



**“National Research Roadmaps: Addressing Today’s
Problems, Trailblazing the Future of Communities”**

**BOOK OF
ABSTRACTS**



“NCAAS: National Conference on Agriculture and Allied Sciences”
is published by the Research, Extension, Production and Development Office,
Bulacan Agricultural State College, Pinaod, San Ildefonso, Bulacan 3010 Philippines.

✉ ncaas.basc@gmail.com

✉ repd@basc.edu.ph

1st National Conference on Agriculture and Allied Science (NCAAS) 2025

**“National Research Roadmaps: Addressing Today’s Problems,
Trailblazing the Future of Communities”**

Bulacan Agricultural State College (onsite) • Zoom (online)

July 4, 2025 • Hybrid Conference

BOOK OF ABSTRACTS

1st National Conference on Agriculture and Allied Sciences

A Proposal

I. Descriptive Summary

Title:	1st National Conference on Agriculture and Allied Sciences
Target Participants:	Researchers, Scientists, Extension Workers, Trainers, Stakeholders
Implementing Agency:	Bulacan Agricultural State College
Date:	July 3, 2025
Venue:	Bulacan Agricultural State College - Farmer's Training Center
Lead Office:	Research, Extension, Production and Development Office

II. Rationale

Research and development (R&D) is a crucial component for many organizations around the world and plays an essential role in the economic growth of nations. Its success largely depends on how effectively a country uses its resources to boost productivity and improve the production of goods and services. These resources include labor, human skills, capital, land, and natural resources, with key productivity drivers being technology, research, and development. In the Philippines, higher education institutions (HEIs) align with the national government's goal to improve R&D outcomes. Through the Commission on Higher Education (CHED), HEIs, including state universities and colleges (SUCs), have responded in various ways to strengthen research efforts. One such response is the institutionalization of faculty engagement in research, development, and extension (RDE) activities, making it a core mandate for chartered HEIs.

Building on the success of previous 1st BASC National Research and Development Conference (NRDC), the newly renamed National Conference on Agriculture and Allied Sciences (NCAAS) aims to establish BASC's brand as one of the leading institutions in conducting impactful conferences. This initiative, led by the BASC Research, Extension, Production, and Development Office, will feature completed research from participating researchers across various SUCs and other agencies. By providing a platform for these findings to be presented, the conference will not only contribute to the advancement of research and development in the country but also align with BASC's commitment to enhancing the national agricultural research landscape. Additionally, this conference is closely linked to the Southeast Asian Journal of Agriculture and Allied Sciences, our Research Journal, further solidifying BASC's role in fostering research excellence in the region.

Thereafter, this activity is intended to be an annual event which aims to showcase various research outputs in the multitude of disciplines, i.e., Agriculture, Fishery, Environment and Natural Resources, Education, Business, Governance and the Social

Sciences, while further subjecting research findings to evaluation by field experts for the purpose of improving the scientific papers.

Moreover, this multi-disciplinary National Conference can potentially create a venue for the exchanges of valuable insights necessary for the production of scientifically sound research outputs of researchers, from which extension and production opportunities may result through knowledge development to technology transfer channel.

Furthermore, this endeavor can also serve as an avenue for researchers to enhance their competence and gain credits as well, and for beginners in the field of research to gain robust motivation in engaging more in this area.

III. Objective

The 1st National Conference on Agriculture and Allied Sciences (NCAAS) generally aim to offer researchers a forum for disseminating their research outputs to a worldwide audience.

Specifically, this National Conference seeks to:

- a. evaluate completed R&D projects in the fields of Agriculture and Fisheries, Environment and Natural Resources, Governance and Management, Engineering and Information Technology, Business and Entrepreneurship, Education and the Social Sciences;
- b. create an avenue for researchers to meet and establish possible collaborations with other researchers from other countries;
- c. offer a venue for exchanging new knowledge and research results/findings among researchers; and
- d. establish partnership with fellow universities in the country in the area of knowledge development and dissemination.

IV. Description of the Event

The 1st NCAAS, a multi-disciplinary research forum, will be a one-day event that will provide a valuable experience for researchers to present their completed research, development and extension projects regardless of source of funds utilized for its conduct.

Prior to the Conference proper, the Secretariat shall release important announcements including materials for submission, deadlines, guidelines, etc. Only those prospective presenters who will be able to comply with the prescribed terms shall be qualified to present.

Experts in the disciplines from the Philippines will be invited to compose the panel of evaluators for each discipline cluster. Prior to the Conference, the evaluators and the Conference secretariat will discuss and formulate a set of criteria to be used in paper evaluation. The members of the panel of evaluators will adopt the agreed set of criteria in evaluating the participating presentations in order to guarantee objective and impartial assessment, based on which Best Paper awardee/s will be selected.

Furthermore, the evaluators must also provide comments, suggestions and recommendations on the different aspects of the presentations for purpose of enhancement of the quality of the papers.

A registration fees amounting to Two Thousand Pesos (PhP 2,000) for onsite and One Thousand Pesos (PhP 1,000) for online presenters; and Five Hundred Pesos (PhP 500) for non-presenters shall be collected from each participant to cover logistical costs for the Conference.

A Book of Abstracts will be published after the Conference.

Research Thrusts

Papers to be presented in the Conference must be anchored with the BASC Research Agenda on the following areas/disciplines:

- Agriculture, Fishery, Environment and Natural Resources
 - Animal Production
 - Crop Production
 - Aquaculture Production
 - Agricultural Biotechnology
 - Environment and Biodiversity Conservation
 - Watershed Management
 - Soil and Water Conservation
 - Climate Change Mitigation
- Education, Business, Governance and Social Sciences
 - Basic and Teacher Education
 - Science and Mathematics
 - Arts, Humanities and Philosophy
 - Governance and Policy Studies
 - Business and Finance
- Engineering and Information Technology
 - Farm Engineering and Technology
 - Agro-industrial Waste Recycling and Utilization
 - Information Technology

Target Participants

This activity is intended to cater all researchers from both private and public academic institutions in the Philippines, as well as the local, regional, and national government agencies, private institutions and organizations, with completed research and/or development projects that are funded either through internal or external sources.

Guidelines for Abstract Submission

The Abstract of the paper shall be submitted on a pre-set deadline prior to the full paper. It must be composed of a single paragraph with a maximum of 250 words. Keywords, which must contain a maximum of five (5) terms that are salient in the manuscript, must be

written below the Abstract.

Upon evaluation of the Abstract submission, the Conference Secretariat shall notify the prospective presenters whether their papers are accepted or otherwise.

Guidelines for Full Paper Submission

The papers to be presented must follow the following format:

1. The manuscript must be in folio-sized paper (8.5" x 13"), with 1.0 paragraph spacing, Arial font and font size of 11 and side margins: top, bottom, left and right – 1.0", and must have a maximum of 20 pages including graphs, tables, eferences and appendices.
2. The paper should contain the following parts:
 - a. **Title.** Provide a concise and informative title. Write author/s name/s, email address/es, affiliation/s and address/es below the title.
 - b. **Abstract.** Abstract must be composed of single paragraph with a maximum of 250 words. Use clear and specific words, phrases, concepts and keywords, and write from an objective point of view. Define unfamiliar terms and acronyms must be preceded by spelledout appellations.
 - c. **Keywords.** Immediately following the Abstract, provide a maximum of five (5) keywords that are salient in the manuscript.
 - d. **Introduction.** The Introduction must present, among others, the research problems, objectives, theoretical background, related researches, research gaps, significance of the study, and the nature and purpose of the article.
 - e. **Methodology.** This section must provide the research design used in the study, and clearly describe the respondents/ participants (i.e., demographics, selection criteria or sampling procedure and group assignment), the materials (i.e., task/s, equipment, instruments, including a discussion of their validity and reliability, if appropriate), and the procedures employed in the study such as treatment(s) and data analysis.
 - f. **Results and Discussion.** The paper must have a combined Results and Discussion section written clearly and concisely. If tables and figures are used to visually show the results, only the essential data should be restated in the text and emphasize evidence on which the conclusions are based. The data should also be interpreted in this section. Discussion should explain the significance of the results of the work.
 - g. **Conclusion and Recommendations.** This section should summarize the main findings of the research. As such, it should only contain information found on the results section of the paper. In addition, this section must be able to address the objectives.
 - h. **Acknowledgements** (when appropriate). Write the Acknowledgements in a separate section at the end of the article just before the References. Include in this section the individuals and/or entities who provided help during the research undertaking (e.g. those who offered help with language, writing or proof reading assistance, etc.), and the research sponsors, among others.
 - i. **References.** The list of references must be comprehensive, as it includes all

pertinent information about the sources of data and information. Presentation of references must follow the APA format.

Oral Presentation

Papers will be presented orally during the Conference. A PowerPoint presentation shall be used in the presentation containing the following pertinent elements:

- Abstract
- Introduction
- Method
- Results and Discussion
- Summary and Conclusion
- Recommendations
- References

Each presenter will be given 20 minutes to present the paper, where the first 15 minutes should include a brief introduction, the presentation slides, and written texts to accompany the slides, while the last five (5) shall cover concluding comments and the discussion.

Mechanics of the Conference

On-site and online presentations will be use. There will be separate parallel sessions for Agriculture, Fishery, Environment and Natural Resources category, and for Education, Business, Governance and the Social Sciences category.

All papers will be evaluated following the prescribed rubrics of scores written in the evaluation sheet. Announcement of winners will be done after the consolidation of scores from the evaluators.

Criteria for the Best Paper Award (All Categories)

A. Creativity, originality and quality of work	30%
- Rationale/state of the art (to include analysis of the project)	
- Objectives	
- Conceptual/analytical framework/methodology	
B. Significance of findings	40%
- Contribution to new S&T knowledge advancement	
- Relevance to national, regional and international development	
C. Manuscript/Write-up	15%
- Accuracy of figures and language	
- Clarity and style	
- Cogency and logic	
D. Presentation	15%
- Clarity of presentation	
- Visual appeal	
- Stage presence	
- Voice modulation	
- Response to inquiries	



PHILIPPINE ASSOCIATION OF STATE UNIVERSITIES AND COLLEGES

No. 142 Scout Rallos Extension, Brgy. Sacred Heart, Diliman, Quezon City 1103

Email addresses: secretary@pasuc.org.ph, pasuoffice@gmail.com

Tel. Nos. (02) 8376-6213 / 8376-6217

PASUC ADVISORY NO. 067, s. 2025

For : All SUC Presidents/Heads

From : Dr. Tirso A. Ronquillo
President

Subject : **1ST NATIONAL CONFERENCE ON AGRICULTURE AND ALLIED SCIENCES (NCAAS)**

Date : May 23, 2025

This is to endorse the 1st National Conference on Agriculture and Allied Sciences (NCAAS), organized by Bulacan Agricultural State College (BASC). With the theme "*National Research Roadmaps: Addressing Today's Problems, Trailblazing the Future of Communities*," the conference will be held on July 3, 2025, adopting a hybrid set-up at BASC Farmers Training Center, San Ildefonso, Bulacan.

The conference aims to bring together faculty researchers, scholars, and practitioners from various higher education institutions nationwide to advance the fields of agriculture and allied sciences. It will specifically highlight relevant research outputs in the areas of Agriculture, Fisheries, Environment and Natural Resources, Education, Business, Governance and Social Sciences, as well as Engineering and Information Technology.

The organizers will accept full paper submissions until June 3, 2025, through the following link <https://forms.gle/cZ5uDhaqFBXzUjH8A>. Interested participants may also pre-register via this link: <https://forms.gle/QZsPmhxjZ9Z9JwYF6>. Alternatively, they may visit the organizer's Facebook page at <https://www.facebook.com/bascrepd> for additional information.

The conference poster is enclosed for your ready reference. For further inquiries, your office may contact Ms Nikki Ann V. Macabontoc, OIC Director, BASC Research Office, via email at NCAAS.basc@gmail.com or mobile at 0928-430-6481.



TIRSO A. RONQUILLO, ASEAN Eng.
President

Poster



1st NCAAS
NATIONAL CONFERENCE
on AGRICULTURE and ALLIED SCIENCES

CALL FOR PAPERS!



You may submit your abstract to:
<https://forms.gle/cZ5uDhaqFBXzUjH8A>

Deadline for Submission:
(Extended Date)
June 16, 2025
Abstract
June 23, 2025
Full Paper

July 3, 2025
BASC FARMERS TRAINING CENTER and HYBRID

Face to Face and Virtual Modes are Available

RESEARCH TOPICS

- 1** Agriculture, Fishery, Environment and Natural Resources
 - Animal Production
 - Crop Production
 - Aquaculture Production
 - Agriculture Biotechnology
 - Environment and Biodiversity Conservation
 - Watershed Management
 - Soil and Water Conservation
 - Climate Change Mitigation
- 2** Education, Business, Governance and Social Sciences
 - Basic and Teacher Education
 - Science and Mathematics
 - Arts, Humanities and Philosophy
 - Governance and Policy Studies
 - Business and Finance
- 3** Engineering and Information Technology
 - Farm Engineering and Technology
 - Agro-Industrial Waste Recycling and Utilization
 - Information Technology

REGISTRATION FEE

For Presenter	Face-To-Face	₱ 2,000
	Online	₱ 1,000
For Non-Presenter	Face-To-Face	₱ 1,000
	Online	₱ 500

Registration form for Non-Presenter
<https://forms.gle/QZsPmhxjZ9Z9JwYF6>

Registration fee can be deposited to the following accounts:

NIKKI ANN V. MACABONTOC

 Gcash: **0928 430 6481**

 Landbank: **4127002792**

Contact Details
NIKKI ANN V. MACABONTOC
DIRECTOR, RESEARCH OFFICE
NCAAS.basc@gmail.com
0928 430 6481

 BASC Research, Extension, Production & Development Office

 www.basc.edu.ph

TABLE OF CONTENTS

CHED Proposal	iii
PASUC Endorsement letter	viii
Poster	ix

Category: Agriculture, Fishery, Environment, and Natural Resources

Hydrologic Yield and Disaster Risk Mapping under Climate Variability in the Angat Watershed using SWAT	1
Product Development and Evaluation of Salted Quail Eggs Using a Brine Solution	2
Compost Activation by Three Fungal Genera Found in Bamboo Enhances Bio-Organic Fertilizer Efficiency in Lettuce Production: A Balanced Fertilization Strategy	3
Evaluating Human-Induced Impacts on Mangrove Conservation and Rehabilitation Areas in the Province of Davao Occidental, Philippines	4
Perceived Climate Vulnerability of Small - Scale Tilapia (<i>Oreochromis niloticus</i>) Farms in the Upland Communities of Davao Occidental, Southern Philippines	5
Environmental Factors Influencing Catch Abundance, Size, and Distribution of Blue Swimming Crab (<i>Portunus pelagicus</i>) in Tabaco Bay	6
Growth Performance of Cucumber (<i>Cucumis sativus</i>) Applied with Fermented Fruit Waste Supplemented with Calcium Phosphate Eggshell	7
Technology Adoption of TAU-developed Free-Range Chicken Production in Bataan as a Viable Enterprise	8
Enhancing Germination of Stored Adlai (<i>Coix lacryma-jobi</i>) Seeds using Black Soldier Fly Frass Tea as an Organic Biofertilizer	9

Category: Education, Business, Governance, and Social Sciences

Teaching Encounters of Digital Immigrant Faculty Members of BASC in the Usage of Infused Technology	11
Constructing Legitimacy and Authority in Narrative: Analyzing Symbolic Leadership in the Philippine Barangay Governance	12
Employer's Feedback among Institute of Education Graduate Program Graduates: A Tracer Study	13
Organizational Commitment and Work Performance of Bulacan Agricultural State College's Bachelor of Science in Business Administration and Bachelor of Science in Agribusiness Students	14
Pinolimpiks: Learning Science 4 Across Sports and Culture	15

A Corpus-Based Exploration of Virtual Linguistic Landscape Across BASC's Social Media Platforms	16
A Socio-Pragmatic Analysis of the Persuasive Strategies used in ESL Student Essays in BASC	17
Fueling Success: Investigating the Influence of Balanced Nutrition on Academic Performance of DLSU Senior High School Students	18
Amore	19
Hospitality Management Students' Motivation and Aspirations to Work in The Gig Economy: An Expectancy Theory Perspective	20
CharMè: Advocating for Environmental Awareness through Functional and Aesthetically Pleasing Phone Accessories	21
A Scientific Review of Skills Development and Training Programs under Blue Economy Initiatives	22
Zipped: Exploring the Demand for Sustainable and Functional Fashion Among Filipino Gen-Z Students	23
Indigenous Peoples' Mandatory Representation and Participation in Barangay Governance: Challenges and Opportunities for Improvement	24
Category: Engineering and Information Technology	
Smart Lighting Artificial Intelligence-Driven Platform for High-Valued Crops on Hydroponics System	26
Root Zone Cooling System for Sustainable Intensified Vertical Modular Hydroponics Crop Production	27
Determination of Factors Affecting the Retention Rate of Institute of Engineering and Applied Technology Students	28
Comparative Analysis on Cost, Accessibility and Reliability of the Different Energy Systems in the Philippines using the PRISMA 2020 Framework for Systematic Review	29
Managing Acceptability and Electrical Safety of an Innovated Smart Outlet	30
Design and Optimization of an Automated Waste-to-Fertilizer System: A Sustainable Organic Waste Management	31

Agriculture, Fishery, Environment, and Natural Resources

Hydrologic Yield and Disaster Risk Mapping under Climate Variability in the Angat Watershed using SWAT

¹Bryan B. Alcalde, ²Jayson M. Victoriano, DIT., & ³Sarah Alma P. Bentir

Abstract

With the worsening climate change scenario, Angat Watershed is critically susceptible to hydrologic extremes, particularly drought and streamflow anomalies. Hence, the study aims to generate a predictive hydrologic model and disaster risk map using the Soil and Water Assessment Tool (SWAT) under future climate projections (CMIP6). The hydrologic model exhibited an NSE of 0.7, R² of 0.72, and PBIAS of 9.16, which satisfied the acceptable threshold values, thus validating the model as a realistic simulation of the watershed. Under RCP 4.5 and RCP 8.5, the model showed that streamflow variance will greatly increase in the Talaguio subbasin, from ± 11.75 m³/s to ± 18.93 m³/s. Furthermore, the whole watershed will potentially experience drought due to decreasing precipitation and inflow caused by prolonged dry spells over the next two decades. The study recommends strategic reforestation and restoration of kaingin areas in the basin to mitigate climate variability effects. Model results showed that the said land management interventions will have a positive impact on improving streamflow in the reservoir by approximately 12.1%, which will address the hydrologic extremes and water availability for its service area.

Keyword: Climate change, Angat watershed, SWAT, streamflow, hydrologic risk

Presenter: **Bryan B. Alcalde**

Affiliation/s: Bulacan State University

Primary Contact's Email Address: bryanalcalde.sedi@gmail.com

Product Development and Evaluation of Salted Quail Eggs Using a Brine Solution

¹Cristine Mae G. Mular, ²Jhiewel Hancy A. Custodio, ³Kaira Ileana D. Navales,
⁴Benjamin IV E. Santiago, & ⁵Marco Felix S. Valdez

Abstract

Japanese quail (*Coturnix coturnix japonica*) is known for its nutrient-rich eggs, high egg production, and potential as a lucrative enterprise for smallholder farmers. However, in the Philippines, raising quail for egg production faces marketing challenges. Thus, producing processed products like salted quail eggs can help extend shelf-life and add value. The main objective of this study was to develop a standardized salted quail egg product using a brine solution. The analysis included determining the optimal curing duration through sensory evaluation by 10 trained panelists, assessing consumer acceptability from 100 participants, evaluating 30-day storage stability, and conducting profit margin and cost-benefit analyses. The results revealed that the optimal curing duration is six days. Consumers demonstrated a positive willingness to purchase the product. Salted quail eggs preserved in brine solution can be stored for seven days at room temperature and up to 14 days under refrigeration. The cost-benefit analysis showed that a 30% profit margin is the most feasible. It is recommended to conduct a nutritional analysis, compare the quality of salted quail eggs produced using brine and clay methods, and explore various techniques to further extend shelf-life.

Keyword: Root zone cooling system, sustainable intensified vertical modular hydroponic, nutrient solution, Sustainable Development Goals (SDG) 12 and 13, hydroponics production

Presenter: **Cristine Mae G. Mular**

Affiliation/s: ¹College of Agriculture, New Era University, Pinugay, Baras, Rizal, Philippines, 4113

²Bulacan Agricultural State College, Pinaod, San Ildefonso, Bulacan, Philippines, 3010

Primary Contact's Email Address: cristine.mular01@gmail.com

Root Zone Cooling System for Sustainable Intensified Vertical Modular Hydroponics Crop Production

¹Meriam F. Sulit, ²Rael C. Tejada, ³Nerilyn J. Victoria

Abstract

Sustainable Development Goals (SDG) 12 on responsible consumption and production and 13 on climate action set forward by the United Nations are directing researches and government policy-making focus on sustainable and improving life. This calls for humane-driven solutions with sustainable impact to the endusers, the farmers and the community. Root zone cooling system are being employed to provide solution to control environmental factors affecting production such as temperature and relative humidity, that has direct effect on the water quality parameters especially with hydroponics production. Hence, the study root zone cooling system for sustainable intensified vertical modular hydroponics crop production were crafted by Bulacan Agricultural State College researchers. The general objective of the study aimed to design an intensified vertical modular hydroponics (IVMH) with root zone cooling system for crop production. Two sets of IVMH were established, one with cooling system and one without cooling system. The IVMH with cooling system was replicated three times and were arranged randomly in the field. Thirty test plants per tower were randomly selected and labelled. The application of the rootzone cooling system had lower the nutrient solution water tanks temperature by an average of 6.0°C during the 12:00 noon before the temperature dissipates compared to the nutrient solution of the water tank without RZCT. Out of all the treatments and replications combinations tested, only T1R1 and T2R3 showed statistically significant differences. Among them, T1R1 stands out by far. It has an extremely high Fvalue and a very low p-value (0.000), which strongly suggests that whatever treatment was used in T1R1 worked exceptionally well. T2R3 also showed some effect ($p = 0.009$), but it was not as strong as T1R1. The area and water productivity were 9.07 kg/m² and 223.95 kg/m³; indicating the efficiency of usage in producing the crop in IVMH. Financial viability shows that the positive ROI of 20.68% and BCR of 1.33 indicate strong profitability and efficient operations. The payback period of 4.84 years is a reasonable timeframe for recouping the initial investment in a long-term agricultural venture.

Keyword: Root zone cooling system, sustainable intensified vertical modular hydroponic, nutrient solution, Sustainable Development Goals (SDG) 12 and 13, hydroponics production

Presenter: **Meriam F. Sulit**

Affiliation/s: Bulacan Agricultural State College

Primary Contact's Email Address: mfsulit.international.affairs@basc.edu.ph

Evaluating Human-Induced Impacts on Mangrove Conservation and Rehabilitation Areas in the Province of Davao Occidental, Philippines

John Paul R. Pacyao

Abstract

This study critically examined the human-induced impacts on mangrove ecosystems within selected Philippine National Aquasilviculture Program (PNAP) Mangrove Rehabilitation Areas across four coastal barangays in Davao Occidental: Tubalan, Buhangin, Sto. Rosario, and Tanglad. Utilizing a self-designed survey instrument, data were collected from purposively selected local residents to capture their socio-demographic profiles, perceptions, and direct involvement in anthropogenic activities affecting mangrove habitats.

The results revealed that most respondents were male, married, and within the 30–40-year age bracket. Key anthropogenic pressures identified include the conversion of mangrove areas into residential zones (90.38%), aquaculture ponds (25.75%), and informal docking areas—most notably in Barangay Sto. Rosario. Additional stressors encompassed improper solid waste disposal, presence of stray and grazing animals, and unsustainable harvesting practices. These activities have contributed to the degradation of mangrove ecosystems, characterized by increased seedling mortality, loss of mature mangrove stands, and diminished ecosystem services such as shoreline protection, biodiversity support, and fishery productivity.

Despite these adverse impacts, grassroots conservation efforts such as community-led coastal clean-up activities and reforestation programs were noted. The findings highlight the urgent necessity for enhanced Information, Education, and Communication (IEC) strategies, strengthened through institutionalized, multi-sectoral collaborations involving local government units, civil society organizations, and local communities. The study strongly recommends the establishment of a standardized monitoring and evaluation framework to assess ecosystem health and ensure the long-term sustainability, resilience, and effectiveness of mangrove rehabilitation initiatives in Davao Occidental.

Keyword: Mangrove Ecosystems, Anthropogenic Impacts, Rehabilitation, Community-Based Conservation, Coastal Resource Management

Presenter: **John Paul R. Pacyao**

Affiliation/s: Bulacan Agricultural State College

Primary Contact's Email Address: jrpacyao@spamast.edu.ph

Perceived Climate Vulnerability of Small - Scale Tilapia (*Oreochromis niloticus*) Farms in the Upland Communities of Davao Occidental, Southern Philippines

¹Kher Dave H. Doños, ²Anna May E. Baldomero, ³Kaye B. Necessario, ⁴Angela Jo Jocoy, ⁵Jeanibe M. Sacil, ⁶Jessa May D. Marquez, ⁷Dexter D. Roquero, & ⁸Georgie F. Tabaranza

Abstract

The impacts of climate change to aquaculture can vary widely and may have both environmental and socioeconomic consequences. This study assessed the perceived vulnerability to climate change impacts of selected small-scale tilapia farms in Davao Occidental using a modified Fisheries Vulnerability Assessment Tool (FishVool). A total of 70 tilapia farmers from the upland areas of Sta. Maria and Malita, Davao Occidental were interviewed. Data on the sensitivity (S), exposure (E) and adaptive capacity (AC) were collected using the FishVool parameters with modifications. Results revealed that the overall climate change vulnerability of tilapia farmers in Davao Occidental was low (L), where both sensitivity and exposure were medium while adaptive capacity is low. In addition, both Sta. Maria and Malita have low vulnerability suggesting the suitability of these municipalities for tilapia production. Generally, this study provided a better understanding of tilapia farming in the province in relation to climate change impacts and vulnerability. In addition, the information gathered in this study is vital for future tilapia farm management and climate change adaptation in the province.

Keyword: *climate, tilapia, FishVOOL, vulnerability*

Presenter: Kher Dave H. Doños

Affiliation/s: ¹Fisheries Department, Institute of Fisheries and Marine Sciences, Southern Philippines Agribusiness and Marine and Aquatic School of Technology, Malita, Davao Occidental, 8012

²Extension Services Office, Southern Philippines Agribusiness and Marine and Aquatic School of Technology, Malita, Davao Occidental, 8012

³Center for Aquatic Resources and Ecosystems Studies (CARES), Southern Philippines Agribusiness and Marine and Aquatic School of Technology, Malita, Davao Occidental, 8012

⁴Department of Arts and Sciences, Institute of Teacher Education and Information Technology, Southern Philippines Agribusiness and Marine and Aquatic School of Technology, Malita, Davao Occidental, 8012

Primary Contact's Email Address: 09239366854 / extensionservices@spamast.edu.ph

Environmental Factors Influencing Catch Abundance, Size, and Distribution of Blue Swimming Crab (*Portunus pelagicus*) in Tabaco Bay

¹Recie B. Bonaos, ²John Christopher C. Nolia, & ³Herminie Palla

Abstract

Small-scale fishermen in the coast areas around Tabaco Bay rely primarily on the blue swimming crab (*Portunus pelagicus*) as a resource, which significantly improves local economies and livelihoods. However, declining catches have raised concerns about the fishery's sustainability. This study investigated the influence of environmental factors on the abundance, size, and distribution of *P. pelagicus* in two stations in Tabaco Bay: Station 1 (deep) and Station 2 (shallow). Data on crab abundance, size, and distribution were collected alongside environmental parameters—temperature, salinity, and pH. Results revealed that Station 2, located in shallower waters, had a higher relative abundance (54.28%) than Station 1 (45.72%), though it was dominated by smaller, likely immature crabs. Station 1, in deeper water, had fewer but significantly larger individuals. The sex ratio at Station 1 was female biased (1:1.2), while Station 2 showed a slightly more balanced ratio (1:1.3).

Size distribution at Station 1 was more balanced, peaking at 180–220 mm, while Station 2 showed a left-skewed distribution indicative of growth overfishing. Crabs at Station 1 exhibited significantly greater carapace width (201.1 ± 31.8 mm), carapace length (95.2 ± 19.8 mm), and body weight (132.5 ± 45.2 g) compared to those at Station 2 (99.3 ± 17.4 mm, 46.2 ± 10.3 mm, and 52.7 ± 17.5 g, respectively), with differences confirmed by the Mann-Whitney U test ($p < 0.0001$). Growth analysis showed positive allometry in most groups, except for males at Station 1, which exhibited negative allometry. Condition factor analysis indicated good health among males, while females in both stations appeared stressed. Station 1 also had significantly higher pH and salinity, with temperature showing a significant negative correlation with carapace length.

These results highlight how habitat depth and environmental conditions shape crab populations and emphasize the necessity for climate-adaptive management, gear modification, habitat protection, stakeholder engagement, and regulatory actions to maintain the BSC fishery in Tabaco Bay.

Keyword: *abundance, allometric equation, relative condition factor, sex ratio, water quality*

Presenter: **Recie B. Bonaos**

Affiliation/s:¹Catanduanes State University, Virac Catanduanes, Philippines

²Camarines Norte State College - Mercedes Campus, Mercedes, Camarines Norte, Philippines

³Western Philippines University, Puerto Princesa, Palawan, Philippines

Primary Contact's Email Address: rbonaos@catsu.edu.ph

Growth Performance of Cucumber (*Cucumis Sativus*) Applied with Fermented Fruit Waste Supplemented with Calcium Phosphate Eggshell

Alvin P. Ramos

Abstract

The field experiment was conducted at Isabela State University-Roxas Campus Research Area, Matusalem, Roxas, Isabela. It was carried out from August 2024 to October 2024 to evaluate the performance of cucumber applied with calcium phosphate and different levels of fermented fruit waste. The experiment was comprised of five treatments, T1- 100% RR (Soil analysis) control, T2 50% RR + 10ml Calphos + 100ml of FFW/liter of water, T3 5% RR + 10ml Calphos + 125ml of FFW/liter of water, T4 50% RR+ 10ml Calphos + 150ml of FFW/ liter of water, T5 50% RR + 10ml Calphos + 100ml of FFW/liter of water. The experiment was laid out following the Randomized Complete Block Design (RCBD) with three replications.

Based on the result, significant result was obtained in plant height at 15, 30, 45 and 60 days after sowing, length and diameter of fruit, weight of marketable and non-marketable, number of marketable and non-marketable fruit. On the computed yield per hectare, the highest yield per hectare was produced by the plants treated with T4 (50% RR + 10ml Calphos + 150ml FFW) with 77.27 percent return on investment (ROI).

Based on the study conducted, application of calphos and levels of fermented fruit waste combined with 50% of the recommended rate proved that it is effective on the yield of the crop and its return of investment.

Presenter: **Alvin P. Ramos**

Affiliation/s: Isabela State University-Roxas Campus, Rang-ayan, Roxas, Isabela.

Primary Contact's Email Address: 09262873650, alvin.p.ramos@isu.edu.ph

Technology Adoption of TAU developed Free-Range Chicken Production in Bataan as a Viable Enterprise

¹Abigail G. Abuan, ²Davedsonn C. Fetalvero, ³Cherlyn U. Gripo ⁴Hermogenes M. Pagua,
⁵Gregorio J. Rodi, ⁶Ruby Anne Peralta, ⁷Manuel A. Abuan Jr, ⁸Sander Agtunong,
& ⁹Jonny Icalla

Abstract

The study was conducted to establish a viable enterprise in free-range chicken using free range chickens' production technology from June 30, 2022, to June 29, 2024 funded by DA-ACEF. The project aims to increase production of F1s of free-range chicken, increase adoption of free-range chicken production technology developed by Tarlac Agricultural University; and enhance capacity of selected beneficiaries on the management of free-range chicken enterprise. Six packages of technology (POT) were adopted at on-station and on-farm site such as FRC housing management, FRC breeding management, FRC brooding management, FRC ranging management, FRC feeding management and FRC health management. A total of 4 farmers from different association/cooperative; 2 female and 2 male beneficiaries (on-farm) located in Tuyo, Balanga City and Gabon, Abucay and one on-site (BPSU) were supported with breeder house, initial stocks of 114 breeders and feeds and madre de agua planting materials, a set of incubators, trainings and technical support. Both sites were 100% adopted the developed technologies and improved the management practices introduced by BPSU in terms of breeder house, grower house, brooding, ranging area, feeds, and use of alternative feeds, improvised forage chopper, use of concoctions and calphos from eggshell. The on-site produced fertilized and unfertilized eggs, hardened chicks and growers and layers as a payback scheme for "passing the gift" for second batch of beneficiaries. A total of 3 trainings attended by the first and second batch of beneficiaries. Among the 5 second batch beneficiaries, two were provided with a total of 205 breeder females as initial start-up for egg production from Balanga and Abucay. Production performance of free-range chicken on both sites were tabulated and analyzed with MS Excel Statistical Tool Pak using T-Test: Two sample assuming equal variances. Significant results were obtained for average egg production and average mortality rate ($P0.05$). Financial analysis assumptions for the selling price per tray is Php 230-250, Average Annual Sales Volume of Php 519, 661.01, Annual Net Income is Php 185, 921.70, Investment cost is Php 401, 901.00 and ROI is 2.16 years width rate of return on capital of 55.71% per station. The project concluded the increased production of free-range chickens in the community, adopted technology and capacitated farmer beneficiaries. The sustainability of the project is recommended to fully utilize the stocks and the inputs for achieving positive return to free-range chickens' growers.

Keyword: *Free-Range Chicken, madre de agua, incubator, on-farm, on-site*

Presenter: **Abigail G Abuan**

Affiliation/s: Bataan Peninsula State University

Primary Contact's Email Address: agabuan@bpsu.edu.ph

Enhancing Germination of Stored Adlai (*Coix lacryma-jobi*) Seeds Using Black Soldier Fly Frass Tea as an Organic Biofertilizer

Domy Bonn M. Untalan

Abstract

As the global demand for nutritious food increases, the agricultural sector shift is lens to underutilized crops like adlai (*Coix lacryma-jobi*), a promising alternative cereal rich in carbohydrates. However, seed dormancy—a state where the embryo remains physiologically inactive—limits its widespread adoption. With the rising interest in sustainable farming, organic inputs such as Black Soldier Fly Frass Tea (BSF FT) offer a potential solution to enhance germination and crop productivity. It's act as liquid biofertilizer that contains nutrients, beneficial microbes and plant growth promoting regulators (PGPRs). As this study evaluated the effects of BSF FT on the germination of stored adlai seeds and identified the optimal concentration for maximum efficacy. The study followed a completely randomized design with eight treatments, replicated three times and conducted in Davao de Oro State College Agriculture laboratory. Results showed that a 20 mL/L concentration of BSF FT significantly improved germination performance, indicating its potential as an effective seed priming agent. Most BSF FT treatments were comparable to synthetic gibberellic acid (GA3) application in promoting germination, except for the undiluted BSF FT. Seedlings treated with BSF FT also exhibited enhanced root and shoot growth, with strong correlations across treatment levels—excluding the pure solution. These findings highlight BSF FT as a safe, low-cost, and eco-friendly alternative to synthetic growth enhancers, offering a viable approach to improve adlai germination and contribute to sustainable food security strategies.

Keyword: BSF Frass Tea (BSF FT), Coix lacryma jobi, seed-dormancy, stored seeds, underutilized cereal

Presenter: **Domy Bonn M. Untalan**

Affiliation/s: Davao de Oro State College

Primary Contact's Email Address: domy.untalan@ddosc.edu.ph

Education, Business, Governance, and Social Sciences

Teaching Encounters of Digital Immigrant Faculty Members of BASC in the Usage of Infused Technology

¹Yosef Eric C. Hipolito & ²Jose Marie F. De Guzman

Abstract

This study examined the teaching experiences of digital immigrant faculty members at Bulacan Agricultural State College (BASC) in the Republic of the Philippines in the context of 21st-century instruction. It focused on their perception of infused technology teaching methods alongside with traditional methods. The study explored the faculty members' perceptions, challenges, and opportunities when incorporating technology in their teaching. Through in-depth interviews, the research aimed to identify potential solutions and enhance their pedagogical prowess in utilizing technology. A descriptive-qualitative research design was employed, utilizing a phenomenological approach to explore the everyday experiences of the participants. Purposive sampling selected ten faculty members aged 40 to 65 for in-depth interviews. Thematic analysis identified recurring patterns and formulated themes capturing the main ideas derived from each question. The findings indicated that digital immigrant faculty members recognize the importance of being technologically knowledgeable and acknowledge the benefits of technology for student learning. However, they preferred a blended teaching approach that combines traditional and technology infused methods. Challenges they faced include internet connectivity issues and limited technology knowledge for pedagogy. To address these challenges, the study recommends providing regular technology training for faculty, improving facilities, and continuing to use blended learning as a flexible teaching approach. These recommendations aim to support faculty development, enhance technological resources, and meet the needs of modern education.

Keyword: Blended teaching, digital immigrant, faculty development, infused technology, traditional methods

Presenter: **Yosef Eric C. Hipolito**

Affiliation/s: Institute of Arts and Sciences, Bulacan Agricultural State College

Primary Contact's Email Address: Yosefhipolito19@gmail.com

Legitimacy and Authority in Rural Barangay Governance: An Organic-Hierarchical Analysis of Leadership Roles and Ritualized Hierarchies

Justin F. Cadera

Abstract

This study investigates how barangay officials in rural communities legitimize their leadership by embodying the principles of the organic-hierarchical paradigm. It examines how local leaders sustain authority through reinforcing social hierarchy and performing leadership roles that emphasize moral responsibility and community integration. The main research question is: how barangay officials enact and maintain leadership legitimacy through ritualized public roles and hierarchical social relations within the organic-hierarchical framework. The study focuses on concrete practices such as the formal conduct of barangay assemblies, the use of symbolic language affirming hierarchical status, and the performance of community rituals that reinforce leader-subject relationships. Using a qualitative research design, data will be gathered through in-depth interviews with barangay officials and community members, alongside participant observation during barangay assemblies and rituals. This approach allows for a nuanced understanding of how leadership legitimacy is performed and perceived in everyday governance. Grounded in the organic-hierarchical paradigm which views society as an interconnected organism with defined roles contributing to social cohesion, the research highlights how these leadership performances establish order and legitimacy. Barangay officials are understood as political actors and moral stewards whose authority is deeply embedded in the community's social fabric. This study contributes to political science by providing an in-depth account of how traditional hierarchical structures and role-based leadership continue to function as core mechanisms of legitimacy in local governance, shedding light on the resilience of non-bureaucratic authority in contemporary rural setting.

Keyword: Organic-Hierarchical paradigm, barangay governance, leadership legitimacy, hierarchical authority, ritualized leadership

Presenter: **Justin F. Cadera**

Affiliation/s: Department of Political Science, National University Clark

Primary Contact's Email Address: caderaajustin15@gmail.com

Employer's Feedback Among Institute of Education Graduate Program Graduates: A Tracer Study

Angelito S. Manalastas

Abstract

This study aimed to determine the pedagogical competence, leadership and management skills and competence and research capability of MAEd graduates after completing their graduate studies at Bulacan Agricultural State College from the Academic Year 2012-2020. Specifically, it sought to identify the graduates' profile in terms of age, sex, and position before and after graduation, and, determine the competence of MAEd graduates in teaching performance, leadership and management and research capability. The study employed a descriptive-quantitative research design, and utilized survey questionnaire as instrument of the study. Findings revealed that majority of the MAED graduates promoted from their present plantilla position after obtaining their degree. For classroom teachers, in terms of pedagogical competence, it is verbally described as "excellent" or "always practice" and for research capability it is verbally described as "outstanding". Meanwhile, for school heads or school leaders, overall, the management skills and competence and leadership skills and competence as well as their research capability is verbally described as "excellent". In the light of the findings and conclusions of this study, the researcher recommends an in-depth study considering other variables or areas.

Keyword: pedagogical competence, leadership and management skills and competence and research capability

Presenter: **Angelito S. Manalastas**

Affiliation/s: Department of Political Science, National University Clark

Primary Contact's Email Address: caderaajustin15@gmail.com

Organizational Commitment and Work Performance of Bulacan Agricultural State College's Bachelor of Science in Business Administration and Bachelor of Science in Agribusiness Students

¹Mellanie B. Pascua & ²Anabel A. Alayon

Abstract

This research examines the employment status, job performance, and organizational commitment of Bachelor of Science in Business Administration (BSBA) and Bachelor of Science in Agribusiness graduates of Bulacan Agricultural State College (BASC) from 2019 to 2023. It explores the correlation between graduates' job performance, intrinsic motivation, productivity, and commitment to their firms and socio-demographic and job-related factors. Results show that the majority of graduates find jobs within five months, with a large percentage working in non-related fields to their degrees. The research also shows moderate job satisfaction, motivation, and productivity among graduates. In addition, employer feedback identifies strengths in communication, teamwork, and problem-solving skills and areas for curriculum development to improve alignment with industry requirements. The research emphasizes the need for improved career support services, closer industry-academe connections, and curriculum improvement to enhance graduate employability and integration into the workplace. Descriptive- correlational research design was used and a survey questionnaire was administered to collect data from a sample of 222 participants. Descriptive and inferential statistical procedures, such as Chi-Square Test and Spearman's Rho Correlation, were applied to examine the relationship between socio-demographic characteristics, employment, job satisfaction, and organizational commitment.

Keyword: Employability, Job Satisfaction, Organizational Commitment, Graduate Performance, Curriculum Relevance

Presenter: Dr. Mellanie B. Pascua & Anabel A. Alayon

Affiliation/s: Bulacan Agricultural State College

Primary Contact's Email Address: mellaniebpascua@gmail.com

Pinolimpiks: Learning Science 4 Across Sports and Culture

Kenneth DC. Delos Santos

Abstract

Scientific literacy is one of the crucial skills in modern societies. Despite its importance, Filipino learners are still struggling behind its neighboring countries. Implementing targeted interventions is pivotal in ensuring scientific mastery. In this study, the researcher aims to investigate the effect of utilizing Pinolimpiks, a game-based learning tool that integrates Filipino games in science lessons. The researcher employed the explanatory sequential mixed-method research design, quantitative data were analyzed through a pretest- posttest control group research design, while qualitative insights were derived from the thematic analysis from the semi-structured interview of the learners. Findings revealed that there is a significant difference in learners pretest and posttest scores across both traditional settings and game-based learning. While minimal, the traditional classroom setting showed slight difference in learning performance with an effect size of .092. On the other hand, game- based learning using Pinolimpiks demonstrated a large effect on the performance with an effect size of .795. Additionally, comparison of the posttest scores across two groups exhibited a significant difference favoring the Pinolimpiks group with an effect size of .754. Thematic analysis of the interview highlighted the holistic benefits of Pinolimpiks including enhanced engagement, synergistic skills, cognitive growth, and emotional well-being. These findings emphasize the effectiveness of integrating cultural relevance into pedagogy and advocate for adoption of game-based strategies in science education.

Keyword: Game-based Learning, science, integrative learning, Instructional Development Framework, science and sports

Presenter: **Kenneth DC. Delos Santos**

Affiliation/s: Mataas na Parang Elementary School

Primary Contact's Email Address: kennethdelossantos31@gmail.com

A Corpus-Based Exploration of Virtual Linguistic Landscape Across BASC's Social Media Platforms

Maria Arjie T. Domingo

Abstract

As institutions increasingly turn to digital spaces for communication, understanding the Virtual Linguistic Landscape (VLL) becomes crucial for analyzing how language is used to shape identity, engagement, and institutional narratives online. This study explores the VLL of Bulacan Agricultural State College (BASC) through a qualitative analysis of 167 Facebook posts across 23 official BASC-affiliated pages from December 2024 to May 2025. Using a multimodal and discourse-analytic approach, the study examines language types, styles, communicative functions, and audience engagement strategies. Findings reveal a dominant use of English (89.82%), affirming its role in projecting professionalism and global accessibility, while Filipino and code-switching are strategically employed to express cultural pride and emotional resonance. Language styles were largely formal (33.14%), promotional (30.88%), and emotive (16.43%), reflecting a balance between institutional authority, branding, and community-building. Communicative functions centered on informing (29.98%), promoting (18.60%), and celebrating (7.66%), suggesting a hybrid discourse that integrates transactional and relational communication. Visual and emphatic strategies, such as infographics, hashtags, emojis, and call-to-action cues, were widely used to maximize engagement. The study underscores Facebook's role as a dynamic discursive space where BASC constructs a multilingual, multimodal identity. It highlights the importance of strategic bilingualism and stylistic diversity in institutional social media communication. Recommendations include developing a flexible content style guide, enhancing dialogic engagement, and leveraging narrative and affective elements to foster inclusive and participatory digital interactions.

Presenter: **Maria Arjie T. Domingo**

Affiliation/s: Bulacan Agricultural State College

Primary Contact's Email Address: mariaarjie_domingo@basc.edu.ph

A Socio-Pragmatic Analysis of the Persuasive Strategies used in ESL Student Essays in BASC

Maria Arjie T. Domingo

Abstract

This study explores the socio-pragmatic dimensions of persuasive strategies employed by Filipino tertiary students in their essays on political issues. Situated within English as a Second Language (ESL) contexts in the Philippines where writing instruction often emphasizes grammatical accuracy over communicative effectiveness the research examines how students use language not only to argue but to enact social roles and respond to complex sociopolitical realities. Anchored in Searle's (1976) Speech Act Theory, the analysis investigates three key questions: the types of persuasive strategies used, their socio-pragmatic functions, and how these linguistic choices reflect broader discourses of citizenship, identity, and ideology. Findings reveal that assertive and directive speech acts dominate student writing, functioning as tools for establishing credibility, articulating ideological clarity, and mobilizing civic action. Although commissive and expressive acts appear less frequently, their presence signals a nuanced engagement with political discourse on a personal level. Moreover, students use metaphor, satire, and indirectness to navigate cultural norms of deference and collective harmony. The study further uncovers how students position themselves as informed, morally grounded members of Gen Z rejecting political apathy and hereditary politics while advocating for democratic values and responsible citizenship. By highlighting the interplay between rhetoric and sociopolitical positioning, this research calls for writing pedagogy that transcends formal correctness to cultivate pragmatic awareness, critical thinking, and civic engagement. These findings underscore the role of persuasive writing as both a linguistic skill and a medium of youth political participation.

Presenter: **Maria Arjie T. Domingo**

Affiliation/s: Bulacan Agricultural State College

Primary Contact's Email Address: mariaarjie_domingo@basc.edu.ph

Fueling Success: Investigating the Influence of Balanced Nutrition on Academic Performance of DLSU Senior High School Students

¹Cedric Jan B. Cabuang, ²Andrei Karl M. Dela Cruz, ³Kevin Gabriel A. Garcia,
⁴Josh Romeo G. Tagsip, & ⁵Cristina B. Abanilla

Abstract

This study investigated the relationship between balanced nutrition and academic performance among Senior High School students at De La Salle University Laguna Campus, with Body Mass Index (BMI) examined as a mediating variable. Academic performance is known to be influenced by various factors such as cognitive abilities, learning environments, and health-related behaviors including nutrition. A quantitative research design was used, involving 40 students who completed a Food Frequency Questionnaire (FFQ) to assess intake of Go, Grow, and Glow (GGG) foods. Grade Point Averages (GPA) were self-reported, and BMI was calculated from the students' reported height and weight. Linear regression and mediation analysis were conducted using the Baron and Kenny procedure to assess the direct and indirect relationships between dietary intake, BMI, and academic performance. Results showed a significant positive relationship between balanced dietary intake and BMI, suggesting that healthier eating was associated with improved physical health. However, there was a slight negative relationship between BMI and GPA, indicating that an increase in BMI was marginally related to lower academic performance. The mediation analysis revealed a small negative indirect effect, implying that while healthier diets improved BMI, this improvement did not translate into higher academic performance. The results highlight the importance of further research on the broader factors that may influence academic performance in the senior high school context. These findings suggest that although promoting proper nutrition remains important for student wellness, the link between physical health indicators and academic outcomes may be more complex.

Keyword: Nutrition, Academic Performance, Dietary Patterns, High School Students, Balanced Diet

Presenter: Cedric Jan B. Cabuang, Andrei Karl M. Dela Cruz, Kevin Gabriel A. Garcia, Josh Romeo G. Tagsip, & Cristina B. Abanilla

Affiliation/s: Senior High School, De La Salle University – Laguna Campus, Biñan, Philippines

Primary Contact's Email Address: andrei_delacruz@dlsu.edu.ph / 09761617939

Amore

¹Isabel Nita V. Resurreccion, ²Ma. Ymelda Feliz R. Javier, ³Farah Maye S. Consigna,
& ⁴Julia Mae Alexandria M. Juan

Abstract

Amore was formed in 2024 by four students from De La Salle University Integrated School Laguna Campus to create jewelry that promotes Filipino culture while adhering to sustainable practices. The business specializes in Filipino-themed Italian charm bracelets, with early marketing efforts focused on social media and local bazaars. Currently, Amore is in the initial growth stage, having produced 400 charms with a unique blend of cultural significance and eco-friendly materials. The company operates as a sole proprietorship under Isabel Nita V. Resurreccion, chosen for her operational expertise and commitment to quality. Key management personnel include finance head Ma. Ymelda Feliz R. Javier, marketing head Farah Maye S. Consigna, and human resources head Julia Mae Alexandria M. Juan, each bringing valuable skills to the team. Amore's target market consists of young adults aged 15-35 who value cultural identity and sustainability. The market is competitive, with established brands offering similar products. Major competitors include local jewelry brands, each with strengths in brand loyalty but weaknesses in cultural representation. To further develop its product line and expand marketing efforts, Amore requires ₱50,000 in financing. This funding will support product development and operational costs. The investment will be repaid through sales revenue, with initial funding sourced from personal investments of the founders totaling ₱28,000.

Keyword: jewelry; sustainability; culture; fashion; filipino

Presenter: Isabel Nita V. Resurreccion, Ma. Ymelda Feliz R. Javier, Farah Maye S. Consigna, & Julia Mae Alexandria M. Juan

Affiliation/s: De La Salle University

Primary Contact's Email Address: isabel_nita_resurreccion@dlsu.edu.ph

Hospitality Management Students' Motivation and Aspirations to Work in The Gig Economy: An Expectancy Theory Perspective

Billy Joe V. Villena

Abstract

The COVID-19 pandemic has reshaped employment landscapes, particularly in the hospitality industry, accelerating the rise of the gig economy. While extensive literature examines the gig economy's influence on job satisfaction, retention, and burnout among current workers, limited research investigates the aspirations of hospitality management students, particularly in the Philippine context. This study seeks to bridge this critical gap by exploring the motivations that drive hospitality students' interest in gig work, employing expectancy theory to understand their perceptions of effort, performance, and reward. Employing a quantitative, descriptive-correlational research design, data were collected to explore students' motivations, interests, and career aspirations in gig-based hospitality work. Results indicate a strong student interest in accommodation services, particularly in tour guiding that highlights local food, history, and cultural experiences as potential income sources. In terms of motivation, students rated effort-performance expectancy, valence, instrumentality, and goal attractiveness as highly important. Aspirations revealed a belief that increased effort leads to improved performance, higher-paying gigs, fair compensation, and financial flexibility. Using Partial Least Squares Structural Equation Modeling (PLS-SEM), findings show that effort-performance expectancy, valence, and goal attractiveness significantly predict interest. Furthermore, effort expectancy, instrumentality, and goal attractiveness directly influence aspirations. Notably, interest was found to significantly mediate the relationship between the motivation and aspirations of BSHM students, emphasizing its crucial role in shaping students' gig economy engagement.

Keyword: Expectancy Theory, Motivations, Gig Economy, Aspirations

Presenter: **Billy Joe V. Villena**

Affiliation/s: Bulacan Agricultural State College

Primary Contact's Email Address: bjvillena@gmail.com

CharMè: Advocating for Environmental Awareness through Functional and Aesthetically Pleasing Phone Accessories

¹Janna Laine C. Pascual, ²John Ezra Miguel A. Balili, ³Martin Gabriel D. Eclarino, ⁴Lisa Jaychelle T. Fenis, & ⁵Maria Amelia Bianca C.Regilme

Abstract

CharMé was founded in 2025 and operates under a sole proprietorship for-profit business due to its simple structure with few legal requirements needed to be accomplished. The business combines style and practicality, mainly focusing on offering a wide variety of aesthetically functional phone accessories that are carefully designed and customized by the uniquely skilled members of the team, as the company's unfair advantage. The company is committed to raising environmental awareness by incorporating nature-inspired floral and animal-themed elements to inspire customers to take collective action towards a more sustainable future, by spreading their advocacies. For every phone accessory design, CharMé's goal is to convey the significance of SDGs 14 (Life Below Water) and 15 (Life on Land), ensuring that each phone accessory can serve as a reminder of the importance of protecting life in the environment. CharMé also takes initiatives in limiting environmental waste by offering reusable packaging. What makes CharMé's phone stand unique is its 360-degree rotational feature, lightweight, and compact design, while the phone straps serve as a valuable accessory for preventing accidental drops and theft. CharMé mainly utilized social media marketing, campus bazaars, and word of mouth in reaching its target customers to expand the business. Financial contributions were equally distributed from all members of the team with an initial capital of ₱12,444, and a current overall revenue of ₱16,835, as of May 2025.

Keyword: functionally aesthetic; phone stands; phone straps; environmental awareness; enamel charms

Presenter: Janna Laine C. Pascual, John Ezra Miguel A. Balili, Martin Gabriel D. Eclarino, Lisa Jaychelle T. Fenis, and Maria Amelia Bianca C. Regilme

Affiliation/s: De La Salle University - Laguna Campus

Primary Contact's Email Address: janna_laine_pascual@dlsu.edu.ph

A Scientific Review of Skills Development and Training Programs under Blue Economy Initiatives

Arizza Joy Tan-Evardone

Abstract

Sustainable growth of the blue economy hinges on effective human-capital development. This study examined capacity-building programs delivered in three municipalities of Samar, Philippines—Jiabong, Motiong, and Paranas—targeting fisheries, marine tourism, and coastal-resource management. A convergent mixed-methods design integrated household surveys ($n = 180$), six focus-group discussions, and eighteen key-informant interviews. Quantitative data were analysed descriptively and comparatively across sites, while qualitative transcripts were thematically coded to capture implementation strengths and gaps. Program outcomes diverged by locality. Jiabong participants gained hands-on skills in mangrove restoration and sustainable fishing, yet deficiencies in equipment, infrastructure, and follow-up curtailed long-term impact. Motiong’s trainings emphasised climate-resilient fisheries and community-based governance but offered limited experiential learning, diminishing practical uptake. Paranas adopted an integrated model coupling eco-tourism, biodiversity monitoring, and fisheries management, producing measurable economic gains and conservation benefits; however, weak transport infrastructure and narrow budgets impeded scale-out. Effectiveness depends on aligning curricula with local needs, pairing theory with field practice, and filling resource gaps. Investments in modern tools, infrastructure, and continuous monitoring, alongside multi-stakeholder partnerships that embed inclusivity and cross-sector collaboration, are recommended to sustain and replicate successes. Addressing these factors can strengthen economic resilience and environmental stewardship, advancing coastal communities toward a more robust blue-economy future.

Keyword: blue economy; capacity building; sustainable fisheries; eco-tourism; mixed methods

Presenter: **Arizza Joy Tan-Evardone**

Affiliation/s: College of Science, University of Eastern Philippines University Town, Northern Samar

Primary Contact’s Email Address: arizza.evardone@gmail.com

Zipped: Exploring the Demand for Sustainable and Functional Fashion Among Filipino Gen-Z Students

¹Iñigo Rafael B. Acosta, ²Ethan Thomase E. Alcasid, ³Mathea Angela B. Austria,
⁴Martin Samuel P. Panganiban, & ⁵Celestine Helena M. Soliva

Abstract

This study investigates the feasibility of launching Zipped, a student-led clothing brand that offers convertible pants designed to address sustainability, affordability, and functionality among Generation Z (Gen Z) consumers. Convertible pants refer to transformable garments that can shift from full-length to shorts using a detachable zipper feature, allowing greater adaptability to changing weather conditions and daily activities. The research focused on Senior High School students at De La Salle University Integrated School (DLSU IS), a demographic selected for their relevance as early adopters and trend-sensitive consumers. Using a two-part quantitative methodology, the study conducted an interest survey to assess consumer attitudes and a conjoint analysis to determine the relative importance of product attributes such as fabric, price, style, comfort, and sustainability. A total of 61 valid responses were gathered. Findings show that affordability, comfort, and sustainable materials are the top drivers of purchase intent, while multifunctionality plays a secondary but supportive role. The Theory of Planned Behavior (TPB) and the Consumer Decision-Making Model served as theoretical frameworks, linking individual attitudes, values, and perceived utility to consumer choice. Results confirm that Gen Z consumers are responsive to sustainability when aligned with practical and aesthetic considerations. This study provides evidence-based insights for product development and targeted marketing and demonstrates how pre-test consumer research can guide socially responsible and market-relevant business planning. Although full implementation is beyond the current scope, the data strongly supports the viability of Zipped. as a student-driven sustainable fashion initiative.

Keyword: convertible pants, consumer preference, sustainable fashion, Gen Z, conjoint analysis

Presenter: Iñigo Rafael B. Acosta, Ethan Thomase E. Alcasid, Mathea Angela B. Austria, Martin Samuel P. Panganiban, & Celestine Helena M. Soliva

Affiliation/s: De La Salle University Laguna Campus

Primary Contact's Email Address: mathea_angela_austria@dlsu.edu.ph

Indigenous Peoples' Mandatory Representation and Participation in Barangay Governance: Challenges and Opportunities for Improvement

Lorenzo B. Dinlayan

Abstract

Indigenous peoples make up nearly 17% of the Philippine population, yet they have historically been marginalized in decision-making processes. The Philippines mandates IP representation in barangay councils through Indigenous Peoples Mandatory Representatives (IPMRs). While this policy is a step forward, the IPMR participation and its impact on governance remain understudied. Drawing on the substantive representation theory, this study examines how IPMRs actively participate and advocate for their communities' interests within the complex political arena of barangay governance. This study uses triangulation to examine IPMR participation, challenges, and opportunities in Malaybalay City. Specific objectives include measuring participation levels, analyzing demographic factors, identifying challenges, and suggesting strategies for improvement. The findings contribute to a better understanding of IP representation in local governance and inform policies aimed at empowering IPMRs. Findings reveal high levels of participation in barangay councils, actively engaging in meetings, representing community concerns, and advocating for policies. At 4.69 as overall average, IPMRs have very high participation in various aspects of governance, advocate for indigenous peoples' rights, and contribute to community development. With a P-value of .79, age is not significant to their participation. Similarly, the P-value at .32, sex is neither significant, too. However, they also face significant challenges in fulfilling their roles effectively. Political pressures, limited knowledge and resources and competing interests and power dynamics came out as top issues. Proposed strategies are drafted to include attendance and engagement, advocacy for policies, and communication with community leaders to bolster their capacity and impact.

Keyword: Challenges, Indigenous Peoples, Indigenous Peoples' Mandatory Representatives, Opportunities, Participation

Presenter: **Lorenzo B. Dinlayan**

Affiliation/s: College of Public Administration and Governance Bukidnon State University
Malaybalay City, Bukidnon 8700 Philippines

Primary Contact's Email Address: lorenzo_dinlayan@buku.edu.ph

Engineering and Information Technology

Smart Lighting Artificial IntelligenceDriven Platform for High-Valued Crops on Hydroponics System

Myrtel S. Bernardo

Abstract

This study introduces a solar-sharing, AI-driven smart lighting platform designed to optimize crop growth in indoor hydroponic systems. The system integrates renewable energy sources with Arduino-based control technology to automatically adjust LED illumination based on environmental conditions and sunlight availability. Using fuzzy logic models, the platform maintains precise light regulation, achieving 96% accuracy with an Absolute Mean Error of 4%. This intelligent control enhances energy efficiency by dimming LEDs during periods of abundant sunlight and increasing light when needed, resulting in reduced energy consumption and operational costs. The setup was tested in an indoor vertical farming environment cultivating high-value crops such as lettuce, cherry tomatoes, and strawberries, with promising results in crop yield, growth stages, and quality attributes. The system's automation and adaptability contribute to sustainable agriculture practices by maximizing crop production with minimal energy input and environmental impact. Furthermore, it aligns with global efforts toward achieving multiple Sustainable Development Goals (SDGs). Specifically, it supports SDG 2 (Zero Hunger) by promoting food security through efficient crop production; SDG 13 (Climate Action) by reducing carbon footprint via renewable energy utilization; and SDG 15 (Life on Land) by encouraging sustainable land management practices. The innovative use of renewable energy and smart AI controls in indoor farming systems demonstrates a scalable and sustainable solution capable of addressing future food security challenges while promoting environmentally responsible agricultural practices. Through this approach, the research contributes to advancing sustainable agriculture technologies that are both economically viable and environmentally friendly.

Keyword: Solar-sharing smart lighting, Artificial Intelligence (AI) Hydroponics, Renewable energy, Indoor vertical farming

Presenter: Myrtel S. Bernardo

Affiliation/s: Bulacan Agricultural State College

Primary Contact's Email Address: engr.myrtelbernardo@gmail.com

Root Zone Cooling System for Sustainable Intensified Vertical Modular Hydroponics Crop Production

¹Meriam F. Sulit, ²Rael C. Tejada & ³Nerilyn J. Victoria

Abstract

Sustainable Development Goals (SDG) 12 on responsible consumption and production and 13 on climate action set forward by the United Nations are directing researches and government policy-making focus on sustainable and improving life. This calls for humane-driven solutions with sustainable impact to the endusers, the farmers and the community. Root zone cooling system are being employed to provide solution to control environmental factors affecting production such as temperature and relative humidity, that has direct effect on the water quality parameters especially with hydroponics production. Hence, the study root zone cooling system for sustainable intensified vertical modular hydroponics crop production were crafted by Bulacan Agricultural State College researchers. The general objective of the study aimed to design an intensified vertical modular hydroponics (IVMH) with root zone cooling system for crop production. Two sets of IVMH were established, one with cooling system and one without cooling system. The IVMH with cooling system was replicated three times and were arranged randomly in the field. Thirty test plants per tower were randomly selected and labelled. The application of the rootzone cooling system had lower the nutrient solution water tanks temperature by an average of 6.0°C during the 12:00 noon before the temperature dissipates compared to the nutrient solution of the water tank without RZCT. Out of all the treatments and replications combinations tested, only T1R1 and T2R3 showed statistically significant differences. Among them, T1R1 stands out by far. It has an extremely high Fvalue and a very low p-value (0.000), which strongly suggests that whatever treatment was used in T1R1 worked exceptionally well. T2R3 also showed some effect ($p = 0.009$), but it was not as strong as T1R1. The area and water productivity were 9.07 kg/m² and 223.95 kg/m³; indicating the efficiency of usage in producing the crop in IVMH. Financial viability shows that the positive ROI of 20.68% and BCR of 1.33 indicate strong profitability and efficient operations. The payback period of 4.84 years is a reasonable timeframe for recouping the initial investment in a long-term agricultural venture.

Keyword: Root zone cooling system, sustainable intensified vertical modular hydroponic, nutrient solution, Sustainable Development Goals (SDG) 12 and 13, hydroponics production

Presenter: **Meriam F. Sulit**

Affiliation/s: Bulacan Agricultural State College

Primary Contact's Email Address: mfsulit.international.affairs@basc.edu.ph

Determination of Factors Affecting the Retention Rate of Institute of Engineering and Applied Technology Students

¹Michelle M. Cortez, ²Engr. Alfredo L. Taluban Jr., ³Engr. Rodwin Derick C. Catiis,
⁴Engr. Alexis Geronimo, ⁵Christine V. Grimaldo

Abstract

The Institute of Engineering and Applied Technology (IEAT) recognized the importance of student retention to its academic programs. Therefore, the institute did its best to address challenges, ensuring its students' success and reputation. This study, a testament to the institute's dedication, aims to identify the factors contributing to the institute's retention rate. It investigates these factors with a thorough, mixed-methods approach to gather data on the factors affecting student retention, with respondents from its programs from 2018 to 2023. The study employed both probability and non- probability sampling, and academic, social, and institutional factors were examined. Descriptive statistics and correlation analysis were used to analyze the survey questionnaire responses, ensuring the validity and reliability of the findings. Meanwhile, qualitative data were transcribed and analyzed thematically to identify the themes and patterns of their responses. The results suggest that the retention rate of IEAT students was affected by various indicators. Academic factors such as program difficulties and the quality of teaching are significant indicators of student retention. On the other hand, social factors such as community engagement, peer relations and collaborations, academic advising, and campus resources and services are positively associated with student retention. This positive association provides a promising outlook for potential improvements. Lastly, institutional factors, such as financial aid, moderate their overall satisfaction, while academic policies and support raise concerns about accessibility and fairness. Based on the study results, updated policies, expanded student academic support, improved support services, and a data-driven retention system are recommended to address the IEAT student retention.

Keyword: Student retention, academic, social, institutional

Presenter: **Michelle M. Cortez**

Affiliation/s: Bulacan Agricultural State College

Primary Contact's Email Address: michelle_cortez@basc.edu.ph &
michcortez1234@gmail.com

Comparative Analysis on Cost, Accessibility and Reliability of the Different Energy Systems in the Philippines using the PRISMA 2020 Framework for Systematic Review

¹Archiebald Landrey M. Bonagua, ²Joseph Andrew A.Sioson, & ³Jacob F. Villanueva

Abstract

Fossil fuels dominate the energy sector, providing a substantial portion of the country's power due to their high accessibility and reliability. As the Philippines faces increasing energy demand amid environmental concerns, transitioning to sustainable and reliable energy sources is essential. This study systematically reviews and compares coal, oil, natural gas, geothermal, hydro, solar, and wind energy in terms of cost, accessibility, and reliability, using the PRISMA 2020 framework and qualitative content analysis. 50 papers were coded and analyzed with qualitative content analysis. Findings indicate that fossil fuels maintain dominance due to extensive infrastructure and consistent power supply, while renewable energy sources, though more cost-effective in operation, are constrained by uneven regional resource distribution and infrastructure gaps. Notably, there is a scarcity of comprehensive local research, highlighting the need for advanced data-gathering methods. To support the country's sustainable energy transition, this study recommends investing in decentralized renewable systems complemented by energy storage to improve accessibility and resilience—particularly in remote areas. These insights provide critical guidance for policymakers, planners, and investors aiming to develop a balanced and sustainable Philippine energy portfolio.

Keyword: electrical energy, philippine energy systems, comparative analysis

Presenter: Archiebald Landrey M. Bonagua, Joseph Andrew A.Sioson, & Jacob F. Villanueva

Affiliation/s: De La Salle University - Laguna Senior High School

Primary Contact's Email Address: archiebald_landrey_bonagua@dlsu.edu.ph, joseph_sioson@dlsu.edu.ph, & jacob_f_villanueva@dlsu.edu.ph

Managing Acceptability and Electrical Safety of an Innovated Smart Outlet

Ronilo Achmad S. Cuachon

Abstract

This research was conducted to determine the acceptability of a newly designed smart socket to prevent electrical shocks. The research has been done in such a way that it includes the determination of the technical requirements for this type of smart socket, including design and construction, materials used, and cost; performance; features; reliability; durability; conformance; perceived ease of use; and perceived usefulness. This research adopted a quantitative and descriptive approach, wherein data were gathered from technical experts with the use of standardized questionnaires. Data used in this study were collected at Cebu Technological University-Main Campus. Responses were analyzed using such statistical measures as the weighted mean. The results indicated that, in general, smart outlet performance was good, with its acceptability regarding construction materials, costs, usefulness, performance, conformance, and durability, and reliability. Further, the smart outlet was considered quite effective by respondents in enhancing electrical safety and hazard prevention, hence raising their confidence in managing electrical risks. Thus, the research has given some very valuable insights and suggestions to improve residential electrical safety concerning child safety, overloading, and short circuits. In general, the smart outlet proved to be highly useful, flexible, and safe. The study has shown the significance of awareness on electrical safety and innovative technologies for the prevention of electrical hazards. A device like this will be an initiative to make the in-house electrical infrastructure much safer and more user-friendly.

Keyword: Electrical safety, RCBO (Residual Circuit Breaker with Over Current), Smart outlet, Technology Adoption

Presenter: **Reycher L. Mortejo**

Affiliation/s: CEBU TECHNOLOGICAL UNIVERSITY – MAIN CAMPUS

Primary Contact's Email Address: reycher23@gmail.com

Design and Optimization of an Automated Waste-To-Fertilizer System: A Sustainable Organic Waste Management

Reycher L. Mortejo

Abstract

The Institute of Engineering and Applied Technology (IEAT) recognized the importance of student retention to its academic programs. Therefore, the institute did its best to address challenges, ensuring its students' success and reputation. This study, a testament to the institute's dedication, aims to identify the factors contributing to the institute's retention rate. It investigates these factors with a thorough, mixed-methods approach to gather data on the factors affecting student retention, with respondents from its programs from 2018 to 2023. The study employed both probability and non-probability sampling, and academic, social, and institutional factors were examined. Descriptive statistics and correlation analysis were used to analyze the survey questionnaire responses, ensuring the validity and reliability of the findings. Meanwhile, qualitative data were transcribed and analyzed thematically to identify the themes and patterns of their responses. The results suggest that the retention rate of IEAT students was affected by various indicators. Academic factors such as program difficulties and the quality of teaching are significant indicators of student retention. On the other hand, social factors such as community engagement, peer relations and collaborations, academic advising, and campus resources and services are positively associated with student retention. This positive association provides a promising outlook for potential improvements. Lastly, institutional factors, such as financial aid, moderate their overall satisfaction, while academic policies and support raise concerns about accessibility and fairness. Based on the study results, updated policies, expanded student academic support, improved support services, and a data-driven retention system are recommended to address the IEAT student retention.

Keyword: Solid Waste Management, Automation, Garvin's Quality Theory, Organic Waste Conversion, Sustainability

Presenter: **Reycher L. Mortejo**

Affiliation/s: CEBU TECHNOLOGICAL UNIVERSITY – MAIN CAMPUS

Primary Contact's Email Address: reycher23@gmail.com



Bulacan Agricultural State College
San Ildefonso, Bulacan 3010, Philippines
<https://basc.edu.ph>
info@basc.edu.ph
(044) 792 4409 | (044) 816 7161

Research, Extension, Production and Development Office
San Ildefonso, Bulacan 3010, Philippines
repd@basc.edu.ph
(044) 697 1730