



UNIVERSITI
TEKNOLOGI
MARA

JABT

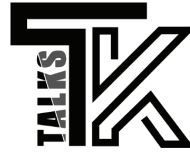
Jabatan Pengajaran
Alam Bina dan Teknologi



TALKS 2.0

THE ACCLAIMED LANDSCAPE OF KNOWLEDGE SHARING
"Harmony in Spaces : Blending Heritage, Nature and Design"

E-PROCEEDING



TALKS 2.0

THE ACCLAIMED LANDSCAPE OF KNOWLEDGE SHARING
"Harmony in Spaces : Blending Heritage, Nature and Design"

" Harmony in Spaces : Blending Heritage , Nature and Design "

ORGANISED BY

*College of Built Environment
Universiti Teknologi MARA Selangor Branch
Puncak Alam Campus*

CO-ORGANISED BY

*Department of Built Environment Studies and Technology
Universiti Teknologi MARA Perak Branch
Seri Iskandar Campus*

24 JANUARY 2024

© Unit Penerbitan UiTM Perak, 2024
e ISBN 978-967-2776-34-5



Unit Penerbitan UiTM Perak
(online)

All rights reserved. No part of this publication may be reproduced, copied, stored in any retrieval system or transmitted in any form or by any means; electronic, mechanical, photocopying, recording or otherwise; without permission on writing from the director of Unit Penerbitan UiTM Perak, Universiti Teknologi MARA, Perak Branch, 32610 Seri Iskandar Perak, Malaysia.

Cover Design : Muhammad Haziq
Typesetting : Syed Muhammad Abdul Hakim

ORGANISING COMMITTEE

Chairman 1: Assoc. Prof. Ts. Dr. Siti Rasidah Md Sakip

Chairman 2: Ts. Dr. Izham Abdul Ghani

MAIN SECRETARIAT

Project Leader : Alif Haikal Bin Azrul Azmi

Secretary : Siti Hajar Binti Bali

Treasurer : Nur Adibah Binti Shalehudin

Program Book Team: Nurul Syazhira Binti Abd Karim

Sharifah Puteri Sophia Binti Syed Faisal

Nurul Azmina Binti Husin

E-Proceeding : Syed Muhammad Abdul Hakim Bin Syed Alhadi
Muhammad

Haziq Bin Mazlan

ICT : Nurhidayah Binti Mohd Adnan

Muhammad Abid Luqman Binti Zalimie Sham

Promotion : Nura'mirah Binti Mat Ali

Syahadan Bin Patricit Sulaiman

Graphic Designer : Muhammad Fazri Bin Mohammad Zaini

Nur Syazlin Binti Ahmad

Nur Hanie Shameera Binti Hazalan

Photographer : Nor Auni Syafikah Binti Zaharum

Amru Al As Bin Iraman

MC : Andrea Angel Robert

Doa : Muhamad Afiq Daniel Bin Azahar

ASSESSING THE EFFICIENCY OF LANDSCAPE DESIGN IN PROMOTING BIODIVERSITY : A CASE STUDY OF THE CULTURAL HERITAGE LANDSCAPE IN PAPAN, PERAK

Andrea Angel Robert¹ & Wan Noor Anira Hj Wan Ali²

***Wan Noor Anira Hj Wan Ali**

*Department of Built Environment Studies and Technology,
College of Built Environment, Faculty of Architecture,
Planning and Surveying, Universiti Teknologi Mara,
Perak Branch, Seri Iskandar, 32610, MALAYSIA*

Andreaangel335@gmail.com1

ABSTRACT

Biological diversity underpins ecosystem functioning and the provision of ecosystem services essential for human well-being. As the world faces increasing environmental challenges, preserving both natural and cultural heritage has become paramount. This research investigates the role of intentional landscape design in balancing conservation efforts with the preservation of cultural heritage in Papan Perak. Therefore, this paper focuses on the importance of the unique blend of ecological and cultural values present in Papan, Perak. The methods used are mixed with quantitative and qualitative by employing an online questionnaire methodology to gather data for the study.

Keywords: Heritage, Preservation, Biodiversity, Tourism

INTRODUCTION

Culture plays an important role in our lives and shapes our experience. The role of culture in influencing landscape experience is obvious. The World Heritage category of cultural landscapes is particularly well-suited to presenting biodiversity as a joint natural-cultural product. By recognizing the cultural and spiritual relationships of people with nature and the intangible, socio-cultural dimension inherent to the conservation and sustainable use of biodiversity, it is possible to promote the conservation of both cultural and natural heritage.

According to Stillman (1976), the physical landscape, wherever it has been so changed by people as to make that change visually apparent is a direct cultural expression, even as a various arts and sciences...culture focuses in many ways, on the qualitative aspects of the interaction between people and people, people and nature, and people and landscape – the latter a product of interaction between people and nature.

Perak was the first state in the Malaysian Peninsula intervened by the British after the signing of Pangkor Treaty in 1874. Mamat & Abdul Aziz (2018). The town of Papan – or “plank” in Malay – in the Kinta district of Perak has been nominated as one of the Unesco’s World Heritage Sites. (The Star, 2020) Papan is one of the seven new villages in the peninsula that has been nominated by the International Council on Monuments and Sites Malaysia ICOMOS to UNESCO for world heritage status. (The Star, 2020) While cultural landscapes are inscribed as cultural World Heritage sites, they may possess significant natural values and reflect the cultural and spiritual relationships of people with nature.

This complementary relationship between World Heritage natural and cultural landscape sites exists in their shared aim to conserve the world’s Outstanding Universally Value heritage. Several objectives are set which the main objective of this study is to examine how well Papan's historical landscape supports biodiversity that should be preserved from the townscape's physical features as a possible asset for preserving urban biodiversity and boosting tourism related to cultural heritage.

This research endeavors to explore the multifaceted role of landscape design strategies in promoting biodiversity within cultural heritage landscape at Papan Perak. Despite the policy enforcement, the underlying

factor which caused the small town of Papan remain unaffected in terms of their physical layout was presumably due to their average economic expansion. Acknowledging so, they still bear the heritage value of old township formation despite facing serious threats arising from modern development pressure, urban dereliction and high deterioration rate (Mamat & Abdul Aziz, 2018).

SIGNIFICANCE OF STUDY

The significance of the study examining how well Papan's historical landscape supports biodiversity and its potential preservation as an asset for urban biodiversity and cultural heritage tourism is multifaceted and holds implications for environmental conservation, cultural appreciation, and economic development. Here are key points to highlight the significance of this study:

1.Cultural Heritage Preservation

Papan's historical landscape is a testament to the rich cultural history of the region. Preserving this landscape is essential for maintaining a tangible link to the past, allowing current and future generations to appreciate and connect with their cultural heritage.

2.Biodiversity Conservation

The study focuses on assessing biodiversity within Papan's historical landscape. The findings can contribute valuable insights into the coexistence of historical structures and diverse ecosystems. Identifying the specific physical features that support biodiversity aids in the formulation of targeted conservation strategies.

3.Urban Biodiversity Enhancement

Understanding how the physical features of Papan's townscape contribute to biodiversity offers an opportunity to integrate urban planning with ecological conservation. By preserving and enhancing these features, urban areas can become more sustainable, resilient, and ecologically friendly.

4.Tourism Development

The historical landscape can serve as a unique attraction for cultural heritage tourism. Preserving biodiversity within this context not only contributes to the authenticity of the tourist experience but also promotes sustainable tourism practices. Visitors drawn to the historical

landscape may become advocates for its preservation (Badariah Din, 2014)

LITERATURE REVIEW

Mainstreaming Biodiversity Conservation in Development Planning

Since Malaysia contributes significantly to the preservation of biodiversity worldwide, biodiversity conservation need to rank among the top issues for sustainable development. The expansion of civil society in Malaysia throughout the years has increased public understanding, acceptance, and support for the significance of biodiversity protection and sustainable development. This has led to the mainstreaming of the issues related to biodiversity in the formulation of national policies. The implementation of existing environmental related policies such as the National Policy on Biological Diversity 2016-2025, National Policy on the Environment 2016, National Wetlands Policy 2004, National Forestry Policy 1978 and more recently, the National Physical Plan 2005-2020, will ensure better management of biodiversity for future generations. (Malaysia. Ministry of Natural Resources and Environment, 2006)

The 1997 Assessment of Biological Diversity in Malaysia identified a number of issues that must be addressed before Malaysia can continue to preserve its natural heritage in a sustainable way. In particular, it would be necessary to rationalise the federal-state relationship concerning a number of issues, such as natural resource management and land management. (Malaysia Ministry of Natural Resources and Environment, 2006)

The Impact of Sustainable Tourism and Good Governance on Biodiversity Loss in Malaysia

The totality (numbers) and variety (types) of living species in the ecosystem, area, and environment are referred to as biodiversity, or biological diversity. Humans will eventually disappear if biodiversity is lost.

Previous study led by the Conservation International (CI), 2017 and United Nations Environment Programme on biodiversity conservation point

out that the tourism- related for loss of biodiversity can be due to:

- (i)habitat disruption due to the total landscape transformation for tourism development (infrastructure and facilities)
- (ii)depletion of scarce resources for the indigenous and local people (e.g. water and electricity consumption);
- (iii)problems associated with littering and water pollution; (Badariah Din, 2014)

For example, tourism tends to create an awareness that the country needs to be attractive, Over time, tourism has the potential to self-destruct if the right laws and incentives aren't put in place to lessen the damaging effects that its operations have on the environment. Over the past twenty years, the goal of national tourist strategies has been to achieve social and economic growth while preserving a nation's natural features. Concerning the idea of "sustainable tourism," it exhorts countries to use environmental resources as efficiently as possible for the growth of the tourist industry while preserving vital ecological processes and contributing to the preservation of biodiversity and natural heritage. Sustainable tourism, for instance, is defined as "tourism which is created and kept up in a way and on a scale that ensures its long-term viability and does not harm the ecosystem it lives in to the point that it makes it impossible for it to succeed creation of additional activities (Roblek et. al, 2021)

Biodiversity Conservation: Issue of Scales

In order to conserve biodiversity properly and effectively, the conservation of species and population of animals and plants as well as the protection of habitats and environment must be given high importance. There are differences in the ways of conservation. For instance endangered species may be bred in a zoo, a botanic garden, or in protection cages (ex situ conservation) for the conservation purpose. Conservation of the population can also be done in the original habitats (in situ conservation) (Naveh, 1994).

Ecology and taxonomy have played a significant influence in preserving the natural environment. Nevertheless, there is insufficient correlation between academic research and population genetics to give valuable insights into the preservation and safeguarding of living things. Why is landscape ecology unique? from the current ecology and using

traditional methods of application and classification to safeguard. The essence of landscape ecology is that it positively absorbs the achievement and technologies used in emerging academic disciplines like spatial ecology and modelling (Woodruff, 2001).

Furthermore, relations of the academic system with other academic fields can be explored in researches. That is why landscape ecology is considered worldwide as an important academic field. The followings are researches about biodiversity from the viewpoint of landscape ecology (Washitani, 1999).

- Understanding of general theology: the mechanism of existence and conservation of biodiversity is an important theme of research in landscape ecology.
- Research on the conservation of species, population, and communities of living things.
- Research on the habitats, the conservation of landscape, restoration, and management of landscapes.

Through these researches, landscape ecology makes an important turning point that changes the existing standard of evaluation on the value of nature from centering on biodiversity (Ro & Hong, 2008)

Balanced Synergy Between Humans and Biodiversity

Lands must be managed both to complement the biodiversity conservation goals of protected areas and to maintain the diverse communities of organisms, from microbes to mammals, that contribute to producing food, materials, clean water, and healthy soils; sequestering greenhouse gases; and buffering extreme weather events, functions that are essential for all life on Earth. (Kremen et. al, 2018)

There are numerous connections between biodiversity and human health; therefore, in addition to diversity itself, factors such as species distribution, abundance, and the size of natural habitats are important. Moreover, we consider not only the direct effects of biodiversity or its components on human health, but also the (indirect) effects that are due to biodiversity's role in supporting ecosystem processes and functioning. (Connecting Global Priorities: Biodiversity and Human Health A State of

Knowledge Review, 2015)

Further to Mace and colleagues (2012), we look at “biodiversity” in a broad sense, including not only species richness and the genetic diversity within species (“biodiversity, narrow sense”) but also the components of biodiversity (species and genotypes), and habitats and ecosystems. (Georgina et. al, 2012)

The participation of the public in environmental decision-making and management is increasingly seen as essential for the success of conservation initiatives. Ecological scientists and conservation practitioners have, however, argued that a lack of understanding of biodiversity issues by the public is a barrier to their effective participation in decision-making processes. These arguments are often based on studies where scientific knowledge is used as the sole measure of public understanding of biodiversity, and therefore fail to account for individuals’ constructs of biodiversity and related issues such as biodiversity management (Anke & Juliette, 2007)

Biodiversity Preservation and Cultural Heritage

The interaction between natural, archaeological and agricultural elements is evident in many historical sites. Biodiversity issues are rarely considered in archaeological conservation and vice versa (Cicinelli et al, 2018) Current socio- economic trends, favoring abandonment and industrialization and conservation policies, supporting and promoting renaturalization, are threatening the loss of critical heritage resources. However, while socio-economic trends are difficult to change, more attention should be placed in conservation strategies (Mauro et. al, 2014) Moreover, this raises issues of the nature of ‘Nature’ for example, and of how perceptions of ‘natural’ landscapes may be misleading. Indeed, the lack of understanding of how ecological systems and their biodiversity relate to the cultural nature of landscapes is hugely problematic.

The reality of landscape heritage is that much biodiversity relates to long-term, predictable, sustainable, traditional uses. When abrupt, dramatic, and frequently unanticipated changes occur, biodiversity drastically falls. With environments transformed by human activity, the eco-cultural

landscapes in traditional or customary management hold much of the most significant wildlife resources (Rotherham et. al, 2015) The termination of customary and traditional management, sometimes known as "cultural severance" (Rotherham, 2008), poses a greater medium-term threat to nature protection in the twenty-first century than climate change does.

METHODOLOGY

Procedure Methods

After gathering the data, the methodological approach to analyzing both quantitative and qualitative data via descriptive analysis will be pivotal in deriving meaningful insights regarding the effectiveness of landscape design in enhancing biodiversity.

In the research methodology, the deliberate organization of the online questionnaire into five distinct parts that serves as a strategic approach. Specifically, the initial four parts are meticulously designed to address quantitative dimensions, while the concluding section is explicitly structured for qualitative exploration. Data for this study was collected through an online questionnaire distributed to potential respondents. The online platform facilitated ease of access and ensured timely responses from participants. A total of 49 respondents has participated in the survey.

Quantitative Sections: These sections can assist in collecting numerical data that can be statistically examined. They most commonly feature closed-ended questions with structured response possibilities. This method is useful for gathering quantifiable and comparable data on a range of topics pertaining to biodiversity and landscape planning.

Qualitative Section: To get more detailed and complex information, the last segment devoted to qualitative inquiries is crucial. Inquiries with open-ended questions in this area allow participants to share their thoughts, perceptions, and experiences, providing important insights that may not be entirely captured by quantitative data.

Respondents of Study

The sample size indeed plays a pivotal role in the validity and reliability of research findings. By considering factors such as research design, methodology, population size, statistical considerations, and study objectives, researchers can optimize their sample size decisions. A well-calculated sample size enhances the study's ability to draw accurate conclusions, ensuring that the results are not only statistically sound but also applicable to the broader population from which the sample was drawn.

Population Size

Papan town has a small and well-defined population may necessitate a smaller sample size. This survey involves the locals in Papan and Pusing Town. As the population in Papan are very limited, the research had to expand the scope of findings to Pusing town which is near to Papan. As there are limitations of study findings, 42 respondents are from Pusing town. However, only 6 of the respondents are from Papan. A summary of sample-size recommendations for quantitative usability studies suggests that 40 participants is an appropriate number for most quantitative studies, but there are cases where fewer users can be recruited (Raluca Budiu & Kate Moran, 2021)

The Confidence Level and Margin of Error

Papan is a limited-population town, the town has a smaller sample size and determined by a higher confidence level with a tighter margin of error

Type of Research

The research type, being qualitative and quantitative, influences the required sample size.

Variability Within The Population

Limited variability in Papan results in a smaller sample size, as there are only a few identified races, with the Chinese being the most numerous. The study encompassed a diverse sample of participants, segmented based on their ethnic backgrounds. The distribution of respondents is as follows:

Chinese: 30 individuals

Malay: 9 individuals

Indian: 8 individuals
Others: 1 individual

Refer to figure 1.

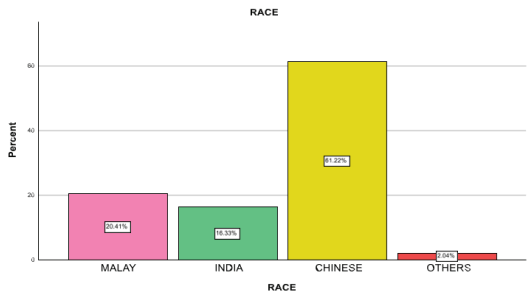


Figure 1. Race Bar Chart

Statistical Power

In the research survey for quantitative studies, due to the smaller sample size in the town, there is often lower statistical power.

Available Resources

In the research, determining the sample size is influenced by available resources. In Papan town, the limited population and significant communication barriers result in scarce information gathering.

Sampling Techniques

This research employs random sampling, convenience sampling and purposive/judgmental techniques to determine the appropriate sample size. In the research, a convenience sampling technique was utilized to gather information from the former village chief due to the accessibility and practicality of this approach for obtaining insights from Miss Leong. Information are collected from particular academic lecturers for the research, employing the judgmental sampling technique. These individuals possess expertise and experience in heritage conservation study making them valuable contributors to the research.

No	Name of Lecturers	Expertise	Academic Qualification		
			BSc	MSc	PhD

1	Expert 1	Landscape Sociology, Landscape and Plant Typology, Sustainable Cultural Landscape & Architecture	Bsc.HBP (Architecture) USM	MSc. Landscape Architecture, USM	PhD in Architecture, The University of Auckland, New Zealand
2	Expert 2	Urban Heritage, Park & Open Space	Bachelor (Hons) In Landscape Architecture	Masters in Landscape Studies (Heritage Conservation)	PhD candidate "Wetlands Conservation Management)

Figure 2. Academic Qualifications

Research Objectives

the specific research objective to evaluate Papan's historical landscape's role in biodiversity and cultural heritage tourism would guide the determination of an appropriate sample size, considering the study's breadth, depth, and methodological requirements.

Data Collection Process

Concerning the data collection process, the questionnaire's design is particularly commendable. It is specifically tailored to address the research objectives, which focus on evaluating how effectively Papan's historical landscape supports biodiversity. Additionally, it explores the potential of the town's physical features as valuable assets for conserving urban biodiversity.

Diversity in Participant Recruitment

In the research conducted, there is intentional diversity across age, race, educational background, professional titles, and age brackets. This intentional inclusivity results in capturing a broader spectrum of perspectives and experiences, enhancing our understanding of landscape design and biodiversity from various vantage points.

Reminder and Follow-Up

There is a strategy implementation of sending reminders to participants throughout the data collection period to motivate completion. This proactive approach aims to enhance response rates and ultimately contribute to a more comprehensive dataset.

Data Security and Confidentiality

The data collected via Google Forms is securely managed and handled

in strict compliance with data protection regulations. This encompasses robust measures to safeguard participant confidentiality and uphold data privacy standards.

Pilot Testing

In the research, prior to the official launch, it would be beneficial to conduct a pilot test with fellow classmates. This approach helps pinpoint any potential issues concerning the questionnaire's functionality or clarity, ensuring its effectiveness before broader dissemination.

Research Instruments

The research employed an online questionnaire methodology through WhatsApp to gather data for the study in a quantitative and qualitative form. In the contemporary landscape of research, the utilization of online methodologies has become increasingly prevalent. This study delves into assessing the efficiency of landscape design in promoting biodiversity in Papan perak with the aim of conserving the world's Outstanding Universally Value heritage.

Balancing Closed and Open-ended Questions

In the research instrument, the sections are designed with a mix of predominantly closed-ended questions complemented by open-ended questions. This balanced approach ensures a comprehensive data collection, capturing both specific responses and diverse insights from participants.

Pilot Testing

In the research instrument for pilot testing, the questionnaire is shared with fellow classmates for initial evaluation. This collaborative approach allows for feedback on clarity, relevance, and any potential improvements needed before broader distribution or full-scale implementation.

Consider Incentives

In the research, extending acknowledgments to academia lecturers, the former village chief, and the residents of Papan town can serve as a motivational factor, potentially boosting participation rates. Recognizing their contributions and involvement fosters a sense of value and appreciation, encouraging active engagement and collaboration in the study.

Data Comparison Analysis

This section compares and contrasts the two approaches, highlighting their respective strengths to the study's findings.

Quantitative Data Analysis

In the research, the strength of quantitative data analysis significantly contributes to a more robust understanding of the research question concerning the efficiency of landscape design in promoting biodiversity. By employing quantitative methods, we can systematically measure and analyze specific variables, facilitating clearer insights, patterns, and correlations that enhance our comprehension of the landscape's impact on biodiversity conservation.

Qualitative Data Analysis

In the research, the strength of qualitative data, gathered through open-ended questionnaires, lies in its ability to capture the depth, complexity, and richness of participants' perspectives and narratives concerning Papan. This approach facilitates a nuanced understanding of individual experiences, cultural nuances, and intricate details that quantitative methods may not fully encapsulate, thereby providing a comprehensive insight into the context and intricacies of the study area

RESULTS AND FINDINGS

Section A : Demographic

Valid	Frequency	Valid Percent
0 – 20 YEARS OLD	2	4.1
20 - 40 YEARS OLD	17	34.7
40 - 60 YEARS OLD	24	49.0
60 YEARS OLD AND ABOVE	6	12.2
TOTAL	49	100.0

Figure 3. Age Frequency Table

The age distribution of the 49 study participants is shown in the

frequency table (figure 3) under the age section. When looking at total percentages: 38.8% is the total percentage of participants under 40 years of age. When people aged 60 and beyond are taken into account, the cumulative proportion increases significantly to 87.8%. When all age groups are included, the data culminates in a cumulative percentage of 100%. This thorough analysis offers valuable information about the age distribution of the participants and lays the groundwork for understanding the makeup of the research study's sample.

Valid	Frequency	Valid Percent
MALE	24	49.0
FEMALE	25	51.0
TOTAL	49	100.0

Figure 4. Gender Frequency Table

The frequency table (figure 4) in the gender section looks at cumulative percentages. For men, the cumulative percentage is 49.0%. For females, the cumulative percentage is 100.0%. This analysis shows that the study's gender distribution was fairly balanced, with a slight majority of participants being female. In order to guarantee that a variety of viewpoints and experiences are taken into account in the research findings, such gender representation is essential.

Valid	Frequency	Valid Percent
MALAY	10	20.4
INDIA	8	16.3
CHINESE	20	61.2
OTHERS	1	2.0
TOTAL	49	100.0

Figure 5. Race Frequency Table

The racial makeup of the 49 participants is shown in (figure 5) in the race section. Malays are represented in the study by a total of 20.4%. When individuals from the Indian and Malay categories are included together, the total percentage increases to 36.7%. Ultimately, the cumulative percentage hits 100.0% when all racial categories are taken into account. This thorough analysis provides insights on the racial diversity of the study's participants, emphasizing the preponderance of the Chinese demography while also

recognizing the presence of other ethnic groupings.

Section B : Impacts of Landscape Design

Statistics			
		Does the landscape design contribute to heritage tourism in the village?	Does the landscape design gives positive impacts towards the cultural heritage preservation in Papan?
N	Valid	49	49
	Missing	0	0
Mean		3.88	3.84
Median		4.00	4.00
Mode		4	4
Std. Deviation		.992	1.264
Variance		.985	1.598
Sum		190	188

Figure 6. Statistics Table of Section B

Does the landscape design contribute to heritage tourism in the village?

Valid	Frequency	Valid Percent
Strongly Disagree	1	2.0
Disagree	6	12.2
Neutral	3	6.1
Agree	27	55.1
Strongly Agree	12	24.5
TOTAL	49	100.0

Figure 7. Frequency Table A

When looking at the cumulative insights of the frequency table (Figure 7) about the perception of whether landscape design contributes to historical tourism in the village, the cumulative percentage of respondents who agree or strongly agree is strikingly high, at 75.5% and 100.0%, respectively. On the other hand, the total number of people who disagree, strongly disagree, or are indifferent to the situation is 20.4%, 14.3%, and 2.0%, respectively. With the majority of respondents recognizing that landscape design has a beneficial impact on historical tourism in the village, this in- depth analysis offers a thorough grasp of the perceptions around this topic.

Does the landscape design gives positive impacts towards the cultural heritage preservation in Papan?

		Frequency	Valid Percent
Valid	Strongly Disagree	5	10.2
	Disagree	3	6.1
	Neutral	4	8.2
	Agree	20	40.8
	Strongly Agree	17	34.7
	Total	49	100.0

Figure 8. Frequency Table B

A total of 65.3% of respondents either agree or strongly agree that landscape design has a beneficial impact on the preservation of cultural heritage, according to the frequency table (Figure 8) on respondents' perceptions of this relationship. Conversely, 10.2% strongly disagree and 16.3% disagree, adding up to a cumulative total of 26.5% of those who hold dissenting opinions. 8.2% of respondents hold a neutral position on the issue. This analysis provides a thorough knowledge of the various viewpoints on how landscape design influences cultural heritage protection in Papan.

Descriptive Statistics			
	N	Mean	Std. Deviation
Does the landscape design contribute to heritage tourism in the village?	49	3.88	.992
Does the landscape design gives positive impacts towards the cultural heritage preservation in Papan?	49	3.84	1.264
Valid N (listwise)	49		

Figure 9. Descriptive Statistics of Section B

Section C : Preservation of cultural/historical landscape

Statistics			
		Do you agree that the landscape design contribute to the preservation of historical sites or structures in Papan?	The community has actively participated in maintaining and preserving the historical landscape.

N	Valid	49	49
	Missing	0	0
Mean		3.14	4.20
Median		3.00	5.00
Mode		3	5
Std. Deviation		.866	1.099
Variance		.750	1.207
Sum		154	206

Figure 10. Statistics table of Section C

Do you agree that the landscape design contribute to the preservation of historical sites or structure in Papan?

		Frequency	Valid Percent
Valid	Strongly Disagree	3	6.1
	Disagree	5	10.2
	Neutral	24	49.0
	Agree	16	32.7
	Strongly Agree	1	2.0
	Total	49	100.0

Figure 11. Frequency table C

The responses are divided into cumulative percentages to clarify the group viewpoints in the frequency table (Figure 11) about the perception of whether landscape design aids in the preservation of historical sites or structures in Papan. All all, 98.0% of respondents said they agreed or strongly agreed that landscape design helps to preserve historical buildings or places. On the other hand, the cumulative percentages of those who disagree, strongly disagree, and remain neutral are 2.0%, 16.3%, and 6.1%, respectively. This comprehensive assessment reveals a largely constructive feeling regarding the good influence of landscape design on maintaining historical aspects inside Papan.

The community has actively participated in maintaining and preserving the historical landscape			
		Frequency	Valid Percent
Valid	Strongly Disagree	3	6.1

	Disagree	1	2.0
	Neutral	4	8.2
	Agree	16	32.7
	Strongly Agree	25	51.0
	Total	49	100.0

Figure 12. Frequency table D

The responses are grouped with respect to the community's engagement in conserving and maintaining the historical landscape in the frequency table (Figure 12). The percentage of respondents who agree and strongly agree that the community plays an active role in preserving historical landscapes is an impressive 83.7%. On the other hand, the cumulative percentages of those who disagree, strongly disagree, and remain neutral are 16.3%, 8.2%, and 6.1%, respectively. This thorough analysis highlights a general consensus that highlights the community's proactive involvement in preserving and protecting the historical landscape.

Descriptive Statistics			
	N	Mean	Std. Deviation
Do you agree that the landscape design contribute to the preservation of historical sites or structures in Papan?	49	3.14	.866
The community has actively participated in maintaining and preserving the historical landscape.	49	4.20	1.099
Valid N (listwise)	49		

Figure 13. Descriptive Statistics of Section C

Overall, the descriptive statistics (Figure 13) provide insights into respondents' perceptions, showing a stronger consensus that the community actively participates in historical landscape preservation compared to the role of landscape design in the same context.

SECTION D : The Influence of Biodiversity

Statistics			
		Over time, there has been good changes in residents' overall health and well-being linked to biodiversity of Papan.	Does the biodiversity in Papan seen as a symbol that defines or represents the cultural identity of the people?
N	Valid	49	49
	Missing	0	0
Mean		3.80	3.92
Median		4.00	4.00
Mode		5	5
Std. Deviation		1.338	1.351
Variance		1.791	1.827
Sum		186	192

Figure 14. Statistics table of Section D

Over time, there has been good changes in residents' overall health and well-being linked to biodiversity of Papan.			
		Frequency	Valid Percent
Valid	Strongly Disagree	5	10.2
	Disagree	4	8.2
	Neutral	7	14.3
	Agree	13	26.5
	Strongly Agree	20	40.8
	Total	49	100.0

Figure 15. Frequency table E

The frequency table (Figure 15) shows how locals perceive changes in their general health and well-being over time in relation to Papan's biodiversity. Overall, 59.2% of respondents agreed or strongly agreed that Papan's biodiversity has a beneficial impact on people's health and well-being. On the other hand, 32.7% are neutral and 18.4% disagree or strongly disagree. This thorough analysis shows that the general consensus among locals is that Papan's biodiversity and advances in health and well-being throughout time are positively correlated.

Does the biodiversity in Papan seen as a symbol that defines or represents the cultural identity of the people?			
		Frequency	Valid Percent
Valid	Strongly Disagree	5	10.2
	Disagree	4	8.2
	Neutral	4	8.2
	Agree	13	26.5
	Strongly Agree	23	46.9
	Total	49	100.0

Figure 16. Frequency table F

Regarding whether the biodiversity of Papan is seen as a sign that characterises or defines the cultural identity of its inhabitants, the frequency chart (Figure 16) The cultural identity of Papan is embodied by its biodiversity, as agreed upon or strongly agreed about by a collective 53.1% of respondents. Conversely, the percentages of those who disagree, strongly disagree, and are indifferent are 46.9%, 18.4%, and 10.2%, respectively. The information confirms a common belief held by most participants, highlighting the cultural relevance of biodiversity in forming Papan's identity.

Descriptive Statistics			
	N	Mean	Std. Deviation
Over time, there has been good changes in residents' overall health and well-being linked to biodiversity of Papan.	49	3.80	1.338
Does the biodiversity in Papan seen as a symbol that defines or represents the cultural identity of the people?	49	3.92	1.351
Valid N (listwise)	49		

Figure 17. Descriptive Statistics of Section D

SECTION E : OPEN ENDED QUESTION

In your opinion, what role does the landscape design play in educating and raising awareness about the importance of biodiversity within the community?					
		Frequency	Percent	Valid Percent	Cumulative Percent

Valid	-	40	81.6	81.6	81.6
	-	1	2.0	2.0	83.7
	by celebrating cultural diversity and connecting people to their roots, landscape design fosters a sense of community pride and stewardship towards the environment.	1	2.0	2.0	85.7
	Cultural tradition inheritance	1	2.0	2.0	87.8
	Designing spaces for community events, workshops, and educational programs to promote community engagement that can allow people to share about biodiversity	1	2.0	2.0	89.8
	Establishing partnerships with local schools and educational institutions to encourage outdoor learning experiences	1	2.0	2.0	91.8
	Establishing partnerships with local schools and educational institutions to encourage outdoor learning experiences	1	2.0	2.0	91.8
	landscape and design help us to sustain healthy ecosystems and communities	1	2.0	2.0	93.9
	Landscape Design comprises of both art and science of particular area. In the context of papan, appraisal towards biodiversity is crucial since this historic oldtown is keeping a lot of history pertaining to biod , the living things in Papan. The simbiosis process is something to look at so that people will aware that neglecting one of the components in biod might give certain impact to the town. As for now, Landscape Architect should do an appraisal to these components of BioD in order to share the richness of existing of BioD with the general public. The data need to be shared with the public so that it will change the current perception of most general public to Hostoric Town of Papan.	1	2.0	2.0	95.9
	serves as a visible and tangible representation of biodiversity.	1	2.0	2.0	98.0
	visual representation	1	2.0	2.0	100.0
	Total	49	100.0	100.0	

--	--	--	--	--	--

Figure 18. Frequency table of Section E

In Figure 18, “By celebrating cultural diversity and connecting people to their roots, landscape design fosters a sense of community pride and stewardship towards the environment.” 1 respondent stated by celebrating cultural diversity and connecting people to their roots: the respondent, representing 2.0%, articulated a specific viewpoint. This respondent believes that landscape design plays a crucial role in fostering community pride and stewardship toward the environment by celebrating cultural diversity and connecting individuals to their heritage and roots. “Cultural tradition inheritance” 1 participant, which represents 2.0%, views the landscape design's role more specifically as a means for cultural tradition inheritance. “Designing spaces for community events, workshops, and educational programs to promote community engagement that can allow people to share about biodiversity” 1 respondent, representing 2.0%, perceives the role of landscape design as pivotal in facilitating community events, workshops, and educational initiatives. This approach promotes community engagement and provides platforms for individuals to share insights and knowledge about biodiversity. “schools and educational institutions to encourage outdoor learning experiences” A singular respondent, accounting for 2.0%, identified this as a method through which landscape design can play a role in fostering education and awareness about biodiversity within the community. “Landscape and design help us to sustain healthy ecosystems and communities” A singular respondent, representing 2.0%, believes that landscape design plays a pivotal role in sustaining healthy ecosystems and communities. “ Landscape Design comprises of both art and science of particular area. In the context of papan, appraisal towards biodiversity is crucial since this historic oldtown is keeping a lot of history pertaining to biod , the living things in Papan. The simbiosis process is something to look at so that people will aware that neglecting one of the components in biod might give certain impact to the town. As for now, Landscape Architect should do an appraisal to these components of BioD in order to share the richness of existing of BioD with the general public. The data need to be shared with the public so that it will change the current perception of most general public to Hostoric Town of Papan.” The single response (1 out of 49 respondents) indicates that landscape design is perceived as a blend of art and science specific to the Papan area. The narrative emphasizes

the importance of biodiversity appreciation in Papan, given its historical significance and the presence of various living organisms. It underscores the symbiotic relationship within biodiversity and the potential consequences of neglecting any component. The landscape architect's role is highlighted in appraising these biodiversity components, aiming to educate the general public about the richness and significance of Papan's biodiversity. Sharing this information with the public is seen as crucial to altering prevailing perceptions of Papan's historical town. "Serves as a visible and tangible representation of biodiversity" A single respondent, constituting 2.0%, believes that landscape design serves as a tangible representation, highlighting the importance of biodiversity within the community. "Visual representation" One respondent, accounting for 2.0%, believes that the primary role of landscape design in the community is to serve as a visual representation, emphasizing its potential in conveying the significance of biodiversity.

FINDINGS & DISCUSSIONS

In alignment with the research aim to conserve the world's Outstanding Universally Value heritage and the objective to examine Papan's historical landscape in relation to urban biodiversity preservation and cultural heritage tourism, the study uncovered significant insights.

•Historical Tourism and Landscape Design

A notable majority of respondents identified landscape design as a pivotal factor contributing to historical tourism in Papan. This finding reinforces the notion that preserving historical landscapes can amplify tourism, thereby supporting the conservation of Outstanding Universally Value heritage sites globally.

•Cultural Heritage Protection

The analysis elucidated diverse perspectives on landscape design's influence on cultural heritage protection within Papan. The positive sentiments underscore the potential of historical landscapes, like those in Papan, as invaluable assets for preserving cultural heritage and promoting global conservation efforts.

•Maintenance of Historical Aspects:

The constructive sentiment regarding landscape design's role in maintaining Papan's historical facets indicates that leveraging townscape's physical features can serve as a tangible asset for preserving urban biodiversity. Such preservation aligns with the broader objective of safeguarding Outstanding Universally Value heritage sites globally.

•Community Engagement and Preservation:

The research emphasized a collective commitment among Papan's community members to preserve and protect the historical landscape. This proactive involvement signifies a grassroots approach to conserving biodiversity and enhancing tourism, aligning with the aim to sustain world-renowned heritage sites.

•Biodiversity and Well-being:

The unanimous consensus linking Papan's biodiversity with advancements in health and well-being reinforces the intrinsic value of urban biodiversity. By recognizing the symbiotic relationship between biodiversity and cultural identity, Papan's historical landscape emerges as a model for urban areas aspiring to harmonize conservation efforts with tourism promotion.

•Cultural Identity and Biodiversity:

The research reaffirmed the cultural relevance of biodiversity in shaping Papan's identity, highlighting the interconnectedness of ecological diversity, cultural heritage, and tourism. Such insights underscore the global significance of preserving townscape features that support biodiversity, thereby contributing to the conservation of Outstanding Universally Value heritage sites

In summary, the results and discussions illuminate Papan's historical landscape's multifaceted role in supporting urban biodiversity preservation and cultural heritage tourism. By aligning with the research aim and objective, the findings emphasize the potential of leveraging historical landscapes as assets for global conservation efforts and sustainable tourism promotion.

CONCLUSION

In conclusion, this research has adeptly fulfilled its objective of assessing the efficacy of Papan's historical landscape in supporting biodiversity, with a particular focus on its townscape's physical features. Employing a rigorous blend of quantitative and qualitative methodologies, including a structured questionnaire, the study has unearthed invaluable insights concerning the nexus between Papan's urban environment, biodiversity conservation, and cultural heritage tourism.

The research underscores Papan's historical landscape as a pivotal asset for urban biodiversity conservation within the Malaysian context. Notably, the findings illuminate a robust correlation between the town's distinctive physical attributes and its capacity to nurture a myriad of ecosystems, accentuating its potential as a linchpin for ecological equilibrium and sustainable urban advancement.

Moreover, the study elucidates the synergistic relationship between biodiversity conservation and cultural heritage tourism in Papan. The town's rich historical landscape not only provides a sanctuary for diverse species but also serves as a compelling attraction for tourists keen on immersing themselves in Malaysia's vibrant cultural legacy. This dual-faceted value propels Papan as an exemplary model for Malaysian municipalities aspiring to seamlessly integrate urban development with environmental conservation and cultural heritage preservation.

By amalgamating quantitative metrics with qualitative narratives, the research enriches the collective understanding of policymakers, stakeholders, and urban planners in Malaysia. These insights are instrumental in shaping evidence-based strategies that prioritize biodiversity preservation while harnessing tourism potential linked to cultural heritage, thereby contributing significantly to national developmental agendas.

In essence, this research amplifies the imperative of valorizing and conserving Papan's historical landscape as a strategic asset within the Malaysian urban framework. Such endeavors are instrumental not only in fostering sustainable urban growth and biodiversity conservation but also in augmenting cultural heritage promotion, thereby enriching societal well-

being and governmental policy frameworks in Malaysia.

Future Research: Moving forward, subsequent research endeavors could delve deeper into elucidating the socio-economic implications of integrating biodiversity conservation with cultural heritage tourism within Malaysia's urban landscapes. Additionally, longitudinal studies examining the scalability of Papan's model to other Malaysian municipalities and evaluating its long-term sustainability would further augment the national body of knowledge. Furthermore, interdisciplinary research exploring innovative policy frameworks, technological interventions, and community engagement strategies could provide holistic solutions for harmonizing urban development with biodiversity conservation and cultural heritage preservation in Malaysia.

ACKNOWLEDGEMENT

First and foremost, I would like to express my deepest gratitude to my supervisor, Dr. Wan Noor Anira Hj Wan Ali, for her invaluable guidance, unwavering support, and constructive feedback throughout the entirety of this research journey. Her expertise and mentorship have been instrumental in shaping this study and guiding me towards its successful completion.

I am also profoundly thankful to Dr. Siti Rasidah Md Sakip for her insightful advice, encouragement, and continuous support throughout this academic endeavor. Her guidance has been pivotal in navigating the complexities of research methodology and analysis.

I extend my heartfelt appreciation to academia lecturers Dr. Huzeima Mohd Hussain and Madam Norasikin Binti Hassan for their willingness to participate in this study. Their valuable insights, expertise, and time spent in completing the survey have significantly enriched the depth and quality of this research, providing invaluable perspectives on Papan's historical landscape.

Lastly, to everyone who has contributed, directly or indirectly, to this research, I offer my deepest gratitude. Your collective efforts and support have been instrumental in bringing this research to fruition.

REFERENCES

- Anke Fischer, & Juliette C. Young. (2007). Understanding mental constructs of biodiversity: Implications for biodiversity management and conservation. *Biological Conservation*, 136(2), 271–282.
- Badariah Din, Muzafar Shah Habibullah, & W.C. Choo. (2014). *The Impact of Sustainable Tourism and Good Governance on Biodiversity Loss in Malaysia*. Universiti Utara Malaysia, 06010 UUM Sintok, Kedah, Malaysia.
- C. Kremen, & A. M. Merenlender. (2018). *Landscapes that work for biodiversity and people*. 362(6412).
- Connecting Global Priorities: Biodiversity and Human Health A State of Knowledge Review. (n.d.).
- E. Cicinelli, G. Salerno, & G. Caneva. (2018). *An assessment methodology to combine the preservation of biodiversity and cultural heritage: the San Vincenzo al Volturno historical site* (Molise, Italy). *Biodiversity and Conservation*, 27, 1073–1093.
- Georgina M. Mace, Ken Norris, & Alastair H. Fitter. (2012). Biodiversity and ecosystem services: a multilayered relationship. *Trends in Ecology & Evolution*, 27(1), 19–26.
- Ian D. Rotherham. (2015). Bio-cultural heritage and biodiversity: emerging paradigms in conservation and planning. *Biodiversity and Conservation*, 24, 3405–3429.
- Malaysia. Kementerian Sumber Asli dan Alam Sekitar. (2006). *Biodiversity in Malaysia. Conservation and Environmental Management Division (CEMD)*.
- Mamat, M. J., Firzan, M., & Aziz, A. (2018). Early Town Planning System Of Small Towns In Perak. In *Journal of the Malaysian Institute of Planners*, 16.
- Mauro Agnoletti. (2014). Rural landscape, nature conservation and culture: Some notes on research trends and management approaches from a (southern) European perspective. *Landscape and Urban Planning*,

Surat kami : 700-KPK (PRP.UP.1/20/1)

Tarikh : 20 Januari 2023

Prof. Madya Dr. Nur Hisham Ibrahim
Rektor
Universiti Teknologi MARA
Cawangan Perak



Tuan,

**PERMOHONAN KELULUSAN MEMUAT NAIK PENERBITAN UiTM CAWANGAN PERAK
MELALUI REPOSITORI INSTITUSI UiTM (IR)**

Perkara di atas adalah dirujuk.

2. Adalah dimaklumkan bahawa pihak kami ingin memohon kelulusan tuan untuk mengimbas (*digitize*) dan memuat naik semua jenis penerbitan di bawah UiTM Cawangan Perak melalui Repositori Institusi UiTM, PTAR.

3. Tujuan permohonan ini adalah bagi membolehkan akses yang lebih meluas oleh pengguna perpustakaan terhadap semua maklumat yang terkandung di dalam penerbitan melalui laman Web PTAR UiTM Cawangan Perak.

Kelulusan daripada pihak tuan dalam perkara ini amat dihargai.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

SITI BASRIYAH SHAIK BAHARUDIN
Timbalan Ketua Pustakawan

nar

Setuju.

27.1.2023

PROF. MADYA DR. NUR HISHAM IBRAHIM
REKTOR
UNIVERSITI TEKNOLOGI MARA
CAWANGAN PERAK
KAMPUS SERI ISKANDAR

126, 66–73.

Plus, S. (2020). *Papan nominated for Unesco World Heritage status*. 1–1.

Roblek, V., Drpić, D., Meško, M., & Miložica, V. (2021). Evolution of sustainable tourism concepts. *In Sustainability (Switzerland)*. 13(22). MDPI. <https://doi.org/10.3390/su132212829>.

Woodruff, D. S. (2001). *Populations, Species, and Conservation Genetics* (Simon Asher Levin, Ed.). National Library of Medicine .

Raluca Budiu, & Kate Moran. (2021). *How Many Participants for Quantitative Usability Studies: A Summary of Sample-Size Recommendations*.