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State Polytechnic of Sriwijaya – Indonesia

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REMARKS FROM DIRECTOR



AssalamualaikumWaRahmatullahiWaBrakatuh,
In the Name of Allah, the Most Beneficent, the Most Merciful
May the peace, the mercy, and the blessing of Allah be upon you.

Distinguished Participants, Ladies and Gentlemen,
On the behalf of State Polytechnic of Sriwijaya, I would like to welcome you all to the
International Conference FIRST 2016 on Renewable Energy for Sustainable
Development

Forum in Research, Science, and Technology(FIRST)is a meeting organised to accomodate researchers, academics, businessman, and government to follow up research results, to identify industry needs and to keep updated with the government policies. This forum has moved from national scale into an international conference which is conducted annually by State Polytechnic of Sriwijaya. This year, FIRST brings a theme “Renewable Energy for Sustainable Development”. It is realised that efforts to solve environmental problems that we are facing today need long term potential actions for sustainable development; And renewable energy resources is one of the most appropriate solutions. Therefore discussing about renewable energy automatically deals with sustainable development.

All papers presented in the conference are documented in proceedings. The proceeding features 71 papers divided into several fields including Environment, Biomass to Energy, Renewable Energy, Audit Energy, Technology for Energy, Design/Modelling, Economic Sustainability and Management. In brief, the relations between renewable energy and sustainable development are described with practical cases and several issues relating to renewable energy, environment and sustainable development from both current and future perspectives.

Our thanks are conveyed to the Governor of South Sumaterafor providing us direction and views related to the importance of renewable energy resources. Also appreciation and gratitude to the keynote speakers, H. Alex Nurdin, Governor of South Sumatera Province, Prof. TjandraSetiadi, Ph.D., ITB, Indonesia, and Prof. Dr. Werner Rammensee, Cologne University, Germany. Also to invited speakers,Prof. Dr. ErryYulianTriblasAdesta, International Islamic University, Malaysia, Christian Overfeld, Lucas Nuelle, Germany, Dr. Sonny Zuhuda, International Islamic University, Malaysia,Ir. Tri Mumpuni, Kementerian ESDM dan IBEKA, Indonesia, Ir. Fahrurrozi, M.Si., Business Head Chemicals Group, PT. BASF Indonesia and Head of Business Development, FederasiIndustri Kimia Indonesia ontheirpresentation related to renewable energy for sustainable development.

Further we extend deepest gratitude and high appreciation to all presenters and contributors to make this conference possible and these proceedings published. It is realised that publication of these proceedings are still far from being perfect; however, hopefully it will be useful for energy scientist, engineers, policy makers and any other readers as references for enriching their knowledge .

May God bless us all with the health to make this event a successful and enjoyable one!

Thank you.

Dr. Ing. Ahmad Taqwa, M.T.
Director of State Polytechnic of Sriwijaya

MESSAGE FROM THE CHAIRMAN

BISMILLAHIROHMANIRROHIM,
ASSALAMUALAIKUM WW.,
Good Morning Everyone
May the peace, the mercy, and the blessing of Allah be upon you.

The honorable governor of South Sumatra Province, Bapak H. Alex Noerdin
The honorable Director of State Polytechnic of Sriwijaya, Bapak Dr. Ahmad
Taqwa
Distinguishedspeakers, Presenter, Guests, and Participants,

It is my great pleasure to welcome and thank you very much for your contributions to this renewable energy conference. This conference which will take place on 18 up to 19 of October 2016, is conducted firstly this year through the initiation of Chemical Engineering Department, State Polytechnic of Sriwijaya, aims to exchange the ideas from governments, non-governmental organizations, research and academic institutions, international organizations, and industries, to learn from each other and build on successes that advance renewable energy for sustainable development.

I am very happy to inform that the committee is very lucky to have 3 keynote speakers, i.e Bapak H. Alex Noerdin, the governor of SS province, Prof. Chandra Setiady from ITB Bandung and Prof Werner Ramensee from Cologne University of Germany, who supported us from the very beginning with their capabilities to present, sharing knowledge and experiences with us here as well as the invited speaker i.e Prof. Dr. Erry Yulian Triblas Adesta, International Islamic University, Malaysia, Christian Overfeld, Lucas Nuelle, Germany, Dr. Sonny Zuhuda, International Islamic University, Malaysia, Ir. Tri Mumpuni, Kementerian ESDM dan IBEKA, Indonesia, Ir. Fahrurrozi, M.Si., Business Head Chemicals Group, PT. BASF Indonesia and Head of Business Development, Federasi Industri Kimia Indonesia.

Distinguished Guests, Presenter, and Participants,

On this special occasion, I would like to report that the conference manage to succesfully attract more than 71 academician to present their abstract, i.e from Kuwait, Germany, Algeria, Malaysia, Cambodia and of course Indonesia. Amongst others there 69 abstract to be presented in this seminar under professional selective review. And for that reason, I personally would congratulate you all as distinguished speaker to this event.

This conference has collaborated with two international journal i.e Journal of Engineering and Technological Science, ITB and Gadjah Mada International Journal of Business. All selected papers are then peer-reviewed to meet the publication standard. The peer reviewer of each manuscript is rigorous and concentrates on objective and technical concern to determine whether the research has been sufficiently well conceived, executed and described.

Excellencies, Distinguished Guests, Ladies And Gentlemen

I would also like to give special welcome to Lucas Nuelle, PT. Merck Chemicals and Life Sciences, CV. BestariSetiaAbadi, PT. BangunEnergi, PT. Ditek Jaya, PT. Bank MandiriTbk., PT. Indofood SuksesMakmur and individual who support this conference through sponsorship. I believe that we could never thank you enough for that.

Finally, I expect all participants have memorable moment through this conference and enjoy your stay in Palembang, South Sumatra Province, Indonesia. Thank you.

Sincerely
Chairman of Organizing Committee
H. Firdaus

KEYNOTE SPEAKER



H. Alex Noerdin
Governor of South Sumatera



Prof. Tjandra Setiady, Ph.D
ITB, Indonesia



Prof. Dr. Werner Rammense
Cologne University, Germany

INVITED SPEAKER



Prof. Dr. Erry Yulian Triblas Adesta
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CASE STUDY FACTORS THAT INFLUENCE CHILDREN TO WORKERS KALIDONI VILLAGE IN PALEMBANG

Indri Ariyanti¹⁾, Rika Sadariawati²⁾, M. Noval³⁾

^{1,2,3)}Management Informatic Department, Politeknik Negeri Sriwijaya,
Jl. Srijaya Negara Bukit Besar, Palembang, South Sumatera Indonesia 30139
Email: indri3673@yahoo.com

Abstract. This research explains the effects of sex the child, the child's age, the presence of parents, family size, birth order of the child on the probability of child labor in the District Kalidoni Palembang. Scope of this research is to analyze children 7-15 years old who are working or not working. Data retrieval is done snowball random sampling. The results of this study indicate that the most influential factor is the factor of birth order in which the child was born first child (the eldest son) would be likely to become child laborers than children born afterwards.

Keywords: Children, Kalidoni, Workers.

I. INTRODUCTION

The phenomenon of child labor in Indonesia are still evolving. Along with that, the problem in this research is: How does the (gender of the child, the child's age, the presence of parents, family size, birth order of the child) on the probability of child labor in the District Kalidoni Palembang.

The purpose of this research is to investigate the influence know the effect (the sex of the child, the child's age, the presence of parents, family size, birth order of the child) on the probability of child labor in the District Kalidoni Palembang.

The benefits from the results of this study are expected by information about the influence know the effect (the sex of the child, the child's age, the presence of parents, family size, birth order of the child) on the probability of child labor in the District Kalidoni Palembang, can provide useful input for interested parties (government or employers) in decisions relating to the issue of child labor in the District Kalidoni Palembang. In addition the results of this study can be used as a reference for similar studies further.

Table 1
Number of Children Age 7-15 2014
Kalidoni Village in Palembang

No.	Village	Population
1	Sungai Selincah	5,306
2	Bukit Sangkal	3,452
3	Kalidoni	2,284
	Total	2,217

Source: BKKBN Palembang 2014

Describes the New Home Economics as part of economic theory deals with the theory of the behavior of households (individuals) who try to meet their satisfaction [1].

In terms of economics theory of economic value of children first popularized Leibenstein [5] which says that a person's decision to have children is based on the cost approach and the benefits of the child (The Benefits And Cost Of Children Approach).

Explaining the theory of the child in terms of supply and demand which encourages children to work [4].

Suggests that there are three theories that cultural theory, theory of poverty and economic theory [3].

Explained that economic difficulties low-income families, usually with a background of low education of heads of households with employment status such as: workers, factory workers, small traders and construction workers, will bring their children to participate work [7].

Research explains that (1) Function of Household Income derived from household capital input agriculture child labor. (2) The significance among households vary in the marginal productivity of average children [2]. Contributions total revenue labor children ranging up to a maximum of 52.3 Household income. (3) Productivity of child labor is very strong and positive compared with the number of adults in the household.

Furthermore [6] added to the research back in that (1) household is the most important factor that can explain variations in the forms of work. (2) In the household where the mother's education, the less time for children to work. (3) Domestic work depending on the age and birth order of the child. (4) When the father is not there, the children spend more time at work, and vice versa if the mother is not there then no significant effect.

Similarly, [9] explains that household income Effects of shift workers more children to work rather than school. But

revenues have negligible effect on the wages of the number of hours children.

II. RESEARCH FRAMEWORK AND METHODS

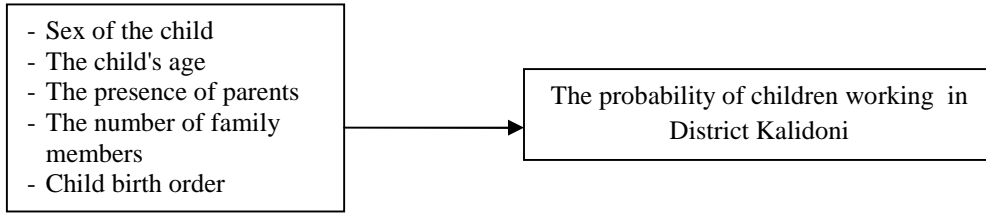


Figure 1. The probability of child labor and factors that give influence

Based on the literature review and theoretical foundation, then made the following framework: analyze the influence know the effect (sex of the child, the child's age, the presence of parents, family size, child birth order) on the probability of child labor in the District Kalidoni Palembang.

A. Hypothesis

"Allegedly factors (sex of the child, the child's age, the presence of parents, family size, birth order of children) affect the probability of child labor in the District Kalidoni significantly".

B. Research Methods

The scope of this study is to analyze the children working or not 7-15 years old. Respondents are children who work or do not work as many as 90 people aged 7-15 years. The research location in District Kalidoni Palembang. Secondary data is data from the BKKBN and BPS Palembang.

C. Analysis method

The model used in this study is a logistic regression model. Selection of logistic regression model or a logit model in this study is due to logistic regression is more easily applied and interpreted. The following definition:

$$P_i = E(Y = 1 | X_i) = \frac{1}{1 + e^{-(\alpha + \beta X_i)}} \dots \dots (1)$$

in which P_i refers to probability. In this research, the model can be simplified as follows:

$$\ln\left(\frac{P_i}{1 - P_i}\right) = \alpha + \beta EX_{i,sex} + \beta EX_{i,age} + \beta EX_{i,parents} + \beta EX_{i,family} + e \dots \dots (2)$$

$$\ln\left(\frac{P_i}{1 - P_i}\right) = \alpha + \beta X_1 + \beta X_2 + \beta X_3 + \beta X_4 + \beta X_5 + e \dots \dots (3)$$

where:

- 1. $\ln\left(\frac{P_i}{1 - P_i}\right)$ = Variable probability of children 7-15 years old who work to earn income and children 7-15 years old who are not working.
- 2. EX1 = sex of the child
- 3. EX2 = age of children
- 4. EX3 = presence of the parents

- 5. EX4 = the number of family members
- 6. EX5 = child birth order
- 7. e = error term

III. RESULTS AND DISCUSSION

The sample size for this study is as much as 90 samples.

Table 2.
The Omnibus Tests of Model Coefficient

	Chi-square	df	Sig.
Step	11.777	5	.038
Block	11.777	5	.038
Model	11.777	5	.038

Source: Research results 2016 (SPSS 20 Output)

Table 2, explained that sig = 0.000, where less than 0.05 95 percent confidence level (= 5 percent), there is one

independent variable affecting the dependent variable. And the model can be used concluded subsequent analysis.

Table 3.
The Wald Test, Significance, and Old Ratios

	B	S.E.	Wald	df	Sig.	Exp(B)
Constant	-.795	.228	12.189	1	.000	.452

Source: Research results 2016 (SPSS 20 Output)

Table 3 describes the significant influence of independent variables on the dependent variable occurs if the value sig <0.05 in Table 3 is 0.000, meaning that simultaneous independent variables affect the dependent variable. Column Exp (B) explain the variables significantly affect the value is

greater than one, then the probability of a child to work is greater. Exp (B) in Table 3 is equal to 0,452 means that the probability of child labor is greater than 0,452 times the children who are not working.

Table 4.
Value Nagelkerke R Square

-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
99.821 ^a	.123	.173

Source: Research results 2016 (SPSS 20 Output)

Table 4 illustrates the value of R Square is 0,173, which means that 17.3 percent of the influence of all independent variables on the dependent variable, while the remaining 82.7

percent is influenced by other variables outside the model. This means that for this research needs to be done further research to add another variable.

Table 5.
Classification

Observed	Prediction		Percentage Correct
	Child not working	Child working	
Child not working	56	6	90.3
Child working	21	7	25.0
Overall Percentage			70.0

Source: Research results 2016 (SPSS 20 Output)

Logistic model used is quite good, is able to guess correctly 70.0 percent of the conditions shown in Table 5.

Table 6. Estimation Results Probability Model Against Children Work

Variabel	B	S.E.	Wald	df	Sig.	Exp(B)
sex of the child	.338	.515	.432	1	.511	1.403
the child's age	.081	.092	.778	1	.378	1.085
the presence of parents	.561	.428	1.723	1	.189	1.753
family size	.328	.223	2.152	1	.142	1.388
child birth order	-.604	.276	4.772	1	.029	.547
Constant	-2.828	1.578	3.213	1	.073	.059

Source: Research results 2016 (SPSS 20 Output)

A. Influence Factor Probability Gender Children Against Child Labour

Table 6 informs, the sex of the child is not significant at = 5 percent level of probability affect child labor. The result indicates that there is no difference in the probability of child labor male and female.

B. Effect of Probability Factor Age Children Against Child Labour

Table 6 explains, the child's age is not significant at = 5 percent level of probability affect child labor. The result indicates that there is no difference in the probability of child labor for the first child and subsequent children were born.

C. Effect of Presence of Parents Against Child Labour Probability

Table 6 shows, the presence of parents is not significant at = 5 percent level affects the probability of child labor. The result indicates that there is no difference in the probability of working children between the presence of a father who is still there with the others.

D. Effect of Number of Household Members Against Child Labour Probability

Table 6 explains, the number of household members is not significant at = 5 percent level of probability affect child labor. The result indicates that there is no difference between the probability of child labor first child and subsequent children were born.

E. Birth Order Effect of Children Against Child Labour Probability

According to estimates by comparing the value of statistics and Wald chi-square value (Sig.) Table 6., so that children born significant at = 5 percent level affect the likelihood of child labor.

Table 6 shows the value of the variable B birth for the negative coefficient. Means, a child born after the first child who has a higher probability of child labor as compared with the first child. With the value of the coefficient of 0.546, which means the value $\text{Odd Ratio} / \text{Exp} (0.604) = 0.546$, shows a comparison of the probability of child labor for children born after the first child compared with the probability of the first child is 05:46. Thus it can be stated that the probability of

child labor for children born after the first child 05:46 time than the first child .compared to the first child.

IV. CONCLUSIONS

Based on the analysis of the problems affecting the factors that most children in child labor, namely: child birth order factors. This means that children born to a higher first probability to become child laborers than children born later. This study can be used as a reference for further research.

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This is to certify that

Indri Ariyanti

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