

**LEMBAR
HASIL PENILAIAN SEJAWAT SEBIDANG ATAU PEER REVIEW
KARYA ILMIAH : PROSIDING**

Judul (Artikel)	:	Application of Active-set Optimization Method to Solve Stochastic Optimization Problem of Supplier Selection and Inventory Control Problem Penulis : Sutrisno, Widowati, Sunarsih and Kartono			
Jumlah Penulis	:	4 orang			
Status Pengusul	:	Penulis pertama/penulis ketiga/penulis korespondensi			
Identitas Jurnal Ilmiah	:	a.	Nama Prosiding	:	IOP Conf. Series: Journal of Physics: Conf. Series
		b.	Nomor ISSN/ISBN	:	
		c.	Volume, nomor, bulan tahun	:	1097 (2018) 012068
		d.	Penerbit	:	IOP Publishing
		e.	DOI artikel (jika ada)	:	doi :10.1088/1742-6596/1097/1/012068
		f.	Alamat web prosiding	:	
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Total = (100%)	25	27,5	26,25
Nilai Pengusul =40% x1/3	3,33	3,67	3,5

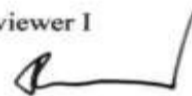
Semarang, 19-9-2019

Reviewer II



Prof. Dr. Heri Sutanto, SSi., MSi
NIP. 197502151998021001
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FSM UNDIP

Reviewer I



Prof. Drs. Mustafid, M.Eng., Ph.D.
NIP. 195505281980031002
Unit kerja : Departemen Statistika,
FSM UNDIP

**LEMBAR
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Total = (100%)	30,00			25
Nilai Pengusul = $40\% \times 1/3 \times 25 = 3,33$				

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- Kelengkapan unsur baik.
- Kedalaman teori kurang
- Tidak tampak kebaruan yang dihasilkan.
- Terbitan baik, diterbitkan pada IOP Conference Series.

Semarang, 30-9-2019

Reviewer 1



Prof. Drs. Mustafid, M.Eng., Ph.D.
NIP. 195505281980031002

Unit kerja : Departemen Statistika, FSM UNDIP

**LEMBAR
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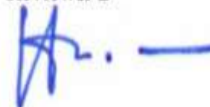
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Total = (100%)	30,00			27,5
Nilai Pengusul = 40% x 1/3 x 27,5 = 3,67				

Catatan Penilaian artikel oleh Reviewer :

- Paper telah ditulis sesuai dengan template JPCS. Pembahasan konsisten, meskipun ada kesalahan di sub bab acknowledgement tapi tertulis conclusion.
- Tingkat kedalaman pembahasan dalam paper “baik” didukung dengan 10 referensi.
- Data yang digunakan dalam pembahasan cukup. Ada 4 referensi dari 10 referensi yang terkini.
- Kualitas terbitan kurang teliti yaitu ucapan terima kasih masuk di sub bab conclusion. Referensi sangat minim hanya ada 10 referensi.

Semarang, 17/9-2019

Reviewer 2



Prof. Dr. Heri Sutanto, SSi., MSi.
NIP. 197502151998021001

Unit kerja : Departemen Fisika, FSM UNDIP



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Volume 1097, Issue 1, 12 October 2018, Article number 012068
5th International Conference on Research, Implementation, and Education of Mathematics and Science, ICRiems 2018; Yogyakarta; Indonesia; 7 May 2018 through 8 May 2018; Code 140764

Application of Active-set Optimization Method to Solve Stochastic Optimization Problem of Supplier Selection and Inventory Control Problem (Conference Paper) [\(Open Access\)](#)

Sutrisno, Widowati, **Sunarsih**, Kartono ✉ 🔍

Department of Mathematics, Diponegoro University Tembalang, Semarang, Indonesia

Abstract

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A stochastic optimization problem that solved by using scenario approach will have a large scale deterministic equivalent optimization. In this paper, we apply the active-set optimization method to solve a stochastic optimization problem of integrated supplier selection and inventory control problem which it solved by using scenario approach or wait and see solution approach. We have solved two numerical experiments which are a small scale problem to illustrate how to determine the solution and a large scale problem to observe how the problem is solved. From the results, the active-set method is applicable for this large scale supplier selection problem considering inventory control problem from the view of the computational time. © 2018 Published under licence by IOP Publishing Ltd.

SciVal Topic Prominence ⓘ

Topic: Supplier selection | Decision making | Sustainable supplier

Prominence percentile: 99.242 ⓘ

Indexed keywords

Engineering controlled terms:

Inventory control Optimization Stochastic systems

Engineering uncontrolled terms

Active set methods Active-Set optimizations Computational time Deterministic equivalents

Inventory control problems Large-scale problem Numerical experiments

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Engineering main heading:

Problem solving

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Funding sponsor	Funding number	Acronym
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Authors thank to UNDIP for financial support under DPA PNBP FSM 2018 research grant.

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5th ICRIEMS

5th International Conference on Research, Implementation
and Education of Mathematics and Sciences

“Revitalizing Research And Education On Mathematics and
Science for Innovations and Social Development”



7-8 May 2018
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Proceeding

“Revitalizing Research And Education On Mathematics and
Science for Innovations And Social Development”

**5th
ICRIEMS**



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Forewords From The Head of Committee 2018

Assalamu'alaikum warahmatullahi wabarakatuh.

On behalf of the organising committee of the 5th ICRIEMS, please let me welcome you to Yogyakarta, Indonesia. Nothing is more precious for us, besides enable to fete you all here, in the 5th of the International Conference on Research, Implementation, and Education of Mathematics and Science, that is organized by the Faculty of Mathematics and Science, Yogyakarta State University.

It is not only about the research as well as the papers that will be presented. But it is also about the academic networks, mutual cooperation, and meaningful communications amongst us – the researchers, academics, and educators – those which we are expecting to be built and established, in this conference. We believe that this occasion may lead our commitment to strength our roles together, particularly to achieve the innovation and social development through research and education on mathematics and science, as it is accentuated by the theme of this conference.

We are strongly considered that this conference would not be meaningful without other parties. Therefore, I would like to express my highest appreciation and gratitude to our keynote speakers and invited speakers. They are:

1. Prof. Ferry Butar Butar, Ph.D.,
2. Prof. Muammer Calik, Ph.D.,
3. Prof. Dr. Eng Khairurrijal, M.Si.
4. Prof. Dr. Fang-Ying Yang
5. Prof. Assoc. Dr. Azmi Mohamed
6. Dr. Lilla Adulyasas.

I also would like to address our big thank to our motivated and valuable participants. There are 570 papers will be presented and 2 posters displayed, out of 575 registered participants. A few selected papers would be published in the Scopus-indexed proceeding whilst others will be in either regular proceeding or journals.

We believe that there would be any shortcomings and inconveniences in this conference. Thus, we really apologize. We hope that this conference will be very succesful. Have a nice talk, discussion, and surely enjoy Yogyakarta. Thank you.

Wassalamu'alaikum warahmatullahi wabarakatuh.

Yogyakarta, May 2018

Agung W. Subiantoro

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Application of Active-set Optimization Method to Solve Stochastic Optimization Problem of Supplier Selection and Inventory Control Problem

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Optimization of fuzzy inference system by using table look-up method to predict white sugar price in the international market

N Azizah, K A'yun, T W Septiarini, D U Wutsqa and A M Abadi

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The Connection Commonalities in the Mathematical Content of Lesson Sequences

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B W Minarni, H Retnawati and T V T Nugraheni

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***N*-hexanoyl-*O*-glycol chitosan as a carrier agent for water-insoluble herbicide**

S N M Yusoff, A Kamari, S Ishak and A L A Halim

Department of Chemistry, Faculty of Science and Mathematics, Universiti Pendidikan Sultan Idris, 35900, Tanjung Malim, Perak, Malaysia.
E-mail: najiah Yusoff@gmail.com

Abstract. The objective of this study was to assess the potential of an amphiphilic chitosan derivative, namely *N*-hexanoyl-*O*-glycol chitosan (HGC) as a carrier agent for herbicide atrazine. The physicochemical properties of HGC were characterised using several analytical instruments. The critical micelle concentration (CMC) of HGC was determined using a Fluorescence Spectrometer. A High Performance Liquid Chromatography (HPLC) was used to determine encapsulation efficiency and loading capacity of atrazine in the amphiphilic chitosan derivative. Research findings found that the addition of hexanoyl and glycol groups to the chitosan backbone has improved the thermal stability of chitosan. TEM observation confirmed that HGC can form self-aggregation in the solution with spherical shape. The CMC values determined for HGC was 0.008 mg/mL. HGC also exhibited excellent encapsulation efficiency and loading capacity. The release profiles of atrazine loaded in HGC showed that it has different release behaviour than the pure herbicide in solution. In conclusion, the results from the study suggest that the amphiphilic chitosan derivative is applicable to be utilised as carrier agent for herbicide atrazine in pesticide formulation.

1. Introduction

Atrazine (2-chloro-4-ethylamino-6-isopropylamine-1,3,5-triazine) is a selective pre- or post-emergence herbicide that widely applied, especially in United States to control invasive weeds on various crops such as maize, sorghum and sugarcane [1-3]. The herbicide kills the weeds by inhibits the photosynthesis activity in chloroplast membrane [4]. It is mostly used in agriculture settings due its moderate toxicity and persistence in environment [1,5]. However, atrazine has low solubility in water (0.028 mg/mL) [6]. Thus, it usually formulated by dissolving in large amount of organic solvent which could be source for volatile organic compounds (VOCs) contamination [7]. Moreover, the herbicide also has high mobility in soils which could lead to groundwater contamination [8].

Good carrier system that could enhance the solubility of hydrophobic pesticide and reduce the risk to environment has become main focus in current pesticide formulation [9]. In recent years, polymeric micelles particularly amphiphilic chitosan derivatives have attract tremendous attention as carrier agents in pesticide formulations [10-12]. The unique properties of amphiphilic chitosan derivatives that contain hydrophobic moieties that can interact with hydrophobic pesticide to form inner core, and hydrophilic moieties that will create outer shell in aqueous solution, can enhance the solubility and control the release behaviour of the pesticide [13].

In the present study, *N*-hexanoyl-*O*-glycol chitosan (HGC) was synthesised and herbicide atrazine was loaded in the HGC micelles. The amphiphilic chitosan derivative was characterised using several analytical instruments, and the encapsulation efficiency and in vitro release study were investigated.



Optimization of fuzzy inference system by using table look-up method to predict white sugar price in the international market

N Azizah¹, K A'yun², T W Septiarini³, D U Wutsqa⁴ and A M Abadi⁴

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Abstract. The study aims to investigate the most optimum rules of fuzzy inference systems to forecast the white sugar price in the international market. The fuzzy rules are optimized by using a table look-up method. As a comparison, we also employ fuzzy time series methods that developed by Chen, Singh, and Heuristic. The main differences among the four methods are on the inputs determination for prediction and on the algorithm to calculate the prediction. The performance of the method is evaluated using MAPE (Mean Absolute Percentage Error). The MAPE values of white sugar price forecasting yielded by a fuzzy inference system with table lookup are 2.83 % on training data and 7.66 % on checking data. Furthermore, the MAPE values resulted by fuzzy time series model of Chen, Singh, and heuristic are 8.52%, 8.62% and 8.01% on training data, and 6.44%, 6.47%, and 6.44% on checking data, respectively. The table lookup delivers the highest performance on the training data, while it delivers the lowest performance on checking data. However, the fluctuation of its forecasts is more reasonable, since it follows the fluctuation of the actual data, while the other three methods deliver constant forecasts which are not reasonable.

1. Introduction

White sugar is a commodity which has an important role in the world. It produces a lot of income for many countries. White sugar industries can absorb many workers. In Indonesia, white sugar becomes one of the strategic economic commodities. Historical records showed that the white sugar became the oldest and leading industry since the days of colonialism the pre-World War II era of 1930-1940, and Java became one of the largest white sugar producers in the world, as well as the second largest exporter of white sugar after Cuba. The on-peak production was achieved in 1931 with 3 million tons per year and approximately 2.40 million tons is exported. At that time, a total of 179 white sugar mills were operated in the Indonesian territory with productivity levels reached 14.80 tons of white sugar per



The Design and Impact of Interactive E-Book on Academic Language Achievement to Language Minority Students

M Phadung¹ and S Dueramae²

¹Computer Education Program, Faculty of Science Technology and Agriculture, YalaRajabhat University, Yala, Thailand

²Ban Katong School, Yaha District, Yala, Thailand

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Abstract. Digital media technology has become an increasing part of daily life. The paper suggested on the efficient e-book design and application. The purpose of the study was to design and test interactive e-book for academic language learning on language minority (LM) students. The researcher conducted an experiment with a total of 54 third-grade LM students (age 8-9). The experimental classroom had 28 LM students who learned by using the interactive e-book. The control classroom had 26 LM students who learned by using the printed book. Testing took place over a period of 4 weeks. The interactive e-book had two primary modes including the automatic and manual mode. Each mode consisted of options and interactive features according to natural approach principles. Results of testing showed that the LM students' improvement after learning with interactive e-book. The experimental group performed significantly better in story comprehension skill than the control group. Based on the results, further study of interactive e-book enhanced language learning is also suggested and discussed.

1. Introduction

A literacy learning related to language minority (LM) students has received increasing attention in educational research theme in recent years. Variety projects were carried out to improve LM students' academic language skills [1]. LM students' limited academic language skills affect their learning achievement. Thus, the achievement gap between LM students and native students is one of the educational problems which should be solved [2]. There are claims by a number of the studies to point out educational problems that LM students in various countries encounter. For example; the study of the mathematical literacy of language minority students in Canada indicated that LM students who have limited skill in the academic language are a major problem in mathematics education [3]. The literacy among the Dongxiang ethnic minority children was problematic and considered the lowest level in China. The study results found that the students at their early age were incapable of reflecting their understanding properly from the lessons which, consequently, decreased their learning achievement and performance in school [4]. Moreover, features of academic language impact on reading comprehension of LM students in Germany [5].





Certificate

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This is to certify that

Sutrisno

has participated in

The 5th International Conference on Research, Implementation and Education of Mathematics and Science

Organized by Faculty of Mathematics and Natural Science,
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on May 7-8, 2018

as a

Presenter

with the paper entitled:

Application of Active-set Optimization Method to Solve Stochastic Optimization Problem of Supplier Selection and Inventory Control Problem

Yogyakarta, May 8, 2018
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