



OPERATION RESEARCH IN HEALTH AND WELLBEING STUDY



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*Hak Cipta Dilindungi Undang-Undang
Dilarang Memperbanyak buku ini dalam bentuk dan
dengan cara apa pun tanpa izin tertulis dari penerbit*

PREFACE

Operation Research is an analytical method of problem-solving and decision-making that is useful in managing organizations. In the operations research area, problems are divided into essential components and then solved in defined steps by mathematical analysis. Operation research provides the basics of systemically thinking based on the concepts of integration, the relationship between parts, holistic, input-output relationships, control mechanisms, and synergies. Operation Research solves problems in management for academics and practitioners who often deal with complex issues related to the existence of causes and other factors.

Alhamdulillah, The Book Chapter of "Operational Research in Health and Wellbeing" compiled by lecturers of the Concentration of Operational Research, Department of Industrial Engineering, Islamic University of Indonesia can be completed properly. This Book Chapter is a collection of research results that can use as a reference, and discussion material, which is expected to help students complete their literacy.

With the publication of the Book Chapter Operational Research in Health and Wellbeing, the author would like to thank the Director of the Directorate of Academic Development, Dean of Industrial Technology, Head of the Department of Industrial Engineering, Head of Undergraduate Program of Industrial Engineering Study Program, Team of Book Chapter, and fellow lecturers, as well as all parties who have helped in the settlement.

Of course, there are still many shortcomings in this textbook that must address. Therefore, criticism and suggestions for improvement are highly expected. May Allah SWT bless our efforts.

Yogyakarta, July 2022

TABLE OF CONTENTS

BOOK TITLE	i
PREFACE	iv
TABLE OF CONTENTS	v
LIST OF FIGURES	vi
LIST OF TABLES	viii
CHAPTER 1	
THE PRELIMINARY RESEARCH OF COVID-19 VACCINATION RISK PERCEPTION OF SUNGAI PAGU AND KOTO PARIK GADANG DIATEH (KPGD) COMMUNITIES IN SOUTH SOLOK REGENCY, WEST SUMATRA, INDONESIA	1
CHAPTER 2	
SENTIMENT ANALYSIS ON USER REVIEWS OF TELEMEDICINE APPS	46
CHAPTER 3	
ANALYSIS OF WASTE REDUCTION IN THE PRODUCTION PROCESS OF BRA STYLE 76080 USING THE LEAN SIX SIGMA METHOD : CASE STUDY	57
CHAPTER 4	
BIBLIOMETRIC ANALYSIS OF HALAL ASSURANCE SYSTEM	81
GLOSSARY	93
INDEX	98

LIST OF FIGURES

Figure	Title	Page
Figure 1.1	Percentage of Covid-19 Vaccination Achievements Each Province	4
Figure 1.2	Percentage of Covid-19 Vaccination Achievements Per Regency	5
Figure 2.1	Comparison of the number of app user reviews	49
Figure 2.2	Distribution of all words	50
Figure 2.3	The highest word distribution of positive sentiment	50
Figure 2.4	Word-cloud of positive sentiment	51
Figure 2.5	The highest word distribution of negative sentiment	52
Figure 2.6	Word-cloud of negative sentiment	52
Figure 2.7	Diagram of problem root analysis	54
Figure 3.1	Batu Raden Line Production and Reject	59
Figure 3.2	Research Flow	61
Figure 3.3	SIPOC Diagram	66
Figure 3.4	Control CHart	69
Figure 3.5	Pareto Diagram	71
Figure 3.6	Soil Fishbone Diagram	71
Figure 3.7	Long Thread Fishbone Diagram	72
Figure 3.8	Symmetry Fishbone Diagram	72
Figure 3.9	Soil Why Why Analysis	73
Figure 3.10	Long Thread Why Why Analysis	73
Figure 3.11	Symmetry Why Why Analysis	74
Figure 4.1	Visualization of Publish or Perish Keyword Search Results	84
Figure 4.2	Visualization of Publish or Perish Results Search Word Titles	85

Figure 4.3	Visualization of Publish or Perish Results Search Word Titles	86
Figure 4.4	Number of Publications Development Chart	86
Figure 4.5	Network Visualization	88
Figure 4.6	Overlay Vizualitation	89
Figure 4.7	Density Visualization	90

LIST OF TABLES

Table	Title	Page
Table 1.1	Percentage of Covid-19 Vaccination Realization Per Subdistrict	5
Table 1.2	Main survey results	9
Table 1.3	Education level of respondents	10
Table 1.4	Respondent's age range	11
Table 1.5	Respondent's education level	15
Table 1.6	Respondent's Occupation	13
Table 1.7	The districts where the respondents live	14
Table 1.8	Descriptive Statistics on the number of family members	15
Table 1.9	Respondents' disease history	16
Table 1.10	The Covid-19 History	17
Table 1.11	Tendency of Respondents to Take The Risks	17
Table 1.12	Risk definition based on respondent's education	19
Table 1.13	Words that Describes the Risks of Covid-19 Vaccination	20
Table 1.14	Percentage of Respondent's Perceptions Related to Covid-19 Vaccination Risk	21
Table 1.15	Percentage of Perceptions of Elementary Graduate Respondents	23
Table 1.16	Perception of Junior High School Respondents	23
Table 1.17	Percentage of High School Respondent's Perception	24
Table 1.18	Percentage of Perception of Diploma Respondents	25
Table 1.19	Percentage of Perception of bachelor degree's Respondents	25

Table 1.20	Descriptive Statistics of Respondents' Knowledge Level Related to the Benefits of Covid-19 Vaccination.	26
Table 1.21	Correlation Test Result of Educational Level and knowledge	27
Table 1.22	Descriptive Statistic of Level of Preparedness to Face Negative Effects	28
Table 1.23	The Correlation Test Between Education Level and The Readiness	28
Table 1.24	Descriptive statistics of Respondent's Information Level	29
Table 1.25	Correlation test Between Respondents' Education Level and level of Information	30
Table 1.26	Descriptive Statistics Related to the Adverse Effects of Covid-19 Vaccination	31
Table 1.27	Correlation Test Between Educational Level and Negative Perception of Covid-19 Vaccination	32
Table 1.28	Descriptive Statistics of Covid-19 Vaccination Risk	33
Table 1.29	Correlation Test of Education Level with Perception of Threat Level of Covid-19 Vaccination Risk	34
Table 1.30	Descriptive Statistics of Level of Fear	35
Table 1.31	Correlation Test Between Respondent's Fearness and Education Level	35
Table 1.32	Descriptive Statistics of Negative Effect of Covid-19 Vaccination Likelihood	36
Table 1.33	Correlation Test of Negative Effect of Covid-19 Vaccination Likelihood	37
Table 1.34	Respondent's Risk Attitude After Covid-19 Vaccination	38
Table 2.1	Association rules in negative reviews	64
Table 3.1	Waste Identification	65
Table 3.2	Waste Relationship Matrix	68

Table 3.3	Waste Assessment Questionare	68
Table 3.4	DPMO and Sigma	70

CHAPTER 1

THE PRELIMINARY RESEARCH OF COVID-19 VACCINATION RISK PERCEPTION OF SUNGAI PAGU AND KOTO PARIK GADANG DIATEH (KPGD) COMMUNITIES IN SOUTH SOLOK REGENCY, WEST SUMATRA, INDONESIA

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Abstract

Covid-19 was the first new type of virus in late 2019 in the Chinese city of Wuhan that infected locals. As of February 1, 2022, Indonesia ranks 17th with the most significant total cases in the world. Covid-19 vaccination is one of the alternatives to reduce the risk of Covid-19 transmission, stimulate the immune system, reduce the severe impact of Covid-19 virus infection and achieve herd immunity. West Sumatra Province is one of the provinces in Indonesia with the lowest Covid-19 vaccination achievement rate, one of the regencies with the lowest vaccination rate in West Sumatra is South Solok Regency. While providing Covid-19 vaccination, many problems arise in the community; some people are not willing to vaccinate because Covid-19 vaccination is considered ineffective and dangerous. This study aims to determine how the perception and behavior of the people of South Solok Regency, especially Sungai Pagu and Koto Parik Gadang Districts, are assessed against the risk of Covid-19 vaccination. The survey method used to obtain facts related to perception and behavior shown by society the theory of planned behavior. The results of the study inform that the background of

4.4 Conclusion

Bibliometrics is a field of science that measures or analyzes the historical development of literature using mathematical and statistical techniques to study publications related to topics on a problem. This study aims to visualize related to the basis and flow of research about the Halal Assurance System to achieve the research objective of knowing the pattern of its development. Four types of clusters are generated by searching the keyword "Halal Assurance System" using VOS viewer Software. It was found that the most research/discussion related to the topic of the Halal Assurance System was carried out in 2018 based on Overlay Visualisation. In addition, there are various keyword topics for discussion related to the Halal Assurance System that has the potential for further research, such as halal logos, halal integrity, Muslim consumers, halal status, etc. Therefore, the halal assurance system is a topic of discussion that has the potential to continue to be developed and researched more deeply by involving the case with related issues as previously described.

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GLOSSARY

- Application : A program (such as a word processor or software) that performs a particular task or set of tasks.
- Assurance : It is the act of assuring; a declaration that tends to inspire full confidence; the quality of giving confidence is intended to be exhibited in what is said or done.
- Bibliometric : a statistical method to analyze bibliographic data derived from a collection of various articles/journals related to a particular problem
- Citation : as an intellectual reference to published or unpublished sources by citing existing books, authors, or publications to support a fact
- Classification : A predictive modeling problem where a class label is predicted for a given example of input data. Classes are sometimes called as targets/ labels or categories.
- Covid-19 : COVID-19 (coronavirus disease 2019) is a disease caused by a new type of coronavirus, Sars-CoV-2, which was first reported in Wuhan China on December 31, 2019. COVID-19 can cause symptoms of acute respiratory disorders such as fever above 38 °C, cough and shortness of breath for humans.
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	fever above 38 °C, cough and shortness of breath for humans.
Critical to Quality	: Characteristic keys in the form of attributes of sections, assembly, sub-assembly, products or processes that are literally important for quality or have a direct and significant impact on the actual or perceived quality
Disaster	: Disasters are a series of events that threaten and disrupt people's lives both caused by natural, non-natural, and human factors that result in casualties, environmental damage, psychological impacts, or property losses.
DPMO	: A Six Sigma metric used in quality management that stands for defects per million opportunities. It is a ratio of the number of defects in a sample to the number of defect opportunities multiplied by 1 million
Fishbone Diagram	: Identifies many possible causes for an effect or problem.
Halal	: It is an Arabic term that is used when referring to what is permissible or lawful in Islam
Labeling	: The process of identifying raw data (images, text files, videos, etc.) and adding one or more meaningful and informative labels to provide context so that a prediction model can learn from it.
Lean Six Sigma	: A method that relies on a collaborative team effort to improve performance by systematically removing waste and reducing variation

- Pandemic : A pandemic is an epidemic that has spread to various continents and countries, generally affecting many people. While epidemic itself is a term that has been used to find out the sudden increase in the number of cases of the disease in a population of a certain area.
- Pandemic : A pandemic is an epidemic that has spread to various continents and countries, generally affecting many people. While epidemic itself is a term that has been used to find out the sudden increase in the number of cases of the disease in a population of a certain area.
- Perception : Perception is the organization, identification, and interpretation of sensory information in order to represent and understand the presented information or environment.
- Questionnaire : A questionnaire is a research instrument consisting of a series of questions for the purpose of gathering information from respondents.
- Respondents : a person who replies to something, especially one supplying information for a survey or questionnaire or responding to an advertisement.
- Review : A retrospection which conducted by any person who has access to the internet and publishes their experience to a review site or social media platform following product testing or the evaluation of a service.
- Risk : According to ISO 31000 risk is an uncertain situation and has a negative impact on a goal to be achieved.

<i>Sample size</i>	:	Sample size is a count the of individual samples or observations in any statistical setting, such as a scientific experiment or a public opinion survey.
Sentiment	:	The emotional significance of a passage or expression as distinguished from its verbal context.
Survey	:	A survey is a research method used for collecting data from a predefined group of respondents to gain information and insights into various topics of interest.
System	:	Number system consists of a group of items that regularly interact or are interdependent
Telemedicine	:	A medical care provided remotely to a patient in a separate location using two-way voice and visual communication (as by computer or cell phone).
Unstructured (data)	:	Information that either does not have a pre-defined data model or is not organized in a pre-defined manner. Unstructured information is typically text-heavy but may contain data such as dates, numbers, and facts as well. This results in irregularities and ambiguities that make it difficult to understand using traditional programs as compared to data stored in fielded form in databases or annotated (semantically tagged) in documents.
Vaccination	:	treatment with a vaccine to produce immunity against a disease.
VOSviewer	:	software for building and describing bibliometric networks. The network may include individual journals, researchers,

publications and citations, bibliographies, co-citations, or co-authoring relationships

- Waste : Any action that does not add value to the customer
- Why why analysis : A method of searching for and finding the root causes of the problem

INDEX

- Disaster 11, 36
- Pandemic 11, 12, 57, 59, 106, 107
- Covid-19 10, 11, 12, 13, 14, 15, 16, 25, 27, 29, 30, 31, 32, 33, 34, 35, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 48, 49, 57, 59
- Risk 10, 12, 16, 17, 27, 28, 29, 30, 31, 32, 43, 44, 47, 48, 49
- Survey 10, 11, 16, 17, 18, 27, 50
- Questionnaire 18
- Vaccination 10, 11, 12, 13, 14, 15, 16, 25, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 46, 47, 48, 59
- Perception 10, 11, 16, 31, 32, 33, 34, 35, 36, 41, 42, 43, 44, 45, 49
- Sample (size) 6
- Telemedicine 57, 59, 60, 61, 66
- Application 18, 57, 58, 58, 60, 61, 64, 65, 66
- Unstructured 57, 59, 108
- Sentiment 57, 59, 60, 61, 62, 63, 64, 65, 66
- Classification 59, 60, 61
- Labeling 59, 60
- Review, 57, 59, 60, 61, 64, 66, 74, 88
- Critical To Quality 74, 79
- Defect 68, 71, 72, 74, 75, 76, 78, 80, 83, 84, 85, 86
- Define, Measure, Analyze, Improve, Control (DMAIC) 57, 59, 65, 68, 74, 75, 76, 77, 79, 82, 92, 96, 104
- Defect per Million Opportunity (DPMO)
- Fishbone Diagram 83, 84
- Lean Six Sigma 88
- Why why analysis 76, 84, 85, 86
- Waste 68, 69, 71, 72, 75, 77, 78, 79, 80, 87
- Bibliometric 94, 95, 96, 98, 100
- Halal 94, 95, 97, 98, 99, 100, 101, 102, 103, 104
- VOSviewer 94, 96, 97, 101, 102, 103
- Citation 96, 100
- System 98, 99, 100, 101, 102, 102, 104
- Assurance 94, 95, 97, 98, 99, 100, 101, 10