
Abstracts

THE IMPACT OF CORPORATE INTERNAL BRANDING ON ORGANIZATIONAL CITIZENSHIP BEHAVIOR OF GENERATION Y IN THE WORKPLACE

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The presence of a strong corporate internal branding nowadays is one of the most intangible assets of a company and has many benefits on the behavior of employees in the workplace. This is a big challenge especially, with the increasing presence of new generation of Millennials a.k.a Generation Y in the workforce now. This study investigates the impact of corporate internal branding such as HR involvement/briefing, training and internal communication on the five dimensions of organizational behavior: altruism, conscientiousness, sportsmanship, courtesy, and civic virtue. Three hundred Generation Y respondents from selected feeds manufacturing industries in Central Luzon made judgments about their company's internal branding in relation to organizational employees' behavior. This study employed descriptive-correlational design using close-ended survey method. The percentage, weighted mean, standard deviation, were employed to describe the profile of the respondents and Pearson product moment correlation coefficient (r), t-test and one way analysis of variance (ANOVA) were used to determine the relationship of corporate internal branding on organizational citizenship behavior. Gathered data were calculated using SPSS version 20. Adopted scales consisting of 21 items for corporate internal branding ($M=3.37, SD=.36$) and 24 items for the five dimensions of organizational behavior ($M=3.32, SD=.31$) were used to regress and analyze the relationship. Results of the study show that corporate internal branding has positive impact on the four variables of organizational citizenship behavior namely: altruism, conscientiousness, courtesy and civic virtue; however, no direct correlation on sportsmanship was observed.



CONSUMER BEHAVIORAL PATTERN AND INSTANT REWARDS SYSTEM AS MOTIVATION ON CREDIT CARD USAGE AMONG MILLENNIALS

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The purchasing behavior of Filipino consumers is slowly migrating from cash transactions to a cashless method of payment. Credit card acquisition is expected to grow in double digits because of its wider range of acceptance across major industries. Continuous technological innovations and marketing efforts of credit card issuing banks to adapt to the ever changing needs and wants of its market allows an individual to charge almost all of his expenses in a plastic card. With the Millennial taking the lead of the country's population, the goal of this study is to identify the consumer behavioral pattern and rewards system as motivation on credit card usage of the millennials in the Philippines. This paper measured relationship of promotions and credit card usage through correlational analysis. The respondents were 300 credit card holders whose age ranges from 21 to 35 years old. Through an on-line administered and face to face survey, the researcher elicited responses which are necessary in attaining the main objective of this study. The profile of the respondents was analyzed through frequency distributions and variables of the study were examined through Pearson product moment correlation coefficient(r) and responses were calculated using SPSS version 20. Based on the results, promotions have significant relationship with motivation but have no significant relationship with the actual usage. Types of promotions such as cash rebates and pay discounts are significantly correlated to motivation while only coupons have significant relationship with usage.

MILLENNIAL DESIRES: MOTIVATIONAL UNDERPINNINGS SHAPING CONSUMER BEHAVIOR TOWARDS MOBILE TELECOMMUNICATIONS BRAND ADVERTISING

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Consumer motivation and brand engagement often go beyond the surface of age, and can be best understood by examining the thoughts, emotions, motivations and intended outcomes of millennials; as demographic and psychographic groups exposed to (a) different social and economic opportunities (b) different types of technological activities, and (c) different social perceptions and community norms. This study investigates on how millennials think, feel, and behaves towards their mobile Telecommunications brand advertising. Moreover, this study aims to discover the factors that shape their behavior where mobile phone penetration already reaches a saturation point. The 16 Basic Desires Theory of motivation framework was used to explain the association between the psychological components of attitudes and features of motivation in understanding the emerging consumer needs, desires and usage trends. A triangulated methodology was employed in examining the study's variables on 400 millennial respondents, in particular on the Telecommunications brand advertising. Findings reveal that the millennial generation is not defined simply by their age but rather they are driven and molded by their desire for curiosity or knowledge from being engaged in advertising. Such results imply that millennials are no longer fascinated by generic brand advertising; they prefer a story that talks and symbolizes social values which then intrinsically motivates them to gain deeper value as subscribers. This study is significant to both the industry and consumer researchers since it discusses the challenges of defining the millennial behavior where change is a constant. Conclusively, the argument that their desire for curiosity is a psychologically significant motive has been validated in this study. Future recommendations include that Telecom companies must always understand customer needs and satisfaction in order to cultivate strong relationships.



REVITALIZATION OF CARRIEDO STREET IN MANILA: UPLIFTING THE PHYSICAL LEGIBILITY AND VISUAL APPROPRIATENESS OF CARRIEDO

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With vast urbanization and high population in Metro Manila, major problems such as traffic, pollution, congestion, and lack of open space occurred, thus these resulted in urban blight. Urban redevelopment programs have been proposed and implemented in Metro Manila. This study identified the factors that contributed to the deterioration of the built environment of Carriedo and determined methods of uplifting its physical legibility and visual appropriateness that was used in the revitalization scheme for Carriedo. The historical background of the street was evaluated. Its current conditions and the factors that contributed to Carriedo's decay were assessed through site investigation, ordinance review and ocular visits. A survey has been made to evaluate the respondent's insights about a Street and evaluated their experiences in using the street of Carriedo. The result showed that people gave more importance to the visibility and understandability of the signage and the landmarks. Thus, the environment along the street gives them a visible choice of where to go. The study discovered that people prefers a legible street with a design based on a local context which they can easily grasp and understand. Least importance was given to the varying height and color of the buildings around the street. Personal interviews with the local government, establishments and property owner representatives revealed that the street of Carriedo lacks strong policy implementation in the aspect of organizing the vendors along the street. Thus, resulted to disorderliness; lack of sidewalks and pathway for pedestrians; and compromised visibility of storefronts. The study also revealed that some buildings along the street are considered as important cultural properties and are encouraged to be preserved. The research determined that the revitalization of Carriedo, from the areas of Plaza Lacson to Plaza Miranda, helped reduce Manila's current urban blight by creating a more legible and appropriate physical environment. The study recommends giving importance to public realm and urban form which promotes legibility, appropriateness, and community identity that helps in improving the urban vitality of the area.

MAKING BATANGAS CITY CENTRAL BUSINESS DISTRICT A WALKABLE COMMUNITY

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Batangas City, known as the "Industrial Port City of Calabarzon", has been classified as one of the fastest urbanizing cities in the Philippines. Rapid urbanization resulted in increased traffic congestion in the city which brought about socio-economic and environmental problems to urban dwellers and street users. The city center, called Central Business District is the area most affected by the congestion. City residents' growing dependence on automobiles, together with the increasing volume of vehicles influenced by the growing number of establishments and facilities in the area, made the narrow and substandard existing roads more congested. The researcher aims to make Batangas City Central Business District a walkable community. An objective and effective pedestrian space design model for Rizal Avenue and Rizal Avenue Extension, (from Burgos Street to DJPMM Access Road), can be the pattern for Batangas City CBD streets, a tool that will make the dwellers and street users go around the city on foot or do active forms of transportation rather than use motorized vehicles. This can be a positive move to reduce, if not totally eliminate problems caused by traffic congestion. Evaluation of the built environment is in form of photo documentation. Maps, data and documents from local and national government units are used to analyze past and present developments of Batangas City CBD. This includes the pedestrianization plans of the

City of Manila and the Ten-Year Comprehensive Development Plan for Batangas City. Research data is supplemented by semi-structured interview with high profile private and public personalities from Batangas City Central Business District. Stakeholder consultation meeting with representatives from all sectors of the city directly affected by road traffic congestion will be conducted. Partial results show the need to address walkability issues including pedestrianization, public transportation rerouting and improvement of the built environment. Public views gathered through the participation of all affected sectors of the Batangas City CBD community will form part of the proposed solution in making Batangas City Central Business District a walkable community.



URBAN TOURISM MASTER DEVELOPMENT PLAN FOR THE CITY OF ILAGAN, ISABELA PROVINCE

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A lot of cities made urban tourism as their major industry in boosting economic growth and involving urban regeneration projects that enhanced the physical, cultural, social, and environmental and heritage richness of their place. With the rapid urbanization of the City of Ilagan, Isabela, urban tourism is one of the vital focuses on the development that created a sense of pride and identity for the city. At present, Isabela Province is being left behind by its neighboring provinces like Ilocos and most of the tourist does not know the place. Through urban tourism, the needs of the city had been re-imagined to make it more innovative and reliable in terms of adequacy of facilities, appropriateness of tourist attractions, effectiveness of amenities, and accessibility of tourist spots. This also improved and maximized all tourism potentials and discovered new tourism experience by means of having an in-depth planning study and providing long-term urban design solutions for sustainable development. The study revealed that most of the respondents are in favor of upgrading the tourism facilities of Ilagan, Isabela. As a result, the urban tourism master development plan for the city of Ilagan made Ilagan one of the premier tourist destinations in Northern Luzon.

THE ROLE OF COMMUNAL SPACES i.e. PARK AND PLAZA IN CABANATUAN SOCIETY BEFORE AND TODAY AND ITS FURTHER IMPROVEMENT

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This study employed the mixed approach of quantitative and qualitative researches to evaluate and further revive the beauty and functions of Park and Plaza in Cabanatuan. Specifically, it explored the historical background and the present condition/s of the Park and Plaza. It was found out that its historical background served as the basis of the two as basic features and functions. However, identified functions cannot be maximized due to being under-utilized: change of users' behavior, competition, lack of improvement and amenities. Subsequently, this eliminated roles of communal spaces i.e Freedom Park and Plaza Lucero, and exhausted natural environment resulting in an assortment of adverse effects, such as congestion and pollutions. Thus, this study divulged that both Freedom Park and Plaza Lucero are in need for further development.



EFFECTS OF TEMPERATURE, PH AND SALINITY SHIFT ON THE BEHAVIOR AND SETTLEMENT OF *POCILLOPORA DAMICORNIS* PLANULAE

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Physico-chemical changes in seawater associated with climate change may affect the long-term health of coral reefs by influencing the recruitment of coral larvae. Although previous studies have addressed these factors, none have focused on special attributes of coral larvae, in particular their motility and their capacity to transform into viable coral polyps. This study studies the effects of altered seawater properties, including pH, and salinity, on newly released planulae of the scleractinian coral *Pocillopora damicornis*, in controlled laboratory conditions. pH values ranged from 7.8, 7.5, 7.0, 6.5, 6.0 while salinity values ranged from 34ppt, 33ppt, 32 ppt, 31 ppt, 30ppt. Planulae were observed regarding their motility (movement) and transformation (change from planula to polyp) at fifteen-minute intervals for a total of 2 hours.

Initial results indicate 100% survival for planulae in all the pH treatments, with similar high survival values for the salinity treatment (100% - 34ppt; 100% - 33ppt; 100% -32ppt; 90% - 31 ppt; 80% -30 ppt). In terms of planular motility, no significant difference was observed in the performance of planulae in all treatments ($X = 0.9936$, $p = 0.6034$), while differential performance was observed between planulae exposed to the different salinity treatments: Motility slowed down with decreasing salinity levels (Control = 33 ppt = 32 ppt > 31 ppt = 30 ppt; $X^2 = 31.7$, $p = 2.345 \times 10^{-7}$). In terms of transformation into polyps 100% transformation was observed in all pH treatments. Varied, but similarly high transformation levels were observed in planulae in the various salinity treatments (100% - 34ppt; 100% - 33ppt; 60% -32 ppt; 70%-31ppt; 90% - 30ppt). The results of this study shows that altered seawater state may negatively impact coral reef health by affecting the larval motility and transformation potential.

DIATOM ASSEMBLAGES IN RESPONSE TO POLLUTION IN LAKE BUNOT USING PALEOLIMNOLOGICAL APPROACH

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Aquatic sediments can store information using indirect records (or proxy data) which may be used to reconstruct past environmental and ecological conditions and the changes that have occurred therein using a science known as Paleolimnology. The aim of the study is infer the history of pollution in a crater lake called Bunot Lake in San Pablo, Laguna Philippines. Presented here is a paleolimnological results from a ²¹⁰Pb dated sediment core spanning approximately the last 200 years. Sediment profiles of diatom fossils and Loss on Ignition (LOI) were investigated. The ²¹⁰Pb record suggests a relatively uniform sedimentation rate for the last 30 years or so with a mean at c. 0.012 g cm⁻² yr⁻¹. A total of 34 diatom species from 20 genera were identified. Early diatom assemblages were dominated by benthic *Nitzschia palea*, which suggests that the lake had past limnological conditions of greater light availability reaching benthic diatoms to favor their growth. A major floristic shift from benthic to planktonic species in the upper 26cm of the core suggests the history of human activity. This is evident from high diatom accumulation rates possibly caused by increased productivity in the lake. Increased in abundance of eutrophic *Aulacoseira granulata* and *Navicula confervacea* concurrent with increased LOI values coincided with the introduction of aquaculture around 1970s implying a period of nutrient enrichment in the lake. Another shift in diatom composition was experienced in the upper core with the sudden rise in relative abundance

of *Cyclotella meneghiniana*, *Discostella stelligera* and *Discostella pseudostelligera*. These centric diatoms are linked to climate warming of lakes and are observed in many paleolimnological studies across the world. At present, Lake Bunot has a significant high productivity level in account to anthropogenic impact. The result of this paleolimnological study will generate long term data of the lake essential in reconstructing past lake ecology.



QUANTIFICATION OF PHOSPHORUS AND NITROGEN UPTAKE KINETICS IN A TROPICAL STREAM: A PIONEERING STUDY IN SILANG-SANTA ROSA SUBWATERSHED, PHILIPPINES

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Phosphorus and nitrogen usually present as phosphate and nitrate in river systems are essential in various biological processes of plants and animals. However, excess phosphorus and nitrogen concentration largely due to surface runoff and human intervention leads to eutrophication which brings adverse impacts to water quality, species diversity and health of immediate human communities. Tracer Addition for Spiraling Curve Characterization (TASCC) also called as the Tracer Method is a recently developed technique used to estimate nutrient uptake kinetics in reaches of small river systems and watersheds. This study pioneers the application of the Tracer Method in tropical streams specifically in five sites along Silang-Santa Rosa Watershed (SSRW) that directly outputs to Laguna de Bay, Philippines. Phosphate uptake kinetics shows shortest uptake length ($Sw_{amb} = 25.27$ m), highest areal uptake rate ($U_{amb} = 37.46$ mg-P/m²/min) and uptake velocity ($V_{famb} = 162.12$ mm/min) in agricultural sites and longest uptake length ($Sw_{amb} = 109.24$ m), lowest areal uptake rate ($U_{amb} = 0.31$ mg-P/m²/min) and uptake velocity ($V_{famb} = 2.76$ mm/min). On the other hand, nitrogen uptake kinetics did not reach saturation peak in its break through curve (BTC) that may be due to N limitation. Various physico-chemical parameters and metal concentrations were statistically tested to determine its relationship to the obtained spiraling metrics. Moreover, this research promotes quantification of nutrient kinetics as a vital component of efficient science-based watershed governance.

EFFECT OF POLYUNSATURATED FATTY ACIDS (OMEGA-3 AND OMEGA-6) ISOLATED FROM *HALOPHYTOPHTHORA* SPP., ON THE GROWTH OF NORMAL AND CANCER CELL LINES IN VITRO

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Oomycetes are usually common in the early-to-late decaying stages of fallen mangrove leaves. *Halophytophthora*, which is an example of marine phythiaceous oomycetes usually inhabit the marine submerged leaf samples. Several reports on these marine oomycetes were focused on the diverse production of polyunsaturated fatty acids (PUFAs) discovered particularly from known and identified straminipilan species. PUFA's such as arachidonic acid (ARA) and eicosapentanoic acid (EPA) are biological lipid derivatives essential in the metabolism and biological activities of humans. Thus, it is the main objective of this study to isolate *Halophytophthora* spp. and determine the effect of their PUFA's on the growth of normal and cancer cell lines and on cell growth and proliferation. The bulk of this research is concentrated on the effect of PUFA on the viability of cancer cells and its potential as drug additive, dietary supplement, and chemotherapeutic significance. Strains of *Halophytophthora* were isolated from

leaf litters collected from Tagum City, Davao del Norte and Sta. Maria, Davao del Sur. Three isolates of *Halophytophthora*, coded as T12GP1, T12YBP3, and ST12YBP3 were morphologically examined based on their plate-colonial formation and zoosporangial structure using the inverted and scanning electron microscopes. Isolates were mass produced using a modified medium composed of clarified vegetable juice and peptone-yeast-glucose-salt. Fatty acids were extracted from the freeze dried mycelia, saponified, and esterified for fatty acid analysis using gas chromatography (GC). Fatty acid analysis of *Halophytophthora* spp. showed the presence of linoleic acid (C18:2n, ω -6), γ -linoleic acid methyl ester (C18:3n, ω -6), linolenic acid (C18:3n, ω -3), *cis*-8,11,14-eicosatrienoic acid (C20:3n, ω -6), and *cis*-5,8,11,14,17-eicosapentanoic acid (C20:5n, ω -3). Crude fatty acid extract of T12GP1, T12YBP2, and ST12YBP3 showed 64 to 73% toxicity on MCF7 cell line. Caspase 3/7 assay showed green fluorescent signals on the crude fatty acid extract and no signals was shown on untreated MCF7 cells. Separation of the significant PUFA from fatty acid mixture will be done through HPLC analysis and will be further studied for cell cytotoxicity and apoptosis assays.



FUNCTIONAL ELUCIDATION OF TOLL-LIKE RECEPTOR 3 FROM *P. VANNAMEI* THROUGH RNA INTERFERENCE AND ITS POTENTIAL ROLE IN THE SHRIMP ANTIVIRAL RESPONSE

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The crude biosecurity measures employed by the shrimp aquaculture industry in response to viral pathogens stem from the stark deficiency of information on the intricate mechanisms of crustacean antiviral response. Continuous disputes among scientists are the argument whether there exists a crustacean antiviral response similar to that of its vertebrate counterparts. Recently, a Toll-like receptor (TLR) known to be a primary element in mounting an antiviral response in vertebrates was characterized in *P. vannamei*. In an effort to trace the cascade initiated by TLR3 in crustaceans, this study utilized the apparent protective effects of GFP-dsRNA against viral pathogens in contrast to the silencing of TLR3 through RNA interference (RNAi) and identifying the relative expression levels of various components of the antiviral cascade through quantitative PCR (qPCR). This study also presupposes a link between the RNAi and IRF-Vago-JAK/STAT pathway, and so, analyses the expression levels of genes involved in both mechanisms. The results show an intriguing trend in the expression of Argonaute and Dicer wherein both genes follow a similar course of expression in the 9th and 12th hour of the shrimps treated with GFP-dsRNA and LvToll3-dsRNA. After the initial similarity, Argonaute and Dicer expression start to diminish precipitately in shrimps treated with LvToll3-dsRNA with a 5 and 1 fold difference, respectively, compared to that of shrimps treated with GFP-dsRNA. The Expression of Argonaute and Dicer continue to decline rapidly during the course of the experiment in the LvToll3-dsRNA treated shrimps as compared to that of the GFP-dsRNA treated shrimps. On the other hand, Vago 4/5, the gene involved in the shrimp's antiviral response show stark differences in expression early on, exhibiting a 13 Fold difference between LvToll3-dsRNA treated and GFP-dsRNA treated specimens on the 9th hour, a 16 fold difference in the 12th hour, and a 7 fold difference in the 24th hour. These preliminary results suggest the indubitable role of LvToll3 in the crustacean antiviral response and a possible link between the RNAi and IRF-Vago-JAK/STAT pathway in that it is both triggered by the detection of foreign ds-RNA by the TLR3.

LATE PRESENTERS AMONG MSMs WITH NEW HIV DIAGNOSIS SEEN AT SAN LAZARO HOSPITAL, MANILA, 2011-2015

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While the rest of the world is enjoying stable to decreasing HIV prevalence, the Philippines is among the top 10 countries globally with increasing HIV statistics according to UNAIDS. The disease is hitting the younger Filipinos aged 15-24, and homosexual contact (men-having-sex-with-men or MSM) is the predominant mode of transmission with 87% of the total new infections. It is still unclear how many are being diagnosed early or late in HIV disease locally. The aim of this study is to assess the extent of late presentation for HIV care among MSMs seen at San Lazaro Hospital, Manila in a 5-year period (2011-2015). The CD4 count was analyzed and correlated with age, occupation, mode of transmission, short-term mortality, opportunistic infections present, initial testing sites, and anti-HIV profiles in western blot tests. Late presenters are persons presenting for care with a CD4 count <350 cells/uL and persons with an advanced HIV disease presentation are those with initial CD4 counts of <200 cells/uL.

A total of 341 randomly selected newly diagnosed MSM patients were included in the study analysis which had a mean (\pm SD) age of 29.4 ± 6.9 years, composed by homosexuals (81.2%) and bisexuals (18.8%). The median CD4 count of the patients was 93 cells / mm³ (IQR 21 to 280 cells / mm³). Two hundred ninety-five (86.5%) were identified as late presenters and 46 (13.5%) are non-late presenters. More than half of the study population (64.5%) belongs to the advanced HIV disease group having CD4 counts below 200 cells/uL. The most commonly occurring opportunistic infection is pulmonary tuberculosis. Late presenters are 2.91 times as likely to have opportunistic infections and are approximately 13.54 times more likely to die within a year after diagnosis compared to non-late presenters. The low baseline CD4 counts of MSMs suggest that majority of the new cases enter health care late in the course of HIV infection. Improvement of surveillance and the development of new strategies should be taken into account to control this HIV epidemic.

SUPPRESSION OF TRANSCRIPTION OF HUMAN IMMUNODEFICIENCY VIRUS BY NATURAL SPIROINDOLE ALKALOIDS



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There is a growing number of human immunodeficiency viruses (HIV) exhibiting resistance to some of the commonly used drugs for antiretroviral therapy. Screening natural products is one way of identifying candidate anti-HIV drugs where the mode of action should preferably suppress HIV transcription if not eliminate the virus. In this study, three indole alkaloids isolated from an endemic Philippine plant, *Voacanga globosa*, were investigated for its capability to suppress HIV transcription. The purified compounds, globospiramine, vobtusine and deoxyvobtusine, were subjected to WST-1 cytotoxicity assay and cytotoxic concentration at 50 % (CC50) was determined. Compounds at different concentrations were then introduced to latently HIV infected OM10.1 and J-Lat cells in the presence of 1-5ng of TNF (tissue necrosis factor). After 3 days of incubation, supernatants were harvested and tested for the HIV p24 antigen ELISA assay. Compounds that showed inhibitory action were introduced to 293 cells for transfection-luciferase assay using specific promoter plasmids: HIV LTR-luc, NFkB-luc and mutant kB-luc; Flavopiridol was used as positive control. Findings showed globospiramine at 10nM (IC50) inhibited TNF-induced HIV replication in J-Lat cells and at 100nM in OM10.1 as measured in HIV p24 antigen levels in

ELISA. CC50 is 5uM for both OM10.1 and J-Lat cells. Deoxyvobtusine and vobtusine did not show remarkable anti-HIV activity. Furthermore, only globospiramine was found to suppress HIV transcription by inhibiting activation of HIV-LTR by cellular transcription factors including NFkB but with some cytotoxicity. With further studies on this new alkaloid, globospiramine is a good candidate for novel anti-HIV drug.

EXPLORING PARASITE DIVERSITY AND SYMBIOSIS IN *LYMNAEA* SPP.: A KNOWN INTERMEDIATE HOST FOR *FASCIOLA* SPP.

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Lymnaeid snails are the known intermediate hosts of the liver fluke *Fasciola* spp, and therefore play an important role in the parasite's life cycle. The specificity of this snail host- parasite interaction was investigated in the current study, as larvae of different morphologies have previously been observed among the lymnaeid sampled. In the Philippines, *Lymnaea philippinensis* and *Lymnaea auricularia rubiginosa*, which thrive in swampy areas with rice fields and water plants, are identified hosts for the parasitic flukes. In this study, a total of 450 snails were collected from an *Ipomea aquatica* field in Barangay Cawongan, Padre Garcia, Batangas from the months of November 2016 to January 2017 (n=150/month). The natural infection rates of the snails studied, as determined by the number of snails with emerged cercariae after five 6-hr exposures to light of 961±165 lux intensity, was found to be 38%, and was associated with the length of the snail (OR =1.65; 95% CI: 1.29-2.12; p<0.001). Cercarial shedding was likewise monitored after one, two, three and four 6-hr exposures, and the infection rates were found to be 26%, 37%, 28% and 30%, respectively. Moreover, snail morphometrics, which included length, width and shell weight of snails, were significantly less in the December 2016 collected snails (Length: [F_{2,435}=19.550], Width [F_{2,435}=21.752], Shell Weight [F_{2,435}=12.485] p<0.001; post hoc: Dec < (Nov = Jan)]. Encysted forms of the parasites were also observed after cercarial emergence, and were correlated with the number of light exposures. Appearance of metacercarial forms increased with increasing number of light exposures, which suggests that repeated light exposures triggers the encystment phenomenon (OR_{batch5} 9.75, 95% CI: 2.74-34.70, p <0.001). Co-infection with cercariae and xiphidiocercariae was observed in some lymnaeid snails, but was not observed in snails that were infected with the furcocercous cercaria such as that of *Schistosoma* spp. Currently, the study is working on the molecular identification of the snails and the unknown cercariae using *cox1* gene primers. At the same time, the lymnaeid snails are being monitored for susceptibility to infection with the miracidia of *Fasciola* spp.



MOLECULAR PHYLOGENY AND TAXONOMIC REVISION OF PHILIPPINE *Uncaria* SCHREB. (NAUCLEAE—RUBIACEAE) INCLUDING PHYTOCHEMICAL SCREENING OF TWO ENDEMIC SPECIES

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The genus *Uncaria* has been an important source of potent immunopotentiating compounds. However, usage has been restricted to a small number of species due to difficulties encountered in identification. This study utilized ITS2 data sequences following the Best Close Match Method to determine conspecificity of 15 recently collected Philippine *Uncaria* spp. and Maximum-Likelihood (ML) and Bayesian Inference (BI) of combined ITS-rbcl-trnL-F dataset for phylogenetic reconstruction. Results of the Best Close Match Method identified seven conspecific clades and the appropriateness of ITS2 data sequences for *Uncaria* identification. ITS2 sequence data showed a barcoding a gap and an average

coalescent depth was established as a threshold value for conspecificity. Phylogenetic reconstruction revealed two distinct clades, an Afro-Neotropical clade recognized for having lateral branches terminated by reproductive organs and by possessing inflorescences born on leafless lateral branches and an Asian clade recognized for having strictly axillary inflorescences. Results of this study promote the proper utilization of *Uncaria* spp. and the possible exploitation of understudied members.

IAGNOSTIC KIT DEVELOPMENT, PREVALENCE & IN VITRO DETERMINATION OF FACTORS AFFECTING AHPND-CAUSING VIBRIO PARAHAEMOLYTICUS IN THE PHILIPPINES



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In 2015, acute hepatopancreatic necrosis disease (AHPND) related outbreaks were reported in the Philippines. This disease, also known as early mortality syndrome (EMS) has caused massive mortalities in shrimp ponds translating to loss of income and production decline in the shrimp industry. AHPND is still a growing concern for shrimp farmers due to lack of knowledge on the disease and inadequate detection methods that are both highly specific and inexpensive. To deal with this problem, an “in vitro” experiment was done to elucidate the environmental factors affecting the growth of the AHPND-causing bacteria. Routine AHPND detection via Polymerase Chain reaction (PCR) is also conducted to determine the prevalence of the disease in the country. In addition, Loop-mediated isothermal amplification (LAMP) primers specifically designed for the Philippine strain of AHPND causing *Vibrio parahaemolyticus* were developed for a more specific detection. LAMP was chosen as the platform to be used since it proves to be a faster and more sensitive alternative to the conventional PCR. Results showed that the optimum temperature and salinity conditions for the growth of *V. parahaemolyticus* causing AHPND is at 30°C and 25 ppt (OD₅₄₀=2.49). Twenty percent (20%) of the samples collected in Luzon tested positive for PCR detection of AHPND and 60% in Mindanao. Using the primers designed from the Philippine strain of AHPND causing *V. parahaemolyticus*, AHPND was detected in 37% of samples from Luzon, 33% in Visayas and 80% in Mindanao. The data at hand revealed that using LAMP as a detection medium is more efficient than PCR by 23%. In summary, AHPND is still a crippling disease in terms of shrimp production in the Philippines and that early detection will be of help in the management of AHPND in the Philippines.



ALIEN AMPHIBIANS, A THREAT TO PHILIPPINE BIOSECURITY: PEST RISK MAPPING OF ALIEN FROGS AND HORIZON SCANNING FOR POTENTIAL INVASIVE AMPHIBIANS

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The amphibian fauna of the Philippines is a global center of diversity and endemism. But nearly half of the endemic species are threatened with extinction; among the major threats include invasive alien species. There are at present six species of alien frogs that have been introduced into the Philippines: the American Bullfrog *Lithobates catesbeianus* (Shaw, 1802), Asiatic Painted Toad *Kaloula pulchra* Gray, 1831, Cane Toad *Rhinella marina* (Linnaeus, 1758), Chinese Bullfrog *Hoplobatrachus rugulosus* (Wiegmann, 1834), Green Paddy Frog *Hylarana erythraea* (Schlegel, 1837), and Greenhouse Frog *Eleutherodactylus planirostris* (Cope, 1862). This study aims to address (1) the large knowledge gap on the dynamics of biological invasions in the Philippines, (2) the need for an updated status and distribution of known alien frog species, and (3) identify measures that could prevent future introductions of alien amphibians into the Philippines. The chronological history of invasion was reconstructed based on

historical and recent geographic data. Current distributions of species were estimated through kernel smoothing and the potential distribution was predicted through species distribution modelling with the use of Maximum Entropy Modelling (MaxEnt). To determine other amphibian species that may have the potential to become invasive in the Philippines, Horizon Scanning was conducted using three predictors of establishment success: climate-match, propagule pressure, and invasion history. Five pathways were identified that may play pivotal roles in the introduction of alien frogs, namely, (i) as a biocontrol agent, (ii) as food source, (iii) pet trade, (iii) trade of exotic plants, and (iv) as cargo stowaways. The spatial invasion of alien frogs exhibits a stratified diffusion pattern of dispersal wherein human-mediated jump-dispersal (or long distance dispersal) is the primary mode of their spread, followed by diffusion dispersal as secondary mode. The same pathways in the initial introduction may have mediated the jump-dispersal of species to other islands. Spatio-temporal patterns show rapid and continuous spread of species, especially evident for *H. rugulosus* and *K. pulchra*. Alien frogs vary in their extent of the current and potential geographic distribution; *Rhinella marina* being the most widespread (throughout the Philippines except Palawan and Batanes) and with the largest potential range (>90% of the Philippines). Consensus maps of current and potential distribution indicate that no species has totally invaded all its potential range. Of the 102 amphibian species with known history of establishment success elsewhere, 74.5% (65 frogs, 11 salamanders) pose a serious risk of becoming established in the Philippines. This study will contribute to our knowledge on the invasion of know alien frogs in the Philippines and provide the much-needed science-based information to guide policies and action plans for the management of invasive alien species.

BIODIVERSITY ASSESSMENT OF LITTORAL MACROZOOBENTHOS IN LAGUNA DE BAY, PHILIPPINES

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Laguna de Bay is home to various macroinvertebrates which play an important part in freshwater ecosystems. These macroinvertebrates or macrozoobenthos participate in the decompositional pathways and interact with the fish and zooplankton communities in water systems. Due to their restricted mobility, they are crucial bioindicators to detect trends in pollutant concentrations and their biodiversity typically reflects changes in the local environment. Despite their ecological importance, macrozoobenthos are still understudied and researches conducted on the effects of changes in water physicochemistry on their communities remain to be poorly known in the Philippines. Thus, this study gathered samples of macrozoobenthos species from 33 littoral sites of Laguna de Bay to determine the biodiversity of the macrozoobenthos species present in the lake. A total of 12,809 samples of macrozoobenthos were obtained, with 9 species from 6 identified families (Ampullaridae, Corbiculidae, Pachychilidae, Planorbidae, Thiaridae, and Viviparidae). Among the samples obtained, *Melanoides turriculus* was recorded as the most abundant species with 56%, while *Indoplanorbis exustus* was the least abundant which only comprised 0.02%. Richness, evenness, and diversity were determined using diversity indices such as Shannon–Wiener index (H') and Simpson's Index of Diversity (1-D). The results showed the highest diversity which was recorded from the sites of the Southern Region (ave $H' = 1.26$; ave $1-D = 0.65$), while the lowest was in Talim Island (ave $H' = 0.87$; ave $1-D = 0.5$). The low diversity of macrozoobenthos in Laguna de Bay indicates a degrading lake condition which suggests proper environmental assessments to be made. Furthermore, the output of the study will serve as an update on the biodiversity and distribution of littoral macrozoobenthos which can be used in biomonitoring programs of the lake.



SEA-BASED WORKERS' REMITTANCES: AN ANALYSIS OF CONSUMPTION OVER LIFE CYCLE

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In the previous decades, the Philippines have been one of the top sea based labor providers and remittance generating countries. Filipino seafarers comprise more than 25 percent of the 1.5 million mariners worldwide, making them the “*single biggest nationality bloc*” in the global shipping industry. Seafarers are known for having substantial income from working on board bringing home lots of stories about life aboard a ship and in the ocean. Most of them share something in common particularly how difficult and lonely life is on board. Despite the danger attached to the job and the suffering from the homesickness, Filipino seafarers endure all the difficulties that go with the work/job that they have chosen to be able to earn a higher income to finance the needs as well as to secure the future of their families. This study aims to know the manner in which the income of seafarers is allocated and the consumption patterns of their savings and investment. This study used self-administered questionnaires on Filipino seafarers with previous international maritime experience and who came back waiting for another job offer or contract and/or attending seminars and trainings. A descriptive – correlation analysis was used to determine life cycle surplus or deficit. Findings showed that average sea-based workers have life cycle surplus than deficit. They spent family savings on retirement and investments. The remittances were mostly spent on food, health, clothing apparel, communication and social activities.

IMPACT OF INFORMATION FLOW PROCESS QUALITY AND LOGISTICS FULFILLMENT PROCESS QUALITY TO PROCUREMENT MANAGEMENT PERFORMANCE AMONG UNIVERSAL BANKS IN THE PHILIPPINES

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Universal Banks play a significant role in the economic performance of the country because they supplement commercial activities. Procurement management performance is a critical ingredient in supply chain management. According to the study of Tassabehi and Moorhouse in 2008, the development of procurement role has been well documented in literature, from traditional organization transactions to one which includes supply network, cooperative alliances and strategic partnerships. Using the theoretical lens of Dynamic Capabilities Theory and Resource-Based View, this study proposes that information and process act as resources that result in logistics fulfillment capabilities. Improving the quality of processes is the key to performance of the firms as it reduces costs, improves resource utilization, and improves process efficiency. The study used Structural Equation Modeling (SEM), a comprehensive statistical tool used to test hypotheses about the relationship/s of latent variables. A total of 118 employees under purchasing and procurement department in 15 universal banks both local and foreign, was part of the study. Findings show that there is not enough evidence to conclude that the relationship between information provided by suppliers and their fulfilled order accuracy is significant with a value of $p\text{-value}=0.138$. Likewise, the relationship between effective and easy to use ordering processes of buyers and suppliers' fulfilled order timeliness was not established showing value of $p\text{-value}=0.312$. On the other hand, information provided by suppliers is positively associated with their fulfilled order timeliness and the relationship is significant, showing Estimated effect= 0.662 , $p\text{-value}=0.001$. Moreover, effective and easy to use ordering processes of buyers are positively associated with suppliers' fulfilled order accuracy showing results of Estimated effect= 0.435 , $p\text{-value}=0.005$. The results also affirmed the hypothesis that logistics fulfillment quality processes i.e. suppliers' fulfilled order accuracy which is at Estimated effect= 0.199 , $p\text{-value}=0.032$ and timeliness at Estimated effect= 0.487 , $p\text{-value}=0.001$ have a positive

impact on procurement satisfaction. One of the notable findings in our study is that fulfilled order timeliness has a significantly greater effect on satisfaction than fulfilled order accuracy. This finding reflects the increasingly important role that the element of time plays in the today's competitive environment.



MACROECONOMIC FACTORS AFFECTING RESIDENTIAL REAL ESTATE PRICE IN THE PHILIPPINES

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Housing is one of the physiological needs of people along with food and clothing as identified in the Maslow's Hierarchy of Needs. However, there is a rapid increase in the housing prices nowadays due to strong demand most especially in the Philippines. This study investigated what were the factors that affect the increase in residential real estate price in the Philippines. All factors are on a yearly basis from 1995-2015. For this research, secondary data were collected from the Bangko Sentral ng Pilipinas (BSP), Philippine Statistic Authority (PSA), and The National and Economic Development Authority (NEDA). The study was made to verify the relationship between the macroeconomic factors and housing price in the Philippines. According to the analysis, Gross Domestic Product (GDP) and interest rates are the main factors that affect the increase in housing price in the country. Focus Group Discussion was conducted to validate the data and findings from the study.

EFFICIENCY ASSESSMENT OF THIRD PARTY LOGISTICS SERVICE PROVIDERS OPERATING IN METRO MANILA

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Outsourcing of the logistics services enables organizations to reduce cost and generate incremental profitability. This business strategy impacts significantly in organizations financial transactions, information management and communication technologies. Third Party Logistics Providers (3PL) are delving into value added activities that enhance logistics operation in a most effective and efficient way. This research study aims to measure the efficiency performance of asset-based 3PLs operating in Metro Manila. Assessing the performance of the Third Party Logistics Providers could provide essential information on the critical success factors that affects the company's strategy to develop competitive advantage to other 3PL firms. A panel data with 80 observations was analyzed through Slack Based - Data Envelopment Analysis (DEA) and Stochastic Frontier Analysis (SFA) from 2008 – 2015. The initial results showed that forty percent (40%) of the logistic firms reached the maximum efficiency (100%) indicating strong performance. 20% of the logistic firms were efficient in managing the inputs but failed to reached the maximum efficiency indicating weak performance. 40% of them were not efficient indicating shortage in operating income and excess in current liabilities. The Stochastic frontier regression estimates show that a 100% increase in net fixed assets and operating expenses generated 15.2% and 6.9% increase in gross profit, respectively.



DETERMINANTS OF “KNOW YOUR CUSTOMER” COMPLIANCE AMONG PRIVATE DOMESTIC UNIVERSAL BANKS IN THE PHILIPPINES

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In the banking industry, know your customer (KYC) is the most basic and important rule to be observed before doing business with clients. The true identity and source of funds of the client must be established with proper recording supported by official documents. But despite this rule, there are still anonymous accounts, fictitious names and unexplained amount of money that penetrate the banking industry. Such incidence increases the reputational, legal and administrative risk of the industry. The objective of the study is to know the factors that affect the KYC compliance of the private domestic universal banks (UB's) in the Philippines with employee competency, bank size, customer characteristics and IT system capability as variables. Copies of modified adapted survey questionnaire (Arasa & Ottichilo, 2015) were distributed to the branch personnel of the 11 listed private domestic UB's in the Philippines who are directly involved in the day-to-day operations and has face-to-face contact with the client. Stratified random sampling is being used in choosing the 377 respondents. The study used descriptive research design and correlation. Initial results shows that: customer characteristics are a key determinant of KYC compliance; false information delivered with or without evil intentions create a permanent untruthful view of customer by bank; and even with strong competition among banks in soliciting more accounts they still adhering the strict implementation of KYC compliance standards.

INFORMATION SECURITY AWARENESS: AN EFFECTIVE APPROACH FOR THE PROTECTION OF INFORMATION IN USE OF STORAGE DEVICES

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Today, data storage devices have been widely used by the majority as a means of personal and work related backing up of files / information, record-keeping of information. Data storage devices like hard drives, laptop, and USB flash drives can easily be carried anywhere by the user. News relative to information security attacks are growing. Hackers are using different methods to alter confidentiality, integrity, and availability of information, while user's negligence, ignorance, lack of information security awareness are some of the reasons for these security attacks. Experts believe that technology cannot always guarantee a secure environment for information. The human aspects of information security should be taken into consideration, besides the technical aspects. The study found that respondents agree that information security is affected by self-efficacy, attitude, experience,-involvement, organizational policy and threat appraisal. These indicators differ per given characteristics of the respondents.



A COMPARATIVE STUDY BETWEEN OUTSOURCING AND IN-HOUSE PREPARATION OF ACCOUNTING SERVICES IN MICRO ENTERPRISES IN THE URBAN GROWTH AREAS OF CAVITE

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Enterprises are segmented into four categories namely: micro, small, medium and large. This study focuses on the micro enterprises which comprise 90% of the total number of establishments in the Philippines. Micro entrepreneurs do not view accounting function as a strategic differentiator and as a critical function, and juggle all the responsibility by themselves. This study aims to compare the advantages and disadvantages between outsourcing and in-house preparation of accounting tasks in micro enterprises in terms of cost effectiveness, and performance efficiency. The study covers micro enterprises in the urban growth areas in the Province of Cavite. A sample of 320 micro enterprises was selected using random sampling. Interview and dissemination of survey questionnaires was conducted to gather data for this study. Respondents include owners, finance officer, accountants, bookkeepers and managers who were knowledgeable in the operations of the enterprise. Data Envelopment Analysis and Stochastic Frontier Regression were used to detect the difference between outsource and in-house preparation of accounting services. The initial findings show that in-house preparation of accounting services incurred higher operating expenditures than outsource accounting services. On the technical inefficiency, micro-enterprise with large capitalization is more technically efficient in its operation than its counterpart with low capitalization. Micro-enterprise that outsource their accounting services is technically efficient than micro-enterprise that has in-house accounting services.

“EFFICIENCY OF WORKING CAPITAL MANAGEMENT AND PROFITABILITY OF PUBLICLY LISTED REAL ESTATE COMPANIES IN THE PHILIPPINES”

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Continuous growth in the real estate industry remains to be positive as it plays a big role towards economic stability. Such development necessitates real estate companies to efficiently manage their working capital to improve their bottom lines. Efficient working capital management is also essential to sustain their operations such as property development, commercial leasing, hotels, resorts and construction services. The efficiency of working capital management in the 12 publicly listed real estate companies in the Philippines was analyzed and its effect on the firm's profitability. The real estate's working capital components such as accounts receivable turnover ratio, accounts payable turnover ratio, inventory turnover ratio and cash conversion cycle were used as input variables while the net income of the firm was used as the output variable to measure profitability. A panel of 120 observations was analyzed using Data Envelopment Analysis (DEA) and Stochastic Frontier Analysis (SFA). Results indicate that working capital management affects the firm's profitability. Reduction in the inventories held and the faster collection of payments were associated to higher income. In general, these results indicate that firms with aggressive working capital management are more profitable and efficient.



AN ASSESSMENT OF THE FACTORS AFFECTING THE USABILITY OF ONLINE BANKING OF MILLENNIALS IN SELECTED BANKS IN THE PHILIPPINES

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The world is changing faster than ever before and in today's fast-paced environment, Information Technology (IT) has played a major part in many industries including the banking industry. Banking is essential in the lives of people in all parts of the world. Transactions such as cash and check deposits, withdrawals, encashments, transfers, and bills payments in the bank have been made over-the-counter. But since the inception of the Internet, the rise of online banking has been offered by businesses to cater the changing needs of the clients. However, the Philippines had the lowest digital-banking penetration of any Asian market surveyed (McKinsey Asia Personal Financial Services Survey, 2014). A survey was conducted to randomly selected millennial banking customers from the top three universal banks in the Philippines who has an existing online banking or use a mobile banking application. Structural equation modeling, a multivariate statistical analysis technique was used to test the relationship among the variables. This study revealed the relationship between the usability of online banking and demographics, bank relationship and three other mediating variables: knowledge and support, website quality, and trust and security.

THE IMPACT OF THE EMERGENCE OF A SUPERMARKET TO THE SURVIVAL OF THE PUBLIC MARKET IN POLANGUI, ALBAY

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Modern grocery retailers such as hypermarkets, convenience stores and supermarkets are becoming more aggressive when it comes to their expansion plans. In the Philippines, grocery retailing has changed tremendously to meet the demands and needs of the consumers over the past few decades. According to the data gathered by the Department of Trade and Industry, the country's micro, small and medium enterprises are mostly engaged in wholesaling and retailing trade. Euromonitor International (2014) found that traditional retailers significantly survived the onslaught of modern grocery retailers and contribute to the economy. The case of the traditional retailers surviving the stiff rivalry offered by the entrant of a large mall in Polangui is a particular case worth studying. The main focus of this study is to determine the impact that the emergence of a supermarket has on the survival of the Public Market in Polangui, Albay. The main respondents of this study are the residents living near the public market in Basud, Polangui Albay. The total number of participants for this research study is 350 that come from the following barangay: (1) Basud, (2) Centro Occidental, (3) Magurang, (4) Sugcad and (5) Ubaliw. To determine the number of respondents, a stratified random sampling technique was used to divide the population into smaller groups. In gathering the necessary data for the study, a semi-structured survey questionnaire was distributed among the chosen respondents from the five barangays. The statistical tools used in interpreting the data in this study are a descriptive statistics that uses frequency and percentage distribution. Initial findings of this study suggest that majority of the respondents from the five chosen barangays still choose to buy their products from the public market instead from the supermarket. The result of the study also revealed that the public market will be able to sustain its operation despite the emergence of the supermarket in Polangui, Albay.



THE INFLUENCE OF ON-LINE WORD OF MOUTH ON PURCHASE INTENTION OF FILIPINO MILLENNIAL TRAVELERS

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One of the faces of new global challenges that affect the hotel industry in the Philippines is the rise of social media and the power of online word-of-mouth. Online word-of-mouth plays a significant role in consumer's online purchase intention. The hospitality industry is attempting to adapt to this new digital marketing revolution. The purpose of this study is to examine the influence of online word-of-mouth on the purchase intention of Filipino millennial travelers in reference to the accredited 4-star hotels by the Department of Tourism in National Capital Region. Data was collected through purposive sampling. A pre-test was conducted to validate the internal consistency of the instrument. A self-administered survey questionnaire was distributed to two hundred (200) Filipino millennial travelers through different social media sites and through paper-based surveys. Initial findings showed that word of mouth is still valuable and reliable source of information on purchase intention of the Filipino Millennial travelers.

SOCIAL MEDIA FOR DISASTER COMMUNICATION OF THE PHILIPPINE DISASTER RESILIENCE FOUNDATION (PDRF)

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During the early 2000s, with the proliferation of the Internet and social media, the accessibility of information brought challenges and opportunities in adapting social media as a new tool. This study explores the social media tools and best practices in disaster communication that the Philippine Disaster Resilience Foundation (PDRF) can draw from in incorporating social media into a disaster communication plan for the organization. Through survey, interviews and focus-group discussions, this research aims to gather data to draw results on social media, public relations, and disaster communications practices of the PDRF and its member organizations, including their opportunities and challenges in communicating during disasters. This study will be significant for PDRF as it will further develop their disaster-related communication strategies that may also be used for future public relations and communications studies.



FACTORS AFFECTING FINANCIAL STABILITY OF FILIPINO SEAFARER HOUSEHOLD

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Global labor migration has been the escape route of Filipinos from poverty. Seafaring profession however is the most risky and uncertain one. It exposes the seafarers to accidents and unhealthy lifestyle in the midst of indefinite contracts. Moreover, as required by law, seafarer should remit 80% of his monthly basic salary to his allottee, which, in case of a married seafarer, should be sent to his wife. Seafarer's wife should be able to manage their finances to have a decent living. But being financially stable would mean having the same quality of lifestyle whether the seafarer husband is onboard or not. This is the particular motivation where the study emanates as it focuses on identifying the relation of demographic variables, financial literacy and financial behavior of seafarer's wife. Using a modified survey questionnaire, the necessary data were gathered from 400 seafarers' wives as respondents. Prior to conducting survey, a pre-test was done to check the reliability of the instrument. The survey was

conducted through existing organizations of seafarers' wives, seafarers' manning agencies and referrals from relatives and friends. To gather additional data, online survey was also conducted and posted in different social media group of seafarers' wives. Initial findings showed seafarers' wives view themselves as financially literate. The household will save for purpose of having emergency fund and would invest in stocks and mutual funds. The household will also cut expenses if the budget runs short but would also borrow money for the same reason. Result also showed that seafarer household are confident that they have enough savings to sustain the family needs without borrowing for a maximum of 1 year and can live comfortably even if the seafarer husband stop sailing for a period of two to four years. However, reports also revealed that seafarer households need assistance to enhance their ability to manage their finances specifically in terms of savings and investment. The data gathered will help different seafarer organizations and manning agencies to identify the specific aid that they can provide for Filipino seafarer household to become financially stable.

THE IMPACT OF PHARMACEUTICAL PROMOTION ON PRESCRIBING DECISIONS OF OPHTHALMOLOGISTS

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The Philippines Pharmaceutical Market is continuously growing at a rate of 12 to 14 percent annually. Pharmaceutical companies invest their resources heavily on pharmaceutical promotion which includes promotional materials “*brand reminders*”, distribution of medical samples, sponsorship of continuing medical education and conferences, funding of scientific studies and detailing of pharmaceutical sales representative (PSR). The industry claims that promotion provides both scientific and educational information to physicians. Some evidence indicate that promotion adversely influence physicians' prescribing decisions. The present study was designed to find out the impact of pharmaceutical promotion offered by companies to influence physicians' prescribing decision. A self-administered questionnaire was conducted from 224 Ophthalmologists working from Licensed Government (DOH) and Private Hospitals in Metro Manila. The questionnaire was validated using Cronbach's Alpha with reliability result of 0.737 and the effectiveness of the promotional strategies on prescribing decisions was marked in a four point Likert-scale. The findings indicated that respondents have a statistically significant positive effect on the marketing practices of the pharmaceutical companies specifically with the continuing medical education, funding of scientific studies and visit of pharmaceutical sales representative while medical samples and promotional materials were perceived to have least attention by the respondents.

MEASURING THE EFFICIENCY OF CORPORATE SOCIAL RESPONSIBILITY (CSR) ON FINANCIAL PERFORMANCE OF SELECTED UNIVERSAL BANKS IN THE PHILIPPINES



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This paper seeks to measure Corporate Social Responsibility's (CSR) efficiency on the financial performance of 12 universal banks in the country chosen through random sampling. Establishing a clear and well-defined CSR initiatives and programs have been a major trend in businesses today. Even in the Philippines, CSR plays a significant role in a firm's reputation. Each bank's operating expenses, shareholder's equities and liabilities served as input variables while revenue, capitalization and intangible assets were the output variables. Age of banks, size of assets and number of employees constitute the factors affecting technical efficiency of the universal banks. A panel data of 80 observations were analyzed through the Dynamic Data Envelopment Analysis (DEA) and Stochastic Frontier Analysis (SFA).

The findings showed that a universal bank with CSR have a higher DEA efficiency score than those that did not incorporate CSR. Their study also showed that the implementation of CSR can also decrease the impact of the resource inputs. Old universal banks with large assets and lesser employees were technically efficient than their counterparts.

THE EFFECTS OF HUMAN RESOURCE OUTSOURCING IN THE OPERATIONAL PERFORMANCE OF SELECTED QUICK SERVICE RESTAURANTS IN THE UNIVERSITY-BELT AREA, MANILA

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In a competitive industry of Quick Service Restaurants (QSR), the value of highly-competent, well-trained and committed employees is crucial to the operation of the management. This study seeks to determine the effects of the work engagement of the outsourced crew members in the operational performance of the selected branches of the leading QSR brands strategically located in the University-Belt (U-belt) of Manila. Selected brands were based from the top ten (10) companies in the Philippine consumer foodservice ranked by Euromonitor in 2014. Jollibee and Mang Inasal, the two leading and most numbered QSR of Jollibee Food Corporation and KFC owned by the largest restaurant company in the world, Yum! Brands Inc. The researcher used quantitative descriptive method and utilized the questionnaire Utrecht Work Engagement Scale (UWES) designed by Dr. Wilmar Schaufeli and Dr. Arnold Bakker. Results of the study revealed that outsourced crew members were pre-dominantly in the 21 to 25 year age group and single. Around 10% of the respondents had a bachelor's degree, the rest were either high school graduates, vocational school graduates, or undergraduate students. The average overall engagement score of the respondents was 4.7, the highest average score being for dedication (5 ± 0.96) and vigor and absorption being almost equal (4.7 and 4.6 respectively). Females had higher scores than males for all three scales, and single employees averaged 0.1 points higher than the married employees. Employees with Bachelor's degrees scored highest when it comes to vigor, while high school graduates scored low on dedication, compared to the other three groups. They also had a lower average score when it came to absorption. Among the employees surveyed those who had been employed for at least 6 years scored highest in all three scales. Taken collectively, the results revealed that there is a significant relationship in the work engagement of the outsourced crew members in the operational performance of the QSR in regards to the employee's morale, productivity and turnover rate wherein the demographic of the employees also plays a big role in the abovementioned result of the study.



FACTORS INFLUENCING CONSUMERS PURCHASE BEHAVIOR OF PRIVATE-LABEL BRANDS IN THE FRESH FOOD CATEGORY

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The present paper aims to investigate some of the factors that may influence the buying behavior of consumers of private-label brands in the fresh food category. Where respondents were grouped according to (a) demographic profile as to age, gender, education, household size, and household gross income per month; (b) consumer buying characteristics as to price-consciousness, price-quality association and perceived risk; and (c) product category characteristics as to product packaging, product advertising and product quality and price toward to their purchase behaviors of PLB in the fresh food category. A one shot survey was conducted among 207 consumers in three selected supermarkets in the City of Manila. Fresh food category (meat, poultry and vegetable) under SM Bonus brand of SM Supermarkets, Supersavers brand of Robinson Supermarkets, and Equal Brand of Puregold were the selected private-label brands under investigation. Purposive sampling was used in selecting the respondents of the study. The respondents consisted of the daily walk-in Filipino consumers who are

current users of private-label brands. The supermarkets were chosen base on the list of the top supermarkets in the Philippines released by the Philippines Retailer Association. The supermarkets were also chosen base on the highest Shelf Keeping Units (SKU's) of PLB as published by Philippine Daily Inquirer, 2012. Results of the correlation analysis using the chi-square showed that some demographic profile influenced their purchase behavior of PLB. While, regression analysis result showed that some of consumer buying characteristics and the product category characteristics influenced their purchase behavior intention on PLB. Of the three supermarkets, the partial result showed that SM Bonus brand is the most recognized private-label brand. A follow-up study could be done to keep abreast of changes in consumers' personal characteristics, purchasing behavior, and product characteristics toward PLB in the fresh food category. It would be interesting to undertake studies looking for changes in the purchase intention of PLB products before and after calamities that affect the prices of the fresh food products. Larger scale surveys and increasing sample size to enhance the external validity of the findings could be done.

PROMOTION OF BATANES AS CULTURAL HERITAGE AND GASTRONOMICAL ATTRACTION TO LOCAL AND FOREIGN TOURISTS

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The marketing and promotion management of tourism destination is starting to play a very important role in the modern economy and increasingly becoming competitive globally. Various discursive inconsistencies emerge and different factors considered were potential restrain to tourism development. In this context, the study presents the potentials of Batanes to show its strengths, weaknesses in marketing its unique attractions that create differentiations. Batanes is closely related to cultural heritage and unique gastronomical attractions. To shed light to the uniqueness of Batanes, three hundred (300) tourists were randomly asked to gauge the cultural heritage and gastronomical attraction of the place from December 2016 to February 2017 through a survey questionnaire. Initial findings showed that satisfaction of tourist were beyond expectations on the appreciation of breathtaking landscape, seascape, and other amenities of the place. People are courteous, honest and reserved.

THE IMPACT OF FACEBOOK SOCIAL COMMERCE ON BRAND ENGAGEMENT, BRAND TRUST, PURCHASE INTENTION, AND WORD-OF-MOUTH



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The development of social media networking sites has given rise to a new paradigm of e-commerce called social commerce. Social commerce uses social networking sites in the buying and selling of various products and services online and in-app. In the recent years, social commerce has gained a major attention from both academics and the industry. The growing use of online social networking becomes more attractive for many companies as it presents opportunity to reach its consumers with the possibility of accessing users' preferences, opinions, and interests which help companies to determine the behavior of the consumers. This research investigates on the impact of social commerce stimuli to brand engagement as an underlying influence to brand trust and purchase intention of products being advertised on Facebook. A conceptual framework was formulated and examined through a four-point Likert-scale type survey questionnaire targeting 311 Facebook users as the respondents who are social networking users and have been actively participating in any social commerce activities. Data gathering was conducted through an online self-administered survey wherein respondents were selected via purposive sampling. Initial findings show that social commerce on Facebook has a significant impact and

relationship with brand engagement which also influences trust, purchase intention and word-of-mouth at 5% level of significance.

PERFORMANCE OF ISO 9001:2008 QUALITY MANAGEMENT CERTIFICATION ON FOOD MANUFACTURING COMPANIES

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Popularity and certification based on international standards provides confidence and facilitates access to world markets. Consumers today are demanding the need for quality service which redounds to financial performances of companies that respond to the challenge. This study therefore aims to analyze the impact of ISO 9001 quality management certification and productivity performance and efficiency of selected food manufacturing companies in the Philippines accredited by Philippine Accreditation Bureau (PAB). A panel data of 105 observations were analyzed using Data Envelopment Analysis (DEA)-Malmquist Productivity Index model and Slack-Based model to measure total productivity (TFP) and calculate efficiency of the selected ISO certified companies from 2009 -2015.. Cost of Good Sold (COGS) and Operating Expenses (OPEX) were used as input variables and Net Sales and Gross Profit as output variables. Findings indicate that the decline in productivity (tfpch) was caused by technological obsolescence (techch) rather than efficiency change or cost efficiency (effch). Improvement in cost efficiency was driven by scale efficiency (sech) or advantageous condition and managerial efficiency (pech) in the food industry. Across the food manufacturing firms, forty percent (40%) achieved improvement in productivity through cost efficient, good management of operation and optimum scale condition. Twenty percent (20% of the food manufacturing firms are operating at their most productive scale size (mpss) with no shortage in output (gross income and net sales) and excess in inputs (cogs and opex)..



FACTORS INFLUENCING IMPULSE BUYING BEHAVIOR OF THE THOMASIAN GRADUATE STUDENTS

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Purchases made on impulse arise due to various factors that affect the buying behavior of a consumer. This study identified the effect of the multiple factors in the marketing environment to the impulsivity of the buying behavior of the consumers, namely the graduate students of the University of Santo Tomas. A total of four hundred (400) graduate students was randomly selected and was given a set of survey questionnaires; and the data gathered were analyzed through the SPSS Software. A pilot study was conducted with 50 respondents to measure the internal consistency of the survey. After accounting for the reversely-worded items, the questions were found to have a reasonably strong Cronbach's alpha of 0.7814. Majority of the respondents were in the 20-30 year age group, a quarter came from the 31-40 age group, and the remaining came from the 41 and above age groups. The group was almost evenly distributed between males and females. A third of the respondents earn more than 300,000 per year. On the average, the group of respondents exhibits moderate impulsive buying behavior (2.4 + 0.45). Males and females scored very closely on the IIB scale, while significant differences were found between the different age groups (p-value = 0.0067) and between the different income groups (p-value = 0.0005). The results from the study shows that (1) increasing age and increasing income are associated with lower impulse buying behavior (IBB), and (2) different marketing schemes (i.e. free products, advertisements of their favorite artists) are associated to the increasing IBB. Given the findings of this study, marketers are given the opportunity to meet the needs of potential customers by distinguishing the factors that influences their buying habits.

BIOASSAY GUIDED ISOLATION OF α -GLUCOSIDASE INHIBITORS FROM THE METHANOLIC BARK EXTRACT OF *Ceriops tagal* C.B. ROB.

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Diabetes mellitus is a chronic metabolic disease caused by acquired deficiency in insulin or unresponsiveness of the organs to secreted insulin. One mode of treating type 2 diabetes is by inhibition of α -glucosidase, the enzyme that catalyzes the hydrolysis of glucose from the non-reducing end of starch and glycogens, delaying the postprandial hyperglycemia. *Ceriops tagal* (Rhizophoraceae) also known as “tangkal” was reported to exhibit high inhibitory activity against α -glucosidase ($IC_{50} = 0.857 \pm 1.46 \mu\text{g mL}^{-1}$). This study aims to isolate the active constituents from the *Ceriops tagal* methanolic bark extract guided by α -glucosidase inhibition bioassay and elucidate their structures using various spectrophotometric methods. The air-dried bark of *Ceriops tagal* (5.7 kg) was ground and exhaustively extracted with 80% methanol. The methanol extract was filtered, separating the filtrate (Ct, 363.5 g, $IC_{50} = 98.28 \mu\text{g mL}^{-1}$) and the precipitate formed (Ctp, 30.9 g, $IC_{50} = 13.16 \mu\text{g mL}^{-1}$). The residue (CtpR, 10.76 g, $IC_{50} = 8.7 \mu\text{g mL}^{-1}$) formed during the partitioning of Ctp with ethyl acetate and water (1.2:1) was collected. CtpR (42.08 mg) was separated using reversed-phase preparative thin-layer chromatography and the major band was collected (CtpR 2, 17.35 mg, $IC_{50} = 633.03 \mu\text{g mL}^{-1}$). Another separation method was employed wherein CtpR was separated into acetone soluble (CtpRA) and insoluble (CtpRB) fractions. The CtpRA and CtpRB fractions were further purified by fractional crystallization to obtain CtpRA2.2 and CtpRB1.2. CtpRA2.2 and CtpRB1.2 exhibited high α -glucosidase inhibitory activity with IC_{50} of $11.29 \mu\text{g mL}^{-1}$ and $18.87 \mu\text{g mL}^{-1}$, respectively, as compared to the positive control, 1-deoxynojirimycin, with IC_{50} of $761.30 \mu\text{g mL}^{-1}$. The ^1H and ^{13}C nuclear magnetic resonance spectra of CtpRB1.2, and ^1H , ^{13}C , COSY, HMQC and HSQC NMR spectra of CtpR 2 and CtpRA2.2 were obtained. Structure elucidation of these isolates is currently in progress.

**CHALLENGES AND FACTORS INFLUENCING BEHAVIORAL INTENTION AND BEHAVIOR TO USE MOBILE BANKING SERVICES IN THE PHILIPPINES**

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The aim of this study is to determine the challenges and factors influencing behavioral intention and behavior to use mobile banking services in the Philippines by empirically examining if these challenges influence initial trust formation through local banks' customers who are non-users of mobile banking services. The study tested a model of Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB) to evaluate potential moderators (demographic variables) and mediators (diffusion of trust, infrastructure quality, perceived costs, privacy, and security) that will influence behavioral intention to use mobile banking. The data were collected from both qualitative and quantitative method. We measured the

variables using questionnaires data from 314 bank customers from twenty local universal/commercial banks in the Philippines. The Hayes' Process Macro developed by Andrew F. Hayes (2013), was used as a statistical moderation and mediation analysis in SPSS to estimates the path coefficients using multiple regression for the continuous outcome. The prevailing responses of non-users of mobile banking asserted that initial trust played a significant impact on behavioral intention whether to use online banking services. Disposition to trust, infrastructure quality, perceived costs, privacy, and security are widely recognized as the main obstacles to the adoption and diffusion of mobile banking in the Philippines.

OPERATIONALIZING A REAL OPTIONS MODEL FOR ACTIVELY TRADED UNIVERSAL BANKLOAN PORTFOLIOS IN THE PHILIPPINES

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Evidence from available actively traded Universal Bank data indicates these banks will selectively allocate funds to acquire holdings in different industry sectors, while lowering exposures to holdings in others. This study examined the optimal values of loan portfolio exposure, through the use of a Real Options model as applied to Portfolio Theory, to determine if actively traded Universal Banks undervalue their loan portfolios given an environment of incomplete information. This study observed a window of eight years, from 2008 to 2015, that utilized secondary data on ten actively traded Universal Banks in the Philippines. A valuation model in the form of a Partial Differential Equation (PDE) was developed by the researcher to determine the value of the loan portfolios in the presence of volatility, portfolio growth rates, the discount rate, the value of waiting, and information asymmetry. Loan portfolio values from annual reports (Group 1) were compared to values predicted by the PDE (Group 2) to ascertain the presence of differences in the pricing of loan portfolios. A Mann-Whitney two-tailed test examined both sets of data for the window of observation and found U statistics ranging from 26 to 50 that indicated homoscedasticity between the PDE and the reported loan portfolio values. A Spearman rho correlation analysis found the PDE carried moderate ($\rho=0.636$) to strong ($\rho=0.867$) positive levels of correspondence between both sample groups. Intraclass Correlation Coefficients that ranged from 0.683 to 0.951 indicated that the PDE provided very reliable predictions of loan portfolio asset values. In a Mann-Whitney one-tailed test, evidence indicated that the loan portfolio values reported in the annual reports were lower than the values determined by the PDE. All found statistical values were significant at the 0.05 level. These findings suggested that reported loan portfolio values do not consider the value of opportunities for future investments on the part of banks in the sample population. This paper seeks to add to the adoption of Real Options Analysis in Capital Budgeting and Rationing decisions by forwarding a model whereby actively traded Universal Banks may value future investments in an environment of imperfect information.



JE T'AIME, SINTA: CULTURE AND GENDER COMMUNICATION IN FRENCH-FILIPINO MARITAL RELATIONSHIP

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When men and women choose to tie the knot, they bring with them all the experiences, qualities, knowledge, and values that shaped them as persons. As though the problems of male and female marriage are not complex enough, more questions and complications escalate when the merging involves people who were born and raised in diverse cultures. The study explores the phenomenon of intercultural communication, particularly the communicative cultural and gender differences in a French-Filipino marriage. It attempts to present the unique communication styles and a conflict management style implemented inside the relationship in conveying affection. Additionally, it investigates the experiences of the spouses and how they cope with their differences and tries to determine the role of communication in causing and managing conflict within the intercultural marriage. The researcher employs Fred Casmir's (1999) Third-culture Building Theory as the main framework of the study to further achieve the research's objectives. In-depth interviews using open-ended questions to 25 French-Filipino couples who have been married for more than thirteen years are engaged. Moreover, participant observations are conducted to select pairs to have a closer look at their intercultural setting. With these methods, the study reveals that language fluency, disparity in cultural dimensions and gender dialects are the difficulties that the participants encountered during the initial stages of the relationship. In view of that, it presents the effectiveness of over-accommodation as a communication approach; and collaboration and integration as resolution styles in handling conflict. The research also shows that French husbands are passive-aggressive, while Filipino wives are assertive making the two communication styles appropriate in intercultural marriage. Identity transformations and changes in communicative behaviors of the couples are evident in constructing their own culture which is suitable in negotiating their differences.

SA LILIM: SAMPUNG KUWENTO NG PAG-IBIG

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Ang "Sa Lilim: Sampung Kuwento ng Pag-ibig" ay isinulat para sa mambabasang young adult. Binubuo ito ng sampung kuwento ng pag-ibig na nagtatampok kay Ana bilang anak, estudyante, kaglase, kaibigan, kalaro, kalaguyo, indibidwal, at marami pang iba. Sakop ng koleksiyon ang karanasan ni Ana sa iba't ibang uri ng pag-ibig simula elementarya hanggang kolehiyo. Ang mga pag-ibig ni Ana ay hindi lamang naikukulong sa pag-iibigan ng babae at lalake, kasama rin sa koleksiyon ang pag-ibig sa kaibigan, sa magulang, sa sarili, o sa ulap man. Isa si Anang bata na hindi pa lubos ang pagkilala sa kanyang sarili, at ginagagap pa lamang ang iba't ibang emosyon. Ilalahad sa koleksiyong ito ang pakikisalamuha ni Ana sa iba't ibang tao, at ang kanyang paglalakbay tungo sa pagkahinog bilang isang indibidwal. "Sa Lilim" ang titulo ng koleksiyon dahil nais ilarawan si Ana bilang isang indibidwal na hindi pa nabibilad sa iba't ibang karanasan sa buhay. May partikular na tuon ang koleksiyon sa kanyang hindi pa lubos na pagkaunawa sa tunay na pagmamahal at pag-aaruga. At tulad ng isang taong nasa lilim, kahit nariyan lamang ang liwanag ng pag-ibig, mayroon pa rin siyang pag-aalinlangan. Maaaring ituring ang bawat kuwento bilang

hakbang ni Ana paalis sa lilim. Ang mga kuwento ni Ana ay umiikot sa kanyang pakikipagsapalaran sa buhay sa kabila ng mga pang-aapi at hindi pag-unawa sa kanya ng mga tao. Maituturing na kakaiba si Ana kumpara sa ibang bata. Dahil hindi lubos na madalumat ni Ana ang mga emosyong mayroon siya o kung mayroon nga ba, marami ang hindi karaniwang pagkilos at pag-uugali ang madalas natutunghayan sa kanya. Hindi nauunawaan si Ana ng mga taong nakapaligid sa kanya. Gaya ng mga taong nakapaligid kay Ana, marami din sa lipunan ang hindi nakakaunawa sa mga taong kakaiba. Kaya't kasama sa tuntunin ng koleksiyon na ilabas sa lilim nang di pag-unawa ang karanasan at pagsusumikap ng isang kakaibang bata.



PULA SA BAHAGHARI: MGA PROFILE NG MODERNONG PLHIV BILANG NARATIBO

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Pagkapipi dahil sa kahihiyan at karamdaman. Iyan ang kasalukuyang mukha ng PLHIV. Ang paglikha ng bagong akdang naratibong maglalahad, mag-iimahan at kakatawan sa “modernong” PLHIV o People Living with HIV (Taong Nabubuhay nang may HIV) sa Filipinas ang pangunahing argumento ng proyektong ito. Bilang tugon na rin sa lumalalang kalagayan ng pagkalat ng sakit na HIV at AIDS sa bansa lalo na sa mga kabataan, kinakailangan na ng akdang pampanitikan magpapakilala sa makabago o modernong PLHIV hindi lamang sa mga kabataan kundi para na rin sa madlang mambabasa. Sa kasalukuyan, wala pang gaanong naililimbag na akdang pampanitikan na tumatalakay sa usapin ng HIV o AIDS sa Filipinas maliban sa nobelang *Orosa-Nakpil*, *Malate* ni Louie Mar Gangcuangco na kung titingnan ay nag-iiwan ng isang malaking puwang sa hanay ng likhang sining at panitikan. Upang maging makatotohanan ang mga akda, Creative Nonfiction o sanaysay ang ginamit na genre upang maisulat ang proyektong ito. Sa pamamagitan ng pagsulat ng sampung Profile Sketch o Profiles ng iba’t ibang PLHIV, nais ng manunulat na bigyan ng bagong pagtingin ang buhay ng mga taong mayroong ganitong uri ng sakit. Alinsunod sa tradisyon ng anyo nina Doreen Fernandez, Edilberto Alegre, Rosario Torres-Yu, Alwin Aguirre, Ligaya Tiamson Rubin at iba pang nangungunang pangalan sa larangan ng pagsulat ng profile at profile sketch, binibigyang mukha ng proyektong ito ang mga kasalukuyang lagay ng mga taong marahil na nagdurusa o hindi naman kaya’y lumalaban sa kanilang sakit. Pagtamasa sa danas ng iba at paglalahad ng sariling pananaw hinggil sa mga pangyayari sa mundong ginagalawan ng mga PLHIV ang pagmumulan ng mga naratibo. Pakikipamuhay at pakikisalamuha ang pangunahing pamamaraan ng pagkalap ng kwento dahil ang danas ng iba ay nagiging danas rin ng manunulat sa ganitong paraan. At sa huli, ang danas at pananaw sa karamdamang ito ang magsisilbing bukal na pagmumulan ng mga bagong kwento’t naratibo hindi lamang para maunawaan natin sila, kundi para matutuhan nating makipamuhay kasama sila sa lipunang ito.

THE ARRIVAL: STORIES ON ADOLESCENCE

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The short story in Philippine literature in English has a century old tradition. It continues to grow through the collective efforts of authors in exploring different forms, genres, narrative techniques, and linguistic experimentation. However, the tradition of Bildungsroman or coming-of-age narratives in Philippine literature in English appears limited. Although some writers like NVM Gonzales (*Bread of Salt and Other Stories*), Gregorio Brillantes (*Distance to Andromeda*), Cristina Pantoja-Hidalgo (*Catch A Falling Star*), Carla Pacis (*Bagets*) and Luis Katigbak (*Happy Endings*) have written short stories and compiled anthologies with coming-of-age themes, the amount of available Bildungsroman short story collections from a single-author are few to nonexistent. Through his collection titled *The Arrival: Stories on Adolescence*, the author wishes to contribute to the tradition of coming-of-age stories, using

Bildungsroman as an overarching theme. Arranged chronologically, all the stories follow the same character as he is exposed to experiences crucial to adolescence such as sexuality and sexual desire, identity, friendship, love, dreams and aspirations, peer pressure, and failure. In every story, the protagonist grows a year older. This is a deliberate technique on the part of the author because he also attempts to illustrate the short story cycle form, a form of fiction, which draws upon the characteristics of two genres: the short story and the novel. The stories in the collection can be read as independent narratives or as one full-length coming-of-age novel. With regards to theme, the collection aims to examine how a society affects the psychological, moral, and social shaping of the young protagonist's personality. Moreover, through his collection, the author also hopes to provide and uncover new realizations about the young adult experience. The author believes that adolescence is one of the vital stages in an individual's life and the narratives coming from the experiences of that time are worth writing about.



A YOUNG GIRL'S JOURNEY TOWARDS HOME: A CHILDREN'S SHORT STORY COLLECTION

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The concepts of "home" are depreciated in the modern Filipino families as marriages lead to divorce, as relationships fall apart, as resources become unavailable and as child is confused because of an absent parent. These greatly affect children as they rely deeply on adults. Despite the changing world and disappearing values, the Filipino child has primary needs that include self-concept and self-worth that need to be developed. These cognitive and affective aspects are established as the child journeys from passive innocence to discovering resilience. The writer has read the works of Jeanette C. Patindol, Grace D. Chong, May Astrid Tobias-Papa, Aleli Dew Ayroso, Carla M. Pacis, Sophia Lee, and Russell Molina in an attempt to follow the tradition of their writing in the facets of its realistic genre and subjects involving a child's conflicts within the family. This is to add to the already plentiful realistic stories for children, attempting to disclose the voices of the most vulnerable—the children. The collection which centers on a character with the hybrid culture of Mormon religion and Filipino family focuses on the child's experiences of deprivation based from Maria Lourdes Carandang's study on children's personal and societal needs in the aspects of financial, emotional, mental, physiological, and even spiritual. The "young girl's journey towards home" employs several notions on the importance of child's need of belongingness within familial conflicts. It also centralizes a theme on difficulty making ends yet rich in other things and finding the good in bad circumstances. It aims to recount different stories from a perspective of a young girl who, in building up her own identity, demonstrates that "home" can be found anywhere the child exemplifies catharsis which later on leads to finding "hope" in the realms of life's tragedies such as poverty, death, marital conflict, people's injustices, mental impairment, and world of differences. The writer articulates the language and psychology of the child in her most vulnerable state, yet emerges to ascertain that resilience can be achieved even at a young age. The collection utilizes the elements of realism which illuminate that "hope" is at the very heart of stories for children.

NAGALAKAW: A CULTURAL ROUTE DIGITAL INTERPRETATION OF NUEVA CACERES FOR THE NAGA MILLENNIAL GENERATION

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Nueva Caceres was one of the four royal cities of Spain in the Philippines during the start of their colonization efforts. Throughout the centuries, various expansions in governance, infrastructure, and faith building were strengthened to attain a more concrete heritage of a devotion to Christianity, Bicol culture, and Philippine society. Heritage tourism has always been a factor in the economic development of a town or city. Tourism programs promoting heritage structures in cities are available, however, only few consider the integration of digital and mobile technology in interpreting non-existing and existing heritage structures. This study therefore developed techniques where millennials will appreciate heritage structures located in Naga City's Heritage District, even when there are only a few tangible structures left existing. "Nagalakaw", is a cultural route program spearheaded by the local heritage society that was initiated to create awareness toward the cultural heritage of Nueva Caceres. A Cultural Heritage Mapping project within the Naga City' heritage district was conducted to determine the cultural resources and further develop the narratives for the cultural route. Also, surveys and focus group discussions were conducted to determine the behavior of Millennials toward Naga City's cultural heritage. Results gathered from the cultural mapping sessions determined the importance of Nueva Caceres as a trading post during the galleon trade through the Naga River. It also highlighted the role of the church in strengthening Christian faith in the Southern Philippines through its Ecclesiastical Centers. The mapping results also revealed the abundance of American period structures and its thriving social development toward the end of the 20th century. Results gathered from the cultural heritage mapping greatly enhanced the narratives, visual presentation, and social relevance of the Nagalakaw program to its audience. The results of the survey and focus group discussion verified media formats to be developed to attain cultural heritage appreciation for the Naga City's Millennial Sector.



UPON SHOULDERS AND WHEELS: CULTURAL SIGNIFICANCE OF SHOULDER-BORNE PLATFORMS (ANDAS) AND PROCESSIONAL CARRIAGES (CARROZAS) OF OLD INTRAMUROS 1597-1945.

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Shoulder-borne platforms (*andas*) and processional carriages (*carrozas*) form part of the extra liturgical celebration of the Catholic Church particularly during religious processions. The *andas* and *carroza* tradition remains as a fine expression of Filipino spiritual sensibilities and artistry. As an enduring cultural material, the layers of its significance become even more relevant. This paper aims to heighten the understanding and appreciation for the *andas* and *carrozas* in the context of Philippine popular piety. Through archival research, complemented by actual field investigations, the study provides a closer examination of this material culture as bearer of historic narratives of a particular community. Focus was given on accounts related to Old Intramuros being the influential Seat of Power for both Church and State in the Spanish Colonial period. But since most of the actual *andas* and *carrozas* of Intramuros were destroyed during the war, surviving pieces in other places allowed us to visually approximate these masterpieces. The research also identified design aesthetics distinctly found in Philippine *andas* and *carrozas*. While there are shared decorative themes from both Western and Oriental persuasions, there is also the seamless effort to localize these elements. Finally, crucial to any study of Sacred Art, the discussion locates the tradition more importantly according to the teachings of the Catholic Church

highlighting the innate catechetical nature of the *andas* and *carrozas*. This research broadens the perspectives of contemporary *andas* and *carroza* owners, designers, and builders by making them realize that there is indeed a “Filipino Style”, one that responds to our topography, appeals to our taste, and reflects our character as a people. And by identifying its historical, aesthetic, and cultural significance, the study redefines the Philippine *andas* and *carrozas* from a mere vehicle to an object of deep artistry and spirituality.

PAG-ATAMAN: DEVELOPING A CONSERVATION MANAGEMENT PLAN FOR SAINT JOHN THE BAPTIST PARISH CHURCH BATO CATANDUANES

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St. John the Baptist Parish Church, found in Bato, Catanduanes, was constantly under the threat of extinction because of direct exposure to natural calamities and external factors that led to structure defects and degradation. Used for daily devotion, worship and prayer for over 187 years, the church made of coral and rubble stones, stood as a cultural symbol and a cradle of faith in the community. Recognizing its cultural value, the study aimed to develop a conservation management plan to support the priests in preserving the built heritage. Following the Burra Charter process, archival, physical and oral evidences were gathered to establish the significance of Bato Church, identify threats, weaknesses and opportunities. 275 sets of questionnaires were disseminated to Virac clergy and religious and Bato parishioners. Through key informant interviews and structured surveys, respondents were asked about the significance of Bato church, perceptions on past renovation and recommendations for future actions. Results of the study affirmed the significance of Bato church as evidenced by experiences and important events associated with the structure. Set upon the perspective that priests are not technically knowledgeable on preservation techniques, the study revealed the importance of consultation with professionals and the need for laws and local ordinances in support of conservation efforts. Specific recommendations were also forwarded by respondents, including the need to prevent the formation of moisture in the interior walls through the removal of the concrete gutter and installation of a new downspout and use of a lime plaster that would allow moisture to evaporate. Respondents suggested the use of chemical solution to stop vegetative growth that damage the wall, and lime mortar repointing to ensure uniformity in form with the existing structure and removal of ground plants along the exterior wall to stop moisture buildup. In terms of equipment and electrical systems, the study found that suitable electrical panelboards need to be installed and electrical equipment covered to maintain safety and neatness. In the course of its preservation and management, the creation of diocesan commission for the cultural heritage and parish committee for heritage as its counterpart was highly recommended.



PRESA: A STUDY ON SPANISH-COLONIAL DAMS IN THE PROVINCES OF CAVITE AND LAGUNA

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This paper aimed to rediscover and document the dams located in the provinces of Laguna and Cavite - the former hacienda areas of the Dominicans and the Recollects. The research also sought to bring out the early history of dam-making in the country as well as studied the impacts of dams on the environment, the present implications on tourism, and contributions to Philippine engineering. Since very little has been written about Spanish colonial dams in the Philippines, this work identified, documented, and assessed Spanish-era dams in Cavite and Laguna as well as studied their use then and at present. Anthropological research approaches such as field research or qualitative method and observation were used in this study. It also employed archival research, physical investigation and inspection, informal conversation

with residents or the unstructured interview method, archaeological approach, Google Maps and Google Earth, a study on toponyms, and a keen examination and comprehension of both provinces' cartography, topography, and geography. The researcher thoroughly documented these dams resulting to the understanding of Spanish colonial engineering in the country particularly the contributions of the friars in the largely unknown realm of dam building. Research outcomes include widespread dam-building in the Hacienda de Imus with Dasmariñas having the most due to its elevation compared to the low-lying areas of Imus and Bacoor, few dams in the Dominican haciendas of Laguna because of the province's topography, the spike in dam construction after the end of the galleon trade in 1815, and that most of these dams are still being used although a number already fell into disuse due to the massive subdivision conversion in both provinces. These results show widespread dam building construction from the late 18th to the late 19th centuries and revealed the complex irrigation system in both Cavite and Laguna.

Development Studies

CLIMATE CHANGE PERCEPTION, ADAPTATION, AND WELL-BEING: A CASE STUDY OF FARMERS IN AURORA PROVINCE

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Climate change is happening now and is already taking its toll on the Philippines. Because the agricultural sector remains to be the backbone for the sustainable achievement of food security, and is still one of the major sources of livelihood in the country, adaptation to the adverse impacts of climate change is imperative to safeguard livelihoods, especially of the poor, as well as to guaranty food security. Using a mixed methods design, the researcher conducted a case study in Aurora Province, particularly in the municipality of Maria Aurora, to investigate and document farmers' perceptions of climate change, their current adaptation strategies, and the factors that influence their adaptation decisions. In addition, this study also looked into the outcomes of adaptation on farmers' well-being. Household surveys, as well as one-on-one interview with key informants were conducted in 10 selected farming *barangays*. Initial findings reveal that most farmers in the study area perceived an increase in both temperature and rainfall. The common adaptation strategies employed include: changing crop variety, soil conservation, selling labor, and borrowing money. Farmers cited that selling labor and seeking other off-farm income sources have increased their income. The main factors influencing farmers' adaptation decisions were money, access to credit, and information on climate change and appropriate adaptation options. Improving access to credit and extension, as well as making farm inputs affordable and providing regular subsidies were found to be the primary needs of farmers to help them adapt to climate change.



EXCHANGE RATE, MONETARY INDEPENDENCE, FINANCIAL INTEGRATION AND SELECTED MACROECONOMIC VARIABLES: THEIR IMPACT ON PHILIPPINE INFLATION AND ECONOMIC GROWTH (1970-2014)

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Global integration leads to economic growth through more efficient resource allocation, increased capital flows, enhanced domestic savings, diffused knowledge and skills, and supplemented job creation. On the other hand, this integration leads to unstable economic growth. Among the most debatable issue concerning global integration today is the concept of trilemma policies which consist of a more open financial market, greater exchange rate stability, and an independent monetary authority. This research aims to find out if exchange rate stability, monetary independence, financial integration, and other macroeconomic variables affect Philippine inflation and economic growth. Annual time series data from 1970 to 2014 were used in this study. Results show that exchange rate stability, monetary independence, financial integration, money supply, and trade openness reduce inflation. In addition, exchange rate stability, monetary independence, money supply, and trade openness exert positive effects on output growth. On the other hand, financial integration adversely affects output. Granger causality test reveals a unidirectional relationship between inflation and exchange rate stability; inflation and trade openness; exchange rate stability and trade openness; money supply and output. There is also a two-way relationship between exchange rate stability and output. Cointegration test results suggest the presence of long-term or equilibrium relationships among the variables of the model. Therefore spurious regression result is ruled out.

IMPACT OF TRADE OPENNESS, FIXED CAPITAL FORMATION AND BROAD MONEY SUPPLY TO THE ECONOMIC GROWTH OF ASEAN 5

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Openness in trade, levels of capital formation and broad money supply (M2) are drivers in stimulating the economic growth. This paper aims to investigate the short and long-run relationships of explanatory variables to GDP per capita (PPP in US\$) for 5 ASEAN countries which are: Indonesia, Malaysia, Philippines, Singapore and Thailand. The time period that the researcher investigated is from 1981 to 2014. The data for Broad Money Supply (M2), trade openness and Gross Fixed Capital Formation, came from the Asian Development Bank (ADB) database and GDP per capita (PPP \$) will come from International Monetary Fund (IMF). Ordinary Least Squares (OLS) is applied for each ASEAN-5 countries using annual data from years 1981 to 2014. Regression results shows that explanatory variables do have a significant effect on Economic Growth to some of ASEAN 5 countries. Statistical diagnostic tests shows stationarity of variables ruled out the presence of autocorrelation, normalized distribution of errors and cured specification of errors. Cointegration test and Causality analysis were conducted to ensure that conclusion from results are valid and it shows that Trade Openness, Broad Money Supply and Gross Fixed Capital Formation have long-run relationship to Economic Growth in some of ASEAN 5 countries. This study is timely and relevant because it will help policy makers with their decision-making, to analyze the performance of economic stimulators and to utilize the effect of ASEAN economic integration.



IS THE PHILIPPINE STOCK MARKET INTEGRATED WITH SELECTED ASEAN4 STOCK MARKETS?: THE PERSPECTIVE ON ASEAN ECONOMIC COMMUNITY

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This study aims to examine how the performance of the Philippine stock market is conditioned by the performances of the other stock markets in Asia, more specifically the ASEAN4; namely, Malaysia, Indonesia, Singapore, and Thailand, since the behavior of stock markets mirror the overall performance of an economy and in the light of the emerging integration of ASEAN markets. The study incorporated a correlational research in a quantitative approach using the monthly indices of the five (5) markets from the periods of January 1998 to September 2016. Regression results showed that the ASEAN4 stock markets excluding Malaysia exert positive and significant effects on the Philippine stock exchange. In addition, cointegration analysis revealed the presence of long-term or equilibrium relationships among the five (5) ASEAN stock markets. The regression results therefore are not spurious. Moreover, unique causal linkages existed between the Philippine and Indonesia stock market. This study will be significant for the current and potential stock investors to have higher financial literacy, further development of financial policymaking, and higher capital accumulation creating economic growth and development within the ASEAN Economic Community.

ESTIMATING THE EFFECT OF MSMEs AND SELECTED MACROECONOMIC FACTORS ON REGIONAL ECONOMIC PERFORMANCE IN THE PHILIPPINES: A PANEL DATA REGRESSION ANALYSIS

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In the Philippines, 99.6% of the country's total business establishments are comprised of micro, small, and medium-sized enterprises (MSMEs), accounting for 62.8% of the total employment (Philippine Statistics Authority, 2014). This study seeks to investigate the role of MSMEs in the broader economy by providing empirical evidence on the contributions of MSMEs and selected macroeconomic growth factors to per capita regional economic growth. Using panel data regression on annual regional data on the share of employment accounted for by MSMEs, number of secondary, vocational and tertiary graduates to capture human capital, regional population, public construction expenditure as a measure of physical capital, and the distribution of banking facilities to indicate a region's access to credit, and per capita Gross Regional Domestic Product (GRDP) from 2006 to 2013, the study found out that both micro- and medium-sized enterprises exert a negative and significant effect to per capita GRDP, while small enterprises were found to be significant and positively associated to per capita regional economic output. However, the estimated effect is minimal. The study also found a positive and significant relationship among the number of secondary graduates, regional public construction expenditure, and access to credit to per capita GRDP. The result of the Hausman Specification test suggested that the unique errors are not correlated with the regressors. Hence, the Fixed Effect Model (FEM) was proven as the preferred model to be utilized in the study. Further, incorporating dummy variables in the regression model, the results suggested that there exist a robust variation in regional economic performance across the country's regions considering the effects of the size of the MSME sector, human capital, regional population, public construction expenditure, and access to finance and credit facilities. To avoid spurious regression, Panel Unit Root and Panel Cointegration tests were also utilized. Result of the Panel Cointegration test indicated that there exists a long-run relationship among the identified predictor variables and per capita GRDP. In light of the ASEAN integration, findings of this study and their implications could provide a basis for enhancing MSME competitiveness and regional economic development policy.



LABOR PRODUCTIVITY IN THE PHILIPPINES: COMPARATIVE ANALYSIS OF THE AGRICULTURE AND NON-AGRICULTURE SECTORS (1981-2015)

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As part of the Philippine Development Plan to strengthen the macro economy and boost the competitiveness of our industries, one of the main concerns for the government would be on labor productivity. Through this study, the researcher has determined the impact of the agricultural sector's per capita output, total employed and average wage rate of employees to labor productivity as compared to the performance of non-agricultural sector. In this research, time series data from years 1981-2015 was gathered and made use of simple linear regression model employing causality and co-integration tests. An economic trend of the variables has been analyzed and generally found increasing patterns for the past 34 years. Statistical diagnostic tests reflected stationarity of the variables and goodness of fit of the model being used in this research. Additionally, long run equilibrium has been identified between labor productivity and its explanatory variables per capita output, total employed and average wages. These results could further support the improvement of long term labor policies and macroeconomic strategies in agriculture and non-agriculture (i.e. industries and services) sector in the Philippines to achieve economic and inclusive growth.

THE IMPACT OF REMITTANCES ON THE HOUSING DEMAND IN THE PHILIPPINES

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Remittances have been an important subject in many studies. Many economists, experts, policy makers, organizations, firms and institutions across the world have shown interest and effort in conducting extensive studies about remittances. According to Ang et al., (2009), the Philippines is one of the top remittance recipient in the world. However, there are limited studies in the Philippines that focused on the impact of remittances on housing demand. The main objective of this paper is to provide empirical estimates on the impact of remittances and other selected macroeconomic and socio-demographic variables on the demand in the housing sector of the Philippines using time series data from BSP, PSA and World Bank for the period of 1977-2011. This paper employed the Least Squares modeling method to capture the impact of remittances and other selected macroeconomic and socio-demographic variables such as lending interest rate, housing inflation rate and urbanization level to the demand for new housing. The computed results indicate that remittance is a significant factor affecting the housing demand in the Philippines; while lending interest rate, urbanization level, and housing inflation rate show no significant impact on the housing demand. Findings suggest that remittances are critical to the demand on the housing sector in the Philippines.



INTERCULTURAL RHETORIC ANALYSIS OF NEWSPAPER EDITORIAL HEADLINES: EFFECTIVENESS OF PRESUPPOSITION TRIGGERS AND RHETORICAL DEVICES

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The study examines the effectiveness of employed presupposition triggers and rhetorical devices in the headlines of editorials of criticism or attack in Philippine Daily Inquirer and New York Times in propagating ideologies and shaping public opinion. Further, the textual and rhetorical features of headlines of editorials of criticism or attack such the frequency and types of presupposition triggers and rhetorical devices employed and the embedded presupposition in each editorial headline were analyzed by employing a set of Filipino raters. In addition, the significant differences between how writers of editorial headlines from Philippine Daily Inquirer and New York Times try to propagate ideologies with the aim to eventually shape public opinion were also analyzed. The corpus consisted of 25 English editorial headlines from the electronic version of Philippine Daily Inquirer and another 25 from the electronic version of New York Times, both of which are considered to have the largest circulation in the Philippines and the United States, respectively. The corpus was collected over a seventh-month period from January to July 2016. Utilizing the methodology of qualitative content analysis, initial findings reveal that editorial headlines from Philippine Daily Inquirer are relatively short, with an average number of three words per headline—which generally do not encapsulate the content of editorials. Further, majority of editorial headlines in PDI followed rhetorical question as a strategy to capture the interest of readers. On the other hand, editorial headlines in NYT are longer—used more words and have sentence-like structure compared to the usual phrase-like structure of editorial headlines in PDI. Analysis also shows that majority of editorial headlines in NYT are usually direct and clearly encapsulate the content of editorials as opposed to editorial headlines in PDI. Another finding reveals that for both sets of editorial headlines, existential or definite description presupposition triggers are common. This further supports the notion posited by Khaleel (2010) and Zare, Abbaspour and Nia (2012) that existential or definite description presupposition triggers are common in English journalistic texts regardless of the context where these texts come from. The researcher concludes that this is primarily because existential or definite description presupposition triggers have simple structure which is composed of possessive constructions or definite noun phrases. Finally, in terms of how writers of the two sets of editorial headlines try to propagate ideologies and shape public opinion, findings show that PDI and NYT editorial writers tend to use a variety of rhetorical devices and tend to manipulate certain linguistic elements specifically presupposition triggers, whether consciously or unconsciously, to frame the structure of editorial headlines to suit their particular purpose.

A STUDY ON MATERIAL EXPLORATION IN BAS-RELIEF AND FREE-STANDING SCULPTURES IN COMMEMORATION OF THE GOOD SHEPHERD IN BAGUIO CITY

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This research aims to express an artistic approach of the image of God as Indigenous Christ in bas-relief and free-standing sculptures symbolizing the Congregation of Our Lady of Charity of the Good Shepherd’s charism of merciful love for the poor, ministry of reconciliation, and the pilgrimage of faith. The bas-relief sculpture’s process is additive wherein a ready-made floor tile is set and prepared then employed with exterior putty in low relief for drying. The dried putty is carved using subtractive process to show texture and patterns in design. Some areas in the relief will have pine cone scales that have been dried, treated and bleached. The image of Christ is the focal point of the relief and the Congregation’s lay mission partners in the community are represented by the six tribes of the Cordilleras. Each design on the tile is rendered with automotive lacquer paint and finished with automotive lacquer varnish. Every tile is framed with metal bars to form a pictorial tile wall of nine feet by seven feet. The whole wall is then framed with metal tubing with base in automotive paint finish. The free-standing sculpture has a height of seven feet with variable width. This is made of metal sheet finished with automotive lacquer paint and fabric from the Cordilleras. This will be mounted on metal pedestal. The overall materials in the process comprised of bleached pine cone scales, clay materials, exterior putty, metal sheets, and fabric. The bas-relief and free-standing sculpture are placed side by side to symbolize the connection of Christ the Good Shepherd and the continuing mission of the Congregation of Our Lady of Charity of the Good Shepherd in Baguio City



CHARACTERIZATION OF DIFFERENT *PILI* NUT (*Canarium ovatum* Engl) VARIETIES IN THE PHILIPPINES

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Pili nut (*Canarium ovatum*) is endemic in the Philippines, a valuable food commodity that may help promote good health among Filipinos. Seven varieties of *Pili* nut (*Lanuza*, *Laysa*, *Magayon*, *Magnaye*, *Mayon #1*, *M. Orolfo*, and *Orbase*) that originated from different provinces of Bicol region were studied. These varieties were cultivated under the same field conditions at Albay Research and Development Center. The study aims to characterize different varieties of *Pili* nut in the Philippines, and specifically to (1) determine nutritional and fatty acid profile, (2) determine total mineral content and availability *in vitro*; (3) determine soluble and insoluble dietary fiber, and (4) Quantify SCFA as product of *in vitro* fermentability simulating colonic condition. Results showed that varieties have different sizes and weight; *Lanuza* as the longest *Pili* nut fruit (68.91mm), *Orbase* and *Magnaye* were the heaviest (41.56 g and 40.55 g) and *M. Orolfo* as the lightest and shortest fruit. Split component of the fruit shows that *Magnaye* has the highest amount of pulp (26.32 g), *Orbase* has the largest amount of shell (12.30 g), and *Lanuza*

has the highest amount of testa (0.34g). *Orbase*, *Magayon*, and *Magnaye* are the varieties with heaviest kernel weight with 3.49, 3.29 and 3.19g respectively. The pulp contains higher percentage of ash (8.32%) *Magayon* to (10.9%) *M.Orolfo* and carbohydrates (60.42%) *Lanuza* to (70.59%) *Magnaye*. Major contributor of carbohydrates in the pulp is dietary fiber (43.4%) *Lanuza* to (53.1%) *M. Orolfo*. Major macronutrient found in kernel is protein (11.49%) *Mayon#1* to (13.15%) *Laysa* and lipid (67.2%) *Magnaye* to (74.1%) *Orbase*, is the major contributor of high-energy value of kernel. Macro minerals like K, Ca, and Na from pulp is higher compared to the kernel, while Mg is higher in the kernel. High amount of trace minerals such as Fe, Zn, Mn, Cu and Ni was found in kernel, Cr and Al is high in pulp. Most of macro and micro minerals concentration varies between fruit parts and varieties. Long chain fatty acids were mostly monounsaturated Oleic acid (C_{18:1}). Palmitic acid (C_{16:0}) and Stearic acid (C_{18:0}) is high in kernel compared with the pulp oil. Total saturated fatty acid is lower in pulp oil (21.96-28.93%) compared to kernel oil (41.74-45-3%). The variety *M. Orolfo* contains a more complex fatty acid profile compared to other varieties. Most of the physical and nutritional compositions measured were significantly affected by variety. Pili nut kernel and pulp are great sources of nutrient, essential fatty acid, essential minerals and a potential functional food commodity locally available in the Philippines.

Human Resource Management



PSYCHOLOGICAL CAPITAL AND WORK ENGAGEMENT OF IT-BPO EMPLOYEES WITH EDUCATION-JOB MATCH AND EDUCATION-JOB MISMATCH

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Studies in psychological capital and work engagement are emerging in different industries. This study aims to identify the psychological capital level and work engagement level of employees with education – job match and education-job mismatch. Furthermore, this is a descriptive correlational study between measures of psychological capital and work engagement. Utrecht Work Engagement Scale (UWES) and Psychological Capital Questionnaire (PCQ) are standardized instruments to be used. Inferential statistics were used for data analysis. Multiple regressions were used to determine the variables that affects job match and mismatch. The multiple regression showed that it is probable to find job mismatch with respondents that are younger, female, with vocational education, less years in the company, not dedicated, have less vigor, low efficacy, and less optimistic in their job. There is a likelihood that job match can be found in respondents that are older, male, BS graduate, have served longer years in the company, absorptive, with high hope, and resilient.

CAREER DEVELOPMENT PRACTICES AND MANAGEMENT OF THE DIFFERENT CHAMBERS OF COMMERCE IN THE PHILIPPINES

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This study focuses on identifying, comparing, and analyzing career development practices and management being adapted by the different Chambers of Commerce in the Philippines on organizational and individual level in terms of career strategies, career opportunities, career developmental support and training and development through observed commonalities, differences, and gaps. Seven Chambers of Commerce are purposively surveyed and interviewed in this descriptive and comparative design. All respondents are regular employees with minimum two years of service. Percentage and rank were utilized to determine the most and least important career and development practices of organizations and to show the demographic profile of employees and organization. Mean and Mode were used to analyze the effectivity of career development practices applied by these organizations. The findings show that out of 20 identified career development practices, majority of the organizations follow five common practices such as performance appraisal, internal job openings, retirement programs, regular training programs and job rotation. Level of implementation, contribution and importance of career development practices and management vary in the different organizations due to the difference in the demographic profile of the respondents mainly on the size and structure of the organization. Best practices identified are the regular training programs and work related workshops provided by the organizations. Lateral career movement and job rotation are the most commonly used career development practices in gaining valuable work experience in this type of organizations.



INFLUENCE OF ETHICAL LEADERSHIP TO WORK ENGAGEMENT AND ORGANIZATIONAL COMMITMENT OF EMPLOYEES FROM DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES (CENTRAL OFFICE)

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Organizations face the challenge of developing and maintaining an engaged and committed workforce. Several studies already discovered that ethical leadership leads to valuable outcomes including work engagement and organizational commitment. It is essential that leaders are ethical because they represent the ethical standards that will govern and guide their followers and their ethical conduct creates a work climate that can culminate the work engagement and organizational commitment of the employees. This study determines if ethical leadership (EL) will affect the work engagement (WE) and organizational commitment (OC) among 228 employees of Department of Environment and Natural Resources (DENR) Central Office using descriptive statistics and correlations. This study utilizes Ethical Leadership Scale (ELS), Utrecht Work Engagement Scale (UWES) and TCM Employee Commitment Survey as its research instruments. Findings showed that research respondents are more of female, single and college graduate and have stayed with DENR for less than five (5) years. The study revealed that most of the respondents agree that they have a high sense of belongingness to their organization, are very often proud of the work that they do and strongly agrees that their immediate supervisor discusses business ethics or values with them. Apparently, the relationship among the three (3) variables shows weak positive correlation at 0.05 level of significance. The result of this study is the basis of an enhancement program that will support the growth of ethical leadership in the organization and will help strengthen the employees' level of commitment and engagement.

THE ESTABLISHMENT OF A CONSTITUTIONAL COURT IN THE PHILIPPINES TO DECIDE ON CONSTITUTIONAL ISSUES

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The Supreme Court has recently been flooded with cases involving constitutional issues. Due to their urgency and social implications, these cases are resolved with dispatch by the Supreme Court. This, in effect, greatly affects the speedy resolution of thousands of other cases pending before the Supreme Court to the prejudice of those accused who are languishing in jail and other litigants whose exercise of their rights and privileges are jeopardized because of the pendency of the appeal. Utilizing historical, exploratory, descriptive, and analytical methods of research, specifically documentary and case analyses techniques, this study proved and established that the creation of a Constitutional Court can help address these problems, and can likewise help de-clog the dockets of the Supreme Court, which has always been swamped with thousands of cases, rendering it impossible for the high court to deliver decisions speedily and with more quality. Moreover, this study also established that a Constitutional Court can contribute to the greater efforts toward helping strengthen and reform the Philippine judicial system, especially in the speedy administration of justice. The researcher interviewed and handed survey questionnaires to selected members of the legal profession, particularly those in the judiciary, to obtain their beliefs, opinions, and views on the establishment of a Constitutional Court in the Philippines to decide on constitutional issues. The findings showed that 107 out of the 146 respondents, or 73.29%, are in favor of the establishment of this Constitutional Court. They believe that a Constitutional Court will help strengthen and reform the Philippine judicial system, especially in the speedy administration of justice, and also help promote the respect for the rule of law in the Philippines. However, 39 out of the 146 respondents, or 26.71%, are of the opinion that a Constitutional Court will not make a difference because it is a relatively new concept. They contend that the people will not support this Constitutional Court because they are not familiar with it. They even argued that the people are usually allergic to changes, especially if the proposed change or changes are foreign to their understanding and belief.



INSTITUTIONAL-LEGAL FRAMEWORK TOWARDS A DYNAMIC INTERNATIONAL COMMERCIAL ARBITRATION FOR THE PHILIPPINES

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The cross-border trading of commercial goods and services is a positive development in the global community and in the commercial interrelationship of nations. The link among nations created by this commercial trading redounds to greater economies and better lives of the humanity. However, the same beneficial development carries with it the commercial disputes that may arise due to varied cultures and laws. A dynamic International Commercial Arbitration body in the country shall therefore best address these commercial disputes. This efficient mode of dispute resolution in a particular jurisdiction, as a great alternative to the snail-paced court litigations, may consequently increase foreign investments due to its speedy mode of settling international commercial controversies.

Thus, this Study aims to improve the practice of the existing International Commercial Arbitration here in the Philippines, in time for the full implementation of the ASEAN economic integration and for global competitiveness of the modes of dispute resolution in the country. The ASEAN community shall also stand to benefit in enhancing a second dynamic International Commercial Arbitration body next to that of Singapore. Further development of International Commercial Arbitration in the Philippines shall definitely

boost the growing economy of the country, and of the region. The Study shall consider the following: (1) United Nations Commission on International Trade Law (UNCITRAL) Model Law; (2) domestic legislations on arbitrations; and (3) best practices of ASEAN countries relative to International Commercial Arbitrations – in order to provide for a more effective International Commercial Arbitration for the Philippines. The Study utilized different research methods, such as but not limited to, comparative and descriptive – historical and legal research methods to confirm the viability of having a dynamic International Commercial Arbitration body in the Philippines.

THE CHILD IN SIMULATED BIRTHS: AN ANALYSIS OF HIS/HER RIGHTS, STATUS AND PRIVILEGES IN THE PHILIPPINES AND INTERNATIONAL LAW

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Simulation of birth is the tampering of civil registry, making it appear in the birth records that a certain child was born to a person who is not his/her biological mother. The law declares it as a criminal offense. The Domestic Adoption Law under RA.8522 was passed by Congress to provide amnesty to those who committed the offense without penalty provided that they will rectify the same by filing a petition for adoption in order to consider the child as a legitimate child. Despite the passage of the law, only few availed of the amnesty and there are still unaccounted and unrecorded simulated birth certificates in the Philippines. If the birth certificate is proven simulated and if no rectification is made during the lifetime of the foster parents, the child loses his identity when his birth certificate is ordered cancelled by the court. The child, under the United Nations Convention on the Rights of the Child (UNCRC), has a right against discrimination, nationality, name and other rights under the law including his right of identity. Under the Philippine law and jurisprudence, unless adopted, the child is not an heir of the foster parents. In that situation, the child loses not only his identity, but also his dignity as a person. Using historical, descriptive and legal methods, and by further utilizing the International and Local Laws giving protection to these children, the researcher proposes a bill that gives protection to these children whose birth certificates were not rectified the regain their dignity and identity.



IN PURSUIT OF THE BEST PRACTICES IN JUDICIAL MERIT SELECTION: A COMPARATIVE STUDY

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The goal of a judicial selection system is, and should be, not to simply fill vacancies, but to select the best candidates for judicial positions. This should be so, since the judiciary serves an important function in any society, that is, of preserving the rule of law and administering justice. A mechanism which ensures that only the most qualified candidates are selected, results in increased confidence in the judiciary, and in the system of administration of justice.

Legal systems diverge in ways of selecting and appointing judges, with the same objective of balancing independence with accountability. This study is a comparative analysis of the different judicial selection mechanisms, focusing on one of the pillars of the judicial appointive process, the judicial nominating commission or judicial councils. Utilizing descriptive-analytical and historical approaches, this study reviews the methods of judicial selection and appointment in general, as a way to contrast and to better understand the selection process in the Philippines, and determine whether the same may be improved by adopting the best practices as employed in the different countries reviewed.

“THE LIBERATION OF THE LEGAL PROFESSION OF THE PHILIPPINES: AN ANSWER TO THE ASEAN INTEGRATION OF THE LEGAL SERVICES”

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There are two provisions of the 1987 Constitution of the Philippines that limit the practice of the legal profession in this country to only Filipino citizens, namely the second paragraph of Section 14 of Article XII and Section 5 (5) of Article VIII. The study focuses on the developments of the legal profession, current trends in the different areas of the legal practice and the opportunities and challenges arising from the ASEAN Integration of the Legal Services. The research uses the historical, descriptive and correctional methods, in studying the different policies, laws, rules and regulations of the other ASEAN countries in relation to the practice of legal profession. Out of ten ASEAN Countries, such as Brunei, Cambodia, Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand and Vietnam only the Philippines completely closed the legal practice to foreign lawyers. Due to the ASEAN Integration of the legal services, the Liberation of the Legal Profession is an advantage to Filipino legal practitioners, the ASEAN integration open the gates of the local practitioners to expand the practice in the other ASEAN countries.

Library & Information Science



USAGE OF ONLINE DATABASE BY THE LA SALLE COLLEGE ANTIPOLO UNDERGRADUATE STUDENTS: ITS IMPLICATION TO THE LIBRARY

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The remarkable influx of online database has made a significant impact on the services of the library to its users. Electronic resources such as electronic journals and online databases are valuable and useful sources of information that are vital for research activities. This research assessed the use of online database by the undergraduate students of La Salle College Antipolo by examining their level of awareness, frequency and extent of use, preference to which undergraduate students use the online database and to discover the challenges and problems they face in using online database as well as the level of satisfaction with the support given by the library. This research also focuses on the role of information and communication technology (ICT) skills and database training provided by the library that affects the use of online database. The descriptive method was used and undergraduate students from six courses have been surveyed using a structured questionnaire designed for collecting data. A total study population of 243 was purposively selected as sample. The results revealed that majority of the respondents (74%) were well aware of online database subscribed by the library and uses online database for research work and writing paper. Library orientation and faculty were the main source of how they came to be aware of online database. It also found that there's a high level of preference to use online database by five factors such as (1) tendency to use, (2) advantages of using, (3) incentives and reason to use, (4) prerequisite for using and (5) extent of use. Lack of online databases and infrastructure to support access to online database were found to be the main problems faced by the respondents. Furthermore, the study reveals that most of the undergraduate students possess ICT skills which enabled them to access and use online database and attributed the training of the library has been effective in enhancing the use the online database.

DETERMINING THE ACCURACY OF PROPAGATION MODELS IN THE DESIGN OF WIMAX FOR SMART GRID APPLICATION IN THE PHILIPPINES

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Intelligent electric grids or 'Smart Grid' has been in the forefront of technology revolution for the energy sector in the past several years. Smart Grid integrates information and communication technologies with electric operation technologies to deliver efficient operation, improved service, and value to its customers. In the Philippine electric distribution sector, the implementation of advance metering infrastructure (AMI) has enabled new business models and service to the customers such as prepaid electricity, demand response, and home area network in addition to optimized metering operations and data analytics. To realize the value of AMI, a robust communication network such as Wireless Interoperability for Mobile Access (WiMax) should be in place, which is ideally suited for fixed broadband applications such as AMI. Investing in franchise-wide WiMax infrastructure for AMI may be costly for distribution utilities and it should be founded with careful engineering design. Therefore, determining the approaches in developing accurate design of WiMax for Smart Grid applications particularly AMI was explored in this paper. The researcher determined the best-fit propagation models as foundation of path-loss modeling for WiMax systems by comparing simulation results with actual field measurements. Simulations were done using various empirical and physical path-loss propagation models that determined received signal levels, uplink, and downlink carrier to interference and noise ratios as the dependent variables. The results of the simulations were compared and analyzed with actual field measurements through statistical analysis of variance (ANOVA). Three areas were considered in this study: industrial urban, sub urban and dense urban areas. The results of the study have found that COST231 Walfish-Ikegami empirical model yielded the best prediction for dense and sub-urban areas. For industrial area, physical models Longley Rice v1.2.2 and TIREM EDX yielded the best prediction. Further analysis of the study has found that Okumura Hata, ITU-R 1812 TIA-TSB88, and Modified Short-Range Hata yielded the highest errors across all subject areas.



ASSESSMENT OF PUBLIC UTILITY VEHICLE (PUV) DRIVER'S BEHAVIOR IN MAJOR ROADS IN MANILA CITY

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Philippines is consistent in the top ten of the worst traffic-congested country in the world with Manila ranks consistent in top fifteen in the worst traffic-congested city in the world according to the website Numbeo from the period of 2014 to 2016. The study aims to assess the effect of the PUV driver's behavior (Lapses, Error, Ordinary Violations, Aggressive Violation and Other Ordinances) for each type of PUV and its route in the major roads of city of Manila through Driver Behavior Questionnaire (DBQ). The study uses a 27 items Manchester DBQ plus seven additional questions from the Philippine traffic code and ordinances. Primary data has been collected from 389 stratified samples representing routes passes through the major roads of Manila (España Blvd, Recto-Sta. Mesa Blvd, and Taft Ave) and different defined type of PUV (Public Utility Jeepney, Public Utility Buses and UV Express Services). The study used non-parametric tests to the data. With a Cronbach's alpha of 0.908 the results shows that PUV type, PUV route, demographics such as marital status, boundary, and profit has an effect on the DBQ. Demographics such as age, gender and education does not have an effect on the DBQ. Results also

shows that Public Utility Jeepney (PUJ) has the highest violation rate at 37.09% followed by UV Express services by 35.88% and Public Utility Buses (PUB) by 19.67%. Route passes through España has the highest violation rate with 50.56% followed by route passes through España- Taft with a violation rate of 45.91%, Recto-Sta. Mesa Blvd by 25.25% and Taft by 24.28%.

Medical Technology

CORRELATION OF URINALYSIS PARAMETERS AND THE DETECTION OF DENGUE NONSTRUCTURAL PROTEIN 1 IN THE URINE

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Early diagnosis is still the best option in the management of DENV infections. The development of a non-invasive procedure for diagnosis is important especially in remote population testing and could potentially limit the use of specialized equipment required. The Dengue NS1 protein is a prospective target for non-invasive DENV diagnostics as its presence in the urine has been established through assays originally designed for sera albeit with limited sensitivity. Further testing has been recommended to determine if the characteristics of the urine could affect results. The objective of this study is two-fold: to determine the diagnostic sensitivity and specificity of urine NS1 strip detection assay and to determine if a significant difference exists between positive and negative urine NS1 detection with regards to pH, specific gravity, protein, and glucose through urinalysis dipstick methods. 120 paired samples of serum and urine from 60 patients were collected from secondary and tertiary hospitals in the cities of San Pedro and Biñan, Laguna. Of the 60, 45 patients were confirmed to have DENV infections while 15 were confirmed negative. Serum and urine samples were tested for DENV-NS1 using SD Dengue NS1 Ag assays. Urinalysis dipstick was performed on urine samples. From the 45 DENV infected patients, 41 had positive serum NS1 while only 14 tested positive for urine NS1. This shows a high diagnostic sensitivity for serum NS1 (91.1% CI95%) and a low diagnostic sensitivity for urine NS1 (31.1% CI95%). All 15 DENV negative patients tested negative for both serum and urine NS1 (specificity 100% CI95%). There were no significant differences found between positive and negative urine NS1 with regards to pH and specific gravity. However protein content of urine who tested positive for NS1 is significantly greater than urine who tested negative for NS1 ($Z=1.990$, $p=0.047$). There were not enough glucose positive urine to establish an association between glycosuria and urine NS1 detection. In conclusion, it is possible to detect urine NS1 and proteinuria may be found in greater amounts in NS1-positive urine. It is recommended for future studies to further investigate urine characteristics and biochemistry using more accurate methods of measurement.



ANTIBACTERIAL AND ANTIBIOFILM ACTIVITY OF BASIL (*OCIMUM BASILICUM*) ESSENTIAL OIL AGAINST *STENOTROPHOMONAS MALTOPHILIA*

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Stenotrophomonas maltophilia (Smp) is reported to be a globally emerging pathogen that infects immunocompromised patients and causes pneumonia. It is an inherent multiple drug resistant bacteria and reports indicate its resistance to the current drug of choice. In the past decade, there has been a renaissance of interest in medicinal plants and their derivatives as sources of drugs. Basil (*Ocimum basilicum* L.) has been used in traditional medicine for the treatment of respiratory, digestive and kidney ailments, epilepsy and malaria. The aim of this study is to determine the antibacterial and antibiofilm activity of Basil leaf essential oil (BEO) obtained by hydro-distillation against Smp. Gas chromatography mass selective analysis was used to profile BEO's chemical composition. Kirby Bauer Disk Diffusion test was performed for preliminary testing and to determine the antibiotic profile of Smp ATCC 17666, *Escherichia coli* ATCC 25922 and *Pseudomonas aeruginosa* ATCC 27853 and ten Smp clinical isolates. The minimum inhibitory concentration (MIC) of BEO against the bacterial isolates was done by agar dilution using serial two-fold dilutions from 1.25% to 0.08% of BEO. Results indicate 0.6% MIC for all Smp isolates and 1.25% for *E.coli* and *P.aeruginosa* reference strains. All *Stenotrophomonas maltophilia* showed susceptibility to recommended drugs: minocycline, levofloxacin and trimethoprim-sulphamethoxazole. Undiluted BEO only showed 11 mm zone of inhibition against Smp ATCC 17666. The results obtained indicate that BEO possesses antibacterial property against the inherently multidrug resistant *Stenotrophomonas maltophilia* and it is recommended that expanded studies using more isolates be done.

MOLECULAR IDENTIFICATION AND BIOSORPTION OF NICKEL BY MARINE AND TERRESTRIAL STRAINS OF *TRICHODERMA*

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Nickel contamination is a serious environmental issue that requires immediate action. Microorganisms such as fungi have been successfully used in the removal of toxic heavy metal ions in polluted environment. In this study, 23 strains of *Trichoderma* were isolated from different terrestrial and marine substrata and identified using combined morphocultural and molecular methods. The identities of the fungal strains were confirmed based on gene sequence analysis of the ITS genes. The *Trichoderma* strains were also tested for their tolerance of heavy metals, and later for their biosorption of nickel. Our results showed the growth of *Trichoderma* strains on Trichoderma Selective Medium (TSM) with 50 to 1,200 ppm of nickel. The highest radial growth was observed on TSM with nickel at 50 ppm for three terrestrial and three marine strains of *Trichoderma*. More terrestrial strains (13) grew on this medium as compared to marine strains (8). Among the fungal isolates, *T. asperellum* S03 isolated from soil exhibited the best growth after 2 days of incubation. For biosorption of nickel, the accumulation or uptake efficiency by selected six *Trichoderma* was determined in Potato Dextrose Broth supplemented with 50 ppm of nickel using Flame Atomic Absorption Spectrophotometer. The percent uptake efficiency of three strains of *Trichoderma asperellum* (S03, S08 and LL14) was computed to be 20-66% while *Trichoderma virens* (SG18 and SF22) achieved 29-68% and *Trichoderma inhamatum* (MW25) also achieved 68% uptake

efficiency. The six *Trichoderma* strains were also observed under the scanning electron microscopy to check the surface morphology of the biomass before and after absorption of nickel. Scanning electron microscopy revealed no damage on the surface morphology of the *Trichoderma* biomass. Thus, our study showed the potential of terrestrial and marine strains of *Trichoderma* for the bioremediation of heavy metals.



MOLECULAR IDENTIFICATION OF *ASPERGILLUS* ISOLATED FROM PHILIPPINE DRIED FISH PRODUCTS AND DETECTION OF AFLATOXIN FOR FOOD SAFETY ASSESSMENT

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Mycotoxin contamination due to toxigenic fungi occurs frequently in various food commodities. These can have serious human and animal health risks. Continuous testing of food products in the market will ensure the safety of foods. This study therefore evaluates the occurrence of aflatoxin-producing fungi from Philippine dried fish products. Thirty one samples of fourteen types of dried fish products from nine local markets were collected for the isolation of contaminating fungi. A total of 115 strains of *Aspergillus* species were then isolated from all dried fish products. Morphological characterization grouped the isolates into nine morphospecies. Identification of these fungi was done using sequence analysis of the ITS genes. These isolates were identified as *A. alliaceus*, *A. clavatus*, *A. flavus*, *A. ochraceous*, *A. oryzae*, *A. steynii* and *A. tamarii* (2 strains). One morphospecies was identified as *A. niger* based only on morphocultural characters. In the study, highest number of morphospecies (6) was reported from dried fish samples (“tuyo”). The nine morphospecies were cultured on Malt Extract Broth for 7 and 14 days and the aflatoxin was extracted from the culture broth with ethyl acetate and detected using thin-layer chromatography. Of the nine morphospecies, only two species, *A. oryzae* (Rf value = 0.47) and *A. steynii* (Rf value = 0.49) showed the presence of aflatoxin at day 7 and 14. These strains were isolated from the dried fish products “tuyo” and “galunggong”. The different physico-chemical parameters and environmental conditions affecting the production of aflatoxin by *A. oryzae* and *A. steynii* on these dried fish products will be further investigated

MOLECULAR IDENTIFICATION AND ALGICIDAL ACTIVITIES OF MARINE-DERIVED FUNGI ISOLATED FROM MACROALGAE AND MUSSEL

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Marine-derived fungi (MDF) can act as biocontrol agents against toxin-producing algae. In this study, MDF were isolated from the macroalgae *Gracilaria* sp. and *Enteromorpha* sp. collected from Batangas and from the bivalve *Perna viridis* collected from Cavite. A total of eight fungal strains were isolated and identified by molecular methods as *Aspergillus sydowii*, *A. westerdijkiae*, *A. versicolor*, *A. terreus*, *Chaetomium nigricolor* (2 strains), *C. bostrychodes*, and *Cladosporium halotolerans*. To test for algicidal activity against representative species of Chlorophyta (*Scenedesmus quadricauda*, *Selenastrum minutum*) and Cyanobacteria (*Anabaena variabilis*, *Oscillatoria chiliensis*), two approaches were conducted: (1) *in vitro* assay of crude culture extracts, and (2) dual-culture method. For the first approach, all fungal isolates were initially grown on Potato Dextrose Broth and Malt Extract Broth with or without marine salts and the secondary metabolites were extracted with ethyl acetate. However, the crude culture extracts at concentrations of 10, 20, 30, and 50 mg/ml gave no zone of inhibition against any test

organisms using the paper disk diffusion assay. For the dual-culture approach, the test fungi were grown together with the test algae/cyanobacteria in BG11 medium. Following incubation, chlorophyll a content was determined. Results showed that the three *Chaetomium* strains showed up to 75% decrease in the chlorophyll content of *A. variabilis* and *O. chiliensis*. Our study provides experimental support on the potential biocontrol application of marine-derived fungi against potentially harmful algal blooms



TEMPORAL DISTRIBUTION PATTERN OF MYXOMYCETES ALONG THE TRAIL OF BULUSAN VOLCANO NATURAL PARK, SORSOGON, PHILIPPINES

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The occurrence and distribution of myxomycetes (or plasmodial slime molds) in different microhabitats or substrata have been widely studied, even in the Philippines. However, their seasonal distribution has rarely been studied. In this study, the pattern of distribution and occurrence of myxomycetes were assessed for a 12-month period along the accessible trail surrounding Bulusan Lake in Bulusan Volcano Natural Park, Sorsogon. Ground leaf litter and twigs were collected and used for the preparation of moist chambers. Field specimens were also collected. Characterization and identification of collected myxomycetes was done using published literature and web-based and electronic ID keys. A total of 369 records representing 39 species of myxomycetes and 17 genera were identified from 89 field collections and 280 collections obtained from 400 moist chamber cultures prepared from samples of decaying leaf and twig litters. Of these, 20 species were collected in the field while 31 species were recorded in moist chamber cultures. Eight species are new record in the Philippines and 23 are new record in the Bicol peninsula. Few fruiting bodies were collected during the dry season (which extends from December through May) while fruiting bodies were prominent in the rainy season. Data obtained from the moist chamber cultures were used to compute species diversity. Highest species diversity was noted for the month of July but lowest during the month of May. Our studies showed the possible impact of seasonal changes to myxomycete diversity.

PREVALENCE OF *erm* GENES AMONG MACROLIDE-LINCOSAMIDE-STREPTOGRAMIN RESISTANT MRSA ISOLATES IN THE PHILIPPINES: YEAR 2014

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Increasing local rates of methicillin-resistance in *Staphylococcus aureus* causing both nosocomial- and community-associated infection, has led to increasing reliance on alternative antibiotic therapy such as macrolide, lincosamide, and streptogramin B (MLS_B). However, development of resistance to MLS_B antibiotics due to the presence of erythromycin ribosome methylase (*erm*) genes causes treatment failure of methicillin resistant *S. aureus* (MRSA) infections. The expression of MLS_B resistance gave way to three phenotypes: constitutive resistance (MLS_{Bc}), inducible resistance (MLS_{Bi}), and resistance only to macrolides and streptogramins B (MS). This study was undertaken to evaluate the expression of MLS_B resistance and prevalence of the *ermA*, *ermB* and *ermC* genes among MLS_B resistant MRSA clinical isolates from the Antimicrobial Resistance Surveillance Reference Laboratory (ARSRL) from January 2014 to December 2014. The susceptibility of all identified *S. aureus* isolates was done using the Kirby Bauer Disc Diffusion Method and Vitek[®] 2 compact automated system. The isolates were also screened

for MLS_B resistance by the double disc diffusion assay (D-test). Detection of *ermA*, *ermB*, and *ermC* genes was done by multiplex PCR. Two thousand and four (2004) MRSA isolates were reported from January to December 2014 in the ARSRL with 1.8% (37 isolates) suggesting MLS_B resistance. Among these MLS_B resistant MRSA isolates, 62% (23) exhibited MLS_{BC} phenotype; 14% (5), MLS_{Bi} and 24% (9), MS. The prevalence of the *ermA*, *ermC* and both *ermA/C* genes among the MLS_B resistant MRSA isolates were 3% (1), 54% (20) and 24% (9), respectively. Nineteen percent (7 isolates) did not possess any *erm* genes while 100% (5 isolates) with MLS_{Bi} resistance phenotype contained *ermC* gene. The *ermB* gene was not detected in the study. MLS_{BC} was the most frequent phenotype and *ermC* was the most common gene among the MLS_B resistant MRSA isolates. The low prevalence of MLS_B resistance among local methicillin-resistant *S. aureus* isolates supports the use of MLS_B in treatment of MRSA infections but it is recommended that the D test be included in the routine antibiotic susceptibility testing. The D-test will detect inducible resistance to clindamycin thus help prevent inappropriate use of MLS_B antibiotics.



PATIENT SATISFACTION AND THEIR PREFERENCES ON NURSES' ATTRIBUTES: A CONJOINT ANALYSIS

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Hospitalized patients have certain expectations in an institution where they are admitted; these expectations once met may contribute to their satisfaction. The uncertainty of factors had led to voluminous researches to identify specific factors that influence patient satisfaction. As much as nurses are in constant pursuit to satisfy their patients by delivering quality of care, they struggle to deliver care that would satisfy their customers due to varying factors. The purpose of this study is to identify the preference of patients on four key nursing attributes: *competence*, *ability to communicate healthcare needs*, *caring attitude* and *response time*. These attributes were then analyzed to determine the significant difference of their responses with their demographic profile. A two-part researcher-made instrument was utilized in the study: (1) Robotfoto (demographic profile) and (2) plan cards. The researcher identified four nursing attributes, each having three levels. These attributes and levels then created thirteen cards which were subsequently presented to 182 patients who were admitted from August 2016 to February 2017 in Government hospitals in Cainta and Manila. They were then asked for their demographic profile and were asked to rank the cards from the most liked to the least liked preference cards. Utilizing conjoint analysis, Patient preference on Nurse's attributes was determined. Based on the result of the study, the most important attribute, is the caring attitude of the nurse towards the patient (importance value: 36.43%). The patient prefers a nurse who consistently shows concern (part worth value = 2.57). Conversely, Nurses' competence in technical skills was the least preferred attribute (importance value= 18.10%) with nurses' excellently executes nursing procedures having part worth value of 1.29. In general, identification of key qualities of a nurse is essential in promoting quality patient care. This study corroborates that the nurturing attribute of a nurse holds the highest importance to patients over the nurses' competence, ability to communicate their needs and response time. Knowing this, can aid the nursing management to enhance their current training program and provide staff support, training and may consider introducing a new care model in their program.

ASSESSMENT OF POTENTIAL HEPATOPROTECTIVE AND ANTIOXIDANT ACTIVITY OF *PHYLLANTHUS CURRANII* C.B. ROB. (*PHYLLANTHACEAE*) ON PARACETAMOL-INDUCED TOXICITY IN SPRAGUE-DAWLEY RATS

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Phyllanthus plant species are traditionally used in many countries to treat liver diseases such as hepatitis B virus and liver cancer. *Phyllanthus curranii*, locally referred to as “baluha”, is an endemic plant in the Philippines. Hepatoprotective and antioxidant activity of the *P. curranii* crude ethanolic extract (PCCEE) were investigated using different tests and analyses. Total phenolics and flavonoids content were determined using fast blue BB method and aluminum chloride assay. Thin-layer chromatography and column chromatography were conducted using a 20% stepwise gradient increase. Highest antioxidant activity was reported in 2 out of 9 pooled fractions with an inhibitory concentration (IC₅₀) of 100.48±0.48 ppm and 97.15±2.07 ppm respectively. DPPH radical scavenging assay showed an EC₅₀ of 970.50 ppm while reducing power assay showed an EC₅₀ of 845.42 ppm against the standard L-ascorbic acid. Hydrogen peroxide scavenging and hydroxyl radical scavenging assays resulted to an EC₅₀ of 3664.38 ppm and 1247.38 ppm respectively against the standard butylated hydroxytoluene (BHT). Metal chelating activity was reported negative. All tests were done in triplicate. Results were expressed as mean ± SEM. Single-factor ANOVA was used to determine significant differences at p≤0.05. Acute oral toxicity test was conducted following the Organization for Economic Cooperation and Development (OECD) 425 Guideline. Histopathological examination showed no signs of toxicity and zero mortality was reported at 2,000 mg/kg and 5,000 mg/kg dose levels after the 14-day observation period. *In vivo* hepatoprotective activity test was conducted using 25 Sprague-Dawley (SD) rats equally divided into 5 groups: Normal control, Toxic control, Dose A, Dose B, and Hepatoprotective control). A 7-day pre-treatment period was observed, and pure silymarin was used as positive hepatoprotective control. Liver toxicity was induced on the 8th day using a single high dose of paracetamol. Serum samples were collected and screened thrice (baseline measurement, before induction of liver damage, and after induction of liver damage) for levels of alanine-L-transferase (ALT), aspartate-S-transferase (AST), alkaline phosphatase (ALP), and total bilirubin. Reduced glutathione (GSH), superoxide dismutase (SOD), and catalase (CAT) levels were also determined. The hepatoprotective and antioxidant potential of *P. curranii* may be due to its phenolics and flavonoids content.

**ANTIANGIOGENIC AND AMP-ACTIVATED PROTEIN KINASE ACTIVITIES OF *GRACILARIA CORONOPIFOLIA* J.G. AGARDH EXTRACTS**

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The search for new effective, safe, and cheap drugs in cancer management remains a challenge for researchers. Interestingly, marine-derived products provide promising sources of bioactive compounds which can be utilized for the development of anticancer agents. The potential antiangiogenic and AMP-activated protein kinase properties of a red alga, *Gracilaria coronopifolia* was investigated. The red algae were exhaustively extracted with hexane, dichloromethane and methanol. All three extracts were able to prevent angiogenesis in a dose-dependent manner, with the highest antiangiogenic activity observed at 1000µg/mL among all extracts. The DCM extract was the most potent, with 88% inhibition of angiogenesis followed by methanol (83%) and hexane (82%). The antiangiogenic effect was correlated to the elemental iron, zinc and copper content of the treated blood vessels by using Varian SpectrAA-55

Atomic Absorption Spectrometer. Colorimetric assay for angiogenesis was developed. Lastly, phytochemical analysis of the three extracts was done using thin layer and gas chromatography-mass spectrometry (GC-MS). The AMP-activated protein kinase activity is currently on going, and will be reported in due course.

β-SECRETASE INHIBITORY ACTIVITY OF *Haliclona koremella* DE LAUBENFELS

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Alzheimer's disease is a neurodegenerative disease illustrated by gradual impairment of both memory and cognitive functions affecting the person's ability to perform daily activities, which can ultimately lead to death. The pathophysiology of Alzheimer's disease is very complex and the specific causes for the disease are still unknown. Current medications available in the market for Alzheimer's disease are used for the symptomatic treatment only of Alzheimer's disease. β-secretase 1 (BACE1) is the rate-limiting enzyme involved in the synthesis of β-amyloid plaques that block signaling pathways for neurotransmitters causing neuronal death. Inhibiting this enzyme was considered to be beneficial for the treatment of Alzheimer's disease. The aim of this study is to determine the BACE1 inhibitory activity of the Philippine marine sponge *Haliclona koremella*. The dried sample (431.16 g) was sequentially extracted with hexane (4.23%), dichloromethane (0.3%), and methanol (5.09%). Analysis BACE1 inhibitory activity of the hexane, dichloromethane, and methanol extracts showed an IC₅₀ of 288.37 μg/mL, 326.19 μg/mL and 98.51 μg/mL respectively. This shows that among the three extracts the methanol extract exhibited the highest inhibitory activity. Secondary metabolite analysis of *Haliclona koremella* by thin layer chromatography showed that it contains phenols, tannins, flavonoids, steroids, and sugars. The samples were further characterized using Gas Chromatography-Mass Spectrometry (GC-MS). AMP kinase assay, and analysis of enzyme kinetics are currently ongoing.

IN VITRO ANGIOTENSIN-I CONVERTING ENZYME INHIBITORY ACTIVITY OF SQUID (*Uroteuthis duvauceli*) INK HYDROLYSATES



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Hypertension is a condition wherein there is a consistently high blood pressure level. It is a common problem among adults worldwide and is a risk factor for cardiovascular diseases. Among the hypertension management techniques, angiotensin I-converting enzyme (ACE) inhibitors are one of the first-line medications. ACE inhibitors prevent the cleavage of angiotensin I by ACE, precluding the formation of active vasoconstrictive form angiotensin II. This results in the vasodilation of arteries and veins. Peptides derived from animal proteins can be used as natural ACE-inhibiting compounds. The ink from squid (*Uroteuthis duvauceli*) is a potentially rich source of bioactive peptides. However, the ink is typically treated as a waste product after processing the squid for consumption. This study then aims to determine the ACE-inhibiting activity of squid ink hydrolysates *in vitro*. The protein concentration of the squid ink, measured through the Bradford assay, was found to be 242.17 μg/mL (24.22%). The ink was then subjected to a two-step enzymatic hydrolysis using pepsin and pancreatin. *In vitro* ACE inhibitory activity of the hydrolysate was determined using ACE kit-WST (Dojindo Laboratories). The hydrolysate was then subjected to size-exclusion chromatography using Sephadex G-25 as the stationary phase. This yielded 19 pooled fractions with fractions 11 (86.53%), 12 (82.79%), 16 (90.57%), and 19 (89.80%) exhibiting high ACE inhibitory activity. These fractions were characterized using surface-assisted laser desorption/ionization time-of-flight tandem mass spectrometry (SALDI-TOF-MS/MS). The peptides that

were characterized in the active fractions contained 2 to 3 amino acid residues, mostly composed of proline and valine. The ongoing experiments will be the oral toxicity test and synthesis of active peptide.

CYTOTOXIC AND ANGIOSUPPRESSIVE POTENTIALS OF *Zehneria japonica* THUNB. (CUCURBITACEAE) CRUDE LEAF EXTRACTS

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Cancer is one of the leading causes of morbidity and mortality worldwide. The abnormality in cells can be progressive with a slow transition from normal cells to benign tumors to malignant tumors. Among the main targets in cancer treatment are the application of compounds toxic against cancer cells and the prevention of blood vessel formation (angiogenesis). This study aims to evaluate the potential cytotoxic and angiostatic properties of *Zehneria japonica* Thunb. (Cucurbitaceae) leaf extracts. The *Z. japonica* semi-crude extracts were obtained by sequential extraction using hexane, ethyl acetate and n-butanol. *In-ovo* angiogenesis assay using *Anas platyrhynchos* (duck) embryos demonstrated that the *Z. japonica* semi-crude extracts suppressed angiogenesis with IC₅₀ values of 1,810.00 ppm, 192.50ppm and 147.70ppm for hexane, ethyl acetate and n-butanol respectively with Celecoxib (20mg) as the positive control. The hexane extract showed the least potent as compared to ethyl acetate and n-butanol extracts. On the other hand, the cytotoxic effects of the extracts were determined through the MTT Assay. Osteosarcoma (U2Os) and hepatocellular carcinoma (HepG2) cell lines were used as the cancer cell samples while human umbilical vein endothelial cells (HUVEC) were used as the normal cell control. The *Z. japonica* extracts were toxic to the cancer cell lines with IC₅₀ values of 59.74ppm, 50.33ppm and 56.99ppm for the hexane, ethyl acetate and n-butanol extracts against U2Os, and 774.01ppm, 292.76ppm and 470.30ppm for the hexane, ethyl acetate and n-butanol extracts on HepG2. Doxorubicin (10µM) was used as the positive control. The extracts also inhibited the growth of the normal cells, with IC₅₀ values of 325.01ppm, 133.32ppm and 307.81ppm for the hexane, ethyl acetate and n-butanol extracts. Phytochemical screening through thin layer chromatography revealed that the extracts contain alkaloids, anthrones, and flavonoids among others.



UNDERSTANDING CREATIVITY IN NIETZSCHE'S PHILOSOPHY

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Creativity is an integral part of the philosophy of Nietzsche. Discussions about it commonly revolve around Nietzsche's personal philosophical process. This study did not only examine how creativity was beneficial to Nietzsche in a personal capacity, as it likewise inquired into the role and essence of creativity in Nietzsche's existentialist thought. A critical exploration of the various interpretations of Nietzsche's ideas relative to creativity has been conducted using *Thus Spoke Zarathustra* as the main reference material. Establishing common grounds and clearly identifying points of disagreement among conflicting views of different authors helped reduce the ambiguity of creativity. A complete picture of creativity has been laid out through beginning this critical exploration with the notion of the will to power and ending it with the 'experience of becoming.' This approach resulted in a refined comprehension of creativity. Creativity has phases starting from (1) the cosmic state to (2) the anthropocentric level. The anthropocentric stage of creativity is further subdivided into two phases: (1) the negative anthropocentric aspect, which is depreciative of life, and (2) the positive anthropocentric aspect, which is constructive of life. The latter phase or aspect of creativity is nearest to the possibility of the 'experience of becoming,' which allows the 'celebration of life.' Creativity does not necessitate a consciousness for it to exist as it has already been in motion since before human existence. However, such ancient creativity is only raw energy, a passive adumbration (*vorform*) that needs an active force that can elevate creativity to being an instrument of happiness. This active force is human beings, power centers who can choose to become great music-makers and fine tuners or mere dwellers of 'wretched contentment.' People have the power to exploit such cosmic energy with the aid of art and science, which are the fundamental qualities of creativity, in order to achieve joy. Mastering creativity, which means learning to use it 'ethically' instead of 'morally,' is the only way to reach Zarathustra's ultimate dream for humanity, which is to witness the rise of the *Übermensch*.

TOWARDS AN ETHICAL INTERPRETATION OF MAURICE MERLEAU-PONTY'S PHILOSOPHY OF PERCEPTION

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This study presents the possibility of an ethics in the philosophy of Maurice Merleau-Ponty. The study seeks to prove that Merleau-Ponty's ontological, epistemological, and aesthetic idea of perception and of the flesh can be considered as a foundation for an ethics that is very relevant in the present times. In order to achieve this goal, the study will focus upon three dimensions of Merleau-Ponty's concept of perception, namely: the flesh, the chiasm, and the imagination in order to elaborate on the ethical possibility of perception. First, the concept of the flesh will be explored as elucidating on kinship and dialogue in perception. Through the concept of the flesh, Merleau-Ponty has broadened the scope of dialogue beyond the confines of language and the human paradigm. Second, the chiasmic character of perception opens up the thought of alterity and freedom in perception. The chiasm can be considered as a critique against perception in order to prevent any tendency to reduce the object of perception to the same or to the self. Lastly, the concept of the imagination will be explained as presenting the aspect of possibility and hope in perception. Merleau-Ponty considered the concept of perception as a critique against perception itself. There is a world beyond the perceptual level and the nature of perception is not to reduce the world into the realm of perception.



COMPARISON OF IMAGE RECONSTRUCTION PARAMETERS IN TIME-OF-FLIGHT PET/CT IMAGING THROUGH PHANTOM AND CLINICAL EVALUATION

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PET Imaging provides information on glucose metabolism uptake of the FDG, which may also indicate the functional status of cancer lesions. Erroneous image details such as distortion, blur, or artifact may lead to false results. Hence, the treatment choice for the patient might not be the most suitable. Reconstruction is used to enhance the data by minimizing the noise, adjusting the contrast, and modifying the features of the image mathematically. The study uses the NEMA phantom for quantitative analysis and retrospective data for clinical evaluation. The resulting raw phantom PET images are reconstructed using defined Time-of-Flight (ToF) protocols of varying relaxation parameter, iteration subsets and kernel width. The data were analyzed to determine the percent contrast, background variability, lung residual error, and contrast-to-noise ratio of each reconstruction protocol. The retrospective data, all with confirmed tumor or cancer occurrence, were assessed by 2 experienced nuclear medicine physicians who were blinded in the reconstruction methods used. The reconstructed images are rated on a scale of 1-4 and scored by rank according to 6 parameters (background marrow, liver, and mediastinum; lesion detectability; noise level; and overall image quality). An ethical clearance was obtained from the UST Ethics Board before the survey was carried out. The phantom quantitative analysis, the smallest hot sphere obtained highest percent contrast of 18.3% on reconstruction protocol 5, while the largest hot sphere had highest value of 55.1% on reconstruction protocol 6. The background variability was least at 4.37% for the smallest hot sphere, and at 5.55% for the largest hot sphere, both on reconstruction protocol 1. The cold spheres had highest percent contrast and background variability on reconstruction protocol 6. The contrast-to-noise ratio was highest on reconstruction protocol 1 for all sphere sizes. Both findings in the phantom study and clinical evaluation were used to optimize the reconstruction protocols in the ToF PET/CT.

IN-PHANTOM DOSIMETRY FOR INTENSITY MODULATED RADIOTHERAPY (IMRT) USING 3D PRINTED PHANTOM

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Radiotherapy phantom is an important tool in verification of the delivered dose against the planned treatment. An in-phantom dosimetry prior to treatment is a part of clinical quality assurance to check for possible dose delivery errors. With the popularity of 3D printing technology, a cost-effective fabrication of a customized phantom becomes possible for quality assurance and clinical research. This study validates the use of 3D printed patient-specific phantom in quality assurance of intensity modulated radiotherapy (IMRT). Using an IMRT Thorax anthropomorphic phantom (CIRS) as a substitute for an actual patient, a 3D printed radiotherapy phantom was designed based on a patient computed tomography (CT) scan during treatment planning. Before printing the phantom, the tissue equivalence of Acrylonitrile Butadiene Styrene (ABS) and Polylactic Acid (PLA) polymers used in 3D printing were characterized by quantifying its CT number and relative electron density to water ($\rho_{e,w}$). A total

of 10 cubes (5 ABS and 5 PLA) with varying infill percentages (20% to 100%) were fabricated to analyze its tissue equivalence using the fused deposition modeling technique. It was found that ABS and PLA could be used as tissue equivalent material: ABS 100% ($\rho_{e,w}^{130kV} = 0.92$) for adipose, ABS 20% ($\rho_{e,w}^{130kV} = 0.20$) & 40% ($\rho_{e,w}^{130kV} = 0.36$) for lung, PLA 100% ($\rho_{e,w}^{130kV} = 0.99$) for soft tissue, and PLA 20% ($\rho_{e,w}^{130kV} = 0.20$) & 40% ($\rho_{e,w}^{130kV} = 0.39$) for lung. Then, a 3D stereolithography (STL) model was created using a marching cube algorithm and Laplacian filter. A five field IMRT plan was then generated to treat the mediastinum part of the thorax phantom using Analytical Anisotropic Algorithm (AAA) of Eclipse treatment planning system (TPS) where the prescribed dose to the tumor volume is 200cGy per fraction. The TPS calculated dose and measured dose in CIRS phantom were in agreement within $\pm 2\%$. Further data are still being gathered in comparing the calculated and measured dose in the 3D printed phantom.



CHARACTERIZATION AND PERFORMANCE ASSESSMENT OF IBA MATRIX 2-D IONIZATION CHAMBER ARRAY

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Dose verification is an important quality assurance procedure performed in intensity modulated radiation therapy (IMRT) prior to patient treatment. This procedure is usually carried out using a 2-D detector array at 0° gantry angle to gain data for a calculated dose distribution. However, using 0° gantry angle is not always the case during actual treatment because treatment delivery involves use of gantry positions other than 0°. The study includes the characterization and performance assessment in treatment plan verification of the IBA Matrix 2-D ionization chamber array (IBA dosimetry, GmbH, Germany). The IBA Matrix has 1020 ionization chambers arranged in a 24 cm x 24 cm grid. The characteristics of the IBA Matrix were investigated in terms of dose linearity, reproducibility of measurements and output factors. Measurements were obtained using the Omnipro IMRT software dedicated for the IBA Matrix. Measurements at CAX of the IBA Matrix were found to be reproducible having a maximum standard deviation of 0.04% for daily checks and 0.3% deviation for the average measurement during the whole duration of experiment. The dose at CAX of the IBA Matrix was also found to be linear within 2-500 MU. Linac radiation output as a function of square field sizes from 2 cm x 2 cm to 25 cm x 25 cm was also assessed to test the scatter properties of the Matrix detectors. The output factor saturates at larger field sizes. Based on preliminary data, the IBA Matrix was found to be a reliable and accurate dosimeter and can be used for pre-treatment quality assurance. The IBA Matrix will further be tested for treatment plan verification for non-zero gantry angles. The IMRT dose distribution acquired with IBA Matrix with angular dependence correction will be investigated and compared to the dose distribution calculated with the treatment planning system as well as the dose measurements with a standard Farmer ionization chamber. The study was conducted at the National Kidney and Transplant Institute.

ASSESSMENT OF NEONATAL ENTRANCE SURFACE DOSES IN CHEST RADIOGRAPHIC EXAMINATIONS AT EAST AVENUE MEDICAL CENTER



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Neonatal chest radiography is a tool which significantly contributes to the initial diagnosis and evaluation of illnesses. Hospitalized and prematurely-born neonates suffer from respiratory and cardiovascular complications. Neonates are sensitive to radiation exposure because of the high mitotic rate of their cells. They are also at high risk for inducing stochastic effects due to their long life expectancy. The International Commission of Radiological Protection (ICRP) recommended the establishment of diagnostic reference level (DRL) as an optimization tool. The DRL is used in benchmarking doses and associated risks in diagnostic radiology. No information is available in the Philippines regarding the radiation doses received by neonates. The aim of the study is to indirectly determine the entrance surface dose (ESD) for the most frequently performed radiographic examination and projections in the Neonatal Intensive Care Unit (NICU) at East Avenue Medical Center (EAMC), and to compare these doses to the International Atomic Energy Agency (IAEA) Guidance Dose Levels and related studies. The Unfors – Xi Platinum Series RF detector was used to measure the machine output. The study followed the procedures for the indirect assessment of the incident air kerma and the entrance surface air kerma detailed in the Technical Report Series (TRS) No. 457. Data shows the variability of exposure parameters used in the chest antero-posterior (AP) and lateral (LAT) projections within the same patient thicknesses. The kilovoltage used for the AP and LAT projections were found to be in the range of 48-61 and 48-58, respectively. The tube loading for the AP and LAT projections were also found to be in the range of 1.2-2.0 and 1.6-2.0, respectively. The exposure parameters are the key factors affecting the ESD values.

A STUDY ON THE DOSIMETRIC PROPERTIES OF AN EPID DOSIMETRY SYSTEM FOR DYNAMIC IMRT QA



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Portal dosimetry offers a convenient assessment tool for patient-specific quality assurance (QA) of Intensity Modulated Radiation Therapy (IMRT) treatment plans. However, the criteria for acceptability of each test as part of the QA process for IMRT plans has not yet been established. This study, therefore, aims to investigate the dosimetric properties of the aSi1000 portal dosimetry system and to come up with specific equipment parameters for routine IMRT pre-treatment QA in our institution. This study intends to establish a protocol to serve as a sound basis for setting clinical action levels in standardizing the evaluation of Electronic Portal Imaging Device (EPID)-based pre-treatment IMRT QA. This study focuses on the calibration and characterization of an in-house portal dosimetry system as well as the comparison of Eclipse treatment planning system (TPS) predicted portal dose image to EPID measured dose. A 6 MV Varian Unique Linear Accelerator equipped with an amorphous silicon (a-Si) flat panel imager was used in this study. The dosimetric characteristics which include linearity, reproducibility, and dose rate dependence of the a-Si EPID for verification of dynamic IMRT delivery were initially investigated. EPID measurements were also compared with the TPS predicted dose images. Planar dose comparison was carried out with gamma criteria of 3% for dose difference and a distance-to-agreement of 3mm. The EPID was found to be linear with dose and dose rate. Reproducibility was within 0.8% ~ 1 standard deviation for a 10cm x10cm field delivered at intervals over a period of 2 weeks. The EPID fluences had >95% agreement to the planned fluences. The preliminary results showed that portal dosimetry is a promising

tool for pre-treatment dynamic IMRT QA in our institution. The use of EPID for treatment verification is less time consuming, easier to set-up and is fully automated.

Political Science

E-GOVERNANCE AND ITS EFFECTS ON POLITICAL PARTICIPATION

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Governments around the world have to adapt to the changing times. Developments in technology is now paving the way to improved delivery of government services, better access to information and creation of better opportunities for political participation. In the Philippines, “e – governance” or the use of Information and Communication Technology (ICT) in governance is a rising trend among local governments and is seen as a welcome avenue for the government to be closer to the people. E-governance has been existent in the Philippines since the 1990s. Though there were some studies made on it, there is still a dearth of knowledge on how it affects political participation particularly on whether the citizenry are encouraged to participate in governmental and political activities or not. This is the context why this study came to be. The main objective of this study is to know the effects of e-governance on the political participation of selected citizens of the Philippines. The descriptive study through the survey method was used to obtain data from Political Science faculty members coming from different Universities and Colleges within Metro Manila. The initial results of the study shows that majority of the respondents’ access government websites to get information, news and updates from the government; that 90% of the respondents participate more in social and civil engagements when they receive information or services from the government and that only 40% of the respondents participate in activities directed towards influencing governmental decision and political outcomes. Lastly, the study shows that the respondents encountered challenges in e-governance which greatly affected their participation in some of the selected forms of political activities.



THE SOUTH KOREAN MILITARY HUMANITARIAN ASSISTANCE AND DISASTER RELIEF OPERATION IN THE PHILIPPINES AFTER TYPHOON HAIYAN

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The study started with a critical awareness of relatively lower attention of South Korea in comparison with the increasing global attention on military Humanitarian Assistance and Disaster Relief (HA/RD) operation. It aimed to determine the strengths and weaknesses of South Korean military HA/RD operation and recommend improvements through the investigation of the case of Typhoon Haiyan (Yolanda) which was the first and sole independent HA/RD operation of South Korea in response to natural disasters. In order to gain rich and balanced data, this study tried to diversify the sources of qualitative data; the comparative analysis between four participating countries and In-depth interviews with both supporting

and supported groups. The finding of the study shows that the fundamental strengths of the South Korea's HA/RD operation may be the 'niche strategy' and the exemplary attitude which supplemented its lesser capabilities. Basically, the South Korea's HA/RD operation's scale and capability were inferior to those of the U.S. and Japan, however they concentrated their efforts on gaps or blind spots where a helping hand did not reach. In addition, their motto, "We repaid your sacrifices of blood with our sweet drops", the joint mission with the Philippine military forces, and their diligent and unpretentious attitude were able to reduce local people's antipathy toward foreign military, as well as to form a favorable image of South Korea. On the other hand, the salient weaknesses may be the inadequacy of domestic laws and systems and compelling activities for growing soft power. The foreign military assets generally are asked for the rapid disaster relief by an affected nation. However, South Korea is unable to dispatch their military assets promptly because of the constraints in domestic laws and systems. In addition, flagrant activities to promote Korean culture could be counterproductive. Based on these findings, the current study recommends that South Korea should try to construct global image as a nation that professionally supports reconstruction and rehabilitation of countries damaged by natural disasters.

Psychology

HOLISTIC WELL-BEING: THE DEVELOPMENT AND VALIDATION OF CHILDREN'S WELL-BEING SCALE (CWBS)

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Children who have a balanced well-being will be able to adapt in different circumstances, and they will be less susceptible to variety of psychological problems in the future. However, well-being is a construct that is not culture free. The majority of children's well-being measurement is often rooted in Western culture in developed countries and are rarely applicable to a child population in non-Western countries. Therefore, along with the increase of public awareness of children's well-being in Indonesia, appropriate tools to measure it is greatly needed. The main objective of this study is to develop a valid and reliable instrument that assess the well-being levels of Indonesian children aged 11-15 years. In achieving this, steps in scale development were carried out in four major phases: test conceptualization, pilot stage, trial stage, and final stage. The first phase is the item generation and construction of the draft of the CWBS. Information from literature review and focus group discussions were used to generate initial item pool which were subjected to content validation by experts. In the second phase, a total of 294 participants completed the initial form of the instrument. Then, adjustments were done to the questionnaire. Cronbach's Alpha indicates that the instrument is internally consistent. In third phase, an additional 288 participants took the revised CWBS. With this new sample, the CWBS are still internally consistent. The final form of CWBS were administered to a large group as a final stage. Classical test theory principles was used for establishing reliability and validity of CWBS. Considering the result from the three phases in the development of CWBS, it can be concluded that CWBS are valid and reliable instruments for Indonesian children.



INDIGINIZATION OF DEPRESSION: UNDERSTANDING THE IMPRESSION, EXPRESSION, AND EXPERIENCES AMONG SELECTED INDIGENOUS PEOPLES OF LUZON, PHILIPPINES

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Depression is an alarming psychological condition among the indigenous people throughout the world. Ethnic minorities are identified as a population that is vulnerable to mental health problems. Depressive disorders have significant cultural variation in clinical presentation Using phenomenological inquiry; this study aims to understand how the indigenous peoples experience and expression of depressive symptoms which is based on the context of their cultural knowledge. The central question that this phenomenological study purported to answer was: How do indigenous peoples collectively characterize their cultural understanding on the impression, expression and experiences of depression? In exploring the expression of depression symptoms among Indigenous peoples it found out that language issues, cultural beliefs and practices influence the experience of depression. Intrinsically, the indigenous understanding of depression is metaphorical in orientation. They use symbols or somatic metaphor to explain depressive symptoms. For dumagat the indigenous concept of illness is related to kakawitang palakol meaning mamatay na mulat, and for the aeta experience dungos or pasma sa tiyan dahil sa gutom, and for the igorot they describe the symptoms to upay or walang gana mg trabaho. Different depressive symptoms profiles among the Dumagat, Aeta and Igorot tribes. The author found different symptom profiles among the three groups; the dumagats were more likely to emphasize affective and existential symptoms (e.g., mahirap kalooban, mahina katawan, ng-alala san kukuha ng makakain sa araw na iyon dahil wala na mukuha sa kalikasan), the aeta experienced somatic complaints (e.g., sakit tiyan/napasma, di makatulog, sakit ulo sanhi ng gutom), and the igorots reported more affected and interpersonal problems (e.g., wala gana mgtrabaho, di nakikihalubili sa mga pagtitipon

DEMOGRAPHIC PROFILE, ORGANIZATIONAL CITIZENSHIP BEHAVIOR AND WORK VALUES OF FILIPINO CUSTOMER SERVICE REPRESENTATIVES

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The call center industry in the Philippines is one of the biggest contributors to the economy. They provide companies that would reach customers in order to ensure customers satisfaction address their problems, requests and complaints and provide access to their companies. There is a need to address the gap in the literature and provide awareness by establishing the relationship among Demographic Profile, Organizational Citizenship Behavior and Work Values of Filipino Customer Service Representatives in the Philippines specifically the relationship between (1) Demographic Profile (age, academic preparation, years of service and civil status) and Organizational Citizenship Behavior, (2) Demographic Profile (age, academic preparation, years of service and civil status) and Work Values, and (3) Organizational Citizenship Behavior and Work Values. Thus, several instruments were utilized to 112 respondents such as Demographic Profile Sheet, Organizational Citizenship Behavior Scale and Filipino Work Values Scale. Results revealed that demographic profile is not significantly correlated with organizational citizenship behavior. In addition, there is no significant relationship among respondents' scores in demographic profile (age, years of service, and civil status) and work values. However, academic preparation (demographic profile) is positively and significantly correlated with work values. This implies that the highest educational attainment of respondents, the more they exhibit work values (Sergio et al., 2015; Gannaban, 2016; Macalalad, 2016). Results also revealed that there is a significant relationship between organizational citizenship behavior and work values. This implies that those who exhibit organizational citizenship behavior are more likely to display work value. Furthermore, organizations may

use the designed organizational support program to recognize employees who exhibit organizational citizenship behaviors as well as look into their work values. The result of this study, this will serve as an aid to the development of programs that will cater to Filipino Customer Service Representatives work enhancement.



THE DEVELOPMENT, VALIDATION AND STANDARDIZATION OF THE ACADEMIC SELF-EFFICACY SCALE (ASES) FOR FILIPINO K TO 12 JUNIOR HIGH SCHOOL STUDENTS

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Measuring the skills and knowledge learned in high schools years, academic performance (AP) serves as a basis for evaluation whether the students are meeting academic standards. However, different findings revealed that the relationship between I.Q and Academic Performance has in moderate range (Zimmerman and Clearly, 2006) and that of Self-efficacy beliefs serves as a mediator and significantly correlated to Academic Performance (Bandura, 2012; Bandura, 2006). Since the implementation of the K to 12 curriculums, there was no published material that uses Academic Self-efficacy for Filipino Junior High School Students. Thus the research is primarily focused on the development, validation and standardization of the Academic Self-efficacy Scale (ASES) for Filipino junior high school students. The design of the research was in the form of Test Development and anchored on Classical Test Theory. There were a total of 4,309 as respondents for the study. Three stages of processes that were imposed are the development of the initial, preliminary and final form.

Result showed that on the development of initial form, 240 items were validated by four expert judges who include one registered Psychologist, one certified Educational Psychologist, one registered Guidance Counselor and one high school Principal. Using Lawshe CVR, 20 items were eliminated and garnered an over-all .87 CVI. This was further validated by intraclass correlation ($ICC(2, 4) = .953, a = .000$) suggesting that the expert validators have high agreement on the items of ASES. Result of the test on preliminary form on the other hand was analyzed using UL-LL method and revealed that the ASES items are discriminating ($d = .43$). Additional analysis such as Cronbach alpha split half method and item to total correlation were also implemented. Further analysis led to the development of the Final Form consisting of 70 items. In conclusion, the result of the study revealed that the ASES for K to 12 Junior High School students is a reliable and valid measure of Academic Self-efficacy.

REDUCING TURNOVER INTENTIONS OF MILLENNIAL EMPLOYEES IN THE BPO INDUSTRY: EXPLORING THE ROLE OF PERCEIVED ORGANIZATIONAL SUPPORT AND WORK-LIFE BALANCE

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The study investigated the cognitive process involved in the actual turnover behavior, turnover intention, in terms of perceived organizational support (POS) and work-life balance (WLB) of millennials employed in the selected BPO industry. A total of 172 employees participated in the study. One set of survey instrument featuring three different measures was utilized: (1) a Survey on Perceived Organizational Support, (2) a Work-Life Balance Scale, and (3) a Turnover Intention Scale. The results show that millennials have high levels of perception that the organization values their contribution and cares about their well-being as well as their overall perceived ability to manage their work and personal life. The WLB dimensions, (1) personal life interferes with work (PLIW) and (2) work-life enrichment (WLE), also indicate a high level of WLB while only a moderate level was found for (3) work interferes with personal life

(WIPL). Pearson-product moment correlation was employed to determine the relationship of the variables in the study. The findings revealed that the more favorable the employees perceive their organization, the more they develop a sense of balance between their work and non-work domains. Moreover, the employees' view that the organization is positively oriented towards them and the experience of work-life balance increase the likelihood of their intent to stay and keep their jobs. In consonance with the existing literatures, POS was a significant predictor of turnover intention. With reference to work-life balance, only the WIPL dimension significantly influenced the dependent variable. This descriptive-correlational research supports the contention of previous studies that POS and WLB influence an individual's plan to leave the organization (Eder & Eisenberger, 2008; Kurtesis, Eisenberger, Ford, et. al., 2015; Marchand & Vandenberghe, 2016; Lewis, Gambles, & Rapoport, 2007; Shobitha, 2014; Kamboj, Rani & Malik, 2015). Specifically, high levels of POS and WLB lead to a reduced turnover intention of the millennial employees in the selected small-sized BPO Company based in Metro Manila. Furthermore, the findings of the study were used as a basis for designing an employee retention program aimed at minimizing the cognitive withdrawal behavior of the millennials.

PREDICTORS OF COPING BEHAVIOR OF THE FIRST SCOUT RANGER REGIMENT

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The Philippine Army Scout Rangers face a great amount of stress from their mandate such as being deployed directly in combat zones and being away from their family. As a result, their susceptibility to develop maladaptive or poor coping behavior is an ever present occupational hazard. The study at hand aimed to dig deeper at the workings of Cognitive Hardiness, Personality Traits, and of Perceived Social Support as predictors of coping behavior of soldiers assigned to the First Scout Ranger Regiment. A sample of 152 scout ranger qualified combatants was selected to complete a set of four self-report questionnaires. Results show that among all variables, it is with Perceived Social Support has the greatest effect on positive coping behavior. Other factors that support positive coping behavior are agreeableness, openness, and extraversion. On the other hand, Cognitive hardiness, conscientiousness and neuroticism are seen to lead toward negative coping behavior. Cognitive hardiness, formerly seen as a protective factor against negative coping behavior, is not observed to be similar for Scout Rangers as the data shows. It is recommended that focusing on unit cohesion amongst Scout Rangers would be beneficial in the prevention of negative coping behaviors.



DEVELOPMENT AND EFFECTIVENESS OF HOLISTIC APPROACH FOR COMMON ADJUSTMENT PROBLEMS (H.A.C.A.P.) INTERVENTION PROGRAM AMONG ADOLESCENT

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Adolescence is a very delicate and vulnerable stage in life. It is characterized by various adjustment problems particular anxiety and depression. Anxiety is the presence of fear while depression is characterize by being sad, irritable and low self-esteem. Moreover this is a period of adjustment which they have to go through in order to have harmony with their environment. The study focused on adolescent's ages 17-19 years of age. **Phase I** is development of Holistic Approach for Common Adjustment problems Intervention Program (H.A.C.A.P.).The researcher analyzed the composition of related literature and needs assessment survey of the adolescents who are enrolled in University of The East-Manila with common adjustment problems and who were referred by the Deans from different colleges to the Guidance office because of having

failing grades for two consecutive semesters last S.Y. 2015-2016. A follow up needs assessment survey was conducted for the S.Y. 2016-2017. The objective is to develop holistic approach for common adjustment problems intervention program. This also determined the composition of needs assessment survey. It revealed that anxiety and depression are the most common adjustment problems among adolescents. On the other hand focus group discussion, expert validation and pilot run are still in process. Supported theories & concept of the study will also analyze to determine the final composition of Holistic Approach for Common Adjustment problems (H.A.C.A.P.) Intervention Program among adolescents. **Phase2** will test the effectiveness of the Holistic Approach for Common Adjustment Problems (H.A.C.A.P) Intervention Program among adolescent.

Public Administration

AN EVALUATION OF THE NATIONAL TOURISM DEVELOPMENT PLAN TOWARDS A SUSTAINABLE TOURISM POLICY FRAMEWORK FOR THE PHILIPPINES

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This paper is an evaluation of the Philippine tourism policy as outlined in the National Tourism Development Plan 2011-2016. Review of the objectives set in Sec. 3 of R.A. 9593 or also known as the Tourism Act of 2009 was conducted if they were included in the plan and implementation through its strategy or elements using a contextual matching form. Likewise, sustainability evaluation was performed using the SWG's Assessment Criteria and based on the sector stakeholders' perception. The evaluation that was made in the study was reviewed and validated by the Department of Tourism. While two hundred one (201) tourism practitioners coming from different tourism related companies and associations were selected as respondents of the stakeholders' survey that was conducted. Participants in the survey were clustered into (1) travel trade; (2) accommodation, food and beverages; (3) attractions and entertainment; (4) allied services, souvenirs and handicrafts; (5) tourism planning and development; and (6) tourism academe and advocates. Ratio measures like proportions, percentages, central location and dispersion measures on rating and target rates together with a multivariate data reduction technique to explore the groupings of respondents or the criteria domains were employed. Following a convergent parallel methodology using the provisions of the law, the plan document, official statistics, and stakeholders' perceptions from purposive and snowballing sample, triangulation of the results was performed to explore a framework toward a sustainable tourism policy for the Philippines. The initial findings showed that the NTDP 2011-2016 covered most of the 18 provisions of the objectives of the R.A. 9593; hence, the criteria of the SWG assessment criteria and per stakeholders view, and some of the goals and objectives set were accomplished during its timeline. Based on the results and review of evolving paradigm in national tourism planning and implementation, areas for improvement were identified resulting to a recommended framework on sustainable tourism policy that can be used in future tourism policy planning and development for the Philippines.



CIVIL SOCIETY ORGANIZATIONS: PARTNERS IN THE DEVELOPMENT OF CAVITE CITY

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Civil society organizations in the Philippines dwell into education, developments on human resource, community, enterprise, health, politics, and sustainable development. One of the development potentials of the city is its fisheries and aquaculture farming as number one source of livelihood. The community development among fishermen and information dissemination are the only strategies applicable to the city's marine fishery sector. This research investigates the existing partnership between the local government and civil society organizations specifically those involved in marginalized fishing in Cavite City, for the last administration (2013-2016). Among 70 accredited CSOs in Cavite City in 2016, nine CSOs were in the fishery sector established in barangay setting. Survey questionnaires were employed to three types of respondents: (1) to represent the LGU sector - all barangay officials whose barangay has a *Samahan ng Mandaragat*, (2) to represent the CSO sector - all representatives of CSOs involved in marginalized fishing; and (3) the stakeholders - 60% of the population of fishermen in each barangay who were members of CSOs involved in marginalized fishing. The initial finding of the study reveals that in the compliance of CSOs in the Local Government Code's IRR, two out of nine have official registration in the Securities and Exchange Commission. Six said their organization's purpose is livelihood development. 61% of fishermen reported that their living status didn't change in the last three years, 21% said it had gotten worse. This was affirmed by the LGU. 82% of the fishermen said they do not earn enough to send their children to college. 51% said they had not received direct service from CSOs. Yet, most of them said CSOs helped raise their knowledge about fishing. Eight of nine CSOs had active participation in the Local Development Council, saying their primary role was program implementation. Four CSOs said the church contributed to the success of their advocacies. The *Sanggunian* is a good avenue for collaboration, but not enough to uplift the living status of fishermen. Fishermen are given full grant to catch aquatic species, yet illegal fishing and trolls are of primary concern. Funding and cooperative programs still needs to be improved to help progress the lives of marginalized fishermen

THE CONTRIBUTION OF 'HIDUP' CATHOLIC MAGAZINE TO THE CATHOLIC PRESS IN INDONESIA: A STUDY IN HISTORY, STRUCTURE AND DEVELOPMENT

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"HIDUP" Catholic Magazine is one of the apostolic media of the Catholic Church for 71 years (1946-2017) in Indonesia. Since at the beginning, the main aim of the periodical is to proclaim the "Good News" for the Catholics as defined in its vision and mission. With this background, the study intends to make a deeper analysis on the contribution of 'HIDUP' Catholic Magazine to the Catholic Press and the Church in Indonesia. There are three areas will be especially studied in HISTORY, STRUCTURE AND DEVELOPMENT by interview and questionnaire in a qualitative approach. This work will further explore the underlying reasons why the publication could survive up to this day as mouthpiece of the Church for Catholics and Indonesian people. In the further development, HIDUP recruits the professional communicators to increase the quality of production: themes, content and presentation and its performance according to expectation and need of readers, especially when it faces the challenges and difficulties which come from the rapid technological development and its impact to readers and a competition arising from the development of the media industry and the other Catholic publications. When comparing with the other Catholic Publications through a content analysis and also get a reaction of readers, the periodical shows two important points. The first is HIDUP shows itself an integral part of the role of the other Catholic publications as apostolic media of the Catholic Church. It provides the content, themes and presentation in general based on pastoral and theological perspectives. The second is the publication presents a special role and contribution by information on pastoral activities in and around Jakarta, other Dioceses and in the World, also advocates social justice, peace and integrity of creation, defends rights of the people, and fosters a dialogue between the Catholic Church and other religions, race, ethnic and groups. Therefore, the publication has taken a major role and contribution for nurturing and maturing the faith of Catholics in Indonesia.



INTERCULTURAL COMMUNICATION IN THE MINISTRY AND MISSION OF THE PHILIPPINE CHURCH (1565-1898): A HISTORICAL AND MISSIOLOGICAL STUDY

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Intercultural communication is defined as "an ongoing process of exchange and 'thoughts and meaning'...between different cultures" (Eilers, 2012, 59). It is a communication process between different people and cultural groups trying to find a common meaning. In this study, the intercultural communication dimension of the missionary endeavors of the Spanish missionaries in the Philippines from 1565-1898 will be analyzed through a historical and missiological presentation. It will look into four areas where intercultural communication is evident: literature, architecture, religious practice and education. In order to achieve this, analysis of historical works by prominent Philippine Church historians will be studied. Learning the local languages for ministry was mandated by the 1582 Synod of Manila. The missionaries studied the native languages and their expertise in linguistics proved to be helpful in this endeavor (Vibar, 2012, 2). This resulted in the publication of various literatures on Christian doctrine, local customs, dictionaries and grammar on vernacular languages among others. The architecture introduced in the country by the Spaniards was an adaptation to the climate, topography, and seismic conditions in the Philippines (Ipac-Alarcon, 2008, 5). This can be seen in the *Mudéjar* architecture present in the

churches in Cebu and Bohol and the *bahay na bato* as an improvement of the *bahay kubo*. In the area of religious practice, the general practice was not to forbid or eliminate the pagan practices without any Christian practice that would stand in its place. This was in line with the policy of “making Christianity permeates the culture and its institutions in the same way as the popular pagan beliefs had done” (de la Costa, 1961, 156). In the area of education, the missionaries took advantage of the locals’ interest in music to teach them not only music but also religion, arts and trades, reading and arithmetic (Bazaco, 1941, 18). The findings show that through intercultural communication, the Spanish missionaries did not impose their culture and Christianity to the locals but used the elements in local cultures to introduce Christianity which gave birth to a unique Filipino culture and Filipino Christianity.

THE PASTORAL COMMUNICATION DIMENSION IN TOBA BATAK CULTURE

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The important relationship between Catholic Church and cultural elements of her members has been an interesting subject of research in the field of pastoral communication. This growing interest is related to the nature of the pastoral communication which is concerned with the communicative needs and condition of the members of the Church in their real condition and culture for the sake of deepening faith and setting Christian community. In line with this inquiry, the present study tries to examine the relationship between the Catholic Church in the Archdiocese of Medan, Indonesia and cultural elements of Batak people as the main ethnic group from the pastoral communication perspective. The purpose of this study is to discover cultural elements as means of communication of the Catholic Church for Toba Batak Catholics. It also explores the needs and possibilities of Toba Batak culture for pastoral communication. To attain this, the study employs the qualitative-descriptive method in focusing on literature, personal and field observation, interview, and focus group discussion. The researcher interviewed 21 respondents and setting up 14 focus group discussions. The findings of this study revealed the correlation between communication theology and pastoral communication, and how it is related to Toba Batak culture. The Toba Batak belief system, rituals, art, oral communication, can be used as means of communication in liturgy and catechesis. Their cultural celebration and traditions can improve the Church as living community. Toba Batak social structure is useful for pastoral care on family, and inter-faith dialogue. The results of this study also discover the needs for cultural elements in pastoral communication. They enable the local Church to communicate faith and making it fruitful in community life. Finally, this study supports the view that pastoral communication is a useful approach to integrate the culture into Church’s activities.



MINISTRY FOR MEDIA PROFESSIONALS IN THE PHILIPPINES: AN APPROACH IN THE SOCIAL/PASTORAL COMMUNICATION PERSPECTIVE

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Major church documents on social communication since Vatican II have promised to provide pastoral ministry specific to media practitioners because of the unique realities and experiences they encounter in carrying out their profession. Those who cover the news, in particular, are frequently exposed to stressful and dangerous situations that need to be processed on the emotional, psychological, and spiritual levels. This study aims to determine what approaches from the social/pastoral perspective can be used to develop a ministry that will effectively address the real-life needs and expectations of media professionals, thus enriching their lives as Christian communicators. The study draws indicators from interviews with reporters, producers, desk editors, and field camera personnel from the news and current

affairs department of a major broadcasting network. Media executives and church officials directly involved in social communication were also sought for their insights and perspective. Outcomes reveal that faith strongly influences the personal conduct and values of media professionals and gives them courage in facing the hazards of their work. Many concur that they are motivated by the desire to serve others and constantly feel God's presence in their lives. As Catholics, they believe that the Church has an obligation to provide spiritual help that meets the special needs of their work. However, they do not believe that the Church has a deep understanding of the dilemmas they face at their work. They are not aware of any pastoral programs designed to deepen their faith nor do they receive assistance from their local parishes. Rather than the customary lectures, rituals, and catechization, what they seek from the Church are opportunities to be aware of inner movements of the Spirit through pockets of silence, prayer, and accompaniment by pastors who convey acceptance, understanding, tolerance and empathy. Treated with openness and guided by the model of Christ, the Good Shepherd and Perfect Communicator, this study establishes relevant markers for designing pastoral ministry that reflect the most highly esteemed values of men and women in media.

CHALLENGES AND IMPLICATIONS OF PASTORAL COMMUNICATION TO THE DAUGHTERS OF ST. PAUL IN THE PHILIPPINES

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Pastoral Communication is the communication dimension of all the ministries of the Church. It is the communication for pastoral care “shepherding, building up, maintaining and deepening of faith”. It is not about technology but formation of a communicative disposition modeled after Jesus the Good Shepherd. This study describes the level of awareness and understanding of Pastoral Communication of the Daughters of St. Paul and identifies the various challenges in the apostolate brought about by digital communication. As a congregation working in the social communication apostolate, there is a need to evaluate their presence in the Church and their quality of response to the communication ministry. This study is a descriptive qualitative research and Focus Group Discussion (FGD) and Interviews were used as tool for data gathering. A total of 45 sisters or 32% of the total number of sisters participated in the focus group discussion and interviews. Data gathered from the discussion and interviews reveal that the research-participants are aware and understand the meaning and importance of Pastoral Communication. The sisters believe that witness of life and consistency of what one says and what one does is necessary for an effective preaching of God's Word. The sisters identified communicative dispositions both on the personal and community level that makes the ministry effective and those which need improvement. Many challenges are encountered in the apostolate and in collaboration with the local Church of the Philippines. Prospects for advancement in the communication ministry are high and the sisters have their own dreams of being active in the social media and come out with an interactive and improved productions. For a wider audience impact and strong evangelizing presence in the digital world, networking with catholic media networks and professional preparation are needed. Finally, the challenge of a strong and profound interior life is indispensable to become credible pastoral communicators.