

**ASSESSING THE CARRYING CAPACITY OF THE EMERGING
ECOTOURISM DESTINATIONS IN PANTABANGAN, NUEVA ECIJA**

BACUY, JOYCE B.

PALLARCA, JOHN CARLOS L.

PITOS, GLYDEL FAITH A.

TIBURCIO, ELAINE

An Undergraduate Thesis Submitted to the Faculty of the Department of Hospitality and
Tourism Management, College of Home Science and Industry, Central Luzon State
University, Science City of Munoz, Nueva Ecija, Philippines

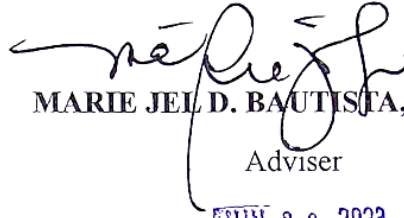
In Partial Fulfillment of the Requirements for the Degree of

BACHELOR OF SCIENCE IN TOURISM MANAGEMENT

JUNE 2023

APPROVAL SHEET

This undergraduate thesis entitled “ASSESSING THE CARRYING CAPACITY OF THE EMERGING ECOTOURISM DESTINATIONS IN PANTABANGAN, NUEVA ECIJA” prepared and submitted by **JOYCE B. BACCOY, JOHN CARLOS L. PALLARCA, GLYDEL FAITH A. PITOS and ELAINE TIBURCIO**, in partial fulfillment of the requirements for the degree of **BACHELOR OF SCIENCE IN TOURISM MANAGEMENT**, is hereby accepted:

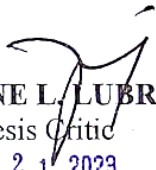


MARIE JEL D. BAUTISTA, DBAHTM

Adviser

JUN 20 2023

Date Signed



JENNYLYNNE L. LUBRIN, MBA

Thesis Critic

JUN 21 2023

Date Signed



JOMERICK F. DOMINGO, MSHTM

Thesis Critic

JUN 21 2023

Date Signed



CELYRAH B. CASTILLO, DHM

Thesis Critic

JUN 21 2023

Date Signed

Accepted at partial fulfillment of the requirements for the degree of **BACHELOR OF SCIENCE IN TOURISM MANAGEMENT**



CELYRAH B. CASTILLO, DHM

Chair, Department of Hospitality and Tourism Management

JUN 21 2023

Date Signed



JUDITH P. ANTONINO, Ph.D.

Dean, College of Home Science and Industry

Date Signed

BIOGRAPHICAL SKETCH

Ms. Joyce B. Bacoy, the primary author of this work, was born on September 17, 2000, and currently resides in Brgy. Lubong Umingan, Pangasinan. She is the third child of Mr. Benito L. Bacoy and Mrs. Grace B. Bacoy. Ms. Bacoy completed her primary education at Pemienta Elementary School in 2013 and subsequently graduated from Umingan Central National High School in 2019. She is presently pursuing a Bachelor's Degree in Tourism Management at Central Luzon State University. Additionally, she holds three National Certificates from the Technical Education and Skills Development Authority (TESDA), namely an NCIII in Event Management, an NCIII in Front Office Services, and an NCII in Services for Promoting Tourism.

Mr. John Carlos L. Pallarca, the second author of this work, was born on September 9, 2000, and currently resides in Sitio Sanggalang, San Francisco, San Antonio, Nueva Ecija. He is the eldest son of Mr. Conrado C. Pallarca and Mrs. Esterlita L. Lejano. Mr. Pallarca completed his primary education at Sanggalang Elementary School in 2013 and subsequently finished his secondary education and senior high school at Batitang National High School in 2019. Currently, he is pursuing a Bachelor's Degree in Tourism Management at Central Luzon State University. Furthermore, he possesses three National Certificates from the Technical Education and Skills Development Authority (TESDA), specifically an NCIII in Event Management, an NCIII in Front Office Services, and an NCIII in Tourism Promotion Services.

Ms. Glydel Faith A. Pitos, the third author of this work, was born on May 26, 1998. She hails from Brgy. Calaanan, Bongabon, Nueva Ecija, and is the youngest daughter of Mr.

Juanito A. Pitos and Mrs. Luisita A. Pitos. Ms. Pitos completed her primary education at Calaanan Elementary School in 2010–2011, followed by her secondary education at Macabaclay National High School in 2015. She is currently pursuing a Bachelor's Degree in Tourism Management at Central Luzon State University. In addition, she has acquired three National Certificates from the Technical Education and Skills Development Authority (TESDA), including an NCIII in Event Management, an NCIII in Front Office Services, and an NCII in Tourism Promotion Services.

Ms. Elaine Tiburcio, the fourth author of this work, was born on June 14, 2001, and currently resides in Brgy. Inanama Llanera, Nueva Ecija. She is the eldest daughter of Mr. Allen P. Abad and Ms. Mariane G. Tiburcio. Ms. Tiburcio completed her primary education at Llanera Central School in 2013 and subsequently finished her secondary education and senior high school at Llanera National High School in 2019. Currently, she is pursuing a bachelor's degree in the Department of Hospitality and Tourism Management at Central Luzon State University. Moreover, she holds three National Certificates from the Technical Education and Skills Development Authority (TESDA), namely an NCIII in Event Management, an NCIII in Front Office Services, and an NCII in Tourism Promotion Services.

ACKNOWLEDGEMENT

As we embark on this new chapter of our lives and advance in our careers, we would like to express our utmost appreciation and profound gratitude to those who have been unwavering in their support. They have provided us with strength, hope, inspiration, and warmth throughout this journey, and we are sincerely grateful.

First and foremost, we extend our heartfelt thanks to our families for being our rock-solid support system. To Mr. John Carlos Pallarca's family, including her mother, Mrs. Esterlita Lejano; his siblings, Ms. Catherine Pallarca and Mr. Chester Pallarca; and Ms. Glydel Faith Pitos' parents, Mr. Juanito Pitos and Mrs. Luisita Pitos. Ms. Pitos; Ms. Elaine Tiburcio's parents, Mr. Allen Abad and Ms. Mariane Tiburcio; and Ms. Joyce Bacoy's parents, Mr. Benito Bacoy and Mrs. Grace Bacoy Your words of encouragement during challenging times, unwavering love, and constant support have been invaluable. We are deeply grateful for your understanding and support throughout the completion of our thesis.

To our thesis adviser, Dr. Marie Jel D. Bautista, we extend our profound gratitude for sharing your expertise and providing us with invaluable guidance. We are truly grateful to have had you as our advisor, and we will always remember the knowledge we gained from you and the support you provided, especially during the most difficult moments. Thank you for your thoughtful guidance and assistance in shaping our final paper.

We also express our sincere appreciation to our thesis critics, Ms. Jennylyne L. Lubrin and Mr. Jomerick F. Domingo, for leading us in our thesis journey and sharing your expertise with us, enabling our growth and progress. Your contributions have been instrumental, and we are deeply grateful.

To our Department Chair, Ms. Celyrah B. Castillo, we extend our heartfelt thanks for your words of encouragement. You have served as an inspiration as we strive to achieve our future goals.

To our respected Dean, Dr. Judith P. Antonino, it has been an honor to be hospitality students under your esteemed administration. Our journey would not have been complete without your guidance and support. From the moment we entered the university until the culmination of the academic year, we appreciated your warm welcome and unwavering commitment to our education.

For our beloved university, it has been a challenging yet immensely rewarding journey. The difficulties, experiences, and lessons learned have been invaluable, and we are profoundly grateful to Central Luzon State University for equipping and guiding us towards our desired professions. Thank you for providing us with a nurturing academic environment.

Lastly, we acknowledge the unwavering strength we draw from the almighty God. We are deeply grateful for the continuous help, guidance, and blessings bestowed upon us. Your unconditional love and support are immeasurable, and we shall forever sing your praises.

**J.C. L. PALLARCA
G.F. A. PITOS
E. TIBURCIO
J.B. BACCOY**

TABLE OF CONTENTS

	PAGE
APPROVAL SHEET	ii
LIST OF TABLES	viii
LIST OF FIGURES	ix
LIST OF APPENDICES	x
ABSTRACT	xi
INTRODUCTION	
Background of the Study	1
Statement of the Problem	6
Objective of the Study	6
Significance of the Study	7
Scope and Limitation of the Study	9
Conceptual Framework	9
Operational Definition of Terms	10
REVIEW OF RELATED LITERATURE	
Carrying Capacity	13
Ecotourism	14
Environmental Impacts of Tourism	15
Responsible Tourism	15
Overtourism	17
Tourism Carrying Capacity	18
Research Gap	20
METHODOLOGY	
Research Design	22
Respondents	22
Sampling	23
Instrumentation	23
Data Gathering Procedures	24
Data Analysis	24
Ethical Consideration	26
RESULTS AND DISCUSSION	29
SUMMARY, CONCLUSION, AND RECOMMENDATION	
Summary	41
Conclusion	43
Recommendations	44
APPENDICES	51

LIST OF TABLES

TABLE		PAGE
1	Research Gap	20
2	Computation of carrying capacity of Farm Ridge by Desmond Farm using BCCMM	29
3	Computation of carrying capacity of Lake Farm de la Marre using BCCMM	33
4	Computation of carrying capacity of Montana Del Sol using BCCMM	37

LIST OF FIGURE

FIGURE		PAGE
1	Conceptual Framework	9

LIST OF APPENDICES

APPENDIX		PAGE
1	Interview Questionnaire	51
2	Research Informed Consent	53
3	Sample Interview Questionnaire	57
4	Ethical Review Certificate	59
5	English Critique Certificate	60
6	Documentation	61
7	Plagiarism Scan Result	64

ABSTRACT

BACCOY, JOYCE B., PALLARCA JOHN CARLOS L., PITOS, GLYDEL FAITH A., TIBURCIO, ELAINE., Department of Hospitality and Tourism Management, College of Home Science and Industry, Central Luzon State University, Science City of Munoz, Nueva Ecija, Philippines, **ASSESSING THE CARRYING CAPACITY OF THE EMERGING ECOTOURISM DESTINATION IN PANTABANGAN, NUEVA ECIJA**

Adviser: MARIE JEL D. BAUTISTA, DBAHTM

Appropriate carrying capacity could regulate the number of visitors to a particular ecotourism destination so that it does not negatively impact the environment and improves both the level of visitor satisfaction and the sociocultural norms of the local community. Once under control, the ecotourism destination will be conserved and sustainable. Thus, this research assessed the carrying capacity of emerging ecotourism destinations in Pantabangan, Nueva Ecija: Farm Ridge by Desmond Farm, Lake Farm de la Marre, and Montana del Sol. Utilizing Boullon's Carrying Capacity Mathematical Model (BCCMM), findings revealed the optimal visitor limits for each destination: Farm Ridge by Desmond Farm's sustainable practices have shown its carrying capacity of a 120-visitor restriction, whereas the BCCMM proposes 109. Lake Farm de la Marre allows 120 people on weekdays and more on weekends, while the BCCMM suggests 431. Montana del Sol had 200 peak-season tourists, while the BCCMM computed 215 daily visitors. This information can help stakeholders prioritize sustainable practices, tourist enjoyment, and natural resource protection.

Keywords: Carrying Capacity, Ecotourism, Bouillon's Carrying Capacity Mathematical Model, Sustainable Development, Overtourism

REFERENCES

- Aileen Y. Vigilia, 2020 Assessment of Tourism industry in Nueva Ecija
- Anderson, R. (2019). Enhancing visitor education and outreach strategies for ecotourism destinations. *Journal of Sustainable Tourism*, 50(2), 456-472. <https://doi.org/10.1080/02508281.2018.1549081>
- Bramwell, B., B. Lane, S. McCabe, J. Mosedale, and C. Scarles. 2008. "Research Perspectives on Responsible Tourism." *Journal of Sustainable Tourism* 16 (3): 253–257. doi:10.1080/09669580802208201.
- Burrai, E., D. M. Buda, and D. Stanford. 2019. "Rethinking the Ideology of Responsible Tourism." *Journal of Sustainable Tourism* 27 (7): 992–1007. doi:10.1080/09669582.2019.1578365
- Butler, R. 2015. "Sustainable Tourism – The Undefined and Unachievable Pursued by the Unrealistic." In *Challenges in Tourism Research*, 234–241. Bristol: Channel View Publications
- Byron, C.J., & Costa-Pierce, B., 2013. Carrying capacity tools for use in the implementation of an ecosystems approach to aquaculture.
- Calanog, L.A. 2015. A Manual on Computing Carrying Capacity of Ecotourism Sites in Protected Areas. Ecosystems Research and Development Bureau, Department of Environment and Natural Resources, College, Laguna, Philippines.
- Caruana, R., S. Glozer, A. Crane, and S. McCabe. 2014. "Tourists' Accounts of Responsible Tourism." <https://www.semanticscholar.org/paper/Tourists'-accounts-of-responsible-tourism-Caruana-Glozer/139af181556f47f03407f0ced9ab3847409e1ad1>
- Castellani et al., A new method for tourism carrying capacity assessment, 2012. https://www.researchgate.net/publication/271435656_A_new_method_for_tourism_carrying_capacity_assessment
- Cater, Carl and Cater, Erlet. 2015. Ecotourism. *International Encyclopedia of the Social & Behavioral Sciences*
- Chougule, Bhakti. 2011. Environmental Carrying Capacity and Ecotourism Development. *Tourism, Introduction Development, Modern For, Ideology*
- Chettiparamb, A., and J. Kokkranikal. 2012. "Responsible Tourism and Sustainability: The Case of Kumarakom in Kerala, India." *Journal of Policy Research in Tourism, Leisure, and Events* 4 (3): 302–326. doi:10.1080/19407963.2012.711088.
- Creswell JW. *Research design: qualitative, quantitative, and mixed methods approach*. 4th ed. Thousand Oaks, CA: SAGE; 2014.
- Creswell, J., & Plano Clark, V. (2018). *Designing and conducting mixed methods research*, (3rd ed.,). Thousand Oaks: Sage.
- Dodds, R., S. R. Graci, and M. Holmes. 2010. "Does the Tourist Care? A Comparison of Tourists in Koh Phi Phi, Thailand and Gili Trawangan, Indonesia." *Journal of Sustainable Tourism* 18 (2): 207–222. (In press). doi: 10.1016/j.jik.2019.12.002
- Evren, S., and N. Kozak. 2018. "Competitive Positioning of Winter Tourism Destinations: A Comparative Analysis of Demand and Supply Sides perspectives—Cases from Turkey." *Journal of Destination Marketing & Management* 9: 247–257. doi: 10.1016/j.jdmm.2018.01.009

- Faiz S. A and Komalasari R.I., 2020. The assessment of tourism carrying capacity in Lombok Island
- Frey, N., and R. George. 2010. "Responsible Tourism Management: The Missing Link between Business Owners' Attitudes and Behaviour in the Cape Town Tourism Industry." *Tourism Management* 31 (5): 621–628. doi: 10.1016/j.tourman.2009.06.017
- Gerald T. Eduarte et al. 2021 Determination of Carrying Capacity Estimates of Ecotourism Attractions in the Quezon Protected Landscape, the Philippines
- Goodwin, H., and J. Francis. 2003. "Ethical and Responsible Tourism: Consumer Trends in the UK." *Journal of Vacation Marketing* 9 (3): 271–284. doi:10.1177/135676670300900306
- Gonson, C., Pelletier, D., & Alban, F. (2018). Social carrying capacity assessment from questionnaire and counts survey: Insights for recreational settings management in coastal areas. *Marine Policy*, 98, 146-157.
- Gonzalez, V. M., Coromina, L., & Gali, N. (2018). Overtourism: residents' perceptions of tourism impact as an indicator of resident social carrying capacity-case study of a Spanish heritage town. *Tourism Review*.
- Gössling, S., Scott, D., & Hall, C.M. (2020). Pandemics, tourism, and global change: a rapid assessment of COVID-19. *Journal of Sustainable Tourism*, 29, 1 - 20.
- Gössling, S., Scott, D., & Hall, C. M. (2020). *Tourism and Water* (2nd ed.). Channel View Publications.
- Higgins-Desbiolles, F., S. Carnicelli, C. Krolkowski, G. Wijesinghe, and K. Boluk. 2019. "Degrowing Tourism: Rethinking Tourism." *Journal of Sustainable Tourism* 27 (12): 1926–1944. doi:10.1080/09669582.2019.1601732.
- Holling, C.S., Resilience and stability of ecological systems. *Annual Review of Ecology and Systematics*, 2015
- IvyPanda. (2019, April 8). Carrying capacity in relation to a tourist destination. <https://ivypanda.com/essays/carrying-capacity-in-relation-to-a-tourist-destination/>
- Jangra, Ravinder and Kaushik, S.P. (2017) "Assessment of Physical Carrying Capacity for Managing Sustainability at Religious Tourist Destinations," *International Journal of Religious Tourism and Pilgrimage: Vol. 5: Iss. 1, Article 5*. doi: <https://doi.org/10.21427/D72X4N>
- Johnson, S., & Liu, A. (2018). Overtourism: A review of its impacts and possible solutions. *Sustainability*, 10(12),
- Koens, K., Postma, A., & Papp, B. (2018). Is overtourism overused? Understanding the impact of tourism in a city context. *Sustainability*, 10(12), 4384.
- Marsiglio, S. (2017). On the carrying capacity and the optimal number of visitors in tourism destinations. *Tourism Economics*, 23(3), 632-646.
- Mathew, P. V., and S. Sreejesh. 2017. "Impact of Responsible Tourism on Destination Sustainability and Quality of Life of Community in Tourism Destinations." *Journal of Hospitality and Tourism Management* 31: 83–89. doi: 10.1016/j.jhtm.2016.10.001.
- McKinsey & Company, & World Travel & Tourism Council. (2017). Coping with success: Managing overcrowding in tourism destination. Retrieved from <https://www.wttc.org/-/media/files/reports/policy-research/copingwith-success---managing-overcrowding-in-tourism-destinations-2017.pdf>
- Mihalic, T. 2016. "Sustainable-responsible Tourism discourse–Towards 'Responsustainable' Tourism." *Journal of Cleaner Production* 111: 461–470. doi: 10.1016/j.jclepro.2014.12.062

- Mody, M., J. Day, S. Sydnor, W. Jaffe, and X. Lehto. 2014. "The Different Shades of Responsibility: Examining Domestic and International Travelers' Motivations for Responsible Tourism in India." *Tourism Management Perspectives* 12: 113–124. doi: 10.1016/j.tmp.2014.09.008.
- Mondal, S., and K. Samaddar. 2020. "Issues and Challenges in Implementing Sharing Economy in Tourism: A Triangulation Study." *Management of Environmental Quality ahead-of-print No. aheadof-print*. doi:10.1108/MEQ-03-2020-0054.
- Pilapil-Añasco, C., & Lizada, J. C. (2014). Philippine tourism: Evolution towards sustainability. In *SHS Web of Conferences* (Vol. 12, p. 01032). EDP Sciences.
- Nghi, T., Lan, N., Thai, N., Mai, D. and Thanh, D. (2007), Tourism carrying capacity assessment for PhongNha-KeBang and DongHoi, QuangBinh Province. *VNU JOURNAL OF SCIENCE, EARTH SCIENCES*, 23: 80-87.
- Plano Clark, V.L., Foote, L. A. & Walton, J. B. (2018). Intersecting Mixed Methods and Case Study Research: Design Possibilities and Challenges. *International Journal of Multiple Research Approaches*, 10 (1), 14–29.
- Prideaux, B., Thompson, M., & Pabel, A. (2020). Lessons from COVID-19 can prepare global tourism for the economic transformation needed to combat climate change. *Tourism Geographies*. <https://doi.org/10.1080/14616688.2020.1762117>
- Richards, G., & Morrill, W. (2020). The impact and future implications of COVID-19 in the youth travel sector (ATLAS Review, vol. 2020-2). Amsterdam: WYSE Travel Confederation.
- Richards, G. (2002). Tourism attraction systems. *Annals of Tourism Research*, 29(4), 1048–1064. doi:10.1016/s0160-7383(02)00026-9
- Robinson KA, Akinyede O, Dutta T, et al. Framework for Determining Research Gaps During Systematic Review: Evaluation [Internet]. Rockville (MD): Agency for Healthcare Research and Quality (US); 2013 Feb. Introduction. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK126702/>
- Ross, B.D., Rosin, L., Thomae, A.W., Hiatt, M.A., Vermaak, D., de la Cruz, A.F., Imhof, A., Mellone, B.G., Malik, H.S. (2013). Stepwise evolution of essential centromere function in a Drosophila neogene. *Science* 340(6137): 1211–1214.
- Santapa, V. (2022), Emerging Destinations: Challenges of Developing Tourism.
- Saveriades, A. (2000). Establishing the social tourism carrying capacity for the tourist resorts of the east coast of the Republic of Cyprus. *Tourism Management*, 21(2), 147-156.
- Sayan MS, Atik M. 2011. *Recreation carrying capacity estimates for protected areas: a study of Termessos National Park*. *Ekoloji* 20(78): 66–74.
- Stanford, D. 2008. "“Exceptional Visitors’: Dimensions of Tourist Responsibility in the Context of New Zealand.” *Journal of Sustainable Tourism* 16 (3): 258–275. doi:10.1080/09669580802154082
- Stern PC. Information, incentives, and pro-environmental consumer behavior. *Journal of Consumer Policy* 22 (2014): 461-478.
- Van der Merwe, M., and A. Wocke. 2007. "An Investigation into Responsible Tourism Practices in the South African Hotel Industry." *South Africa Journal of Business Management* 38 (2): 1–5. doi:10.4102/sajbm. v38i2.579
- Velasco-Allones, M. A. C., et al. (2022, March 1). Tourism Awakens: It's More Fun with You. TPB Spotlight. <https://www.tpb.gov.ph/wp-content/uploads/2022/04/SPOTLIGHT-22-Q1-v4.pdf>
- Wang, J., Huang, X., Gong, Z., Cao, K., 2020. Dynamic assessment of tourism carrying capacity and its impacts on

- tourism economic growth in urban tourism destinations in China. *J. Dest. Mark. Manag.* 15, 100383.
- WTO, Global code of ethics for tourism. Proc. of Thirteenth session of General Assembly: Santiago, Chile, 2013.
- Zacarias, D.A., Williams, A.T., Newton, A., 2011. Recreation carrying capacity estimations to support beach management at Praia de Faro, Portugal. *Appl. Geogr.* 31, 1075–1081.
- Zhang, L.-Y., Chung, S.-s., Qiu, J.-W., 2016. Ecological carrying capacity assessment of diving site: a case study of Mabul Island, Malaysia. *J. Environ. Manag.* 183 (1), 253–259.