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Submission


Authors	Muhammad Faisal Ibrahim, Yunita Siti Mardhiyyah, Ahmad Rusdiansyah, Meidina Kalse Boer, Dana Marsetiya Utama
Title	A Three-Phased Perishable Inventory Simulation Model with Quality Decrease Consideration
Original file	11769-34173-1-SM.docx 2020-08-04
Supp. files	None
Submitter	Muhammad Faisal Ibrahim 
Date submitted	August 4, 2020 - 03:48 PM
Section	Articles
Editor	Eko Setiawan 
Abstract Views	92

Status

Status	Published Vol. 19, No. 02, December 2020
Initiated	2020-12-23
Last modified	2020-12-23

Submission Metadata


Authors

Name	Muhammad Faisal Ibrahim 
Affiliation	Universitas Internasional Semen Indonesia
Country	Indonesia
Bio Statement	—
Principal contact for editorial correspondence.	

Name	Yunita Siti Mardhiyyah 
Affiliation	Universitas Internasional Semen Indonesia
Country	Indonesia
Bio Statement	—

Name	Ahmad Rusdiansyah 
Affiliation	Institut Teknologi Sepuluh Nopember
Country	Indonesia
Bio Statement	—

Name	Meidina Kalse Boer 
Affiliation	Institut Teknologi Sepuluh Nopember
Country	Indonesia
Bio Statement	—

Name	Dana Marsetiya Utama 
Affiliation	Universitas Muhammadiyah Malang
Country	Indonesia
Bio Statement	—

Title and Abstract

Title	A Three-Phased Perishable Inventory Simulation Model with Quality Decrease Consideration
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Abstract	In this article, focus on the simulation of a three-phase perishable product inventory system of a SMEs selling fresh and processed milkfish. This research was conducted to simulate a perishable product inventory system to understand and analyze the problems that occur then propose solutions to fix them. The simulation model was developed with ARENA software, simulation results of the existing condition show that there is 162 kg/month waste in fresh fish, 158 pcs/month in processed product A, and 86 pcs/month in processed product B. A model with a product renewal process mechanism was proposed to overcome this problem, and seven improvement scenarios were developed. The results obtained from the seventh improvement scenario revealed that there was a 100% reduction in fresh fish and processed product B and 94% in processed product A. Besides, there was a saving in need for fresh fish supply of 10 kg/day. In this article, we show how ARENA software can be adopted to simulate inventory system problems effectively. The method in this research can be applied to investigate various supply system scenarios and their consequences before implementing it in a real system.
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Indexing

Keywords	inventory simulation; inventory model; arena; perishable product
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Language	en
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Supporting Agencies

Agencies	—
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References

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| References | <p>Abelti, A., Correspondence, A., & Abelti. (2016). Post-harvest and nutritional loss assessment of fish at different handling stage from Genale River, Southeastern Oromia. 263, 263-266.</p> <p>Agustina, D., Lee, C. K. M., & Piplani, R. (2014). Vehicle scheduling and routing at a cross docking center for food supply chains. <i>International Journal of Production Economics</i>, 152, 29-41. doi:https://doi.org/10.1016/j.ijpe.2014.01.002</p> <p>Ali, I., Nagalingam, S., & Gurd, B. (2018). A resilience model for cold chain logistics of perishable products. <i>The International Journal of Logistics Management</i>. doi:10.1108/IJLM-06-2017-0147</p> <p>Ames, G., Clucas, I., & Paul, S. S. (1991). <i>Post-Harvest Losses of Fish in The Tropics</i>: Natural Resources Institute.</p> <p>Amorim, P., Günther, H. O., & Almada-Lobo, B. (2012). Multi-objective integrated production and distribution planning of perishable products. <i>International Journal of Production Economics</i>, 138(1), 89-101. doi:https://doi.org/10.1016/j.ijpe.2012.03.005</p> <p>Avinadav, T., Herbon, A., & Spiegel, U. J. I. J. o. P. E. (2013). Optimal inventory policy for a perishable item with demand function sensitive to price and time. 144(2), 497-506.</p> <p>Bakker, M., Riezebos, J., & Teunter, R. H. (2012). Review of inventory systems with deterioration since 2001. <i>European Journal of Operational Research</i>, 221(2), 275-284. doi:https://doi.org/10.1016/j.ejor.2012.03.004</p> <p>Chakraborty, N., Mondal, S., Maiti, M. J. C., & Engineering, I. (2013). A deteriorating multi-item inventory model with price discount and variable demands via fuzzy logic under resource constraints. 66(4), 976-987.</p> <p>Chang, C.-T., Cheng, M.-C., & Ouyang, L.-Y. (2015). Optimal pricing and ordering policies for non-instantaneously deteriorating items under order-size-dependent delay in payments. <i>Applied Mathematical Modelling</i>, 39(2), 747-763. doi:https://doi.org/10.1016/j.apm.2014.07.002</p> <p>Chao, X., Gong, X., Shi, C., & Zhang, H. J. O. R. (2015). Approximation algorithms for perishable inventory systems. 63(3), 585-601.</p> <p>Cheke, R. A., & Ward, A. R. (1998). A model for evaluating interventions designed to reduce post-harvest fish losses. <i>Fisheries Research</i>, 35(3), 219-227. doi:https://doi.org/10.1016/S0165-7836(98)00074-5</p> <p>Chen, X., Pang, Z., & Pan, L. J. O. R. (2014). Coordinating inventory control and pricing strategies for perishable products. 62(2), 284-300.</p> <p>Chen, Z. (2018). Optimization of production inventory with pricing and promotion effort for a single-vendor multi-buyer system of perishable products. <i>International Journal of Production Economics</i>, 203, 333-349. doi:https://doi.org/10.1016/j.ijpe.2018.06.002</p> |
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Jurnal Ilmiah Teknik Industri; Print ISSN: [1412-6869](#) | Online ISSN (e-ISSN): [2460-4038](#)



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Authors Muhammad Faisal Ibrahim, Yunita Siti Mardhiyyah, Ahmad Rusdiansyah, Meidina Kalse Boer, Dana Marsetiya Utama 
Title A Three-Phased Perishable Inventory Simulation Model with Quality Decrease Consideration
Section Articles
Editor Eko Setiawan 

Peer Review

Round 1

Review Version [11769-34174-1-RV.docx](#) 2020-08-04
Initiated 2020-10-07
Last modified 2020-12-07
Uploaded file None

Editor Decision

Decision Accept Submission 2020-12-16
Notify Editor  Editor/Author Email Record  2020-12-07
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Submission

Authors Muhammad Faisal Ibrahim, Yunita Siti Mardhiyyah, Ahmad Rusdiansyah, Meidina Kalse Boer, Dana Marsetiya Utama 

Title A Three-Phased Perishable Inventory Simulation Model with Quality Decrease Consideration


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Layout

Layout Editor	None
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None	
Galley Format	File
1. PDF View Proof	11769-38877-1-PB.pdf 2020-12-23 46
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Proofreading Corrections  No Comments [Proofing Instructions](#)

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Letter of Acceptance

2 messages

Jurnal Industri <jurnal.industri@ums.ac.id>
To: muhammad.ibrahim@uisi.ac.id

Wed, Dec 9, 2020 at 11:31 AM

Dear Mr./Mrs. **Muhammad Faisal Ibrahim, Yunita Siti Mardhiyyah, Ahmad Rusdiansyah, Meidina Kalse Boer, Dana Marsetiya Utama**

Assalaamu'alaikum wa rahmatullaahi wa barakaatuh

Alhamdulillah, all praise is due to Allah, the Most Gracious and the Most Merciful.

We congratulate that the manuscript that you have sent to the editor of Jurnal Ilmiah Teknik Industri,

Title : **A Three-Phased Perishable Inventory Simulation Model with Quality Decrease Consideration**

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Author(s): **Muhammad Faisal Ibrahim, Yunita Siti Mardhiyyah, Ahmad Rusdiansyah, Meidina Kalse Boer, Dana Marsetiya Utama**

has been **accepted for publication in Vol. 19 No. 2**, which will be published in December 2020.

For this reason, a publication fee of IDR 1,000,000 can be transferred to Bank Mandiri, account number 138.00.0501276.5 (Much Djunaidi). We expect publication fees to be transferred no later than December 15, 2020. Please, send the transfer evidence to this email.

Thank you for your attention.

Wassalaamu'alaikum wa rahmatullaahi wa barakaatuh

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Muhammad Faisal Ibrahim <muhammad.ibrahim@uisi.ac.id>
To: Jurnal Industri <jurnal.industri@ums.ac.id>

Mon, Dec 14, 2020 at 9:03 AM

Dear Editor Jurnal Ilmiah Teknik Industri,

Waalaikumsalam warahmatullaahi wa barakaatuh

Along with this e-mail, I attach evidence of the publication fee transfer. We will re-upload the full paper soon.

Thanks

--
Best Regards,

Muhammad Faisal Ibrahim, S.T., M.T.

Lecturer of Logistics Engineering Department

Universitas Internasional Semen Indonesia

Gresik 61122, East Java, Indonesia

Mobile +62853 2366 6694

Office +6231 3985482 /+6231 3981732

Fax +6231 3985481

[Quoted text hidden]

--

Best Regards,

Muhammad Faisal Ibrahim, S.T., M.T.

Lecturer of Logistics Engineering Department
Universitas Internasional Semen Indonesia
Gresik 61122, East Java, Indonesia

Mobile +62853 2366 6694

Office +6231 3985482 /+6231 3981732

Fax +6231 3985481



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1 message

Jurnal Industri <jurnal.industri@ums.ac.id>

Wed, Dec 23, 2020 at 8:30 AM

To: Heru Prastawa <heru.prastawa@gmail.com>, Lobes Herdiman <lobesh@gmail.com>, Octa Bimansyah Untoro <oktauntoro@student.uns.ac.id>, luthfina.ariyani@gmail.com, fransetiawan@unpar.ac.id, Julya Ditazha <julyaditazha@gmail.com>, fauzan@ittelkom-pwt.ac.id, Ilyas Masudin <masudin@umm.ac.id>, muhammad.ibrahim@uisi.ac.id, iveline.annemarie@trisakti.ac.id, jasmineraisya@student.telkomuniversity.ac.id

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[JITI] Submission Acknowledgement

1 message

Much. Djunaidi <journals-noreply@ums.ac.id>
To: Muhammad Faisal Ibrahim <faisalibrahim.ie@gmail.com>

Tue, Aug 4, 2020 at 3:48 PM

Muhammad Faisal Ibrahim:

Thank you for submitting the manuscript, "A Three-Phased Perishable Inventory Simulation Model with Quality Decrease Consideration" to Jurnal Ilmiah Teknik Industri. With the online journal management system that we are using, you will be able to track its progress through the editorial process by logging in to the journal web site:

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If you have any questions, please contact me. Thank you for considering this journal as a venue for your work.

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[JITI] Editor Decision

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Much. Djunaidi <journals-noreply@ums.ac.id>
To: Muhammad Faisal Ibrahim <faisalibrahim.ie@gmail.com>

Mon, Dec 7, 2020 at 7:11 AM

Muhammad Faisal Ibrahim:

We have reached a decision regarding your submission to Jurnal Ilmiah Teknik Industri, "A Three-Phased Perishable Inventory Simulation Model with Quality Decrease Consideration".

Our decision is to: REVISION REQUIRED

Much. Djunaidi
Universitas Muhammadiyah Surakarta
much.djunaidi@ums.ac.id

Reviewer A:

Please describe your detail inputs in pointers format. You are permitted to provide direct inputs to the manuscript by providing direct comments in every section of the manuscript as guided in the following list. Abstract (concise and complete):

The abstract should be concise

Introduction and Theoretical Background (problem clarity and theoretical framework):

This sentence "In previous studies, there have been many inventory models for perishable products, but very few consider the renewal process" in the introduction section is ambiguity, lack of support and only based on the writer perspective .

The gap from previous research is not explained with proper flow in the section of introduction

Methods (clarity and details of the research steps):

The method is using Arena simulation. There are no justification on some treatment of the simulation model such as scenarios and some modules used in the Arena.

Results and Discussions (results of data processing, depth of analysis and discussion):

Results are not analyzed in depth. The results from scenarios are not discussed firmly.

Conclusion (summary of analysis and discussion):

The conclusion should not just mention the results, it should beyond the results.

References (up-to-date and conformity with citations):

There is no Reference published in 2019 and 2020.

Substantive Manuscript (important things related to the decision on the manuscript):

the fundamental flaws of this article.

Reviewer B:

Please describe your detail inputs in pointers format. You are permitted to provide direct inputs to the manuscript by providing direct comments in every section of the manuscript as guided in the following list. Abstract (concise and complete):

The abstract should be concise, no need to state further potential research

Introduction and Theoretical Background (problem clarity and theoretical framework):

This sentence in the introduction section is ambiguity, lack of support and only based on the writer perspective "In previous studies, there have been many inventory models for perishable products, but very few consider the renewal process".

The gap from previous research is not explained with proper flow in the section of introduction

Methods (clarity and details of the research steps):

The method is using Arena simulation however there are no justification on some treatment of the simulation model such as scenarios and some modules used in the Arena.

Results and Discussions (results of data processing, depth of analysis and discussion):

Results are not analyzed in depth. It is all about the results of the software. The results from scenarios are not discussed firmly. There should be practical implication section explaining the proposed improvement for the company. Also there should be a section of theoretical insight to answer the gap of this study from other previous relevant studies.

Conclusion (summary of analysis and discussion):

The conclusion should not just mention the results, it should beyond the results. Thus it should be written in better way

References (up-to-date and conformity with citations):

There is no Reference published in 2019 and 2020. That means that this article was made prior 2019.

Substantive Manuscript (important things related to the decision on the manuscript):

The gap of this study comparing previous relevant and contribution of this article to the body of knowledge are the fundamental flaws of this article.