

The Effect of Firm Size, Gender, and Household Interference on MSEs Performance and Household Welfare in Indonesia

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ABSTRAK

Penelitian ini bertujuan untuk menganalisis pengaruh ukuran usaha, gender, dan household interference terhadap kinerja UMK dan kesejahteraan rumah tangga di Indonesia dengan menggunakan raw data dari Indonesian Family Life Survey tahun 2014 (IFLS-5), dengan sampel sebanyak 4.314 rumah tangga yang menjalankan UMK non-pertanian dengan modal sendiri. Mengingat karakteristik data yang heterogen dan adanya outlier, maka penelitian ini menggunakan metode regresi kuantil dengan tingkat kepercayaan ($\alpha=0,05$). Hasil analisis menunjukkan bahwa ukuran usaha berpengaruh positif dan signifikan terhadap kinerja UMK. Sebaliknya, gender dan household interference berpengaruh negatif dan signifikan terhadap kinerja UMK. Ukuran usaha, berpengaruh positif terhadap kesejahteraan rumah tangga. Gender berpengaruh positif terhadap kesejahteraan rumah tangga, namun signifikan hanya pada Q0,50. Dan household interference berpengaruh positif terhadap kesejahteraan rumah tangga, namun signifikan hanya pada Q0,75.

ABSTRACT

This study aims to analyze the effect of business size, gender, and household interference on MSE performance and household welfare in Indonesia using raw data from the 2014 Indonesian Family Life Survey (IFLS-5), with a sample of 4,314 households running non-agricultural MSEs with their own capital. Given the heterogeneous characteristics of the data and the presence of outliers, this study uses the quantile regression method with confidence level ($\alpha=0.05$). The analysis shows that business size has a positive and significant effect on MSE performance. In contrast, gender and household interference have a negative and significant effect on MSE performance. Firm size has a positive effect on household welfare. Gender has a positive effect on household welfare, but is significant only at Q0.50. And household interference has a positive effect on household welfare, but is significant only at Q0.75.

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INTRODUCTION

Micro and small enterprises (MSEs) play an important role in the Indonesian economy. According to the publication of the Ministry of Cooperatives and SMEs in 2019, MSEs accounted for 98.7% of the total 65,465,497 MSMEs in Indonesia, and have been increasing by more than two percent every year. However, the output growth of MSEs tends to fluctuate and is still lower than the output of large businesses, even though MSEs have a much larger number of business units and workforce compared to large businesses (Hamzah & Agustien, 2019).

According to Rezaei et al (2017), MSEs will grow when they are opportunity-driven. This is in accordance with the assumption of business unity, where MSEs are seen as stand-alone business entities, separate from their households, so as business and household management are managed separately (Baridwan, 2004: 8). However, in reality, there are still many MSEs management that cannot be separated from household management (Yuliati et al., 2022). Many households with limited assets, funds, or access to decent employment, decide to start a business because they only need money and the need to fulfill their basic needs, otherwise known as necessity-driven businesses (de Vries et al., 2020).

On the other hand, household income and asset management are also widely used for MSEs without clear records. Many MSEs use facilities, tools and equipment simultaneously for household and business purposes (Verrest, 2013). This suggests that there is overlap between business and household (Stafford, 1999). Therefore, in assessing the success and sustainability of an MSE, it cannot only be seen from the business aspect, but must also be seen from the household aspect, because the sustainability of an MSE is a combination of business success and household success, as well as success in responding appropriately to disruptions (Yanuarta RE et al., 2023).

Many things can affect the performance and sustainability of a micro and small enterprise (MSE), one of which is business size, gender, and household interference. Business size can affect the performance of MSEs because if the business has a larger scale, it can obtain more sources of funds to finance its investment in obtaining net profit (Midesia, 2022). This will also have an impact on higher household expenditure per capita because the income consumed by households comes from the net profit generated by the business, so if a large business size has an impact on higher net profit, it will also have an impact on household expenditure per capita which will increase proportionally (Akrom, 2020).

Gender also affects household performance and welfare because in general, women are often encouraged to work and run MSEs to help households improve survival due to low household income (Nainggolan, 2016). In addition, MSEs are generally dominated by women entrepreneurs because women tend to prefer micro and small businesses because they only require relatively small capital, do not have extensive business experience, and adequate entrepreneurial skills (Tundui, 2012). This shows that the role of women entrepreneurs can help households in improving living standards and household economic welfare (Seshie-Nasser & Oduro, 2018). However, MSEs run by women face intense competition, so MSEs have low growth and potentially lower net profit as well (Nainggolan, 2016).

Household interference in the form consuming revenue affects MSE performance and household welfare because when a business is necessity-driven, there will be an overlap between the business and the household. MSEs and households have unique and overlapping resources to utilize during disruptions (McDonald & Marshall, 2017). When household interference occurs, the achievement of MSE goals cannot be separated from the household, this is called household interference, one of which is consuming revenue (Yanuarta RE et al., 2023). Consuming revenue has an impact on the lower net profit of MSEs, but has a good impact on household expenditure per capita because the net profit generated by MSEs will be used to meet daily needs by households (Vial & Hanoteau, 2015).

Therefore, this study contributes to further examine the effect of business size, gender, and household interference by using quantile regression method.

LITERATURE REVIEW

Agency Theory

According to Jensen & Meckling (1976), agency theory explains the relationships and contracts that exist in companies between various stakeholders (principals) and managers (agents), which result in two problems, namely the conflict of interest due to inequality of objectives, and the existence of information asymmetry, thus allowing the risk of managers to take actions that are detrimental to the principal as the owner (Amponsah-Kwatiah & Asiamah, 2020).

Signaling Theory

According to Spence (1973), signaling theory involves two parties, namely internal parties and external parties in information exchange because they have different access to information. In this case, the one whose role is to provide signals is management and the one whose role is to receive these signals is external parties such as investors.

Human Capital Theory

According to Matthewman and Matignon (2014), human capital is the accumulation of knowledge, skills, experience, and other relevant attributes in the organization that can spur productivity, performance, and achievement of the company's strategic goals.

Boundary Theory

Boundary Theory refers to physical, temporal, and/or cognitive boundaries or parameters that define a business as an entity that stands alone and is separate from its household, and identifies the components within that entity. However, in reality, businesses conducted by poor households due to coercion as an option to make ends meet (necessity-driven), cannot be seen as a business entity that stands alone and is separate from the household (Yanuarta RE et al., 2023).

Sustainability Family Business Theory

According to SFBT theory, there is an overlap between household and business as two parallel systems that move together towards sustainability (Yanuarta RE et al., 2023). In enterprise-oriented MSEs, it will separate the management between the business and the household, so there will be little overlap or diagrammatically, there is little interface area between the two systems. In contrast, in need-oriented MSEs, it will combine the management of the business with the household, so there will be a very large overlap or interface between the two systems is also quite large (Stafford, 1999).

Necessity-driven VS Opportunity-driven

According to Moradi et al (2020), a business run by households driven by compulsion to meet household living needs is called a necessity-driven business, while business activities driven by the principle of innovation and proactivity to take advantage of profitable business opportunities for households are called opportunity-driven businesses.

Micro and Small Enterprise (MSE) Performance

MSE performance is an effort made by MSEs to measure the company's success in generating profits, so that it can see a picture of future prospects, growth and good development potential for the business. In measuring the performance of an MSE, it can be assessed based on the net profit of the business (Lara, 2021).

Household Welfare

Household welfare is a situation in which all physical and spiritual needs of the household can be met according to the standard or level of living (Badan Pusat Statistik, 2020). In measuring household welfare, it can use the per capita household expenditure indicator because this indicator is often used and is better for measuring the level of prosperity and household welfare (Ubaidillah et al., 2019). Household expenditure per capita is all expenses or costs incurred by households, both in the form of food and non-food expenditures and other expenses, in a year divided by the number of household dependents (Sajogyo, 1977).

Firm Size

According to Nurmalita (2011), firm size is the total value of wealth owned by the business. Meanwhile, according to Sunarto & Budi (2009), firm size is a measure of the amount of assets owned by the business, where in general large business tend to have large total assets as well.

Gender

Gender is the difference between men and women based on social construction, not from biological differences alone (Unger & Crawford, 1992). MSEs are necessity-driven, so women are often encouraged to work and running MSEs is also influenced by the factor of low household income (Nainggolan, 2016).

Household Interference

Household interference is a situation where the achievement of MSE goals cannot be separated from the involvement or interference that comes from the household (Yanuarta, RE, R., 2023). Several forms of household interference, namely consuming revenue, unpaid workers, and home business.

The Effect of Firm Size on Net Profit

Firm size is a measure that can affect business performance as reflected in net profit. If a business has a larger scale, it can obtain a larger source of external funding to finance its investment in making a profit, and can be said to have good business performance, because large businesses have access to better capital and can have a good reputation among the public or investors (Amalia & Khuzaini, 2021).

H1 : Firm size has a positive effect on net profit

The Effect of Gender on Net Profit

MSEs are more dominated by female entrepreneurs because women tend to prefer MSEs because they only require relatively small capital, inadequate entrepreneurial skills and minimal business experience, so that businesses are difficult to survive and develop and move to a higher class (Tundui, 2012). In addition, women are often encouraged to work and run MSEs to help households improve survival due to low household income (Nainggolan, 2016). However, even though they can help households improve living standards, MSEs run by women face intense competition, so MSEs have low growth and have the potential to have lower net profits as well (Nainggolan, 2016).

H2 : Gender has a negative effect on net profit

The Effect of Consuming Revenue on Net Profit

Businesses run by necessity-driven households, generally occur due to poverty or unemployment conditions, so there tends to be household interference in the form of consuming business income directly by households (Yanuarta RE et al., 2023). This results in the net profit generated not showing a significant increase because the business run prioritizes meeting the needs of household life, where the profits generated by the business are consumed directly by the household, so this can interfere with business performance and sustainability (Yanuarta RE et al., 2023).

H3 : Consuming revenue has a negative effect on net profit

The Effect of Firm Size on Household Expenditure per Capita

According to Midesia (2022), the larger the size of the business, the greater the net profit of MSEs. When MSEs are run on the basis of necessity-driven, there will be an overlap between business and household, so that if a large business size has an impact on higher net profit, it will also have an impact on household expenditure per capita which will increase proportionally (Akrom, 2020). Therefore, the greater the assets owned by MSEs, the higher the household welfare (Seshie-Nasser & Oduro, 2018).

H4 : Firm size has a positive effect on household expenditure per capita

The Effect of Gender on Household Expenditure per Capita

According to Shannon (2003), women entrepreneurs run businesses tend to be caused by the crisis of the household economy, which makes women responsible for helping households to improve the sustainability of life. This shows that the role of women entrepreneurs can help improve household living standards because their resources can help improve household welfare (Seshie-Nasser & Oduro, 2018).

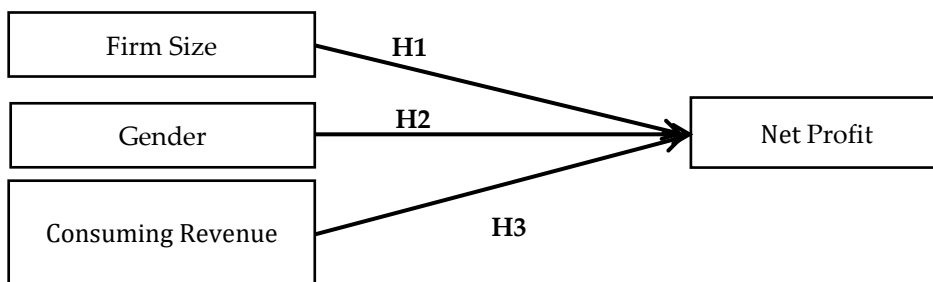
H5 : Gender has a positive effect on household expenditure per capita

The Effect of Consuming Revenue on Household Expenditure per Capita

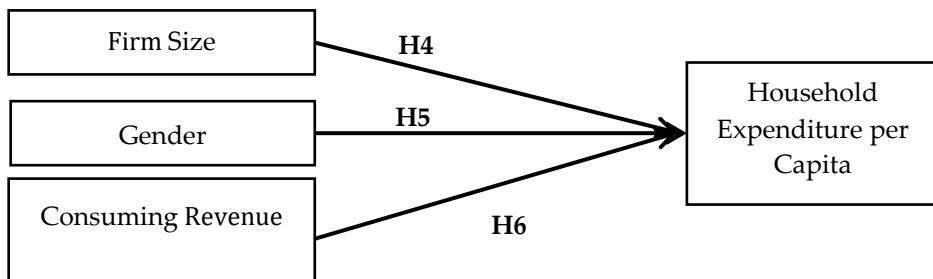
When MSEs are run by households only to fulfill the household's livelihood, the business has low performance and is difficult to develop because there is often a mix of resources between the business and the household due to household interference, such as consuming direct income (ADB, 1997). Although consuming direct income has a negative impact on the performance of MSEs, it can have a good impact on improving household welfare because the net profit generated by MSEs can be consumed directly by households in meeting their daily needs, so this will improve the economic welfare of the owner's household, which is reflected in higher per capita household expenditure (Vial & Hanoteau, 2015).

H6 : Consuming revenue has a positive effect on household expenditure per capita

Conceptual Framework



Gambar 1 Kerangka Konseptual (1)



Gambar 2 Kerangka Konseptual (2)

METHOD

Type of Research

This research is a quantitative study that focuses on testing theories by measuring research variables using data in the form of numbers and analyzing the data through statistical methods (Indriantoro & Supomo, 2018).

Data Source

This research uses raw data obtained from the Indonesian Family Life Survey in 2014 (IFLS-5), which is the result of a multi-aspect longitudinal survey of household life at the individual, household, and community levels.

Population

The population in this study are households that own micro and small enterprises (MSEs) throughout Indonesia.

Sample

The sample was taken using a non-probability sample selection method, namely the purposive sampling method. The sample criteria required in this study are:

1. Selecting households from the raw data that have non-agricultural businesses for the 2014 survey wave (IFLS-5) that are micro and small scale.
2. Furthermore, selecting MSEs that run businesses with their own capital ownership.
3. The available data is not empty and fulfills the variables under study.

Table 1. Total of IFLS-F Respondents (IFLS-2014)

IFLS Respondent	2014
Interviewed households	16.931
Households with non-agricultural business	5.759
Households that have a business with own capital ownership	4.314

Source: Indonesian Family Life Survey (IFLS-5), data processed

Based on this data, the total number of household respondents interviewed was 16,931, and the sample in this study was 4,314, namely households that have non-agricultural businesses with their own capital ownership.

Operational Definition and Sample Measurement

The operational definitions and sample measurements in this study are as follows:

Table 2. Operational Definition and Sample Measurement

Operational Definition	Measurement
Dependent Variable	
Net profit (<i>lnnetprofit</i>) (MODELS 1)	MSE performance from the business aspect as measured by MSE net profit per month in natural logarithms. Rupiah
Household expenditure per capita (<i>lnexpend</i>) (MODELS 2)	MSE performance in terms of household economic welfare is measured by total household expenditure per capita per month in natural logarithms. Rupiah
Independent Variable	
Firm size (<i>lnasset</i>)	Value of MSE assets in natural logarithm. Rupiah
<i>Dummy_gender</i>	The difference between men and women is based on social construction, not biological differences. 1 = Women 0 = Men
<i>Dummy_consuming revenue (consum_rev)</i>	Household interference in the form of household activities consuming revenue. 1 = Some business products are consumed directly by the household. 0 = None.
Control Variable	
Education level (<i>educ</i>)	The level of education in this case is how long the education level has been taken by household members who are responsible for running the business. No schooling = 0 years Elementary school completion = 6 years Junior high school completion = 9 years High school completion = 12 years
Age (<i>age</i>)	Limiting the characteristics of entrepreneurs based on the age of MSE entrepreneurs. Year

Business age (<i>buss_age</i>)	How long have micro and small enterprises (MSEs) been running.	Year
Worker total (<i>worker_tot</i>)	Total number of workers employed in MSEs, both paid and unpaid.	Person
Business sector (<i>sector</i>)	A business sector is a type of business that is categorized into three main sectors, namely (1) trade, (2) production, and (3) services.	<i>sector_i1</i> : 1 = Trade 0 = Others <i>sector_i2</i> : 1 = Production 0 = Others
Dependency (<i>dependency</i>)	Household dependence on net profit generated by businesses.	Ratio
Size household (<i>size_hh</i>)	Number of household members living in the same house.	Person
Ratio of household members <15 years old to total household members (<i>struct_hh</i>)	Comparison of the number of household members aged <15 years to total household members.	Percentage
Wages of working household members per capita (<i>lnwagecap_hh</i>)	Household income that does not come from business, but from working household members, in natural logarithms.	Rupiah
Total population rural/urban (<i>inpopul</i>)	Total population of the village/city where the MSE is located, in natural logarithms.	Person
Dummy_urban (<i>urban</i>)	Grouping of MSEs located in urban areas.	1 = Urban 0 = Rural
Dummy_java (<i>java</i>)	Grouping of MSEs located on the island of Java	1 = Java 0 = Non-Java

Data analysis

In this study, the method used is the quantile regression method with the help of Stata software. The quantile regression method is a regression method with the approach of dividing or separating data into certain quantiles by minimizing the unsymmetrical weighted absolute remainder and estimating the conditional quantile function on an overall data distribution. The quantile regression method is used in this study because the regression characteristics of each MSE are diverse and heterogeneous, this requires the use of an analysis model with parameters that are more accurate in seeing a pattern of heterogeneity. The equation used for this method is as follows:

$$lnnetprofit (\theta) = \beta_0 + \beta_1lnasset_i + \beta_2gender_i + \beta_3consum_rev_i + \beta_4educ_i + \beta_5age_i + \beta_6buss_age_i + \beta_7sector_i1_i + \beta_8sector_i2_i + \beta_9dependency + \beta_{10}size_hh + \beta_{11}struct_hh + \beta_{12}lnwagecap_hh + \beta_{13}lnpopul + \beta_{14}urban + \beta_{15}java + \epsilon$$

$$lnexpend (\theta) = \beta_0 + \beta_1lnasset_i + \beta_2gender_i + \beta_3consum_rev_i + \beta_4educ_i + \beta_5age_i + \beta_6buss_age_i + \beta_7sector_i1_i + \beta_8sector_i2_i + \beta_9dependency_i + \beta_{10}size_hh_i + \beta_{11}struct_hh_i + \beta_{12}lnwagecap_hh_i + \beta_{13}lnpopul_i + \beta_{14}urban_i + \beta_{15}java_i + \epsilon$$

Description:

- Lnnetprofit* = natural logarithm of net income
- Lnexpend* = natural logarithm of household expenditure per capita
- (θ) = quantile regression (Q0,25; Q0,50; Q0,75)
- β_0 = constant
- $\beta_1lnasset_i$ = independent variable, firm size
- $\beta_2gender_i$ = independent variable, gender

$\beta_{3consumrev_i}$	= independent variable, consuming revenue
β_{4educ_i}	= control variable, level education
β_{5age_i}	= control variable, MSE entrepreneur age
$\beta_{6buss_age_i}$	= control variable, business age
$\beta_{7sector_i1_i}$	= control variable, trade business sector
$\beta_{8sector_i2_i}$	= control variable, production business sector
$\beta_{dependency_i}$	= control variable, dependency
$\beta_{size_hh_i}$	= control variable, size household
$\beta_{struct_hh_i}$	= control variable, ratio of hh members <15 years old to total hh members
$\beta_{lnwagecap_hh_i}$	= control variable, wages of working household members per capita
$\beta_{lnpopul}$	= control variable, total population rural/urban
β_{urban}	= control variable, urban
β_{java_i}	= control variable, java
ϵ	= error term

RESULT AND DISCUSSION

Descriptive Analysis

Referring to the sample data used, Table 3 illustrates the descriptive characteristics of the 4,314 MSEs analyzed. Table 3 shows that the natural logarithm of net profit (*lnnetprofit*) on average is 13.33 with a standard deviation of 1.50. When measured using the minimum and maximum values, it has a value of 6.21 and 17.91. Furthermore, household expenditure (*lnexpend*) with an average of 13.81 and a standard deviation of 0.67, with a minimum value of 11.55 and a maximum value of 17.17. This shows that the amount of net profit generated and household expenditure incurred in each MSE cluster has a large range and is very diverse.

Table 3. Descriptive Statistics Based on Research Variables

Variabel	Obs	Mean	Std. Dev	Min	Max
Net profit (<i>lnnetprofit</i>)	4,314	13.33028	1.504203	6.214608	17.90985
Household expenditure per capita (<i>lnexpend</i>)	4,314	13.81109	0.6658645	11.55375	17.17052
Firm size (<i>lnaset</i>)	4,314	13.39093	4.949907	0	21.51761
Dummy_gender (<i>gender</i>)	4,314	0.4742698	0.4993954	0	1
Dummy_consuming revenue (<i>consum_rev</i>)	4,314	0.746407	0.4351177	0	1

Source: Indonesian Family Life Survey (IFLS-5), data processed

Firm size which is assessed from the logarithm of assets, has an average data concentration size of 13.39 with a standard deviation of 4.95, where the size of this data distribution is higher than the other variables. Meanwhile, this firm size has a maximum value of 21.52, and a minimum value of 0. This means that there are still many MSEs run by households without having any assets.

Furthermore, gender uses a dummy variable, which one 1 = female, and 0 = male. Therefore, Table 3 shows that the minimum value of gender is 0 and the maximum value is 1. On average, female entrepreneurs are 0.47, while the size of the data spread in standard deviation is 0.50. Furthermore, household interference in the form of consuming revenue also uses dummy variables, so the minimum value is 0 and the maximum value is 1. The average consumption revenue variable is 0.75 and the standard deviation is 0.44. Where, the size of this data spread is lower than the other variables.

Inferential Analysis

Table 4. Net Profit Quantile Regression Equation (*lnnetprofit*)

Variabel	(1) OLS	(2) Q(0.25)	(3) Q(0.50)	(4) Q(0.75)
Variabel Bebas				

Lnaset	0.0659***	0.0811***	0.0748***	0.0602***
Gender	-0.583***	-0.593***	-0.577***	-0.483***
Consum_rev	-2.714***	-3.510***	-2.497***	-1.574***
Variabel Kontrol				
Educ	0.0315***	0.0257***	0.0284***	0.0272***
Age_pj	-0.00320	-0.00175	-0.00160	-0.00258
Buss_age	0.0216***	0.0204***	0.0182***	0.0153***
Worker_tot	0.106***	0.0856***	0.0922***	0.111***
Sector_i1	0.0823	0.0867	0.189***	0.198***
Sector_i2	0.0379	0.0511	0.140**	0.120**
Dependency	3.483***	4.666***	3.124***	1.930***
Size_hh	-0.0251**	-0.0307	-0.0241	-0.00703
Struct_hh	0.0999	0.0782	0.178	0.0731
Lnwagecap_hh	0.0441***	0.0538***	0.0436***	0.0389***
Lnpopul	0.0898***	0.161***	0.0997***	0.0939***
Urban	0.196***	0.205***	0.233***	0.143***
Java	-0.226***	-0.227***	-0.215***	-0.208***
Constant	10.88***	9.079***	10.74***	11.83***
Observations	4,314	4,314	4,314	4,314
r2	0.320			
r2_p		0.204	0.176	0.157
<i>Robust standard errors in parentheses</i>				
*** p<0.01, ** p<0.05, * p<0.1				

Source: Indonesian Family Life Survey (IFLS-5), data processed

Based on the analysis in Table 4, it can be seen that the OLS regression estimation results show that the variables of firm size (lnaset), gender (dummy_gender), and household interference in the form of consuming revenue (consum_rev) have a significant influence on MSE net profit, with a significance level of < 0.05 . Interestingly, the quantile regression method can provide more detailed estimation results, so as to see the effect of each variable on various MSE scale groups. The quantile regression estimation results show that the firm size variable (lnaset) consistently shows positive and significant results in each quantile (Q0.25; Q0.50; Q0.75) of MSE net profit, amounting to (0.0811; 0.0748; 0.0602). This shows that firm size has a coefficient value that tends to decrease along the quantile distribution line and is visible in the range of its standard deviation (Figure 3, panel a). In addition, the equivalence test in Table 6 further shows that there is a significant difference in the regression coefficients for each quantile, where the Equivalency Coefficient F test (Prob > F) value of firm size is $0.0035 < 0.05$. It can be concluded that firm size has an effect on MSE net profit with the impact of higher business net profit, but the effect of this variable decreases as the quantile of MSE net profit increases.

Furthermore, the gender variable (dummy_gender) consistently shows negative and significant results at each quantile Q0.25; Q0.50; Q0.75) of MSEs' net profit, amounting to (-0.593; -0.577; -0.483). This shows that gender has a coefficient value that tends to increase along the quantile distribution line, but is still randomly around the mean (OLS: -0.0583), and is visible in the range of its standard deviation (Figure 3, panel b). In addition, the equivalence test in Table 6 further shows that there is no significant difference in the regression coefficients for each quantile, where the Equivalency Coefficient F test (Prob>F) value of gender is $0.0850 > 0.05$. It can be concluded that the gender variable has an effect on MSE net profit with a lower impact on MSEs net profit, and the magnitude of this gender effect is not affected by differences in the scale of MSEs net profit.

Next, the variable consuming revenue (consum_rev) also consistently shows negative and significant results at each quantile (Q0.25; Q0.50; Q0.75) of MSEs' net profit, amounting to (-3.510; -2.497; -1.574). This shows that consuming revenue has a coefficient value that tends to increase along

the quantile distribution line and is visible in the range of its standard deviation (Figure 3, panel c). In addition, the equivalence test in Table 6 further shows that there is a significant difference in the regression coefficients for each quantile, where the Equivalency Coefficient F test (Prob > F) value of firm size is $0.0000 < 0.05$. It can be concluded that the variable consuming income directly affects MSE net profit with a lower impact on business net profit, but the effect of this variable decreases as the quantile of MSE net profit increases.

In this case, it can be seen that if using OLS regression estimation, the effect is seen only as a whole. However, this study can see the effect of each variable in detail on each MSEs scale. Overall (complete model, net profit), the use of the quantile regression model is very appropriate because the Prob > F test value = $0.0000 < 0.05$. In addition, the conclusion of the feasibility of the quantile regression model on net profit is also supported by the results of the heteroscedasticity test (BreuschPagan/Cook-Weisberg test for heteroscedasticity), with the null hypothesis being constant variance, giving the result of $\chi^2(16) = 212.24$ with Prob > $\chi^2 = 0.000 < 0.05$. So it can be concluded that the existence of heteroscedasticity (variance is not constant) is accepted, so quantile regression in this study is appropriate.

Table 5. Per Capita Household Expenditure Quantile Regression Equation (*Inexpend*)

Variabel	(1)	(2)	(3)	(4)
	OLS	Q(0.25)	Q(0.50)	Q(0.75)
Variabel Bebas				
Lnaset	0.0153***	0.0146***	0.0149***	0.0148***
Gender	0.0456***	0.0305	0.0661***	0.0376
Consum_rev	0.215***	0.100	0.120*	0.325***
Variabel Kontrol				
Educ	0.0395***	0.0371***	0.0397***	0.0405***
Age_pj	0.00120	0.00194**	0.00170*	0.00111
Buss_age	0.00160	0.00140	0.00245**	0.00322**
Worker_tot	0.0414***	0.0367***	0.0404***	0.0431***
Sector_i1	0.0303	0.0306	0.0570**	0.0295
Sector_i2	-0.0381*	0.00514	-0.0265	-0.0511
Dependency	-0.267***	-0.110	-0.191**	-0.394***
Size_hh	-0.145***	-0.139***	-0.130***	-0.139***
Struct_hh	-0.390***	-0.236***	-0.394***	-0.522***
Lnwagecap_hh	0.0162***	0.0185***	0.0194***	0.0154***
Lnpopul	0.109***	0.100***	0.107***	0.116***
Urban	0.0611***	0.0794***	0.0667***	0.0458
Java	-0.145***	-0.149***	-0.133***	-0.158***
Constant	12.71***	12.30***	12.57***	13.01***
Observations	4,314	4,314	4,314	4,314
r2	0.340			
r2_pseudo		0.172	0.181	0.201

Robust standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Source: Indonesian Family Life Survey (IFLS-5), data processed

In contrast to the per capita household expenditure model in Table 5, the analysis results show that all variables, namely firm size (Lnaset), gender (dummy_gender), and household interference in the form of consuming revenue (consum_rev) consistently show positive results on per capita household expenditure. However, the quantile regression estimation results show that the effect of each variable on household expenditure per capita in each quantile has a different level of significance. Which one, the variable of firm size (Lnaset) consistently shows positive and significant results at each

quantile (Q0.25; Q0.50; Q0.75) of per capita household expenditure, amounting to (0.0146; 0.0149; 0.0148), with a significance level < 0.05 . This shows that firm size has a coefficient value that tends to fluctuate along the quantile distribution line, but is still randomly around the mean (OLS: 0.0153), and is visible in the range of its standard deviation (Figure 3, panel d). In addition, the equivalence test in Table 6 further shows that there is no significant difference in the regression coefficients for each quantile, where the Equivalency Coefficient F test value ($\text{Prob} > F$) of business size is $0.9918 > 0.05$. It can be concluded that the business size variable has an effect on household welfare with the impact of higher household expenditure per capita, and the magnitude of this business size effect is not affected by differences in the scale of household expenditure per capita.

Furthermore, the gender variable (*dummy_gender*) consistently shows positive results on household expenditure per capita, namely (Q0.25; Q0.50; Q0.75) of (0.0305; 0.0661; 0.0376) respectively, but its effect is significant only at Q0.50 with a significance level < 0.05 . This shows that gender has a coefficient value that tends to fluctuate along its quantile distribution line, but is still randomly around the mean (OLS: 0.0456), and is visible in the range of its standard deviation (Figure 3, panel e). In addition, the equivalence test in Table 6 further shows that there is no significant difference in the regression coefficients for each quantile, where the Equivalency Coefficient F test value ($\text{Prob} > F$) for gender is $0.0878 > 0.05$. It can be concluded that the gender variable has an effect on household welfare with the impact of higher household expenditure per capita, and the magnitude of this gender effect is not affected by differences in the scale of household expenditure per capita. Or in other words, female entrepreneurs will generate higher household expenditure per capita than male entrepreneurs, taking into account various aspects, such as education, age of the entrepreneur, length of business, business sector, and other aspects that act as control variables in this study.

Next, the variable consuming revenue (*consum_rev*) also consistently shows positive results on household expenditure per capita, namely (Q0.25; Q0.50; Q0.75) of (0.100; 0.120; 0.325) respectively, but its effect is significant only at Q0.75 with a significance level < 0.05 . This shows that consuming revenue has a coefficient value that tends to increase along the quantile distribution line, and is visible in the range of its standard deviation (Figure 3, panel f). In addition, the equivalence test in Table 6 further shows that there is a significant difference in the regression coefficients for each quantile, where the Equivalency Coefficient F test ($\text{Prob} > F$) value of consuming revenue is $0.0360 < 0.05$. It can be concluded that the variable of consuming revenue affects the household expenditure per capita of MSEs with the impact of higher household expenditure per capita, and the effect of this variable increases with the increasing quantile of household expenditure per capita. Or in other words, MSEs whose households directly consume revenue have higher per capita household expenditure compared to MSEs that do not directly consume their business results.

Although in each quantile of household expenditure per capita on gender variables and consuming revenue there are differences in significance, but in the OLS regression estimation results to see the overall effect, it shows that all variables have a significant effect with a significance level < 0.05 . And overall (complete model, household expenditure per capita), the use of the quantile regression model is very appropriate because the $\text{Prob} > F$ test value = $0.0000 < 0.05$. In addition, the conclusion of the feasibility of the quantile regression model on household expenditure is also supported by the results of the heteroscedasticity test (BreuschPagan/Cook-Weisberg test for heteroscedasticity), with the null hypothesis being constant variance, giving the result of $\text{chi}^2(16) = 79.01$ with $\text{Prob} > \text{chi}^2 = 0.000 < 0.05$. So it can be concluded that the existence of heteroscedasticity (variance is not constant) is accepted, so quantile regression in this study is appropriate.

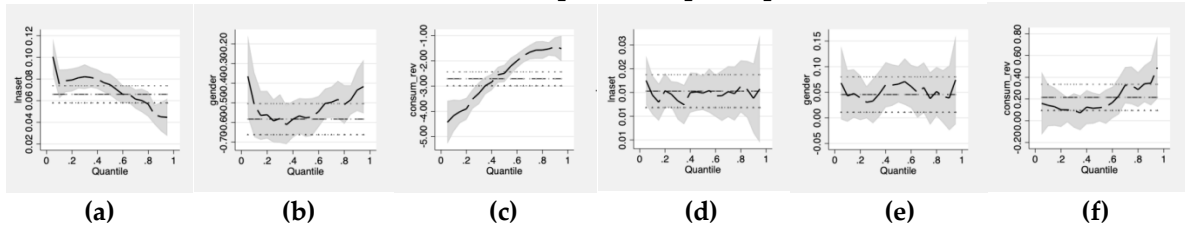
Table 6. Equivalency Coefficients

Dependent Variable	Heteroscedasticity Test	Equivalency Test*		
		Firm Size (<i>lnaset</i>)	Gender (<i>gender</i>)	Household Interference (<i>consum_rev</i>)
Net profit (<i>lnnetprofit</i>)	212,24 (0,0000)	5,67 (0,0035)	2,47 (0,0850)	35,35 (0,0000)

Household expenditure per capita (<i>lnexpend</i>)	79,01 (0,0000)	0,01 (0,9918)	2,43 (0,0878)	3,33 (0,0360)
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Source: Indonesian Family Life Survey (IFLS-5), data processed

Figure 4: Regression Coefficients for Quantiles of Net Income and Household Expenditure per Capita



Source: Indonesian Family Life Survey (IFLS-5), data processed

The Effect of Firm Size on the Performance of Micro and Small Enterprises (MSEs) in Indonesia

Based on statistical tests, the results show that firm size has a positive and significant effect on the performance of micro and small enterprises (MSEs) in Indonesia at each scale of MSEs. These results of this research are in line with the research of Midesia (2022), which states that the greater the total assets, the greater the net profit of MSEs. And also in line with Amalia & Khuzaini's research (2021), that firm size has a positive and significant effect on net profit because if MSEs have a larger scale, they can obtain more sources of funds to finance their investments in obtaining net profit, and can be said to have good business performance, because large businesses have access to better capital and can have a good reputation among the public or investors.

These result of this research is supported by signaling theory, where increasing business size will have an impact on increasing MSE performance which shows that the ability of MSEs to generate high profits, so that it can provide positive signals to potential investors (Spence, 1973). Furthermore, according to agency theory, the business owner (principal) is also the manager (agent) of the business, this can minimize problems related to conflicts of interest due to inequality of objectives, so as to provide accurate information to investors (Jensen & Meckling, 1976).

However, these results are not in line with the research of Hasti et al (2022), which state that firm size has no effect on business financial performance. And also not in line with the research of Khafa & Laksito (2015), which states that firm size has a negative effect on business financial performance.

The Effect of Gender on the Performance of Micro and Small Enterprises (MSEs) in Indonesia

Based on statistical test, the results show that gender has a negative and significant effect on the performance of micro and small enterprises (MSEs) in Indonesia at each scale of MSEs. Or in other words, female entrepreneurs will generate lower net profit compared to male entrepreneurs by considering various aspects, such as education, age of the entrepreneur, length of business, business sector, and other aspects that act as control variables in this research.

These results of this research are in line with research conducted by Boohene (2009) and Kumar (2015), which states that the level of performance of female entrepreneurs is lower than that of male entrepreneurs and there is less chance of achieving growth-oriented goals. The results of this study are also supported by human capital theory, that male or female gender as part of human capital, plays a very important role as a key component that affects the level of performance, growth, and sustainability of MSEs.

However, these results are not in line with the research of Shava & Rungani (2016) and Weber & Geneste, which state that gender has no effect on the performance of MSEs, where there is no significant difference between the performance of male entrepreneurs and female entrepreneurs. These results of this study are also not in line with the research of Neneh et al (2016), which states that the performance of MSEs increases more when run by female entrepreneurs than male entrepreneurs.

The Effect of Household Interference on the Performance of Micro and Small Enterprises (MSEs) in Indonesia

Based on statistical test, the result shows that consuming revenue has a negative and significant effect on the performance of micro and small enterprises (MSEs) in Indonesia at each scale of MSEs, which means that if more business income is consumed directly by households, the smaller the net profit that will be generated by the business. These results of this research are in line with the research of Yanuarta RE et al (2023), which states that when there is an activity of consuming direct income, it will have an impact on the resulting net profit which does not show a significant increase because the business being run prioritizes the fulfillment of household living needs, where the profits generated by the business are consumed directly by households, so this can interfere with business performance and sustainability. This is supported by the Sustainability Family Business Theory (SFBT), which states that in necessity-driven MSEs, there will be a combination of management between the business and the household, so there will be a very large overlap or interface between the two systems which is also quite large (Stafford, 1999).

The Effect of Firm Size on Household Welfare in Indonesia

Based on the statistical test, the result shows that firm size has a positive and significant effect on household welfare in Indonesia at each scale of MSEs. This result is in line with the research of Seshie-Nasser & Oduro (2018), that the greater the assets owned by MSEs, the higher the welfare of their households. This result is also supported by the Sustainability Family Business Theory (SFBT), which states that in the context of micro and small enterprises (MSEs), businesses tend to be necessity-driven, so there will be overlap between businesses and households. Due to the overlap between the business and the household, the net profit earned by the business becomes a source of income for the household which will be used to fulfill all household living needs. Therefore, if a large firm size has an impact on higher net profit, it will also have an impact on household expenditure per capita, which will increase proportionally (Akrom, 2020).

The Effect of Gender on Household Welfare in Indonesia

Based on the statistical test, the result shows that gender has a positive effect on household welfare in Indonesia, which means that if MSEs are run by female entrepreneurs, it will have an impact on higher household expenditure per capita compared to male entrepreneurs. This result is in line with research conducted by Seshie-Nasser & Oduro (2018), that the role of women entrepreneurs can help improve household living standards because the resources they have can help improve household welfare. This result is also supported by the Sustainability Family Business Theory (SFBT), which states that when an MSE is driven by poverty and necessity-driven factors, then women entrepreneurs run businesses tend to be caused by the crisis of the household economy which makes women responsible for helping households in sustainability (Shannon, 2003). And also supported by human capital theory which refers to how male and female entrepreneurs contribute their knowledge, skills and abilities to improve the performance, capabilities and sustainability of the MSEs they run, thus impacting on the survival of their households (Armstrong & Taylor, 2014).

The Effect of Household Interference on Household Welfare in Indonesia

Based on the statistical test, the result shows that the household interference in the form of consuming revenue has a positive effect on household welfare in Indonesia, which means that the more business income consumed directly by households, the greater the household expenditure per capita. This is in line with the research of Yanuarta RE et al (2023), that MSEs where the owner's household consumes revenue, will provide support for higher household expenditure per capita compared to MSEs where there is no household interference in the form of consuming revenue. This is also supported by the Sustainability Family Business Theory (SFBT), due to the overlap between businesses and households, when households have no or few fixed sources of income and are faced with the need

to survive, then directly consuming income from MSEs becomes a rational solution to meet these needs (Floro & Swin, 2013).

CONCLUSION

Based on the results of data analysis and discussion previously described, the results of this study can be concluded as follows:

1. Firm size has a positive and significant effect on the performance of micro and small enterprises (MSEs) in Indonesia at each scale of MSEs (Q0.25; Q0.50, Q0.75).
2. Gender has a negative and significant effect on the performance of micro and small enterprises (MSEs) in Indonesia at each scale of MSEs (Q0.25; Q0.50, Q0.75).
3. Household interference in the form of consuming revenue has a negative and significant effect on the performance of micro and small enterprises (MSEs) in Indonesia at each scale of MSEs (Q0.25; Q0.50, Q0.75).
4. Firm size has a positive and significant effect on household welfare in Indonesia at each scale of MSEs (Q0.25; Q0.50, Q0.75).
5. Gender has a positive effect on household welfare in Indonesia. However, this effect is significant only at middle quantile (Q0.50).
6. Household interference in the form of consuming revenue has a positive effect on household welfare in Indonesia. However, this effect is significant only at highest quantile (Q0.75).

Based on the conclusions above, it can be seen that the performance of micro and small enterprises (UMK) and household welfare are in line with firm size, gender, and household interference in MSEs. However, because this is an inherent condition of MSEs, the majority of which come from poor and unemployed households, as well as MSEs that are driven by a compulsion to meet life's needs (necessity-driven), it is necessary to have a role from outside parties, especially the government, to can provide training and coaching for MSEs so that these entrepreneurs can improve the performance of MSEs and the welfare of their households.

Apart from that, with assistance from external parties to help improve the abilities and skills of MSE entrepreneurs, it is hoped that MSEs which were previously on a small business scale, can be upgraded to become a larger business scale. MSEs which were previously need-driven (necessity-driven), over time it can turn into an opportunity-driven business. This will not only have an impact on the individuals of each MSE actor and their household, but will also have an impact on improving the national economy, opening up wide employment opportunities, so as to reduce unemployment and poverty rates in Indonesia.

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