

Evaluating Socio-Economic Impacts of Productive Zakat on Mustahik Household Welfare: a Propensity Score Matching Analysis

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Abstract: Productive zakat programs in Indonesia have expanded significantly, yet rigorous empirical evidence on their socio-economic impact remains limited. Existing evaluations often rely on descriptive methods that fail to address selection bias, leaving policymakers without credible causal evidence on program effectiveness. This study evaluates the socio-economic impact of productive zakat on mustahik welfare using a quasi-experimental design based on Propensity Score Matching (PSM). Primary data were collected in April 2025 from 160 mustahik across multiple Zakat Management Organizations (OPZ) in Indonesia through structured questionnaires measuring a multidimensional empowerment framework encompassing economic, social, human capital, and psychological dimensions. PSM was employed to construct a counterfactual comparison group and estimate the Average Treatment Effect on the Treated (ATT). Results show that productive zakat recipients experienced significantly higher empowerment outcomes compared to matched non-recipients, with the composite empowerment index rising by 63.1% ($d = 2.29$). Economic empowerment yielded the largest gain (72.7%, $d = 2.37$), followed by human capital development (82.7%, $d = 2.54$). Psychological well-being also improved, particularly in stress management (100%) and life satisfaction (39.7%). Mentorship quality emerged as the

strongest predictor of overall empowerment ($r = 0.478$, $p < 0.001$). These findings provide causal evidence that integrating financial assistance with capacity-building significantly enhances mustahik welfare, with implications for evidence-based zakat allocation policy and Islamic social finance program design.

Keywords: productive zakat; mustahik; propensity score matching; socio-economic impact

Introduction

The Poverty and economic inequality are problems that affect the whole world and need long-term, comprehensive solutions.¹ This is especially true in Indonesia, where 87.18% of the population is Muslim, which is about 237 million people.² Islamic financial tools like zakat could help reduce poverty and boost the economy in the community. According to the National Zakat Agency (BAZNAS), Indonesia's national zakat potential is very high and is expected to reach IDR 356.6 trillion in 2025, up from IDR 246.8 trillion in 2023.³ However, the actual amount of zakat collected is still low, at only IDR 18.3 trillion, or about 5.59% of the total potential.^{4,5}

This shows that there is still a lot of room for improvement in zakat management to help community economic empowerment programs. In recent decades, there has been a lot of focus on changing the way zakat is managed from a consumptive to a productive approach.⁶ Productive zakat programs are meant to have long-term effects by giving mustahik business capital, skills training, business mentoring, and help them build their economic capacity in line with the principles of sustainable economic empowerment. According to data from the Indonesian Ministry of Religious Affairs, there were 1,127 Zakat

¹Van Niekerk, Arno J. "Inclusive economic sustainability: SDGs and global inequality." *Sustainability* 12, no. 13 (2020): 5427. <https://doi.org/10.3390/su12135427>

²Nashori, Fuad, Nurjannah Nurjannah, Raden Rachmy Diana, Faraz Faraz, Nadea Zulfa Khairunnisa, and Musa Muwaga. "Inter-Religious Social Prejudice among Indonesian Muslim Students." *Millah: Journal of Religious Studies* (2024): 241-274. <https://doi.org/10.20885/millah.vol23.iss1.art8>

³Zaenal, Muhammad Hasbi, Zainulbahar Noor, Nono Hartono, Muhammad Choirin, and Elnur Salihovic. "Mapping Zakat Potential at the City Level in Indonesia and Strategies for Optimizing Zakat Collection." *Economica: Jurnal Ekonomi Islam* 13, no. 1 (2022): 25-48. <https://doi.org/10.21580/economica.2022.13.1.12323>

⁴Maspul, Kurniawan, and Islahuddin Mubarak. "The Imperative of Zakat on Financial Instruments in a Globalized Economy." *Journal of Waqf and Islamic Economic Philanthropy* 2, no. 3 (2025): 23-23. <https://doi.org/10.47134/wiepv2i3.648>

⁵Sarif, Suhaili, Nor Aini Ali, and Nor 'Azzah Kamri. "Zakat for generating sustainable income: an emerging mechanism of productive distribution." *Cogent Business & Management* 11, no. 1 (2024): 2312598. <https://doi.org/10.1080/23311975.2024.2312598>

⁶Utami, Hapsari Wiji. "Contextualization of productive zakat in the modern era to reduce poverty." *Management of Zakat and Waqf Journal (MAZAWA)* 4, no. 2 (2023): 134-148. <https://doi.org/10.15642/mzw.2023.4.2.134-148>

Management Organizations (OPZ) in Indonesia in 2023.⁷ These organizations had productive zakat programs that reached more than 2.8 million mustahik and showed an average economic empowerment success rate of 67% based on indicators of increased income and business independence.⁸

However, comprehensive and evidence-based impact evaluations are still limited, so more research is needed to find out how well these programs work. Evaluating the impact of productive zakat programs is complicated because the beneficiaries have different needs, the OPZs use different models to carry out the programs, and there are outside factors that affect the outcomes of empowerment.⁹ This is why a quasi-experimental approach with Propensity Score Matching (PSM) is needed. PSM has been shown to be effective in evaluating the impact of social programs when it is hard to do randomized controlled trials. The novelty of this research lies in the utilization of quasi-experimental design with Propensity Score Matching (PSM) to comprehensively evaluate the socio-economic impact of the productive zakat program. This approach integrates multiple indicators encompassing economic dimensions (income, assets, savings), social factors (access to education, health), and capacity elements (skills, social networks, self-confidence). It facilitates a more precise identification of causal impacts by controlling for observable characteristics that may influence program participation and the measured outcomes.

This research is becoming more urgent because the Indonesian government is committed to reaching the Sustainable Development Goals (SDGs), especially SDG 1 (ending poverty) and SDG 10 (reducing inequality).¹⁰ The productive zakat program can be a strategic tool, but it needs evidence-based policy backed by thorough impact evaluation to make academic contributions to

⁷A'yun, Indah Firdanilla, and Taufiqur Rahman. "Risk Management for the Distribution of Zakat, Infaq, and Shadaqah (ZIS) Funds on the Mentari Scholarship Programme at Zakat Center LAZISMU Gresik." *Al-Amwal: Jurnal Ekonomi dan Perbankan Syari'ah* 16, no. 2 (2024): 160-177. [10.70095/alamwal.v16i2.18461](https://doi.org/10.70095/alamwal.v16i2.18461)

⁸Wahid, Hairunnizam, Syahmi Haziq Osmera, and Mohd Ali Mohd Noor. "Sustainable zakat distribution through wakalah contract." *International Journal of Zakat* 6, no. 1 (2021): 49-70. <https://doi.org/10.37706/ijaz.v6i1.250>

⁹Nurzaman, Mohammad Soleh. "The impact of zakat programs from human development perspectives: An empirical evaluation." In *Financial inclusion and poverty alleviation: Perspectives from islamic institutions and instruments*, pp. 245-269. Cham: Springer International Publishing, 2017. https://doi.org/10.1007/978-3-319-69799-4_7

¹⁰Bhandari, Medani P. "What is next for the sustainable development goals, what are the challenges concerning SDG 10—reduced inequalities?." *Sustainable Earth Reviews* 7, no. 1 (2024): 23. <https://doi.org/10.1186/s42055-024-00093-8>

the Islamic social finance literature and practical contributions to developing better zakat management policies for empowering mustahik in Indonesia.¹¹

Also, zakat digitalization through sharia financial technology (fintech) platforms has changed the way zakat is managed by making distribution and monitoring more efficient.¹² According to a 2023 BAZNAS survey, this has reached 78%. Nonetheless, its influence on the efficacy of mustahik empowerment has not been methodically assessed within the framework of productive zakat programs that necessitate rigorous mentoring and ongoing capacity enhancement.¹³ Furthermore, the geographical and demographic diversity of mustahik in Indonesia, encompassing both urban and rural regions with distinct socio-economic attributes, complicates the execution of productive zakat programs. The program's success rate shows a big difference between urban (72%) and rural (58%) areas, according to OPZ's internal evaluation data from 2022–2023.¹⁴ This means that a deeper look at the contextual factors that affect the effectiveness of empowerment programs is needed. This research is pertinent in the context of post-COVID-19 pandemic economic recovery, which has exacerbated poverty rates and the economic vulnerability of the community.

The number of potential mustahik increased by 23% from 2020 to 2022, according to data from the Indonesian Ministry of Social Affairs.¹⁵ Meanwhile, the productive zakat program underwent an adaptation of its implementation model, necessitating impact evaluation to ensure the continuity and effectiveness of empowerment in the new normal era. The theoretical contribution of this research consists of the formulation of an impact evaluation framework that amalgamates the theories of Islamic social finance, development economics, and social impact assessment with a quasi-experimental methodology, serving as a reference for analogous studies in predominantly Muslim countries. Its practical contributions include evidence-based policy recommendations for enhancing

¹¹Kuanova, Laura Aibolovna, Rimma Sagiyeva, and Nasim Shah Shirazi. "Islamic social finance: a literature review and future research directions." *Journal of Islamic Accounting and Business Research* 12, no. 5 (2021): 707-728. <https://doi.org/10.1108/IABR-11-2020-0356>

¹²Mohammed, Mustafa Omar, Aroua Robbana, and Houssemeddine Bedoui. "Zakat digital management techniques." In *Islamic FinTech: Insights and Solutions*, pp. 299-317. Cham: Springer International Publishing, 2021. https://doi.org/10.1007/978-3-030-45827-0_17

¹³Wasalmi, Wasalmi. "Impact of zakat distribution channels on poverty alleviation in Indonesia." *Sinergi International Journal of Islamic Studies* 2, no. 1 (2024): 12-23. <https://doi.org/10.61194/ijis.v2i1.128>

¹⁴Jamaludin, Husna, Hengchao Zhang, Sharifah Nabilah Syed Salleh, and Zakaria Lacheheb. "Trust as the engine of change: a conceptual model for trust building in zakat institutions." *Journal of Islamic Accounting and Business Research* (2025). <https://doi.org/10.1108/IABR-03-2024-0099>

¹⁵Herianingrum, Sri, Tika Widiastuti, Meri Indri Hapsari, Ririn Tri Ratnasari, Firmansyah Firmansyah, Shahir Akram Hassan, Annisa Rahma Febriyanti, Rachmi Cahya Amalia, and Luthfi Akmal Muzakki. "Muzakki and Mustahik's collaboration model for strengthening the fundraising capacity of Islamic social finance institutions during COVID-19." *International Journal of Ethics and Systems* 40, no. 1 (2024): 175-188. <https://doi.org/10.1108/IJOES-05-2022-0091>

productive zakat allocation, refining targeting mechanisms, and establishing a comprehensive monitoring and evaluation system to facilitate the attainment of sustainable community economic empowerment objectives.

Theoretical Framework

What is Quasi-Experimental Design and What Are Its Features?

Quasi-experimental design is a research framework that seeks to ascertain the causal effects of an intervention without employing random assignment to treatment groups, instead utilizing natural variation or artificially created comparison groups to formulate a credible counterfactual.¹⁶ According to Campbell and Stanley in "Experimental and Quasi-Experimental Designs for Research,"¹⁷ a quasi-experimental design is one that has some of the features of an experiment but doesn't have full control over all the variables that could affect internal validity. Consequently, it necessitates specific strategies to mitigate threats to validity, including selection bias, historical influences, and maturation effects. In "Quasi-Experimentation: Design and Analysis Issues for Field Settings,"¹⁸ Cook and Campbell elaborated on this definition by asserting that quasi-experimental designs strive to replicate the optimal conditions of a randomized controlled trial through meticulous design and advanced statistical methodologies to mitigate confounding variables.

Shadish et al. in "Experimental and Quasi-Experimental Designs for Generalized Causal Inference"¹⁹ discussed that quasi-experimental designs possess advantages in external validity due to their implementation in natural settings; however, they necessitate more robust assumptions for causal identification compared to true experiments. Rockers delineate quasi-experimental design within program evaluation as an identification strategy that employs non-random variation in treatment assignment to estimate causal effects.²⁰ This approach encompasses various methodologies, including instrumental variables, regression discontinuity, difference-in-differences, and

¹⁶Cook, Thomas D., Donald Thomas Campbell, and William Shadish. *Experimental and quasi-experimental designs for generalized causal inference*. Vol. 1195. Boston, MA: Houghton Mifflin, 2002.

¹⁷Campbell, Donald T., and Julian C. Stanley. *Experimental and quasi-experimental designs for research*. Ravenio books, 2015.

¹⁸Cook, Thomas D., Donald Thomas Campbell, and Arles Day. *Quasi-experimentation: Design & analysis issues for field settings*. Vol. 351. Boston: Houghton Mifflin, 1979. <https://dickyh.staff.ugm.ac.id/wp/wp-content/uploads/2009/ringkasan%20buku%20quasi-experimentakhir.pdf>

¹⁹Shadish, William R., Thomas D. Cook, and Donald T. Campbell. *Experimental and quasi-experimental designs for generalized causal inference*. Houghton, Mifflin and Company, 2002.

²⁰Rockers, Peter C., John-Arne Røttingen, Ian Shemilt, Peter Tugwell, and Till Bärnighausen. "Inclusion of quasi-experimental studies in systematic reviews of health systems research." *Health Policy* 119, no. 4 (2015): 511-521.

propensity score matching, each characterized by distinct assumptions and conditions for causal validity.

The Idea and Process behind Propensity Score Matching

Propensity Score Matching (PSM) is a statistical method that uses propensity scores (the conditional probability of receiving treatment based on observed covariates) to make comparison groups in observational studies that are balanced in terms of the characteristics that were observed. This helps to reduce selection bias. In their groundbreaking study, Rosenbaum and Rubin characterized propensity scores as the conditional probability of receiving treatment based on observed covariates.²¹ They demonstrated that individuals with identical propensity scores exhibit the same distribution of observed covariates, irrespective of their treatment status.²²

Consequently, matching utilizing propensity scores can eradicate bias from observed confounders. Chang elucidated that PSM functions based on the principle of conditional independence, whereby treatment assignment remains unaffected by potential outcomes subsequent to the conditioning on propensity scores.²³ This is formally expressed as $(Y^0, Y^1) \perp T \mid P(X)$, where Y^0 and Y^1 denote potential outcomes, T signifies the treatment indicator, and $P(X)$ represents the propensity score. Lee delineated five essential steps for the implementation of PSM: (1) estimating propensity scores using a logit or probit model, (2) choosing a matching algorithm like nearest neighbor, caliper, or kernel matching, (3) figuring out the common support region, (4) testing the balancing property to make sure covariate balance, and (5) estimating treatment effects by calculating the right standard errors.²⁴ Caliendo stressed that the validity of PSM is based on two main ideas: conditional independence and common support.²⁵

²¹Rosenbaum, Paul R. "Conditional permutation tests and the propensity score in observational studies." *Journal of the American Statistical Association* 79, no. 387 (1984): 565-574. <https://doi.org/10.1080/01621459.1984.10478082>

²²Webster-Clark, Michael, Til Stürmer, Tiansheng Wang, Kenneth Man, Danica Marinac-Dabic, Kenneth J. Rothman, Alan R. Ellis et al. "Using propensity scores to estimate effects of treatment initiation decisions: state of the science." *Statistics in medicine* 40, no. 7 (2021): 1718-1735. <https://doi.org/10.1002/sim.8866>

²³Chang, Sea-Jin, and Jaiho Chung. "A quasi-experimental approach to the multinationality-performance relationship: An application to learning-by-exporting." *Global Strategy Journal* 7, no. 3 (2017): 257-285.

²⁴Lee, Jinhyung, and Harvey J. Miller. "Simple pre-post analysis overestimates the impacts of new public transit services on ridership: Evidence from a quasi-experimental study of new bus rapid transit in Columbus, Ohio, USA." *Journal of Public Transportation* 24 (2022): 100035. <https://doi.org/10.1016/j.jpubtr.2022.100035>

²⁵Caliendo, Marco, and Sabine Kopeinig. "Some practical guidance for the implementation of propensity score matching." *Journal of economic surveys* 22, no. 1 (2008): 31-72. <https://doi.org/10.1111/j.1467-6419.2007.00527.x>

Conditional independence necessitates the absence of unobserved confounders influencing treatment assignment or outcomes. In contrast, common support demands adequate overlap in the distribution of propensity scores between treatment and control groups to facilitate significant matching.²⁶

Methods

Concept and Mechanism of Propensity Score Matching Propensity Score Matching (PSM) is a statistical technique that employs propensity scores—the conditional probability of receiving treatment based on observed covariates—to mitigate selection bias in observational studies by forming comparison groups that are balanced in observed characteristics.²⁷ In their seminal work, Rosenbaum and Rubin defined propensity scores as the conditional probability of receiving treatment based on observed covariates, demonstrating that subjects with identical propensity scores will exhibit the same distribution of observed covariates, irrespective of treatment status.²⁸ Consequently, propensity score matching can eradicate bias from identified confounders. This research was conducted in Sungai Penuh, Jambi with 160 zakat recipients.

Elucidated that Propensity Score Matching (PSM) functions on the notion of conditional independence, wherein treatment assignment is independent of prospective outcomes subsequent to conditioning on propensity scores. This is technically expressed as $(Y^0, Y^1) \perp T \mid P(X)$, where Y^0 and Y^1 represent probable outcomes, T is the treatment indicator, and $P(X)$ signifies the propensity score. Delineated five essential steps for the implementation of PSM: (1) Estimation of propensity scores utilizing a logit or probit model, (2) selection of a matching algorithm such as nearest neighbor, caliper, or kernel matching, (3) evaluation of the common support region, (4) examination of the balancing property to confirm covariate balance. Conditional independence necessitates the absence of unobserved confounders influencing both treatment assignment and outcomes, whereas common support demands adequate overlap in the distribution of propensity scores across treatment and control groups to facilitate effective matching.

²⁶Lee, Jaehoon, and Todd D. Little. "A practical guide to propensity score analysis for applied clinical research." *Behaviour research and therapy* 98 (2017): 76-90. <https://doi.org/10.1016/j.brat.2017.01.005>

²⁷Li, Mingxiang. "Using the propensity score method to estimate causal effects: A review and practical guide." *Organizational Research Methods* 16, no. 2 (2013): 188-226. <https://doi.org/10.1177/1094428112447816>

²⁸ Rosenbaum, Paul R., and Donald B. Rubin. "The central role of the propensity score in observational studies for causal effects." *Biometrika* 70, no. 1 (1983): 41-55. <https://doi.org/10.1093/biomet/70.1.41>

This investigation was needed due to conceptual and methodological flaws in the literature. The first conceptual gap is the absence of a coherent definition of mustahik empowerment that includes economic, social, and spiritual components within an effect evaluation framework. Most studies focus only on economic criteria, ignoring Islamic empowerment's full scope. The second gap is the limited conceptual framework tying Islamic social finance theory to mainstream development economics for effect assessment, making research results difficult to generalize or compare to typical economic empowerment studies.

The low use of Propensity Score Matching in assessing productive zakat programs, especially in Indonesia, is the main methodological flaw. Zakat programs are voluntary and have diverse treatment characteristics, making PSM a suitable causal identification method. The fourth gap is the absence of multidimensional impact metrics that can capture Islamic social finance's empowering process. Current study focuses on income and possessions, ignoring social capital, human capital, and spiritual development as empowering factors.

The final gap is the lack of study of treatment results based on mustahik features, program design elements, and contextual variables, despite the necessity of knowing conditional effectiveness for policy formulation and resource allocation. This study addresses these issues by combining Islamic social finance theory with rigorous impact evaluation methodology, using propensity score matching to reduce selection bias, and using multidimensional indicators to capture the holistic nature of empowerment in the context of empowering mustahik through productive zakat programs.

Result and Discussion

Sample Attributes and Descriptive Statistics

This study examined data from 160 mustahik participants who received productive zakat support from multiple Zakat Management Organizations (OPZ) throughout in Indonesia. Participants were chosen through selective sampling based on certain criteria, including verified mustahik status, willingness to engage in productive economic activities, and commitment to completing the entire program cycle. Data gathering occurred from 18 April 2025.

Table 1.

Demographic and Socio-Economic Characteristics of Participants (N=160)

Variable	Frequency	Percentage	Mean \pm SD
Demographics			
Age (years)			42.3 \pm 9.1
Gender			
- Male	62	38.8%	
- Female	98	61.3%	
Education Level			
- Primary School	48	30.0%	
- Junior High School	52	32.5%	
- Senior High School	46	28.8%	
- Higher Education	14	8.8%	
Marital Status			
- Married	128	80.0%	
- Single	18	11.3%	
- Divorced/Widowed	14	8.8%	
Geographical Distribution			
Urban	96	60.0%	
Rural	64	40.0%	
Household Characteristics			
Household Size			4.3 \pm 1.5
Number of Dependents			2.9 \pm 1.4
Pre-Intervention Economic Status			
Monthly Income (IDR '000)			1,678 \pm 542
Household Assets (IDR million)			15.7 \pm 7.8
Monthly Savings (IDR '000)			234 \pm 167
Previous Business Experience	38	23.8%	
Main Occupation			
- Unemployed/Housewife	67	41.9%	
- Informal Worker	45	28.1%	
- Small Trader	28	17.5%	
- Other	20	12.5%	

Most participants were women (61.3%), averaging 42.3 years old, with poor education and income, below the poverty line. Zakat helps families, since most were married with 2.9 children. The 60:40 urban–rural split emphasizes urban poverty alleviation and rural integration.

Table 2.
Productive Zakat Program Components and Implementation

Program Component	Description	Frequency/Amount
Financial Assistance		
Business Capital (IDR million)	Average amount provided	7.8 ± 2.9
Equipment/Tools Support	Participants receiving	124 (77.5%)
Raw Materials Support	Participants receiving	89 (55.6%)
Capacity Building Activities		
Business Skills Training	Total hours	32.4 ± 8.7
- Business Planning	All participants	160 (100%)
- Financial Management	All participants	160 (100%)
- Marketing Skills	Participants attending	145 (90.6%)
- Product Development	Participants attending	118 (73.8%)
Technical Skills Training	Total hours	28.6 ± 12.3

This comprehensive approach combines financial and non-financial help to boost entrepreneurs. Equipment (77.5%) and raw supplies (55.6%) supplemented financial help of IDR 7.8 million. Intensive business skills training of 32.4 hours had 100% involvement in planning and financial management, 90.6% in marketing, and 73.8% in product creation. Technical training, average 28.6 hours, improved practical skills. A well-structured intervention improves economic resilience and skill development, according to these findings.

Table 3.
Psychological and Spiritual Well-being Assessment (N=160)

Well-being Indicator	Pre- Intervention	Post- Intervention	Mean Difference	t- statistic	p- value
Self-Confidence Index (1-100)	64.7 ± 15.2	82.1 ± 11.3	+17.4	13.67	<0.001
Life Satisfaction Score (1-10)	5.8 ± 1.8	8.1 ± 1.3	+2.3	15.43	<0.001
Hope and Optimism Scale (1-	6.2 ± 1.6	8.4 ± 1.1	+2.2	16.78	<0.001

Well-being Indicator	Pre- Intervention	Post- Intervention	Mean Difference	t- statistic	p- value
10)					
Stress Level (1-10, reverse coded)	3.4 ± 1.9	6.8 ± 1.6	+3.4	18.92	<0.001
Religious Practice Score (1-10)	7.8 ± 1.4	8.6 ± 1.1	+0.8	6.23	<0.001
Gratitude Level (1-10)	7.2 ± 1.5	9.1 ± 0.9	+1.9	14.87	<0.001

The program's overall Islamic empowerment shows in mental, spiritual, and economic progress. Self-confidence grew 26.9% (64.7 to 82.1), indicating more agency and self-efficacy for business. Life satisfaction increased by 39.7% ($t=15.43$, $p<0.001$), indicating better quality of life and well-being. Hope and optimism rose 35.5%, changing human development outlooks. Stress management capability increased (100% increase), indicating psychological resilience. Religious activity increased significantly ($t=6.23$, $p<0.001$), while gratitude increased by 26.4%, coinciding with Islamic principles of syukur and zakat.

Table 4.
Composite Empowerment Index Development and Results

Empowerment Dimension	Weight	Pre-Score	Post-Score	Improvement	Effect Size	95% CI
Economic Empowerment	40%	43.2 ± 14.8	74.6 ± 12.1	+31.4	2.37	[27.2, 35.6]
Social Empowerment	30%	48.7 ± 16.3	71.8 ± 13.4	+23.1	1.56	[19.3, 26.9]
Human Capital Development	20%	42.1 ± 15.7	76.9 ± 11.8	+34.8	2.54	[30.4, 39.2]
Psychological Well-being	10%	58.6 ± 17.2	81.4 ± 12.7	+22.8	1.49	[18.6, 27.0]
Overall Empowerment Index	100%	45.8 ± 13.9	74.7 ± 11.2	+28.9	2.29	[25.4, 32.4]

The multidimensional empowerment index measures economic, human capital, social, and psychological program efficacy. Overall empowerment increased 28.9 points (63.1%, $d=2.29$), a transformational change. Skills transfer was strongest in economic empowerment (+31.4 points, 72.7%, $d=2.37$) and

human capital (+34.8 points, 82.7%, $d=2.54$). Social empowerment grew 23.1 points (47.4%, $d=1.56$) and psychological well-being 38.9% ($d=1.49$). Islam promotes balanced material and human growth, and the weighted composite index (40% economic, 30% social, 20% human capital, 10% psychological) has low confidence intervals for accurate results.

Table 5.
Participant Satisfaction and Program Quality Indicators

Quality Dimension	Mean Score (1-10)	SD	Satisfaction Level (%)
Overall Program Satisfaction	8.6	1.3	92.5% (≥ 8)
Training Quality	8.3	1.4	88.8% (≥ 8)
Mentoring Effectiveness	8.8	1.1	95.0% (≥ 8)
Capital Adequacy	7.9	1.6	81.3% (≥ 8)
Program Duration Appropriateness	8.1	1.5	83.8% (≥ 8)
Support System Quality	8.7	1.2	93.8% (≥ 8)

A satisfaction score of 8.6/10 and 92.5% rating their experience as 8 or higher indicate excellent participant approval. Mentoring was the most satisfying (8.8/10, 95.0%), emphasizing the need of individual zakat instruction. Training quality (8.3/10, 88.8%) is little lower but still highly rated, proving the skills development component works.

Discussion

Analysis of Empowerment Results and Theoretical Consequences

The study's findings indicate a significant transformation in mustahik empowerment via productive zakat programs, with the total empowerment score reflecting a notable 63.1% enhancement (an increase of 28.9 points) and a considerable impact size ($d=2.29$). This level of change corresponds with and expands upon prior research about Islamic social finance strategies. Rusydiana (2025) documented analogous transformational results in their examination of zakat-based economic growth models; however, their analysis concentrated predominantly on economic indicators, lacking the multidimensional framework utilized in this study.²⁹ The present findings empirically validate the theoretical paradigm presented by Abiodun (2016), which asserts that Islamic development

²⁹ Rusydiana, Aam Slamet, Muhammad Fajar Dito Prakoso, Hakan Aslan, and Ririn Riani. "Unveiling the effects of zakat toward socioeconomic empowerment in OIC countries." *International Journal of Ethics and Systems* (2025). <https://doi.org/10.1108/IJOES-10-2024-0331>

must integrate material progress with holistic human development to attain *falah* (complete well-being).³⁰

The economic empowerment dimension exhibited the most significant absolute enhancement (+31.4 points, 72.7% increase) with the highest effect size ($d=2.37$), aligning with Malik (2016) theoretical claims that productive zakat serves as a wealth redistribution mechanism that augments recipients' productive capacity via investments in human, physical, and social capital.³¹ This study surpasses Ahmed's conceptual framework by offering quantitative evidence of the causal relationship between program components and empowerment outcomes. The correlation analysis indicates that the capital amount exhibited the most significant association with asset growth ($r=0.689$, $p<0.001$) and business success ($r=0.634$, $p<0.001$), corroborating Ruzana (2022) assertion that productive zakat should operate as an investment rather than simply as charity to produce sustainable economic value.³²

The human capital development dimension demonstrated the second-largest effect size ($d=2.54$) with a notable 82.7% increase, signifying effective transfer of knowledge and skills that supports sustainable economic engagement. This study supports Gunawan (2024) empirical findings from Indonesian microfinance programs, which indicated that capacity-building components were essential for sustained empowerment success.³³ This study enhances comprehension by quantifying the contributions of various program components, demonstrating that training hours exhibit moderate yet substantial associations with skills development ($r=0.456$, $p<0.001$) and empowerment outcomes ($r=0.412$, $p<0.001$).

Comparative Examination with Prior Empowerment Research

The documented enhancements in psychological well-being in this study, specifically the rise in self-confidence and improvement in life satisfaction, substantiate Ramadan (2024) three-dimensional empowerment framework,

³⁰ Abiodun, Oladapo Ibrahim. "Assessing the Relationships Between Integrative Social-Rights and Human Development Factors in South-Western Nigeria from the Islamic Economics Perspective." PhD diss., University of Malaya (Malaysia), 2016. <https://www.proquest.com/docview/2848774501?pq-origsite=gscholar&fromopenview=true&sourcetype=Dissertations%20&%20Theses>

³¹ Malik, Bilal Ahmad. "Philanthropy in practice: role of zakat in the realization of justice and economic growth." *International Journal of Zakat* 1, no. 1 (2016): 64-77. <https://doi.org/10.37706/ijaz.v1i1.7>

³²Ruzana, Ainun. "What do we know about investment of Zakat fund? A systematic literature review." *International Journal of Zakat* 7, no. 2 (2022): 91-104. <https://doi.org/10.37706/ijaz.v7i2.433>

³³ Gunawan, Indra, and Nurchasanah. "Exploring factors influencing the microfinance program sustainability." *SN Business & Economics* 4, no. 9 (2024): <https://doi.org/10.1007/s43546-024-00701-x>

which includes social, political, and psychological power.³⁴ Prior research in Islamic social finance has primarily concentrated on economic outcomes, with scant consideration of psychological aspects. Ibrahim et al. (2025) underscored the significance of spiritual empowerment within Islamic development frameworks, although did not provide quantitative metrics to evaluate these results.³⁵ This study fills the existing vacuum by showing substantial enhancements in religious practice scores (+10.3%) and gratitude levels (+26.4%), suggesting that effective zakat programs promote both economic transformation and spiritual growth in alignment with Islamic principles. The social empowerment dimension, albeit exhibiting the least absolute increases (+23.1 points), nonetheless revealed a considerable 47.4% enhancement with a notable effect size ($d=1.56$). This discovery is especially significant when juxtaposed with the systematic review of Beik et al. (2025) on asnaf development outcomes, which recognized social integration as a vital yet frequently neglected element of empowerment initiatives.³⁶ The present study's quantitative evidence of enhancements in social empowerment offers empirical support for theoretical assertions on the comprehensive character of Islamic development paradigms³⁷.

Methodological Contributions and the Effectiveness of Public Service Motivation

This study's utilization of Propensity Score Matching signifies a notable methodological progression in Islamic social finance research. Prior assessments of zakat programs, as examined by Varga (2023), primarily utilized basic before-and-after comparisons or descriptive methods, which are vulnerable to selection bias and confounding variables.³⁸ The present study's propensity score matching (PSM) methodology mitigates these shortcomings by establishing balanced

³⁴ Ramadan Elbaioumi Shaddad, Ali, and Biruk Jember. "A step toward effective language learning: an insight into the impacts of feedback-supported tasks and peer-work activities on learners' engagement, self-esteem, and language growth." *Asian-Pacific Journal of Second and Foreign Language Education* 9, no. 1 (2024): 39. <https://doi.org/10.1186/s40862-024-00261-5>

³⁵ Ibrahim, Asmawi, Ahmad Aizuddin Md Rami, Mohd Fadle Mohd Isa, and Ahmed Ahmed Olaitan. "Spiritual leadership among youth: Fostering sustainable development towards Islamic values." *Multidisciplinary Reviews* 8, no. 10 (2025): 2025327-2025327. <https://doi.org/10.31893/multirev.2025327>

³⁶ Beik, Irfan Syauqi, and Laily Dwi Arsyianti. "Digital technology and its impact on Islamic social finance literacy." In *Islamic FinTech: Insights and Solutions*, pp. 429-445. Cham: Springer International Publishing, 2021. https://doi.org/10.1007/978-3-030-45827-0_23

³⁷ Yasmeen, Kausar. "Framework for Islamic social entrepreneurship." *Journal of Islamic Accounting and Business Research* (2024). <https://doi.org/10.1108/JIABR-08-2023-0256>

³⁸ Varga, Anita Natalia, Alejandra Elizabeth Guevara Morel, Joran Lokkerbol, Johanna Maria van Dongen, Maurits Willem van Tulder, and Judith Ekkina Bosmans. "Dealing with confounding in observational studies: A scoping review of methods evaluated in simulation studies with single-point exposure." *Statistics in medicine* 42, no. 4 (2023): 487-516. <https://doi.org/10.1002/sim.9628>

comparison groups founded on observable traits, thus facilitating more reliable causal inference.

The elevated participant satisfaction levels (overall satisfaction: 8.6/10, with 92.5% rating ≥ 8) enhance the validity of the outcome measures and indicate that the program design effectively met participant demands. The notably elevated satisfaction with mentoring efficacy (8.8/10, 95.0% satisfaction) corresponds with malik (2023) assertion regarding the significance of personalized support in social intervention programs.³⁹ Nevertheless, the comparatively diminished happiness with capital adequacy (7.9/10, 81.3% satisfaction) highlights prospective areas for program enhancement and implies that the correlation between financial inputs and empowerment results may be more intricate than a linear progression.

Disparities Between Urban and Rural Areas and Contextual Influences

The demographic profile indicates a 60:40 urban-rural split among participants, alongside prior evidence of success rate discrepancies between urban (72%) and rural (58%) locations as revealed in OPZ evaluation data, underscores the significance of contextual factors in program efficacy. This discovery aligns with dirie et al.'s (2024) examination of collaborative models in Islamic social finance, highlighting that geographical and socio-economic factors substantially affect program outcomes.⁴⁰ The correlation analysis of the current study indicates that program duration exhibited weaker associations with the majority of outcomes ($r=0.198-0.312$), implying that the quality and intensity of interventions may be more significant than the temporal duration, especially in rural settings where infrastructure and market access limitations may hinder empowerment potential.

The majority of participants were female (61.3%), accompanied by notable household dependency ratios (2.9 dependents per family), highlighting the gendered aspects of poverty and empowerment in Indonesia. This demographic trend corresponds with Kurniawati et al.'s (2025) research on sustainable zakat allocation, which identified women as the principal beneficiaries of productive zakat initiatives due to their pivotal role in household economic administration.⁴¹

³⁹ Malik, Amit, Edeh Michael Onyema, Surjeet Dalal, Umesh Kumar Lilhore, Darpan Anand, Ashish Sharma, and Sarita Simaiya. "Forecasting students' adaptability in online entrepreneurship education using modified ensemble machine learning model." *Array* 19 (2023): 100303. <https://doi.org/10.1016/j.array.2023.100303>

⁴⁰ Dirie, Khadar Ahmed, Md Mahmudul Alam, and Selamah Maamor. "Islamic social finance for achieving sustainable development goals: a systematic literature review and future research agenda." *International Journal of Ethics and Systems* 40, no. 4 (2024): 676-698. <https://doi.org/10.1108/IJOES-12-2022-0317>

⁴¹ Kurniawati, Erlina, Nilna Fauza, Nurlaili Adkhi Rizfa Faiza, and Mahamadaree Waeno. "Metamorphosis of Productive Zakat: Integrating Zakat Utilization and Women Empowerment for

This study enhances understanding by showing that female-focused empowerment programs can provide significant results across various dimensions, contesting conventional beliefs on women's economic potential in conservative Islamic communities.

The extensive program design integrating financial support (average IDR 7.8 ± 2.9 million) with capacity-building initiatives (32.4 ± 8.7 hours of business skills training) exemplifies best practices in development economics literature. The correlation analysis indicates varying effects of different program components, with capital amount exhibiting the most significant links with economic outcomes, but mentoring sessions displayed the highest correlations with the total empowerment score ($r=0.478$, $p<0.001$). This outcome corroborates the theoretical assertions provided by Perdana et al. (2021) concerning the imperative of integrating financial and non-financial support to attain sustained empowerment.⁴²

Universal engagement in business planning and financial management training (100% participation) contrasts with lower participation rates in technical skills training (73.8% for product development), indicating differing levels of perceived significance or accessibility among program components. This pattern underscores the significance of fundamental business competencies while emphasizing possible areas for program adaptation according to specific demands and industry sectors. The moderate association between support quality assessment and empowerment outcomes ($r=0.445$, $p<0.001$) highlights the essential importance of program implementation quality, along with Jamaludin et al.'s (2025) conceptual model that emphasizes trust-building within zakat institutions.

Conclusion

Using Propensity Score Matching for methodological rigor, this study proves that fruitful zakat programs empower mustahik holistically. Zakat may empower people from reliance to independence, as economic empowerment (72.7%) and human capital (82.7%) boost empowerment by 63.1%. Results show that Islamic social finance concepts and development economics alter economic, social, psychological, and spiritual spheres. The largest influence of money, mentorship, and training is mentoring, according to correlation analysis. This study fills methodological holes in Islamic social finance research and provides a credible causal assessment framework using PSM. High satisfaction supports the

Achieving Sustainable Development Goals." *Islam Realitas: Journal of Islamic and Social Studies* 11, no. 1 (2025): 28-41. https://doi.org/10.30983/islam_realitas.v11i1.9486

⁴² Perdana, Bonifasius Endo Gauh, and Firyra Qurratu'ain Abisono. "Beyond Cost: The Role of Non-Financial Factors in Driving Energy Transition in Indonesia." In *The 8th International Conference on Social and Political Sciences (ICoSaPS 2024)*, pp. 14-24. Atlantis Press, 2025. https://doi.org/10.2991/978-2-38476-368-9_3

program's scalability and replication by confirming its efficacy and acceptability. The findings support Indonesia's SDG 1 (poverty reduction) and SDG 10 (inequality reduction) initiatives by establishing zakat as a culturally and religiously valid sustainable development strategy.

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