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**JOURNAL**

# Australian Journal of Basic and Applied Sciences

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## Australian Journal of Basic and Applied Sciences(AJBAS)



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Non-indexed in the ICI Journals Master List 2020

Not reported for evaluation

Archival ratings ➤

Citations: Coming soon

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The Journal of the AJBAS (Australian Journal of Basic and Applied Sciences) has been published since 2007. AJBAS (Australian Journal of Basic and Applied Sciences) is a multidisciplinary journal that publishes high quality research publications in the areas of Agriculture, Biological, Information, Engineering, Health & Life Sciences, Zoology, Humanity, Social and Applied Sciences etc. and published by American-Eurasian Network for Scientific Information, Jordan with ISSN: 1991-8178. Being an academic-research publisher of peer-reviewed journals across the world, AJBAS is committed to publish excellent, original, double-blind peer-reviewed research articles of all types in various subjects. Along with AJBAS, AENSI Publishing Corporation publishes a number of journals to nurture the community and recognize the budding talents in the scientific world.

AJBAS (Australian Journal of Basic and Applied Sciences) reached until October of 2017 around 20.500 citations according to Google scholar and there are strategies for increasing the citations to be in the end of 2017 more than 21 000 citations by publishing the high-quality papers and specific topics which have highly attentions around the world.

<https://scholar.google.com/citations?user=NojREosAAAAJ&hl=en>

**Google-based Impact Factor: 2.5**

The [impact factor \(IF\)](#) normally is calculated by Thomson Reuters based on the Web of Science (WOS). However, Google Scholar now provides an alternative Google-based impact factor. Google Scholar is the only openly available database suitable for journal metric calculation. It has a wide coverage and is a meaningful source. For this reason, AJBAS (Australian Journal of Basic and Applied Sciences) is calculating its own Impact Factor by applying [Thomson Reuters'\(TR\)](#) algorithm based on Google Scholar's citation counts.

## AS Journal Stats until October 2017

Articles	<a href="#">2700</a>
Citations	<a href="#">20500</a>
h-index	<a href="#">43</a>
i10-index	<a href="#">669</a>
IF	<a href="#">2.5</a>

### IMPACT FACTOR IF FOR AJBAS

**MIAR collects data for the identification and the analysis of scientific journals (Spain) ICDS**

**IF= 3.5** <http://miar.ub.edu/issn/1991-8178>

**SCIENTIFIC JOURNAL IMPACT FACTOR (SJIF 2013 = 3.84).**

**GLOBAL IMPACT FACTOR (GIF 2015=0.786)**

**INFOBASE INDEX IBI FACOTR IN 2015=3.79**

**GENERAL IMPACT FACTOR IN 2016: 0.7039**

**Australian Journal of Basic and Applied Sciences Journal Impact under RESEARCHGATE: 0.23**

**\* \*This value is calculated using RESEARCHGATE data and is based on average citation counts from work published in this journal.**

### Most cited articles

Induction and modulation of resistance in tomato plants against Fusarium wilt disease by bioagent fungi (arbuscular mycorrhiza) and/or hormonal elicitors (jasmonic acid & salicylic acid): 1-Changes in growth, some metabolic activities and endogenous hormones related to defence mechanism

[https://scholar.google.com/citations?](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=NojREosAAAAJ&citation_for_view=NojREosAAAAJ:qKtbcrzMvwAC)

[view\\_op=view\\_citation&hl=en&user=NojREosAAAAJ&citation\\_for\\_view=NojREosAAAAJ:qKtbcrzMvwAC](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=NojREosAAAAJ&citation_for_view=NojREosAAAAJ:qKtbcrzMvwAC)

Factors influencing acoustic performance of sound absorptive materials

[https://scholar.google.com/citations?](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=NojREosAAAAJ&citation_for_view=NojREosAAAAJ:kMwF0kOiZPMC)

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Impact of Treatment on Growth and Yield of Lettuce and Tomato

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Rice husk ash concrete: the effect of RHA average particle size on mechanical properties and drying shrinkage

[https://scholar.google.com/citations?](https://scholar.google.com/citations?view_op=view_citation&hl=en&user=NojREosAAAAJ&citation_for_view=NojREosAAAAJ:CREiCvMVTUAC)

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Isolation and identification of new cellulases producing thermophilic bacteria from an Egyptian hot spring and some properties of the crude enzyme

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The journal includes detailed reports of original research results on various aspects of multidisciplinary and directly related subjects such as:

Agriculture and forestry

Agriculture and veterinary medicine

Soil-Plant-Water Relationships

Statistics

Biological and environmental science

Medical science, medicine, dentistry, pharmacy,.  
 Natural and applied Science, Chemistry, physics, geology, biostatistics and bioinformatics  
 Nanobiology, chemical biology, biochemistry, biophysics, medical physics  
 Structure biology (proteins, lipids, carbohydrates and DNA), cellular signaling, redox biology, stem cells and phytochemicals  
 Information technology  
 Technology Innovation in Information Technology  
 Computer Engineering  
 Information Technology  
 Multimedia  
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 Technology Innovation in Energy  
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 Energy Science and Technology  
 Efficient Resources Utilization  
 Climate Change Mitigation  
 Technology Innovation in Electrical and Electronics  
 Mechatronics and Robotics  
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 Distributed Generation  
 Electrical Machines, Power Electronics and Drives  
 Control and Automation  
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**Norwegian Register for Scientific Journals, Series and Publishers (NSD).**

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**published in this journal. The data used in the calculation may not be exhaustive.**

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AGRICOLA

CABI: AgBiotech New & Information, CAB Abstracts, CAB Direct, Horticultural Abstracts, Ornamental Horticulture, Plant Breeding Abstracts, Nematological Abstracts, Plant Growth Regulator Abstracts, Review of Plant Pathology, CropPhys Abstracts

Chemical Abstracts Service: CA Plus

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EBSCOhost Research Databases [www.ebscohost.com/](http://www.ebscohost.com/).

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There are 2256 citations for articles published in the journal AJBAS as of October 2017, in 2016 there 3764 citations and in 2015 3780 citations as of June 2016.

**The 2-year Google-based Journal Impact Factor (2-GJIF) is 2.5**

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December 2018

# Contamination Assessment of Heavy Metals in Road Dust of the University of Nigeria, Enugu Campus, Southeastern Nigeria

*Ichu BC, Opara AI and Ibe FC*

**Abstract:** Heavy metals concentration in the environment is increasingly becoming a health concern in the world for humans and a disruptor of the ecosystem. This is particularly observable in street dust of urban cities and settlements with high density traffic. Road dust samples were analyzed for determination of concentrations of the environmentally sensitive elements, Co, Cr, Cd, Ni, Pb, Fe, Mn and Zn in fraction of dust smaller than 100 µm. The dust particles were collected during the dry season along the road in office complexes, residential, construction sites, business centers and classroom areas representing different activities across the University of Nigeria Campus located in an urban city, Enugu, southeast Nigeria. The road dust was collected near the curb and 1 m from the curb on the road. The dust samples were measured for their heavy metal concentration and contamination levels. The assessment of heavy metal pollution was based on such geochemical models as single pollution indices (Contamination Factor and enrichment factor), integrated pollution index (degree of contamination (Dc)) and Pearson moment correlation in order to determine their possible source and spatial distribution. The results obtained after acid digestion and metal determination with an atomic absorption spectrophotometer gave the following mean values for Co, Mn, Zn, Ni and Fe: 11.53, 99.92, 221, 44.23 and 216 mg kg<sup>-1</sup> respectively from samples near the curb and 12.37, 92.25, 248.87, 43.62 and 197.5 mg kg<sup>-1</sup> respectively from samples 1 m from the curb. The mean values for the physico-chemical parameters obtained which include electrical conductivity (EC), pH and total organic matter (TOM) are 304µS/cm, 7.13, and 6.9% respectively from samples near the curb and 408µS/cm, 7.33 and 5.57% respectively for samples 1 m from the curb. The general pattern of occurrence of heavy metals on the two road positions follows a similar order of Zn>Fe>Mn>Ni>Co>Pb>Cd>Cr. The highest levels of Cr, Zn and Ni were found in the high traffic density areas, and strong positive correlations were found between these metals. These results suggest diverse origin of pollution sources which include human activities, vehicular emissions and lithogenic occurrences of the metals from road construction currently in some of the sites sampled.

[FULL TEXT PDF 1-8](#) ] DOI: 10.22587/ajbas.2018.12.12.1

# Effect of ethanol extract of *Zapoteca portoricensis* stem on testosterone-induced benign prostate hyperplasia (BPH) in adult male albino rats

*Joshua P.E., Ezugwu C.H., Chilaka F.C., Nwodo O.F.C., Dasofunjo K., Ezugwu M.U*

**Abstract:** The effect of ethanol extract of *Zapoteca portoricensis* stem on testosterone-induced benign prostate hyperplasia (BPH) in adult male albino rats was aimed at in this study. The percentage yield of the extract was determined to be 1.73% and the extract showed the presence of alkaloids, terpenoids, saponins, phenols, flavonoids, tannins, glycosides and carotenoids as phyto constituents. A dose of 5000mg/kg body weight was found to be safe in the LD50 study of the extract. A total of 25 adult male albino rats (weighing 231-391g) were selected for this study and randomly divided into five groups (1, 2, 3, 4 and 5) of five animals per group. Group 1 served as the normal control, group 2 as the positive control, group 3 as the standard control and groups 4 and 5 as the test groups. Animals in group 2, 3, 4 and 5 were induced with BPH via daily subcutaneous injection of testosterone propionate (3mg/kgbw) for 14 days and group 1 received subcutaneous injection of olive oil in place of the hormone for the same duration. After the induction, groups 1 and 2 received oral administration of 2 % v/v tween 80 solution and groups 3, 4 and 5 received oral administration of finasteride (10mg/kg), 100mg/kg extract and 200mg/kg extract respectively for 21 days. The oral administration of the extract showed a non-significant ( $P > 0.05$ ) decrease in the mean body weight of the animals compared to that of the normal control group (group 1) and mean prostate weight decreased significantly ( $P < 0.05$ ) when compared to that of the positive control group (group 2). There were significant ( $P < 0.05$ ) decrease in mean relative prostate weight, lower increase in relative prostate weight and lower percentage increase in relative prostate weight of extract treated group animals compared to those of the positive control animals. However, the extract treated groups (4 and 5) showed higher percentage recovery of relative prostate weight (65.56 and 70 respectively) than that of group 2 (0). Testosterone levels of groups 4 and 5 animals significantly ( $P < 0.05$ ) increased compared to those of group 2 and dihydrotestosterone level in the extract treated groups significantly ( $P < 0.05$ ) decreased compared to that of group 2. The prolactin and prostate specific antigen concentrations of the test groups decreased significantly ( $P < 0.05$ ) compared to those of the positive control group and likewise serum zinc concentration. The result of this study suggests that *Zapoteca portoricensis* stem extract has pharmacological effect in the treatment of induced BPH in animals.

[\[ FULL TEXT PDF 9-18 \]](#) DOI: 10.22587/ajbas.2018.12.12.2

# Fungicides and Forms of Application in Controlling the Colletotrichum Lindemuthianum in the Culture of Common Beans

*Francielli Geremia, Rodrigo Bressiani, Claudia Manteli, Elouize Xavier, Larissa Corradi Voss, Rayanah Stival Svidzinski, Alberto Ricardo Stefani.*

**Abstract:** Anthracnose is one of the major diseases of the bean culture and causing major losses to the culture. The bad handling held by producers, not to acquire periodic seeds, lack of knowledge of technologies and control techniques further aggravate these losses. The objective was to evaluate the effect of fungicides used to control anthracnose in beans, relying on fungicides application stage and in mixtures used. The experiment conducted with the cultivar ANFC 9 in experimental field at União de Ensino do Sudoeste do Paraná (UNISEP), DoisVizinhos, PR in 2016. The experimental desing was a randomized block desing with 5 treatments and 4 replicates. The treatments used T1: none application; T2: V4: Oranis; V5: Oranis + Mertin; R8: Oranis + Mertin; T3: V4: Comet; V5: Comet + Chlorothalonil; R8: Comet + Chlorothalonil; T4: Oranis in V4, V5 and R8 stages; T5: V4: Oranis; V5: Oranis + Chlorothalonil; R8: Oranis + Chlorothalonil. The variables analyzed were incidence and severity of disease, plant height in the commercial maturation, insertion height of first pod, number of pods per plant, number of seeds per pod, thousand grain weight and productivity. There was not anthracnose severity due to climate conditions. It was observed that the application of fungicides has positive results in grain weight and, therefore, in productivity.

[\[ FULL TEXT PDF 19-25 \]](#) DOI: 10.22587/ajbas.2018.12.12.3

# Indoor Air Quality and Prevalence of Sick Building Syndrome Among Office Workers in Umm Al-Qura University in Kingdom of Saudi Arabia

*Mutasim Mohamed Khalafalla, Fadil Muhammad Banjar, Fowzi Omer Elamin, Ahmad Omar Babalghith, Adil Omar Bahathiq, Ashraf Adnan Al-Maimani, Tariq Sultan UL-Haq Pasha, Ramadan Ali Badran.*

**Abstract:** In the Kingdom of Saudi Arabia due to the harsh climatic conditions, especially high temperature and seasonal dusty storm, office building have

extensively evolved to become tightly constructed and sealed with controlled environments. Therefore, office workers may be particularly at risk due to accumulation of indoor air pollutants. This study aimed to investigate the indoor air quality (IAQ) in offices and prevalence of sick building syndrome (SBS) symptoms among office workers in the deanship of faculty members and employees affairs of Umm Al- Qura University. Furthermore, a comparison with an established benchmark was conducted to identify rooms for improvement.

The result shows that the measured levels of carbon dioxide (CO<sub>2</sub>) in offices of all sections were well within the limits described by the ASHRAE except in salaries section. Total volatile organic compounds (VOCs) in all sections exceeded Mølhave recommended value (200 µg/m<sup>3</sup>). Temperature levels were not within the threshold values specified by ASHRAE. However, relative humidity (RH) levels were well within the limits described by the ASHRAE in all sections. Particulate matter concentrations (PM<sub>2.5</sub> and PM<sub>10</sub>) in offices of most sections exceeded both the maximum 24-h and annual mean limits provided by WHO and EPA. Growth of fungal and bacterial species was observed with variable counts in offices of all sections.

The SBS symptoms were assessed by using questionnaires. 93(92%) office workers responded to the questionnaire and the findings showed that running nose (14%) red eyes (19%), eye irritation (21%), fatigability (36%) headache (41%) and itch skin (15%) were the most prevalent SBS symptoms.

[ [FULL TEXT PDF 26-31](#) ] DOI: 10.22587/ajbas.2018.12.12.4

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### Electrical Conductivity in Nutritive Solution and Influence on Hydroponic Production in Lettuce Culture (*Lactuta sativa* L.)

*Victor Hugo Moraes, Pedro Rogerio. Giongo, Matheus Vinicius Abadia Ventura, Angelina Maria Marcomini Giongo, Thomas Jefferson Cavalcante, Bruno Henrique Tondato Arantes, Estevam Matheus Costa*

**Abstract:** Food production at scale needed to meet today's need is a matter of enormous concern to the world. Hydroponics is a technique that has caused a growing world interest. The experiment was conducted in May and June 2013 under greenhouse conditions at the State University of Goias, Santa Helena de Goias campus. The experimental design was a randomized block design in a 3x7 factorial scheme with three replications, the first one factor: three commercial lettuce cultivars (American GL, Rafaela-Americana and Simpson Black Seed) and the second factor: seven EC concentrations, being 0.92, 2.00, 2.22, 2.99, 4.03, 4.41 and 5.02 µS.cm<sup>-1</sup>. The cultivars Americana GL, Rafaela Americana and Simpson Black Seed in the hydroponic cultivation system had their productive characteristics influenced by the EC concentrations between 0.92 and 5.02 µS.cm<sup>-1</sup>. The cultivars Rafaela A and Simpson BS show better performances in the ECs from 0.92 to 2.99 µS.cm<sup>-1</sup>. There is a propensity for better performances for the American GL cultivar, for the range of 2 to 4 µS.cm<sup>-1</sup>. The increase of the EC concentrations decreased the dry mass of the plants and the root length of the tested cultivars.

[ [FULL TEXT PDF 32-35](#) ] DOI: 10.22587/ajbas.2018.12.12.5

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### Use of Remote Sensing in the Evaluation of the Behavior of Biophysical Variables in the Cerrado Biome.

*Victor Hugo Moraes, Pedro Rogerio. Giongo, Thomas Jefferson Cavalcante, Angelina Maria Marcomini Giongo, Bruno Henrique Tondato Arantes, Estevam Matheus Costa, Matheus Vinicius Abadia Ventura*

**Abstract:** The Cerrado is the second largest biome in South America, occupying an area of 2,036,448 km<sup>2</sup>, about 22% of the national territory. In the cerrado, changes in the behavior of biophysical variables such as vegetation index, surface temperature, precipitation and evapotranspiration and through remote sensing techniques have been used in temporal studies of changes in soil cover changes. Currently there are several remote sensors with different spatial, temporal and spectral resolutions, such as the products: MOD11 - Surface temperature; MOD16 - Evapotranspiration; MOD13 - Index of vegetation; TRMM - Precipitation. This study aims to evaluate the impact of land use change on the patterns of change of biophysical variables in regions of the Cerrado Biome. The work was developed in the region of the Cerrado biome, contemplating an extensive area of wide heterogeneity and natural cover. The choice of specific areas of study was based on data overlap of areas occupied by cerrado, pasture, sugarcane, eucalyptus and annual crops. Selection of MODIS data was performed according to the temporal availability of each product (8, 16 days or monthly). And it can be concluded that the vegetation index had an annual average reduction only in the transition from the cerrado to the annual harvest, the surface temperature had an increase in its average, only when the cerrado is changed to annual crop, annual average evapotranspiration increased in all transitions, and the average annual rainfall increased when the annual transition to sugarcane and the cerrado for annual cultivation.

[ [FULL TEXT PDF 36-40](#) ] DOI: 10.22587/ajbas.2018.12.12.6

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### Night Bars on the Coast of Paraná- Brazil: A Brief Overview on Consumption

*Adilson Anacleto, Vanessa Cristina Avelino, Juliana Sawada de Medeiros, Andressa Henseler Luciani de Oliveira, Bruno Henrique Araújo Silva*

**Abstract:** Paraná Coast is a region with tourist interest and it has hundreds of companies, and in this context, nightclubs have relevant economic importance. However, in the last decades several establishments have decreed bankruptcy. In addition, regarding to Paraná Coast in relation to nightclubs, there is a lack of studies on this segment, and in order to be able to find elements that explain this trend, it was carried out a study that sought to diagnose the nightclubs consumers' profile and behavior. A descriptive exploratory survey was conducted between July and August 2018, directed at 207 consumers, over 18 years old, who attend nightclubs from the Paraná Coast main city, Paranaguá. The results showed that nightclubs clients in Paraná Coast were mostly women (n=59%), and the average age group independent of the gender was 27 years old. The study concluded that the consumers' perceptions related to the competitive differentials that should be present in nightclubs, were: service quality (n= 71.98%), followed by the pleasant environment (n= 66.18%), and price (n= 60%). In addition, they pointed out the factors that caused the rejection to the establishment, being: places with a lot of people, delayed service. The main factors that affected consumption behavior in nightclubs along the Paraná Coast were: the civil status, income and age, and it was observed a lower presence of the public with greater spending power (class A and B), and in this case it could be adopted a relationship marketing processes as an alternative to increase the presence of this public in the region nightclubs.

[ [FULL TEXT PDF 41-45](#) ] DOI: 10.22587/ajbas.2018.12.12.7

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### Creativity in Marketing Creative Business Enterprises in Gorontalo City

*Radia Hafid*

**Abstract:** MSMEs and creative industries have a very strategic role in national development and economic growth. Creative industries in Gorontalo city are dominated by three sub-sectors of industry, namely the culinary creative industry, the creative industries of fashion and the handicraft industry. The hypothesis developed from this study is First, Creativity and marketing have an effect simultaneously on the creative industry. Second, creativity has a partial effect on the creative industry. Third, Marketing has a partial effect on the creative industry and, Fourth, Creativity has a dominant influence on the creative industry. The method used in this study is expanatory research to explain the influence between variables with multiple linear analysis approaches on the object of research in the creative industry in Gorontalo City. The results of the regression analysis partially show that there is a simultaneous influence between the creativity variable (X1) and marketing variable (X2) on the creative industry, the creativity variable (X1) has a significant effect on the creative industry by 41.7% and the marketing variable (X2) has a significant effect towards the creative industry by 52.1%, the results of regression testing indicate that the marketing variable has more influence on the creative industry than the creativity variable.

### Carrot Roots as Clean and Sustainable Biocatalyst for Obtaining Natural Menthol

*Felipe de Oliveira Souza, Rogério Aparecido Minini dos Santos, Arildo José Braz de Oliveira, Regina Aparecida Correia Gonçalves, Caio Franco de Araújo Almeida Campo, José Eduardo Gonçalves*

**Abstract:** Biotransformation using whole plant cells is an area of green chemistry that has the purpose of minimizing impacts to the environment, coupled with the characteristics of high selectivity, chemo, regio and stereoselective reactions. The objective of the present work is the sustainable synthesis of menthol by biocatalysis through the bioreduction reaction of prochiral ketones present in the EOMP (Essential oil of *Mentha piperita* L.) mediated by reductase enzymes contained in carrot cells (*Daucus carota*). The substrates and the carrot biomass were taken to the Orbital Shaker at 35 C°, 150 rpm, where they remained for 72 hours. At each 24-hour, 2 ml aliquots of the erlenmeyers were collected for reaction follow-up, the aliquots were transferred into test tubes and mixed with 1 mL of ethyl acetate (EtOAc). The organic fraction was analyzed by thin layer chromatography (TLC) and gas chromatography coupled to mass spectrometry (GC/MS). After the *D. carota* bioreduction reaction, the menthol contained in the essential oil of *Mentha piperita* L. raised from 46 to 82% by bioreduction of the carbonyl monoterpenes naturally present in the essential oil of *Mentha piperita* L., demonstrating the capacity of sustainable and efficient biotransformation of *D. carota* even in a complex matrix such as EOMP.

[ FULL TEXT PDF 51-54 ] DOI: 10.22587/ajbas.2018.12.12.9

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### Block of mineral salt in the diet of sheep and lambs and their effects on health and performance

*Sarita Bonagurio Gallo, Thais Brochado, Felipe José Corrado Kyomen, Luciano Brochine*

**Abstract:** The objective of the study was to assess the effects of consumption of mineral salt blocks on the performance and the hematologic and biochemical parameters of sheep and lambs animals kept in tropical conditions. The study was divided into two field experiments. The first experiment used a total of 44 hair sheep of the Santa Ines breed, which were maintained under *Brachiaria brizantha* cv. Marandu grazing system. Animals were randomly assigned to two treatments to received mineral supplementation as: a) powder or b) block of mineral salt; and consumption and hematological and biochemical blood parameters were assessed. In the second experiment, lambs divided equally, similar to experiment 1, and performance and carcass quality parameters were assessed. Sheep and lambs consumed less mineral supplementation in multi-nutritional block format ( $P < 0.05$ ); however, the hematological and biochemical blood parameters were not affected by the form of the mineral supplementation offered ( $P > 0.05$ ). Carcass characteristics were also not affected by the form of mineral supplementation form ( $P > 0.05$ ). Multi-nutritional block was well accepted by sheep and lambs and did not affect health and performance of the animals; thus, it could be recommended as an alternative to the powder mineral supplementation. The product was easy to use as a supplement for grazing or stall-fed animals.

[ FULL TEXT PDF 55-60 ] DOI: 10.22587/ajbas.2018.12.12.10

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### "The Application of Dynamic Up – Flow Sand Filtration in Water Sludge Treatment"

*Ibrahim, M.K.M, Abd el azeem, M.M.A, Aly, O.H.I, Ahmed, H.M.H*

**Abstract:** In Egypt, Surface water treatment plants produce more than 100 million tons of sludge per year. Disposal of these massive quantities of sludge are discharged into natural water bodies. This study assessed the possibility to use the dynamic up flow sand filtration system (Dyna Sand) as a new technique successfully applied in different countries for water and wastewater from different sources in water sludge treatment.

The current study was held to evaluate and examine the efficiency of using dynamic up flow sand filter to treat water works sludge that are produced from the surface water purification in conventional water treatment plants WTPs at different operation conditions. The study was held at Elfostat water treatment plant in Dar Elsalam located in south of Cairo. The study was carried out to examine the performance of the existing conventional system in handling WTS. The samples were collected from the sludge tanks in the plant. Moreover, samples were taken after the Dyna Sand to examine and prove the success of the filter. The parameters measured to assess the filter were Turbidity, BOD, Residual Aluminum, Algae, Total Bacterial Count and Total Suspended Solids. The filter showed high removal efficiency in eliminating these parameters. The treatment plant effluent resulted highly rates of impurities. The removal efficiency of turbidity reached 94 %, while for Total Suspended Solids 90 %. For Algae the removal efficiency was found to be 97% and for Bio chemical Oxygen Demand it was 84%. After Filtration by dynamic up flow sand filter most of these impurities were removed, thus the effluent is complying with the ministry of health requirements for raw drinking water.

[ FULL TEXT PDF 61-66 ] DOI: 10.22587/ajbas.2018.12.12.11

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### Local Productive Arrangement of Non-Wood Forest Products in Paraná Coast, Brazil, Between Ascension and Decline

*Adilson Anacleto, Anna Paula de Araújo Bornancin*

**Abstract:** The Paraná Coast since the 1970s had a strong relationship with NWFP (non-wood forest products) extraction with commercial purposes, and from this activity survived more than 1,500 families in the region during the period of highest ascension of the activity. From the 90's began the decline of activity and the exodus of families to large urban centers. In this perspective, this study aimed to present a current diagnosis of NWFP extractivism, identifying the main implications of the activity for families that the NWFP is the main income source. Thus, descriptive exploratory research was carried out, and in the total were identified 127 families, and from this total, representatives from 14 families participated in the elaboration of a DRP – Participative Rural Diagnosis between June and November of 2017. The species of greatest commercial value reported by the interviewees were orchids, bromeliads, ferns and several medicinal herbs. The study concluded that from the 127 families identified, 75 dropped out the activity and joined to the rural exodus which reached levels of reduction of 60% of people who lived in the communities in just two decades. The main factors in the external context that contributed to the decline of NWFP APL in Paraná Coast were: lack of legislation on sustainable extractivism ( $n=20.02\%$ ), low government support for cultivation introduction ( $n=16.73\%$ ), lack of credit lines that could be accessed by communities ( $n=11.44\%$ ). The main factors in the internal context that contributed to the productive arrangement decline were: lack of crops legalization ( $n=30.01\%$ ), lack of agronomic knowledge about the species with the greatest productive potential ( $N=9.01\%$ ), strong dependence on few middlemen ( $n=8.99\%$ ). The scenario results in a perverse cycle where the communities, because they are impoverished and have low capacity for organization, were invisible to the public power, and because they were invisible to the public power they were still impoverished. It was concluded that the combination of negative factors simultaneously led to a strong rural exodus, and it is urgent that debates be raised on the possible ways in which impoverished rural communities can organize themselves and collectively strengthen their actions, obtaining greater bargaining power with the several levels of public power in order to promote rural development.

[ FULL TEXT PDF 67-71 ] DOI: 10.22587/ajbas.2018.12.12.12

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### Phenol adsorption on Ca / TiO<sub>2</sub> catalysts

**Abstract:** Nowadays, the problem of the contamination of water by the phenolic compounds worries more and more. Faced with this growing concern, it is therefore necessary to develop new high-performance materials capable of meeting the requirements related to sustainable development and the preservation of the ecosystem. In this study, heterogeneous monometallic catalysts (X%Ca/TiO<sub>2</sub>) were synthesized to eliminate the phenol by the technique of adsorption. The effects of the pH of catalysts and the content of metal calcium were studied. The commercial support (TiO<sub>2</sub> P25) calcined and the catalyst 4%Ca/TiO<sub>2</sub> synthesized were characterized by BET adsorption-desorption of N<sub>2</sub>, spectroscopy FTIR and the AAS. The effects of the content of calcium (Ca), of time, the mass of the absorbent, the concentration, stirring velocity and the performance of catalyst were studied. The catalyst 4%Ca/TiO<sub>2</sub> was calcined with 400°C during 4 hours in a muffle furnace. In this work, the results showed that the catalysts 5%Ca/TiO<sub>2</sub> had the most raised rates of adsorption of calcium and reached a maximum with pH=5. The time of contact is obtained as from 90 minutes of contact. Thus, a time of two (2) hours contact was selected for the following experiments. It should also be noted that the values of the pseudo-second-order model are very close to the values determined experimentally, that means that the pseudo-second-order model is adequate, the adsorption reaction of phenol would be a chemisorption. In addition, the amount adsorbed phenol increased with the catalyst mass and the initial phenol concentration. The adsorption of phenol on catalysts would be supported by an increase speed. Then, the negative values of  $\Delta G^\circ$ , suggested that the process of adsorption of phenol was spontaneous and that the degree of spontaneity of the reaction increased with the temperature. The results showed that after 5 tests (reuse tests), 4%Ca/TiO<sub>2</sub> catalyst always has a high catalytic activity to elimination phenol at 72% in 2 hours. The adsorption of phenol on the different catalysts from 1% to 5%Ca/TiO<sub>2</sub> made it possible to show that the catalyst 4%Ca/TiO<sub>2</sub> gave a better result.

[FULL TEXT PDF 72-82] DOI: 10.22587/ajbas.2018.12.12.13

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### Biosorption of Methylene Blue and Orange II on deactivated *lichen Parmotrema dilatatum* : Modeling and kinetic studies

Kouassi Kouadio Dobi-Brice, Ekou Lynda, Ekou Tchirioua, Yacouba Zoungnanan

**Abstract:** The flowering of industrial activities is generally accompanied by a phenomenon of effluent discharges containing many dangerous chemical substances. These water pollutants include Methylene Blue (BM) and Orange II (OII), which can cause human health problems and disrupt the balance of the aquatic system. Several effluent treatment methods exist but remain expensive and therefore inaccessible for developing countries such as Côte d'Ivoire.

The present work aims at the adsorption removal of these two toxic dyes on inexpensive plant biomass in this case deactivated lichens.

The various parameters influencing the adsorption such as the contact time, the initial concentration of the solution and the temperature, were studied. The kinetic study has shown that the biosorption process of BM and OII suitably follows pseudo-order two kinetics. The adsorption isotherms have shown that biosorption of BM is best described by the Freundlich model and that of OII by the Langmuir model. The thermodynamic study of the lichen-dye system showed that the adsorption process of the two dyes is spontaneous, endothermic for BM and exothermic for OII. The results obtained suggested a process of chemisorption and physisorption.

These results show the possibility of treatment of colored effluents by lichens.

[FULL TEXT PDF 83-89] DOI: 10.22587/ajbas.2018.12.12.14

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### Efficacy of Sewage Treatment Plant near Pokhribal Site of Nigeen Basin

Faizanul Mukhtara, Hamida Chistia, Nawaz Ahmad Mirb, Shabir Ahmad Bhat

**Abstract:** Water quality monitoring has been high priority to determine the current conditions of the water system. The present study has been undertaken to evaluate the performance of the Sewage Treatment Plant (STP) located near Pokhribal site of Nigeen basin. Sewage samples were collected and analyses were undertaken for raw sewage entering the STP and treated one discharged at the site. Various physico-chemical parameters were checked and the efficacy of the STP for many parameters was evaluated. It was found that the efficiency of the STP in respect of turbidity was 63.52%, total hardness 7.10%, total alkalinity 22.81%, COD 71.98%, BOD 75.20%, Ca 17.64% etc.

[FULL TEXT PDF 90-93] DOI: 10.22587/ajbas.2018.12.12.15

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### Factors Affecting the Usability of Laboratory Information System used in Libyan Hospitals by using Technology Acceptance Model (TAM)

Said Milad Mohamed Rabha, Gülşah Hançerlioğulları Köksalmış, Aybaba Hançerlioğulları

**Abstract:** Information system research can help the industry improve their service management and coordination via a successful information technology (IT) implementation. Many hospitals have implemented various healthcare IT, such as Laboratory Information System (LIS), in order to deal with paperless and filmless operation requirements. An LIS is necessary to manage the flow of information between health care providers, patients, and laboratories and should be designed to optimize not only laboratory operations but also personalized clinical care. The objective of this study is to analyze and integrate several factors impacting the acceptance and usability of the laboratory information system (LIS) used at Libyan Hospitals. In the light of Technology Acceptance model (TAM), and extending it to seven external variables including computer anxiety, self-efficacy, user interface design, training, age, educational level and system experience. For this purpose, quantitative research was chosen for examining the research model, and the data were obtained from technicians, chemists, and physicians using the Laboratory Information System (LIS). The sample size is (N=250); therefore, the data were analyzed using Structural Equation Modeling (SEM) to analyze the relationship between explanatory factors and actual use of LIS. SmartPLS software was utilized to analyze the data and test the hypotheses. The results indicate that actual use of laboratory information system significantly and positively affected by behavioral intention, education level, interface design, perceived usefulness, perceived ease of use, training, system experience. Moreover, computer anxiety and elder age significantly and negatively affect actual use of LIS. The implications of the outcomes are discussed, and suggestions for future research are made.

[FULL TEXT PDF 94-103] DOI: 10.22587/ajbas.2018.12.12.16

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### Emotional Adjustment in Adolescent Interpersonal Attachment and Psychological Distress

Hooman Mehrani, Abdolhassan Farhangi

**Abstract:** The main purpose of this study is to test the mediating role of the emotional adjustment ability of the middle school students in their interpersonal attachment and psychological distress. To do so 1586 students are conducted in this research. The results show that there is a significant negative correlation between self-reported behavior and depression. On the other hand, the dependence on father and mother and attachment to escape can be directly influencing self-reporting psychological distress, and indirectly affecting self-confidence psychological distress through emotional regulation. And the attachment anxiety to friends can be directly and indirectly influence self-reporting mental distress through emotional regulation. However, unlike expectations, friends attach to evade self-reporting for young people. The overall effect of psychological distress is not significant. The results of this study



also show that there is a relationship between parental attachment and peer attachment and psychological distress among adolescents.

[ [FULL TEXT PDF 104-107](#) ] DOI: 10.22587/ajbas.2018.12.12.17

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### Performance of the global Geo-Potential models over Egypt

Mostafa H. A. Mohamed

**Abstract:** The recent Global Geo-potential Models (GGMs) achieve a huge upturn in geomatics application and geoid modeling. In order to increase the accuracy of a geoid model, a precise Global Geopotential Model (GGM) is needed. This paper aimed to investigate the accuracy assessment of the most recent GGMs over Egypt referenced to differential GPS terrestrial ground control points with knowing orthometric height. Five GGMs were selected for this study where, the GGMs are SGG-UGM-1 (2159), EIGEN-5C (360), EGM 2008 (2190), AIUB-CHAMP01S (70) and EGM 96 (360). The obtained results concluded that SGG-UGM-1 is almost the same accuracy with EGM 2008 GGM which include a GRACE data. The both GGMs models were best fits to Egypt local gravity.

[ [FULL TEXT PDF 108-112](#) ] DOI: 10.22587/ajbas.2018.12.12.18

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### Assessment the impact of covering a part of watercourse by pipe

Zahraa T. Shahat, Ashraf S. Ellean, Hossam M. Sief, Mohammed F. Sobeih

**Abstract:** This experimental investigates the effect of coverage a part of watercourses with varies blocking ratio and discharges. The research includes 52 test runs with three inner diameter of the circular coverage (10, 12, and 14.5) cm, four tested blocking ratio of the pipe (0, 10, 20, and 30%) and four discharges (2,5,8 and 11)Lit/sec.

The water surface profile and shape of the developed scoured holes downstream the coverage at each scenario were recorded. Based on the analysis, it could be concluded that the heading up is directly proportional, so it is recommended to carry out continuous maintenance for removing the upstream blocking. To avoid the sharp increase in the heading up (hu), it is recommended to keep the maximum allowable inlet area of coverage per wetted area of canal upstream coverage (ratio of relative area)  $A_s/A_o$  less than 5 %. Empirical equations were developed to describe the relationships between the characteristics of scour (the length and the depth), and flow characteristics (discharge, velocity and heading up).

[ [FULL TEXT PDF 113-120](#) ] DOI: 10.22587/ajbas.2018.12.12.19

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### Utilization of Ginger Powder (*Zingiber officinale Roscoe*) in Functional Food Production

Sara M.S. Awad

**Abstract** The aim of this study is to utilize of ginger powder (GP) (*Zingiber officinale Roscoe* ) in preparation of both cakes ( 3.0 and 6.0 %) and beef burgers (1.5, 3.0 and 4.5 %), respectively. Wheat flour 72% and 82% extraction was used in cakes. Also, chemical, physical, microbiological and sensory evaluation were investigated. In addition, beef burgers freezing and frozen storage period at -180c for three months. Results indicated that prepared cake formulae is considered as a good sources of crude fibers and ash content. Also, ginger powder was improved extensograph and farinograph parameters. Physical properties (weight, volume and specific weight) volume were improved due to the addition the gingers. Sensory evaluation was recorded highly acceptability score by the panelists, but formula which contained 3.0% GP was the best results. TBA values of prepared beef burgers showed that there are significant differences ( $p \leq 0.05$ ) between control and other treatments. TBA values were decreased as the level of GP increased. The results of total bacterial counts were permissible limits and safe for human consumption. It could be concluded that ginger powder is considered as a good antioxidants and antimicrobial effect. Moreover, it could be used GP as functional foods.

[ [FULL TEXT PDF 121-130](#) ] DOI: 10.22587/ajbas.2018.12.12.20

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### Artifact in the Image of Ultrasound

Adil Ismail Nasir

**Abstract** The aim of our study is to explain the physics of ultrasound in which it represented the key to understanding the artifacts. Since the artifacts also obey the same physical principles, and the ability of a radiologist to understand the fundamental physics of ultrasound, recognize common US artifacts, and provide recommendations for altering the imaging technique. it may be difficult to eliminate them. Patient and Methods This is an exploratory study carried out in the specialized medical hospital in Iraq from October 2016 to July 2017 on patients attending to the emergency department and examined by Ultrasound Machine type Philips, all patients undergo a full abdominal examination. More than (35) images have been collected from (departments of radiology). The Sonar- images which contained a spectrum of artifacts were classified according to the type of artifact, the region of exam such as (abdomen, chest, head, pelvic, neck, etc.) and the causative agent, as shown in table (1, 2). The study included the common artifacts presents in conventional and Doppler sonography used in medicine. Result Ultrasound imaging artifacts of acoustic origin associated with the resolution and path of propagation and attenuation are reviewed. The lateral and coarse lateral limits are of a complex nature, as failure to solve means losing details and two adjacent constructs can be visualized as one. The apparent resolution near the transformer (s) is not directly related to the tissue texture, but is due to the interference effects of dispersal of the dispersants in the tissues. The echoes produce a range of echoes of equal artifacts that diverge into real reflectors. The tool for the displayed images represents objects displayed on one side of a powerful reflector, which appear on the other side as well. Shading and refinement of useful antiques to determine the nature of the masses. Improvements result in low attenuation objects in the audio path while shading results from highly reflective or highly attenuated objects. Additional artifacts include section thickness, refraction, multiple pathways, side lobe, grating lobe, focal reinforcement, comet tail, ring down, speed error, and range ambiguity. The key to understanding artifacts is the physical basis of ultrasound imaging. It may be difficult to eliminate artifacts, because it also obeys the same physical principles. Conclusions Sonographers or Ultrasonography who have a good understanding of ultrasound, including ultrasound, how they are produced, how a picture is created, can educate clients and other members of the medical health care team more effectively, and ultimately, increase the quality of care. Technicians may also wish to expand their basic knowledge of ultrasound as part of their education and training to increase their abilities and responsibilities. The ultrasound detected a change in the adverse local tissue reaction (ALTR) size and degree difference with a higher resolution and higher agreement with MRI compared to the initial assessment, indicating that the ultrasound is valid and useful Just as ultrasound is performed by professionals in human medicine, it is likely that this imaging technique will someday be a common skill for Sonographers or Ultrasonography, giving more time for the Physcians to interpret images and treat the patient. The operator can be alerted to the possibility of technical presence, and how to identify it only through appropriate education and experience, where it is easy to identify the Doppler effects in general and can provide evidence of diagnosis if interpreted correctly. It is essential in making ultrasonography (US) a clinically useful imaging modality and also understanding the physical basis of US image formation is critical to understanding US artifacts and thus proper image interpretation.

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## Creativity in Marketing Creative Business Enterprises in Gorontalo City

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### Abstract

MSMEs and creative industries have a very strategic role in national development and economic growth. Creative industries in Gorontalo city are dominated by three sub-sectors of industry, namely the culinary creative industry, the creative industries of fashion and the handicraft industry. The hypothesis developed from this study is First, Creativity and marketing have an effect simultaneously on the creative industry. Second, creativity has a partial effect on the creative industry. Third, Marketing has a partial effect on the creative industry and, Fourth, Creativity has a dominant influence on the creative industry. The method used in this study is explanatory research to explain the influence between variables with multiple linear analysis approaches on the object of research in the creative industry in Gorontalo City. The results of the regression analysis partially show that there is a simultaneous influence between the creativity variable (X1) and marketing variable (X2) on the creative industry, the creativity variable (X1) has a significant effect on the creative industry by 41.7% and the marketing variable (X2) has a significant effect towards the creative industry by 52.1%, the results of regression testing indicate that the marketing variable has more influence on the creative industry than the creativity variable.

**Key words:** Creativity, Marketing, Creative Industry, Gorontalo City

### INTRODUCTION

Talking about the economic crisis, Indonesia had experienced an economic crisis that made the national economy worse, in 1998 many large companies from various sectors such as industry, trade and services stagnated and even stopped their activities. However, small, micro and medium enterprises (MSMEs) are able to survive showing their existence and are one of the lighters to recover the economy at that time. Scarborough & Zimmerer (2005) in his research stated that the duration of the recovery of the economic crisis was seven years and several studies have shown that the Indonesian economy does not only rely on the role of large-scale businesses, but MSMEs have relatively better resilience compared to large scale businesses. In several aspects of MSMEs there are several advantages, namely: First, it can create new jobs and be consistent in supporting the national economy. Second, the amount of industrial value is greater and can spread to various economic sectors. Third, give a good contribution to Gross Domestic Product (GDP).

Today's economic development is undergoing a paradigm shift, namely from a resource-based economy to a science and creativity-based economic paradigm. Howkins (2001) explained that currently humanity is entering a new era in its economic life, where all economic activities are centered on creative economic and economic knowledge. The basic element that must be possessed by every MSME business actor in this case is the small creative industries are talents, skills, and creativity accompanied by an increase in knowledge and intellectuals in running businesses to increase income and welfare.

The current model of developing creative industries has begun to be lyrics by the government in economic growth. According to records from the 2016 Creative Economy Agency (Bekraf) about the dominance of the three sub-sectors of the creative industry in Gorontalo City, there are two sub-sectors that dominate the creative industry and are the main icons in representing the creative industry in Gorontalo, namely culinary creative industries, fashion and industrial creative industries craft. Although the creative industry MSMEs have a very strategic role in development, as a significant contributor to economic growth, the absorption of labor in large numbers, a significant contributor to regional and regional income for exports and able to withstand crisis conditions but still many problems are resolved. One important point that must be answered by creative industry entrepreneurs is in terms of marketing, such as the opinion expressed by Kotler (2008) that the marketing concept that is often run by entrepreneurs often shows the difference in concepts in conventional marketing. Hadiyati (2012) states that conventional marketing meaning is identified in consumer needs through formal market research and the results of its analysis will be used as a basis in developing new products or services in marketing activities to respond to consumer needs.

Marketing strategy is one of the important things in achieving company goals, in his opinion Swastha in Triyaningsih (2012) explains that the marketing strategy is a large design that describes the state of how the company operates to achieve its objectives. In another opinion (Day et al., 2006) stated that every entrepreneur in running each business is more informal but uses a lot of unplanned intuition, but still in the corridor to realize its business objectives. This explains that every business has a clear goal, but in its implementation the behavior of entrepreneurs can combine conventional marketing and entrepreneurship. Entrepreneurship in this case can mean that business people have a renewal, dynamic, innovative and adaptive nature to technological change and scientific progress.

Creativity related to instuisi, stimulus or stimulation to the brain, experience, openness, unusual ways, ready to accept changes, ideas or ideas, independent, self-confident, ability, exploration, ready to accept challenges, seek opportunities, flexible, persistent, thinking and acting, self-motivated, selective. This is what an entrepreneur needs in developing his business because of challenges and demands on the development of business that continues to grow following the market flow.

Marketing is human activity, sales, fulfillment of needs, desires, maintaining the viability of its business, products, prices, distribution and promotion. Marketing is needed for survival and desired goals can be achieved Based on the explanation above, the purpose of the study is to determine the effect of creativity in marketing both partially and simultaneously to the creative industry.

## **Theoretical study**

### **Creativity**

Creativity (Susanto, 1999) explains as the use of imagination and ingenuity to be able to achieve something or to obtain a unique solution in overcoming problems, creative is not innate but something that can be created and trained through patterns of stimuli or stimuli to the brain, by practicing for creative thinking, the desire and inspiration to make and create something becomes very open so that it can produce something new and innovative.

According to Munandar in Suryobroto (2009) Creativity is a way of thinking creatively and diverging based on the data and information available, which will determine the number of possible answers to a problem, the emphasis is on the quantity, the right answers and diverse. The more quality answers then show someone's creativity. Creativity is one way to measure the potential and quality of human resources, creativity is in the same order with the potential of other human resources such as intelligence, personality and tenacity.

Deep understanding of creativity (creativity) gives us a strong experience in compiling modules or devices regarding MSMEs. Small business actors (entrepreneurs) have a central role in creating (to create te innovation) something new in carrying out their business, such as: new views on markets, new concepts and ideas in managing businesses, renewal of products and services produced, manufacturing processes that new, new company management and the latest decision-making process.

### **Innovation**

Innovation (Robbins and Coulter, 1999) is a process of translating ideas and transforming them into products and services. Innovation in the general sense is not only limited to products and services. Innovation can be ideas, ways or objects that someone perceives as something new. Innovation is also often used to refer to changes that are perceived as new by the community. several factors driving the emergence of innovation are:

1. Structure variables in entrepreneurship such as structure in the organization, limited human resources possessed, and ways of communicating that occur within the organization.
2. Cultural variables such as ways of accepting ambiguity, attitudes and tolerance for things that are less practical, low control of extremes, tolerance of risks that will arise, tolerance for conflict, focus on results, and an open system.
3. Variable human resources, including high commitment to training and development, the level of job security, and the resources of creative people.

In the context of marketing and entrepreneurship, innovation is associated with the creation of new products or services. New refers to products that are indeed renewable and truly never existed before in the market and new in the sense of something different which is a refinement or improvement of the previous product that consumers have ever encountered in the market. Larsen and Lewis (2007) explained that one important character that must be possessed by business people is their ability to create innovation, because without innovation the company will not last long.

An entrepreneur requires management of innovation in managing ideas from the results of creativity and innovation. Innovation Management is needed because to recognize that fresh ideas must continue to flow as quickly as possible and at all times in anticipation of the development of an increasingly fast, diverse and dynamic world. Even though the idea has been in mind for a long time, this idea can be said as an innovation for others because they just saw or felt it.

### **Entrepreneurship**

The word Entrepreneur comes from French, which is an entrepreneur who has the meaning of starting or implementing. At first the word entrepreneur is often interpreted as a person who stands or works alone and in Indonesia is often interpreted to people who work not in the government sector and entrepreneurs are people who have their own business. To achieve success we often witness the activity of a person or group of people spending money in buying goods and trying to meet their needs, this reality is a picture of the activities of an entrepreneur in his daily activities and efforts carried out without knowing feelings of embarrassment, shame, fear or inferiority to earn income.

Some developing assumptions state that entrepreneurship is a substitute for the term entrepreneur, but there are also some views which state that the term entrepreneur is assumed to be an entrepreneur, whereas for the term entrepreneurship is commonly used as a term of entrepreneurship which ultimately concludes that the term entrepreneur is the same as entrepreneurship. According to Alma (2011) entrepreneurs are an innovator both as individuals who have the instinct for data to see potential and opportunity, have motivation and enthusiasm, ability and mind to be able to conquer slow and lazy ways of thinking. As an entrepreneur taking risks in running your own business is a challenge. Jong and Wenneekers in Hadiyati (2012) explained that an entrepreneur must be able to take the risks and challenges that exist into opportunities to create new innovations in his business.

Druker in Novian (2012) explains that an entrepreneur (entrepreneur) has the nature, character, and characteristics inherent in him who has a strong will to realize innovative ideas into the real world of business and can develop them. Entrepreneurship is someone who is free and has the ability to live independently in carrying out his business activities or business or life. He is free to design, determine management, control all his efforts. Entrepreneurship is a mental and mental attitude that is always active or creative empowered, created, intentional and modest in trying to increase income in its business activities.

### **Marketing**

Marketing is a basic activity that must be carried out by every company, both goods and services company in an effort to maintain the viability of its business. The success of a company in achieving its objectives depends on how much ability and expertise from the marketing field. Marketing activities carried out by business people begin when identifying consumer needs that must be satisfied, choose and determine products that can be produced, determine the price of the product, determine the tricks and ways in the promotion and distribution or sale of these products.

According to Kotler (2009) marketing is human activity directed at fulfilling needs and desires through an exchange process, wherein these activities are interconnected as a unified system. Opinions similar to those expressed by Stanton (2001) that marketing is a picture of an overall system consisting of business activities aimed at planning, pricing, how to promote and activities to distribute goods or services to be able to satisfy consumer needs.

The marketing strategy can be fulfilled by providing a facility called the Marketing Mix. Marketing Mix is the core of the company's marketing system, according to Kotler (2009) Marketing mix is a set of marketing tools used by the company continuously to be able to achieve its marketing goals in the target market. The marketing mix consists of: product, price, distribution and promotion. Hammel and Prahalad (1995) state that the goal of the strategy is not only to imitate competitors' products, processes and methods, but to develop them to create opportunities in the future and exploit them.

### **Small industry**

Micro, Small and Medium Enterprises according to the 2008 Law are as follows:

1. Micro business is a productive business and belongs to a person or individual and/ or business entity that meets the criteria as a Micro Business as stipulated in this Act.
2. Small business is a productive and independent economic enterprise, carried out by individuals or individuals, and or business entities that are not subsidiaries or branches of companies that are owned, controlled and or become part of either directly or indirectly from the business medium or large in nature and meet the criteria of a Small Business as referred to in the Act.
3. Medium Enterprises are productive and independent economic enterprises, carried out by individuals or individuals, and or business entities that are not subsidiaries or branches of companies that are owned, controlled, and or become part of either directly or indirectly from businesses that Small or large business with an average and the amount of net assets and / or annual sales as stipulated in this Law.

### **Creative Industry**

The creative industry is currently being discussed by the public and business people, but by many understanding groups and the concept of developing the creative industry, it is still vague for most people. In principle, the growth and movement of the creative industry comes from creativity and innovation produced by entrepreneurs in producing products or services that can be accepted by the market. The term creative economy was first introduced by Howkins (2001) who was an English filmmaker but often voiced about the creative economy. According to the Howkins definition, Creative Economy is an economic activity where the input and output are original ideas and can be protected by IPR.

Creative economy consists of a broad group of professionals, especially for those who participate and are in the creative industry and can contribute to innovation that has the ability to think spread and get patterns to be able to produce the latest ideas. Therefore the creative economy is often interpreted as a system of transactions from the supply and demand of sour sources from economic activities and creative industries, while the creative industry itself focuses on the creation and exploitation of the intellectual property of someone

### **Research Hypothesis**

Based on the background, previous research and this theoretical basis can form hypotheses, among others: First, Creativity and marketing have an effect simultaneously on the creative industry. Second, creativity has a partial effect on the creative industry. Third, Marketing has a partial effect on the creative industry and, Fourth, Creativity has a dominant influence on the creative industry.

## **METHODOLOGY**

### **Research sites**

The location in this study is the creative industry MSMEs in Gorontalo City with three leading sub-sectors namely: creative fashion industry, culinary creative industry and craft creative industries. The reason for choosing this location is because of the large role of MSMEs in supporting the regional economy, it is one of the regional leading sectors and is one of the regional government programs in the small and medium industry sector.

### **Types of research**

This type of research is expansive research which according to Sugiono (2013) is a method used to obtain data through data collection by distributing questionnaires, tests, interviews and so on. This study also intends to explain the effect of one variable with another variable.

### **Data source**

The data used in this study consisted of primary and secondary data. Primary data is obtained through data collection by means of questionnaires, interviews and field observations to the creative industry SMEs in Gorontalo City. Secondary data was obtained from book reviews, data from Bekraf and data from the Department of Industry and Trade of Gorontalo City.

### **Method of collecting data**

To obtain valid data, in this study using data collection methods as follows: First, spread questionnaires (questionnaires) in the form of questions to obtain research data that must be answered by respondents. Second, conducting interviews (interviews) directly with respondents. Third, observation is to make a direct observation of the object to be studied.

### **Research Population**

The population used in this study are entrepreneurs who are members of the Indonesian Creative Economy Agency (BEKRAF) of Gorontalo City, whose members are 50 creative industries, all of which will serve as samples in this study.

## **RESULTS AND DISCUSSION**

### **1. Overview of Respondents**

Based on data from the results of the questionnaire that have been collected from a total of 50 respondents who are members of the BEKRAF community in Gorontalo City, the profile of all respondents can be described based on education level, initial business capital, age and duration of business.

#### **a. Level of Education**

In general, 23.7% of business actors and business owners are junior high school graduates, 31.4% are high school graduates / equivalent, 21.8% are elementary school graduates and the remaining 23.1% are graduates of universities.

#### **b. Initial Business Capital**

In forming its business, business owners need the capital size with the following range: initial capital of 1-5 million at 42.7%, initial capital of 6-10 million at 35.9%, initial capital of 11-15 million by 11.5% and the remaining initial capital above 15 million at 9.9%.

#### **c. Age**

Entrepreneurs have the following age averages: 10 people aged between 20-29 years, 15 people aged between 30-39 years, 21 people aged between 40-50 years and 4 people aged over 50 years. This shows that many creative industries are carried out at the age of 40-50 years which is a mature age for someone to develop their ideas and business.

#### **d. Duration of business**

From the results of data collection, it shows that the length of time spent by entrepreneurs engaged in the creative industries is: businesses carried out in the span of 1-5 years by 45.6%), business ranges of 6-10 years by 32.1%, business challenges for 10-15 years 13.7% and the remaining 8.6% aged between 15 years and above. This illustrates that the creative industry in Gorontalo City is still very young with a business span of between 1-5 years.

### **2. Research Instrument Testing Results**

#### **a. Validity test**

Validity testing is done to determine whether or not each instrument is valid to be used in the research variable. Based on the results of the analysis of primary data that has been processed, each instrument obtained in this study has validity test results with Sig.correlation  $< \alpha$  (0.5 ) which means that all variables used in this study are valid.

#### **b. Reliability Test**

In this test the research instrument will be tested for the reliability coefficient. Based on the analysis of primary data that has been processed, the test results show Cronbach Alpha values above 0.6. This number can be said that the variables from the results of reliability testing in this study are valid.



### 3. Research Data Analysis

#### Multiple Linear Analysis

The results of data collection obtained from respondents will be processed using SPSS 23.00 for windows application software to find out the results of multiple linear analysis partially and simultaneously from the tested variables. The results of multiple analysis processing are as shown in Table 1 below.

Table. 1 Multiple linear analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	B	Std. Error	Beta		
(Constant)	-67.805	16.583		-5.217	.000
Creativity	.417	.096	.482	3.544	.003
Marketing	.521	.107	.515	4.212	.001

Determinant coefficient (R<sup>2</sup>) : 0.745

Multiple Correlation (R) : 0.771

A = 5%

F count = 36.780

The calculation results using multiple linear analysis (Table 1) show that the influence of the independent variables on the dependent variable is very large, this can be seen in the value of the Determinant Coefficient (R<sup>2</sup>) which is 0.745, where this figure indicates that creativity and marketing have a significant influence the creative industry is 74.5% and for the remaining 26.5% is influenced by other variables not included in the analysis of this study.

At the same time the relationship between the variables of creativity and marketing together has a very strong relationship in supporting the dependent variable in this case is the creative industry. This is indicated by the Multiple Correlation Coefficient value R / multiple correlation of 0.771 where the relationship between these variables is very close because the value of R approaches the number 1. From the above calculation the multiple regression equation can be formulated as follows:

$$Y = -67.805 + 0.417X_1 + 0.521X_2$$

From the above equation, it can be explained as follows:

b<sub>1</sub> = 0.417 is a slope or coefficient from the direction of the creativity variable that influences the creative industry, the coefficient of the regression value (b<sub>1</sub>) is 0.467 and is indicated by a positive value. These results explain that the creative industry will increase with the assumption that the creativity variable has a value equal to zero or both of these variables influence each other constantly.

b<sub>2</sub> = 0.521 is a slope or coefficient of the direction of the marketing variable that influences the creative industry, the coefficient of the regression value (b<sub>2</sub>) is 0.521 and is indicated by a positive value. These results explain that the creative industry will increase if the marketing variable increases with the assumption that the marketing variable has a value equal to zero or both of these variables have a constant influence on each other.

#### 4. Hypothesis testing

In testing this hypothesis it will be done in 3 steps as follows:

The first step is the F Test (F-test) which aims to determine whether there is an influence shown by the independent variables simultaneously on the dependent variable. The F-test is done by means of a comparison between the significance values of the alpha (α) value. How to know the effect of independent variables simultaneously on the dependent variable as illustrated in table 2 is through a comparison through the sig value. F with the level of significance (α).

Table 2. F Test Result Analysis

	Significance	Description
36.780	0.000	Significant

Based on the results of the analysis on the F test in table 2 where the significance value is 0.000 and it is obtained that the value of significance F is smaller than the value of α. Then the results of this analysis indicate that the variables of creativity and marketing simultaneously have a significant effect on the creative industry. This is in line with the opinion of Utaminingsih (2016) that market orientation, innovation and creativity in marketing significantly influence the marketing performance of rattan handicraft SMEs in Teluk Wetan Village,

The second and third step is to test to determine the effect of each independent variable (creativity and marketing) has a partial influence on the dependent variable (creative industry), to know this, a t-test will be conducted in two directions (2-tail test) by comparing the significance value with the value of α, the value of the degree of freedom of 95% (α = 5%). To find out the results of the t test in full, it is presented in.

Table 3. Results of t test analysis

Variable	B	Value of F <sub>Count</sub>	Significance	Description
Creativity	0.417	3.544	.003	Significant
Marketing	0.521	4.212	.001	Significant

Based on the results of the t test in table 3 the results of the regression analysis are partially explained that the variable creativity (X<sub>1</sub>) shows that the significance value of 0.003 is smaller than the value of α (5%). These results indicate that there is a significant influence between the variables of creativity (X<sub>1</sub>) on the creative industry. The assumption is that the creativity variable will have a constant influence on the creative industry variables. With this result, it can be explained that creativity must be owned by every business actor, this is in line with the Istifadah and Tjakara research (2017) that the development of the creative economy depends on the quantity and quality of its human resources. Human resources must be creative and innovative because they are the foundation of the creative economy. HR as an agent of the creative economy is required to have high creativity and innovation, discipline, have technological skills, be responsive to the market, and are always ready to face the challenges of the domestic and international markets.

The results of the t test for the marketing variable (X<sub>2</sub>) from the results of the regression analysis indicate that the significance value of the marketing variable (X<sub>2</sub>) is 0.001 or smaller than the value of α (5%). These results indicate that there is a significant influence between the marketing variables (X<sub>2</sub>) on the creative industry. The assumption is that marketing variables have a constant influence on the creative industry. This simply illustrates that a business person / entrepreneur must have a clear marketing target in advancing his business, the results of a study conducted by Harini et al. (2017) that entrepreneurial marketing has a positive but not significant effect on the performance of MSMEs but by utilizing e-commerce technology the marketing mix actually has a positive and significant effect on the performance of MSMEs

To find out the magnitude of the influence of the two independent variables (creativity and marketing) can be seen in the regression coefficient magnitude (table 3), where the results indicate that the coefficient of the marketing regression value is 52.1% greater than the creativity regression coefficient 41.7% . These results illustrate that the marketing variable has more influence on the creative industry in Gorontalo City.

### CONCLUSIONS

1. Independent variables (creativity and marketing) have a partial effect on the dependent variable (creative industry).
2. The results of the regression analysis indicate that there is a significant influence between the variables of creativity (X1) of 41.7% and the marketing variable (X2) on the amount of 52.1% of the creative industry
3. Based on the results of the analysis and testing of the regression coefficients carried out shows that the marketing variable has a greater influence of 52.1% when compared to the 41.7% creativity variable towards the creative industry.

### SUGGESTION

1. Support and attention from the local government is very much needed by the MSMEs in the creative industries, the creativity and marketing that will be carried out by these business actors will run effectively and well if they have supporting and clear rules from the government.
2. Ease in providing capital loans from banks. The difficulty that is often experienced by MSMEs is the limited capital, the ease and relief of the banks in providing soft loans to entrepreneurs in this sector will help the business progress of entrepreneurs.

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