

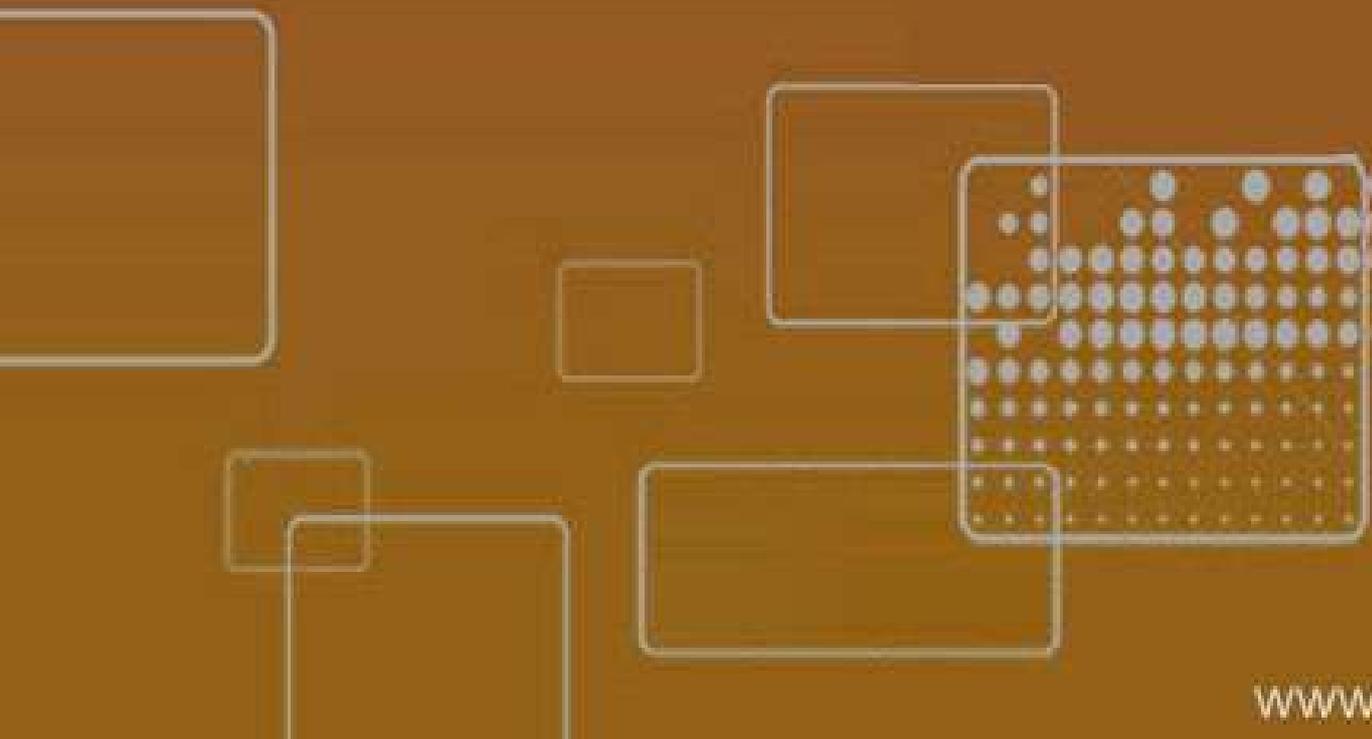
ISSN 2277-8616

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e-publication, Volume 8, Issue 6

June 2019 Edition

ISSN 2277-8616



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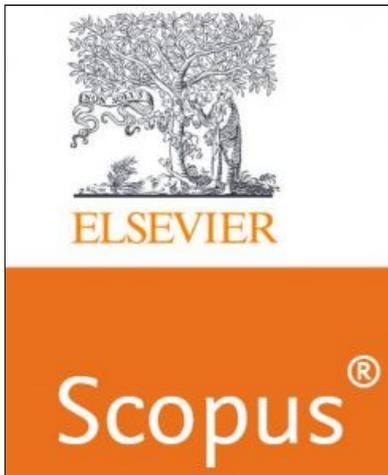
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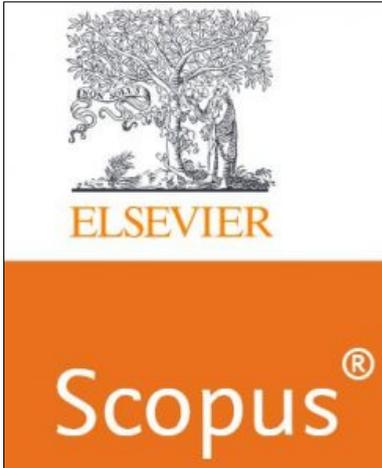
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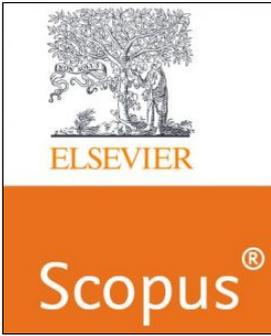
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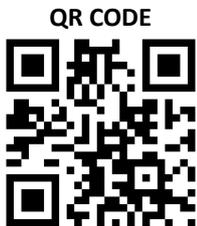
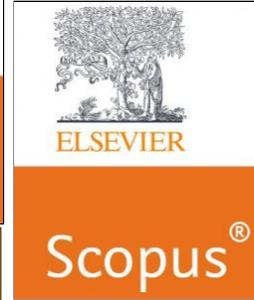
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Smart Air Conditioning

Nabil Ahmad Moussa

The need for man and his interest in conditioning is due to ancient times. For example, ancients enjoyed drinking cold water without having any kind of ice in their countries by putting water in pottery vessels and leave them on the roofs of their houses at sunset and long nights, Dry desert air vaporizes the water that passes through the pores of pottery vessels and the water inside it becomes cold. The Romans and the Greeks used their slaves to bring the snow from the mountain tops and then store it in huge conical pits in the ground, lined with leaves and covered to use it when needed. Also the great Alexander used this natural ice to cool wine barrels that he offered to his soldiers in every battle they won. Emperor Nero was always offering chilled food at his concerts. Hundreds of slaves were used to store the natural ice in the vaults of his palace. People continued to use natural ice only as a way to cool their drinks for a long time.

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Relationship Marketing, Service Quality, Satisfaction And Customers Loyalty Of Bank Sharia Mandiri Banyuwangi

Dwi Ratnasari, Tatang Ary Gumanti

The purpose of this article is to examine the association between marketing relationships and service quality satisfaction and loyalty of Bank Syariah Mandiri customer in the Banyuwangi district. The samples consist of 150 customers of independent Islamic banks in Banyuwangi district. Samples were chosen by accidental sampling, which means that any BSM customer who happens to meet with a researcher can be selected as a sample. Data were analyzed using path analysis. The research findings reveal that relationship marketing has an effect on customer satisfaction and loyalty. Quality of service affects customer satisfaction and loyalty. Customer satisfaction does not fully mediate the influence of relationship marketing and service quality on customer loyalty.

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Viscosity Of Aqueous Solutions Of N-Methyldiethanolamine + Monoethanolamine (MDEA+MEA)

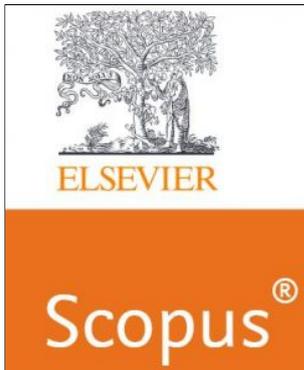
Udara. S. P. R. Arachchige

The blended amine viscosities of N-Methyldiethanolamine and monoethanolamine (MDEA+MEA) are measured for temperature range from 293.15 to 413.15 K. The total amine strength in the solution is maintained at 0.2, 0.3 and 0.4 mass basis. Temperature range 293.15 to 303.15 K is performed with cooling system to achieve the lower stable temperatures during the experiment. Operating pressure is maintained at 1 bar for temperature range 293.15 to 353.15 K and 4.5 bar for higher temperatures. Measured viscosity data is compared with available literature data as well as with modeled data by Grunberg and Nissan model. Earlier viscosity values are available up to 353.15 K for some blended amine concentrations. Therefore, this study is given highly importance for gas absorption process while developing regression models for reacting systems in gas separation. The average absolute deviation between measured viscosity values and viscosity calculated by regression model is around 2.1%. Therefore, measured blended amine viscosities are in good agreement with the predicted viscosity by regression model which is given by Grunberg and Nissan equation.

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Conservatism Under IFRS In Indonesia



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This research examines the effect of IFRS adoption its impact on the implementation of Unconditional and Conditional accounting conservatism prinsipal. The sample in this research is manufacturing listed industries for 2008-2015. By using purposive sampling, we get 32 samples and 256 observasion. The result shows IFRS adoption has negative significant impact on accounting unconditional conservatism. Futhermore, the adoption of IFRS has positive significant impact on conditional conservatism. The implication of the result is that financial report which implement IFRS is found more conservative in conditional consevatism.

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The Study Of Corporate Social Responsibility In Emerging Economies: The Case Of SME's, Tourism, Environment Upgrade Programs In Indonesia

Tirta Nugraha Mursitama, Noerlina, Nilam Budi Wulandari

This research observed the implementation of Corporate Social Responsibility (CSR) program done by multinational company, PT. HM Sampoerna, Tbk who runs the SME's, Tourism, Environment Upgrade Programs (STEP UP) Program. The qualitative descriptive method is being used to prove the hypothesis from primary data which were extracted from interview, secondary data analysis obtained from company's official website, and relevant books and journals. The findings of this study concur that STEP UP Program has successfully addressed three CSR aspects that are people, planet, and profit in maintaining good relations between society and company. Additionally, the study also highlighted the participation of multinational company as one of non-state actors in supporting the government by empowering local economies through infrastructure and environmental improvements.

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Gender Differences, Mathematics Anxiety, And First-Year College Students' Mathematical Achievement

Ellenita G. Manalaysay

Mathematics plays a vital role in science and technology development. Its usefulness cannot be denied but most of the Filipino students perform poorly in the subject. Several factors were identified to influence student's achievement in mathematics and one of the identified factors in the student's attitude towards it. This study examines the influence of gender, mathematics anxiety which has to have attitudinal component, and the interaction of these two variables on the mathematical achievement of the student. 390 freshmen college students were surveyed to determine their anxiety scores when grouped according to grade, future, in-class and assignment factors. Independent sample t-test result showed that no statistically significant difference in the mathematics achievement between the male and female respondents can be concluded. Regression analysis reveals that mathematics anxiety is a predictor of achievement in mathematics and Analysis of covariance result implies that the influence of gender and mathematics anxiety when taken together on the mathematical achievement of the students is not significant.

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Coaxial Antenna Slot Impact On Thermal Effectiveness In Microwave Ablation Therapy

Olumide A. Towoju, Felix A. Ishola, Timilehin Sanni, Rita Soji-Adekunle

Ablation is a minimally invasive procedure used in the treatment of small tumours. Tumour sizes of about 3 cm are now been effectively treated with thermal ablation therapy using either microwave ablation or radiofrequency ablation. The impact of the slot position on a coaxial antenna on the extent of thermal lesion at the tumour site was investigated numerically in this study by varying the slot distance from the antenna tip using COMSOL Multiphysics as the modelling tool. The coaxial antenna size investigated has a diameter of 1.79 mm, with a central conductor diameter of 0.29 mm and Tefzel ETFE as the catheter material. The coaxial antenna performance was optimized at a slot distance of 6 mm from the antenna tip. The total power dissipation density and hence, the degree of thermal lesion created during the procedure is dependent on slot position of the coaxial antenna.

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Modelling Organisations As Electronic Institutions

Gideon Dadik Bibu

In recent times, artificial intelligence and social science have paid closer attention to computational modelling and analysis of organizations. The Multi agent systems community in particular has found organizations to be useful for the design of agent systems in which the regulation of the interaction among autonomous agents is possible. Similarly, social science organizational research has found computational models useful for analysis of structure and dynamics of real organizations. Motivated by this growing interest which is hinged on the importance of computational models for organizations, this paper presents the state of the art approaches to computational models for organizations with emphasis on electronic institutions.

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37-43

Mobile Based Android Application Pharmaceutical Dictionary With Direct Search As Searching Process

Akbar Iskandar, Markus Dwiyanto Tobi Sogen, Jacky Chin, Erwinsyah Satria, Rohman Dijaya

Searching in a dictionary is natural and must be done to facilitate the search for information that is desired, the search process varies and requires a good algorithm so that the search results are also maximum. Direct Search is an algorithm that is used to help the process of finding data that is input by the user so that the information needed by the user can appear correctly. The search process with direct search will match words that are inputted with data in a dictionary in sequence and of course with the application of algorithms the results obtained will be faster than random search.

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44-46

Ethnomathematics: Exploration Of The Muntuk Community

Maryati, Rully Charitas Indra Prahmana

Bamboo handicraft is one of the cultural heritage that is still preserved by the Muntuk community. In making bamboo handicrafts, many use interesting and varied motifs of Anyaman (handicraft). The purpose of this research is to explore the relationship between mathematics and culture, especially in the motif of Anyaman Bambu (bamboo's handicraft). This research used an ethnographic approach which is an empirical and theoretical approach, which aims to obtain a thorough description and analysis of culture based on field research. The result is exploration ethnomathematics in the several motifs of Anyaman Bambu that contains mathematics concept, especially geometric transformation subject.

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47-49

Boric Acid And Hazard Analysis Critical Control Point (HACCP) On Kerupuk To Improve The Indonesian `S Traditional Foods Safety

Anita Dewi Moelyaningrum

Diseases can be caused by consumption of contaminated food such as toxicant. Kerupuk are one of the traditional foods produced by some of the traditional industries in Jember. The objective of this study was to identify the content of borix acid and analyze hazards and determine the critical control points on tofu crackers. This could raise the traditional food safety for consumers. This study was a descriptive study conducted by interview and observation. Boric acid testing was carried out on five samples of kerupuk. Instrument sheets referred to the SNI CAC RCP1-2011. The results indicated that 100% of the samples contained boric acid. The selection of materials, slicing, drying and distribution were the control points while mixing and kneading, steaming, frying and packaging were the critical control point. Boric acid is still used on tofu kerupuk; therefore, the government should immediately provide information and training on sustainable traditional food industry to reduce the incidence of illness and food poisoning in traditional food.

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50-54

Adaptation Of AVEM (Arbeitsbezogenes Vehaltens-Und Erlebensmuster) Test To Measure Work-Related Behavior And Experience Patterns

Hazhira Qudsyi, Fitri Ayu Kusumaningrum, Dian Sari Utami, Arief Fahmi, Nyda Afsari, Mirza Muchammad Iqbal, Marcus Stueck

People who work will face a variety of stressful situations and pressures. Stress experienced by workers can be caused by various factors, generally caused by external factors and internal factors of the individual itself. Existing studies tend to focus on the influence of external factors on stress conditions experienced by workers, such as environment and work situation. Meanwhile, studies focusing

on internal factors as a cause of worker stress, are still not widely practiced, particularly with regard to experience patterns and work-related behavior. Measurements used to measure experience patterns and work-related behavior are also newly adapted in some countries, using the AVEM test. Considering benefits from measuring individual experience patterns and work-related behavior through the AVEM test, researchers are interested in adapting AVEM tests into Bahasa Indonesia. Respondents in this study were 357 respondents, with various educational and work background. The data were collected at various locations in Yogyakarta Province. Main instrument used in this study is a work-related behavior and experience patterns test known as *Arbeitsbezogenes Verhalten-Und Erlebensmuster (AVEM Test)*. In addition, this study also used other measurements to be correlated as part of instruments validation, namely *Sense of Coherence Scale (SOC)*, *Parental Stress Scale (PSS)*, and *Family Hardiness Index (FHI)*. Based on results and discussion, it can be concluded that AVEM test in Bahasa Indonesia and among Indonesian produce items on AVEM test is divided into 2 main dimensions, namely *Engagement dimension* and *Resilience dimension*. Meanwhile, *Emotion dimension* that exists as its own dimension on English version of AVEM test goes into *Engagement dimension*. And referring to the results of reliability estimates, it can be concluded that Indonesia version of AVEM test is reliable for use on Indonesian. In addition, referring to the results of previous analysis, it can be concluded that Indonesia version of AVEM test can be used as a tool to measure experience patterns and work-related behavior among people of Indonesia.

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62-69

Interactive Online And Offline Games: Their Influence To The Mathematical Aptitude Of Secondary School Learners

Marchie V. Penaso, Derren N. Gaylo

Playing interactive games, both online and offline, might pose risks leading to poor academic achievement. This alarmed parents and school authorities especially that the difference between game engagement and addiction has not been fully understood. The present study determined the influence of interactive games on the mathematical aptitude of secondary school learners. It was conducted at Halapitan National High School, Division of Bukidnon, for the school year 2018-2019, with 208 respondents from Grade 10 and 11 learners. The study utilized descriptive-comparative research design, while employing researcher-made survey questionnaire and National Career Assessment Examination results as main data gathering tools. The appropriate statistical techniques like frequency, percentage, mean, standard deviation, two-way analysis of variance (ANOVA) were used to treat the data. Results revealed that the mathematical aptitude of the respondents was at Low Average, showing that the learners showed little knowledge and understanding in the mathematical concepts tested. Moreover, the extent of exposure of the learners in the study is Slightly Exposed to the different levels of interactive games. Further, there is no significant difference in the mathematical aptitude of secondary school learners when grouped according to the levels of interactivity of games they play and their extent of exposure.

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70-77

Public Servants Characteristics And Their Perception On Motivation And Performance

A.T. Hendrawijaya, N. Imsiyah, D.T. Indrianti

Motivation has always been argued to be the essential factor in the management of personnel. It is also known as a crucial variable in producing a high performance of an organization. The relationship between motivation and performance has been widely examined in previous studies. However, it seems that motivation has become one of the big questions in government organization, in particular among developing countries. Thus, understanding how employees in the public sector assess the motivation and performance is interesting. This study aims to examine the influence of two employees' characteristics on their perception of motivation and performance. It examines a sample of 96 employees assigned specifically to deal with the prevention of Dengue Fever in Jember District Health Office, East Java Province, Indonesia. A univariate test is performed to test the hypotheses. Results show that age and gender are not related to both the work motivation and performance of employees.

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78-81

The Effect Of Minimum Wage On Employment, Economic Growth And Social Welfare In The Ex Besuki Residency Of East Java-Indonesia

Sunarsih, Mohammad Saleh, Syamsul Huda, I Wayan Subagiarta

The development of human resources is part of the problem of economic development which aims to expand employment and improve the welfare of the community, especially in the regions so that the planning must be comprehensive. The most important resource of every organization and nation in a wider scope is human. Organizations that want to grow and develop must begin with developing their human resources. Human resources that function as labor must be able to do work to produce goods and / or services to fulfil both their own needs and the community's just to be able to gain their income. The research aims to analyze and examine the influence of the minimum wage on economic growth; analyze and examine the influence of the minimum wage on the welfare of the community in the ex-Residency of Besuki East Java, Indonesia. Human development means positive growth and changes in the level of welfare. This must occur in all aspects of life like economic, social, political, cultural and environmental aspects, therefore the main focus of human development lies in humans and their welfare (BPS, 2015). The results of the study concludes that the minimum wage had a significant effect on employment, economic growth and community welfare in the Ex Besuki Residency of East Java Indonesia.

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82-89

Effects Of Local Wisdom In The Form Of Planting Prayer In The Regional Development On Rice Paddy Farmers Revenue In Indonesia

Hasman Hasyim, Iskandar Muda

The research objective is to analyze the effects of local wisdom in the form of planting prayer in the regional development directly and through agribusiness main activities affecting the revenue of rice paddy farmers. This research was conducted using SEM (Structural Equation Modeling) to see the effects and factor analysis. The tools used were AMOS (Analysis of Moment Structure) 19. The results show that the effects of local wisdom in the form of planting prayer in the regional development directly on the increase in revenues have significant positive value, and through the agribusiness main activities in the regional development they have significant positive value.

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90-98

It's True The Effectiveness Of The Fertilizer Subsidy Policy And Its Effects On The Income Of The Farmers ? (Case In Indonesia)

Rahmanta, Andri Prasetyo, Iskandar Muda

The purpose of this research is to analyse the effectiveness of the fertilizer subsidy policy with analyse the influence the effectiveness of the fertilizer subsidy policy against rice farmer income in Melati II Villages, Perbaungan District, Serdang Bedagai Regency, North Sumatera, Indonesia. The use a research method be used is primary data using questionnaires to farmers. The research method of used is descriptive method and multiple regression analysis. The results showed that the effectiveness of the fertilizer subsidy policy is measured based on five indicators of accuracy namely, right price, right amount, right time, right place and right kind of earn a percentage accuracy of 47,16%. Multiple linear regression analysis results, indicating that the variable expansive land, labor, the price of the grain real effect and positive income against rice. Whereas the effectiveness of the fertilizer subsidy policy provide a positive influence but is not a real against rice farmer income.

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99-102

Development Of Embroidery Motif Designs Using The Principle Theory Of Gestalt

Dwi Cahyadi, Etwin Fibriane Suprpto, Andi Farid Hidayanto

The typical embroidery in the province of East Kalimantan Indonesia, known as sulam tumpar has a variety of patterns with bright colors. Sulam tumpar is a decoration made on cloth or other materials with sewing needles and yarns. The various embroidery motif that are availabel today, the shape of flower motif is more often used in craft and fashion products. The need for new ideas for embroidery motif by taking abstract forms from local animal will add new creations to the local motif of the area. The problem in this study is how to develop embroidery motif through the design process development model of Cross which combined with the figure and ground principle of gestalt theory. The purpose and benefit of this research is to design and develop new embroidery motif by applying the gestalt theory so that existing new motif will have two perceptual forms for those who look to be more interesting. The results of this study are the existence of new embroidery motif by displaying images of small egrets which are birds commonly found in the East Kalimantan province.

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103-106

The Competency Of Agriculture Extension Supervisor Based On Farmer's Perspectives

Is Eka Herawati, Adhi Susilo

Agricultural extension agent as a coaching counselor in Lebak has an important and strategic position to support agriculture, fishery and forestry. To support his role, an agricultural extension agent should have competency to nurture farmers. This study describes the responsibility and function of agricultural trainer and the farmer characteristic in Lebak district. Data analyzed using SPSS and Lisrel. The result of the study shows that the responsibility and function of agriculture trainer can help the head of the village and the official to escort and assist farmers and business person in the agricultural area. Meanwhile, the characteristic of the farmer as respondents is in the age range 25-65 with the status of the farmers are a land tenant (55%), land owner (41%). Respondents' educational background is primary school (54%). Based on data analysis substructure 1 using Lisrel Student 8.54, it can be interpreted that the determinant coefficient reached 0,51 or 51%. This showed the variability of the variable of agricultural trainer from a farmer perspective is 51%. The existence of agricultural trainer di Lebak in doing the responsibility and function supports the agriculture counselor. From the competency in doing the role, the agricultural trainer has done the job very well, in the case for a few of them are still low. A few of those who are still less efficient in doing responsibility need to improve by giving the government's attention.

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107-113

Canteen Service Quality And Student Satisfaction

Norman R. Galabo, EdD, FRIEdr

The purpose of the study was to determine the relationship between canteen service quality and student satisfaction at Mintal Comprehensive High School, Mintal, Tugbok, Davao City, Philippines. The research used a non-experimental descriptive correlational research with a total of 200 Grade 11 respondents who were randomly selected. The statistical tools used were the mean, Pearson Product-Moment Correlation (Pearson r) and regression analysis. The indicators of canteen service quality were tangibility, assurance, reliability, responsiveness, and empathy. Student satisfaction was based on the canteen ambiance, cleanliness, facilities, features, and prices. The findings revealed that canteen service quality as perceived by the students is moderately satisfactory and the student satisfaction was moderate. Further, canteen service quality is associated with student satisfaction wherein tangibility, reliability, responsiveness, and empathy showed strong positive correlation. Besides, tangibility, responsiveness, and empathy were the domains of canteen service quality that contribute significantly to student satisfaction. Hence, the school canteen managers are encouraged to improve their service quality provided to students based on the three predictors of student satisfaction.

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114-126

Metric Chromatic Number Of Unicyclic Graphs

R. Alfarisi, A.I. Kristiana, E.R.Albirri, R. Adawiyah, Dafik

All graphs in this paper are nontrivial and connected graph. Let $f: V(G) \rightarrow \{1, 2, \dots, k\}$ be a vertex coloring of a graph G where two adjacent vertices may be colored the same color. Consider the color classes $\Pi = \{C_1, C_2, \dots, C_k\}$. For a vertex v of G , the representation color of v is the k -vector $r(v|\Pi) = (d(v, C_1), d(v, C_2), \dots, d(v, C_k))$, where $d(v, C_i) = \min\{d(v, c); c \in C_i\}$. If $r(u|\Pi) \neq r(v|\Pi)$ for every two adjacent vertices u and v of G , then f is a metric coloring of G . The minimum k for which G has a metric k -coloring is called the metric chromatic number of G and is denoted by $\mu(G)$. The metric chromatic numbers of unicyclic graphs namely tadpole graphs, cycle with m -pendants, sun graphs, cycle with two pendants, subdivision of sun graphs.

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127-130

Expert System Design As A Quality Control Efforts In The Packaging Process Tea Rgb 220 Ml Package Bottle In Pt. Sinar Sosro Kpb Deli Serdang

Isra Mouludi, Kasman Rukun, Nurhasan Syah, Seprina Hafridana, Maria Isfus Senjawati, B.Herawan Hayadi

PT. Sinar Sosro is the first pioneer of ready-to-drink tea products in Indonesia and has high enough consumers among the community. The problem that occurs is the number of defective products in the 220 ml glass bottle packaging sosro tea products during August 2017 in terms of packaging, such as less tea volume in the process filler and the bottle cap is not installed properly in the

process crowner so that every day there are hundreds of defective products not worthy of being marketed. The purpose of this study is to analyze the factors that cause product defects, provide proposed improvements that must be made to reduce the occurrence of defective products by designing expert systems tailored to the causes of defects that occur. The technique of collecting data is done through direct observation, interviews and literature studies. Data analysis using control charts, Pareto diagrams, and fishbone diagrams. The results of the observation show that there are 4 factors that cause disability, namely machine, human, material and environmental factors, then expert system design is done using software WinExsys, the role of expert systems designed can be used as a tool to support decision making at each management level.

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131-133

Feasibility Analysis For Local Industry Of Gonggong Crackers In Batam

M. Ansyar Bora, Jalius Jama, syahril, Albertus Laurensius Setyabudhi, Ari Susanti

This research want to know feasibility for local industry of gonggong crackers in Batam. There is one objective and two hypotheses from this research. The feasibility was reviewed with eight aspect and one of them is financial aspect. This research use questioner and spread to 284 sample from Batam residents. To prove the feasibility in the financial aspect we use payback period (PP), net present velue (NPV), profitability index (PI), and internal rate of return (IRR). The result from this research in financial aspect is feasible. So we suggest to continue this local industry and expand to International Market.

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134-136

Development Of Batik Toba Gorga Simeol-Meol Of Design On Photoshop

Netty Juliana, Selamat Triono, Fahmi Rizal, B.Herawan Hayadi

This community service aims to create new creations of gorga simeol-meol carvings on Toba batik craft. Batik Toba simeol-meol is a brainchild of stylation of swollen tendrils. So that Gorga simeol-meol symbolizes joy, joy for the Toba people. Gorga simeol-meol was developed in the design of Toba batik using computer media in Photoshop. The process of practice activities to design batik Toba can provide special expertise to students in the lecture of craft arts. So that students can produce traditional products of high value and elegance. Cultural preservation Batik Toba is well maintained. The design of the development of Batik Toba gorga simeol-meol Batik can be said to be successful if students in Unimed fashion study program master several stages, namely: 1) Application of art elements to Batik Toba design, 2) application of design principles to Batik Toba , 3) mastery use of tools in the Adobe Photoshop program in designing Batik Toba skillfully, and 4) Students are able to express their ideas in the form of creative and innovative visual images. The skills and knowledge obtained by students in learning the practice of batik craft directly prepare the skills of students entering the workforce, namely the world of creative industries, where the development of the world of batik craft industry is increasingly rapid in the field of technology and social economy.

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137-140

Implementation Of Computer Damage Diagnosis By Expert System Based Using Forward Chaining And Certainty Factor Methods

Yaslinda Lizar, Jalius Jama, Fahmi Rizal, Asriwag Guci, Tomi Loveri, Lita Sari Muchlis

The computer damage diagnosis expert system is used by the user to help to detect the damage faster without spending a lot of money and a long time if given to a computer service provider. People who do not understand the problem of computer damage always feel panic if there is a problem with their computer, so it is more likely to be resigned to waiting for the results of repairs made by technicians in computer service, so researcher developed an expert system to diagnose computer damage using Android-based the method of forward chaining and certainty factor. The method used is prototype (prototyping), while the tools used in conducting analysis and design are unified modeling systems (UML). The results of this study are expert systems for detecting hardware damage on Android-based computers and laptops that use the method of forward chaining in the work process and to prove the facts with the method of certainty factor.

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141-144

Project-Based Entrepreneurship Education Model In Vocational High Schools

The purpose of this study was to see how the application of a project-based learning model (PjBL) on entrepreneurship subjects in the xii class of vocational high school level. This application was carried out in two different departments, namely the hospitality department and the accounting department but still in the same educational institution, namely SMK Negeri 2 Batam. This research is an experimental research in which the comparison of the conditions of learning outcomes with conventional systems with the PjBL learning system. The syntax used in this study consisted of: (1) learning preparation, (2) lucrative project design, (3) unite all the materials, (4) build the project, (5) activity activity & progress of the project, (6) show the final project. From the results of the study it can be seen that there was an increase in student learning outcomes and high learning motivation at each meeting.

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145-147

Development Of Student Handbook In Learning Electrical Lighting Installation In Vocational School Of Electrical Engineering Department Based On Curriculum Of 2013

Syahril, Suparno, Nurhasan Syah, Hermansyah, B. Herawan Hayadi

This study originated from a preliminary study at Vocational High School 5 Padang which found a number of facts which concluded that Installation Learning was not yet optimally measured by validation, effectiveness and practicality. This study uses Research and Development (R & D) with the procedure Borg and Gall which aims to create student Guide Book for Contextual Project Based Learning. Qualitative data was collected through observation and interviews, while quantitative data was collected through questionnaires, both data collection tools were validated by experts in FGD (Focus Group Discussion) attended by promoters, professors and senior lecturers of the Postgraduate Program of the Faculty of Engineering on Vocational Field Representation. Research, Development and Optional Refraction, from the FGD obtained research data collection instruments, a set of experiments was carried out to test whether the developed Student Guide Book was valid, effective and practical in the learning of electric lighting installations. A number of students were included in this study with an experimental class and a control class formed. In the experimental class the treatment was given using the student Guide Book of Contextual Project Based Learning while in the control class it was not, with the conclusion that using CPjBL the learning outcomes were superior to conventional ones. The learning outcomes of the two classes were compared with the T-test, the results of data processing showed that there were significant differences between the experimental class and the control class. Based on the results of T-test data processing, it is concluded that students with the treatment of student Guide Book of Contextual Project Based Learning in Learning of Electric lighting Installation is better than the control class that is not given the treatment. The implications of this study need to be an alternative development of learning in Installation subjects in electric lighting and renewal in the student manual, then in improving Installation learning in electric lighting and other lessons, innovation in learning is needed, so the CPjBL student manual is more practical than the conventional one.

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148-151

Application Of Research Based Learning (RBL) Model In Subject Of Electric Power System Protection

Liliana, Nizwardi Jalinus, Krismadinata, B. Herawan Hayadi

This study aims to assess the effectiveness of student learning in the Electric Power System Protection subject after the use of the Research Based Learning model in learning. The learning model should be adapted to current and future learning needs. Achieving student competencies in learning in each subject, one of which is influenced by the learning model used. Among the learning models that are developing at this time which bring students to develop their abilities in mastering learning material is the Research Based Learning model. This model is a model that focuses on students as a learning resource (SCL) that integrates research into learning. This research in its implementation uses a Research Based Learning model developed by Sota and Karl.P, (2017). This model carries a nine-step model that is applied in learning in the subject of Electric Power System Protection. After using the Research Based Learning model in learning, an increase in student learning outcomes is measured in the assessment of effectiveness through formative evaluation and summative evaluation.

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152-155

Work Productivity Of Construction Industry Employees In Two Cross Cultures

Riki Adriadi, Ganefri, Fahmi Rizal, Tifani Ratu Firdaus, Feny Purwani

In recent era of digitalization, all fields of science are engaged in using sophisticated technology to deliver fast and straightforward work. In the completion of construction projects we often encounter complex problems. In general, the factors that affect employee productivity are (a) Low motivation levels of employees due to differences in two cultures (b) unresolved conflicts (c) The low level of entrepreneurial spirit of employees in exploiting the opportunities that exist (d) The failure of the company in regulating Human Resources (HR), (e) The absence of leadership characters between two employee cultures (d) The failure of the company to utilize advanced technology currently related to settlement effective and efficient work. Weaknesses in considering labor productivity are caused by productivity problems in very complex projects and the presence of internal and external factors that influence them. In this case, one construction project has two different ethnicities and cultures, namely Minang culture and Sundanese culture, based on field observations. There are several solutions to overcome them, namely (1) Employee Entrepreneurship Productivity, (2) Work Motivation, (3) Leadership, (4) Human Resources and (5) Work Information Technology. The method used is the MANOVA Statistics (Multivariate of Variant analysis) and realized in SEM (Structural equations Modeling). The results obtained are a model that is effective in increasing employee productivity in the construction industry.

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156-158

Analysis Of 3 Kg LPG Determination Route Decision Using Nearest Neighbor Algorithm And Local Search Method

Mitha Istia Mulyadewi, Handriyono, Fiona Niska Dinda Nadia

These the problem of product distribution has to be overcome by concerning on economic value in it. The determination of 3 kg LPG (Liquified Petroleum Gas) distribution route which is only based on the experience of driver and kernet of delivery vehicle will give impact improper route determination. Thus, it causes waste of time, energy and costs. The determination strategy of distribution route plays an important role to achieve the aim of time effectiveness and cost efficiency. The methods of nearest neighbor and local search can become the alternative to solve the problem of 3 kg LPG route determination. This method used the approach of distribution location determination which has the nearest distance. Distribution route based on analysis result showed in 1 week period, there was minimization of mileage of 146.04 Km. The completion time was 230.31 minutes faster and cost savings of IDR 118.657,-. The application of nearest neighbor and local search methods are good alternative from economic aspect in determining the determination strategy of 3 Kg LPG route.

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159-162

Transformational Leadership Style, Organizational Culture, Locus Of Control And Its Influence On The Organizational Citizenship Of Behavior Employees: State Institute Of Islamic Studies Of Jember

Siti Masrohatin, Diana Sulianti K. Tobing

Organization citizenship behaviour (OCB) becomes an important issue in the establishment of attitude and employee behaviour in the workplace which is required to work over the formal aspect of work. Previously, organizational citizenship behaviour (OCB) research used to workforce and organization's member that have heterogeneous culture as a research object. This research strived to reveal: Were the dimension transformational leadership style, organizational culture, and locus of control will be given effect on employees organizational citizenship behaviour (OCB) The religious colleges which have a homogenous background. It is absolutely, the environment and its organization behaviour covered by religiosity spirit.

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163-171

Effect Of Concentration And Duration Of Colchicine Treatment To Garlic (Allium Sativum L.) Cv. Doulu

Gabriella Marry Ayu, Elimasni, Isnaini Nurwahyuni

Productivity of Doulu's garlic is still considered low and has not yet been able to fulfill local needs, especially in North Sumatera. Meanwhile, the public interest of local garlic especially variety from Doulu, was low due to the small size and high cost compared with imported garlic. The aim of this study was to determine the effect of concentration and duration of colchicine treatment towards production of Doulu garlic. Experimental design used in this study was randomized block design two factorials with 20 combinations and three replications. The first factor was concentration of colchicine (D): 0% (D0), 0.1% (D1), 0.2% (D2), and 0.3% (D3). The second factor was immersion times: 0 (T0), 6 (T1), 12 (T2), 18 (T3), 24 (T4) hr. The results showed that all treatment did not affect on root length, number of roots, but contributed to

stomatal densities. Concentration of 0.3% colchicine without immersion time showed the highest results on stomatal densities.

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172-175

Emotion Classification Based On Public Opinion Analysis On Online News

Ciptadi, Abba Suganda Girsang

Technological developments, especially on social media, allow online news readers to channel their opinions in the form of comments and reactions. Opinions given by readers are a great source of data that can be processed for the emotions of readers. This paper intends to classify emotions by comparing two classifiers, namely Naive Bayes and Logistic Regression. The dataset used in this study was taken from Indonesian online news detik.com which has eight class emotion. This study has several experimental scenarios that is a combination of total comment and ratio. Because of the imbalance class data, this study uses the SMOTE oversampling technique. This study also shows that the use of SMOTE oversampling can improve classifier performance. The results of this study show that the accuracy achieved 55.43% for the Naive Bayes classifier and 65.95% for the Logistic Regression classifier after SMOTE. It can increase the accuracy up to 35%.

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176-182

Analysis Phytochemical Compounds Of Ethyl Acetate Extract Garlic Tree, Scorodocarpus Borneensis Becc As A Source Of Bioactive Ingredients

Sudrajat Sudrajat, Rudi Kartika, Wawan Kustiawan

This study aims to identify bioactive compounds contained in leaf extracts of garlic tree, Scorodocarpus borneensis as tropical forest trees that have the potential source of chemical natural ingredients. The GC-MS analysis of the plant extracts was performed using GC-MS a Shimadzu QP2010 GC / MS apparatus (Shimadzu Corp., Japan) and mass spectra of compounds found in the extracted data in the library of the National Institute of Standards and Technology (NIST). The results of the analysis were identified as much as the six compounds were presented. The results showed a major component with a maximum percentage (54.42%) of phytol, followed by Nonylphenol isomer (9.07%), Nonylphenol (5.93%, 6-octadecanoic acid, methyl ester (7.88%), 1,2 Benzene-dicarboxylic acid (5.47%) Based on this analysis it can be concluded from the present study that some of the identified phytochemicals could be responsible for the medicinal value or biological activity of the leaves of S.borneensis.

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183-186

Effect Of Accounting Information Systems Quality End-User Satisfaction Based Accounting Software Enterprise Resource Planning Perceived Usefulness As Moderating

Enni Savitri

This study is about the quality of information systems used in the company, according to the needs and capabilities of the end user. So that this system can collaborate to process accounting data into quality information so that it is useful for users of information systems. To measure the quality of information systems is to find out how fast the accounting software system works. The system can processes accounting input data into a financial report. This system is assisted by the ability of the end user. The problem that usually occurs in the use of accounting software packages is the incompatibility of the system with business processes and the information needed by the company. The purpose of this study is to examine the quality effect of accounting information systems and perceived usefulness on end-user satisfaction. The population in this study are the end users of enterprise resources planning in Pekanbaru, Riau Indonesia. The sampling technique used in this study is purposive sampling with a total sample of 50 end users. The primary data was collected using questionnaires. The data was analyzed using a multiple linear regression method. The result of this study showed that the quality of accounting information systems has an effect on end-user satisfaction. Meanwhile, the perceived usefulness has a mediating effect on the influence of quality of accounting information system toward end-user satisfaction.

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187-192

Determination Of Priority Indicators Evaluation Of Lecturer Performance With Multi Criteria Decision Making Approach

Fenny Purwani, Nizwardi Jalinus, Ambiyar, Riki Adriadi, Fenando

This study aims to develop a lecturer performance evaluation model to prioritize indicators that affect the performance of lecturers. This performance evaluation model uses the approach of the Multi Criteria Decision Making (MCDM) with the method of Analytic Network Process (ANP). Score indicators of lecturer performance evaluation are based on a pairwise comparison matrix. Data are obtained from 5 experts in the field of organizational behavior that provides an assessment or influence score between indicators. The results of this study show that this model is able to take into account the relationship between criteria and sub-criteria of the factors that influence the performance of lecturers, which can be used to support decision making based on the priorities of lecturer performance evaluation indicators. Five priority indicators that affect lecturer performance are; First priority is an indicator of the need for achievement, the second is a professional indicator, the third is an indicator of learning, the fourth is pedagogy, and the fifth is an indicator of the use of information technology, with a rate agreement between high experts at $W = 0.649$.

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193-195

Carrier Liabilities For Passenger Baggage Handover In Air Transport As A Manifestation Of Legal Protection During The Liability Period (A Case Study At East Nusa Tenggara Airport At West And East Sumba: Tambolaka-Umbu Mehang Kunda)

Elfrida Ratnawati

A carrier is liable for passenger baggage, including for the handover, because the carrier is obliged to maintain safety and security of the passenger during its liability period. Based on this description, two issues will be discussed in this paper: a) What is the proper and correct arrangement for luggage handover belonging to passengers? And b) What is the liability of the carrier for passenger baggage during its liability period at Tambolaka and Umbu Mehang Kunda airports? Also, c) What is the legal protection for passengers during the carrier's liability period? To answer these issues, the Author used Normative research method supported by secondary and primary data, then analyzed descriptively. The study confirms that the carrier is responsible for both baggage and the passengers during its liability period as a carrier, up to the destination as stated on the passenger's ticket or where the passenger ends air transport, where the passenger has the right to receive his/her baggage. Area for cargo delivery an airport warehouse, while the baggage handover is done inside an airport building where passengers end their air transport. Handover of luggage belonging to passengers at Tambolaka and Umbu Mehang Kunda Airports is carried out in a large area of the apron, where passengers queue in the middle of the airplane parking space to wait for their baggage. Such conduct is highly inappropriate and against applicable regulations. Legal protection for these passengers is inexistent, even though the carrier must assure passenger safety during its liability period.

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196-200

The Influence Of Bank Indonesia Interest Rate, Coupon Bonds, Maturity Time Of Bonds, And Net Profit Margin On Bonds Prices

Hari Gursida, Abdul Rahmat

This study aims to examine the effect of Bank Indonesia interest rates, bond coupons, bond maturity, and issuer net profit margin on the bonds price. It was conducted in the Indonesia Bond Pricing Agency (IBPA) during a period cover 2012-2016. The method used in this research is multiple linear regression analysis. The results of partial testing showed that Bank Indonesia interest rates have a negative influence on bond prices; The Bank Indonesia (BI) rate has a significant effect on bond prices; Bond coupons have a positive influence on bond prices. Bond coupons have a significant effect on Bond Prices. The finding show that the time maturity of Bond affects negatively the bond prices, but bond coupons do not have a significant effect on Bond Prices, and Net Profit Margin has a positive influence on bond prices. Profit Margin does not have a significant effect on bond prices. The finding of the study show that in terms of parameter marks, the influence of the independent variable is in accordance with the hypothesis, and it turns out that the BI Rate and coupon bonds have relatively more dominant influences

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201-207

eGovernment Transformation: Literature Review

Zaied Shouran, Tri kuntoro Priyambodo, Nur Rokhman

eGovernment ends up one of the key components for the advancement of the nation. Previous studies on eGovernment indicate that most governments are performing well in eGovernment implementation. However, eGovernment make the services from the government more effective and efficient through the better ICT capabilities rather the conventional method. The use of ICT make the

public access faster and the public can get better information through the digital platform via internet. Currently, there is a necessity to focus on eGovernment Transformation, Organization Transformation, Public e-service, Public value, Challenges and Obstacles that face government to transform. The findings showed that each organizational element, that consists of process, people, culture and structure can identified well through the technology that induced organizational transformation in public sector. The changes of attribute can be identified by comprehensive review from general literature review of organizational point of view, the literature in the field of organization and information systems, and eGovernment literature. The new idea is about the discussion of effect challenges and obstacles to eGovernment transformation.

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208-212

The Model Of Grade Point Average Academic Of Timor-Leste S In Indonesia

Augusto da Costa, Fattah Hanurawan, Adi Atmoko, Imanuel Hitipeuw

The Purpose of this to test the major and minor hypothesis of grade point average (GPA) model and to describe the impacts within the constructs. This applied causal correlational in the quantitative approach. The population consisted of 5.000 Timorese s in Indonesia at 2016/2017 academic year. This study utilized multistage cluster random sampling to determine 360 samples, from 48 universities and 42 faculties in Indonesia. Compelling data used the scale of academic behavior, self-regulated learning, intrinsic learning motivation, extrinsic learning motivation, and self-adjustment. The GPA was taken from the first semester to previous one. Moreover, researcher arranged the instrument through expertise and field tested. Exploratory and confirmatory factor analysis utilized to test validity and reliability of instrument. Cronbach alpha > 0.734 and KMO > 0.874. This instrument consisted of 40 items out of 78 items. Furthermore, to analysis, the data exerted Structural Equation Modeling. The outcome of the analysis empirical model validated the theoretical. The within construct certified the positive, significant, and direct impact of academic behavior, self-regulated learning, intrinsic learning motivation, and extrinsic learning motivation and self-adjustment on GPA and through academic behavior. This provided empirical data for scholars and universities to foster mentioning factors. It facilitated scholars to elevate knowledge for reaching GPA so graduate on time.

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213-216

Lms Edmodo To Improve Student Understanding Of The Arithmetic Concept In Microsoft Excel

Amril, Z.Mawardi Effendi, Indrati Kusumaningrum, B. Herawan Hayadi

This study aims to design and implement LMS Edmodo on Microsoft Excel applications specifically for arithmetic functions in the first semester students of AMIK Kosgoro Solok. The research and development phase refers to the ADDIE development model. The research instrument consisted of 3 instruments: (1) validity instruments (2) practicality instruments, and (3) instruments of effectiveness in the form of student learning outcomes. The results of data analysis showed that the validity of LMS Edmodo was 0.82 (valid). The activity of LMS Edmodo from the lecturer response was 86.43 (high) and the student response was 84.97 (high). The effectiveness of LMS Edmodo based on normalized gain analysis is 0.73 (very high category). based on the results of the study it can be concluded that the developed LMS Edmodo is valid, practical and improves student learning outcomes.

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220-222

Human Resources Management Cycle And Sales

Azhar Susanto, Meiryani

Business processes have evolved over time. The development has triggered an increase in demand for human resources by a company. As a result, the level of complexity of human resource management in a company is increasing. The most crucial system in this activity is related to payroll. The payroll activity consists of three stages, namely updating master data, preparing payroll and issuing salary. The process in payroll is very vulnerable to threats, consequently strong controls are needed in this system. various types of controls are needed to protect this system. The control is influenced by the type of threat and the condition of the company itself. However, on the other hand, because of the large costs for employees, the company also has the option to outsource employees. Some of the benefits that can be given through this outsourcing system are cost reduction. Wider range of benefits and savings in computer systems.

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223-227

Development Of Student Worksheets Based On Discovery Learning To Improve Student Mathematical Problem Solving Ability In Class X Senior High School

Dewi Harni Nasution, Yerizon

The results of preliminary studies show that students problem solving ability is still low. This is due to a lack of learning resources, students are less active in the learning process, and are not used to working on problems in the form of problem solving. Therefore, learning tools based on discovery learning are expected to improve student mathematical problem solving ability. This research is a development research by adapting the development model of Plomp. Plomp consists of three phases, which are preliminary research, prototype phase, and assessment phase. The preliminary research stage consist of needs analysis, curriculum analysis, student characteristics analysis, and concept analysis. In the prototype phase, worksheet developed based on discovery learning, then doing formative evaluation includes self evaluation, expert rivew, one to one evaluation, and small group evaluation to determine the validity and practicality of the product. In the assessment phase doing an assessment with limited practicality and effectiveness for students class X SMAN 1 Panyabungan. Practical data is obtained from the teacher's practicality questionnaire, and the students practicality questionnaire. Effectiveness data obtained from student learning outcomes in the form of a final test to see students mathematical problem solving ability. The results of the studies show that worksheet based on discovery learning are valid in terms of content and constructs. Practical because it is easy to use and understand, the allocation determined is very efficient, interesting, and contributes to learning. Based on the results of the test of students mathematical problem solving ability with an average completeness is 84.34%, it indicates that learning device is effective in improving students mathematical problem solving ability.

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228-231

Managing Children Participation In Elementary Education In South Manokwari

Edison Ompe, Sugiyono, Lantip Diat Prasajo

As a developing country, Indonesia faces many challenging in improving education participation especially in less-developed area. This research analyze children participation in elementary education in South Manokwari, West Papua, a regency with low rate of children accessing school. The research was conducted using mixed methods of qualitative and quantitative approaches. The results suggest that an effective management to improve school participation should involve public, family, school's member and children. These stakeholders should work together to improve school participation in elementary education which is essential for human development in the area.

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232-235

Understanding Urban Environment Problems In The Newly Urbanizing Areas Of Kenya, A Case Of Narok Town

Mary Wambui Mwangi

Like many other countries in developing world, Kenya has been experiencing rapid urbanization. Although urbanization is associated with social and economic transformations, the trend is also associated with an increase in urban environment problems. The environment is considered as the gear to economic activities and the well fare of human beings. It is therefore important to understand the environmental consequences that comes with urbanization so as to safe guard the economy and the well fare of human beings living within and without the urban area. The study was conducted in Narok Town with a major focus of understanding urban environmental problems that the newly urbanizing areas in Kenya are facing. The study was conducted in five areas that make up Narok Town which include Lenana, Total, Majengo, London and the town center. The study was conducted using descriptive survey where questionnaires were administered to the respondents who were selected randomly to identify urban environmental problems in Narok Town. Observation and was also done in the study to identify urban environmental problems in Narok Town. Data that was gathered from the questionnaire was analyzed using SPSS Package version 20.0 and presented in forms of figurers and text. Data from observation was analyzed qualitatively and presented in form of text. The findings of the study indicate that Narok town is experiencing urban environmental problems which include development of slums, inadequate drainage systems.

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236-241

The Physical Properties And Phytochemical Exploration Of Bioinsecticide Granules Mixed Betel Leaf Extract (Piper Betle) And Srikaya Seed Extract (Annonasquamosa)

One alternative in controlling *Aedes aegypti* larvae is with the use of bioinsecticides that are environmentally friendly, safe, and inexpensive. Granules mixed betel leaf and srikaya seeds contain chemical compounds that can be used as bioinsecticide. When granule formulation is designed, it is necessary to understand the properties of granules to determine the optimal type, grade, and amount of material. In addition, the content of chemical compounds in granules is also an important aspect that must be known. This study aims to determine the physical properties and phytochemical contents of granules mixture of betel leaves extract with srikaya seeds extract. The physical properties to be studied are tap density and fragility of granules. The research was conducted by conducting laboratory test using tap density and sieving machine. The following paper deals with detection of phytochemical in the Granules using Thin Layer Chromatography (TLC) and FTIR. The results obtained the tap density determination on the first, second and third replication, obtained value of 9.33%, 5.28%, and 7.11% and the fragility granules on the first, second and third replication, the value of 0.05%, 0.1%, and 0.2%. The TLC analysis was performed Rf value for 0.91 flavonoid compound; alkaloids 0.49; saponins 0.29 and 0.65; tannin 0.89; and anthraquinone 0.22 and 0.45. The FTIR analysis was performed represented the presence of various functional groups which includes alcohol, alkane, nitrile, and ether.

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242-247

The Market Reaction To Environmental Disclosures And The Companies' Characteristics Influencing The Disclosure: A Study On The Indonesian Public Companies)

Aris Tri Cahyono, Sudarlan

The purpose of this study at empirically examining and proving the research problems formulated are: (1) whether the companies' characteristics influence environmental disclosures level of the companies listed in the Kompas 100 Index; (2) Which aspects dominate the influence on the environmental disclosure of the companies listed in the Kompas 100 Index; (3) and whether environmental disclosures affect impact the market reaction to the companies listed in the Kompas 100 Index. The data is analyzed using Partial Least Square (PLS). Results of t-test on the hypotheses in each path analysis show that: (1) the companies' characteristics as independent variables which influence the environmental disclosures are: company size, leverage, profitability, and industry type while variables as number of commissioner board member and portion of public shares do not affect, (2) industry type and company size both dominate the influence which is consistent with prior studies, (3) market reaction examined using cumulative abnormal return proxy with window event seven days around annual report publication date is proved to significantly influence. Hopefully, results of the research can enrich the accounting literatures especially on the decision usefulness theory and also benefit the academicians and practitioners as well.

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248-257

Quality Improvement Of Blackwater Using Filter Materials And Cattail

Mohammad Bisri, Lies K. Wulandari

This study aimed to improve the quality of blackwater by using a physical model consisting of 2 processes; stratified filters and wetland. The stratified filtration method utilized gravel, charcoal, and sand as the filter materials, meanwhile, the wetland system utilized the Cattail plant (*Typha Angustifolia*). Blackwater quality improvement was observed at the intervals of 2 days, 4 days and 6 days, and included parameters of pH, temperature, TSS, TDS, BOD and COD. The method of data analysis was Multiple Linear Regression. Generally, the final result showed that the blackwater quality was improved and met the standard of grade IV water quality (water for agricultural purposes). Furthermore, the equation of Regression analysis obtained was, Water Quality (Y) = 4.693 - 0.176 X1 * - 0.294 X2 * + e6 (X1 = sand thickness, X2 = residence time). This means that every 1 cm thickness of the sand layer contributes to the improvement of water quality by 0.176. In addition, each application of 1 day residence time in the wetland tube has the potential to increase the water quality by 0.294 units. Therefore, the use of filter materials and Cattail plants has been proven to be effective for pollutant removal in blackwater.

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258-261

International Joint Supervision: A Breakthrough To Promote Effective Master Thesis Writing

R.A.Noer Dobby Irmawati, Kasiyarno, Akmal

During the last fifteen years, there have been so many researches on joint supervision. Nevertheless, no previous studies were recorded on joint-master thesis supervisor. The study is aimed at assessing the implementation of the Joint Thesis Writing Supervision Program between Universitas Ahmad Dahlan (UAD), Indonesia and University of Saint Anthony (USANT), Philippines. The study is descriptive-qualitative that uses triangulation technique in analysing the data. The subjects were 23 master students from the English Graduate Program who participated in the Joint Thesis supervision during the academic year of 2014-2016. Data were collected using questionnaires, interviews, and documents from UAD and USANT. The results explain about the students' profile as to their prior writing skill, their obstacles, and difficulties in writing a thesis during their stay at USANT, the level of students' satisfaction, and the strengths and weaknesses of the program. All findings are discussed in detail.

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262-266

Design And Performance Analysis Of Hybrid Micro-Grid Power Supply System Using HOMER Software For Rural Village In Adama Area, Ethiopia

Wondwossen Astatike, Dr. Chandrasekar P.

This paper is devoted to the design & performance analysis of hybrid Micro-Grid power supply system using HOMER software. The hybrid system has been designed with wind turbine generator, diesel generator and solar panel as components of local micro grid supply system. The design aimed at primarily to create an isolated micro grid system used to supply a reliable and cost effective electric power for the rural village under study. The design is done considering the present and future forecasted household AC loads as well as 2 AC pumps presently operating for agricultural irrigation purposes of the rural communities. Most rural villages in Ethiopia are not connected to the already existing electric supply network/grid. The majority of rural village homes which don't have access to the National electric supply network usually use diesel generator set or car batteries as preferential power sources for meeting their household electric power supply demand as well as to run pumps for agricultural irrigation purposes. These power sources are not cost effective and not reliable from the point of availability of cheap diesel to the rural village to run generator and requirement of repeated charging cycle's of batteries. Analysis indicates that Hybrid power supply system which uses two or more power sources will give better and reliable power source with high cost effectiveness.

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267-275

An Islamic Economic Perspective Of Public Finance In Indonesia Based On Ad-Dawudi's Thought In Kitab Al-Amwal

Fajar Fandi Atmaja, Asmuni, Yuli Andriansyah

This paper analyzes Ad-Dāwudī's thought on public finance based on the source of income of a nation, its distribution, and basic ethical assumption underlying his thought. The paper also analyses the current relevance of Ad-Dāwudī's thought for Indonesia fiscal policy with a hope of potential application. This paper was based on qualitative research using literature review to analyze economic thought of Ad-Dāwudī in his Kitāb al-Amwāl. The results show that Ad-Dāwudī devised sources of national income to recurring and non-recurring type. Furthermore, he emphasizes the role of zakah for social and economic purposes. For government spending, Ad-Dāwudī noted national defense, administrative of public duties and development as main types of spending. Ad-Dāwudī also noticed the importance of government duties to the people so that state budget should be spent in best ways to ensure welfare.

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276-279

Education And History Of "Wayang" Using Flash Animation As Media Learning

Deny Setiawan

Wayang is one of the cultural heritages in Indonesia, puppets are synonymous with Javanese tribes, in this day and age many puppets do not know what puppets and their history are so that it is believed that the puppet culture will be lost or even stolen by other countries. learning that contains information about puppets and their history, learning media created later will take the form of animations that display images, types of puppets, puppet plays and other information, learning media created using Adobe Flash so the results will be interesting because the software has many facilities to produce animations the good one.

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280-283

Cloud Computing For Development Smes S-Commerce Layer

Endang Supriyati, Mohammad Iqbal, Tutik Khotimah, Tri Listyorini

The purpose of this study is to develop the SME market online cloud-based hosting, promoting small businesses, especially SMEs using information technology without a large investment. Cloud Computing offers many opportunities and could help companies to improve their business and use technology more efficiently. Cloud computing can often help ease this burden by enabling SMEs to access services that they might not have the money or resources to implement or support on their own. We study the factors of social commerce design with application environment and human capabilities. SMEs as one of the country's economic pillars facing double insistence among SME products domestic and foreign products. One way to increase sales was by promotion. Promotions were able to increase sales with a short time, reward for those who shop in the promotion timeframe. Social marketing combined product, price, place and promotion to maximize product sales. Then social-commerce(s-commerce) must be added promotional features. In this study developed a promotional feature in e-commerce for SMEs. So people interested to visit and interested to buy. The results of s-commerce design and applications with the contribution of promotional features.

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284-287

Automatic Text Summarization For Bengali Language Including Grammatical Analysis

Ratul Sikder, Md. Monowar Hossain, F.M. Rahat Hasan Robi

Text summarization is a process of summarize any text or document. There are many summarization tools for English language. There are also a few works for automated Bengali text or document summarization. The tools are seemed not much appropriate from application point of view. Summarization is categorized in two ways: extractive and abstractive approach. Most of the summarizer methods for Bengali text summarization are extractive. Those proposed methods can't extract whole theme of a text document. Reader can be satisfied about summary if it gives full important information of input document. Our proposed method introduces an enhanced summarization method that can improve the quality of outputs. The proposed method is modeled combining a set mathematical rules and Bengali grammatical rules. This method also solves many problems of extractive summarizer and it also introduces the path of abstractive summarization methods. Although the method has been developed for Bengali language, it is a generic and platform independent approach and can flexible be extended for other languages.

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288-292

Dynamic Analysis Of Hydraulic Rotary Actuator By Using Planetary Gear System

Selman CAVUSOGLU, Mehmet BAGCI, Damla VURAL CAVUSOGLU

Developing technology reveals higher force and torque requirements. In addition, it is one of the requirements of our age that these needs can be made in as small volumes as possible. For this reason, hydraulic systems are preferred instead of electrical and pneumatic systems. The fact that hydraulic systems are applicable to mobile applications is just one of the other advantages. In this study, the dynamic analysis of the hydraulic rotary actuator by using planetary gear mechanism which has been designed will perform and compared with the analytical calculations and measured how much advantaged according to existing products.

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293-295

Accounting Examination Based On Information Technology

Azhar Susanto, Meiryani

Information Technology audit itself is a combination of various kinds of knowledge, including: Traditional Audit, Management of Information Systems, Accounting Information Systems, Computer Science, and Behavioral Science. Basically, IT Audit can be divided into two categories, namely Application Control and General Control. General control objectives further guarantee the integrity of the data contained in computer systems and at the same time ensure the integrity of the program or application used to process data. Meanwhile, the purpose of controlling the application is intended to ensure that the data is correctly input into the application, processed correctly, and that there are adequate controls on the output produced. In audits of applications, typically, checks on general controls are also carried out given that general controls contribute to the effectiveness of application controls. In practice, the stages in IT audits are not different from audits in general. The planning stage, as an introduction, is absolutely necessary so that the auditor knows the object to be examined properly. In addition, of course, auditors can ensure that

qualified resources are already owned, in this case experienced aspects of HR and also references to best practices.

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296-299

Implementation And Improvement Of Green Walls In The Architecture Of Uzbekistan

Fotimakhon Maksudkhodjaeva, Madina Akhmedova

This article is about the advent of today's technology rapidly advancing, the earth's various chemical gases emerge as the atmosphere of our daily life is increasingly in demand, and the development of green architecture in the time when the human body needs oxygen. In our country it is necessary to study the solutions of factories and factories, as well as the reduction of carbon dioxide emissions from gases and production of phylonsids, moisture supply, reduction of solar radiation, light emission, green walls and green roofs in our country. The benefit of the green walls is the ecological and aesthetically important service for the people who seek the best for diseases, and the useful areas in large parks.

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300-304

The Future Of Information Technology

Azhar Susanto, Meiryani

This article discusses the role of information technology which is a combination of computer technology and communication technology needed in the information age. One form of information technology is the emergence of the internet which is an information network that has a large and wide reach and the existence of e-commerce business which is another alternative for business people. Besides that, the development of information technology in Indonesia, its obstacles and expectations.

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305-308

Database Management System

Azhar Susanto, Meiryani

A database is a system used to manage data on a computer system. There are several database work systems that have their own laws and ways of working. Data are arranged in various levels. In computer data are classified in a hierarchy. A higher level consists of one or more data at a lower level. Example: a folder has several sub folders, some subfolders have several files. Management of database management requires a tool / tool to be able to manage it, so that database management can continue to be managed and continue to improve its performance. With the existence of an information system, an organization will strive to be more competitive and efficient, which in turn adds value to obtaining, changing and distributing information with the aim of increasing decision making, increasing organizational performance in achieving its organizational goals. An effective Information System provides accurate, timely and relevant information to users so that it can be used for decision making. In making decisions, both in daily operations, as well as in strategic planning into the future. The decision-making process must be based on timely and appropriate data and information so that the decisions taken are on target. Information is obtained from data processing, and data processing is carried out by information systems with the support of information technology.

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309-312

The Nature Of Management Control Systems

Azhar Susanto, Meiryani

The development of an increasingly complex organization and the demand to always adapt to the organizational environment, resulting in decision-making processes and management also developed. The process is related to information which is important and valuable in an organization today, because accurate and fast information can greatly help the growth and development of an organization. Therefore, the management of information is seen as important for the smooth running of a job and for analyzing the development of the work itself. This requires learning Management Information Systems in creating, distributing and utilizing information to support management activities, especially decision making in public policy. However, unfortunately many organizations want to build their own Management Information Systems, and have provided sufficient funds, but it turns out that these businesses often fail. The causes include inadequate organizational structure, inadequate organizational plans, inadequate human resources, and most importantly, lack of management participation in the form of manager participation in designing systems, controlling system development efforts and motivating all parties involved.

Estimation Of The Effect Of Filtration Anisotropy Of Grounds On The Sustainability Of Side Of Ground Dams Under Unstead Filtering

Fayziev Kh., Baymatov Sh., Rakhimov Sh.

The results of calculation of stability of dam slope based on the filtration of soil anisotropy. The effect of filtration anisotropy of soils on the stability of the uphill slope at different rates of water decrease in the upstream has been studied.

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317-318

The Way Of Development Of Urban Planning And Architecture Of Tashkent

Abdumannop Ziyayev

This article illustrates the ways of development of urban planning and architecture of Tashkent, which is located in Uzbekistan. Especially, in antique times, the middle ages and contemporary days.

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319-321

The Role Of New Public Service Model In Developing Tourist Destination In Bandung City: A New Paradigm For Domestic Tourism Industry

Lia Muliawaty, Kamal Alamsyah, Henry H. Loupias

Bandung City is known as creative city, fashion city or 'factory outlet' city, and culinary city. Many factors that encourage the rapid growth of tourism in Bandung City, especially driven by domestic tourists from Jakarta. Some tourists are loyal customers who often make visits to tourist destinations in Bandung City. The negative impact of tourist visit to Bandung city is the increasing of waste such as used plastic drink bottles, food packaging and shopping bag. While waste facilities are limited and public awareness is low. Therefore, community participation in tourism destination development is very important. The New Public Service (NPS) model is a new paradigm in order to improve the quality of government services to the public. The main concept of the NPS model is democratic involving citizens in government policies and programs. There are many factors that become obstacles in applying NPS, among others rigid bureaucracy, apparatus have no vision, not creative and innovative. All are challenges in implementing NPS in tourist destinations in Bandung City.

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322-326

Analysis Of Factors That Influence Consumer Loyalty With Customer Satisfaction As Intervening Variables In Fruit Products Pepaya Calina Ipb 9 In Medan

Eka Wahyuni, Endang Sulistyia Rini

In an era of global competition, customer loyalty is the key to success for every company. It is difficult for companies to survive in competition without having loyal customers. In shaping customer loyalty, there is generally a need for satisfaction in the customer when making transactions with the company, having a strategy from the marketing mix and the right quality of service in an effort to create satisfaction that has an impact on customer loyalty. This study aims to determine and analyze the factors that influence customer loyalty through satisfaction. The sample in this study amounted to 70 employees who were responsible for the procurement and quality of Calina IPB 9 Papaya fruit in Hotels, Restaurants and Supermarkets. The sampling method used is saturated samples where all members of the population are used as samples. Data analysis method used is descriptive and inferential statistical analysis. The results showed that the product partially had a positive but not significant effect on customer satisfaction. Price and service quality partially have a positive and significant effect on customer satisfaction. Partial promotion and distribution have a negative but not significant effect on customer satisfaction. Product, promotion, distribution and service quality are partially positive but not significant to customer loyalty. Prices partially have a positive and significant effect on customer loyalty. Customer satisfaction variables have a positive but not significant effect on customer loyalty.

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327-330

The Effect Of Giving Nagasari And Agar-Agar Sweet Potatoes As A Local Food To Defection Change In Pregnant Women Trimester Iii In Langsa Barus Health Center Of Langsa

Cut Nurhasanah, Maghfirah

In the third trimester of pregnancy, often pregnant women experience constipation. Constipation can be reduced through the provision of local food, one of the ingredients of purple sweet potato. The purpose is to know the effect of nagasari and purple sweet potato as a local food on changes in defecation in third trimester pregnant women. The type of research that will be conducted is a quasi experiment. The design used is before and after with control. Research is planned to be carried out in the working area of Langsa Barat Community Health Center, Langsa City. The number of samples in this study were 30 respondents. Each of the 10 respondents for the three groups. Group 1 is given nagasari and jelly sweet potato purple. Group 2 is given the base of purple sweet potato. Group 3 as a control was not treated. The sampling technique is done by purposive sampling. The analysis used Paired t-test and One-Way ANOVA. The results of the Paired ttest group 1 were all significant variables ($p < 0.05$) which were strong straining (0.003), hard stool (0.001), incomplete stool (0.011), manual action (0.015) and BAB frequency (0.001). While group 2 is not all meaningful variables. Significant variables were hard stool (0.001), incomplete stool (0.02), and BAB frequency (0.001). Group 3 all variables were not meaningful. ANOVA test group 1, group 2 and group 3 on strong straining (0,004), hard stool (0,0001), incomplete stool (0,06), manual action (0,001) first week BAB frequency (0,001) and week BAB frequency second (0.001). The conclusion is the effect of nagasari and purple sweet potato on changes in defecation in III trimester pregnant women. It is expected that health workers can promote local food to pregnant women to prevent constipation.

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331-334

Revenue Cycle In Accounting Information Systems

Azhar Susanto, Meiryani

The income cycle is the direct exchange of the final product and service into cash in one transaction between the seller and the buyer. So, a series of business activities and related information processing activities that keep repeating by providing goods and services to customers and collecting cash as payments from those sales. Income cycle goals: (1) Record sales orders quickly & accurately; (2) Check customer credit worthiness; (3) Send products or services according to the specified day; (4) Make billing in a timely and accurate manner; (5) Record and classify cash receipts quickly and accurately; (6) Post sales and cash receipts in the appropriate accounts receivable subsidiary; (7) Secure the product until the item is sent; (8) Secure cash until deposited. Three (3) The concept of the revenue cycle: (1) Sales order processing, (2) Sales return procedures, (3) Cash receipts processes. Sales order processing is the activity of receiving and processing orders from customers, filling orders, and sending products to customers, customers paying at certain times, and correctly entering transactions. The sales department records order details on the order form. The transaction will be approved by the credit department. After that, the warehouse will be delivered. Goods, shipping slips, and bills will be prepared by the sender and received by the customer. The authorization section is different from the sales order processing section. Control inventory separate from the warehouse section. Accounts receivable is separate from the general ledger control account section. Process in sales order processing: (1) Receive Order; Check Credit; Pick Goods; Ship Goods; Customer Bill; (2) Update Inventory Records; Update Accounts Receivable; Post to General Ledger.

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335-339

Full Disclosure In Financial Reporting

Azhar Susanto, Meiryani

Quality in decision making is influenced by the quality of company disclosures provided through the annual report so that the information presented in the financial statements can be understood and does not cause misinterpretation, then the presentation of financial statements must be accompanied by adequate disclosure (Equivalent disclosure). Companies will make disclosures in excess of minimum disclosure obligations if they feel such disclosures will reduce their capital costs or if they do not want to miss competitive disclosure practices. Quality in decision making is influenced by the quality of disclosure provided through the annual report so that the information must be accompanied by adequate disclosure. Mandatory disclosure of information required by applicable regulations, in this case the regulation is issued by the financial services authority. Whereas voluntary disclosure is disclosure of information carried out voluntarily by the company without being required by applicable regulations or disclosures that are more than required.

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340-345

Experimental Study Of Counter Rotating Wind Turbine (Full Scale, R = 1.5 M) With Single Generator Using Gearbox

Alief Maulana Ilmunandar, Muhammad Agung Bramantya

These Wind turbines are media used to convert wind energy into electrical energy. Counter Rotating type Wind Turbine is a type of wind turbine that has a double rotor. This type of wind turbine was developed because it is very suitable for high-speed wind, in this study the length of the blade is 1.5 m. Therefore the counter-rotating type wind turbine is made with full scale and tested with the wind in nature, especially the coastal area so that it can be seen the counter-rotating type wind turbine performance when using the natural wind in Indonesia. This performance is known by measuring the amount of electric power, torque and radial speed of the front and rear rotors based on high wind speeds. In the end, the performance of the wind turbine can be known at wind speeds of more than 5 m / s where the higher the wind speed the greater the front and rear rotor radial speed. This is directly proportional to the electrical power produced and inversely proportional to torque, where the greater the speed of the second radial rotor, the smaller the torque produced. Based on data obtained at wind speeds of 5.01 m / s, the front and rear radial speeds of the motor are 25 rpm, 12 Nm Torque, and 0.0072 Watt electric power respectively. Whereas the wind speed of 8.17 m / s obtained the values of front and rear radial speeds of 428 rpm, the torque and also electric power respectively 0.700934 Nm and 4.7034 watts.

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346-351

Development Of Student Worksheets Based On M-APOS Approach With Mind Mapping To Improve Mathematical Communication Ability Of Grade VII Students Of Middle School

Yerizon, Armiati, Fridgo Tasman, Basman Abdullah

The purpose of this study is to produce valid, practical and effective M-APOS-based SMP / MTs math worksheets. Its effectiveness is seen from students' mathematical communication skills. This research is a development research with Plomp model with three stages, namely preliminary research, Development or Prototyping Phase, and assessment phase. The subjects of this study were Grade VII students of SMP Negeri 1, Kapur District IX. The research instruments were validation sheets, teacher and student response questionnaires, observation sheets, and tests. This research has produced a valid, practical and effective worksheet. Teachers and students gave a good response to these worksheets because it helps them in the learning process. Learning becomes efficient and students can understand easily the mathematical concepts that they learned. These worksheets also generate students' interest in learning and it can improve students' mathematical communication skills.

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352-356

Citric Acid Production From Molasses Use Biosynthesis *Aspergillus Niger*

Marlinda, Mardhiyah N, M. Irwan, Ramli

Molasses is a by-product of the sugar processing industry. Each year, molasses are produced in large quantities. Therefore, there is necessity for further treating molasses in order to have economical values. One of the utilization efforts is by using molasses as a substrate in fermentation process of citric acid manufacture. The purpose of this study is to determine the effect of fermentation time on the production of citric acid. The variables used were fermentation time of 3, 6, 9, 12, 15, and 18 days. Molasses of 250 ml were incorporated into a fermentor with 500 ml of nutrient solution and 16 ml of *Aspergillus Niger*. Fermentation is carried out under aerobic conditions. The concentration of citric acid from the result of fermentation was then analyzed by using gas chromatography. From the result of analysis, the best result of citric acid was obtained at fermentation time of 9 days as much as 72.3958 g/L.

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357-360



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The Influence Of Bank Indonesia Interest Rate, Coupon Bonds, Maturity Time Of Bonds, And Net Profit Margin On Bonds Prices

Hari Gursida, Abdul Rahmat

Abstract: This study aims to examine the effect of Bank Indonesia interest rates, bond coupons, bond maturity, and issuer net profit margin on the bonds price. It was conducted in the Indonesia Bond Pricing Agency (IBPA) during a period cover 2012-2016. The method used in this research is multiple linear regression analysis. The results of partial testing showed that Bank Indonesia interest rates have a negative influence on bond prices; The Bank Indonesia (BI) rate has a significant effect on bond prices; Bond coupons have a positive influence on bond prices. Bond coupons have a significant effect on Bond Prices. The finding show that the time maturity of Bond affects negatively the bond prices, but bond coupons do not have a significant effect on Bond Prices, and Net Profit Margin has a positive influence on bond prices. Profit Margin does not have a significant effect on bond prices. The finding of the study show that in terms of parameter marks, the influence of the independent variable is in accordance with the hypothesis, and it turns out that the BI Rate and coupon bonds have relatively more dominant influences

Index Terms: BI Rate, coupon bond, bond maturity, net profit margin and bond price.

1 INTRODUCTION

The capital markets have an important role in increasing economic growth, it have two functions namely economic functions and financial functions (Robert Ang, 1997; Consiglio, & Zenios, 2018). According to Tandellin (2010) investment is a commitment to a number of funds with the aim of obtaining future profits. Instruments that are often used in investing in the capital market are bonds, which are long-term debt securities issued by companies with par value and maturity. Bonds as securities that are sold to the public (Fahmi, 2013), have various provisions such as value, interest rate, time period, publisher's name and other provisions. Investments in bonds will provide a certain profit or return for the holder which can be in the form of a fixed interest income (coupon) that has been agreed at the beginning of the bond purchase agreement, as well as other benefits (Altavilla et al., 2018; Lopez, et al., 2018). Investment income from capital gains occurs because of changes in bond prices caused by buying and selling activities of investors and is influenced by changes in the magnitude of macroeconomic variables such as Bank Indonesia interest rates, bond coupons, bond maturity and profitability (Altavilla et al., 2018). Bank Indonesia interest rates can encourage changes in bond prices. The increase in interest rates can make bond prices fall, and vice versa. Generally the bond coupon value will be higher than the deposit interest rate, but lower than the bank loan interest rate. According to Sari and Sudjarni (2016) the higher the coupon offered by a bond, the more investors tend to buy the bond because it is considered to be able to provide benefits and benefits to investors. In general, the longer the time, the higher the coupon offered to cover additional risks due to a very long investment period.

The maturity period of the bonds is the time determined by the issuer's company on the bonds issued or the time required by the bond company to fulfill its obligations. Bodie et al., (2009), state that when a bond has approached the maturity date, the value will decrease due to the less remaining interest payments on the market. This theory is supported by research conducted by Ericsson and Reneby (2001) and Rubayah et al. (2002). According to Aarstol (2000); SuptoRahardjo (2003); Memmel, (2011); Shen, & Liao, (2014) suggest that the shorter the term of the bonds, the more attractive the investors will be because they are considered to be of lower risk. The company's ability to provide large profits is an attraction for investors. According to Alexandri (2008), stated that Net Profit Margin (NPM) is: "Net Profit Margin is the ratio used to show the company's ability to generate net profit after tax deduction". High net profit margin not only shows the strength of the business but also the strong enthusiasm of the management to control costs. Thus the company has high efficiency and also means to show the company's ability to generate high profits from its sales. The greater the NPM, the more productive the company's performance will be, thereby increasing investor confidence in investing in the company. The results of the study by Long staff and Schwartz (1993), state that interest rates have a significant negative effect on bond prices.

2. Literature Background

1. Bond

Bonds are a form of investment instrument in the form of a letter issued by a company (issuer) to obtain a number of funds and will return a fixed amount of money to the holder at the maturity in the future plus interest payments in the form of periodic coupons in accordance with the agreement. Bonds can also be defined as long-term debt that will be repaid at maturity with a fixed interest (Hartono, 2016). According to Tandellin (2010), bonds when viewed from the side of the company are corporate debt to investors (bondholders), whereas if seen from the investor's side, corporate bonds represent claims from creditors to issuers and not ownership claims such as ordinary shares. According to IDX or IDX, bonds consist of several types, as for types of bonds, when

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viewed from the side of issuer bonds divided into Corporate Bonds, Government Bonds, Municipal Bonds, whereas when viewed from exchange rights / bond options divided into convertible bonds, exchangeable bonds, callable bonds.

2. Bond Prices

Bond prices are the value of selling or buying a bond issued by an issuer in the capital market either through exchange transactions or Over the Counter. In contrast to instruments expressed in currency terms, bond prices are expressed as a percentage (%), which is a percentage of the nominal value. There are 3 (three) possible market prices of the bonds offered, namely:

- a. Par value: Bond price is equal to nominal value. For example: Bonds with a nominal value of Rp 50 million are sold at a price of 100%, then the value of the bonds is $100\% \times \text{Rp } 50 \text{ million} = \text{Rp } 50 \text{ million}$.
- b. With premium: Bond price is greater than nominal value. Example: Bonds with a nominal value of Rp 50 million are sold at a price of 102%, the bond value is $102\% \times \text{Rp } 50 \text{ million} = \text{Rp } 51 \text{ million}$.
- c. Discount: Bond prices are smaller than the nominal value. For example: Bonds with a nominal value of Rp 50 million are sold at a price of 98%, the value of the bonds is $98\% \times \text{Rp } 50 \text{ million} = \text{Rp } 49 \text{ million}$.

According to Fabozzi (2000); Baker and Mansi (2002); Baldan, & Zen (2012); Bao et al., (2011), bond prices are influenced by several factors, including SBI interest rates, liquidity, rating, coupons, and maturity. Based on Rahardjo (2007), generally the formation of a bond price is determined by various factors, namely the coupon rate, issuer rating, bond value, maturity period, bond liquidity, bond type and issuer external factors such as inflation, interest rates, JCI and exchange rates.

3. Bank Indonesia Interest Rate (BI Rate)

Bank Indonesian interest rate (BI Rate) is a policy interest rate that reflects the attitude of monetary policy determined by bank Indonesia and announced to the public. Interest rates are an important factor in a country's economy because interest rates can affect the economy in general (Dahlquist, & Hasseltoft, 2013; Dan, & Guohua, 2013; Consiglio, & Zenios, 2018). Interest rates have a very strong influence on the capital market (Erawati: 2002). In general, if the interest rate in the economic system decreases, the value of bonds rises; and vice versa if interest increases, the value of bonds falls (Dan, & Guohua, 2013; Sundjaja et.al, 2007). With the change in BI Rates, it will trigger a shift in investor interest in investing. And this is a very reasonable thing, because there are various investment instruments that offer attractive returns in the capital market. Likewise in bond investing, BI Rates have a dominant influence. Bond prices will change in a different direction from interest rate movements. According to Warsini (2009), if the SBI interest rate rises, bond prices will decrease, because rational investors will choose risk-free investments with equal or greater returns. Also added according to Takahashi et al., (2001), Delis, & Kouretas, (2011); Zubir (2012); (Altavilla et al., 2018), if the market interest rate rises, the bond price will decrease. Conversely, if the interest rate drops, bond prices rise, so it is profitable for investors if they have to sell the bonds. This happens if BI interest rates are higher than bond interest rates, investors will prefer to place their funds on deposits. So investors choose to sell the bonds

they have and convert them into deposits (Cochrane, & Piazzesi, 2005; Ammann et al., 2008; Feng et al., 2016). If the BI Rate increases, it will cause bond prices to decline, because the real return obtained by investors becomes small, so many investors will sell and divert their investment to other instruments that provide greater returns.

4. Bond Coupons

Bonds provide income through coupons or interest to the bondholders. Coupon is the interest value paid by the issuer per period until the maturity date of the bond to the investor as a reward for the investment invested. Coupon bonds are expressed in percent. Coupons are interest payments paid to bondholders (Brealey et al., 2008). Coupons are interest paid periodically by the bond issuer to the holder (Tandelilin, 2010; Entrop, et al., 2015). High coupons will cause investors to get greater benefits. The higher the coupon value the greater the cash flow for the owner. The coupon rate on bonds shows the percentage of interest on the nominal value of the bonds to be paid annually (Keown et al., 2011; Comelli, 2012; Csontó, 2014; Lopez, et al., 2018). Fixed Coupon bonds provide the same coupon rate until maturity. Coupon bonds with interest rates will still protect coupons from movements or changes in market interest rates that can cause investor income to change at any time (Anderson et al., 2007). Bond prices will continue to decline if changes in interest rates that occur make investors sell bonds that they have (Anderson et al., 2007). This happens because the level of return received by small investors. In contrast to bonds with a higher coupon rate, the returns obtained by bondholders are quite competitive, and allow the bonds to be sold at a higher price than the low coupon bonds. But the situation reverses, if there is a decrease in market interest rates, the price of bonds that have lower coupons will experience a higher price increase compared to bonds that have higher coupons (Tandelilin, 2010).

5. Bond Maturity

At the maturity date of the Bond, the bond issuer must pay off the principal and interest value of the bond. Rahardjo (2003); Campbell and taksler (2003), states that what must be remembered in discussing the maturity date of a bond is that the longer the maturity period of the bonds, the higher the level of investment risk. Because in such a long period or period, the risk of adverse events or events that cause a company's performance to decline can occur. Bonds that have a long maturity will have a higher level of risk so the yield obtained is also different from bonds with a fairly short maturity period. Small yields will cause small returns too. This causes bonds to have a low selling value compared to bonds that have a short maturity. If there is an increase in the interest rate, the price of bonds that have a longer maturity period will experience a greater decline in prices compared to bonds that have a shorter time (Gebhardt et al., 2005; Tandelilin, 2010; Claessens et al., 2015; Hachenberg, & Schiereck, 2018; Caliendo, 2019). This condition is due to the concern of bondholders to the financial condition of the company which may be faltering in relation to changes in interest rates. Changes in interest rates will increase the company's operating expenses, which will lead to the company's ability to pay coupons. If the condition is long, it is likely that the company will experience a large default compared to the company that issues bonds with a short term (Mommel, 2011;

Shen, & Liao, 2014).

6. Net Profit Margin

Profitability ratios are ratios used to measure a company's ability to generate profits from the normal activities of its business. One of the company's main objectives in its operations is to generate maximum profits. Therefore, profitability is one of the indicators of company performance. To measure a company's ability to generate profits, the author uses the Net Profit Margin ratio as an indicator. According to Ludvigson, & Ng,(2009); Marinkovic, & Radovic, (2010); Hanafi and Halim (2012) the net profit margin calculates the extent to which a company's ability to generate net income at a certain level of sales. Net profit margin is the sales profit after calculating all income costs and taxes (Martono and Harjito, 2010). Another definition according to Sumarsan (2013) states that this ratio describes the company's net income after tax obtained by each sale made. Sartono (2013), defines NPM as follows: "Net Profit Margin is the ratio between net income i.e. sales that have been deducted by all costs including tax compared to sales". This ratio describes the ability of a company to obtain high profits at a certain level of sales, while a low net profit margin indicates sales are too low for a certain level of cost (Claessens et al., 2016; Chaudron, 2018). A high NPM level illustrates that the company has succeeded in carrying out efficiency in operations. Companies can reduce costs that are not needed, so that eventually the company is able to generate net income. If the percentage level of net income recognized as equity is higher than the percentage of net income distributed as dividends, then the growth of the company always records high net income, and net income will enter as retained earnings which will ultimately add to the company's equity. According to Zubir (2012), the ability of companies to pay coupons and principal loans is determined by the company's ability to generate profits. Analyze the ability of companies to create profits, namely through the calculation of Net Profit Margin. This information is presented in financial statements that are reported regularly, and things become triggers in the movement of bond prices (Tsiveriotis, & Fernandes, 1998; Hong, & Kacperczyk, 2009; Hachenberg, & Schiereck, 2018; Zerbib, 2019). A keen investor will study the development of the company presented in financial statements, especially at the NPM ratio, so that the expected return can be achieved.

3 RESEARCH AND METHODOLOGY

This research was conducted on companies registered in the Indonesia Bond Pricing Agency (IBPA) in 2018. Quantitative associative methods are used to determine the effect of independent variables, namely Bank Indonesia interest rate, bond coupons, maturity time, and issuer net profit margin on prices bonds as Dependent Variables. The estimation method used is Multiple regression. The population in this study were 331 issuers registered with IBPA in the period 2012-2016. The sample selection was purposive as many as 49 issuers. The conceptual framework of the study that explains the relationship between independent variables and dependent variables is presented in the following figure.

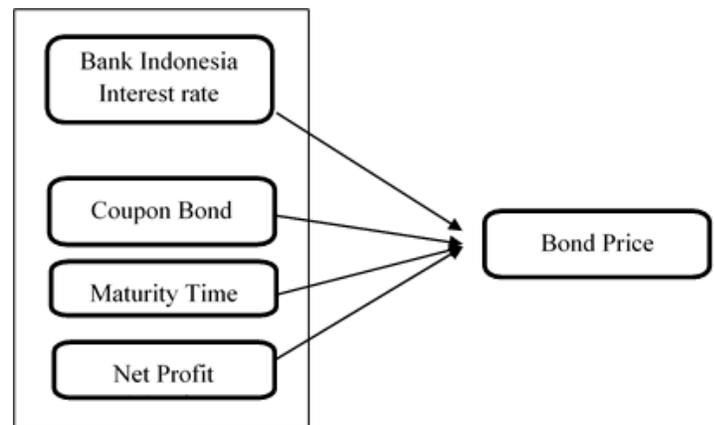


Figure 1. Theoretical Framework of Research Paradigms

Research Hypothesis

- H1: Bank Indonesia's interest rate has a negative effect on bond prices
- H2: Bond coupons have a positive effect on bond prices
- H3: The maturity date of bonds has a negative effect on bond prices
- H4: Net profit margin of the issuer's has a positive effect on bond prices
- H5: Bank Indonesia interest rates, Bond Coupons, Bond Maturity Time, and Net Profit Margin (NPM) of issuers have an effect on bond prices

4 RESULT AND DISCUSSION

1. Test of Classical Assumptions

a. Normality test

The normality test aims to test whether the regression of the dependent variable and the independent variable has normal or near normal data distribution. The results of normality test data can be seen from the normality test graph, where it can easily be seen that the distribution of data approaches a straight line (diagonal). Thus, it can be said that residual (data) is normally distributed.

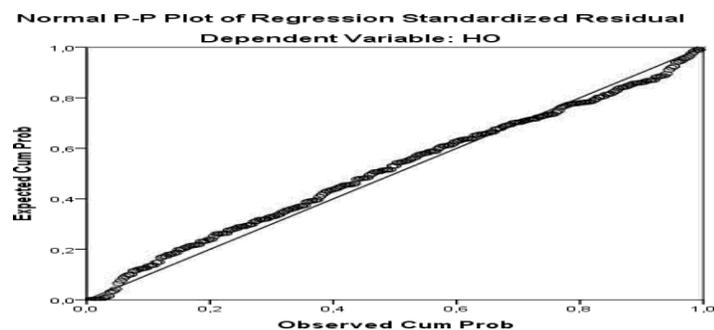


Figure 1. Normality Test

Based on the data processing using SPSS seen in Figure 1, the graph shows that the existing points approach or are in a straight line (diagonal), so that it can be concluded that the residual data is normally distributed, then the panel data regression model meets the assumption of data normality.

b. Heterocedasticity test

Heterocedasticity test is used to test whether in the regression model variance and residual inequalities occur one

observation to another observation. If the residual variance from one observation to another observation remains, it is called homoskedasticity, on the contrary if it is different it is called heterocedasticity. A good regression model is homoskedasticity, because if a regression is found there is heterocedasticity then the variance is not constant which in turn causes the bias standard error. From the test results it can be stated that there are no heterocedasticity problems

c. Multicollinearity Test

Multicollinearity test aims to test whether the regression model found a correlation between independent variables. In a good regression model there should be no correlation between independent variables. Multicollinearity test is done by looking at the tolerance value and variance inflation factor (VIF), if the tolerance value is higher than 0.10 or VIF is smaller than 10, it can be concluded that there is no multicollinearity.

Table 1. Multicollinearity Test

Coefficients^a

Model	Standardized Coefficients	Collinearity Statistics	
	Beta	Tolerance	VIF
(Constant)			
1 BI Rate	,284	,978	1,023
Bond Coupon	-,558	,966	1,035
Time Maturity	,000	,954	1,048
NPM	,070	,988	1,012

a. Dependent Variable: Harga Obligasi

Based on the results of testing using SPSS seen in Table 1 it was found that the VIF value in the SBI Level variable was 1.023, the Coupon variable was 1.035, the Maturity Time was 1.048 and the NPM variable was 1.012. The results are below 10. In the same table the Tolerance value of the SBI Level is 0.978, the Coupon variable is 0.966, the Maturity Time is 0.954, and the NPM variable is 0.988. The results are above 0.01. If the VIF value is less than 10 and or the Tolerance value is more than 0.01, it can be concluded that there is no multicollinearity problem, so the test results are said to be reliable or reliable.

d. Autocorrelation Test

The autocorrelation test aims to test whether in a linear regression model there is a correlation between interfering errors in period t with errors in period t-1 (before). If there is a correlation, then there is an autocorrelation problem.

Table 12. Autocorrelation Test

Runs Test

	Unstandardized Residual
Test Value ^a	,00223
Cases < Test Value	122
Cases >= Test Value	123
Total Cases	245
Number of Runs	134
Z	1,345
Asymp. Sig. (2-tailed)	,179

a. Median

Based on Table 2, the Autocorrelation Test using the Runs Test, found that the value of Asymp. Sig of 0.179, the value is greater than the sig value of 0.05. Then it can be concluded that the variables tested in this study did not occur with autocorrelation.

2. Test the Hypothesis Partially (t-Test)

The results of the regression analysis and the magnitude of the calculated t-values are presented in the following table.

Table 3 Hypothesis Tests H1, H2, H3, and H4 with t test

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1,006	,019		53,622	,000
X ₁	-1,754	,160	-,558	-10,995	,000
X ₂	,948	,168	,284	5,628	,000
X ₃	-7,202E-6	,001	,000	-,008	,994
X ₄	,003	,002	,070	1,405	,161

a. Dependent Variable: BP

Based on the regression test results in table 3 above, the regression equation is obtained as follows:

a. Regression of Bank Indonesia Interest Rate (X₁) on Bond Prices, Y = 1.006 -1.754X₁. The interpretation of the equation is:

The regression coefficient is obtained at -1.754, this means that if the BI Rate increases by one unit then the value of the bond price will decrease by 1.754. Based on the results of the regression test above it is also known that the value of the t-stat BI rate variable is -10.995 with a significance of 0.00. The t-stat value is greater than t-table (2.015), thus in this study the hypothesis that the level of the BI Rate affects the price of bonds is acceptable.

b. Regression of Bond Coupon (X₂) on Bond Prices, Y = 1.006 + 0.948X₂.

The interpretation of the equation is:

The regression coefficient is obtained at 0.948, this means that if there is an increase in the value of the bond coupon even though it is only a unit of value, the value of the bond price will increase by 0.948. Based on the results of the regression test above it is also known that the value of the bond coupon variable t is 5.628 with a significance of 0.00. Based on the provisions of the hypothesis that Ho is rejected and Ha is accepted if the value of t count > t table is 2.015, then in this study the hypothesis that the coupon of bonds affects the price of bonds can be accepted.

c. Regression of Bond Maturity (X₃) on Bond Prices, Y = 1.006 - 0.008X₃.

The interpretation of the equation is:

The regression coefficient value is obtained at - 0.008, this

means that if there is an increase in the value of the maturity date of the bond even though it is only a unit of value, the value of the bond price will decrease by 0.008. Based on the results of the regression test above, it is also known that the value of the variable coupon t value is - 0.008 with a significance of 0.994. Based on the provisions of the hypothesis that H_0 is accepted and H_a is rejected if the value of t count $< t$ table is 2.015, then in this study the hypothesis that the maturity time does not affect the price of bonds is acceptable.

d Regression of Issuer Net Profit Margin (X_4) on Bond Prices, $Y = 1.006 + 0.003X_4$.

The interpretation of the equation is:

The regression coefficient is obtained at 0.003, this means that if there is an increase in the value of the bond coupon even though it is only a unit of value, the value of the bond price will increase by 0.003. Based on the results of the regression test above it is also known that the value of the bond coupon variable count is 1.405 with a significance of 0.161. Based on the provisions of the hypothesis that H_0 is accepted and H_1 is rejected if the value of t -stat $< t$ -table is 2.015, then in this study the hypothesis which states that the Net Profit Margin of the Issuer does not affect the bonds price is acceptable. Overall, the findings of the above research can be summarized briefly in the following multiple regression equation:

$$Y = 1,006 - 1,754 X_1 + 0,948 X_2 - 7,202 X_3 + 0,003 X_4$$

The coefficient of determination (R^2) is 0.403, which explains that 40.3 percent of the variable Bond Price (Y) can be explained together by the four independent variables BI Rate, Bond Coupon, Maturity Time, and Net Profit Margin. In other words, the total effect of the independent variables together on Bond Price is 40.3 percent. On the other hand, this shows that there are 59.7% remaining which reflects the magnitude of the influence of other variables not examined which can affect Bond Price.

DISCUSSION

1. The influence of BI Rate on bond prices

Bank Indonesia interest rates have a negative influence on bond prices. The results of hypothesis testing indicate that the calculated t -stat is greater than the t -table ($10.995 > 2.015$). Thus, it can be concluded that the BI rate has a significant effect on Bond Prices at a 95% confidence level. The results of this study are the same as those of I Wayan Sumarna and Ida Bagus Badjra (2016), Long staff and Schwartz (1993), Sukanto (2009), Widajati (2009), Juhartono (2010), Karagiannis et al., (2016), who explained that Bank Indonesia Interest Rates negatively affected Bond Prices.

2. The influence of bond coupons on bond prices

Bond coupons have a positive influence on bond prices. The results of hypothesis testing indicate that the value of t -stat is greater than the t -table ($5.628 > 2.015$). Thus, it can be concluded that bond coupons have a significant effect on Bond Prices at a confidence level of 95%. The results of this study are the same as those of Ida Bagus Badjra (2016), Edward (2007), and Krisnilasari (2007) which explain that Bond Coupons have a positive effect on Bond Prices. The results of this study get the same results because they have

similarity in the use of purposive sampling as a sampling technique even though the type of company, data processing program and research period are different.

3. The influence of the time maturity of bonds on bond prices

The time maturity of Bond has a negative influence on bond prices. The results of hypothesis testing indicate that the value of t -stat is smaller than the t -table ($0.008 < 2.015$). Thus, it can be concluded that bond coupons do not have a significant effect on Bond Prices at a 95% confidence level. The results of this study are the same as those of Kecskés et al., (2012), King, & Mauer, (2014), I Wayan Sumarna and Ida Bagus Badjra (2016), Monica (2007), and Satria (2014) which explain that Maturity Time has a negative effect on Bond Prices. The results of this study get the same results because they have similarities in the use of purposive sampling as a sampling technique even though the types of companies, data processing programs and research periods are different.

4. The influence of Net Profit Margin (NPM) Issuers on bond prices

Net Profit Margin has a positive influence on bond prices. The results of hypothesis testing indicate that the value of t -stat is smaller than the t -table ($1,405 < 2,015$). Thus, it can be concluded that Net Profit Margin does not have a significant effect on Bond Prices at a 95% confidence level.

5. The influence of BI rates, bond coupons, bond maturity, and Net Profit Margin of Issuers on bond prices.

Simultaneous testing of the effects of X_1 , X_2 , X_3 and X_4 on Y indicates the BI Rate, Bond Coupon, Maturity Time, and Net Profit Margin of the Issuer which has a significant effect on bond prices.

5. CONCLUSION

Based on the results of testing The influence of independent variables on the dependent variable carried out by the author, then conclusions can be described as follows:

1. The influence of BI Rate (X_1) on bond prices (Y). Variable BI Rates have a sig value of $0,000 < 0,05$, with a regression coefficient of - 1,754, which means that if there is an increase in the value of SBI 1 unit of value, the value of bond prices will decrease by 1,754. So it can be concluded that the research hypothesis is accepted, namely the BI Rate has a significant effect on bond prices.
2. The influence of bond coupons on bond prices. The bond coupon variable has a sig value of $0.000 < 0.05$, with a regression coefficient of 0.948, which means that if there is an increase in the value of the bond coupon even if only 1 unit of value, the value of the bond price will increase by 0.948. So it can be concluded that the research hypothesis is accepted, namely the bond coupon has a significant effect on bond prices.
3. The influence of bond maturity on bond prices. The bond maturity variable has a sig value of $0.994 > 0.05$, with a regression coefficient of - 7.202, which means that the results indicate that the increase in bond prices cannot be achieved by extending the maturity of the bonds. Then it can be concluded that the research hypothesis is accepted, namely the maturity date of bonds has a negative effect on bond prices.
4. The influence of Issuer Net Profit Margin on bond prices.

The Issuer Net Profit Margin variable has a value of $0.161 > 0.05$, with a regression coefficient of 0.003 , which means that the results of changes in bond prices cannot be achieved by increasing the value of the net profit margin (NPM). The hypothesis is accepted, namely the maturity date of bonds has a negative effect on accepted bond prices, namely Bank Indonesia interest rates, bond coupons, bond maturity, and Net Profit Margin (NPM) Issuers have a significant effect on bond prices.

Implications

From the analysis of The influence of BI Rate, bond coupons, bond maturity, and Issuers Net Profit Margin on bond prices of the 49 emissions listed at IPBA in the 2012-2016 found that bond coupons have a positive effect on bond prices while the BI Rate has a negative influence on bond prices, this condition has implications for companies and investors as follows:

1. BI rate have a significant influence on bond prices. This gives an implication that the BI rate has a dominant factor in influencing bond price movements. Any changes in BI Rate that occur will cause the bond price to be corrected. In this study, it appears that the relationship that occurs is negative, it can be concluded that any changes that occur in BI Rate will cause an impact that is opposite the bond price. The higher the change in the BI Rate, the lower the price of existing bonds.
2. Bond Coupons. Bond coupons have a significant influence on bond prices. This gives the implication that the market considers bond prices to be driven by the amount of coupons on emissions sold. In this study, it can be seen that the influence of coupons on bond prices is positive, it can be concluded that each bond coupon gives a positive boost to bond prices on the market. With a high coupon rate, it also means a high return, this is a driving factor for increasing bond prices. In the investment context, investors will choose investment instruments that have returns that match their expectations.

ACKNOWLEDGMENT

The authors wish to thank BI, Ministry of Finance of the Republic of Indonesia

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