THE INFLUENCE OF HOUSEHOLD EXPENSE, PRODUCTION DEPENDENCE ON ENERGY, AND DAILY ACTIVITY DEPENDENCE ON ENERGY TOWARD WILLINGNESS TO TAKE FINANCIAL RISK

PENGARUH PENGELUARAN RUMAH TANGGA, KETERGANTUNGAN PRODUKSI PADA ENERGI, DAN KETERGANTUNGAN KEGIATAN SEHARI-HARI PADA ENERGI TERHADAP KESEDIAAN UNTUK MENGAMBIL RISIKO KEUANGAN

By:
Gloria Gwyneth Pai[1]

Faculty of Economics and Business, Management Program
University of Sam Ratulangi Manado

E-mail:
gwynethgloria1@gmail.com

Abstract: This research aims to investigate the influence of household expense, production dependence on energy, and daily activity dependence on energy, toward a willingness to take financial risk. This study uses a quantitative method with questionnaires used to collect the data. This research relied on an ordinal regression model with a sample of 100 respondents of Micro-Small and Medium Enterprises in North Sulawesi. The findings of this research shows that two out of three independent variables, namely, household expense and production dependence on energy, have significant effects on willingness to take financial risk. Meanwhile, daily activity dependence on energy does not have a significant effect on the willingness to take financial risk.

Keywords: *MSMEs, Household Expense, Production Dependence on Energy, Daily Activity Dependence on Energy, Willingness to Take Financial Risk*

Abstrak: Penelitian ini bertujuan untuk mengetahui pengaruh pengeluaran rumah tangga, ketergantungan produksi pada energi, dan ketergantungan kegiatan sehari-hari pada energi, terhadap kesediaan untuk mengambil risiko keuangan. Penelitian ini menggunakan metode kuantitatif dengan kuesioner yang digunakan untuk mengumpulkan data. Penelitian ini mengandalkan model regresi ordinal dengan sampel 100 responden Usaha Mikro Kecil dan Menengah di Sulawesi Utara. Temuan penelitian ini menunjukkan bahwa dua dari tiga variabel independen, yaitu, pengeluaran rumah tangga dan ketergantungan produksi pada energi memiliki pengaruh signifikan terhadap kesediaan untuk mengambil risiko keuangan. Sementara itu, ketergantungan kegiatan sehari-hari pada energi tidak memiliki pengaruh yang signifikan terhadap kesediaan untuk mengambil risiko finansial.

Kata kunci: *UMKM, Pengeluaran Rumah Tangga, Ketergantungan Produksi Pada Energi, Ketergantungan Kegiatan Sehari-hari Pada Energi, Kesediaan Untuk Mengambil Risiko Keuangan*

INTRODUCTION

Research Background

Indonesia has experienced an economic crisis that caused the collapse of the national economy. Many large-scale businesses in various sectors, including industry, trade, and services, have stagnated and even stopped their activities in 1998. However, Micro, Small and Medium Enterprises (MSMEs) can survive and become economic recovery amid the slump due to the monetary crisis in various economic sectors. Micro, Small and Medium Enterprises (MSME) is one of the business sectors that can develop and be consistent in the national economy. MSMEs are an excellent place for productive employment creation. (A. D. Ananda, D. Susilowati, 2017).

When starting a business, entrepreneurs often take actions that contain risks related to financial security, career opportunities, family relationships and personal well-being. Entrepreneurs must have the ability to take appropriate risks, be good at adapting to change and building emotional strength. The courage to take risks in entrepreneurship is a desire to try to do smart regardless of shame and fear. An entrepreneur must have the courage to be responsible, be willing to test his assumptions about the business to be run and dare to take the risk of being wrong. The greater the courage in taking risks, the higher one's interest in entrepreneurship. Likewise, in taking a financial risk. The greater the courage or willingness to take financial risk, the higher the expenditure spent.

Energy is used in the production process as the inputs. Micro and small businesses have a significant role in economic growths. (M. K. Mawati, P. Kindangen, H. Tasik, 2018). At the most basic level, it is a precondition of cooked food, boiled water and warmth. Energy is crucial, but in the search for solutions, it is essential to understand that energy supply is not a goal in itself but only a means to meet peoples‘ needs. People need heating, lighting, cooking food, and transportation energy as an essential input into all human activities. Spending on electricity reduces the ability to meet daily needs but no necessarily makes lives better or worse. (Tasik, 2020). At the most simplistic level: producing food requires energy inputs to prepare the land for harvesting the crops, transporting, processing, and cooking the food. (M. A. Hussein & W. L. Filho, 2012). Many groups of poor people preferred to have more energy than cash, which led to his conclusion that the programs' generalization of the programs was ineffective. (Tasik, 2019).

Nowadays, the increase in household needs is one reason people want to do business or open business. Because through these efforts, they can get income to fulfill their needs. Expenditures incurred are for the needs of food, clothing, and even energy for their production. The people of Manado, Bitung, and Minahasa cities realize that the higher their expenditure, the higher their willingness to take financial risks. To make a business successful, it requires an increased willingness to take risks. Some communities in certain areas are a little difficult to get energy. Also, some households that do not have access to electricity can disrupt their activities, and production.

Research Objectives

1. To identify whether household expense affect willingness to take financial risk.
2. To identify whether production dependence on energy affect willingness to take financial risk.
3. To identify whether daily activity dependence on energy affect willingness to take financial risk.

THEORETICAL REVIEW

Production

Production is the organised activity of transforming resources into finished products in the form of goods and services; the objective of production is to satisfy the demand for such transformed resources (Bates and Parkinson, 2007).

Micro Small and Medium Enterprises (MSME)

Micro Small and Medium Enterprises (MSME) according to Law No. 20 of 2008, Micro business is a productive business owned by individuals and individual business entities that meet the criteria of micro business. Small companies are productive businesses that are independent, carried out by individuals or business entities that are not subsidiaries of companies that are owned, controlled, or become a part either directly or indirectly of medium or large businesses that meet the criteria of small businesses. A medium-scale business is a productive economic business that stands alone, which is carried out by an individual or business entity that is not a subsidiary

or branch of a company that is owned, controlled, or becomes a part either directly or indirectly with a small business or large business with a net worth or the result of annual sales.

Based on the definition above, it can be said that MSME is a business owned by an individual or business entity that is not a subsidiary or a branch of another company with the criteria of having business capital that has certain restrictions.

Household Expense

Household expenses represent a per-person breakdown of general living expenses. They include the amount paid for lodging, food consumed within the home, utilities paid and other expenses. The sum of all the expenses is then divided by the number of family members residing in the house in order to find each member's part of the total expense. (Julia Kagan, 2020).

Energy

In economic terminology, energy includes all energy commodities and energy resources, commodities or resources that embody significant amounts of physical energy and thus offerthe ability to perform work. Energy commodities - e.g., gasoline, diesel fuel, natural gas, propane, coal, or electricity – can be used to provide energy services for human activities,such as lighting, space heating, water heating, cooking, motive power, electronic activity. Energy resources - e.g., crude oil, natural gas, coal, biomass, hydro, uranium, wind, sunlight,or geothermal deposits – can be harvested to produce energy commodities. (M. A. Hussein & W. L. Filho, 2012).

Production Dependence on Energy

Production is a process of changing raw materials into finished goods or adding value to a product (goods and services) to fulfill the community's needs.

The performers of these production activities are referred to as producers (both individuals and organizations), while goods that are produced are called products (goods or services). Whether goods or services are consumed by the community every day, starting from the production process. After the production process, there are several more stages before the product finally reaches consumption for use.

Energy is very much needed in carrying out Indonesian economic activities, both for consumption needs and for various economic sectors. As natural resources, energy must be utilized as much as possible for the community's prosperity, and its management must refer to the principle of sustainable development. (S. I. Faizah, U. A. Husaeni, 2018).

Daily Activity Dependence on Energy

Energy is essential for all humans' survival on this earth because energy and life have a very close relationship. Without energy, all human activities will be hampered.

There are many types of energy, of the many energies that most humans need is electricity. From homes in slums to luxury housing, all of them use electricity. Electrical power becomes essential because almost all the equipment we use is sourced from electricity, so we become dependent on energy. For example, when there was a power outage by PLN, some people complained and were overwhelmed because it could hamper all kinds of activities in the household, government, and industry sectors.

Electric power is a very important energy source for human life, both for industrial activities, commercial activities, and households' daily lives. Electrical energy is needed to meet lighting needs and the production process involving electronic goods and industrial equipment/machinery. They were considering the vast and essential benefits of electrical power while the source of electricity generation, especially those from non-renewable resources, is limited. To maintain this energy source, strategic steps that can support electricity supply are optimal and affordable. (Rasul K. A. A, Khan K. M. M. G, Ahsan T & Ahmed S. F, 2013).

At present, the availability of electrical energy sources cannot meet the increasing electricity demand in Indonesia. The temporary interruption and distribution of electrical energy in the rotation impact the limited electrical life supplied by PLN. This happens because the rate of increase in new energy sources and the procurement of power plants are not proportional to electricity consumption.

Willingness to Take Financial Risk

Financial risk usually is any risk associated with any form of financing. It is one type of risk in which one may have the chance to lose the capital or full money. It refers to the risk of bankruptcy arising from the possibility of a firm not being to repay its debts on time. The higher the debt-equity ratio of a firm, the higher the financial

risk faced by a firm. Financial risk arises through countless transactions of a financial nature, including sales and purchases, investments and loans, and various other business activities. It can occur due to legal transactions, new projects, mergers and acquisitions, debt financing, the energy component of costs, or through the actions of management, stakeholders, competitors, foreign governments, or weather. When financial prices change dramatically, it can increase costs, reduce revenues, or otherwise adversely impact an organization (Bhag Singh Bodla and Reeta, 2013).

Personal willingness to take risks determines to what extent an investor is prepared to accept price fluctuations and losses. It has to be differentiated from the investor`s objective ability to take risks.

Previous Research

Conceptual Framework

The relationship between the variables in this research is explained in this conceptual framework.

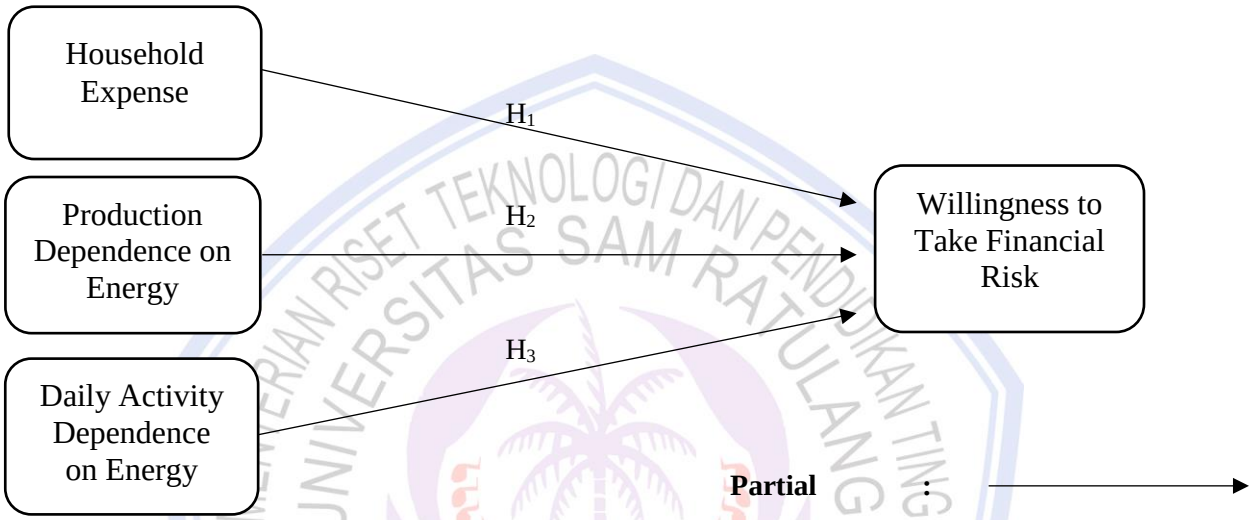

Figure 1. Conceptual Framework
Source: Data Processed, 2019)

Hypothesis

The hypothesis of this research are:

Hypothesis 1 : There is influence of Household Expense Toward Willingness to Take Financial Risk partially.

Hypothesis 2 : There is influence of Production Dependence on Energy Toward Willingness to Take Financial Risk partially.

Hypothesis 3 : There is influence of Daily Activity Dependence on Energy Toward Willingness to Take Financial Risk partially.

RESEARCH METHOD

Research Approach

This research is using a quantitative approach. Quantitative research is explaining phenomena by collecting numerical data that are analyzed using a mathematically based method (in particular statistic). It will explain the relationship of variables through Causal Analysis in Ordinal Regression between one continuous dependent variable and two or more independent variables. Causal analysis is a research study conducted to establish cause and effect relationship among variables (Sekaran and Bougie, 2009).

Population

The population of this research is the people who running Micro Small and Medium Business in North Sulawesi exactly in Minahasa, Bitung, and Manado.

Sampling Technique

This research using a type of probability sampling that is simple random sampling.

Sample

The sample of this research are 100 Micro Small and Medium Enterprises who produced. In this case, street vendors, chefs, restaurant owners, and fishermen.

Data Collection Method

To collect the research data, primary data collection was used through questionnaires.

Operational Definition of Research Variables

Table 1. Definition of Research Variables

NO	Variables	Definition	Measurement
1.	Household Expense	Household expense is the cost of maintaining the home. These expenses include the rent, utilities, property insurance, food consumed at home; repairs in the house, etc	Ordinal
2.	Production Dependence on Energy	Production dependence on energy means the products that can not be separated from energy such as LPG, electricity, fuel and the other energy.	Ordinal
3.	Daily Activity Dependence on Energy	Daily activity dependence on energy means an activity that can not be separated from energy because energy has an important role in order to support the daily activity.	Ordinal
4.	Willingness to Take Financial Risk	Financial risk is a term that can apply to businesses, government entities, the financial market as a whole, and the individual. Willingness to take financial risk means how much people are willing to take risk in finance even its danger or possibility that they will lose money.	Nine Pont Scale

Source: Author's, 2019

Data Analysis Method

Validity Test

Validity test uses to see the validity of the questions and whether the questionnaire questions are valid and in-line with the research. Pearson Product Moment was used for this test. A question was categorized as a valid question if the Pearson correlation value was positive, and the significance value below 0.05 to the total questions of variables.

Reliability Test

Reliability test is used to measure the consistency of measuring instruments. The measuring device is repeatedly used, whether it will give relatively the same results or not much different. Cronbach's Alpha is a reliability coefficient that indicates how well the items in a set are positively correlated to one another (Sekaran and Bougie, 2009).

Ordinal Regression Analysis

This research used ordinal regression analysis because as a predictive analysis, ordinal regression

describes data and explains the relationship between one dependent variable and two or more independent variables.

RESULTS AND DISCUSSION

Results

Ordinal Regression Analysis

Table 1. Model Fitting Information

Model	-2 Log Likelihood	Chi-Square	Df	Sig.
Intercept Only	157.640			
Final	70.241	87.399	3	.000

Link function: Logit.

Source: Output SPSS, 2019

On table 1, there is intercept only 157.640 is the expected mean value of Y (dependent variable) when all X (independent variables) = 0. Final is the value when X (independent variables) are put and computed which in this case the value of final is 70.241. Chi-Square provides those predictors' regression coeficients in the model which don't equal to 0 (zero). The Chi-Square is 87.399 with significant of actual level 5% (sig 0.000).

Table 2. Goodness-of-Fit

	Chi-Square	Df	Sig.
Pearson	57.034	45	.108
Deviance	54.173	45	.164

Link function: Logit.

Source: Output SPSS, 2019

On table 2, there are two statistics which are Pearson and Deviance, they both have their own value of Chi-Square. Pearson 57.034 with the Sig. 0.108 and Deviance 54.173 with the Sig. 0.164, those value indicate that the model is good fit because significant value of both pearson and deviance are greater than 0.05.

Table 3. Pseudo R-Square

Cox and Snell	.583
Nagelkerke	.670
McFadden	.428

Link function: Logit.

Source: Output SPSS, 2019

Table 3 shows that amongst those Pseudo R-Square, Nagelkerke Pseudo R-Square is the biggest which 0.670. It informs that household expense, production dependence on energy, and daily activity dependence on energy (independent variables) are able to explain a willingness to take financial risk (dependent variable) as much as 67%, while the rest 33% explained by other factors not discussed in this research.

Table 4. Parameter Estimates

							95% Confidence Interval	
		Estimate	Std. Error	Wald	Df	Sig.	Lower Bound	Upper Bound
Threshold	[Willingness_To_Take_Financial_Risk = 6.00]	28.468	5.060	31.654	1	.000	18.550	38.385
	[Willingness_To_Take_Financial_Risk = 7.00]	33.011	5.701	33.530	1	.000	21.838	44.185

Location	Household_Exp	1.435	.323	19.755	1	.000	.802	2.067
	Prod_Dep_On_Energy	3.621	.790	20.981	1	.000	2.072	5.170
	DailyAct_Dep_On_Energy	.542	.297	3.329	1	.068	-.040	1.125

Link function: Logit.
Source: Output SPSS, 2019

y = Willingness to Take Financial Risk

Table Parameter Estimates above have to notice the Wald value and significance value. Variable X1 (Household Expense) has Wald value 19.755 with sig. 0.000 (<0.05), variable X2 (Production Dependence on Energy) has Wald value 20.981 with sig. 0.000 (<0.05), and variable X3 (Daily Activity Dependence on Energy) has Wald value 3.329 with sig. 0.068 (>0.05). It means that two out of three independent variables which are household expense and production dependence on energy have significant effect on willingness to take financial risk and daily activity dependence on energy does not have significant effect on willingness to take financial risk. Based on the analysis, the formula of ordinal regression model in this research is shown as follows:

$$\mathrm{E(y)} = \frac{e^{\beta_0 + \text{Household Expense} + \text{Production Dependence on Energy} + \text{Daily Activity Dependence on Energy}}}{1 + e^{\beta_0 + \text{Household Expense} + \text{Production Dependence on Energy} + \text{Daily Activity Dependence on Energy}}}$$

y = Willingness to Take Financial Risk

$$\mathrm{E(y)} = \frac{e^{157.640} + 1.435 + 3.621 + 0.542}{1 + e^{157.640} + 1.435 + 3.621 + 0.542}$$

y = Willingness to Take Financial Risk

Discussion

In conducting a business, both small and medium-sized businesses, the entrepreneurs certainly have the same goal, which is to look for profit or income. From this income, entrepreneurs can fulfill their daily needs. Not only the need to eat, but also they need energy so that the production process for their business keeps continues. Most micro-small and medium entrepreneurs need energy because, without energy, their businesses' production process will not run well. Not only for production that requires energy, but also for daily activities at home and outside the home.

Energy is an essential part of people's lives because almost all human activities always need energy. For example, for cooking, lighting, industrial processes, or moving household appliances, electricity is needed to drive both two and four-wheeled vehicles; gasoline is needed, and there is still a lot of equipment around human life that requires energy.

When starting a business, entrepreneurs often take actions that contain risks related to financial security, career opportunities, family relationships, and personal well-being. Entrepreneurs must have the ability to take appropriate risks, be good at adapting to change and building personal strength. The courage to take risks in entrepreneurship is a desire to try to do smart regardless of shame and fear. An entrepreneur must have the courage to be responsible, be willing to test his assumptions about the business to be run and dare to take the risk of being wrong. The greater the courage in taking risks, the higher one's interest in entrepreneurship. Likewise, in taking a financial risk. The greater the courage or willingness to take financial risk, the higher the expenditure spent.

In this research, the data was collected from 100 respondents. Micro-Small and Medium Entrepreneurs were produced and categorized by gender, age, main job, income, expenditure, and type of energy used. The result shows that 84% are female, and 16% are male. Most of the respondents are between 41-50 years old, the main job of most respondents is a chef by 55%; the largest number of sampled respondents (46%) have income Rp. 4.000.001 – Rp. 5.000.000 and the expenditure of most of the respondents as much as Rp. 2.000.001 – Rp. 3.000.000 (55%), and most of the respondents used LPG to produced.

The result of this research shows that, based on the parameter estimates, two out of three independent variables, which are household expense and production dependence on energy have significant effect on willingness to take financial risk and daily activity dependence on energy does not have significant effect on willingness to take financial risk.

CONCLUSION AND RECOMMENDATIONS

Conclusion

After examining the findings and discussing the result, The conclusions based on this research can be formulated as follows:

1. Household expense as one of the independent variables partially has a significant effect on the willingness to take a financial risk as the dependent variable.
2. Production dependence on energy as one of the independent variables partially has a significant effect on the willingness to take a financial risk as the dependent variable.
3. Daily activity dependence on energy as one of the independent variables partially has a significant effect on the willingness to take a financial risk as the dependent variable.

Recommendation

This research was conducted to know the influence of household expenses, production dependence on energy, and daily activity dependence on energy toward a willingness to take the financial risk of MSMEs in North Sulawesi. The recommendation was formulated based on the findings in this research for MSMEs and further studies.

Micro-Small and Medium Enterprises need to develop their product further so that the more produced, the more that can be sold to get more income. And to develop production, it must provide enough energy to produce.

Future research is necessary to conduct further research about household expenses, production dependence on energy, and daily activity dependence on energy, toward a willingness to take a financial risk that the author has not examined.

REFERENCES

Ananda, A. D., Susilowati D. (2017). Pengembangan Usaha Mikro Kecil dan Menengah (UMKM) Berbasis Industri Kreatif di Kota Malang. *Jurnal Ilmu Ekonomi*. From: http://ejournal.umm.ac.id/index.php/jie/article/view/6072/5526

Azad, A., K. Rasul, M., G. M., M., K., Khan, T., Ahasan, & S., F., Ahmed. (2013). Energy Scenario: Production, Consumption and Prospect of Renewable Energy in Australia. *Journal of Power and Energy Engineering*. From: https://www.researchgate.net/publication/264976584_Energy_Scenario_Production_Consumption_and_Prospect_of_Renewable_Energy_in_Australia

Bates J., Parkinson J.R. (2007). Business Economics. New Delhi: Pratibha Bagga

Bodla, B., S., Reeta. (2013). Financial Risk Management in India-Evidence from Literature Review. SDIMT Management Review. Vol. 1, No. 1. From: https://www.researchgate.net/publication/321153324_Financial_Risk_Management_in_India-Evidence_from_Literature_Review

Faizah, S., I, Husaeni, U., A. (2018). Development of Consumption and Supplying Energy in Indonesia's Economy. *International Journal of energy Economics and Policy*, 8(6), 313-321. From: https://www.econjournals.com

Kagan, J. (2020). Household Expenses. Investopedia. From: https://www.investopedia.com/terms/h/householdexpenses.asp

Mawati M. K., Kindangen P., Tasik H. (2018). Assessing Micro and Small Business'Energy Management to Optimize Micro and Small Business'Production: Case Study. *Jurnal EMBA*. Vol. 6 Issue 4. From: https://ejournal.unsrat.ac.id/index.php/emba/article/view/21911

Muawaya, A., H. (2013). Analysis of Energy as precondition for improvement of living condition and poverty reduction in sub-Saharan Africa. From:

https://www.researchgate.net/publication/281319556_Analysis_of_Energy_as_precondition_for_improvement_of_living_conditions_and_poverty_reduction_in_sub-Saharan_Africa Accessed on: October 7th 2019

Sekaran, U. and Bougie, R. 2009. Research Method for Business: A Skill Building Approach. 5th Edition, John Wiley and Sons Inc., Hoboken.

Tasik, H., H., D. (2019). A Tale of Income and Energy in Rural Areas: What Contributes to People's Happiness?. *International Journal Of Energy Economics and Policy*. Vol. 9, No. 4. From: https://www.econjournals.com/index.php/ijeep/article/view/7782 Accessed on: October 6th 2019

Tasik, H., H., D. (2020). Can Energy Consumption and Benefit Programs Explain One's Living Standards Afterwards? Evidence from Northern Sulawesi, Indonesia. *International Journal of energy Economics and Policy*, 10(4), 43-50. From: https://www.econjournals.com/index.php/ijeep/article/view/9208/5101 Accessed on: May 21st 2020