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Revisiting Gender Gaps in Microenterprise Performance: Evidence from Firm-Level and Household-Level Outcomes

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Abstract

Micro and small enterprises (MSEs) play an important role in economic resilience in emerging economies, yet women-owned MSEs consistently report lower profits than male-owned firms. Most studies evaluate this gender gap using firm-level indicators, with limited attention to how enterprise outcomes relate to household welfare. This study examines whether female ownership is associated with both enterprise profit and household well-being by simultaneously estimating firm-level performance and household-level welfare outcomes within a single nationally representative Indonesian dataset. Using data from the Indonesia Family Life Survey (IFLS-5), four regression models are estimated for business profit, household per capita expenditure, education spending, and subjective well-being, applying Ordinary Least Squares with robust standard errors and M-estimator regressions to assess the stability of associations across specifications. The results indicate a significant gender gap in business profit; however, female ownership is positively associated with household consumption, education expenditure, and subjective well-being. These findings suggest that in necessity-driven contexts, women-owned MSEs may play a role in supporting household welfare despite lower firm-level returns, thereby providing a basis to reconsider profit-centered measures of entrepreneurial success and informing more gender-sensitive evaluation frameworks. The analysis identifies statistical associations rather than causal effects and does not fully address potential issues such as selection into female ownership, omitted variables, and the ordinal nature of subjective well-being.

KEYWORDS

gender gap in microenterprises; necessity-driven entrepreneurship; household welfare; human capital investment; household interference, emerging economies.

Introduction

Micro and small enterprises (MSEs) play a pivotal role in economic resilience, employment generation, and poverty alleviation across emerging economies. Empirical evidence shows that MSEs significantly enhance household income and well-being, particularly in contexts with limited formal employment (Endris & Kassegn, 2022). In Indonesia, MSEs account for approximately 99% of enterprises and employ more than 97% of the labor force, underscoring their significant role in inclusive economic development (Badan Pusat Statistik, 2024).

Women constitute a substantial and growing share of MSE owners across emerging economies. However, their increasing participation in micro and small-scale entrepreneurship has not been accompanied by equivalent enterprise outcomes, as gender-based performance disparities remain persistent (Kim, 2022). A large body of research consistently documents gender gaps in firm-level performance (Allison et al., 2023; Fang et al., 2022; Islam et al., 2019). Female-owned MSEs tend to generate lower profits, slower growth, and lower returns to capital, even after controlling for education, sector, and capital intensity (Delecourt & Ng, 2021; Tsyganova & Shirokova, 2010). Recent global evidence further confirms the persistence of gaps driven by unequal access to finance, professional networks, and growth opportunities (Aterido et al., 2013).

Prevailing explanations attribute these disparities to structural constraints such as financial exclusion, unpaid care burdens, and socio-cultural norms limiting women's mobility and business expansion (Bullough et al., 2022; Field et al., 2021; Jayachandran, 2021). Empirical evidence further highlights restricted access to capital and weaker integration into formal financial systems as barriers to scaling women-led enterprises (Demirgüç-Kunt et al., 2020; Sahay et al., 2015). While these explanations are well established, they largely assume that profit maximization and firm growth are the primary objectives of entrepreneurship.

This profit-centered assumption may overlook differences in entrepreneurial motivation that shape how MSEs are run and how business income is used. In many emerging economies, women are more likely to engage in entrepreneurship out of necessity rather than opportunity, particularly in contexts characterized by labor market informality and economic precarity; (Block et al., 2015; Bosma et al., 2020; Williams & Williams, 2014). In such contexts, entrepreneurship often serves as an income-smoothing mechanism embedded in household survival strategies rather than as a vehicle for capital accumulation (Grimm et al., 2012; Vial & Hanoteau, 2015).

In necessity-driven entrepreneurship, business income is commonly allocated to immediate household needs rather than reinvested in the firm. Evidence from development economics consistently shows that women's income is more likely to be directed toward food security, education, and human capital formation (Duflo, 2012; Heath & Mushfiq Mobarak, 2015; Prina, 2015). Research on MSEs' behavior further demonstrates that female entrepreneurs exhibit different reinvestment and consumption patterns than men, often prioritizing household welfare over business expansion (Berge et al., 2015; Fafchamps et al., 2014). Evidence from Indonesia also highlights the strong overlap between household and business finances in microenterprises, reinforcing the interdependence between enterprise performance and household welfare (Yanuarta RE et al., 2023).

Despite these insights, most empirical research on gender and MSE performance remains firm-centric, focusing primarily on profit and growth indicators (Delecourt & Ng, 2021; Kalnins & Williams, 2014). Such approaches risk mischaracterizing women-owned MSEs as underperforming while overlooking their broader contribution to household welfare. While existing studies on household interference, family business systems, and women's income allocation highlight the interdependence between enterprise and household outcomes, they rarely examine these dimensions jointly within a single empirical framework. Addressing this gap, the present study simultaneously estimates firm-level and household-level outcomes using nationally representative data from the Indonesia Family Life Survey (IFLS). By integrating business profit with household per capita expenditure, education spending, and subjective well-being, this study offers a more bounded empirical reassessment of gender performance differences and reinterprets the gender performance gap through the lens of household interference (Yanuarta RE et al., 2023).

Specifically, the study examines whether lower firm-level performance among women-owned MSEs is associated with stronger household-level outcomes. By integrating objective and subjective welfare indicators, it advances a gender-sensitive, contextually grounded understanding of entrepreneurial success and provides a basis to reassess profit-centric evaluations in gender and entrepreneurship research in emerging economies.

Literature Review

A substantial body of research documents persistent

gender disparities in MSEs' performance across both developed and emerging economies. Experimental and field evidence shows that female-owned MSEs generate lower profits and returns to capital than male-owned firms, even after controlling for sector, education, and initial capital (Delecourt & Ng, 2021; Fafchamps et al., 2014). Large-scale cross-country analyses further confirm systematic gender gaps in profit, productivity, and growth across diverse institutional contexts (Aterido et al., 2013; Kalnins & Williams, 2014). Importantly, these disparities persist beyond early-stage firms, suggesting structural rather than transitory constraints.

Prevailing explanations emphasize structural barriers disproportionately affecting women entrepreneurs. Limited access to formal finance remains one of the most consistently documented constraints (Demirgüç-Kunt et al., 2020; Sahay et al., 2015), while gender norms limit mobility, risk-taking, and participation in professional networks (Bullough et al., 2022; Jayachandran, 2021). Women-owned MSEs are also more concentrated in lower-margin sectors and face binding time constraints due to unpaid care responsibilities, which constrain growth trajectories (Field et al., 2021). Collectively, these structural factors reduce profit potential. Consistent with this literature, we expect:

H1a: Female-owned MSEs generate lower business profits than male-owned enterprises, *ceteris paribus*.

While structural explanations are empirically robust, they largely assume that firm growth and profit maximization are universal entrepreneurial objectives. A second stream of literature challenges this assumption by emphasizing entrepreneurial motivation, particularly the distinction between opportunity-driven and necessity-driven entrepreneurship. In many emerging economies, women are more likely to engage in entrepreneurship as a response to labor market informality, limited employment opportunities, and economic precarity (Block et al., 2015; Bosma et al., 2020). Such enterprises are often subsistence-oriented and embedded within household survival strategies rather than designed for capital accumulation (Grimm et al., 2012; Williams & Williams, 2014). This perspective suggests that enterprise performance may be shaped not only by structural constraints but also by differences in the objectives and functions that entrepreneurship serves within the household economy.

This motivational perspective suggests that lower firm-level performance among women-owned MSEs may reflect differences in income-use priorities rather than inferior managerial capability. In necessity-driven contexts, where enterprises are often established as income-stabilization strategies under binding resource constraints, financial decisions may prioritize immediate household needs over business reinvestment. Building on this perspective, the literature on household interference and the Sustainable Family Business Model conceptualizes business and household systems as mutually interdependent, with financial flows potentially shifting from the enterprise to the household when consumption pressures are high (Svoboda, 2020). Within this framework, a plausible sequence can be proposed in which necessity-driven motives are associated with lower reinvestment capacity, which in turn is linked to greater allocation of resources toward household consumption and human capital investment. Empirical evidence shows that women's income is more frequently associated with expenditures on food security, children's education, and human capital formation (Duflo, 2012; Heath & Mushfiq Mobarak, 2015; Prina, 2015), while experimental studies document gender differences in reinvestment and capital allocation behavior in microenterprise settings (Berge et al., 2015; Fafchamps et al., 2014). Evidence from Indonesia further indicates a strong overlap between household and business finances in microenterprises (Yanuarta RE et al., 2023). However, it is important to note that the present study

does not directly observe intra-household allocation decisions. Therefore, this sequence should be interpreted as a proposed mechanism that is consistent with, but not directly tested by, the empirical analysis.

These findings suggest that enterprise performance and household welfare are jointly determined outcomes. Evaluating women-owned MSEs solely through firm-centric metrics risks misinterpreting rational household-oriented income allocation as inefficiency. If women channel business income directly toward household consumption and human capital investment, then household-level welfare indicators may diverge from firm-level profit measures. Accordingly, we expect:

H1b: Households operating female-owned MSEs are associated with higher per capita expenditure than those operating male-owned enterprises, *ceteris paribus*.

Given consistent evidence that women's income allocation improves educational investment and child outcomes (Duflo, 2012; Heath & Mushfiq Mobarak, 2015), we further hypothesize:

H1c: Female-owned MSEs are associated with higher household education expenditure compared to male-owned enterprises, *ceteris paribus*.

Beyond objective consumption measures, subjective well-being captures perceived economic security and resilience. If women's entrepreneurship stabilizes household income and strengthens food security and educational investment, it may enhance perceived welfare despite lower business profit (Prina, 2015). Therefore:

H1d: Households operating female-owned MSEs report higher levels of subjective well-being than those operating male-owned enterprises, *ceteris paribus*.

These hypotheses are grounded in a dual-outcome framework that distinguishes between firm-level and household-level performance. Prior research can be broadly grouped into two streams. The first stream focuses on firm-level outcomes, evaluating entrepreneurial success primarily through profit, productivity, and growth indicators, and consistently documenting gender-based performance disparities. The second stream emphasizes household-level outcomes, highlighting the role of women's income in supporting consumption, human capital investment, and broader welfare objectives, particularly in necessity-driven contexts (Jayachandran, 2021; Sahay et al., 2015). However, these streams have largely developed in parallel, leaving unresolved how firm-level disadvantage and household-level welfare outcomes jointly manifest within the same empirical setting. The present study addresses this gap by simultaneously estimating business and household outcomes within a single analytical framework. By jointly examining profit, consumption, education expenditure, and subjective well-being, this approach provides a more integrated empirical perspective and enables a more precise assessment of how gender differences in microenterprise performance relate to household welfare in emerging economies.

Methods

Data Source

This study uses a quantitative, cross-sectional design based on secondary data from the Indonesia Family Life Survey-Wave 5 (IFLS-5), a nationally representative longitudinal household survey conducted in 2014–2015 by the RAND Corporation in collaboration with Lembaga Demografi Universitas Indonesia, the Population Research Center Universitas Gadjah Mada, and SurveyMeter. IFLS covers more than 13,000 households and over 30,000 individuals across 13 provinces, representing approximately 83% of the Indonesian population (Strauss et al., 2016).

Although the data were collected in 2014–2015, they remain suitable for the present study because the analysis focuses on structural patterns of household–enterprise interaction and gendered economic roles, which tend to be relatively persistent in necessity-driven contexts. The survey provides detailed information on household demographics, labor participation, consumption, subjective well-being, and non-agricultural enterprise activities. Individual, enterprise, and household modules are linked using unique household and individual identifiers, enabling the construction of an integrated dataset that connects enterprise-level performance with household-level welfare outcomes. While the IFLS employs a complex survey design with stratified sampling, the present analysis treats the data as a representative cross-section and applies robust standard errors to account for heteroskedasticity; however, the results should be interpreted as associational rather than fully design-based causal inference. IFLS is particularly suitable for this study because it integrates enterprise-level variables with household-level welfare measures, enabling an empirical assessment of household interference (Strauss et al., 2016; Yanuarta RE et al., 2023).

Sample Selection

The analytical sample consists of male and female micro and small entrepreneurs operating non-agricultural household businesses recorded in the IFLS enterprise module. Consistent with the survey's small-enterprise coverage, MSE status in this study refers to self-reported household businesses operated on a micro or small scale, without the formal characteristics of large firms. The sample selection follows a sequential screening process. First, individuals not engaged in non-agricultural household enterprise activities are excluded. Second, agricultural businesses are removed to maintain comparability in enterprise structure and income generation. Third, the sample is restricted to individuals aged 18–64 who are identified in the survey as the primary owner or main decision-maker of the enterprise. Fourth, observations associated with irregular or non-continuous activities are excluded to focus on relatively stable income-generating MSE operations. Fifth, observations with missing key variables, including enterprise performance measures and household welfare indicators, are removed. Finally, zero and negative profit observations are excluded to allow consistent estimation of log-transformed profit models. After applying these sequential filters, the final analytical sample includes 4,064 entrepreneurs (2,154 male-owned and 1,910 female-owned MSEs).

Variables and Measures

This study uses variables available in the IFLS-5. Four dependent variables correspond to four empirical models. One variable, business profit, represents business-level outcomes and is measured as self-reported monthly operating revenue minus monthly operating expenses as recorded in the IFLS business module. Because the IFLS covers household-based micro and small businesses, reported profits may reflect seasonal fluctuations and overlap between household and business finances. However, it remains the most direct indicator available of routine business financial returns in the survey. To allow for a logarithmic transformation and reduce distortion from non-operational or loss-making observations, zero and negative profit values are excluded from the regression.

Three variables, per capita household expenditure (monthly total household consumption divided by household size (Beegle et al., 2016; Deaton & Zaidi, 2002), household education expenditure (total spending on children's education), and subjective well-being (self-reported economic well-being on a six-point Likert scale (Diener et al., 2018), represent outcomes at the household level. Although subjective well-being is

measured on an ordered scale, OLS is retained as the common baseline estimator to preserve coefficient comparability across the four outcome models and because prior applied research shows that OLS generally provides substantively similar directional inferences for ordinal well-being measures in large samples. This choice is consistent with the study's objective of examining directional associations within a unified regression framework. However, because OLS does not fully capture the ordinal structure of subjective well-being, the results for this outcome should be interpreted cautiously and as associational rather than causal.

The key explanatory variable is female ownership, coded as 1 for female-owned MSEs and 0 for male-owned MSEs. In the IFLS context, ownership refers to the individual identified in the survey as the primary owner or main decision-maker of the enterprise, capturing operational control and day-to-day managerial authority rather than formal legal ownership alone. This definition is consistent with the household-based nature of microenterprises, where business decisions and financial management are closely tied to the individual responsible for enterprise operations. Control variables include owner characteristics (age and years of education), enterprise characteristics (sector, log business assets, log reinvestment), and household characteristics (household size, proportion of members aged ≤ 15 , log labor income of other household members, urban-rural residence, and Java versus non-Java fixed effects), following established microenterprise and welfare modeling practices (Cameron & Trivedi, 2005).

Data Analysis

Descriptive analysis employs distribution-sensitive measures because of the heavy-tailed distributions of profit and expenditure. Cross-tabulations of profit quartiles and household per capita expenditure quartiles (Q1–Q4) are presented by gender of ownership. Median and interquartile range (IQR) statistics are reported for profit, household expenditure, and education spending (Cameron & Trivedi, 2005).

Inferential analysis uses Ordinary Least Squares (OLS) with heteroskedasticity-robust standard errors as the baseline estimator. OLS is employed to provide a consistent and comparable estimation framework across all outcome variables, including both continuous monetary measures and subjective well-being. Monetary variables such as business profit, household expenditure, and education spending exhibit right-skewed distributions; therefore, log transformations are applied to reduce skewness and improve model fit. To address potential model concerns, multicollinearity diagnostics were examined and found to be within acceptable thresholds, and model specifications were evaluated to ensure stability of the estimated coefficients. As a robustness check, models are re-estimated using M-estimation with Huber and Tukey bi-weight iterations to reduce the influence of outliers (White, 1980). This approach follows established practices in applied micro econometrics for large household surveys (Cameron & Trivedi, 2005). While these methods improve estimation reliability, the analysis is based on cross-sectional data and is intended to identify statistical associations rather than causal relationships.

Result and Discussion

Table 1 presents the cross-tabulation of business profit and household per capita expenditure across quartiles (q1–q4), disaggregated by gender of ownership. The distribution reveals a clear gender asymmetry at the tails of the profit distribution. Female-owned enterprises are overrepresented

in the lowest profit quartile (q1), while male-owned firms dominate the highest quartile (q4).

Furthermore, Table 2 maps a strong monotonic alignment between firm-level profit and household expenditure for both genders. Among businesses in the lowest profit quartile (q1), household expenditure is heavily concentrated in q1 expenditure and declines steadily toward higher expenditure quartiles, both for female-owned and male-owned firms. A similar gradient persists in the q2 profit group, where expenditure remains most concentrated in q1 and progressively decreases toward q4.

At the opposite end, the highest profit quartile (q4) exhibits the reverse pattern: household expenditure is concentrated in q4 expenditure and becomes progressively smaller toward lower expenditure quartiles. This holds for both female-owned and male-owned enterprises. These distributions indicate that, descriptively, higher-profit enterprises are systematically associated with higher household expenditure levels.

Importantly, gender differences are most visible in the composition and in the q3 profit group. For the q3 profit quartile, males are more numerous overall (584 males vs 432 females). Yet, conditional on being in q3 profit, the expenditure distribution differs by gender: male-owned firms are relatively evenly distributed across expenditure quartiles, whereas female-owned firms show a clear upward concentration in q4 expenditure, with expenditure progressively declining across lower quartiles. This pattern suggests that, among mid-upper profit enterprises, female-owned MSE households are more likely to be in higher household expenditure quartiles than would be expected under an even distribution.

Table 2 complements these distributional patterns using median and interquartile range (IQR). Consistent with the profit composition in Table 1, female-owned enterprises display substantially lower median profit (IDR 458,333; IQR 922,500) than male-owned enterprises (IDR 1,000,000; IQR 1,680,000). In contrast, median household per capita expenditure is slightly higher among female-owned households (IDR 952,608; IQR 837,083) than male-owned households (IDR 936,350; IQR 854,526).

The descriptive evidence above indicates (i) a strong positive profit-expenditure gradient for both genders, (ii) a clear gender gap in profit distribution (female concentrated at low-profit, male at high-profit), and (iii) a nuanced mid-upper segment (Q3 profit) where female-owned households are more concentrated in the highest expenditure quartile. These patterns motivate multivariate regressions that test whether gender differences in household welfare persist after controlling for owner, enterprise, and household characteristics.

Multivariate Regressions Results

Table 3 reports OLS estimates with heteroskedasticity-robust standard errors for four outcome variables: business profit, household per capita expenditure, education expenditure, and subjective well-being. All models are jointly significant ($\text{Prob} > F = 0.000$), with explanatory power ranging from modest ($R^2 = 0.042$ for subjective well-being) to substantial ($R^2 = 0.312$ for per capita expenditure).

Firm-Level Performance

Female ownership is negatively and strongly associated with business profit ($\beta = -0.563$, $p < 0.001$), indicating a substantial gender gap in firm-level performance after controlling for owner, enterprise, household, and regional characteristics. Business assets, reinvestment-related variables, education, and urban location are positively associated with profit, while operating outside Java is negatively associated with profit. These results are consistent with H1a, suggesting that female-owned MSEs are associated

Table 1. Cross-Tabulation Business Profit-Household Expenditure by Gender in Quartile

Variable		Expenditure – frequency (percent)				Total	
		q1	q2	q3	q4		
Profit	q1	female	243 (5.98)	159 (3.91)	155 (3.81)	89 (2.19)	646 (15.89)
		male	132 (3.25)	107 (2.63)	79 (1.94)	57 (1.4)	375 (9.22)
	q2	female	145 (3.57)	142 (3.49)	138 (3.4)	115 2.83	540 13.29
		male	165 (4.06)	115 (2.83)	109 (2.68)	82 (2.02)	471 (11.59)
	q3	female	76 (1.87)	104 (2.56)	117 (2.88)	135 (3.32)	432 (10.63)
		male	148 (3.64)	162 (3.99)	142 (3.49)	132 (3.25)	584 (14.37)
	q4	female	26 (0.64)	60 (1.48)	77 (1.89)	129 (3.17)	292 (7.18)
		male	81 (1.99)	167 (4.11)	199 (4.9)	277 (6.82)	724 (17.81)
	total		1016 (25.00)	1016 (25.00)	1016 (25.00)	1016 (25.00)	4064 (100.00)

Source: Authors' own work

Table 2. Summary Statistics of Business Profit-Household Expenditure by Gender

Variable	Gender	N	Median (IDR)	IQR (IDR)
Profit	Female	1,910	458,333	922,500
	Male	2,154	1,000,000	1,680,000
	Total	4,064	702,083	1,343,083
Expenditure	Female	1,910	952,608	837,083
	Male	2,154	936,350	854,526
	Total	4,064	936,350	847,750

Source: Authors' own work

Table 3. Results of Regression with VCE Robust

Variable	profit	expenditure	expenditure-educ	sb-wellbeing
<i>female_own</i>	-0.56300***	0.03354*	0.80535***	0.18005***
<i>asset (ln)</i>	0.07493***	0.01351***	0.064**	0.01168***
<i>reinvest (ln)</i>	-0.00391	0.00349**	-0.00052	-0.00096
<i>revconsum (ln)</i>	0.12563***	0.0109***	0.05878**	0.00085
<i>sector_i1</i>	0.12337**	-0.00678	0.12213	0.03599
<i>sector_i2</i>	-0.01753	-0.06590**	0.28646	0.02819
<i>size-fam</i>	0.02799**	-0.13948***	0.88021***	0.00164
<i>struct-fam</i>	-0.02637	-0.41556***	11.813***	0.01831
<i>pcwage (ln)</i>	0.03615***	0.01668***	-0.01012	0.01318**
<i>age</i>	0.00337	0.00164*	0.04937***	0.00162
<i>educ</i>	0.03562***	0.04185***	0.19937***	0.03952***
<i>java</i>	-0.25337***	0.09054***	0.55171**	0.06696**
<i>urban</i>	0.24157***	0.13211***	-0.21400	-0.00204
<i>constant</i>	9.88924***	13.47719***	-1.69838**	2.14236***
N	4064	4064	4064	4064
F (8, 4055)	81.87	21.39	43.85	115.2
Prob > F	0	0	0	0
ll	-6970.094	-3248.366	-12963.341	-5576.384
r2	0.271	0.312	0.251	0.042
aic	13968.187	6524.731	25954.683	11180.769

Legend: * p<.1; ** p<.05; *** p<.001

Source: Authors' own work

with lower business profits than male-owned enterprises, *ceteris paribus*. However, this adjusted association should be interpreted with caution, as it may also reflect alternative factors such as reporting differences, residual sectoral composition not fully captured by control variables, survivorship patterns, and unobserved household or entrepreneurial characteristics.

Household-Level Performance

In contrast, female ownership is positively associated with household per capita expenditure ($\beta = 0.03354$, $p < 0.10$), implying a modest increase of approximately 3.3% in per capita consumption. Although small in magnitude and only marginally significant, the direction of this association contrasts with the negative profit coefficient. Household size and the share of children significantly reduce per capita expenditure, whereas

Table 4. Results of Robustness Test with M-Estimator Regression

Variable	profit	expenditure	expenditure-educ	sb-wellbeing
<i>female_own</i>	-0.06126**	0.03308*	0.71622***	0.18691***
<i>asset (ln)</i>	0.01398***	0.01328***	0.0714**	0.01234***
<i>reinvest (ln)</i>	0.00114	0.00384**	-0.00268	-0.00127
<i>revconsum (ln)</i>	0.90364***	0.01079***	0.06231**	0.00186
<i>sector_i1</i>	0.05076**	-0.00114	0.13871	0.01841
<i>sector_i2</i>	0.03993	-0.06638**	0.32401	0.02121
<i>size-fam</i>	-0.00666	-0.13603***	0.99853***	0.00118
<i>struct-fam</i>	-0.06317	-0.41818***	12.58043***	-0.00346
<i>pcwage (ln)</i>	0.00944***	0.01806***	0.00505	0.01556***
<i>age</i>	-0.00256**	0.00197**	0.04686***	-0.00057
<i>educ</i>	0.01031***	0.04104***	0.20945***	0.04544***
<i>java</i>	-0.08274***	-0.09339***	0.55063**	0.05458*
<i>urban</i>	0.05211**	0.12909***	-0.25991	0.02121
<i>constant</i>	1.20411***	13.43268***	-2.20836**	2.10839***
N	4064	4064	4064	4064
r2	0.966	0.299	0.266	0.069

Legend: * $p < .1$; ** $p < .05$; *** $p < .001$

Source: Authors' own work

household wage income, education, assets, and urban residence increase it. Taken together, these results provide limited and suggestive evidence consistent with H1b, indicating that lower firm-level profit among female-owned MSEs is not necessarily associated with lower household consumption. However, this relationship is notably weaker than the education expenditure results, which show larger magnitudes and stronger statistical significance, suggesting that the welfare-related effects of female ownership may be more pronounced in human capital investment than in general consumption.

Furthermore, female ownership shows a large, and highly significant positive association with household education spending ($\beta = 0.8053$, $p < 0.001$). This effect remains robust after controlling household composition, income, and business characteristics. Owner education and the proportion of children are also strongly positive predictors. The magnitude and significance of the gender coefficient provide strong evidence consistent with H1c, indicating that female-owned MSE households invest more intensively in children's human capital.

For subjective well-being, female ownership is again positive and statistically significant ($\beta = 0.18005$, $p < 0.001$). While the model explains a smaller share of variance, the consistent positive coefficient suggests that households operating female-owned MSEs report higher perceived economic welfare. This finding is consistent with H1d.

Across models, a consistent dual pattern emerges: female ownership is negatively associated with firm-level profit but positively associated with household consumption, education expenditure, and subjective well-being. The divergence between enterprise and household outcomes persists after controlling observable characteristics, providing multivariate evidence broadly consistent with the household interference framework and the study's dual-outcome hypothesis.

Robustness Test: M-Estimator

Table 4 reports M-estimator regressions using Huber and Tukey bi-weight iterations to account for influential observations. The results confirm the baseline findings. Female ownership remains negatively associated with business profit ($\beta = -0.0613$, $p < 0.05$), indicating that outliers do not drive the gender profit gap. At the household level, female ownership remains positively associated with per capita expenditure ($\beta = 0.0331$, $p < 0.10$), education spending ($\beta = 0.7162$, $p < 0.001$), and subjective well-being ($\beta = 0.1869$, $p < 0.001$).

The stability of coefficient signs across estimators suggests that the observed dual-outcome pattern namely, lower firm-level profit alongside stronger household-level welfare among female-owned pattern is less sensitive to influential observations. Although the coefficient magnitudes differ modestly from the baseline OLS estimates, such variation is expected under M-estimation because influential observations receive lower weights, while the overall directional relationships remain consistent. These results indicate that the main findings are not driven solely by extreme values or skewed distributions. However, it is important to note that this robustness check does not address other potential sources of bias, including endogeneity, omitted variables, measurement error, or selection into female ownership.

This study contributes to the literature on gender and micro and small enterprise (MSE) performance by showing a systematic divergence between firm-level and household-level outcomes, extending prior empirical work that has largely examined gender disadvantage through profit-centered business indicators alone. Consistent with a large body of prior research, the results confirm a significant gender gap in business profit: female-owned MSEs generate lower returns than male-owned enterprises even after controlling for owner characteristics, assets, sector, and regional factors (De Mel et al., 2009; Delecourt & Ng, 2021). This finding aligns with structural explanations emphasizing unequal access to capital, network constraints, and sectoral segregation (Aterido et al., 2013). In many developing economies, women entrepreneurs operate with smaller start-up capital, have lower access to formal financial services, and are often excluded from professional networks that facilitate information flows, credit access, and market opportunities. These structural disadvantages can limit the scale and productivity of women-led enterprises, reinforcing persistent gender gaps in profitability.

However, the contribution of this study lies in moving beyond the firm-centric interpretation that has dominated much of the entrepreneurship literature, particularly the experimental and econometric tradition that evaluates gender disparities primarily through business profit, returns to capital, productivity, and growth (De Mel et al., 2009; Delecourt & Ng, 2021). While prior research has largely focused on firm-level indicators such as profit, productivity, and growth, the present findings show that lower business profit among female-owned enterprises does not necessarily imply lower household welfare. Female ownership is positively associated with household per capita expenditure, strongly associated with education spending, and positively associated with subjective

well-being. Importantly, these patterns are consistent across both OLS and M-estimator regressions, suggesting that the main associations are less sensitive to influential observations and extreme values in the distribution of income and expenditure. However, this robustness check does not eliminate other potential sources of bias, including endogeneity, omitted variables, or measurement error.

This divergence between enterprise performance and household welfare outcomes is consistent with the household interference framework, which conceptualizes business and family systems as mutually embedded rather than independent economic units, and offers an empirical illustration of how such embeddedness may generate gender-differentiated outcome patterns across business and household domains (Stafford et al., 1999; Yanuarta RE et al., 2023). Within this theoretical perspective, decisions about income allocation, reinvestment, and consumption are shaped by the interaction between business objectives and household needs. Particularly in contexts characterized by necessity-driven entrepreneurship, enterprises are often created not primarily as growth-oriented ventures but as mechanisms for stabilizing household income. As highlighted in the literature on subsistence entrepreneurship, such businesses often serve as adaptive responses to labor-market informality, income volatility, and limited social protection systems (Block et al., 2015; Grimm et al., 2012). Under these conditions, entrepreneurs may rationally allocate business income toward immediate household consumption rather than reinvestment in productive assets.

The empirical findings of this study indicate a positive association between female ownership and household education expenditure. This pattern is consistent with, but does not directly establish, the interpretation that income generated by women-owned enterprises may be more closely linked to investments in children's human capital. The data capture expenditure outcomes rather than intra-household allocation decisions; therefore, the underlying mechanism cannot be directly observed. Alternative explanations may also contribute to this pattern, including unobserved household wealth, sectoral sorting into activities with different income profiles, variations in household composition, and potential reporting differences across respondents. Within these limits, the observed association aligns with a well-established body of research in development economics showing that women's control over income is often associated with higher spending on children's education, health, and broader household welfare (Duflo, 2012; Heath & Mushfiq Mobarak, 2015). From the perspective of the household interference framework, this pattern can be interpreted as suggestive of gendered intra-household decision processes in which resources may be oriented toward collective welfare and long-term outcomes. In the context of microenterprises, this implies that the economic role of women entrepreneurs may extend beyond firm-level performance, although such interpretations should be viewed as consistent with, rather than directly demonstrated by, the empirical analysis.

Evidence from experimental studies of microenterprise investment behavior further supports this interpretation. Research has shown that male and female entrepreneurs may respond differently to financial shocks, grants, or access to credit, with women often allocating resources more conservatively and directing a larger share toward household consumption and risk mitigation (Berge et al., 2015; Fafchamps et al., 2014). Rather than reflecting inefficiency or weaker entrepreneurial ability, these differences may reflect patterns consistent with rational strategies shaped by household responsibilities, income risk, and caregiving obligations. In other words, the lower level of firm-level reinvestment observed among women-owned enterprises may reflect deliberate allocation priorities rather than

managerial shortcomings.

The descriptive quartile analysis presented in this study provides additional evidence that is consistent with this interpretation. Although female-owned enterprises are more concentrated in lower-profit quartiles, household expenditure remains positively associated with profit for both genders. More importantly, among enterprises located in the mid-to-upper profit range, female-owned households are more frequently represented in the highest expenditure quartile. This pattern suggests that, conditional on achieving moderate business returns, female ownership is associated with relatively higher household expenditure outcomes. However, this descriptive evidence does not identify the underlying allocation process or imply a direct flow of income from enterprise to household use. Rather, it indicates a pattern that is consistent with the possibility that enterprise income in female-owned MSEs may be more closely linked to household welfare, while alternative explanations such as unobserved household characteristics, sectoral differences, or reporting variation may also contribute to the observed distribution.

These results support a broader reconceptualization of entrepreneurial success in emerging economies. Traditional approaches to evaluating business performance emphasize firm growth, profit maximization, and capital accumulation as the primary indicators of entrepreneurial success. In contrast, the present findings suggest that household consumption, education investment, and perceived welfare should also be considered as complementary evaluative dimensions when assessing household-based micro and small enterprises. While these metrics may be appropriate for opportunity-driven ventures in advanced economies, they may inadequately capture the economic role of microenterprises operating under necessity-driven conditions. In contexts such as Indonesia, where informality remains widespread, and many households lack stable wage employment, microenterprises frequently serve as instruments of household welfare production rather than purely profit-maximizing entities.

From this perspective, the contribution of women's entrepreneurship may be systematically undervalued when evaluation frameworks rely exclusively on firm-level indicators. By integrating firm-level outcomes with household-level measures such as consumption, education expenditure, and subjective well-being, this study provides a more comprehensive assessment of the economic role of women-owned enterprises. The results demonstrate that female entrepreneurship can contribute significantly to household resilience, human capital formation, and perceived economic security, even when firm-level profit remain modest.

This study, therefore, contributes to the growing literature that calls for a more holistic evaluation of entrepreneurship in developing economies. By empirically documenting the divergence between enterprise profitability and household welfare outcomes, the study underscores the importance of accounting for intra-household allocation dynamics when assessing the economic impact of microenterprises. The findings suggest that gender gaps in firm performance cannot be fully understood without accounting for the broader socio-economic functions that enterprises perform within household systems.

Finally, the study contributes a novel empirical perspective by simultaneously examining firm-level and household-level outcomes within a unified analytical framework. While previous studies have typically focused on either enterprise performance or household welfare, the present analysis demonstrates that these dimensions may follow distinct patterns, particularly in gendered entrepreneurial contexts. This dual-outcome approach helps reconcile the apparent contradiction between lower firm-level performance and positive household welfare outcomes among female-owned enterprises. In doing so, it advances a gender-sensitive and

contextually grounded understanding of entrepreneurial success that better reflects the economic realities of necessity-driven entrepreneurship in emerging economies.

Conclusion

This study reexamines gender disparities in micro and small enterprise (MSE) performance by adopting a dual-outcome framework that simultaneously evaluates firm- and household-level indicators, thereby offering both an empirical reassessment and a broader conceptual framing of entrepreneurial performance. Using nationally representative data from Indonesia, the findings confirm a persistent gender gap in business profit: female-owned MSEs generate significantly lower returns than male-owned enterprises.

However, the analysis reveals a contrasting pattern at the household level. Female ownership is positively associated with per capita household expenditure, strongly associated with education spending, and positively associated with subjective well-being. These findings remain robust across alternative estimators, indicating that extreme values or distributional artifacts do not drive the observed divergence.

The results suggest that gender differences in microenterprise performance are not fully captured by profit-based indicators alone. While female-owned enterprises are associated with lower business profit, the evidence indicates positive associations with selected household welfare outcomes, particularly education expenditure and subjective well-being. In contrast, the association with per capita household expenditure is more modest and only marginally significant. Taken together, these findings are consistent with the household interference perspective, suggesting that enterprise performance and household welfare may not move in parallel in necessity-driven contexts. However, given the cross-sectional design, these patterns should be interpreted as associational rather than causal, and as indicative of potential differences in how enterprise income relates to household welfare rather than definitive evidence of underlying allocation mechanisms.

By integrating firm and household dimensions within a single empirical framework, this study contributes to gender and development scholarship. It offers a transferable dual-outcome approach for future research on household-based entrepreneurship. First, it demonstrates that gender gaps in enterprise performance do not necessarily imply lower welfare among female-led households. Second, it provides empirical evidence that women's entrepreneurial income is closely linked to human capital investment and perceived economic security. Third, it advances a more gender-sensitive evaluation of entrepreneurship that aligns with inclusive development objectives in emerging economies.

Future research should further explore dynamic and causal mechanisms linking enterprise income allocation, intra-household bargaining power, and long-term welfare trajectories. Nonetheless, the present findings underscore a central implication: entrepreneurial success, particularly among women in necessity-driven contexts, should be assessed not only by firm growth but also by its contribution to household resilience and well-being.

Policy Implications

The findings carry implications for entrepreneurship, gender, and development policy in emerging economies. From an evidence-based perspective, the results indicate a persistent association between female ownership and lower firm-level profit, alongside positive associations with selected household welfare outcomes. These patterns are consistent with the presence of structural constraints that disproportionately affect women entrepreneurs, including limited access to finance, weaker integration into business

networks, and institutional barriers. At the same time, the findings suggest that policy frameworks focused solely on firm-level profitability may overlook the broader welfare-related dimensions associated with women-owned enterprises. However, these implications should not be interpreted as causal evidence that expanding support for women-owned enterprises will necessarily lead to improved household welfare outcomes. Rather, policies such as improving access to finance, strengthening participation in business networks, and reducing institutional barriers may be informed by these observed patterns, while recognizing that the underlying mechanisms linking enterprise performance and household welfare remain only partially understood.

Second, the evidence that female-owned MSEs are positively associated with household consumption, education expenditure, and subjective well-being suggests that women's entrepreneurship may play an important role in supporting household welfare stability. In necessity-driven contexts, enterprises often function as instruments of income smoothing and household resilience rather than purely growth-oriented ventures. These findings suggest that policy design should more carefully recognize this potential welfare-supporting function of women-owned MSEs, while acknowledging that such implications are informed by observed associations rather than definitive causal effects. In this regard, social protection programs, conditional cash transfers, and microfinance schemes may be more effectively integrated with enterprise development initiatives to strengthen both business sustainability and household well-being.

Third, the strong association between female ownership and education spending highlights the intergenerational impact of women's entrepreneurship. Supporting women-led enterprises may yield long-term human capital gains that extend beyond immediate firm performance. Policymakers should consider entrepreneurship support as part of broader human development strategies, particularly in regions characterized by informality and labor-market precarity.

Fourth, evaluation frameworks for MSME development programs should move beyond narrow profit-based indicators. Monitoring systems that incorporate household-level outcomes, such as consumption stability, education investment, and subjective welfare, would provide a more comprehensive assessment of program effectiveness, especially in gender-targeted interventions.

Finally, regional disparities observed in the models underscore the importance of spatially differentiated policies. Tailored interventions that account for urban-rural divides and Java-non-Java differences are necessary to ensure equitable entrepreneurial development.

In sum, the study suggests that gender-sensitive entrepreneurship policy should pursue a dual objective: reducing structural barriers to firm growth while simultaneously recognizing and reinforcing the household welfare contributions of women's enterprises. Such an integrated approach aligns more closely with inclusive development goals and the broader agenda of economic resilience in emerging economies.

Limitations

Several limitations should be acknowledged. First, although the study relies on nationally representative IFLS data, the analysis is based on cross-sectional estimation. As such, the results capture associations rather than causal relationships. Unobserved heterogeneity, such as entrepreneurial ability, intra-household bargaining power, or social capital, may influence both enterprise performance and household welfare outcomes. Future research could exploit the longitudinal structure of IFLS to examine dynamic trajectories and causal mechanisms using panel or quasi-experimental approaches.

Second, while the study incorporates both objective and

subjective welfare indicators, it does not directly measure intra-household decision-making processes or income control mechanisms. Prior research suggests that women's allocation patterns are closely linked to bargaining power and control over household resources. Incorporating measures of financial decision authority or joint versus individual ownership structures would deepen understanding of how enterprise income translates into welfare outcomes.

Third, while this study centers on Indonesia, the findings may not be fully generalizable to contexts with different institutional environments or gender norms. Comparative cross-country analyses could test whether the dual-outcome pattern identified here holds across varying levels of financial inclusion, labor market formality, and gender equality.

Recommendations for Future Research

Future research should therefore pursue three main directions: (1) longitudinal analysis of enterprise-household

dynamics; (2) deeper examination of intra-household allocation and bargaining mechanisms; and (3) comparative studies across institutional contexts. Advancing these lines of inquiry will further refine the conceptualization of entrepreneurial success and strengthen the integration of gender, household economics, and enterprise development scholarship.

Author contributions

Ramel Yanuarta conceived and designed the analysis, collected the data, contributed data or analysis tools, performed the analysis, interpreted the results, and wrote the paper. Yokazio Sharen collected the data, contributed data or analysis tools, performed the analysis, and wrote the paper. Nurfaizah collected the data, contributed data or analysis tools, and wrote the paper.

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