

ISBN :



# CONFERENCE PROGRAMS AND ABSTRACT

**ADVANCING SUSTAINABLE SCIENCE AND TECHNOLOGY  
THROUGH EFFECTIVE COLLABORATION**

**OCTOBER 20-21, 2021**

**Palembang, Province of South Sumatera  
Indonesia**

Organized By :



## FOREWORD FROM GENERAL CHAIR 5<sup>th</sup> FIRST 2021 INTERNATIONAL CONFERENCE



Assalamu'alaikum wr wb,

Alhamdulillahirrobbil 'alamin, Thank to the God, almighty, due to His bless and love, we are granted good health and opportunity so that we can meet here in the event of the 5<sup>th</sup> FIRST and the 3<sup>rd</sup> SNAPTEKMAS 2021.

The honorable keynote speakers of the 5<sup>th</sup> FIRST and the 3<sup>rd</sup> SNAPTEKMAS 2021

Dra. Nana Yuliana, MA., Ph.D., as The Indonesian LBBP Ambassador for the Republic of Cuba, concurrently with the Commonwealth of the Bahamas, Jamaica, the Dominican Republic and Haiti

Prof. Ramaraj Boopathy. from U Alcee Fortier Distinguished Service Professor of Biological Sciences At the Nicholls State University, USA

Dr. Ing. Ahmad Taqwa, the Director of State Polytechnic of Sriwijaya.

The honourable keynote speakers, distinguished guests, all participants, ladies and gentlemen,

For the beginning of my speech, let me welcome all of you with my great warm hug. It is a great honor for me that you choose the 5<sup>th</sup> FIRST and the 3<sup>rd</sup> SNAPTEKMAS 2021 as your conference. I am so proud that the authors still become enthusiastic to develop the knowledge although in this pandemic situation. Let us still work hard to support the development of the world through the research, science, and technology in many parts of the knowledge, as what has been purposed by the FIRST conference itself.

In this occasion, I would like proudly to inform you that the 5<sup>th</sup> FIRST and the 3<sup>rd</sup> SNAPTEKMAS 2021 as the forum to share knowledge, to search, to find, and to enlarge the link with other industries and universities has attracted so many authors from abroad, such as from: Politeknik Tun Syed Nasir Syed Ismail; MARA University; Politeknik Mukah Sarawak; University Sultan Zainal Abidin, Terengganu, Malaysia; Politeknik Melaka (PMK) Malaysia; Iloilo Science and Technology University (ISAT-U) Philipina; Politeknik Kota Kinabalu; Universiti Teknologi Malaysia; The National University of Malaysia; National Chin-Yi University of Technology (NCUT); Accounting Research Institute UiTM-Malaysia; Management and Science University Malaysia; AlBaha University, KSA, Saudi Arabia; Politeknik Melaka (PMK), Malaysia; Kuantan Community College, Pahang, Malaysia; Universiti Brunei Darussalam; and Ferdowsi University of Mashhad, Iran.

Welcome to all of the researchers that become the collaborators in our research and community service. It is our great honour to have you as our collaborators and participants in the 5<sup>th</sup> FIRST and the 3<sup>rd</sup> SNAPTEKMAS 2021.

The honourable keynote speakers, distinguished guests, all participants, ladies and gentlemen,

In this chance, I would like to say thank you very much to the Director of State Polytechnic of Sriwijaya for his full support in the development of the Research and Service Community programs. Due to his hard work and his belief to all of the committee so that this event can be held.



In this occasion, I also would like to convey my big thank to all of the keynote speakers, invited guests, all the participants, all reviewers, and all committee of the 5<sup>th</sup> FIRST and the 3<sup>rd</sup> SNAPTEKMAS 2021. Without you all, this event will be nothing. May Allah SWT gives His reward for your sincerity. As the time goes by, it is hoped that our cooperation and coordination in the FIRST and SNAPTEKMAS can be maintained and improved. I hope that you can enjoy this conference and can get a big benefit from this event. I also wish that we can meet again in the forthcoming FISRT ad SNAPTEKMAS

Wassalamu'alaikumwaraahmatullahi wabarakatuh

## FOREWORD FROM DIRECTOR OF STATE POLYTECHNIC OF SRIWIJAYA



The honorable, FIRST 2021 and SNAPTEKMAS 2021 keynote speakers,

Dra. Nana Yuliana, MA., Ph.D., as The Indonesian LBBP Ambassador for the Republic of Cuba, accredited to the Bahamas, Republic of Dominican, Republic of Haiti and Jamaica

Prof. Ramaraj Boopathy., from U Alcee Fortier Distinguished Service Professor of biological sciences at the Nicholls State University, USA

Dr. Ing. Ahmad Taqwa, MT., as Director of Politeknik Negeri Sriwijaya

Assalamualaikum wr wb,

Let us extend our gratitude to Allah SWT, the most gracious, the most merciful. Due to His bless, we can gather here, at the Opening Ceremony of the FIRST 2021 and SNAPTEKMAS 2021

First of all, Please let me deliver my warm welcome to all keynote speakers and all participant of FIRST 2021 and SNAPTEKMAS 2021. It is my great pleasure to meet and see you in this event.

Although, there are so many obstacles that should be faced in the pandemic situation, however, as young generation, we should be optimistic, stay strong and be active in searching and finding the solution. The FIRST 2021 and SNAPTEKMAS 2021 as the DIES of State Polytechnic of Sriwijaya annual event will become one of the media to support those activities. The researchers could share knowledge, find partners, and enlarge the collaboration through this event.

Based on the change in the model of the teaching learning activity that focuses on the MERDEKA BELAJAR, State Polytechnic of Sriwijaya has a big desire in getting acceleration in the internationalization of the institution. One of them by improving the overseas and industrial collaboration, especially in joint research and joint publication. In the beginning of 2021, the research and community service unit in Politeknik Negeri Sriwijaya has launched new schemes of research and community service, namely the Overseas Collaboration Research and Overseas Collaboration Community Service. Thanks to God, those schemes have attracted researchers not only from Asia but also several other countries outside Asia, such as: research and community service collaboration with Al Baha University from Saudi Arabia, with Ferdowsi University of Mashhad from Iran, and with Princess Sumaya University of Technology from Jordan, as well as several other foreign universities.

In this occasion, I also would like to welcome all the researchers that become the collaborators in our new scheme of research and community service. It is our great honour to have you as our collaborators.

The honourable participants,

At this time, State Polytechnic of Sriwijaya has held 5 times of FIRST. FIRST publications from previous conferences have been successfully indexed not only in SCOPUS, but also in WOS. This 5th FIRST seminar will be conjugated with the 3<sup>rd</sup> National Seminar on Community Service SNAPTEKMAS. (National seminar of applied technology for public). All of these are the efforts to improve the quality of Polsri lecturers which significantly have a positive effect on the learning process of Polsri students.

Before ending my speech, I would like to congratulate the participants of The FIRST 2021 and SNAPTEKMAS 2021. May the noble efforts, support, and cooperation of researchers in this conference will continue. Special thanks to the organizer and co-organizer committee of The FIRST 2021 and SNAPTEKMAS 2021 for the hard work and the commitment in realizing this conference. Do maintain the spirit of working in a team and continue to unite in order to display a culture of excellence in the eyes of the country and the world.



With Bismillahirrahmanirrahim, I officiate The FIRST 2021 and SNAPTEKMAS 2021.  
Wassalamu'alaikum warrahmatullahi Wabarakatu

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## KEYNOTE SPEAKER



**Dra. Nana Yuliana, MA., Ph.D.**

The Indonesian LBBP Ambassador for the Republic of Cuba, concurrently with the Commonwealth of the Bahamas, Jamaica, the Dominican Republic and Haiti

Her Excellency Ambassador Nana Yuliana, Ph.D arrived in Havana, Cuba on December, 23rd, 2020 to serve her duties as the Ambassador Extraordinary and Plenipotentiary of the Republic of Indonesia to Republic of Cuba, Commonwealth of Bahamas, Dominican Republic, Republic of Haiti and Jamaica. She was appointed by the President of the Republic of Indonesia on October 19th, 2020. Prior to her position as Ambassador Extraordinary and Plenipotentiary, she was Consul General of the Republic of Indonesia in Houston, Texas, United States of America from 2017 –2020, after she was the Director of Mid-Career Diplomatic School at the Ministry of Foreign Affairs of Indonesia from 2014 – 2017. Her first diplomatic assignment was as First Secretary of Political Affairs at the Embassy of Indonesia in Manila from 2001-2005. From 2008 to 2012, she was the Counsellor of Economic Affairs of the Embassy of Indonesia in Bangkok and Permanent Representative of Indonesia to the United Nations Economic and Social Commission for Asia and Pacific (UNESCAP). She attended several meetings related to Millennium Development Goals (MDGs) or Sustainable Development Goals (SDGs) issues. Her bachelor's degree was English Education from Institute of Teacher's Training in Jakarta, then she pursued her Master Degree in Applied Linguistics for Macquarie University in Sydney, Australia and also International Relations from University of Indonesia in Jakarta, Indonesia. She completed her Doctoral Degree in Development Studies from the University of Santo Tomas, Manila, Philippines in 2006. While serving as a diplomat since 1995, her passion in teaching and learning encourages her as well to share her knowledge and teaches at the University in Jakarta, Indonesia. During her tenure as Consul General, she was very active in promoting Trade, Tourism, Inbound and Outbound Investments and very keen to engage with Universities for cooperation in human capital development.



## KEYNOTE SPEAKER



### Prof. Ramaraj Boopathy

Alcee Fortier Distinguished Service Professor of biological sciences  
at the Nicholls State University, USA

Fulbright Scholar Fulbright Senior Specialist World Class Professor-Government of Indonesia. Honorary Visiting Professor, ITB, Indonesia Alcee Fortier Distinguished Service Professor John Brady Endowed Professor in Biological Sciences Nicholls State University Business Address: Alcee Fortier Distinguished Service Professor John Brady Endowed Professor in Biological Sciences Department of Biological Sciences Nicholls State University Thibodaux **EDUCATION:** B.Sc. Zoology, University of Madras, India; 1979 M.Sc. Environmental Biology, Tamil Nadu Agricultural University, India; 1981 Ph.D. Environmental Biology, University of Madras, India; 1986 **UNIVERSITY RESPONSIBILITIES:** Responsibilities include Teaching Environmental Biotechnology, a Senior and Graduate level course, Marine and Environmental Biology (Graduate Course), Microbiology and Environmental Biology courses. Research interests include Bioremediation of Hazardous Chemicals and Anaerobic Microbiology. Service includes advising students, participate in Departmental and University committees and serving the local and regional communities. Advisor to Masters Program in Marine and Environmental Biology. **PROFESSIONAL EXPERIENCE:** January 2013 – Present: John Brady Endowed Professor in Biological Sciences, Department of Biological Sciences, Nicholls State University, Thibodaux. Teaching, Research, and Service to the University and Community. August 2012 – Present: Alcee Fortier Distinguished Service Professor, Department of Biological Sciences, Nicholls State University, Thibodaux. Teaching, Research, and Service to the University and Community. August 2004 – Present: Distinguished Service Professor, Department of Biological Sciences, Nicholls State University, Thibodaux. Teaching, Research, and Service to the University and Community. **MAJOR AREAS OF RESEARCH INTERESTS:** Anaerobic digestion, Composting, Biodegradation of hazardous chemicals. Antibiotic resistant bacteria and Antibiotic resistance genes in the aquatic ecosystem. Isolation and identification of novel bacteria. Anaerobic degradation of explosive chemicals with particular reference to sulfate reducing bacteria. Design and development of biological reactor systems. Microbial immobilization of

heavy metals and radionuclides. Alcohol production from agricultural residues. Water quality in the wetlands. Alternative to sugarcane burning, Biological control of termites. Organic ways to control land loss and coastal restoration.

## KEYNOTE SPEAKER



**Dr. Ing. Ahmad Taqwa, MT.**

Director of Politeknik Negeri Sriwijaya Indonesia

Director of State Polytechnic of Sriwijaya, other than that, he is still active at Head of The Research and Publication Commission Forum Director of State Polytechnical In Indonesia, Founder of The Online Journalist Board (IWO) Sumsel, Chairman of The Advisory Board of UKM Nusantara Palembang and Assessor of Higher Accreditation Board. **EDUCATION:** Diplom Ingenieur Electrical Engineering HTL, Ingenieurschule Beider Basel, Switzerland; 1994, Magister (2005) and Doctoral (2010) at Electrical Engineering, Bandung Institute of Technology, Indonesia. **RESEARCH:** Head of Research Assignment “Mini PLTS Periodic Cooling System to Overcome Overheating in Palembang City” (2019), Member of The Research Assignment “Effects of Sea Salt Dust Collection on Output Loss and Solar Panel Output Efficiency” (2020), and Head of Research Assignment “Design and Build of Wireless Sensor Network Prototype Detection Of Landslides Based on IOT and LORA” (2020). **DEDICATION:** “The Design and Evaluation of Virus Scan in The E-Mail System in SMA N 5 Palembang” (2018), Assignment Service “Utilization of WSN Technology in Parking Air Monitoring Foundation SMP Harapan Mulia Palembang” (2019), Development of Teaching Materials with Interactive Multimedia with Education Game for Harapan Mulia Junior High School Students” (2020). **AWARD:** Certificate In Participating In The 200 Hour Advanced Technical Teacher Training awarded by FONTYS and PEDC (1998), Satyalancana Karya Satya X Year 2011 And Satyalancana Karya Satya XX Year 2017 by The President of The Republic of Indonesia. **WORKSHOP:** Seminar and Focus Group Discussion Forum The Rector of Indonesia “Economic Stability In The Vuca Area”, Ujung Pandang (2020), Workshop on Using Integrated Resources Information System Applications For Lecturers of State Polytechnical Polytechnic, Palembang (2019) And Workshop of Learning Methodology of Polsri Lecturers and Outside Education Domicile (PDD) as a Source Person, Palembang (2019).




**RUNDOWN**  
**The 5<sup>th</sup> FIRST 2021 INTERNATIONAL CONFERENCE**  
**(FORUM IN RESEARCH SCIENCE AND TECHNOLOGY)**  
**SNAPTEKMAS (Seminar Nasional Aplikasi Teknologi pada Masyarakat) 2021**  
**Palembang, South Sumatera, Indonesia**  
**Thursday, October 21, 20201**

		Thursday, October 21, 20201			
No.	Session	Person in Charge	Time Allotment (WIB)	Liaison Officer	
1.	Registration	Event Section Committee	07.00 – 08.00	Doeslohal Djumrianti, S.E.MIS., Ph.D	
2.	The Opening Ceremony				
3.	Do'a				
4.	Indonesian National Anthem				
5.	Chair Report Speech	Event Section Committee	08.00 – 09.00		
6.	Speech and Opening Remarks by Director of State Polytechnic of Srijijaya				
7.	Souvenirs Gift, Group Photos				
PLENARY SESSION					
No.	Keynote Speaker	Affiliation	Time Allotment (WIB)	Moderator	Liaison Officer
1.	Dra. Nana Yuliana, MA., Ph.D.	The Indonesian LBBP Ambassador for the Republic of Cuba, concurrently with the Commonwealth of the Bahamas, Jamaica, the Dominican Republic and Haiti	09.00 – 10.00	Tiur Simanjuntak M.Pd.	Doeslohal Djumrianti, S.E.MIS., Ph.D
2.	Prof. Ramaraj Boopathy	Alcee Fortier Distinguished Service Professor of biological sciences at the Nicholls State University, USA	10.00 – 11.00	Prof. Hasan Basri	Dr. Nyayu Latifah Husni, M.T.
3..	Dr. Ing. Ahmad Taqwa, MT.	Director of Politeknik Negeri Sriwijaya, Indonesia	11.00 – 12.00	Jaksen M. Amin, M.Si.	Dr. Martha Aznury, S.Pd., M.Si.

**PARALLEL SESSION**

No.	Theme	Room	Time	Moderator	Articles
1.	TRACK 1 (Engineering and Science)	1	13.00 – 16.00	Dr. Eng Tresna Dewi, M.Eng./ Ika Sulianti, ST, MT	15
2.	TRACK 1 (Engineering and Science)	2	13.00 – 16.00	Dr. Martha Aznury, M.Si./ Indah Purnamasari, M.Eng.	14
3.	TRACK 1 (Engineering and Science)	3	13.00 – 16.00	Fatahul Arifin, M.Eng, Ph.d./ Dr. Indrayani, S.T., M.T.	13
4.	TRACK 2 (Computer Science, Computer Engineering, Information System, Informatics Management)	4	13.00 – 16.00	Rika Sadariawati, M.Si./ M.Miftakul Amin, S.Kom., M.Eng	13
5.	TRACK 2 (Computer Science, Computer Engineering, Information System, Informatics Management)	5	13.00 – 16.00	Dr. Nyayu Latifah H, MT./ Lindawati, S.T., M.TI	12
6.	TRACK 3 (Social Science)	6	13.00 – 16.00	Doeslohah Djumrianti, S.E.MIS., Ph.D/ Dr. Marieska Lupikawati	13
7.	TRACK 3 (Social Science)	7	13.00 – 16.00	Dr. Sari Lestari ZR/ Dr. Rita Martini	14
8.	SNAPTEKMAS 1	8	13.00 – 16.00	Yumi Oklarina, ST, MT/ Mouland Irwadi, SE. M.Si.	15
9.	SNAPTEKMAS 2	9	13.00 – 16.00	Leni Novianti, M.Kom./ Maivi Kusnandar, M.Kom	15
10	SNAPTEKMAS 3	10	13.00 – 16.00	M Husni Mubarak, M.Si./ Martinus Mujur, ST, MT	15
11	SNAPTEKMAS 4	10	13.00 – 16.00	Dr. Ade Silvia H, MT./ M. Sopian Soim, ST, MT	13



### CLOSING SESSION

Event	Time	Room
<ul style="list-style-type: none"><li>- Closing Ceremony</li><li>- Announcement of:<ol style="list-style-type: none"><li>1. Best Paper FIRST IC 2021</li><li>2. Best Paper SNAPTEKMAS 2021</li><li>3. Best Presenter FIRST IC 2021</li><li>4. Best Presenter SNAPTEKMAS 2021</li></ol></li><li>- Quiz Online</li></ul>	16.00– 17.00	Main Room



### TRACK 3 (Social Science)

ROOM : 6  
 TIME : Thursday, 21 October, 2021/ 13.00 - 16.30  
 ARTICLES : 13  
 MODERATOR : Doeslohal Djumrianti, S.E.MIS., Ph.D/ Dr. Marieska  
 Lupikawati

NO	Time	ID	AUTHORS	TITLE	AFFILIATION
1	13.00-13.10	3847	Ayu Chotibah, Bainil Yulina, Desi Apriyanty, Evada Dewata, Pridson Mandiangan	THE INNOVATION OF SOUTH SUMATERA TRADITIONAL BATIK E-COMMERCE APPLICATIONS	State Polytechnic of Sriwijaya
2	13.10-13.20	3683	M. Thoyib, Riza Wahyudi, Firmansyah, Darul Amri	THE ANALYSIS OF COST QUALITY ON PRODUCTIVITY OF IRON RAILING PRODUCTS IN SMALL AND MEDIUM BUSINESS IN PALEMBANG	State Polytechnic of Srwiwijaya
3	13.20-13.30	3757/3756	Nelly Masnila, Firmansyah, Jovan Febriantoko, Riana Mayasari, Jamaliah Said	Quality of Financial Reporting and Impact of GGG Implementation: Study on Local Government in Indonesia	State Polytechnic of Sriwijaya
4	13.30-13.40	3796	Evi Agustina Sari, Sri Gustiani, Yusri, Tiur Simanjuntak	An Error Analysis of English Sentence Construction in Writing Subject Made by the Students of the English Department at Sriwijaya State Polytechnics	State Polytechnic of Sriwijaya
5	13.40-13.50	3827	Edwin Frymaruwah, Farah Aida Ahmad Nadzri, Periansya, Evada Dewata	DISCLOSURE OF SUSTAINABLE PERFORMANCE IN HIGHER EDUCATION IN INDONESIA	State Polytechnic of Sriwijaya, UiTM
6	13.50-14.00	3976	Hendra Hadiwijaya Febrianty Rezanía Agramanisti Azdy	Improvement of LPKA Class 1 Palembang Electronic Dashboard with Field Performance Monitoring	Palcomtech Polytechnic, STMIK PalComTech
7	14.00-14.10	3853/4034	Neneng Miskiyah, Purwati, Yulia Pebrianti, Keti Purnamasari, Nyimas Miftahul Jannah,	OPTIMIZATION OF INCOME PARAMETERS OF SONGKET CRAFTSMEN ON KOPERASI SONGKET PALEMBANG	State Polytechnic of Sriwijaya

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# Welfare Evaluation of the Duck Breeding in Gandus Subdistrict, Palembang

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## ABSTRACT

The Department of Agriculture and Food Security of Palembang City is located in the Gandus sub-district, assisting in the form of ducks breeders to reduce poverty and improve community welfare. Methods of data collection using questionnaires and interviews with duck farmers. The number of samples as many as 68 people with the census sampling technique method. Data analysis method using SmartPLS with PLS Algorithm and Bootstrapping test. The results of data processing show that the assistance of ducks to farmer groups in Gandus sub-district has not been successful in increasing income and welfare. The income of duck farmers is not from selling duck eggs but from other sources of income. The factors that cause the failure of duck breeders are i) lack of experience of duck breeders in raising ducks, ii) inappropriate breeder environment because ducks can survive in paddy fields and swampy land so that the ducks can find their food. It is recommended that the Department of Agriculture and Food Security of Palembang City should provide laying hens assistance to farmer groups because it is under the experience of farmers and the breeder's environments.

**Keywords:** *welfare, poverty alleviation, income, farmer groups, smart PLS*

## 1. INTRODUCTION

The Government of the Republic Indonesia through the Ministry of Agriculture has a program in an effort to alleviate poverty so that people are more prosperous. One of the programs that have been launched is BEKERJA Program or the Welfare People's Poverty Surgery based on agriculture. The BEKERJA program provides assistance to households in the form of livestock and plants that use community yards intensively for agriculture. The government's hope, in this case the ministry of agriculture, is that there is good synergy from all parties, both the government, stakeholders, organizations from the community and from academia [1].

### 1.1. Background of the problem

The BEKERJA program has also been carried out by the Department of Agriculture and Resilience of the City of Palembang, which is located in Gandus District. In 2017 it has distributed ducks, cage materials, and duck feed for 1 month. The Department of Agriculture and

Resilience of the City of Palembang also continues to provide business assistance by deploying Field Extension Officers (PPL) every day and periodically vaccinating animals.

The selection of assistance in the form of ducks to the community for reasons according to the geographical conditions in the Gandus sub-district, namely swampy land. Based on interviews that have been conducted with veterinary authority officials, Dr.Drh.Jafrizal that there will be no similar activities until 2020 because the results of the assistance are still being observed, so assistance from academics is needed to evaluate the impact of the duck distribution assistance. Programs that have been running can be said to be successful if the indicators of success are that ducks can lay eggs and ducks can breed so as to provide income for farmers which can further reduce poverty and improve welfare. Poverty is a condition of limited ability to meet the needs of a decent life, while welfare is the level of poverty condition of a household. The cause of poverty leads to the vicious cycle of poverty theory proposed by Nurkse in [2], that market imperfections, and lack of capital lead to low

productivity. Low productivity results in low income received. Low income will have implications for low savings and investment. low investment results in underdevelopment and poverty.

**1.2. Research purposes**

This study attempts to evaluate the distribution of poverty alleviation program assistance in the form of ducks from the Department of Agriculture and Food Security of Palembang City.

**2. LITERATURE REVIEW**

**2.1. Poverty**

Poverty is a condition of limited ability to meet the needs of a decent life such as limitations in the ownership of household resources. Implies from [3] that resources consist of natural resources, human resources and capital resources. This measurement is material or monetary approach. Measurement with a monetary approach can be done using expenditure data as an approach to household income [4].

**2.2. Income**

Income has a close relationship with the level of production achieved, if production increases then income tends to increase. In addition, the income of farmers depends on the prevailing price level. The level of income is influenced by production and price levels. According to the book on Duck Cultivation Techniques [5], the productivity of ducks is influenced by factors 1) quality of seeds, 2) maintenance procedures, 3) quality and method of feeding, 4) business systems and financial analysis and 5) experience in maintaining.

**2.3. Investment**

Investment can be defined as a commitment of a sum of money or other resources made at this time (present time) with the hope of obtaining benefits in the future. At the practical level, investment is usually associated with various activities related to investing money in various alternative assets, both classified as real assets such as land, gold, property or in the form of financial assets, such as various forms of letters. valuables such as stocks, bonds or mutual funds [6].

**2.4. Welfare**

Welfare is the level of poverty condition of a household. Based on the Poverty Line indicator [7], a family is said to be poor or less prosperous if it has per capita expenditure per month below the poverty line of Rp 521,489,-.

**3. METHODOLOGY**

The data needed for this research, using the method of library research and field research. The data collection method used by the team was to conduct a structured oral question and answer session with the staff and leaders responsible for the livestock business household poverty alleviation program from the Agriculture and Resilience Office of Palembang City. Furthermore, distributing questionnaires with the heads of livestock business households who have received assistance from the Palembang City Agriculture and Food Security Service.

**Table 1** Population Distribution of Farmer Group Assistance in Gandus District

Pegagan Duck Breeding Group					Total
Sinar Lestari	Sinar Jaya	Sri Kembang	Kerto wijaya	Sandang Sarana	
15	10	23	10	10	68

Source: Department of Agriculture and Food Security of Palembang City, 2019 [8]

The population was taken from the number of duck breeders who had been assisted by the Palembang City Agriculture and Food Security Service, namely 68 people. A sample is a certain sample taken from a population and examined in detail. Due to the population below 100 people, the sampling technique that can be used is the census sampling technique, which is a study conducted on all members of the population [9], so the number of samples is 68 people.

The methods and analysis used in making the livestock business household poverty alleviation model with SEM PLS modeling analysis with data analysis steps such as quotes from [10].

**4. RESULT AND DISCUSSION**

**4.1. Measurement Evaluation (Outer) Model**

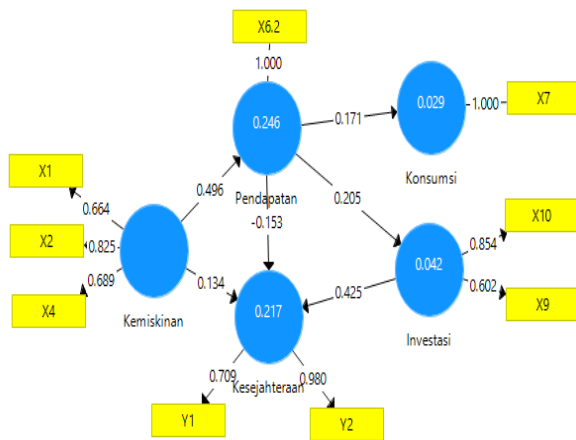
Data analysis using SmartPLS with PLS Algorithm and Bootstrapping test. The outer model can be evaluated through three criteria, namely 1) convergent validity, 2) discriminant validity, 3) composite reliability. Convergent validity tests the correlation between items/indicators and their construct scores. To test the validity of the items from the questionnaire using the outer loading test from the PLS Algorithm. The following are the results of the instrument test:



**Table 2** Outer Loading

	Invest	Poverty	Welfare	Consump	Income
X1		0.664			
X2		0.785			
X3.1		-0.012			
X3.2		0.139			
X3.3		0.025			
X3.4		0.378			
X3.5		-0.053			
X3.6		0.179			
X4		0.615			
X5.2					0.119
X6.2					1,000
X7				-0.974	
X8				-0.238	
X9	0.629				
X10	0.836				
Y1			0.776		
Y2			0.955		

Individual reflection size is said to be high if the correlation is more than 0.70, but according to Chin in [11] for research in the early stages of developing a measurement scale for the loading factor value of 0.5 to 0.6 is considered sufficient. From Table 1, it can be seen that the results of the loading factor test which have results above 0.5, namely indicators X1, X2, X4, X6.2, X9, X10, Y1 and Y2, while results below 0.5 can be deleted and processed data return.



**Figure 1** Poverty Reduction Model

After removing the results from the loading factor test below 0.5, Figure 1 is a model where the results have met convergent validity because all factor loadings are above 0.5.

**Discriminant validity** purposes to predict the size of one block rather than the size of the other. Evaluation of the discriminant validity measurement model can be seen from the value of the Average Variance Extracted (AVE) it is recommended that it must be above 0.50.

**Table 3** Variable AVE Value

Variable	AVE	Information
Investment	0.546	Valid
Poverty	0.532	Valid
Income	1,000	Valid
Consumption	1,000	Valid
Well-being	0.731	Valid

Information in Table 2 shows that the AVE value is above 0.50 for all variables, meaning that the variance of the indicator can be explained as much as 50% or more, so that it is in accordance with the model's assessment criteria.

**Composite reliability** purposes to measure the extent to which the measuring instrument can be trusted (reliable), measuring internal consistency and the value must be above 0.60. With the composite reliability criteria in the PLS Algorithm test, the following results are obtained:

**Table 4** Composite Reliability

Variable	Composite Reliability	Information
Investment	0.700	Reliable
Poverty	0.772	Reliable
Income	1,000	Reliable
Consumption	1,000	Reliable
Well-being	0.841	Reliable

Information in Table 3, it can be seen that all variables above 0.60 have met the reliable element, meaning that the questionnaire questions are consistent.

#### 4.2. Evaluation of the Structural Model (Inner Model)

In assessing the model with PLS, you can see the R-square for each dependent latent variable. Changes in the value of R-square can be used to assess the effect of certain independent latent variables on the dependent latent variable whether it has a substantive effect.

**Table 5** R-Square Nilai Value

Variable	R-Square	Information
Investment	0.042	Weak
Income	0.246	Weak
Consumption	0.029	Weak
Well-being	0.217	Weak

According to [11] R-square results of 0.67, 0.33 and 0.19 for endogenous laten variables in the structural model indicate that the model is categorized as good, moderate and weak. The information in Table 4 of the calculation results shows the model is categorized as low.

### 4.3. Hypothesis test

Hypothesis testing using bootstrapping method. This hypothesis test is done by analysing the p-value. The criterion for testing the hypothesis is the p-value with a significant level of 5%.

**Table 6** P-value

	Original Sample	Standard Deviation	T - Statistics	P- Values	Decision
Investment -> Welfare	0.425	0.114	3,744	0.000	Accepted
Poverty -> welfare	0.209	0.132	1,587	0.113	Rejected
Poverty -> income	0.496	0.166	2,978	0.003	Accepted
Income -> investment	0.205	0.245	1.809	1.809	Rejected
Income-> welfare	-0.240	0.124	1,935	0.054	Rejected
Income -> consumption	0.171	0.144	1.078	0.282	Rejected

The results of the calculations in Table 5 are concluded:

1. Investment on welfare has a positive and significant effect because t statistic > t table is 3,744 > 1.96 or significant below 0.05
2. Poverty on welfare has an insignificant effect because t statistic < t table is 1.587 < 1.96 or significant above 0.05
3. Poverty on income has a positive and significant effect because the t statistic > t table is 2,978 > 1.96 or the significance is below 0.05
4. Income on investment has no significant effect because t statistic < t table is 1.809 < 1.96 or significant above 0.05
5. Income against kWelfare has an insignificant effect because t statistic < t table is 1.935 < 1.96 or significant above 0.05
6. Income on consumption has no significant effect because t statistic < t table is 1.078 < 1.96 or significant above 0.05

### AUTHORS' CONTRIBUTIONS

The results of data processing show that the assistance of ducks to farmer groups in Gandus sub-district has not been successful in increasing income and welfare because income has no effect on welfare. The income of duck farmers is not from selling duck eggs but from other sources of income.

The factors that cause the failure of duck breeders are i) lack of experience of duck breeders in raising ducks, ii)

inappropriate breeder environment because ducks can survive in paddy fields and swampy land so that the ducks can find their food.

It is recommended that the Department of Agriculture and Food Security of Palembang City should provide laying hens assistance to farmer groups because it is under the experience of farmers and the breeder's environment.

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