*Abstract – BEP001*

**EXPRESSKART ONLINE GROCERY DELIVERY SERVICE**

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****Expresskart is an internet-based grocery delivery service that offers same-day door to door delivery that mainly covers urban areas of Butuan City. In Expresskart model, the website contains varieties of grocery products where customers can select different grocery items and pay through cash on delivery (COD), cash remittances center, debit card and credit card. After receiving all the orders from the customers, Expresskart delivery man goes to the tie-up store and purchased the ordered items and deliver it immediately to the customers. Regardless of unavailability of internet connection, customers can still avail the service through phone call or by sending their list of orders. Expresskart set the delivery fee at a reasonable price amounting to P120.00 and no product mark-up.To determine the feasibility of this business in Butuan City, the researcher used descriptive research method to be able to evaluate the Effectivity of online grocery shopping. The target market of Expresskart are the households living in urban barangay of Butuan City. Based on the Philippine Statistics Authority (PSA) the total population of the target market is twenty thousand nine hundred ninety-two (20, 992). From this population, the researcher used Slovins formula with five percent marginal error resulted to 392 total respondents. The researcher designed an open-ended questionnaire distributed to the households in urban barangay of Butuan City. The questionnaire consisted of nine (9) questions. As a result of the study, there is a total of 224 respondents or 57% are willing to avail the service and 43% or 168 respondents are not willing to avail. From this result, Expresskart has a market share of 20%. Based on the size of the market and the projected sales, the increase of sales is 8% annually. The return on investment is 38.43% on its first year, 40.22% on second year, 32.2% on third year, 27.27% on its fourth year and 23.85% on its fifth year of operation. By availing the service of Expresskart, customers are able to have a convenient, less hassle, and time-saving grocery shopping which they can shop grocery items online and have it immediately.

***Keywords****: Expresskart, Investment, marginal, feasibility, customers*

*Abstract BEP002*

**EVALUATION ON THE EFFECTIVENESS OF ADVERTISING MEDIA USED BY GLORETO SUITE IN MONTILLA STREET BUTUAN CITY**

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Effectiveness in the Advertising Media used by Gloreto Suite in Montilla Street, Butuan City, Agusan Del Norte was determined. Purposive-Convenience Sampling Method was used in the study. There were three (3) Advertising Media considered. Likert-Scale Model was utilized to interpret the advertising media employed. A total of 64 respondents were chosen to answer the questionnaires. Among the three (3) advertising media: Flier, Facebook Page, and Tarpaulin, the result shows that Tarpaulin obtained the highest weighted mean of (2.08) with a verbal description of fair which means it only slightly influenced customers to avail the offered service, hence, less effective. On the other hand, Flier got the overall weighted mean of (1.75), and Facebook page also got (1.73). This further means that these two (2) advertising media were ineffective in influencing customers to avail the offered service of the company based on the Likert-Scale Model Interpretation. Herein, the management fails to manage consistently its advertising media especially its facebook page which has the higher possibility of reaching a large number of potential customers. Furthermore, the number of fliers and tarpaulins produced were not enough in raising awareness of the existence of the business. Hence, there is really a need for the company to change the way it advertised the establishment by improving the attributes, performance, and execution of its existing media in order to influence and induced actions from a large number of potential customers.

***Keywords****: Advertising media, fliers, social media, tarpaulin*

*Abstract BEP003*

**Evaluation on Credit and Collection Practices of Fundline Finance Corporation Butuan Branch**

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The Evaluation of Credit and Collection Practices of Fundline Finance Corporation Butuan City Branch was assessed. The study aimed to evaluate credit and collection practices based on credit application, credit investigation, credit approval, credit terms and collection policy. The study used descriptive method and purposive-complete enumeration. A total of nine (9) respondents were subjected. Moreover, a four-point Likert Scale was also used to interpret and analyze the data gathered. Results showed that the highest average mean was 3.06 with a verbal description of Often under the area of credit application. It was followed by an average mean of 2.80 with a verbal description of Often under collection policy area. An average mean of 2.71 with a verbal description of Often under the credit approval area was on the third line. The second lowest average mean was 2.31 with a verbal description of Sometimes under credit application area. The lowest mean was 1.64 with a verbal description of Never under the area of credit term. This indicated that Fundline Finance Corporation was lenient in its implementation of credit and collection policy. Therefore, they need proper implementation in accordance their manual so that the company would not experience high delinquency accounts. The researchers recommend that the corporation must have a proper work designation of the employees in order to separate the workplace of each employee. Also, the corporation should hire more competent financial consultants to become efficient in collecting the everyday payment and delinquent accounts. In rewards for early payment, the corporation should grant a discount to customers who would pay on time or before due date. For the late paying customer, the corporation should charge penalties by cancelling their credit line and disallow them to re loan. Thus, evaluating the credit and collection practices is useful in a financial institution to increase the cash inflow of the business.

***Keywords:*** *Collection, Evaluation, delinquent, investigation, enumeration.*

*Abstract BEP004*

**EVALUATION ON CREDIT MANAGEMENT OF WILKRIS APPLIANCE CORPORATION**

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The study evaluated the practices of credit management of Wilkris Appliance Corporation Butuan Branch on areas of application processing, credit standard and credit monitoring. Descriptive research method was used to evaluate the practices of credit management of the company. Purposive-complete enumeration sampling was done, a total of three hundred nineteen (319) respondents. Result showed that credit monitoring has the highest mean of 2.4 while application processing has the lowest mean of 2.2 and both have a verbal description of sometimes. While the application processing has the mean of 2.38 with a verbal description of sometimes. The finding revealed that the credit management practices of Wilkris Appliance Corporation was occasionally practiced that is why the company has been experiencing an increase of delinquent accounts which resulted to an increase of unpaid debts of their customers. The researchers proposed recommendations in order to help in minimizing the delinquent accounts such as the company must be strict in the submission of requirements as well as the customers filling up the application form and verified through initial interview and investigation. Furthermore, must have a thorough investigation and evaluation for a basis of approval upon/before availing the credit, always review and monitor the customer’s status in terms of its record of collection every day, send a message 4 days to 7 days before/prior to its due date, update/improve the website to have a wide customer’s access of information. Thus, the study helps to sustain the decreasing delinquent account.

***Keywords:*** *Credit Management,standard, delinquent account, investigation*

*Abstract BEP005*

**An Effective Evaluation on Collection Management of Isomedical Ventures Incorporated Basis for Improvement**

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The Collection Management of Isomedical Ventures Incorporated in 531 3rd ST. Basic Homes, Baan, Butuan City, Agusan Del Norte was determined. The study focuses on the private customers since the problem are on the private customers. Also, the focus of the study consist of four (4) areas, the monitoring, planning, billing, and reminder and follow-up. The study used the purposive and complete enumeration in choosing the respondents. The researchers both considered the employees and customers as the respondents of the study. The employees’ response in collection monitoring, collection planning, billing and reminder and follow-up had an average weighted mean of (2.03), (1.95), (2.40), (1.80) with a verbal description of Sometimes. In the customers’ response, collection planning, billing, reminder and follow-up had an average weighted mean of (1.90), (2.27), (1.76) with the verbal description of Sometimes.The collection management of Isomedical Ventures Incorporated was lenient and observed but rarely followed which resulted to a rapid increased of overdue accounts in private customers. Isomedical Ventures Incorporated should add more efforts and be strict in collecting the overdue accounts of the customers and in order for them not to be taken for granted by the customers. In addition, it should set a credit limit to avoid a higher amount of accounts receivable, and it must also apply a policy in bad debts and disposition of accounts.

***Keywords:*** *collection management; overdue accounts; monitoring; planning; billing; reminder and follow-up*

*Abstract BEP006*

**PHOTOHAPPIER PRINTING SERVICES**

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Photohappier Printing Services is a sole Proprietorship type of business owned and managed by Ms. Ivy Grace A. Carreon. It is a service related business that is considered a retail outlet business model. The business provides services through photocopying and printing which are the main services offered and the business caters ACLC students from Monday to Saturday. The business is located within ACLC College of Butuan which is accessible and convenient to those students who need a photocopier service. Also, the availability of the business hours would be rendered from 7:30am to 8:30pm in which the competitors closes at 6:30pm and the business also offers affordable prices or services to entice students to choose Photohappier Printing Services. The business Return on Investment would be 47% on its first year of operation, 46% for the second year, 39% for the third year, 33% for the fourth year and 28% for the fifth year of operation. It is indicated that the business has already recovered its cost of investment after one year and seven months of business operation. Photohappier Printing Services started its business operation with an initial capital of Php 140,000.00 coming from the savings of the owner.

***Keywords:*** *Retail Outlet, Services, Convenient, investment, savings*

*Abstract BEP007*

**Evaluation of the Cash Management Practices of Saint Gabriel Multi-Purpose Cooperative (SGMPC) at Barangay Tiniwisan, Butuan City**

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The study was conducted to evaluate the cash management practices of Saint Gabriel Multi-Purpose Cooperative in Barangay Tiniwisan, Butuan City on areas of cash control, cash forecasting, investing surplus cash, and debt management. The study used descriptive research method to evaluate the cash management practices of the cooperative. The study employed purposive-complete enumeration sampling where the respondents are the eight employees who are involved in the cash management practices of SGMPC. The respondents of the study were surveyed through the use of questionnaire and interview. The findings revealed that the cash management practices were not consistently done and practiced specifically on the areas of cash control, cash forecasting, investing surplus cash, and debt management that were implemented and followed leniently. The researchers proposed the recommendations in order to help the cooperative sustain their operations such as increasing its membership of nine (9) heads per month, encourage students below 17 years old and require all the members to Savings deposit, go on with the established service, shorten the cash collection period from 6-month into 4-month term, grant and equally allocate funds to all the borrowers as much as possible, negotiate favorable payment periods on supplies or equipment up to 30-day period by using purchase order, set number of borrowers in a month, invest its idle funds to earn income, invest in short term productive investments such as livestock feeds, limit borrowings, and maintain an emergency funds for payment of debt. If these issues will be given attention, the cooperative can sustain their operations in the long run.

***Keywords:*** *Forecasting, debt management, cash collection, borrowers.*

*Abstract BEP008*

**ASSESSMENT IN THE IMPLEMENTATION OF COLLECTION MANAGEMENT OF MANAPA AGRARIAN REFORM BENEFICIARIES AND COMMMUNITY COOPERATIVE, BUENAVISTA, AGUSAN DEL NORTE**

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Assessment in the implementation of Collection Management of Manapa Agrarian Reform Beneficiaries and Community Cooperative at Km.12, Purok 5, Manapa, Buenavista, Agusan del Norte, was determined. There were three areas of collection management employed (payment alternatives, monitoring and follow-ups, and litigation). The researchers used purposive-complete enumeration and random sampling method for both employees and delinquent member borrowers. Also, used modified Likert Scale to analyzed the data gathered. A total of 97 respondents were surveyed. Among the three areas of collection management, payment alternatives got the highest average weighted mean of 2.76 and 2.6 as both perceived by employees and member borrowers with a verbal description of Often. It was followed by monitoring and follow-ups with an average weighted mean of 2.68 and 2.53 as perceived by employees and member borrowers with both verbal description of Often. The litigation got the lowest average weighted mean of 1.76 and 1.80 with a verbal description of Sometimes as perceived by employees and member borrowers. Based on the results of the study, the MARBCC was lenient in the implementation of its collection management that leads to higher delinquent accounts that affect the operation of the cooperative. Thus, the researchers would like to recommend the following: First is that the cooperative should hire an additional collector among the members of the cooperative. Second, they must fully implement their policy with regards to co-makers. Third, they should undergo litigation process through filing a lawsuit against delinquent member borrowers. Fourth, they should send a text message prior to due date. Lastly, they should create a policy automatically deducting capital savings account of the borrowers.

***Keywords*** *Collection Management; Delinquent Account; Litigation; Monitoring and Follow Ups; Payment Alternatives*

*Abstract BEP009*

**EVALUATION ON INVENTORY MANAGEMENT OF ANGGING DRY GOODS STORE IN BUENAVISTA, AGUSAN DEL NORTE**

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Evaluation on Inventory Management of Angging Dry Goods Store in Buenavista, Agusan del Norte was assessed. There were areas subject to the study (forecasting, ordering and controlling) to help the management change their traditional way of inventory management. The study used the descriptive method of research and a purposive-complete enumeration sampling method. About 8 respondents were analyzed that includes the store manager, cashier, six sales ladies. Results showed that in evaluating the inventory management of the store, forecasting, ordering and controlling has a weighted mean of 2.40, 2.80, and 1.43, respectively. In terms of forecasting, the management lacks knowledge in forecasting that causes them to have incorrect forecasting of the demand. In ordering, the management does not have a reorder point for their inventory which causes them to order stocks consistently from their suppliers. In controlling, the management lacks control over their inventory and failed to follow any standard practices. It was concluded that the areas mentioned above contributed to the increase number of slow-moving stocks made for bargain below its original cost which results to the decrease of the company’s net income of the said store. The management should adapt FIFO method and POS to have control of the inventory and avoid obsolescence of stocks and conduct trainings and seminars to educate the employees of the store.

***Keywords*** *Inventory Management; Forecasting; Ordering; Controlling; Bargain; Obsolescence; Retail; Slow-Moving Stocks*

*Abstract BEP010*

**The Effectiveness of the Collection Policy of Pera Multi-Purpose Cooperative Butuan Branch**

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Pera Multi-Purpose Cooperative Butuan Branch has been experiencing an increase in delinquent amount of SSS pension loans from year 2015 to 2017. The study aims to evaluate the effectiveness of the collection policy and the alteration of non-value adding procedures. The specific areas of the study are the grace period, payment alternative, monitoring and follow-up and litigation. The researchers of this study used descriptive method for the evaluation of this case. The study used the purposive-complete enumeration sampling method, Frequency Distribution Table in summary and presentation of data and weighted mean together with the qualitative description in evaluation the procedures. The given grace period had an average weighted mean of 2.40. Payment alternative had an average weighted mean of 2.52. Monitoring and follow-ups with an average weighted mean of 2.80 and litigation had an average weighted mean of 2.28. The researchers found out that the current collection policy of Pera MPC in delinquent accounts are less effective. The researchers recommended that the cooperative must give a grace period up to 15 days only. Second, the cooperative must apply litigation consistently against the delinquent borrowers in accordance with the time frame designated in taking legal action to make the sending of 2nd and final demand letter effective. Third, the cooperative must take into reality the use of co-makers. Fourth, the cooperative must accept pledges from delinquent borrower specifically those pledges that carries value for sale. Fifth, the cooperative must offer a savings account. Lastly, the cooperative must create a system that will automatically send a text message about the status of the borrower’s obligation.

***Keywords*** *Collection Policy; Delinquent Account; Grace Period; Litigation; Medial Delinquency; Minimal Delinquency; Monitoring and Follow-up; Non-value-added Procedures; Payment Alternative; Value-added Procedures.*

*Abstract BEP011*

**ANALYSIS OF FINANCIAL PERFORMANCE AND OPERATION OF LJ SEEDLINGS SUPPLIER IN BRGY. VILLA KANANGGA, BUTUAN CITY**

**TO MAXIMIZE PROFIT**

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The study was conducted to analyze the practices of LJ Seedlings Supplier in Brgy. Villa Kanangga, Butuan City in relation to its financial performance, acquisition of assets, new project, raising capital, and distributing dividends. It used descriptive research method to analyze the practices of financial performance of LJ Seedlings Supplier. While the study employed purposive-complete enumeration sampling where the respondent was the owner/general manager who was involved in the financial performance of LJ Seedlings Supplier. The respondent of the study was surveyed through the use of questionnaire and interview. The findings revealed that the profit of LJ Seedlings Supplier was not maximize since the practices of the company, specifically on the areas of acquisition of assets, new projects, raising capital, and distributing dividends, were implemented and followed in a few or rare instances.The researchers proposed the recommendations in order to help the business maximize its profit such as applying for license/nursery accreditation to eliminate the expenses on royalty fee for using the Caraga Farmers and Environmental Developers Multi–Purpose Cooperative (CFED-MPC) license, acquiring loan from bank to minimize borrowing cost other than raising funds from friends and acquaintances, separating personal and business transactions to avoid overspending, saving funds to acquire assets in the future such as land to maximize production and or plantation of seedlings, and lastly, expanding to private market other than focusing on government agencies engagements. If these issues will be given attention, the owner can maximize the profit of the business in the long run.

***Keywords: Seedlings,***  *Dividends, plantation, production, seedlings, supplier*

*Abstract BEP012*

**LIGHT MICROFINACE INCORPORATED BUTUAN BRANCH**

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The study evaluated the credit management of LIGHT Microfinance Incorporated in Brgy. San Ignacio Montilla Blvd. Butuan Branch on areas of credit application, investigation and approval. Descriptive research method was used to evaluate the practices of credit management of the company. This study employed purposive-complete enumeration sampling where the respondents are the employees who was involved in the credit management and used purposive-convenience sampling method to a total of one hundred eighty-two (182) clients of LIGHT Microfinance as respondents. Results showed under the credit application and credit investigation has an average mean of 2.47 with a verbal description of sometimes while as perceived by the clients it has the average mean of 2.48 with a verbal description of sometimes. The findings further revealed that the credit management practices of LIGHT Microfinance Incorporated was occasionally practiced that contribute to their problem of an increase in delinquent accounts. The researchers proposed recommendations in order to minimize the problem of delinquent accounts. Recommendations include the following: the company must strictly require the clients to submit all the needed requirements as well as to conduct a loan orientation for new and old clients. Furthermore the client must have a co-maker that should be a non-client of the company, must have a thorough investigation to have a firm basin in the decision of granting loans or not, must hire or assign a collector, must review, update and reevaluate the old client’s creditworthiness, and charge a penalty for late payments.

***Keywords:***  *Credit Management, convenience, occasionally, orientation*

*Abstract BEP013*

**ASSESSMENT OF ACCOUNTS RECEIVABLE MANAGEMENT PRACTICES OF**

**BUTUAN CHAMPION HARDWARE**

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Butuan Champion Hardware was established during the year 1958 at E. Luna Street Corner, Lopez Jaena St, Butuan, 8600 Agusan Del Norte. It offers hardware products, machines and construction products for home-based equipment. Credit limit, credit terms and conditions, monitoring accounts receivable and follow-ups were the three specific areas of the study. The respondents are the management and contractors of Butuan champion Hardware. The researchers of this study used descriptive method for the purpose of solving, evaluating and assessing this case. For the sampling design, the researchers used purposive convenience sampling method for the contractors, while random sampling method for the employees. Among the three areas of the study, credit terms and conditions got the highest weighted mean 2.82 and 2.75 as perceived by the contractors and employees respectively with a verbal description of Often. It was followed by monitoring and follow-ups with an average weighted mean of 2.50 as perceived by the contractors and 2.46 as perceived by the employees with both verbal description of Sometimes. The credit limit got the lowest average weighted mean of 2.42 and 2.32 as perceived by contractors and employees respectively with a verbal description of Sometimes. Based on the result of the study, Butuan Champion Hardware has a variety of ways to collect payments from the contractors, but they do not have a standard credit and collection policy to follow. Hence, the researchers would like to recommend the following: First, the business should conduct credit investigation. Second, the business should charge over the limit fee for all the contractors. Third, the business should give a discount rate of 3% for those contractors who fully paid their account 15 days before their due date. Fourth, the business should hire an appraiser. Fifth, the business should strictly ask for collateral when the contractor exceeded on his credit limit. Lastly, the business should create standard procedures regarding credit and collection policy.

***Keywords:*** Discount rate, Appraiser, Collection Policy, Credit policy

*Abstract BEP014*

**ASSESMENT OF CUSTOMER SATISFACTION IN TERMS OF PHYSICAL ENVIRONMENT OF WE CARE FITNESS GYM IN SOUTH MONTILLA BOULEVARD, BRGY. J.P. RIZAL, BUTUAN CITY**

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The researchers conducted a study entitled Assessing Customer Satisfaction in terms of Physical Environment of We Care Fitness Gym in South Montilla Boulevard, Brgy. J.P.Rizal, Butuan City, Agusan Del Norte. Well assessed Purposive-Convenience Sampling Method was used for gathering data. A modified survey questionnaire was developed and a frequency distribution table was used for the weighted mean and used Likert Scale to analyze data. There were 50 sample questionnaires used for the respondents during the survey. The study was conducted from June 2018 up to December 2018. The result of the evaluation showed that in the area of Ambient Condition obtained the highest weighted mean of 2.63. It reveals that We Care Fitness Gym has a serene and safe atmosphere that customers feel comfortable to perform their physical fitness. In Signs and Symbols, it reveals that the fitness gym has a proper signages and symbols inside and outside the gym. The Spatial Layout reveals that the fitness gym does not have enough space for the equipments as well as the arrangement and design of the gym. The Functionality obtained the lowest weighted mean of 2.29, it reveals that the functionality of the equipment of We Care Fitness Gym did not meet the customers expectation. This study stated that the customers are not satisfied with the overall condition of the physical environment of We Care Fitness Gym, which lead to have a dissatisfied customer. This study will help We Care Fitness Gym to know what are the changes they should make to satisfy the customers. Hence, it was recommended that We Care Fitness Gym manager should engage more into enhancing the physical environment in terms of ambient condition, signs and symbols, spatial layout and functionality of the gym as they cause customer satisfaction.

***Keywords****: Fitness, Functionality, Satisfaction, Purposive-Convenience*

*Abstract BEP015*

**ASSESSING CUSTOMERS’ SATISFACTION IN**

**PHYSICAL ENVIRONMENT OF KARL’S KITCHENETTE**

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The researchers conducted a study entitled Assessing Customers’ Satisfaction in Physical Environment of Karl’s Kitchenette in Buenavista, Agusan del Norte. To assess the customer satisfaction of Karl’s Kitchenette a purposive-convenience research method was used. There were four (4) areas considered. A modified questionnaire was also developed and used a frequency distribution table using the weighted mean. A total of 51 respondents were randomly surveyed and able to answer the given questionnaires. The (4) four areas are Store Signage, Spatial Layout, Ambiance, and functionality. Results showed that Functionality has weighted mean of (2.38), Spatial Layout (2.36), Ambiance (2.30), and Store Signage (2.01) the result showed that all areas of physical environment are below satisfactory and below customers’ expectation in the Likert- Scale Model Interpretation. Thus, it suggests that the signage must be improve in size while at night time this emphasized by installing a light fixtures to be visible. For Spatial Layout, provide a kitchen cabinet, change the boundary wall into a sliding door and window while the Ambiance, install an Air Conditioner, add light bulb inside the kitchenette with a maximum wattage, repaint the faded walling, add decoration that is classy and is in line with the new trend. Lastly, for functionality, remake the menu list, clean the fans regularly, remodel the main door, and change the torn out part of the ceiling outside kitchenette. Thus, the outcome of the study reveals significant information in physical environment of Karl’s Kitchenette.

***Keywords:*** Expectation, Ambiance, Fixtures, classy, functionality

*Abstract BEP016*

**Evaluating the Effectiveness of Marketing Strategy of 3 in 1 Water Refilling Station in Barangay Dagohoy, Pili Drive, Butuan City, Agusan del Norte**

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The Effectiveness in the Marketing Strategies of 3 in 1 Water Refilling Station in Brgy. Dagohoy, Butuan City, Agusan del Norte was determined. A purposive-convenience sampling method used in the study. There were four (4) Marketing Strategies applied. Likert-Scale Model was also utilized to interpret the marketing strategies employed. A total of 150 respondents randomly surveyed and able to answer the given questionnaires. Among the four marketing strategy: Product, Price, Place, and Promotion. Results showed that Product obtained the highest weighted mean of (2.54) indicating an Effective Marketing Strategy. On the other hand, the price has a weighted mean (2.46), Place (2.39) and Promotion (2.32) respectively. These three marketing strategies were considered Less Effective, and that must be implemented by the establishment to be able to support the business study. Further, Product is a significant aspect of marketing strategies and thus ensures quality and could sustain the needs of the customers. Therefore, evaluating the marketing strategies help to understand the current condition of any businesses and also advancement to stabilize its development.

***Keywords:*** *Marketing Strategy, Refilling Station, Promotion, sampling*

*Abstract BEP017*

**The Evaluation on the Service Quality of MAPECON (Manila Pest Control) Philippines Incorporated Butuan Branch at Guingona, Butuan**

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The Evaluation on Service Quality of MAPECON (Manila Pest Control) Guingona, Butuan City was employed. The purpose of the study is to assess its areas that greatly affect the increasing back jobs and cost incurred by the company at present. Purposive-random samplings were used in the conduct of the study. Likert Scale Model was used to express the response. A total of 101 respondents were randomly surveyed to answer the given questionnaires. Upon evaluating the results of the study, the overall rating of the service quality of MAPECON PHILS. INC, Butuan are occasionally practiced which means that upon rendering service to the clients, the company fails to give them quality services at all times. This further means that the practices of the company are insufficient in giving optimal quality of service to its clients. Among the five dimensions of service quality: Reliability, Assurance, Empathy, Responsiveness and Tangibles, the results showed that Responsiveness obtained the highest weighted mean of 2.77 which means frequently practiced; and the reliability dimension got the lowest weighted mean of 2.03 which means occasionally practiced. This means that reliability dimension greatly contributes to the increasing complaints and back jobs incurred by the company at present. Thus, to sustain the operation of the company, the business should conduct skills trainings and seminars to its service technicians and should include in their service agreement the different conditions of the various services offered by the company in order to gain customer patronage and a positive word of mouth.

***Keywords:*** *Evaluation, Responsiveness, complaints, back jobs*

*Abstract BEP018*

**ASSESSMENT AND IMPLEMENTATION OF**

**STANDARD REQUIREMENT’S FROM DEPARTMENT OF TOURISM (DOT) THROUGH TAM’S FORTUNE INN BRANCH 1 BUTUAN CITY, AGUSAN DEL NORTE**

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Assessment And Implementation of Standard Requirements from Department of Tourism (DOT) through Tam’s Fortune Inn Branch 1 Butuan City, Agusan Del Norte was determined. Purposive sampling method was used in the study. There were ten (10) Standard requirements of tourist Inn considered. Likert-scale model was also utilized to interpret the data gathered. A total of 92 respondents were randomly surveyed and able to answer the given questionnaires. Among the ten (10) standard requirements of tourist Inn, there are four (4) standard requirements that the Inn did not comply (dining room, emergency power, parking area and telephone) which are subject for recommendation. Only six (6) were assessed, (Bedroom Facilities, Furnishing, Location, Radio/Television, Reception, and Security).The result showed that the Location obtained the highest weighted mean of 2.66, followed by Security with a weighted mean of 2.60, both qualitative description of good. Radio/Television 2.30, Furnishing 2.29, Reception weighted mean 1.91 and Bedroom Facilities got the lowest weighted mean of 1.85. These six (6) standard requirements of tourist Inn considered as below customer satisfaction in the Likert scale model interpretation. The study helps to understand the current condition of the businesses and also to meet and follow the standard given by the Department of Tourism (DOT) to improved and develop their company.

***Keywords****: Tourist Inn, Customer Satisfaction, Reception, Security*

*Abstract BEP019*

**EVALUATION ON THE BUSINESS PERFORMANCE OF MALAMBUON MULTI-PURPOSE COOPERATIVE IN BRGY. DUMALAGAN, BUTUAN CITY**

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The researchers conducted a study entitled Evaluation on the Business Performance of Malambuon Multi-Purpose Cooperative in Brgy. Dumalagan, Butuan City. Well assessed Homogenous Purposive Sampling Method was used for gathering data. A modified survey questionnaire was developed and a frequency distribution table was used for the weighted mean and used Likert Scale to analyze data. There were 134 sample questionnaires for the member and 22 sample questionnaires for the management staff used during the study. The study was conducted from June up to December 2018. The result of the evaluation showed that in the area of Learning and growth perspective obtained the highest weighted mean of 2.97. For Customers perspective it obtained the lowest weighted mean of 2.55 which both demonstrates contentment in the operational and financial performance of the cooperative. It showed that in terms of Customer’s perspective, Learning and growth perspective the management staff and coop members are both contented and satisfied to the performance of the cooperative. However, if this will continue it will create dissatisfaction to the members because some of their wants and needs are not attained and performed. Hence, it was recommended that Malambuon Multi- Purpose Cooperative should offer livelihood and entrepreneurial loans to its members to assist them to have their own capital, the cooperative must tap the Commission on Higher Education (CHED) for the livelihood and training for educational scholarship, and must develop their own online portal to be able to create development to the cooperative.

***Keywords****: Business Performance, Cooperative, Livelihood, perspective*

***Abstract* –** ITEP001

**AMA Computer Learning Center (ACLC) Graduate Tracer and Forecasting using Time-Series Analysis**

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Tracer study is an approach which is globally used in most organization especially in the educational institutions to track and to keep a record of students once graduated from the institution. This study aims to develop a Decision Support System (DSS) tool that will analyze the systematic tracing of graduates and make decisions based on the outcome of the forecast. Decision Support System (DSS) is an [information system](https://en.wikipedia.org/wiki/Information_systems) that supports business or organizational [decision-making](https://en.wikipedia.org/wiki/Decision-making) activities. This serves the management, operations and planning levels of an organization and help people make decisions about problems that may be rapidly changing and not easily specified in advance. The proponents used Auto-regressive Integrated Moving Average (ARIMA) a time-series analysis model to forecast the future number of graduates in the upcoming year as well as the graduate’s productivity and competitiveness, also the number of employed and unemployed graduates. To improve decision making and analyzing of data; to generate statistical results a decision support system tool must be develop. The proponents conducted a survey to test the developed system’s efficiency to the graduates as the respondents and was acceptable based on the obtained 3.95 mean average. With that, the proponents developed a decision support system that would give assistance to the institution on the decision-making and planning preparation regarding on how to improve the curricular programs of BS in Information Technology, BS in Computer Science, BS in Business Administration major in Financial Management, BS in Business Administration major in Marketing Management, Computer-Based Accounting and Associate in Computer Technology of ACLC College of Butuan.

***Keywords*** : Decision Support System (DSS); Auto-regressive Integrated Moving Average (ARIMA); Tracer Study.

***Abstract* –** ITEP002

**KamayUtak: A Multiplayer Android Game**

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The study of the KamayUtak: An Android Multiplayer Game is focused on the promotion of playing Filipino Games using Android phones in offline mode using the Hotspot Connection. The proponent’s idea of this game is to create an Android multiplayer game and to promote Filipino Games in order for the new generation to remember and interact with each other about what had happened in the past. This game will help the players to have a vision about what are the different types of Filipino Games. With the use of an Android phone, this game will be effective because majority of people nowadays uses Android phones where this game can be exclusively played. This game application requires a minimum version of Android 4.0.4 and above for the game to have a smooth and good performance. Through research, the game was discovered to apply and enhance the other games concept. The game contains a main objective, a player needs to accomplish. This can be accessed and be able to perform in the following OS Sandwich, JellyBean, Lollipop, Marsh Mallows, Nougat. The game can be played by 2-3 players with a hotspot connection. Due to process analysis of the study, the proponents of KamayUtak concluded that the objective of the project were met. The development for the KamayUtak played in offline using Hotspot connection is divulged. Enhancement are highly appreciated if there will be some individuals in the future generation who want to enhance this study. The objective of the game was achieved. It is done and applied during the development. Since it is the linchpin of the game, the game will be played interestingly and retains the presence of the Filipino game. Developing the KamayUtak: A multiplayer android game was accomplished.

***Keywords*:** Android; Hotspot Connection; Filipino Games; Offline mode; Android Versions; Multiplayer

***Abstract* –** *ITEP003*

**BOOKISTA – An Electronic Library with Augmented Reality**

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Bookista - An Electronic Library System with Augmented Reality is a web and mobile application which makes library experience modern technology. This innovation helps the student and librarian for the easy flow of transactions inside the library. It promotes Augmented Reality through the use of your android mobile device. The application scan the QR code of every book, then it offers not only the eBook version but also other related books, online references and the details of the book. This web and mobile based application is a modern innovation for the library experience of all library user. The proponents used the System Development Life Cycle (SDLC) method Iterative Waterfall Model a sequential design process for the deployment of the processes of the system. This model is appropriate for the developed system since it is a step by step process, every phase of the development can be repeated whenever there are changes along the development. After the survey, the results were tabulated and found out that the developed software garnered positive responses from the selected respondents of the study. The developed system was highly acceptable and efficient to the users based on the total mean of 4.70 gathered from the ISO-1926-1 Survey Questionnaire. The proponents concluded that with the use of Bookista: An Electronic Library System with Augmented Reality in the library would make the transaction inside the library more efficient, reliable and advance compared to the current manual processing of transaction.

***Keywords*:** Augmented Reality; Library; E-library; E-book; Android Application; Books; Web Application; PDF.

***Abstract –*** *ITEP004*

**AGUSAN RIVER FLOOD MONITORING WITH SMS ADVISORY USING RASPBERRY PI**

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Agusan River Flood Monitoring using Raspberry Pi with SMS Advisory has been developed to give warning and to help the residents of the affected barangays because Butuan City was prone to flooding during rainy season. This study focuses only on the water level detection and early warning system (via SMS) that alerts affected residents for a potential flood event and give the address of the nearest evacuation center in their area. Furthermore, inquiry was also included in this study to become more interactive wherein individuals in the community inquire the actual water level status and the residents can also turn on and off the SMS notification alert through SMS keyword. Using System Development Life Cycle (SDLC) as a method in making the software was very useful and helpful in identifying errors during the development. The following technologies like Raspberry Pi 3 B+, Ultrasonic Sensor, and GSM are used in making the prototype. The proponent conducted a survey for the software quality of the system to the affected barangay and was highly acceptable based on the total mean obtained of 4.52. The software was indeed useful to the residents who live in the flood prone area because it helps them evacuate early before the situation get worst. This eliminates the manual way of detecting the water level of the flood and late receiving of SMS warning of the residents. it was relevant and important as per needs for safety and welfare of the community.

***Keywords:*** *Agusan River, Raspberry Pi, Flood Monitoring.*

***Abstract –*** *ITEP005*

**Evacuation Center Locator Using Geographical Information System (ECLGIS)**

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Evacuation Center Locator using Geographical Information System (ECLGIS) has been developed to find the nearest evacuation center base on user’s current location in Butuan City. The user should open the global positioning system (GPS), on their smartphones and after that it would automatically determine where they are. It would also give nearest evacuation center based on user current location. This study focuses only on finding the nearest evacuation center base on user’s current location. Furthermore, inquiry was also included in this study to become more interactive wherein individuals in the community can use the application in terms of any catastrophe and view all nearest evacuation center. Using System Development Life Cycle (SDLC) as a method in making the application was very useful and helpful in identifying errors during the development. The following technologies like Android Studio and ARCGIS are used in making the application. The proponents conducted a survey for the application quality of the system to places with a high risk of imminent threat like flood prone area and was highly acceptable based on the total mean obtained of 4.70. The application was indeed useful to the residents of Butuan City who live in the flood prone area because it helps them find the nearest evacuation center base on user’s current location before the situation get worst. This eliminates the manual way of telling the people in Butuan City to evacuate on that certain school or covered court with the barangay officer going to their houses. It was relevant and important as per needs for safety and welfare of the community.

***Keywords*** : Geographical Information System; Global Positioning System;

***Abstract –*** *ITEP006*

**SOLAR POWERED AUTOMATED DRYING RACK USING RASPBERRY PI**

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This study is about the Solar Powered Automated Drying Rack Using Raspberry Pi. The study is focused on developing a drying rack prototype that would automatically hide and unhide due to rain instances. The researchers anchored the study in Home Automation Systems Theory, thus, the study provided two interfaces that would enable the users to automatically and manually control the prototype. The study was conducted to find a solution to the inconvenience of the raining probability gives whenever clothes are hanged in the drying rack in an open area. There is a possibility that it might get wet if there is an unpredicted rain. Or, simply, no one is around to take care of the clothes when it rains. The proponents of the study aimed to develop a solar powered drying rack prototype that would automatically and manually hide and unhide due to rainfall detection and weather forecast from the internet. The newly developed system must be evaluated in terms of functionality, reliability, efficiency and usability. By utilizing the Waterfall Development Model Methodology, the prototype was improved, developed and implemented into a hardware product that would benefit people of different walks of life in a community who are too occupied to monitor their clothes in the drying rack. Besides, it is an efficient solution to the inconvenience since the prototype is solar powered, hence, weather monitoring and controlling of the drying rack can be carried out at any time of the day without worrying about power interruption. The prototype used relevant technologies such as Raspberry Pi 3, Rain Sensor Module and Servo Motor for rainfall detection and mechanical control of the drying rack. Furthermore, the prototype integrated mobile application to remotely control the drying rack. The study has reached its purpose in developing a solar powered automated drying rack prototype using raspberry pi. The researchers concluded that the developed system is acceptable in accordance to the ISO/IEC 9126-1 Quality Standard Model.

***Keywords****: unhide, unpredicted, probability, monitor*

***Abstract*** *: BEP020*

**CUSTOMER EVALUATION OF PRISCILLA CITY GUEST HOUSE**

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The researchers conducted a study entitled Customer Service Evaluation of Priscilla City Guest House in South Montilla Boulevard Brgy. J.P.Rizal, Butuan City. Purposive-Convenience Sampling Method was used for gathering data. A modified survey questionnaire was developed and a frequency distribution table was used for the weighted mean and used Likert Scale to analyze data. The study was conducted from August 2018 up to November 2018.The result of the evaluation showed that in the area of Communication it generated the average weighted mean of 3.48. In relation to that, Priscilla City Guest House lacks proper communication that many of its guests are having negative feedbacks to it. In the area of Assurance, it emphasizes that somehow the orders must be acknowledged immediately as well as its waiting time. In the area of Tangibles, restaurant facility are at par but lacking of proper condiments are the main concern of many of their guest. In the area of Empathy, being responsive and attentive are somewhat Priscilla City Guest House service crew fails to perform. Lastly, the area which generated the lowest average weighted mean is Timeliness, 3.35. Considerably in delivering a good customer service and satisfaction, business establishment must practice on being timely especially when the nature of its business is food service. Priscilla City Guest House guests arguably denotes their capacity on delivering food orders on time.

***Keywords:***  *Customer Service, Communication, Assurance, Condiments*

***Abstract*** *BEP021*

**AN EVALUATION OF CUSTOMERS’ SATISFACTION SPECIFICALLY ON PHYSICAL ENVIRONMENT OF LASAR FAST-FOOD & RESTAURANT**

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An evaluation of the customer satisfaction of Lasar Fast-food & Restaurant was conducted. A descriptive method of research and a purposive-convenience sampling technique were used in gathering the data. While, a modified questionnaire was also developed in conducting the survey. The study was conducted from June 2018 to October 2018. In analyzing the results of the survey, the researchers used the frequency distribution and Likert Scale. Three (3) dimensions (functionality, layout and ambience) were used in evaluating the physical environment of the restaurant. The result of the evaluation showed that customers are less satisfied to the physical environment of the Lasar Fast-food & Restaurant. This means that the functionality, layout, and ambiance of the restaurant fails to meet the expectation of the customers. Out of the three (3) areas assessed, layout got the highest weighted average of 2.49 with a verbal description of less satisfactory which means it is below customers’ expectation. Functionality got the lowest average weighted mean of 2.33 with a verbal description of less satisfactory which means it is also below customers’ expectation level. Herein, the management fails to manage and update their facilities for the customers. Therefore, the management should enhance and improve the functionalities of their amenities in order to give optimal comfort and convenience to their customers to increase customer loyalty and patronage through a positive word of mouth.

***Keywords:*** *Convenience, Ambiance, Facilities, Patronage*

***Abstract*** *BEP022*

**EVALUATION ON THE PRINCPLES AND PRACTICES OF ACCOUNTS RECEIVABLE MANAGEMENT OF AGUSAN NORTE TRANSPORT SERVICE COOPERATIVE (ANTSCO) IN BUTUAN CITY, AGUSAN DEL NORTE**

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This study presents the Evaluation on the Principles and Practices of Accounts Receivable Management that is adopted by Agusan Norte Transport Service Cooperative in Villa Kananga, Butuan City. This study was descriptive in nature for the purpose of evaluating the case and Purposive-Complete Enumeration Sampling Method was used. There were three (3) Accounts Receivable Management Strategies considered. Likert Scale Model was also utilized to interpret the Accounts Receivable Management Strategies employed. Charts, tables and figures were used to report findings. Data was collected through a modified survey questionnaire administered to the five (5) respondents of the cooperative. Personal interviews were also conducted to enhance the validity of information gathered using questionnaires. The three (3) Accounts Receivable Management Strategies composed of the areas namely: Credit Extension Policy, Credit Collection Policy and Credit Control and Monitoring. The results from the study revealed that Credit Extension Policy has a weighted mean of (2.38), Credit Collection Policy has a weighted mean of (2.10) and Credit Control and Monitoring has a weighted mean of (2.13), respectively. All of these strategies were implemented and followed in few or rare instances in the Accounts Receivable Management Strategies based on the Likert Scale Model Interpretation. Thus, all of the three (3) Accounts Receivable Management Strategies constitutes a significant portion and plays as an important component in the effective management of accounts receivable that would ensure a reduction in bad debts and improved liquidity for the cooperative.

***Keywords:*** *Evaluation, Accounts Receivable, Credit Control, liquidity*

***Abstract*** *ITEP 007*

**“GREENBOT”**

**AN AUTOMATED INDOOR GREENHOUSE FOR MICROGREEN PLANTS USING RASPBERRY PI**

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GreenBot is an automated indoor greenhouse management system for microgreen plants that allows the user to manage, monitor and be notified of its growth and status from planting until harvesting. The purpose of this research is to develop an accurate, portable but automated indoor greenhouse for microgreen plants using cheaper materials in order to help the user manage their microgreens even if they are not around or without direct user intervention. The programing languages used for GreenBot are Python for server-side processes and for modules in controlling hardware, JavaScript for user interface functionalities, HTML and CSS for user-interface design. GreenBot uses Twillio SMS platform for sending SMS notification. The system uses pythonanywhere.com for the webhosting of systems online interface. The Hardware modules used by the system are DHT11 sensor module which is used for taking the temperature and humidity, Soil moisture sensor and analog to digital module which is used for measuring water level and soil moisture level, LED lights for lighting. Brushless DC exhaust fan for ventilation, camera for taking up pictures, water pump for watering plants and Raspberry Pi which is the main component of the system that contains the system files, scripts and assets used by GreenBot. The materials and interface used by the system helps the user to grown their microgreen plant even if they’re not around because of the automation of lighting, ventilation and watering of the plants. The user also stays on track by SMS notification sent by the GreenBot about the status of the machine like temperature, humidity and the water container level. User can also see their plants remotely by visiting the systems online page and by clicking take picture button to see the plants. Greenbot is really helpful especially for people who are home growing microgreens themselves that doesn’t always have the time to manage it whether it’s for personal consumption or for business purposes.

***Keywords:*** *Microgreen, greenhouse, portable, greenbot, accurate*

***Abstract*** *ITEP 008*

**ACLC DEPARTMENTAL EXAMINATION SCHEDULING SYSTEM**

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The proposed ACLC Departmental Scheduling System was created and designed to supply the needs of the client. The researchers gathered all the data in order to develop a system which created schedules for the users freed from hassle going to school just to look for their exam schedules. The ACLC Departmental Scheduling System is a system which is useful for the scheduler and also for the students to determine their respected schedules. And for the instructors, with their busy schedules, they can save time looking for their exam to handle during examination period.

***Keywords:*** *Departmental Scheduling System, Exam, proctor, hassle*

***Abstract*** *ITEP 009*

**KEY DISPENSER WITH FACE RECOGNITION USING RASPBERRY PI**

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Many companies and Schools today are still using a manual process in storing and distributing the keys for their rooms, which companies need nowadays is a systematic way for this process. The proponents came up with an idea of developing a Key dispenser with face recognition that uses Raspberry Pi 3 due to many companies today are still using a manual process when distributing the keys for their rooms. Companies nowadays should use a systematic way to distribute the keys and also to organized it safely and secured. The proponents want to develop a key dispenser system with face recognition to help distribute the keys to the employees in a well-organized way and also to enhance the security for all the keys by only allowing an authorized person. The proponents also want to make this study as a reference to the future proponents who are studying in ACLC College of Butuan, who are planning to propose and make a project that is related to the Key dispenser system, and to those who want to improve the proponents’ current project. During the data gathering and analysis phase, the proponents ask questions specifically about the flow of the proposed system. From that, the proponents formulate what are the necessary things to do and what the proponents can do to upgrade the process of distributing the keys, also to have features that will help the process become more helpful. The proponents predicted that all the features of the system will be possible with the help of the data and information that the proponents had gathered. The proponents test the system to users, and they find it really helpful especially in recognizing the face of the employees who are registered. Therefore, the proponents conclude that the system is a big help in the school and will solve the problems in distributing the keys for the employees.

***Keywords:*** *Manual process, storing, dispenser, face recognition, distribute*

***Abstract*** *ITEP 010*

**POLYCLINIC MANAGEMENT SYSTEM**

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Many clinics are still using paper usage to record all the information and medical records of a patient and manual system in other clinical activities. The purpose of this study is to address the concern and solve related problems by developing a Polyclinic Management System which aims to support the clinic’s daily activities. This system involves all the clinic activities starting from registration to billing. The system is able to generate all clinic transactions such as reports, doctor’s prescription, patient’s information and medical history, medicine inventory, consultations and billings. It also has a queuing and online appointment system for patients to save their time.The proponents also included a Dynamic Module Distribution and Decision Support feature for the system to be dynamic to different types of clinics. This feature help the user choose their desired modules depending on their discipline. The concept of Decision Support feature aims to guide, suggest or recommend to the new user or new subscriber in choosing what modules are needed in his/her discipline. The methods used for this study include Feature Driven Development (FDD) and Agile Approach which is applied while developing this system. The design involves Entity Relationship Diagram (ERD) and Data Flow Diagram (DFD) to show the logical flow for the system. For the implementation, Apache is used as a web server, MySQL as a database, PHP Laravel as a scripting language and Google Chrome as a browser. Furthermore, the doctor, secretary and patients will give their evaluation and also opinions to make the system more usable for the clinic’s daily activity. Overall, this system is able to support the daily clinic operation based on evaluation from real users and the system is able to perform the task correctly.

***Keywords****: Polyclinic, medical records, medicine inventory, database, prescription*

***Abstract*** *ITEP 011*

**DIETARY: A MOBILE APPLICATION FOR REAL TIME RECOGNITION WITH NUTRITIONAL FACTS**

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The proponents came up with an idea on developing an Android application to scan raw foods and displays nutritional facts, benefits and recommendations of the particular food items being scanned. Instead of doing it manually like trying to surf at the internet the nutritional value available on a raw food. Why not make it easier for them to know the content of a raw food to be easier for them to get a healthier lifestyle. The proponents develop an android application that will help individuals of Butuan City to have easy access what are the nutritional facts, benefits and recommendations of the particular food item being scanned. This is what we need nowadays because we encountered a lot of problems related to our health. The proponents also want to make this study as a reference to the future proponents who are studying in ACLC College of Butuan, who are planning to propose and make a project that is related to the Dietary: A Mobile Application for Real-Time Recognition with Nutritional Facts and to those who want to improve the proponents’ current project.

***Keywords:*** *Android application, nutritional facts, scan, dietary, real-time recognition*

***Abstract*** *SHS001*

**Morphological Assessment of *Nemipterus japonicus* from Surigao Coast using Fluctuating Asymmetry Analysis**

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Fluctuating Asymmetry (FA) is used to indicate an individual’s quality in study of natural and sexual selection and as a tool for environmental observation and preservation of biology. The study’s objective is to indicate the possible effects of *Nemipterus japonicus*’ body parts due to pollution. There were sixty (60) samples consisting of thirty (30 females & 30 males) were collected from Surigao Coast. The samples were subjected to digital imaging. The land marking of the sampled fish was done using thin-plate spline (TPS) series while the analysis was completed through (SAGE) software. In female, Procrustes ANOVA results indicated the high significant differences (P<0.0001) among the factors analysis (individuals, sides, and individuals vs. sides). While in male, only individual x sides shows a high significant difference (P<0.0001). The Principal Component Analysis (PCA) in females were 75.1746 % and in males were 81.9129 %. Therefore, the level of asymmetry indicates the environmental alterations.

***Key Words****: fluctuating asymmetry, Nemipterus japonicus, Surigao Coast.*

*Abstract SHS002*

**Evaluating Developmental Instability in Bigeye scad *(Selar crumenopthalmus)* from Butuan Bay, Agusan del Norte, Philippines Using Geometric Morphometry**

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Geometric Morphometry is used as a means of measuring phenotypic variations among species. This study aims to determine developmental instability in Bigeye scad (*Selar crumenophthalmus*) from Butuan Bay using geometric morphometry. Sixty (60) samples of *Selar crumenophthalmus* with thirty (30) females and Thirty (30) males were collected from Butuan Bay. Samples were analyzed through land marking process using Symmetry and Asymmetry Geometric data software (SAGE). Procrustes ANOVA results showed highly significant differences among the factor analyzed between the two sexes (P<0.0001). The males attained the highest percentage of the Fluctuating Asymmetry with 87.2388% while the female had a lower percentage of 84.5484%. The results suggest that the level of asymmetry were observed among the samples. Thus, employing geometric morphometry in determining developmental instability.

***Key Words****: fluctuating asymmetry, Bioindicator, Butuan Bay, Marine*

*Abstract SHS003*

**Morphological Assessment in the Morphology of *Sardinella sardinella* Sampled in Buenavista Coast, Agusan del Norte, Philippines**

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Ecological perturbations largely affects the phenotypes of any living organisms. This study aims to evaluate the morphology of *S******ardinella sardinella* sampled in Buenavista Coast, Agusan del Norte, Philippines using Fluctuating Asymmetry. A total of 60 samples (30 females & 30 males) were randomly collected from the study area. Digital imaging was prepared and the acquired images were loaded into tpsDig2 program. Standard landmarks on fish morphometric were employed. Using thin-plate spline (TPS) series, landmark analysis were completed and subjected to Symmetry and Asymmetry in Geometric Data (SAGE) software. There were three factors applied to identify shape variations: individuals, sides and individuals vs. sides. Results in Procrustes ANOVA showed a high significant differences of (P<0.0001) in the factors analyzed (individuals and individual x sides) and were observed in female samples. While, in male samples only the factor of individual x sides indicating a high significant difference (P<0.0001). This suggests that Fluctuating Asymmetry were detected among of the samples analyzed. Principal Component Analysis (PCA) showed the level of asymmetry in males (77.3997%) while in females (66.1427%).It implies that morphological variations were detected among of the samples within of the same taxa. Further, employing Fluctuating Asymmetry analysis further understands phenotypic variability among and within of species lineage.

***Keywords****: geometric morphometric, phenotypic variations, itchyofauna, marine ecosystem, bioindicator*

*Abstract SHS004*

**Evaluation for Larvicidal Activity of *Catharanthus roseus* and *Gmelina arborea* against *Aedes albopictus***

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Larvicidal activity for various plant crude extracts has been known to identify secondary metabolites and its potential medicinal properties. In this study, *Catharanthus roseus* and *Gmelina arborea* was utilized and undergone extraction process. About 300 g of flower extracts (*C. roseus*) and fruit extract of (*G. arborea*) was prepared and treated to the 220 populations of an Albopictus late instar larvae using the Cold Percolation Method. The result showed that 20%, 40%, and 60% concentrations obtained the least mortality rates when compared to 80% concentration. Mann-Whitney U test shows a significant difference (P<0.05) between the two plant extracts processes and across its various concentrations. Further, a concentration-dependent increase was observed amongst the two extracts. Therefore, the higher the concentration the higher the mortality rate of the mosquitoes. Thus, the study identifies potential substances that could prevent the outgrowth of related mosquito-borne diseases

***Key Words:***  *albopictus, Plant crude extract, Yemane, Madagascar Rosy Periwinkle, Agusan del Norte*

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**ACLC COLLEGE OF BUTUAN BOOK OF ABSTRACT**

**“**Nurturing Students’ Research Character”

This book contains the abstracts of studies presented at the Research, Innovation & Extension Division (RIED) center, a semi- annual research presentation of the graduating students of Business Education Department (BEP), Information Technology Education Department (ITEP) and Senior High School Department (SHS). Materials here may not be reproduced or copied, in any form or by any means, without the written permission from the publisher.

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