clustered flowers, which often contains higher levels of sucrose, glucose, and fructose, may also play a significant role in attracting *P. demoleus* (Saldivar, Romero, & Wilson, 2022). These sugars are essential energy sources for butterflies, making clustered flowers more desirable feeding sites.

Additionally, the preference for clustered flowers aligns with the findings of previous studies that highlight the importance of floral structure in butterfly feeding behavior. According to Santana et al. (2022), butterflies are more likely to visit flowers that offer easier access to nectar, which is often found in clustered flower structures. These structures not only provide more nectar but also allow butterflies to feed from multiple flowers in a single visit, maximizing their energy intake with minimal effort.

P. demoleus demonstrates a clear preference for clustered flowers over small single flowers, likely due to the higher nectar availability and more accessible feeding sites provided by clustered flowers. This preference underscores the importance of considering floral structure in butterfly conservation and habitat management efforts. By providing a variety of clustered flower species, we can support healthy butterfly populations by ensuring adequate nectar resources are available (Stavenga, 2023).

Figure 3.2 Feeding Preference of *Idea Leuconoe* with Reference to the Flower Structures

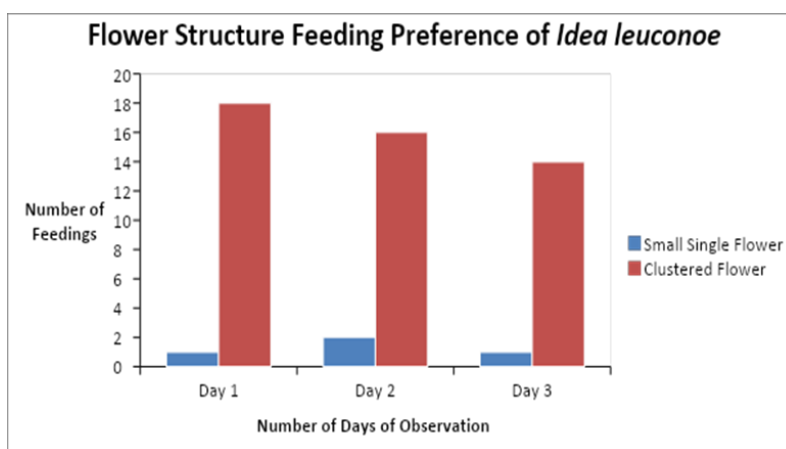


Figure 3.2 illustrates the feeding preference of *Idea leuconoe* with reference to the flower structures of *Lantana camara* and *Ixora coccinea* (clustered flowers) versus *Catharanthus roseus* and *Tabernaemontana pandacqui* (small single flowers). The data reveal a pronounced preference for clustered flowers over small single flowers.

On day 1, *I. leuconoe* demonstrated 18 feedings on clustered flowers compared to only 1 feeding on small single flowers. This trend persisted on day 2, with 16 feedings on clustered flowers and again only 1 feeding on small single flowers. On day 3, the pattern remained consistent, with 14 feedings on clustered flowers and 2 feedings on small single flowers.

The marked preference for clustered flowers can be attributed to several factors. Clustered flowers provide a larger surface area and multiple nectary sites, allowing butterflies to feed more efficiently and effectively. This efficiency is crucial for *I. leuconoe*, which requires significant energy intake to support its high metabolic demands (Stavenga, 2023).

Furthermore, the nectar composition in clustered flowers, which often contains higher levels of sucrose, glucose, and fructose, may also play a significant role in attracting *I. leuconoe*. These sugars are essential

energy sources for butterflies, making clustered flowers more desirable feeding sites (Saldivar, Romero, & Wilson, 2022).

Additionally, the preference for clustered flowers aligns with findings from previous studies that highlight the importance of floral structure in butterfly feeding behavior. According to Santana et al. (2022), butterflies are more likely to visit flowers that offer easier access to nectar, which is often found in clustered flower structures. These structures not only provide more nectar but also allow butterflies to feed from multiple flowers in a single visit, maximizing their energy intake with minimal effort.

In conclusion, *I. leuconoe* demonstrates a clear preference for clustered flowers over small single flowers, likely due to the higher nectar availability and more accessible feeding sites provided by clustered flowers. This preference underscores the importance of considering floral structure in butterfly conservation and habitat management efforts. By providing a variety of clustered flower species, we can support healthy butterfly populations by ensuring adequate nectar resources are available (Stavenga, 2023).

Conclusions and Recommendations

This study demonstrated that both *Papilio demoleus* and *Idea leuconoe* butterflies exhibited a marked preference for the yellow flowers of *Lantana camara* and the clustered flower structures of *L. camara* and *Ixora coccinea*. This preference is attributed to the substantial amount of nectar these flowers contain. The research highlighted the butterflies' ability to learn and detect significant nectar sources, which eventually leads them to develop specific feeding preferences.

Additionally, the study revealed that butterflies possess distinct flower preferences based on various floral traits. All observed butterfly species responded to flower color manipulation, indicating their potential to influence selection on this trait, consistent with findings in other pollinator types. However, unlike honeybees and bumblebees, the butterflies did not exhibit flower constancy during their foraging bouts, especially when interacting with two species from the *Asteraceae* family. This lack of constancy could reduce the effectiveness of butterfly pollination.

These findings suggest that the context of other floral traits can influence color preferences in butterflies. The absence of flower constancy observed in this study indicates a potential area for further research. Future studies should examine the consequences of these preferences and the lack of constancy for the selection of floral traits and the comparative effectiveness of butterflies as pollinators compared to other species.

The implications of this research are significant for understanding butterfly behavior and improving conservation efforts. By recognizing the importance of nectar-rich and preferred floral structures, habitat management can be better tailored to support butterfly populations. This study provides a foundation for future investigations into the complex interactions between butterflies and their floral environments, enhancing our knowledge of pollination dynamics and the ecological roles of butterflies.

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Training and Development Needs of Graduate School Faculty of Universidad De Manila towards Enhanced Professionalism in the WorkplaceRemigio V. Gancia¹¹Universidad De Manila

Abstract - This study investigates the training and development needs of the graduate school faculty at Universidad De Manila, aiming to enhance professionalism in the workplace. The objectives are to identify key training gaps, assess financial and resource provisions, and evaluate job enrichment strategies. Utilizing a descriptive research design, the study involves a purposive sample of 100 faculty members, comprising 50 permanent and 50 temporary contractual staff. The findings from the training needs analysis reveal that the highest-rated indicator is the assessment of roles and required skills, with high agreement among both permanent and temporary faculty. This underscores the critical importance of defining roles and skills for effective job performance. Conversely, identifying training and development needs, while still deemed important, received the lowest ratings, suggesting it may be less emphasized or effectively executed. Assessment of financial and resource provisions indicates strong agreement among respondents, highlighting the significant support from top management in policy direction and resource allocation. This support is crucial for the success of training programs. However, the quantification of the financial value of human assets received relatively lower scores, indicating potential challenges in this area. Job enrichment assessment shows a general agreement that job enrichment practices are positively perceived, with the highest ratings for utilizing self-direction and control capabilities. This aligns with Herzberg's motivation-hygiene theory. The lowest ratings were for expanding job responsibilities, suggesting this aspect may not be as well-received due to potential increased workload. The study's results are consistent with existing literature, emphasizing the importance of continuous training, effective management support, and meaningful job enrichment for enhancing employee performance and satisfaction. These insights can guide the development of targeted training programs and job enrichment strategies to foster a more professional and motivated faculty at Universidad De Manila.

Keywords - *Training Needs Analysis, Faculty Development, Professionalism, Job Enrichment, Resource Allocation, Graduate School*

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Introduction

The motivation and encouragement provided by management through career opportunities serve as powerful motivators for employees, enhancing their aspirations for a better environment and more secure, satisfying positions. This motivation is often propelled by exposure to pertinent and job-specific training programs (Hope, Abrams, & Marshall, 2022). Human resource management (HRM) is defined as an organizational function that strategically incorporates managing people, the workplace, and culture to achieve the aims and objectives of the business through theories, principles, policies, and practices. In the context of the harsh and competitive environment surrounding businesses and organizations, this function becomes even more vital and relevant (Phantharakphong & Liyanage, 2022, pp. 311-323). HRM focuses on issues relating to recruitment, selection, training and development, compensation, rewards, performance appraisal, employee benefits, welfare, safety, and more. It aims to develop training needs analysis practices for graduate students in preparation for their future careers (Mondejar & Asio, 2022, pp. 1630-1641).

Training and development are frequently highlighted in HRM literature as crucial tools for equipping staff with the skills, knowledge, and attitudes necessary for improved performance and productivity. In the Philippine public service, the government has institutionalized training and development as an essential

HRM tool (Kozhakhmet et al., 2022, pp. 437-449). The 1987 Philippine Constitution, through the Civil Service Commission, mandates the establishment of a career service and the promotion of morale, efficiency, integrity, responsiveness, progressiveness, and courtesy in the civil service. It also emphasizes strengthening the merit and rewards system and integrating all human resources development programs at all levels and ranks (Section 33, Art. IX).

Executive Order No. 292, known as the "Administrative Code of 1987," further underscores the importance of career and personnel development. Section 30 of Chapter V states, "The development and retention of a competent and efficient workforce in the public service is a primary concern of government." It mandates the creation of an integrated national plan for career and personnel development to serve as the basis for all such activities in the government.

The City Colleges of Manila, now known as Universidad de Manila (UDM), was founded in 1995 through Manila City Council Ordinance No. 7885 under Mayor Alfredo S. Lim's leadership. It was established to offer free tertiary education to deserving but financially disadvantaged youth. In 2006, under Mayor Jose L. Atienza's administration, UDM received university status after the approval of Ordinance No. 8120 by the city council. UDM's institutional priorities include improving systems, academic assistance, and services; advancing industrial training and micro-credentialing; achieving academic excellence; enhancing linkages and community outreach; and participating in research. The University's strategic direction focuses on quality systems and performance, stakeholder satisfaction, and sustainability and accountability.

Recognizing the sustained support from the local government of Manila, UDM should commit to extending welfare and well-being initiatives for its academic community, particularly the graduate school and undergraduate core faculty. This commitment is essential to support and respond to their reasonable needs, enabling UDM to actualize its vision, mission, core values, and targets. Evaluating the success of the annual investment made by the city government through UDM in its human resources, particularly in the training and development programs for teaching staff, is crucial for ensuring the effectiveness and impact of these initiatives.

Statement of the Problem

Effective training and development programs are crucial for enhancing professionalism and job satisfaction among faculty members. At Universidad De Manila, understanding the specific training needs, financial provisions, and job enrichment strategies for the graduate school faculty can provide insights into improving their professional development and overall performance. This study aims to address these critical areas to foster a more motivated and competent faculty.

The study aims to answer the following research questions:

1. What are the training needs and gaps among the faculty of the graduate school program at Universidad De Manila?
2. How adequate are the financial and resource provisions for the graduate school faculty at Universidad De Manila?
3. What are the perceptions and implementations of job enrichment among the graduate school faculty at Universidad De Manila?

Literature Review

Training and development are crucial aspects of human resource management that significantly impact employee performance and organizational success. According to Busto (2017), individuals appointed to positions within the Philippine Civil Service are selected based on merit and are presumed qualified. However, continuous training is essential for employees to adapt to evolving office programs and assume greater responsibilities in the future. Busto outlines various training programs, including orientation, employee development, professional and technical training, supervisory, middle management, career executive development, value development, pre-retirement counseling, overseas training, and

scholarships. These programs aim to enhance employees' skills, knowledge, and commitment to public service.

The significance of training and development in modern businesses cannot be overstated. Alzonal et al. (2016) highlight that training and development are formal, ongoing efforts by organizations to improve employee performance and satisfaction through various instructional strategies. These initiatives range from professional development to specialized job skills training. The emphasis on continuous learning and training in modern businesses is vital for maintaining a talented workforce and ensuring long-term success and profitability.

Ditan (2016) defines training as an intentional activity designed to disseminate knowledge and skills to enhance performance and capability. Training and development programs are essential for both individual and team performance, focusing on skills that can be applied in various contexts, such as leadership and decision-making. Training helps prevent work-related issues and enhances job satisfaction, reducing absenteeism and turnover.

Medina (2011) emphasizes that training helps develop team players by enhancing problem-solving, communication, negotiation, conflict management, and coaching skills. Training is not just for new employees but also for those requiring new skills to meet changing job demands. The Japanese approach to human resource development, as noted by Goel (2009), focuses on improving people to create a better society, emphasizing the importance of capable and motivated employees.

The concept of Human Resource Development (HRD), as described by Bittel and Newstrom (2010), involves systematic and planned activities to provide employees with opportunities to acquire necessary skills for current and future job demands. HRD programs must adapt to job changes and incorporate long-term organizational strategies.

Robbins and Judge (2011) categorize training into basic literacy, technical skills, interpersonal skills, problem-solving skills, and ethics training. These categories address the need for employees to adapt to technological advancements, improve interpersonal relations, and develop ethical decision-making abilities. Effective training programs enhance employee productivity and satisfaction.

Putti (2015) outlines the basic logic of training, including identifying training needs, selecting appropriate target groups, designing training experiences, and evaluating training outcomes. Training improves operative employees' abilities and knowledge, while development enhances managerial capabilities.

Dubois and Rothwell (2004) discuss career growth as a continuous process influenced by personal values, attitudes, interests, motivations, education, competencies, and training. Organizations have a responsibility to provide growth opportunities to help employees achieve their personal and professional goals.

Jehanzeb and Bashier (2013) present a conceptual analysis of the benefits of employee training and development programs for both employees and organizations. These programs are crucial for maintaining a competitive edge in the global economy and enhancing employee performance.

Fejoh and Faniran (2016) examine the impact of in-service training and staff development on job performance and productivity in Nigerian public secondary schools. Their study highlights the importance of regular training programs to cope with changing technological environments and improve organizational climate.

Els (2017) identifies themes related to professional growth in higher education, including the incorporation of technology, funding for professional development, collaboration among employees, motivation for professional development, outreach, availability of resources, and the desire for education and skill advancement.

Engeton (2017) emphasizes the importance of training and development in improving employee capabilities and organizational performance. The study shows that effective training methods significantly enhance employees' work contributions, skills, and productivity.

Yilmas and Sever (2021) investigate the impact of professional development on teachers' professional enthusiasm and students' academic success. Their findings suggest that professional development should be tailored to the needs of educational professionals and include various options beyond traditional courses and seminars.

In conclusion, training and development are essential components of human resource management that enhance employee performance, satisfaction, and organizational success. Continuous learning, effective management support, and meaningful job enrichment are crucial for fostering a motivated and competent workforce.

Methodology

In this study, a descriptive research design was employed. Austiverio Latada (2011) asserts that a descriptive design is appropriate for studies aiming to describe the characteristics of a particular situation or group, regardless of initial hypotheses regarding the nature of these characteristics or the frequency with which a particular phenomenon occurs or is connected to several other factors. The use of descriptive research was deemed suitable for this study as it necessitated the gathering of data regarding the training needs analysis, job enrichment, financial and resource provision, job rotation, and monitoring and evaluation needs of the graduate school faculty at Universidad De Manila. This approach focuses on characterizing the traits of individuals and estimating the frequency of occurrences or the properties of individuals holding certain views or behaving in specific ways.

The target population for this study consisted of the graduate school faculty at Universidad De Manila, comprising fifty (50) regular teaching staff and fifty (50) part-time teaching staff. A purposive sampling method was applied in selecting the target respondents. This sampling method was chosen as it is the most appropriate manner of selection in determining the key stakeholders of the university who would directly benefit from the training and development initiatives.

The primary data gathering instrument used in this study was a survey questionnaire, which was formulated with guidance from advisers and a consultant. The survey questionnaire was designed to assess the training and development needs of the faculty. Additionally, interview guide questions were employed to support the data gathered through the survey instrument. The interview guide was developed through a series of consultations and evaluations to ensure its relevance and comprehensiveness.

Informal group discussions were conducted with the teaching staff respondents before drafting the structured questionnaire. This process was facilitated by a research group of consultants and experts to ensure the reliability and clarity of the questions. The validity of the questions was assessed, and the items were refined to ensure they were clear and concise. The final questionnaire was evaluated and approved by the dissertation advisers and the dissertation panel members. Upon approval, a letter requesting permission to conduct the study was sent to the higher authorities of the university.

After receiving approval, the researcher used a blended approach to administer the survey questionnaire. This involved both an online platform (Google Forms) and an in-person approach to ensure comprehensive data collection. The survey responses were then retrieved and analyzed.

The data analysis involved the use of frequency, percentage, mean, and ranking methods. Additionally, Analysis of Variance (ANOVA) was utilized to test the hypothesis and determine if there were significant differences in the assessment of the training and development needs between the two groups of respondents (regular and part-time teaching staff).

Results and Discussion

On the assessment on training needs analysis

Table 1:
Assessment on Training Needs Analysis

Indicators	Permanent Graduate Faculty		Temporary Contractual Graduate Faculty		Total	
	WM	VI	WM	VI	WM	VI
Analyzes what exactly are the needs to be responded to by training	3.55	Strongly Agree	3.77	Strongly Agree	3.59	Strongly Agree
Determines changes in employee's knowledge, attitude, skills and habits	3.58	Strongly Agree	3.67	Strongly Agree	3.59	Strongly Agree
Defines the specific set of behaviors that the participants should manifest after completing the course	3.42	Strongly Agree	3.43	Strongly Agree	3.42	Strongly Agree
Projects right employee to the right job.	3.47	Strongly Agree	3.47	Strongly Agree	3.47	Strongly Agree
Evaluate skill gap in workplace	3.31	Strongly Agree	3.43	Strongly Agree	3.33	Strongly Agree
Identifies the training and development needs of the workforce	3.31	Strongly Agree	3.37	Strongly Agree	3.32	Strongly Agree
Assesses role and the skills required to carry out work efficiently and confidently	3.59	Strongly Agree	3.77	Strongly Agree	3.63	Strongly Agree
Grand Mean	3.48	Strongly Agree	3.58	Strongly Agree	3.50	Strongly Agree

The results of the training needs analysis for the graduate faculty at Universidad De Manila reveal a high level of agreement among both permanent and temporary contractual faculty regarding the importance and effectiveness of the various indicators assessed.

The indicator "Analyzes what exactly are the needs to be responded to by training" received a weighted mean (WM) of 3.55 from permanent faculty and 3.77 from temporary faculty, with an overall WM of 3.59, all interpreted as "Strongly Agree." This suggests that both groups acknowledge the critical role of identifying specific training needs as a foundational step in the training process. Literature supports this view, emphasizing the importance of thorough needs assessment in designing effective training programs (Goldstein & Ford, 2002).

Similarly, the indicator "Determines changes in employee's knowledge, attitude, skills, and habits" scored a WM of 3.58 from permanent faculty and 3.67 from temporary faculty, with an overall WM of 3.59. This consistency highlights the faculty's recognition of the transformative potential of well-designed training programs in enhancing various competencies (Noe, 2020).

The indicator "Defines the specific set of behaviors that the participants should manifest after completing the course" achieved WMs of 3.42 from both permanent and temporary faculty. This suggests a strong consensus on the importance of clear behavioral objectives in training programs. Clear objectives are crucial as they provide measurable goals and help in evaluating the effectiveness of the training (Kirkpatrick & Kirkpatrick, 2006).

The indicator "Projects right employee to the right job" also received identical WMs of 3.47 from both groups, reflecting strong agreement. This aligns with the notion that proper job alignment is essential for maximizing employee potential and organizational efficiency (Ulrich, 1997).

For the indicator "Evaluate skill gap in workplace," the WM was 3.31 from permanent faculty and 3.43 from temporary faculty, with an overall WM of 3.33. This indicates a strong agreement on the importance of identifying skill gaps to tailor training programs effectively (Cascio, 2019).

The indicator "Identifies the training and development needs of the workforce" had WMs of 3.31 and 3.37 from permanent and temporary faculty, respectively, resulting in an overall WM of 3.32. Despite being slightly lower than other indicators, it still reflects strong agreement, underscoring the essential role of continuous identification of training needs (Armstrong & Taylor, 2020).

The highest-rated indicator, "Assesses role and the skills required to carry out work efficiently and confidently," received WMs of 3.59 from permanent faculty and 3.77 from temporary faculty, with an overall WM of 3.63. This indicates a strong consensus on the necessity of understanding the roles and required skills to ensure efficient job performance, which is critical for effective workforce management (Dessler, 2020).

The grand mean for all indicators was 3.50, interpreted as "Strongly Agree." This suggests a robust agreement among the faculty on the effectiveness and importance of these training needs analysis indicators. The findings highlight that both permanent and temporary faculty members perceive these training needs assessments as vital for their professional development and job performance.

On the assessment on financial and resources provision

Table 2:
Assessment on Financial and Resources Provision

Indictors	Permanent Graduate Faculty		Temporary Contractual Graduate Faculty		Total	
	WM	VI	WM	VI	WM	VI
Inclusion in the annual budget of allocation for human resource development	3.68	Strongly Agree	3.77	Strongly Agree	3.69	Strongly Agree
Preparation of necessary training materials and handouts, forms, posters, worksheet and visual aids	3.78	Strongly Agree	3.93	Strongly Agree	3.81	Strongly Agree
Documentation of the implementation of the training program how subject areas were covered and delivered, how much resources have been put to use which shall be included in the terminal report	3.80	Strongly Agree	3.87	Strongly Agree	3.81	Strongly Agree
Support by top management in terms of policy direction, financial and resource provision, recognition and similar actions.	3.81	Strongly Agree	3.93	Strongly Agree	3.83	Strongly Agree
Actions on budget allocation by concerned officials for the training program are reasonably and timely given.	3.69	Strongly Agree	3.73	Strongly Agree	3.70	Strongly Agree
Determination of the value of human assets by computing how much is spent to hire, train and retrain people in the organization.	3.63	Strongly Agree	3.83	Strongly Agree	3.67	Strongly Agree

Contribution of the individual employee towards attaining the objectives of the management system.	3.80	Strongly Agree	3.83	Strongly Agree	3.81	Strongly Agree
Grand Mean	3.71	Strongly Agree	3.81	Strongly Agree	3.73	Strongly Agree

The assessment of financial and resources provision for the graduate faculty at Universidad De Manila indicates strong agreement across all indicators from both permanent and temporary contractual faculty. The findings suggest a robust support system and resource allocation for human resource development, reflecting the institution's commitment to faculty development.

The indicator "Inclusion in the annual budget of allocation for human resource development" received a weighted mean (WM) of 3.68 from permanent faculty and 3.77 from temporary faculty, with an overall WM of 3.69, all interpreted as "Strongly Agree." This underscores the critical importance of budgeting for human resource development, a sentiment echoed in the literature which highlights that consistent budget allocation is essential for the sustainability of training programs (Noe, 2020).

For the indicator "Preparation of necessary training materials and handouts, forms, posters, worksheet and visual aids," the WM was 3.78 from permanent faculty and 3.93 from temporary faculty, with an overall WM of 3.81. This strong agreement reflects the recognition of the need for comprehensive training materials to enhance the effectiveness of training programs. Research indicates that well-prepared materials are crucial for facilitating learning and ensuring that training objectives are met (Salas et al., 2012).

The indicator "Documentation of the implementation of the training program how subject areas were covered and delivered, how much resources have been put to use which shall be included in the terminal report" achieved WMs of 3.80 from permanent faculty and 3.87 from temporary faculty, with an overall WM of 3.81. This suggests a strong consensus on the importance of thorough documentation for accountability and continuous improvement of training programs (Kirkpatrick & Kirkpatrick, 2006).

"Support by top management in terms of policy direction, financial and resource provision, recognition and similar actions" received a WM of 3.81 from permanent faculty and 3.93 from temporary faculty, resulting in an overall WM of 3.83. This indicator received one of the highest ratings, highlighting the crucial role of top management support in the success of training and development initiatives. Literature supports that management support is vital for motivating employees and providing the necessary resources for effective training (Armstrong & Taylor, 2020).

The indicator "Actions on budget allocation by concerned officials for the training program are reasonably and timely given" received WMs of 3.69 from permanent faculty and 3.73 from temporary faculty, with an overall WM of 3.70. This strong agreement indicates satisfaction with the timeliness and reasonableness of budget allocation decisions, which are crucial for the seamless implementation of training programs (Dessler, 2020).

"Determination of the value of human assets by computing how much is spent to hire, train and retrain people in the organization" had WMs of 3.63 from permanent faculty and 3.83 from temporary faculty, with an overall WM of 3.67. Although slightly lower than other indicators, it still reflects strong agreement, suggesting that both faculty groups recognize the importance of evaluating the financial investment in human resources (Becker, 1964).

The indicator "Contribution of the individual employee towards attaining the objectives of the management system" received WMs of 3.80 from permanent faculty and 3.83 from temporary faculty, with an overall WM of 3.81. This suggests a strong recognition of the role that individual contributions play in achieving organizational goals, which is consistent with the literature on performance management and employee engagement (Aguinis, 2019).

The grand mean for all indicators was 3.73, interpreted as "Strongly Agree." This suggests a robust agreement among both permanent and temporary faculty members regarding the effectiveness of financial

and resource provisions for training and development. The findings highlight that both groups perceive the financial and resource support as critical and well-executed, contributing significantly to their professional development and job performance.

On the assessment on job enrichment

Table 3:
Assessment on Job Enrichment

Indicators	Permanent Graduate Faculty		Temporary Contractual Graduate Faculty		Total	
	WM	VI	WM	VI	WM	VI
Involves loading of functions and responsibilities of the employees	3.36	Strongly Agree	3.20	Agree	3.33	Strongly Agree
Makes the job livelier challenging and satisfying	3.32	Strongly Agree	3.17	Agree	3.29	Strongly Agree
Uses one's capabilities of self – direction and control	3.68	Strongly Agree	3.53	Strongly Agree	3.65	Strongly Agree
Adds more tasks and authority to employees' job	3.68	Strongly Agree	3.67	Strongly Agree	3.68	Strongly Agree
Redesigns job in a way that increases for the worker to experience feelings of responsibility, achievement, growth and recognition.	3.38	Strongly Agree	3.17	Agree	3.33	Strongly Agree
Given the worker more authority in planning and controlling the work	3.33	Strongly Agree	3.17	Agree	3.29	Strongly Agree
Expands job through increased worker responsibility	3.23	Agree	3.10	Agree	3.21	Agree
Grand Mean	3.43	Strongly Agree	3.28	Strongly Agree	3.40	Strongly Agree

The assessment of job enrichment among the graduate faculty at Universidad De Manila reveals varied perceptions between permanent and temporary contractual faculty. The overall results indicate a strong agreement among respondents on several indicators, reflecting positive views on job enrichment practices. However, some differences in perception between permanent and temporary faculty are notable.

The indicator "Involves loading of functions and responsibilities of the employees" received a weighted mean (WM) of 3.36 from permanent faculty, indicating "Strongly Agree," and 3.20 from temporary faculty, indicating "Agree," with an overall WM of 3.33. This suggests that both groups recognize the importance of increased responsibilities as part of job enrichment, though temporary faculty are slightly less enthusiastic. According to Hackman and Oldham's Job Characteristics Model, increasing responsibilities can enhance job satisfaction by making roles more challenging and meaningful (Hackman & Oldham, 1976).

The indicator "Makes the job livelier, challenging, and satisfying" received a WM of 3.32 from permanent faculty ("Strongly Agree") and 3.17 from temporary faculty ("Agree"), with an overall WM of 3.29. This reflects a general consensus that job enrichment can make work more engaging, although temporary faculty again show slightly less agreement. This finding aligns with Herzberg's Motivation-Hygiene Theory, which posits that job enrichment can enhance job satisfaction by increasing intrinsic motivators (Herzberg, 1966).

For the indicator "Uses one's capabilities of self-direction and control," the WMs were 3.68 from permanent faculty and 3.53 from temporary faculty, with an overall WM of 3.65, all interpreted as "Strongly Agree." This strong agreement highlights the value placed on autonomy and self-direction in job roles, which are

crucial components of job enrichment that can lead to higher job satisfaction and performance (Deci & Ryan, 2000).

The indicator "Adds more tasks and authority to employees' job" achieved WMs of 3.68 from both permanent and temporary faculty, resulting in an overall WM of 3.68, interpreted as "Strongly Agree." This suggests that both groups perceive the addition of tasks and authority positively, which can enhance their sense of empowerment and responsibility (Lawler, 1986).

The indicator "Redesigns job in a way that increases the worker's experience of feelings of responsibility, achievement, growth, and recognition" had WMs of 3.38 from permanent faculty and 3.17 from temporary faculty, with an overall WM of 3.33. This indicates strong agreement among permanent faculty and moderate agreement among temporary faculty, reflecting the importance of job redesign in fostering professional growth and recognition (Oldham & Hackman, 2010).

The indicator "Given the worker more authority in planning and controlling the work" received WMs of 3.33 from permanent faculty and 3.17 from temporary faculty, with an overall WM of 3.29, both interpreted as "Strongly Agree" and "Agree" respectively. This suggests a recognition of the benefits of empowering employees with more control over their work processes, which can enhance their engagement and productivity (Conger & Kanungo, 1988).

The indicator "Expands job through increased worker responsibility" had WMs of 3.23 from permanent faculty and 3.10 from temporary faculty, resulting in an overall WM of 3.21, interpreted as "Agree" for both groups. This lower score compared to other indicators suggests that while increased responsibility is generally accepted, it may not be as strongly favored, possibly due to concerns about workload and stress (Karasek & Theorell, 1990).

The grand mean for all indicators was 3.40, interpreted as "Strongly Agree," indicating a positive overall perception of job enrichment practices among the graduate faculty. The findings suggest that job enrichment strategies, such as increasing responsibilities, providing autonomy, and redesigning jobs for growth, are well-received and contribute to job satisfaction and professional development. However, the slightly lower agreement from temporary faculty indicates the need for tailored approaches to address their specific concerns and preferences.

Conclusions and Recommendations

This study aimed to evaluate the training and development needs of the graduate school faculty at Universidad De Manila, focusing on key areas such as training needs analysis, financial and resource provisions, and job enrichment. The findings provide valuable insights into the current state and future directions for faculty development programs.

The study revealed a strong agreement among both permanent and temporary contractual faculty on the importance of analyzing training needs, determining changes in knowledge, skills, and attitudes, and defining specific behaviors post-training. The overall grand mean of 3.50 indicates that the faculty recognizes the critical need for a thorough training needs analysis to enhance their professional capabilities. However, the slightly lower scores on identifying training and development needs suggest that while recognized as important, this aspect may not be effectively addressed or prioritized.

The assessment of financial and resource provisions showed a high level of agreement among respondents, with a grand mean of 3.73. This indicates robust support from top management in terms of policy direction, financial and resource allocation, and documentation of training programs. However, the relatively lower score on determining the value of human assets highlights a potential area for improvement in quantifying the financial impact of training investments.

The evaluation of job enrichment practices revealed a positive perception, with a grand mean of 3.40, indicating strong agreement on the benefits of job enrichment. The faculty appreciates the enhancement of job responsibilities, the opportunity for self-direction, and the redesign of jobs to promote feelings of

responsibility and achievement. However, the lower scores from temporary faculty on some indicators suggest that job enrichment efforts might not be equally effective for all faculty members, possibly due to differences in job security and workload concerns.

Based on the conclusions drawn from the study, the following recommendations are proposed to further enhance the effectiveness of the training and development programs for the graduate school faculty at Universidad De Manila:

It is crucial to establish a more systematic and comprehensive approach to identifying training needs. This can be achieved through regular surveys, feedback mechanisms, and performance assessments to ensure that all training programs are relevant and aligned with the faculty's professional growth requirements. While there is strong support for training initiatives, it is essential to develop methods to better quantify the financial value of these investments. Implementing cost-benefit analyses and tracking the return on investment (ROI) for training programs can provide clearer insights into their effectiveness and justify the allocation of resources.

Given the differences in perceptions between permanent and temporary faculty, it is important to design job enrichment programs that address the specific needs of each group. For temporary faculty, efforts should be made to provide more job security and manageable workloads to enhance their job satisfaction and professional development. To maintain high levels of motivation and job satisfaction, the university should offer continuous professional development opportunities, including workshops, seminars, and advanced training courses. These should be accessible to all faculty members and tailored to their career stages and professional goals.

Establishing a mentorship program and providing career counseling can help faculty members navigate their professional development paths more effectively. Support from experienced colleagues and clear career progression plans can significantly enhance job satisfaction and retention. Implementing a robust evaluation system for training programs and job enrichment initiatives is essential. Regular feedback from faculty members should be collected and analyzed to continuously improve these programs and ensure they meet the evolving needs of the academic community.

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**Going Beyond E-Book Engagement for Students:
A Motivation in Utilizing the Library of Universidad De Manila**

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Abstract - This study investigates the motivations for utilizing the library at Universidad De Manila, particularly focusing on the engagement beyond e-books and its impact on students' independent learning and academic performance. The research employs case analysis of data recorded at the Library Center, with a sample based on records from the first semester of the 2022-2023 academic year. The findings reveal that while professors encourage students to use e-books, there is a significant reluctance among students due to a lack of information and proper utilization skills. Students tend to spend more time browsing physical books rather than e-books. Additionally, the study highlights that despite the availability of e-books, many students do not utilize them due to limited access to gadgets and computers in the library. The underutilization of e-books negatively impacts students' academic learning and classroom performance, emphasizing the need for increased motivation and better resources to enhance e-book engagement.

Keywords - *E-book Engagement, Library Utilization, Independent Learning, Academic Performance, Student Motivation*

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Introduction

The advent of technology has significantly transformed the landscape of education, particularly through the introduction of e-books. According to Sari et al. (2022), e-books have become an essential part of modern education due to their convenience and accessibility. Unlike traditional books, e-books require minimal storage space, provide an extensive range of reading materials, and promote a more interactive and engaging learning experience. However, despite these advantages, there are notable challenges associated with e-book utilization, such as a lack of information and limited access to necessary devices among students.

Busto (2017) highlighted that e-books are often underutilized due to insufficient information and resources. Traditional books, although valuable, present environmental concerns when damaged and are often expensive, making them less accessible for students. The shift towards e-books addresses these issues by providing a sustainable and cost-effective alternative. However, effective implementation requires proper orientation and training for both students and faculty to maximize their potential.

The integration of e-books into the educational system is not without its challenges. According to Nurchotimah et al. (2022), there is a gap in the awareness and proper utilization of e-books among students. This gap is often due to inadequate information dissemination and a lack of training on how to effectively use e-books. Lecturers play a crucial role in bridging this gap by incorporating e-book usage into their teaching methods and encouraging students to utilize these resources.

Merkle et al. (2022) emphasized the importance of e-books in enhancing student engagement and academic performance. E-books offer a dynamic platform for learning, allowing students to access a wealth of information and resources beyond the traditional classroom setting. This digital shift supports independent learning and helps students develop critical thinking and problem-solving skills. However, the

success of e-books depends on the availability of technology and the ability of students and faculty to adapt to this new mode of learning.

The features of e-books, such as interactive content, easy navigation, and accessibility, significantly contribute to their effectiveness in education. Yang and Ogata (2023) noted that e-books facilitate personalized learning and improve student engagement by providing interactive features such as videos, animations, and augmented reality. These features enhance the learning experience and help students retain information better.

Furthermore, Hidajat (2023) pointed out that e-books support self-regulated learning, which is essential for student success in a digital learning environment. Self-regulated learning involves setting goals, monitoring progress, and reflecting on learning outcomes. E-books provide the necessary tools for students to engage in self-regulated learning, thereby enhancing their academic performance and overall learning experience.

Kim et al. (2021) explored the factors influencing the adoption of e-books in education. Their study identified several barriers to e-book utilization, including resistance to change, perceived risks, and the value placed on traditional books. Overcoming these barriers requires a comprehensive approach that includes training, support, and continuous evaluation of e-book programs.

Amirtharaj, Raghavan, and Arulappan (2023) emphasized the need for universities to invest in digital libraries and e-book resources to support modern learning styles. The shift towards e-books requires a strategic approach to ensure that students and faculty are adequately equipped to use these resources effectively. This includes providing access to necessary devices, training on e-book usage, and integrating e-books into the curriculum.

Almekhlafi (2021) highlighted the positive impact of e-books on teaching and learning. E-books provide a flexible and interactive platform for delivering content, making it easier for teachers to engage students and enhance their learning experience. The use of e-books also supports blended learning models, where students can access learning materials both online and offline.

Finally, Susanto et al. (2022) and Wu, Lu, and Huang (2023) discussed the role of e-books in promoting critical thinking and problem-based learning. E-books provide a rich source of information and interactive content that encourages students to explore, analyze, and synthesize information. This approach fosters a deeper understanding of the subject matter and helps students develop essential skills for academic and professional success.

As students and educators navigate the digital transformation of educational resources, it becomes crucial to assess the effectiveness and impact of e-books on learning processes and outcomes. This research aims to provide insights into the utilization of e-books at Universidad De Manila, examining factors that influence their adoption and effectiveness in enhancing student motivation and engagement. By understanding these dynamics, educators can better implement digital resources to support and enrich the learning experiences of their students.

Statement of the Problem

In the digital age, the utilization of e-books has become increasingly prevalent in academic settings, offering students a flexible and accessible resource for their studies. The Library of Universidad De Manila (UDM) has embraced this technological shift by integrating e-books into its resources. However, understanding the motivation behind students' engagement with e-books and identifying patterns in their usage is crucial for enhancing the library's services and supporting students' academic success. This study aims to explore these aspects during the 1st semester of the academic year 2022-2023.

This research seeks to address the following problems:

1. What motivates students at Universidad De Manila to utilize the library's e-book resources during the 1st semester of the academic year 2022-2023, and what are the overall patterns and trends in e-book usage?
2. What factors motivate students to go beyond basic e-book engagement at the Library of UDM during the 1st semester of the academic year 2022-2023, and how do these factors influence the engagement levels of unique e-book users?

Literature Review

The integration of e-books into educational systems has significantly influenced student performance and academic achievement. Sung et al. (2022) explained that developing interactive e-book models for contextual learning can enhance student performance. Despite the advantages, e-book utilization presents challenges such as limited internet access, slow internet speeds, and insufficient knowledge on how to use e-books effectively. Addressing these issues, the library at Universidad De Manila assists students in utilizing e-books, enabling them to conduct research conveniently from any location with internet access. This technological advancement facilitates students' capacity to engage in academic activities beyond traditional settings, promoting learning achievement and motivation.

Tlili et al. (2022) emphasized that e-books can motivate students to explore learning processes by providing easy access to educational resources. By minimizing the need for physical books and providing digital alternatives, universities can reduce expenses for students. Universidad De Manila's library supports this by registering students on a portal where they can access e-books. This system helps students overcome challenges in using the library and facilitates personalized learning, aligning with the university's mission and vision.

Moreover, Susiaty et al. (2022) highlighted that e-books assist in developing students' critical thinking skills by providing necessary learning materials. Through e-books, students can access topics and guide questions that encourage independent exploration and knowledge acquisition. This approach promotes outcome-based and student-centered learning, allowing students to develop analytical skills and apply critical thinking in their studies. E-books provide an effective platform for evaluating course modules and enhancing the learning process.

E-books also support students' learning programs, especially when physical textbooks are unavailable due to budget constraints. Scott et al. (2022) discussed how e-books leverage advanced learning methods, providing cost-effective and accessible educational resources. This move aligns with the university's policy to embrace digital advancements, ensuring students are equipped with current educational tools. The persistence of e-book utilization is necessary for students, offering diverse perspectives and important approaches to learning across all course modules.

Furthermore, Lee, Chen, and Cheng (2023) noted that e-books improve retention, self-efficacy, problem-solving skills, and learning attitudes through multi-level and sequential prompting strategies. E-books enable students to access library resources conveniently, fostering healthy learning behaviors. Despite the benefits, proper training and procedures are essential to maximize e-book utilization. Researchers advocate for the introduction of interactive e-books in various modules to enhance teaching and learning processes. E-books offer a conventional learning approach, promoting critical thinking, comprehension, and problem-solving skills, which are crucial for students' academic development.

Methodology

This study employs a case analysis approach to examine the data on e-book utilization among students during the academic year 2022-2023. The goal is to create knowledge and generate detailed insights into e-book engagement for teaching and learning. The study relies on observed data on e-book usage as recorded by the librarians at Universidad De Manila. This approach addresses the complexity and dynamic

nature of e-book utilization in an educational context, aligning with a quantitative research design and a pragmatic transdisciplinary framework (Hiver, Al-Hoorie, & Mercer, 2022, pp. 7-22).

Purposive sampling was utilized in this study based on predefined criteria set by the researchers. This technique is critical for gathering a relevant sample size for examining e-book engagement among students at Universidad De Manila. Purposive sampling allows for the selection of participants who are most likely to provide rich and relevant data regarding the motivation behind utilizing e-books. This method is particularly effective for focusing on specific research areas, such as e-book engagement in teaching and learning. It facilitates the collection of deep knowledge and information about the sample population, which is essential for understanding the nuances of e-book usage and its impact on student learning (Thomas, 2022, pp. 1-8).

The primary data was collected from the library records at Universidad De Manila, which documented the utilization of e-books by students during the 1st semester of the academic year 2022-2023. The records included the frequency of e-book access, the duration of usage, and the specific e-books accessed by students. Additionally, the study involved informal group discussions with students to gain qualitative insights into their motivations and experiences with e-book usage.

Quantitative data analysis was conducted to examine patterns and trends in e-book usage among students. Descriptive statistics, such as mean, median, and mode, were used to summarize the data. Additionally, frequency distribution and percentage analysis were employed to understand the extent of e-book engagement. Qualitative data from group discussions were analyzed thematically to identify common themes and insights regarding student motivations and challenges related to e-book usage.

The study adhered to ethical guidelines for research involving human participants. Informed consent was obtained from all participants, and confidentiality was maintained throughout the study. The data collected was used solely for research purposes and was anonymized to protect the identity of the respondents.

Results and Discussion

On the motivation in utilizing the library of Universidad De Manila of going beyond eBook engagement for students

Table 1:
Motivation of Utilizing the Library of UDM of Going Beyond E-Book Engagement of Students for the 1st Semester 2022-2023 (E-Book Unique Users)

E-Book Unique Users Per College/Department	Total No. of Enrollees	Frequency	Percentage	Ranking
College of Business Administration	2970	473	13.90	6
College of Arts and Sciences	2281	481	14.13	5
College of Engineering and Technology	1810	538	15.80	3
College of Education	1639	593	17.42	1
College of Criminal Justice	765	577	16.95	2
College of Health Sciences	878	510	14.98	4
Senior High School	818	232	6.82	7
Total	11161	3404	100	

The data reveals significant differences in the utilization of e-books across various colleges and departments at UDM. The College of Education (CED) had the highest percentage of unique e-book users, with 17.42% of its enrollees engaging with e-books. This high level of engagement could be attributed to

the nature of the education curriculum, which may require extensive reading and research, thereby driving students to utilize e-books more frequently.

The College of Criminal Justice (CCJ) follows closely with 16.95% of its students using e-books. The high engagement in CCJ could be due to the specialized and detailed nature of criminal justice studies, which often require access to a wide range of resources and literature.

The College of Engineering and Technology (CET) also showed a significant level of engagement, with 15.80% of its students using e-books. This may be due to the technical and research-intensive nature of engineering courses, necessitating the use of various digital resources.

In contrast, the Senior High School (SHS) had the lowest percentage of unique e-book users, at only 6.82%. This lower engagement could be attributed to the students' lower academic level, which may not require as intensive use of e-books as higher education courses.

Overall, the total number of unique e-book users was 3404 out of 11161 enrollees, representing 100% of the analyzed data. The variation in e-book engagement across different colleges indicates that while some students are highly motivated to use the library's e-book resources, others may need more encouragement and support to do so.

The findings are consistent with previous research that highlights the importance of accessibility and availability of digital resources in enhancing student engagement and learning outcomes (Sung et al., 2022). Studies have shown that the integration of e-books into the learning environment can significantly improve students' academic performance by providing them with convenient and flexible access to necessary reading materials (Tlili et al., 2022).

Furthermore, the motivation to utilize e-books can be linked to the perceived ease of use and usefulness of these digital resources, as indicated by the Technology Acceptance Model (TAM) (Davis, 1989). When students find e-books easy to use and perceive them as beneficial for their studies, their engagement levels increase.

Moreover, the role of faculty in promoting the use of e-books cannot be understated. According to Susiaty et al. (2022), instructors who actively integrate e-books into their curriculum and assignments can significantly influence students' motivation to utilize these resources.

Table 2
Motivation in Utilizing Library of UDM of Going Beyond E-Book Engagement for Students for the 1st Semester 2022-2023 (E-Book Usage)

E-Book Unique Users Per College/Department	Total No. of Enrollees	Frequency	Percentage	Ranking
College of Business Administration	2970	1778	19.22	1
College of Arts and Sciences	2281	1577	17.04	2
College of Engineering and Technology	1810	1353	14.62	4
College of Education	1639	1520	16.43	3
College of Criminal Justice	765	871	9.41	6
College of Health Sciences	878	1326	14.33	5
Senior High School	818	323	8.95	7
Total	11161	3404	100	

The data indicates significant differences in e-book usage across various colleges and departments at UDM. The College of Business Administration (CBA) had the highest percentage of e-book usage, with

19.22% of its enrollees engaging with e-books. This high level of engagement can be attributed to the nature of business courses, which often require extensive reading and access to up-to-date resources for case studies, research, and assignments.

The College of Arts and Sciences (CAS) follows closely with 17.04% of its students using e-books. The high engagement in CAS can be linked to the diverse range of subjects and the necessity for comprehensive literature reviews, which e-books can conveniently provide.

The College of Education (CED) also demonstrated significant e-book usage, with 16.43% of its students engaging with e-books. This can be attributed to the education curriculum's emphasis on research and continuous professional development, necessitating access to various educational resources.

On the other hand, the College of Criminal Justice (CCJ) and the Senior High School (SHS) exhibited lower percentages of e-book usage, at 9.41% and 8.95% respectively. The lower engagement in CCJ might be due to the practical nature of criminal justice studies, which may rely more on physical resources or hands-on experiences. For SHS, the lower engagement could be due to the students' lower academic level and possibly less demanding coursework compared to college-level studies.

Overall, the total number of e-book users was 3404 out of 11161 enrollees, representing 100% of the analyzed data. The variation in e-book engagement across different colleges indicates that while some students are highly motivated to use the library's e-book resources, others may need more encouragement and support to do so.

The findings align with previous research highlighting the significance of digital resources in enhancing student engagement and learning outcomes. According to Sung et al. (2022), integrating e-books into the learning environment significantly improves students' academic performance by providing them with convenient and flexible access to necessary reading materials.

Moreover, the Technology Acceptance Model (TAM) suggests that the perceived ease of use and usefulness of e-books can significantly influence students' motivation to engage with these resources (Davis, 1989). When students find e-books easy to use and beneficial for their studies, their engagement levels tend to increase.

Faculty promotion of e-book usage also plays a crucial role. As emphasized by Tlili et al. (2022), instructors who integrate e-books into their curriculum can significantly influence students' motivation to utilize these digital resources.

Additionally, Susiaty et al. (2022) stress the importance of e-books in enhancing critical thinking skills. E-books provide students with the necessary materials for research and independent learning, promoting deeper engagement with the content.

On factors motivate students to go beyond basic e-book engagement at the Library of UDM during the 1st semester of the academic year 2022-2023

The study explores the factors motivating students to engage deeply with e-books provided by the university library. The findings reveal a complex interplay of technological, academic, institutional, and personal factors that influence students' usage patterns and preferences for e-books.

Technological Factors

One of the primary technological motivators is the ease of access and convenience offered by e-books. Students appreciate the flexibility of accessing resources anytime and anywhere, without the need to physically visit the library. This is particularly significant in the context of busy academic schedules and the need for immediate access to information. Sung, Chang, and Liu (2022) emphasize that such technological advancements enhance students' capacity to read and conduct research efficiently.

Moreover, e-books come equipped with interactive features like hyperlinks, multimedia elements, and search functions, which significantly enhance the reading and learning experience. These features enable students to locate specific information quickly and engage more deeply with the content (Tlili et al., 2022). The integration of e-books with learning management systems (LMS) further promotes continuous engagement, as students can access course materials and resources directly through the platforms they use for their studies (Nurchotimah, Susilawati, & Rahayu, 2022).

Academic Factors

Academically, support from faculty plays a crucial role in encouraging students to utilize e-books. When professors integrate e-books into their curriculum and recommend specific titles, students are more likely to engage with these resources. This aligns with findings by Susiaty, Rahman, and Wahyuni (2022), who note that faculty endorsement significantly influences students' adoption of e-books.

The comprehensive and up-to-date content available in e-books is another key motivator. E-books often provide the latest information and research findings, which are essential for students, especially those involved in research projects and advanced studies. Scott, Miller, and Sanders (2022) highlight that access to current and comprehensive content is critical for academic success. Furthermore, the potential for e-books to enhance academic performance motivates students to prefer e-books over traditional textbooks, recognizing their value in preparing for exams, writing papers, and completing assignments (Sung et al., 2022).

Institutional Factors

Institutional support is vital in promoting e-book engagement. UDM's commitment to providing a wide range of e-books and ensuring their accessibility underscores the university's dedication to enhancing students' academic experience. The library's efforts to maintain an extensive collection of e-books that support various academic disciplines encourage students to utilize these resources (Tlili et al., 2022).

Training sessions and support services are also crucial. When students receive adequate training on how to use e-books effectively, their confidence in these digital resources increases, leading to higher engagement levels (Susiaty et al., 2022). Additionally, promotional activities such as workshops and seminars about the benefits of e-books raise awareness and encourage students to explore these resources further (Nurchotimah et al., 2022).

Personal Factors

Personal motivations play a significant role in students' engagement with e-books. Students driven by a desire for self-directed learning find e-books particularly appealing. The ability to learn independently and access a wide range of resources without being constrained by library hours fosters a sense of autonomy and motivates deeper engagement (Hidajat, 2023).

Interest in technology is another personal factor influencing e-book usage. Students who are keen on using digital tools and technologies naturally gravitate towards e-books. The interactive and tech-friendly nature of e-books appeals to these students, motivating them to rely on these resources extensively (Yang & Ogata, 2023). Additionally, environmental concerns motivate some students to prefer e-books. Those who are environmentally conscious recognize e-books as a more sustainable option compared to physical books, thus engaging with them more frequently (Kim et al., 2021).

The study identifies a multifaceted set of factors that motivate students to go beyond basic e-book engagement at the Library of Universidad De Manila. These factors include the ease of access and interactive features of e-books, academic support and comprehensive content, institutional resource provision and support services, and personal motivations related to self-directed learning and environmental consciousness. Understanding these motivating factors allows UDM to develop strategies

that promote deeper and more meaningful engagement with e-books, ultimately enhancing the academic experience and performance of its students.

Conclusions and Recommendations

The study aimed to assess the motivations behind students' utilization of e-books and analyze their engagement levels with the library's digital resources during the 1st semester of the academic year 2022-2023. Several key conclusions emerged from the research findings.

Firstly, the high engagement and utilization of e-books by students were driven primarily by their convenience and accessibility. The flexibility to access e-books anytime and anywhere, coupled with their interactive features, significantly contributed to high engagement levels. For instance, the College of Business Administration exhibited the highest number of unique e-book users, followed by the College of Arts and Sciences, indicating a strong inclination toward e-book usage among these departments.

Secondly, the study highlighted the critical role of academic support and curriculum integration in motivating students. When professors recommend and incorporate e-books into their teaching, students are more likely to engage with these digital resources. This was evident from the substantial engagement observed in the College of Education, reflecting effective faculty encouragement and curricular integration.

Thirdly, the importance of technological infrastructure and institutional support in promoting e-book usage was underscored. Adequate training and resources provided by the university library, along with initiatives to raise awareness about e-books, have been instrumental in driving student engagement. Departments with higher engagement, such as the College of Health Sciences, benefit from robust technological and institutional support.

Lastly, personal motivation and learning preferences also play a significant role in influencing students' engagement with e-books. Factors such as a desire for self-directed learning, environmental consciousness, and interest in technology were key motivators for students to utilize e-books extensively, as seen in the consistent engagement across various departments.

Based on the study's findings, several recommendations are proposed to further enhance e-book engagement and utilization at the Universidad De Manila.

Enhanced Faculty Integration and Support

To encourage faculty members across all departments to integrate e-books into their teaching strategies and curriculum, the university should provide training sessions on effectively incorporating e-books into courses. Additionally, developing incentive programs for faculty who successfully integrate e-books into their teaching can further boost student engagement. Recognizing and rewarding faculty efforts to promote digital literacy will enhance the overall effectiveness of e-book programs.

Improved Technological Infrastructure

Investing in enhancing the technological infrastructure of the university library is crucial to ensuring that students have seamless access to e-books. This includes improving internet connectivity and increasing the availability of digital devices for students who may not have personal access. Implementing user-friendly platforms and interfaces for e-book access will make it easier for students to navigate and utilize digital resources.

Comprehensive Student Training and Support

Offering regular workshops and training sessions for students on effectively using e-books and other digital resources will be beneficial. These sessions should cover basic navigation, advanced search techniques, and utilizing interactive features for enhanced learning. Creating a dedicated helpdesk or support team

within the library to assist students with technical issues or queries related to e-book usage will also support student engagement.

Promotion and Awareness Campaigns

Launching targeted promotion and awareness campaigns to highlight the benefits of e-books can significantly enhance their usage. Utilizing various channels such as social media, university newsletters, and campus events to reach a wider audience will increase awareness. Developing engaging marketing materials that showcase success stories and testimonials from students and faculty who have benefited from using e-books can further motivate students to utilize these resources.

Continuous Feedback and Improvement

Establishing a system for continuous feedback from students and faculty regarding their experiences with e-books is essential. This feedback should be used to make necessary improvements and updates to the digital library resources. Regularly assessing the effectiveness of e-book programs and initiatives, making data-driven decisions to enhance their impact on student learning and engagement, is also recommended.

By implementing these recommendations, the Universidad De Manila can strengthen its e-book engagement initiatives, providing students with valuable digital resources that enhance their academic performance and foster a culture of continuous learning and innovation.

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UDM Library E-Book: Pathways to Functional Information SystemClarissa R. Navarro¹, Rubirosa V. Sicat¹ and Flordeliza M. Rubio ¹¹Universidad De Manila

Abstract - This study aims to assess the status of e-books at the Universidad De Manila Library in terms of utilization, awareness, and acceptability. The research also identifies weaknesses encountered by respondents in these areas. Utilizing a descriptive research design, the study investigates correlations between variables through document analysis and survey instruments. The survey, adapted from the National Competency-Based Standards for School Heads Training and Development Needs Assessment (NCBSSH-TDNA) and Individual Performance Commitment and Review Form (IPCRF), was distributed to selected students and faculty members. Findings indicate limited usage of e-books despite high awareness and acceptability among the university community. Additionally, e-books embedded in Moodle are not recommended by teachers, and the library system lacks automation, restricting e-book access to Moodle. Recommendations include reviewing existing library policies and enhancing automation for better accessibility.

Keywords - *E-Book Utilization, Library Automation, Information System, Academic Resources, Higher Education*

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Introduction

The effects of the Covid-19 pandemic in 2020 were unexpected by everyone, particularly in the field of education. Many private schools closed due to a drop in enrollment, and numerous teachers lost their positions as a result of declining parental incomes, students' unstable health conditions, and the inability of schools to provide a safe environment. Consequently, many students transferred to public schools. To address these challenges, the academic community was compelled to integrate technology into classrooms, such as utilizing electronic books (e-books), to enhance the quality of education and efficiently sustain learning through learning management systems. This shift aimed to bridge the educational gap caused by the pandemic and offer new learning avenues.

An e-book, or electronic book, is a non-editable text transformed into a digital format, accessible on electronic devices like tablets or smartphones. Unlike other digital texts, e-books cannot be altered, ensuring the author's security and protection (Svennberg, et al., 2022). E-books are practical and cost-effective as they eliminate the overhead expenses associated with producing hard copies. Moreover, they occupy less physical space and can be accessed simultaneously on multiple devices. The primary goal of e-books is to enhance and streamline the learning process, making it more interactive and engaging (Egert, Cordes, & Hartig, 2022).

Incorporating e-books with a learning management system (LMS) offers numerous advantages to both students and teachers. An LMS allows educators to manage and distribute instructional content, monitor student progress, and provide feedback. It enables teachers to assign e-books and track student development, personalizing learning experiences to meet individual needs (Lwande, Muchemi, & Oboko,

2021). UDMoodle, the Universidad De Manila's LMS, facilitates the remote delivery of online reference materials, integrating e-books into its e-library for 24/7 access (Manaeva & Yusupova, 2020).

Research indicates that e-books on digital platforms can enhance student engagement and problem-solving skills, positively impacting academic performance (Boozer & Simon, 2020; Hopkins et al., 2020). However, there is limited research on the specific effects of e-books on student engagement. Studies suggest that effective e-books can modulate the relationship between textbook effectiveness and academic engagement, with higher rates of engagement and performance (Adam, 2021).

The transition to e-books also offers a cost-effective solution for educational resources. Libraries, including the Universidad De Manila Library, have adopted institutional licenses for scholarly e-books, making them accessible to the entire university (Sparc, 2021). This shift is part of a broader trend towards digital resources in higher education, driven by the need for cost savings and increased accessibility (Cowley et al., 2021; Hair & Sarsstedt, 2021).

Effective e-books can enhance student engagement by increasing internet activity and providing immediate feedback through online exercises. These features can motivate students to complete more assignments and participate more actively in their learning (Chang & Chen, 2022). The Universidad De Manila Library has embraced this digital transformation, integrating e-books into its resources to support the institution's educational mission (Sudaryat et al., 2022). However, librarians face challenges such as limited administrative support, budget constraints, and technological shortcomings. Addressing these challenges requires careful planning and design to create an effective and useful information system.

The "electronic book or e-book" project initiated by Universidad de Manila in November 2021 aims to enhance the institution's educational process using modern technology. By incorporating e-books into the Moodle platform, teachers and students can access learning materials more conveniently, thereby improving the quality of education (Sudaryat et al., 2022).

Statement of the Problem

The integration of electronic books (e-books) into academic libraries has become increasingly vital in the digital age, providing a versatile and accessible platform for student learning and research. The Universidad De Manila (UDM) Library has incorporated e-books into its resources to enhance the educational experience of its students. This study aims to evaluate the effectiveness of UDM Library e-books as a functional information system. Specifically, it seeks to investigate the utilization, awareness, and acceptability of e-books among students and to identify the weaknesses encountered in these areas.

This study aims to determine the effectiveness of UDM Library e-books in terms of utilization, awareness, and acceptability as pathways to a functional information system. Specifically, it seeks to address the following research problems:

1. How do respondents assess the status of Universidad De Manila Library e-books in terms of:
 - 1.1 Utilization;
 - 1.2 Awareness;
 - 1.3 Acceptability?
2. What are the identified weaknesses encountered by the respondents in terms of the utilization, awareness, and acceptability of UDM Library e-books?

Literature Review

E-books have been warmly welcomed by university libraries, seen as a magic solution by librarians, resulting in effective resource utilization, space savings, student satisfaction, and alignment with the study habits of the millennial generation. Despite the many benefits e-books offer, such as portability, accessibility, functionality, and ease of searching, the sentiment towards them is not entirely positive. Issues such as publisher constraints, the complexity of e-book distribution, and reading device incompatibility have been highlighted. One significant discovery concerned e-book interrogation, which required more focused

content searches and 'bite-size' reading techniques. To ensure library collections support a variety of learning styles and provide students with opportunities to better understand the material, caution must be exercised (Casselden, 2019).

The level of awareness, use, and attitudes of students toward e-books were investigated in a study which found that the majority of respondents had a favorable opinion of e-books, stating they were easy to find and useful for their projects. They valued the online capabilities of e-books. However, there were substantial differences in opinions among students from various academic fields regarding the use of e-books (Jbeen, 2019).

The modified diffusion of innovation theory was used to examine students' intentions regarding the uptake of e-books. Independent factors such as student attitude, awareness, and perceived innovation characteristics (PIC) were considered. The acceptance of e-books is positively influenced by compatibility, complexity, observability, trialability, attitude, and awareness, whereas behavioral intention is minimally influenced by relative benefit. Additionally, behavioral intention has a very good impact on actual usage. Understanding the factors influencing the uptake of e-book reading will help in understanding the role of PIC in the adoption of new products and technologies (Veletsianos & Houlden, 2020).

The theories surrounding the reasons why certain people resist adopting new technologies were considered. Several research studies indicated that higher education was resistant to technologically disruptive advances a few years before the Covid-19 public health disaster. It was revealed that learning in a technologically advanced smart classroom was less engaging than in a conventional classroom. While students may not always see the advantages of a smart classroom, other technological advancements such as hybrid and online learning are slowly gaining hold. The adoption of e-books enhances the link between textbook efficacy and one component of student involvement. E-books modify the relationship between textbook effectiveness and academic performance engagement, one of the most important discoveries (Veletsianos & Houlden, 2020).

The utilization of e-book reference materials can improve learning because it places students in a setting where they are more likely to collaborate or share current activities and easily access relevant materials for their coursework. E-books give readers the chance to learn more deeply, offering engagement and better learning outcomes similar to those provided by conventional print textbooks. Several publishers integrate their electronic books into a platform for interactive learning.

Today's students, often referred to as digital natives, spend a lot of time utilizing gadgets like computers, video games, digital music players, iPads, e-readers, and cell phones due to their technologically advanced upbringing. Despite their affinity for digital devices, students sometimes prefer print textbooks due to the simplicity of use compared to the complexity of the technology, software, and connectivity required for e-books. Nevertheless, a survey of technology courses revealed that students believe e-books provide novel approaches to learning that boost motivation, enthusiasm, attentiveness, and course interest (Sari et al., 2022).

Methodology

The study employed a descriptive research design to present, analyze, and interpret data regarding the utilization, awareness, and acceptability of e-books at the Universidad De Manila (UDM) Library. Descriptive research design is effective for examining correlations between variables and providing a detailed account of the scenario under investigation. This design is particularly useful in educational research as it helps in understanding the phenomena by verbalizing observations and describing them in detail (Birgili, Seggie, & Oğuz, 2021).

The process of document analysis was integral to this study. Document analysis involves evaluating both electronic and paper documents to comprehend and build upon the information they contain. This method is crucial for interpreting sources accurately and selecting the most relevant information for the research. Document analysis was used to assess e-book usage, which included analyzing data recorded by librarians on e-book interactions (Birgili, Seggie, & Oğuz, 2021).

The primary data collection tool was a survey questionnaire. The term "survey instrument" refers to the questionnaires designed to gather data from respondents. The survey questionnaire for this study was adapted with modifications from the evaluation tools of the Department of Education-Central Office, specifically the National Competency-Based Standards for School Heads Training and Development Needs Assessment (NCBSSH-TDNA) and the Individual Performance Commitment and Review Form (IPCRF) for Teachers I-III. These tools are public domain materials, as confirmed by DepEd-DCS Manila Superintendent Maria Magdalena M. Lim, CESO V, and can be used without obtaining permission (August 25, 2022).

The survey questionnaire consisted of two parts: the level of awareness and the level of acceptability of electronic books. It comprised thirty statements aimed at assessing these aspects. The questionnaires underwent content validation by experts to ensure clarity and relevance of the items.

Purposive sampling was used to select the respondents. This method involves selecting individuals based on specific criteria relevant to the research objectives. In this study, the criteria included being a student or faculty member at UDM, ensuring that the respondents had relevant experiences with e-books. The sample included selected students and faculty members from various colleges within the university.

The researcher personally administered the survey questionnaires to the selected students and faculty members. This approach ensured a higher response rate and allowed for immediate clarification of any questions the respondents might have. The objectives of the study were clearly explained to the respondents to ensure they understood the purpose of the research and the importance of their participation. The researcher assured the respondents of the confidentiality of their answers to encourage honest and accurate responses.

Results and Discussion

On the assess the status of Universidad De Manila Library e-books in terms as to the Utilization, Awareness and Acceptability

Table 1:
Status of UDM Library e-books in terms of Usage Per College
(February 2022-May 2022-, 2nd Semester)

College	February	March	April	May	TOTAL
CAS	1112	2698	1898	1325	7033
CBAE	1110	2534	2036	1532	7212
CED	387	1072	928	1426	3813
CET	460	2154	1983	1623	6220
CCJ	493	851	732	602	2678
CHS	345	713	625	403	2086
CMIT-TESD A	1	3	2	1	7
SHS	52	78	63	42	235
Total	3960	10103	8267	6954	29284

The data on e-book usage at the Universidad De Manila (UDM) Library for the second semester (February 2022-May 2022) reveals significant variation in the usage across different colleges. The total usage counts for each college demonstrate the engagement level with e-books as follows:

College of Arts and Sciences (CAS):

CAS recorded the highest usage with a total of 7,033 e-book accesses over the four months. The peak usage was in March with 2,698 accesses, followed by April (1,898), February (1,112), and May (1,325). This indicates a consistent and significant engagement with e-books, likely reflecting a strong integration of digital resources in the college's academic activities.

College of Business Administration and Entrepreneurship (CBAE):

CBAE had a total of 7,212 e-book accesses, slightly higher than CAS. March saw the highest usage at 2,534 accesses, followed by April (2,036), May (1,532), and February (1,110). The data suggests that CBAE also relies heavily on e-books, with usage patterns similar to CAS, indicating consistent academic demand for digital resources.

College of Engineering and Technology (CET):

CET recorded a total of 6,220 e-book accesses. The highest usage was in March with 2,154 accesses, followed by April (1,983), May (1,623), and February (460). The significant drop in February could be due to the start of the semester when academic activities might not be at their peak. CET's high engagement in March and April suggests an increased demand for e-books as the semester progresses.

College of Education (CED):

CED had a total of 3,813 e-book accesses, with the highest usage in May (1,426), indicating a peak likely due to final preparations and examinations. March (1,072) and April (928) also showed substantial usage, with the lowest in February (387). This pattern might reflect the college's academic calendar and the students' need for resources for project completion and exam preparation.

College of Criminal Justice (CCJ):

CCJ recorded a total of 2,678 e-book accesses. The highest usage was in March (851), followed by February (493), April (732), and May (602). The relatively lower overall usage compared to other colleges might indicate lesser reliance on e-books or potential preferences for other forms of resources.

College of Health Sciences (CHS):

CHS had 2,086 e-book accesses, with the highest in March (713). Usage in February (345), April (625), and May (403) shows fluctuating engagement, possibly tied to specific academic requirements or availability of e-books relevant to their studies.

TESDA (CMIT-TESDA):

CMIT-TESDA showed negligible usage with only 7 accesses over four months, indicating minimal engagement with e-books. This could be due to the nature of their curriculum, which might rely more on practical and hands-on resources.

Senior High School (SHS):

SHS recorded the lowest usage with a total of 235 accesses. March had the highest usage (78), followed by April (63), February (52), and May (42). The low engagement could reflect a lesser emphasis on e-books at this educational level or limited awareness and accessibility among SHS students.

The data indicates that e-book usage varies significantly across different colleges at UDM. Colleges like CAS, CBAE, and CET show high engagement, which could be attributed to effective integration of digital resources into their curricula and active promotion by faculty. In contrast, colleges like CMIT-TESDA and SHS show minimal engagement, suggesting potential areas for improvement in awareness and resource allocation.

The results align with findings from Casselden (2019), who noted that while e-books offer numerous advantages, their adoption and utilization are not uniform across disciplines and educational levels. Factors such as the availability of relevant e-books, ease of access, and faculty encouragement play critical roles in influencing e-book usage (Casselden, 2019). Additionally, Jbeen (2019) emphasized the importance of awareness and attitudes towards e-books in driving their usage among students, which is evident in the varied engagement levels observed across UDM's colleges.

Table 2:
Status of UDM Library e-books in terms of Usage Per College vs Population
(February 2022-May 2022-, 2nd Semester)

COLLEGE	USERS	POPULATIONS	% Over e-books users	% Over total populations
CBAE	629	3103	26%	5.74%
CAS	572	2567	24%	5.22%
CET	356	1770	15%	3.25%
CED	298	1228	12%	2.72%
CCJ	235	758	10%	2.14%
CHS	193	550	8%	1.76%
SHS	129	980	5%	1.18%
TOTAL USERS	2412	10956		

The analysis of e-book usage at the Universidad De Manila (UDM) Library for the second semester of the academic year 2022, as shown in Table 2, reveals significant insights into the engagement levels across different colleges within the university.

The College of Business Administration and Entrepreneurship (CBAE) exhibits the highest engagement with e-books. With 629 users out of a total population of 3103, CBAE demonstrates a 26% engagement rate, representing 5.74% of the total university population. This suggests a robust integration of e-books into the curriculum, possibly driven by course requirements that emphasize digital resources or effective promotion by faculty members.

Following closely is the College of Arts and Sciences (CAS), where 572 out of 2567 students utilize e-books, accounting for 24% of its population and 5.22% of the university's total. This significant engagement likely reflects the diverse range of subjects within CAS that benefit from the accessibility and functionality of e-books, aligning well with the needs of modern academic research and study habits.

The College of Engineering and Technology (CET) shows moderate e-book usage, with 356 users out of 1770 students, equating to 15% engagement within the college and 3.25% of the university's total population. The lower percentage compared to CBAE and CAS may indicate a preference for other types of resources among engineering students or less integration of e-books within their curriculum.

In the College of Education (CED), 298 out of 1228 students engage with e-books, representing 12% of the college's population and 2.72% of the university's total. The relatively lower engagement may be due to the nature of educational studies, which often rely on physical teaching aids and materials. However, the presence of digital engagement indicates a growing acceptance of e-books.

The College of Criminal Justice (CCJ) has 235 e-book users out of 758 students, making up 10% of its population and 2.14% of the total university population. This lower engagement could be attributed to specific course requirements that may not prioritize digital resources, highlighting an opportunity to increase awareness and integration of e-books in this college.

The College of Health Sciences (CHS) shows minimal engagement, with 193 out of 550 students utilizing e-books, accounting for 8% of the college's population and 1.76% of the university's total. The reliance on physical textbooks and hands-on materials necessary for health sciences studies may contribute to this lower usage, suggesting a need for targeted interventions to promote digital resource usage.

Lastly, the Senior High School (SHS) has the lowest engagement with e-books, with only 129 users out of 980 students, representing 5% of its population and 1.18% of the university's total. Limited access to devices, lack of familiarity with e-books, or a curriculum that does not heavily integrate digital resources could be factors influencing this low engagement.

The overall analysis indicates varying levels of e-book engagement across different colleges at UDM. Colleges such as CBAE and CAS, with higher percentages of e-book users, illustrate the benefits of integrating digital resources into the curriculum. In contrast, lower engagement levels in colleges like CCJ, CHS, and SHS suggest the need for targeted interventions to increase awareness and accessibility of e-books.

The findings align with Casselden's (2019) study, which noted that while e-books offer numerous advantages, their adoption varies widely across disciplines. Promoting e-book usage and effectively integrating them into academic programs is crucial, as highlighted by Jbeen (2019), who found that awareness and attitudes significantly impact e-book usage. Veletsianos and Houlden (2020) emphasized the role of perceived innovation characteristics in the adoption of new technologies, suggesting that increasing familiarity and demonstrating the benefits of e-books could enhance their acceptance and utilization.

Table 3
Status of UDM Library e-books in terms of Awareness of Students

Statement	CET	CHS	CED	CAS	CBA	CCJ
Availability of e-books in the library	3.43	3.52	3.92	3.47	2.96	3.06
Accessibility of e-books in the UDM Moodle	3.47	3.4	3.68	3.34	2.58	3.3
E-books open access sites	3.56	3.4	3.39	3.38	2.58	3.06
UDM Library provides access to e-books	3.56	3.48	3.23	3.35	2.57	3.36
Availability of e-books in area of specialization	3.21	2.84	3.15	2.98	2.48	2.83
E-books can be downloaded to mobile devices and laptops	3.43	2.84	3.21	2.97	2.36	3.13
E-books can be useful in time for leisure.	3.65	3.2	3.21	3.18	2.71	3.03
E-books can be used for seminar presentation, course assignment and research work	3.65	3.16	3.57	3.44	2.64	3.06
E-books accessibility in the library webpage	3.45	3.28	3.57	3.31	3.25	2.76
Over-all Weighted Mean	3.49 Aware	2.91 Aware	3.43 Aware	3.26 Aware	2.68 Aware	2.75 Aware

The analysis of the status of UDM Library e-books in terms of awareness among students across various colleges reveals significant insights into how well students know about and use the e-books available to them.

Availability of E-books in the Library

The College of Education (CED) scored the highest with a mean of 3.92, indicating strong awareness of e-book availability among its students. This high level of awareness could be attributed to the college's efforts

to integrate e-books into their curriculum and promote their usage. On the other hand, the College of Business Administration (CBA) had the lowest mean score of 2.96, suggesting that students in this college are less aware of the e-books available in the library. This may indicate a need for increased promotion and integration of e-books in the business curriculum.

Accessibility of E-books in UDM Moodle

CED also scored high (3.68) in the accessibility of e-books through the UDM Moodle platform, reflecting the effective integration of digital resources in their educational processes. Conversely, CBA again scored the lowest (2.58), indicating potential barriers to access or a lack of promotion about how to access these resources through Moodle.

E-books Open Access Sites

Students in the College of Engineering and Technology (CET) showed the highest awareness of open access e-book sites with a mean of 3.56. This could be due to the nature of engineering studies that often require access to a wide range of resources, pushing students to be more resourceful. Meanwhile, CBA students were least aware (2.58), suggesting a gap that needs addressing through better communication and education about available resources.

UDM Library Provides Access to E-books

Similar trends are observed with CET scoring high (3.56) and CBA scoring low (2.57) regarding the perception that the UDM Library provides access to e-books. This disparity underscores the necessity for targeted awareness campaigns in colleges where awareness is low.

Availability of E-books in Area of Specialization

Here, CET students showed moderate awareness (3.21), while CBA students scored the lowest (2.48). This points to the need for more specialized resources tailored to the specific needs of business students.

E-books Downloadable to Mobile Devices and Laptops

Awareness about the ability to download e-books was highest in CET (3.43) and lowest in CBA (2.36), further highlighting the technology gap that exists between these colleges.

E-books for Leisure, Seminars, Course Assignments, and Research Work

CED students exhibited high awareness (3.57) of the utility of e-books for seminars, assignments, and research, reflecting a strong recognition of the practical applications of these resources. In contrast, CBA students again scored lowest (2.64), indicating a potential underutilization of e-books for academic purposes.

The overall weighted mean scores indicate that students from CET (3.49) and CED (3.43) are the most aware of e-book resources, while students from CBA (2.68) and CCJ (2.75) are the least aware. This suggests that certain colleges have successfully integrated e-books into their academic culture, while others lag behind.

The data indicates a significant variation in e-book awareness among students across different colleges at UDM. Colleges such as CED and CET show higher levels of awareness, likely due to better integration of e-books into their academic programs and effective communication about these resources. In contrast, CBA and CCJ show lower levels of awareness, pointing to a need for targeted efforts to enhance awareness and utilization of e-books in these colleges.

These findings are consistent with Casselden (2019), who noted that while e-books offer numerous advantages, their adoption and awareness vary widely across disciplines. The importance of effective

promotion and integration of e-books into the curriculum is highlighted by Jbeen (2019), who found that awareness significantly impacts e-book usage. Veletsianos and Houlden (2020) emphasize the role of perceived innovation characteristics in the adoption of new technologies, suggesting that increasing familiarity and demonstrating the benefits of e-books could enhance their acceptance and utilization.

Table 4
Status of UDM Library e-books in terms of Acceptability of Students

Statement	CET	CHS	CED	CAS	CBA	CCJ
E-books with interactive design and component elements can provide higher interactional level to students.	4.06	3.72	4.00	3.6 4	3.50	3.56
E-books exhibit a proactive approach to research inquiries of students.	4.00	3.80	3.71	3.6 8	3.50	3.70
E-books can be used for school project/s.	4.13	3.84	3.92	3.7 0	3.50	3.86
E-books can help to adapt a research-based school program.	4.17	3.6	3.89	3.78	3.5	3.60
E-books can be used as reference for course assignment.	3.95	3.76	3.94	3.67	3.5	3.70
E-books can help in learning more about a subject.	4.08	3.68	3.86	3.6 2	3.50	3.73
E-books can be a domain in the implementation of coherent, and responsive school-wide curriculum for students.	4.06	3.52	3.65	3.5 4	3.50	3.40
E-books can be an additional source in doing term paper.	4.00	3.76	3.84	3.74	4.00	3.53
E-books can promote technology-based driven community.	4.13	3.88	3.42	3.8 2	3.50	3.50
E-books can be used as citation in seminar presentation.	4.15	3.72	3.92	3.67	4.00	3.50
	4.73	3.72	3.81	3.68	3.17	3.60

<u>Over-all Weighted Mean</u>	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable
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The analysis of Table 4 provides insights into the acceptability of e-books among students from different colleges at Universidad De Manila (UDM). The results indicate the degree to which students find e-books useful and relevant to their academic activities, reflecting the overall acceptance of e-books as a valuable educational resource.

E-books with Interactive Design and Components

The College of Engineering and Technology (CET) scored the highest in this category with a mean of 4.06, indicating that students in CET find interactive e-books highly engaging. This aligns with the literature suggesting that interactive elements in e-books enhance user engagement and learning outcomes (Sung et al., 2022). The College of Business Administration (CBA) scored the lowest (3.50), suggesting that there may be a need for more interactive content tailored to the needs of business students.

Proactive Research Inquiries

CET students again showed high acceptance with a mean of 4.00, reflecting a strong recognition of e-books as a proactive tool for research. This supports findings by Veletsianos and Houlden (2020) that e-books can significantly aid in academic research due to their accessibility and comprehensive content. Conversely, the lower score from CBA (3.50) indicates that business students may not fully recognize the potential of e-books for research inquiries.

Use for School Projects

CET scored highest (4.13), showing strong acceptance of e-books for school projects, which suggests that e-books are seen as valuable resources for practical applications in engineering studies. CBA's lower score (3.50) may point to a lack of integration of e-books into project-based assignments or a preference for other resources.

Adaptation to Research-based Programs

CET's highest score (4.17) indicates that e-books are well-accepted as supportive tools in adapting research-based school programs, consistent with the view that e-books facilitate advanced learning and research (Casselden, 2019). CBA's score (3.50) suggests that e-books are underutilized in research-focused initiatives within the business curriculum.

Reference for Course Assignments

There is a high acceptance of e-books as reference materials in CET (3.95), reflecting the alignment of e-books with engineering coursework. CBA, again scoring lowest (3.50), may benefit from increased advocacy on the use of e-books for assignments to enhance their academic value.

Learning Enhancement

CET students scored highest (4.08) in using e-books to learn more about a subject, highlighting the effectiveness of e-books in supporting comprehensive learning. The relatively lower score from CBA (3.50) suggests that business students might not be fully leveraging e-books for subject matter enhancement, potentially due to a preference for traditional textbooks or other learning resources.

Curriculum Integration

CET (4.06) showed high acceptance of e-books as part of a coherent and responsive school-wide curriculum, indicating that e-books are well-integrated into their academic structure. In contrast, the lower score from CCJ (3.40) suggests that e-books may not be as seamlessly integrated into the curriculum, which could affect their perceived utility.

Source for Term Papers

Both CET and CBA scored high (4.00), showing that e-books are well-accepted as sources for term papers across these colleges. This indicates a recognition of the depth and breadth of information available through e-books, supporting their use in extensive academic writing and research.

Technology-driven Community

CET scored the highest (4.13) in viewing e-books as promoters of a technology-based community, suggesting a strong alignment with the technological orientation of engineering students. The lower score from CBA (3.50) could reflect a slower adaptation to technology-driven learning environments.

Citation in Seminar Presentations

Both CET and CBA showed high acceptance (4.15 and 4.00, respectively) for using e-books as citation sources, indicating a recognition of the credibility and relevance of e-books in academic discourse.

The overall weighted mean indicates that CET students (4.73) have the highest acceptance of e-books, while CBA students (3.17) have the lowest. This disparity underscores the need for targeted strategies to enhance the perception and integration of e-books in colleges where acceptance is lower.

The results highlight a general acceptance of e-books among UDM students, with notable variations across different colleges. The high acceptance rates in CET indicate that engineering students recognize and utilize e-books effectively, likely due to the nature of their studies which require access to up-to-date and interactive resources. On the other hand, the lower acceptance rates in CBA suggest that business students may not be fully aware of or utilizing e-books to their potential. This calls for targeted efforts to increase awareness and integration of e-books in the business curriculum to enhance their academic utility.

These findings align with Casselden (2019), who highlighted the benefits and challenges of e-book adoption in academic settings, and Veletsianos and Houlden (2020), who discussed the impact of e-books on student engagement and learning outcomes. The emphasis on interactive and proactive elements in e-books supports Sung et al. (2022), who found that such features significantly enhance learning experiences.

On the identified weaknesses encountered by the respondents in terms of the utilization, awareness, and acceptability of UDM Library e-books

The research revealed several weaknesses in the utilization, awareness, and acceptability of UDM Library e-books, impacting both students and teachers. These weaknesses highlight critical areas that need improvement to enhance the effectiveness and integration of e-books in the academic environment.

One significant issue is the lack of an automated library system to integrate electronic books with other library services. Currently, the UDM Library relies on Moodle, a learning management system (LMS), which is not specifically designed for managing or accessing digital references. This gap creates a barrier for seamless access and management of e-books, limiting their potential utility.

Accessibility is another major concern. Despite the availability of e-books, many students and faculty members face difficulties accessing these resources due to inadequate internet services on campus. The lack of sufficient data allowances further exacerbates this issue, making it inconvenient and often impossible for users to utilize e-books effectively. This problem underscores the need for robust internet infrastructure to support digital learning resources fully.

Furthermore, there is a noticeable gap in the availability of specialized e-books, particularly for board-based courses, non-board-based courses, and technical vocational courses. This lack of resources in specific fields of study hampers students' ability to access relevant materials, which is crucial for their academic success.

Justifications for Identified Weaknesses

The acceptance of e-books among respondents is significantly influenced by their credibility. Students and faculty members tend to rely on resources they perceive as legitimate and trustworthy. If e-books are not regarded as credible, their adoption and utilization are adversely affected. This finding aligns with Casselden (2019), who noted that credibility plays a crucial role in the acceptance of digital resources in academic libraries.

The complexity of using e-books also presents a challenge. Ease of use is a critical factor in the adoption of any new technology. If students and faculty find e-books difficult to navigate or manage, they are less likely to use them regularly. Veletsianos and Houlden (2020) emphasized that the simplicity and user-friendliness of digital tools are essential for their widespread acceptance and use in educational settings.

Affordability is another significant factor influencing the use of e-books. While digital books can be more cost-effective than traditional textbooks, the initial costs associated with accessing and using these resources, such as the need for reliable internet and compatible devices, can be a barrier for some students. Sari et al. (2022) highlighted that the financial aspect plays a crucial role in the adoption of e-books, especially in resource-constrained environments.

Policy Initiatives to Address Identified Weaknesses

Based on the identified weaknesses, several policy initiatives are proposed to enhance the utilization, awareness, and acceptability of UDM Library e-books:

Firstly, integrating electronic books into all programs, including specialized courses, is essential. By making e-books a mandatory resource across all academic programs, the university can ensure a uniform approach to digital learning and maximize the benefits of these resources. Secondly, incorporating e-books into course activities will encourage regular use among students. When e-books and other library resources are integral to course assignments and projects, students are more likely to engage with these materials and recognize their value in their academic work. Thirdly, adherence to copyright and licensing agreements is crucial. Ensuring that the use of e-book content complies with legal and ethical standards will maintain the integrity of the library's digital resources and protect intellectual property rights.

Restricting the use of e-books to academic purposes is also important. By limiting access to academic research and classroom instructions, the university can prevent the misuse of digital resources and ensure that they are available for educational purposes.

Additionally, monitoring and limiting excessive downloading of e-books will prevent abuse and ensure equitable access to resources. Implementing a system to track and control downloads can help maintain a fair distribution of digital materials among all students.

Finally, enforcing library policies is necessary to ensure compliance and maintain the quality of the library's digital services. The University Library should have the authority to suspend privileges and revoke accounts of patrons who violate these policies, thereby safeguarding the library's resources and promoting responsible use.

These policy initiatives aim to improve the utilization, awareness, and acceptability of e-books among the UDM academic community, thereby enhancing the overall educational experience and promoting the effective use of technological innovations.

Conclusions and Recommendations

Based on the study several important conclusions can be drawn regarding the utilization, awareness, and acceptability of e-books among students and faculty at Universidad De Manila.

The overall utilization of e-books in the UDM Library remains limited. Despite the availability of e-books, their use is not as widespread as expected. This limited usage can be attributed to various factors, including inadequate internet access on campus, insufficient data allowances for students and faculty, and the absence of an automated library system that integrates e-books seamlessly with other library services.

There is a moderate level of awareness among students and faculty regarding the availability of e-books. Many students and faculty members are aware of the existence of e-books and their accessibility through the UDMoodle, but this awareness does not necessarily translate into effective utilization. Challenges related to technological and infrastructural limitations hinder the effective use of these resources.

The acceptability of e-books among students and faculty is influenced by factors such as credibility, ease of use, and affordability. While there is a general acceptance of e-books as valuable resources, issues related to the credibility of e-book sources, the complexity of accessing e-books, and the cost associated with necessary technology (such as reliable internet access and compatible devices) hinder their widespread acceptance and use.

To address these identified weaknesses and enhance the utilization, awareness, and acceptability of e-books at the UDM Library, several recommendations are proposed.

Firstly, improving the internet infrastructure on campus is crucial. This includes providing reliable Wi-Fi services and increasing data allowances to facilitate seamless access to digital resources. By ensuring that students and faculty can access e-books without interruption, the overall utilization of e-books is likely to increase.

Developing an automated library system that integrates e-books with other library services is another essential step. This system should allow for easy access, searchability, and management of e-books, making it more convenient for users to find and utilize these resources.

Expanding the availability of e-books in specialized areas, including board-based courses, non-board-based courses, and technical vocational courses, is also recommended. Collaboration with faculty to identify and acquire e-books that are most relevant to their courses and disciplines will ensure that the e-book collection meets the needs of all users.

Promoting e-book awareness and training through workshops and training sessions is vital. Educating students and faculty about the benefits and usage of e-books, providing detailed guides and tutorials, and ensuring that all users are well-informed and capable of leveraging these resources effectively will enhance overall awareness and utilization.

Ensuring the credibility and quality of e-books is another important recommendation. Partnering with reputable publishers to ensure the credibility of e-books available in the library and highlighting this credibility will build trust among users and encourage greater acceptance of e-books as reliable academic resources.

Encouraging faculty to integrate e-books into their course assignments and activities will also promote the regular use of these resources. By making e-books a mandatory part of the curriculum, students will be more likely to engage with them regularly.

Implementing policies to monitor and regulate the usage of e-books is necessary to ensure that resources are used fairly and responsibly. Establishing guidelines to prevent excessive downloading and misuse of e-books will help maintain the availability of these resources for all users.

Finally, establishing a dedicated support team to assist students and faculty with any issues related to e-books will provide necessary technical support, answer queries, and offer guidance on how to make the most of the e-book resources available.

By implementing these recommendations, the UDM Library can enhance the utilization, awareness, and acceptability of e-books, ultimately supporting the academic success and engagement of students and faculty at Universidad De Manila.

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