

Does Household Financial Management of Independent Oil Palm Smallholders Promote Rural Development?

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ABSTRACT

Sustainable production by independent oil palm smallholders links to the creation of goods and services using processes and systems that are resource-conserving, economically viable, and socially and creatively rewarding for all working people and consumers. However, there is limited efficiency in financial management and low resource allocation for rural finance operations to support the development of rural economies. This study tried to prove whether household financial management promotes rural development using the theories of transaction cost, financial transaction management, public expenditure management, and a rural development framework. This research was conducted in Sambas District, West Kalimantan, using a mixed method with purposive sampling and structured questionnaires administered to 200 independent oil palm smallholders. Multidimensional scaling and a structural equation model were employed to analyze the data. The results unveiled that household financial management promoted rural development due to its effects on accessibility and infrastructure for market opportunities, basic and public services, and governance regarding participation in agriculture meetings and training by the government. Governance emerged as the most direct effect of rural development as it contributed to livelihoods, community-based economic empowerment, human resources, and rural environmental problems. Operational and risk management came as the most influential factors in household financial management. Government played a role in engaging smallholders in supply chains, access to inputs, and households' transition in confronting a variety of yields, unstable output and input prices, and changes in production technology. Innovative multi-actor collaborations were required to reinforce and provide a cloak for policy decisions.

Keywords: Economic empowerment; Financial management; Market opportunity; Oil palm smallholders; Rural development

INTRODUCTION

Independent oil palm smallholders are one of the keys to achieving sustainable production (Bakhtary, Haupt, Luttrell, Landholm, & Jelsma, 2021) and initiating the regional

economy (Sukiyono et al., 2022). In 2020, the total area of oil palm smallholders in Indonesia was 6.09 (40.62%) of 14,97 million hectares and produced 17,38 (35.38%) of 49,12 million tonnes of total crude palm oil production (Nashr, Putri, Dharmawan, & Fauzi, 2021). Independent oil palm smallholders have been believed to enhance livelihood standards (Chiriaco, Bellotta, Jusić, & Perugini, 2022), poverty alleviation (Ichsan, Saputra, & Permatasari, 2021; Ruml et al., 2022), and human capital formation among farm households in rural areas (Chrisendo, Siregar, & Qaim, 2022; Qaim, Sibhatu, Siregar, & Grass, 2020; Sukiyono et al., 2022).

However, independent oil palm smallholders have faced multiple socioeconomic challenges, such as low-intensity farming, low yields, limited market access, and insufficient profits (Ogahara, Jespersen, Theilade, & Nielsen, 2022), which prevent modernization (Meemken & Bellemare, 2020). They are often associated with unsustainable oil palm sources (Nashr et al., 2021), such as tropical deforestation, losses in biodiversity and ecosystem functions (Qaim et al., 2020), land conflicts, and labor abuses (Ogahara et al., 2022).

In addition, they possess variations in financial management (Andrianto, Fauzi, & Falatehan, 2019) and low technical efficiency (Varina, Hartoyo, Kusnadi, & Rifin, 2021). Most independent smallholders do not record cash flows; only a few keep written records of the prices of fresh fruit bunches (FFB) or the quantity of fertilizers and pesticides (Sahara, Haryadi, & Kusumowardhani, 2017), have a low marginal propensity to save, and prefer to hold cash (Sahara et al., 2017). Accordingly, they bear all kinds of business risks from markets due to limited capital (Ichsan et al., 2021), disconnects, and antagonisms in the global oil palm sector (Pacheco, Schoneveld, Dermawan, Komarudin, & Djama, 2020).

Thus, independent oil palm smallholders highly necessitate financial literacy to manage their financial resource needs (Askar, Ouattara, & Zhang, 2020). It has been widely recognized to affect people's welfare and the quality of household decisions (Koomson, Ansong, Okumu, & Achulo, 2022; Okoye et al., 2021). Financial literacy is associated with financial management (Tejero, Pilongo, & Pamaran, 2019) and is required for rural development to access enhanced resources (Askar et al., 2020). It also promotes efficient links between production and distribution (Jia, Qiu, & Yang, 2021), which has recently surged in reaching sustainable development goals (Dikshit & Pandey, 2021).

Rural development is a leading factor in economic growth of any country (Takhumova, 2020), influenced by socioeconomic conditions and resource availability (United Nations Department of Economic and Social Affairs [UN DESA], 2021). It contributes to sustainable agriculture for independent oil palm smallholders by ensuring that the current use of resources does not deprive future generations of social, economic, and environmental benefits (Sukiyono et al., 2022) through coordination between stakeholders, an innovative financial approach (Zhou, Chen, & Li, 2018), and public expenditure management (Ngoben & Muchopa, 2022) to increase market efficiency (Sgroi & Sciancalepore, 2022).

Thus, independent oil palm smallholders are expected to have an adjustment in resource allocation and income distribution (Pretorius & Pretorius, 2009) as part of the financial management dimensions (Wilson, 2019). Unfortunately, the efficiency of financial

management is still limited, while the promotion of rural development requires effective economic capabilities to generate sufficient results (Ma & Liu, 2020).

This research aims to prove whether household financial management promotes rural development using the theories of transaction cost (Williamson, 1998), financial transaction (Benston & Smith, 1976), public expenditure management (Premchand, 1994), and a rural development framework. The framework of household financial management is arranged based on aggregate management, operational management, risk management, and governance. Aggregate management provides priorities and fiscal sustainability. At the same time, operational management contributes to short-term and long-term decision-making, performance measurement, and strategic planning (Battistoni, Bonacelli, Colladon, & Schiraldi, 2013). Risk management is required to mitigate the risks of pursuing the objectives (Srinivas, 2019). Governance ensures that households are inclusive, accountable, transparent, responsive, equitable, effective, and efficient (Singh, Ansari, & Singh, 2009). Therefore, household financial management, expected to manifest in the quality and quantity of public services and resources (Taufiq & Yatminiwati, 2020), plays a significant role in determining livelihood strategies and diversification endeavors success for rural development.

RESEARCH METHOD

This study was conducted in Sambas District, one of the largest oil palm smallholder populations in West Kalimantan, reaching 2.11 million hectares (BPS-Statistics Indonesia, 2020; Nurliza, Dolorosa, & Suryadi, 2018). The research period ran from April to August 2022. This research employed a mixed method as a flexible and adaptive conceptual framework providing detailed insights and the generalizable (Dawadi, Shrestha, & Giri, 2021) and purposive sampling due to widespread geographic objects and methodological rigor (Ames, Glenton, & Lewin, 2019) with structured questionnaires frequently applied in social research (Roopa & Rani, 2012).

This study was systematically carried out with the following steps. Initially, characteristics of household financial management and the rural development of independent oil palm smallholders were identified using descriptive statistics (Cooksey, 2020). The characteristics of household financial management consisted of aggregate management (i.e., fiscal sustainability and resource allocation), operational management (i.e., cooperative performance and extension performance), risk management (i.e., investment, insurance, and savings), and governance (i.e., smallholders, firms, and government).

Rural development characteristics (Donnges, 2003) encompassed basic services (i.e., education, health), infrastructure conditions (i.e., economic infrastructure, energy infrastructure, communication and information, and clean water and sanitation) (Yarkova, 2020), accessibility or transportation (i.e., access to public transportation and transportation access condition of village or city or district roads) (Kaiser & Barstow, 2022), public services (i.e., access to government health insurance, access to other health insurance, and access to

sports facilities), and governance (i.e., autonomy and quality of human resources) (Popoola, Magidimisha-Chipungu, & Chipungu, 2022).

Additionally, the leverage of household financial management was determined using multidimensional scaling (MDS) with Rap-Palm Oil software to generate critical key factors affecting the situation of rural development. A semantic differential scale of three levels (least = 1 and most = 3 at opposite buttons) was utilized to acquire orderings of the most important in predetermined contexts (Rosenberg & Navarro, 2018; Takahashi, Ban, & Asada, 2016).

Finally, the structural equation model (SEM) was deployed with Lisrel software to assess whether household financial management promoted rural development among independent oil palm smallholders due to its generality and flexibility (Kang & Ahn, 2021). In SEM, there was a structural model and a measurement model for causal relationships between latent variables (household financial management and rural development) and their indicators with the following steps: data characteristics, reliability, and validity; evaluating model fit; model estimation; model re-specification; and reporting (Karakaya-Ozyer & Aksu-Dunya, 2018). In terms of data characteristics, 200 participants were required for the sample size (Anderson & Gerbing, 1988), followed by interpretation (Măță, Clipa, & Tzafilkou, 2020). Model fit among latent variables utilized goodness-of-fit indices (Mulaik et al., 1989). Valid results were generated from maximum likelihood estimation (MLE) (Cham, Reshetnyak, Rosenfeld, & Breitbart, 2017), followed by re-specification of the model and reporting.

RESULTS AND DISCUSSION

Characteristics of Household Financial Management and Rural Development of Independent Oil Palm Smallholders

Characteristics of household financial management consisted of aggregate management, operational management, risk management, and governance, as presented in Table 1.

Table 1 displays that the most essential factors for fiscal sustainability and resource allocation in aggregate management were on-farm income, food expenditure, land assets, plant age, improving road conditions to facilitate access to markets, using traditional healthcare, distance to the health facility, and a small number of school dependents. Besides, most of them did not join the cooperative in operational management due to the absence of aid for production facilities by the government, resulting in poor cooperative performance despite the easy-to-understand and well-communicated information and training by extension agents. They invested most in oil palm for fertilizers and pesticides, did not record cash flows, only memorized fresh fruit bunches (FFB) prices, and saved for assets, causing them to rarely have cash savings and no farm insurance. Most firms bought the FFB from a middleman, and a few of them went to factories some distance away.

Table 2 exhibits that the majority of independent oil palm smallholders were junior high school graduates and occasionally visited health centers for basic services. Concerning infrastructure, necessities and fuel, electricity from the state power, cell phones, and the

internet network were all easily accessible, but access to clean water and sanitation was more of a challenge. The inaccessible public transportation due to the poor village, city, and district roads caused independent oil palm smallholders to rely on their vehicles to obtain the necessities. Conversely, government health insurance and sports facilities were easily accessible, but their utilization remained minimal. Despite participating in agriculture meetings and training by the government, the quality of human resources was still lacking.

TABLE 1. CHARACTERISTICS OF HOUSEHOLD FINANCIAL MANAGEMENT

Characteristics of Household Financial Management	%	Characteristics of Household Financial Management	%
Aggregate Management		Operational Management	
Fiscal sustainability		Cooperative performance:	
On-farm income (IDR/month):		Not joining the cooperative	100
≤ 1,000,000	13.33	Poor cooperative performance	100
1,000,000-5,000,000	74	Performance of extension agents:	
≥ 5,000,000	12.67	Extension information	100
Food expenditure (IDR/month)		Well communication	100
≤ 1,000,000	34.67	Training	100
1,000,000-5,000,000	65.33	Risk Management	
Land asset:		Investment in oil palm	100
Land ownership by one's own	100	Save for assets	100
Land area (ha)		No farm insurance	100
≤ 1	46	Governance	
1-2	38	Smallholders:	
≥ 2	16	Income for fertilizers and pesticides (IDR/month):	
Plant age (year):		< 100,000	50
< 5	1.33	100,000-500,000	20
5-10	80.67	> 500,000	30
> 10	18	Income for the debts (IDR/month):	
Transportation:		< 100,000	86
Village road conditions were bad	100	100,000-500,000	14
Accessible	100	Firms:	
Resource allocation		Sales of FFB:	
Using traditional healthcare	100	Middleman	81.33
Distance to health facility (km)		Factory	18.67
< 1	22	Farm distance to factory (km):	
1-5	57	1-5	24.67
> 5 km	21	> 5	75.33
No farm insurance	100	Government:	
School dependents (people):		No aid of production facilities by the government	65.33
None	30.67	The aid of production facilities by the government	34.67
1-3	68.66		
> 3	0.67		
None of financial knowledge	100		

TABLE 2. CHARACTERISTICS OF RURAL DEVELOPMENT

Characteristics of Rural Development	%	Characteristics of Rural Development	%
Basic Services		Accessibility or Transportation	
<u>Education:</u>		No access to public transportation, but personal vehicles	100
Elementary School	20	Bad transportation access conditions of village, city, or district roads	100
Junior High School	55	Public Services	
Senior High School	23	Access to government health insurance	43
Diploma-Bachelor	3	Access to other health insurance	4
<u>Health:</u>		Access to sports facilities	100
Occasionally visiting health centers	96	Governance	
Frequently visiting health centers	4	<u>Autonomy:</u>	
Infrastructure Conditions		Participating in agriculture meetings by the government	100
<u>Economic infrastructure:</u>		Participating in agriculture training by the government	100
Good condition of shops	100	<u>Quality of human resources:</u>	
Ease of getting necessities	82	Elementary school of a village head	84
<u>Energy infrastructure:</u>		Diploma-Bachelor of village secretary	85
Using electricity from the state power	100		
Easy to obtain fuel for household	100		
<u>Communication and information:</u>			
Cell phone	100		
Available internet network	100		
Clean water and sanitation	100		

Table 3 portrays that the household financial management of independent oil palm smallholders met the requirements of the goodness of fit for the leverage interpretation.

TABLE 3. THE GOODNESS OF FIT HOUSEHOLD FINANCIAL MANAGEMENT

Dimension of Household Financial	Stress	R ²	MDS	Monte-Carlo	Deviation (MDS-Monte Carlo)
Aggregate management	0.16	0.93	41.66	43.27	1.61
Operational Management	0.20	0.90	32.81	33.33	0.52
Risk management	0.12	0.96	48.33	48.66	0.33
Governance	0.18	0.91	59.73	58.12	1.61

Table 4 depicts the leverage of each household's financial management of independent oil palm smallholders. As displayed in Table 4, the most leverage of aggregate management, operational management, risk management, and governance were fiscal sustainability, the performance of extension agents, investment in oil palm cultivation, and firms, respectively.

Fiscal sustainability in aggregate management indicates the ability of local authorities to provide public services for smallholders (Wojtowicz & Hodzic, 2021). It has been linked to a sustainable economy (Wojtowicz & Hodzic, 2021), supply chains (Bancilhon, Charlotte, Karge, & Norton, 2018), and productivity (OECD, 2016). Independent oil palm smallholders have systemically lacked access to long-term finance due to limited collateral and insufficient finances (Bronkhorst et al., 2017) and the absence of active financial support from the government. While smallholders have not entirely achieved equalizing marginal products in

resource allocation, it has contributed to an enhancement in productivity (Marshall, Brown, Fritz, & Johnson, 2018).

TABLE 4. LEVERAGE OF HOUSEHOLD FINANCIAL MANAGEMENT DIMENSIONS

Dimensions of Household Financial Management	Leverage (%)
Aggregate management	Fiscal sustainability
	58.98
Operational management	Resource allocation
	41.02
Risk management	Cooperative performance
	34.35
Governance	Performance of extension agents
	65.65
Investment	Investment
	39.99
Savings	Savings
	34.05
Insurance	Insurance
	25.96
Smallholders	Smallholders
	31.74
Firms	Firms
	61.24
Government	Government
	7.02

In operational management, cooperatives' actions could represent the economic effectiveness principle (Giacomini, Chiaf, & Mazzoleni, 2017), with certain behaviors (Nurliza, Ruliyansyah, & Hazriani, 2020) for optimizing farm inputs and yield while promoting sustainable development (Deng, Chen, Zhao, & Wang, 2021). The role of extension services through guidance, encouragement, education, and training (Musa, Ismail, Ismail, & Elpawati, 2019) improved economic performance (Verhofstadt & Maertens, 2014) for value-added and labor productivity (Rokhani, Asrofi, Adi, Khasan, & Rondhi, 2021).

In risk management, investing in oil palm provided high economic profitability relative to other farm activities despite the high sunk costs and uncertain returns (Papenfus, 2000). Savings catalyzed capital creation and served as a driving force for generating higher savings for economic growth (Wieliczko, Kurdyś-Kujawska, & Sompolska-Rzechuła, 2020). Nevertheless, independent oil palm smallholders had no farm insurance due to their imperfect and non-existent access to it (Loeper, Drimie, & Blignaut, 2018), occasional contact with extension agents, and the location of their upstream areas (Mutaqin & Usami, 2019).

Concerning governance, most smallholders sold the FFB to middlemen regardless of poor quality, limited access to financial resources (Ichsan et al., 2021), and weak management (Irawan & Purwanto, 2020). An increase in FFB prices led to input usage for productivity, and a rise in input prices caused drawbacks to their farm performance and reduced hired labor (Hamdani, Yanti, & Budiwati, 2016). Firms could provide technical assistance to smallholders through public-private partnerships (Mikolajczyk, Mikulcak, Thompson, & Long, 2021). While the government, through regulatory frameworks, could provide an institutional strengthening model to overcome and minimize complex socio-economic issues (Raharja et al., 2020), such as organized production and livelihood systems (Dharmawan et al., 2020; Nurliza, Nugraha, Muthahhari, Pamela, & Suyatno, 2022).

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Table 5 discloses the nature of convergent validity through the construct reliability (CR) and variance extracted (VE) of the model.

TABLE 5. CONSTRUCT RELIABILITY (CR) AND VARIANCE EXTRACTED (VE)

Criteria	Household Financial Management (HoFiMana)				Rural Development (VilDevel)				
	AggMana	ManaOper	ManaRisk	Gover	BasicSer	InfraCon	AccTran	PubSer	GoverAd
Std. Loading Factor VE	0.91	0.99	0.80	0.80	0.91	0.85	0.71	0.60	0.89
Error VE	0.83	0.76	0.73	0.75	0.83	0.27	0.50	0.64	0.77
VE	0.50	0.50	0.50	0.50	0.51	0.51	0.51	0.51	0.51
Overall VE > 0.50									
Std. Loading Factor CR	0.91	0.99	0.80	0.80	0.91	0.85	0.71	0.60	0.89
Error CR	0.83	0.76	0.73	0.75	0.83	0.27	0.50	0.64	0.77
CR	0.79	0.79	0.79	0.79	0.83	0.83	0.83	0.83	0.83
Overall CR > 0.70									

Note: HoFiMana is household financial management/X, VilDevel is village development/Y, AggMana is aggregate management, ManaOper is operational management, ManaRisk is risk management, Gover is governance, BasicSer is basic service, InfraCon is infrastructure condition, AccTran is accessibility or transportation, PubSer is public service, and GoverAd is government administration.

As displayed in Table 6, all criteria in the goodness of fit test (15 criteria) revealed that the model was suitable for problem analysis.

TABLE 6. THE GOODNESS OF FIT

GOF	Standard Value	Estimated	Conclusion
χ^2/DF	$1.0 \geq x \leq 5.0$	1.00	Fit
NCP	Small value with narrow intervals	299.87 (245.36; 8.44)	Fit
SNCP (NCP/n)	Small value	1.9	Fit
RMSEA	≤ 0.08	0.001	Fit
NFI	≥ 0.90	0.91	Fit
NNFI	≥ 0.90	0.91	Fit
CFI	≥ 0.90	0.92	Fit
IFI	≥ 0.90	0.93	Fit
RFI	≥ 0.90	0.93	Fit
GFI	≥ 0.90	0.93	Fit
PGFI	0-1	0.53	Fit
RMR	≤ 0.05	0.012	Fit

The findings of household financial management's effect on rural development from independent oil palm smallholders were employed to obtain an overview of whether household financial management promoted rural development, generated by the structural (Figure 1) and measurement models (Table 7).

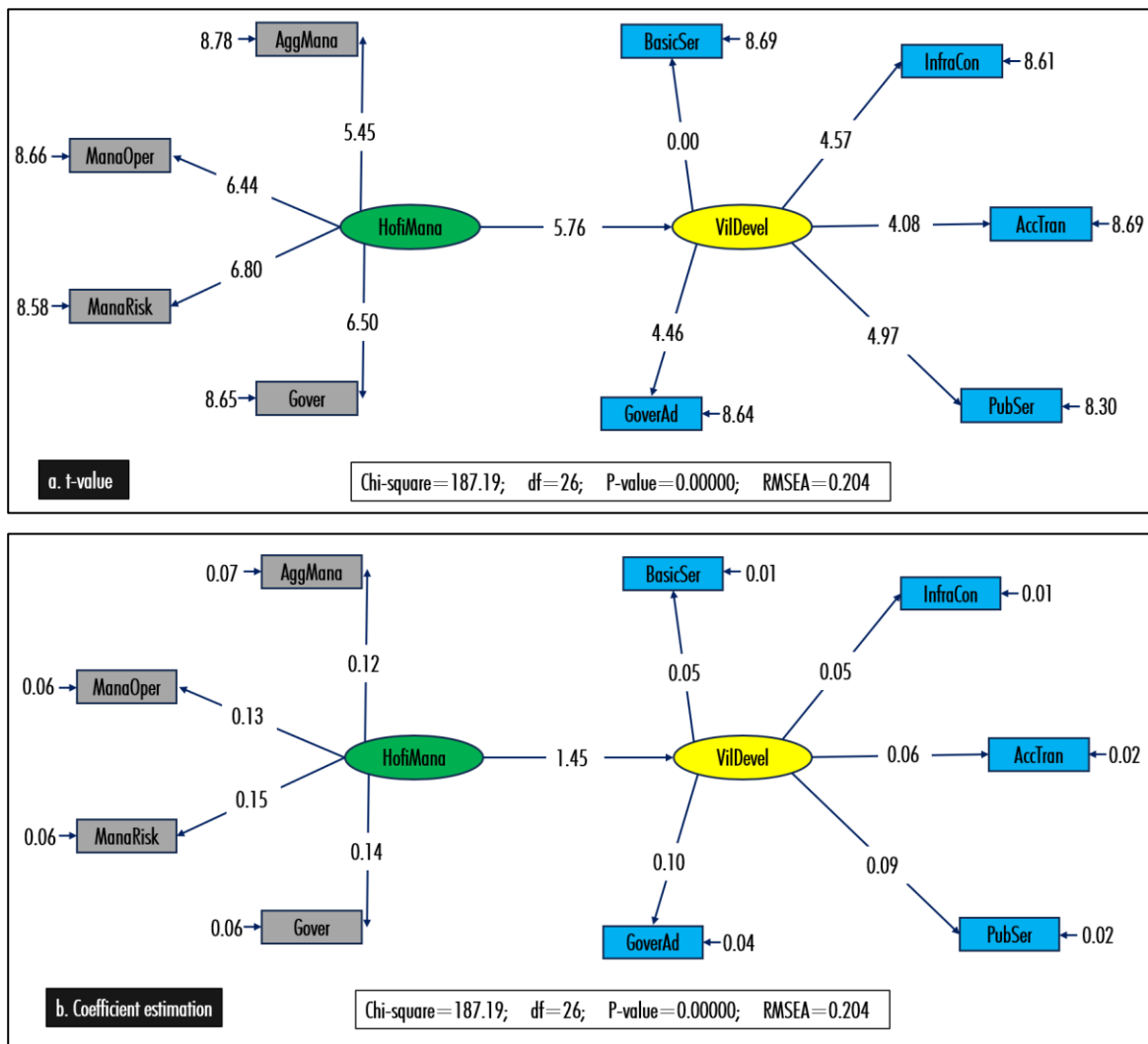


FIGURE 1. STRUCTURAL MODEL

Figure 1 illustrates that household financial management promoted rural development, indicated by a significant positive effect of aggregate management, operational management, risk management, and governance on basic services, infrastructure conditions, accessibility or transportation, public service, and governance.

Household financial management of independent oil palm smallholders has been associated with more rapid rural development due to its effects on accessibility and infrastructure for market opportunities (Tok & Heng, 2022), basic and public services, governance regarding participation in agriculture meetings, and training to improve productivity and shock resilience (United Nation and Inter-agency Task Force on Financing for Development, 2022). Policies and public expenditures affected the degree to which financial management of independent oil palm smallholders to promoted rural development (International Fund for Agricultural Development [IFAD], 2016). The inclusive financial management system influenced rural development through economic growth (International Fund for Agricultural Development [IFAD], 2016), and economic growth often coexisted with resource allocation due to the financial market imperfections of human capital investments

(Topuz, 2022). The aggregate rate of economic growth determined poverty rates (Hill, 2021), income inequality, and rural development (McKnight, 2019).

Furthermore, Table 7 portrays the causal relationship between latent variables and their indicators (confirmatory factor analysis model).

TABLE 7. MODEL MEASUREMENT

Indicators of latent variable	Coef. estimated	Error	R ²
Rural Development (VilDevel/Y):			
Basic services (BasicSer)	0.66	0.013	0.22
Infrastructure conditions (InfraCon)	0.46	0.0067	0.22
Accessibility or transportation (AccTran)	0.85	0.013	0.33
Public service (PubSer)	0.80	0.018	0.24
Governance (GoverAd)	1.00	0.044	0.17
Household financial management (HoFiMana/X):			
Aggregate management (AggMana)	0.025	0.089	0.0027
Operational management (ManaOper)	0.22	0.095	0.25
Risk management (ManaRisk)	0.22	0.87	0.28
Governance (Gover)	0.16	0.074	0.16

Regarding rural development, Table 7 depicts that governance took the lead, whereas operational management and risk management had the greatest impact on household financial management.

Governance contributed to the development of rural areas, such as in livelihoods, community-based economic empowerment, human resources, and rural environment problems (Nurlinah, Haryanto, & Sunardi, 2020). Village capacity building and information (Kosec & Wantchekon, 2020) were urgently required to solve governance problems in the development of rural areas, requiring effective external inputs to generate sufficient results. Hence, innovative multi-actor collaborations were highly required to reinforce and provide a cloak for policy decisions (Doyle, 2018; Medina-García, Nagarajan, Castillo-Vysokolan, Béatse, & Van den Broeck, 2021).

Operational and risk management served as strategies to engage independent oil palm smallholders in supply chains to access inputs and farm management skills while securing sustainable production (Accountability Framework Initiative [AFI], 2019; International Finance Corporation, 2016). Moreover, households' transition to confront a variety of yields, unstable output and input prices, and changes in production technology have become strategic decisions (Cervantes-Godoy, Kimura, & Antón, 2013).

The effect of each rural development dimension on household financial management is presented in Table 8.

Table 8 displays that governance imposed the most direct effect (in line with Table 7), followed by public service, accessibility or transportation, basic services, and infrastructure conditions.

TABLE 8. EFFECT OF RURAL DEVELOPMENT DIMENSIONS ON HOUSEHOLD FINANCIAL MANAGEMENT

Rural Development Dimension	Effect on Household Financial Management
Basic services (BasicSer)	0.07
Infrastructure conditions (InfraCon)	0.07
Accessibility or transportation (AccTran)	0.08
Public service (PubSer)	0.13
Governance (GoverAd)	0.15

Basic and public services must be provided for rural economic growth. Since these services represent both a supply and demand factor for economic development, it becomes extremely difficult for the economic activities of independent oil palm smallholders to take off and stay sustainable (International Labour Office, 2017). Additionally, the community's economic security, social cohesion, and equitable and inclusive development have become their priorities (World Health Organization [WHO], 2019).

Rural accessibility has played a significant role in enhancing people's lives and raising the opportunities for sustainable social and economic development in rural areas (Ahmed & Eklund, 2019). Lack of accessibility could have a worse effect on wider aspects, such as poverty, health, and educational measurements (Soseco, 2016).

Rural infrastructure is a crucial factor for production conditions and the functioning of society (Thacker et al., 2018) due to its contribution to rural economic growth and poverty alleviation (Asian Development Bank [ADB], 2012) by enhancing agricultural productivity (Rosegrant, 2020) and fostering commercialization (Alemu & Dachito, 2020). Inadequate transportation infrastructure in rural areas caused a lack of mobility and constraints on rural development, necessitating interdependencies of assets, institutions, and knowledge (Thacker et al., 2018).

CONCLUSION

The results uncovered that household financial management promoted rural development. It was associated with more rapid rural development due to its effects on accessibility and infrastructure for market opportunities, basic and public services, and governance regarding participation in agriculture meetings and training by the government to improve productivity. Economic growth as a result of household financial management has frequently coexisted with resource allocation. The aggregate rate of economic growth determined poverty rates, income inequality, and rural development. Governance appeared to be the most direct effect of rural development, contributing to livelihoods, community-based economic empowerment, human resources, and rural environmental problems. Operational and risk management significantly influenced household financial management, engaging independent oil palm smallholders in supply chains, access to inputs, and households' transition to confront a variety of yields, unstable output and input prices, and changes in production technology. Thus, innovative multi-actor collaborations were highly demanded to reinforce and provide a cloak for policy decisions.

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REFERENCES

- Accountability Framework Initiative [AFI]. (2019). *Operational Guidance on Smallholder Inclusion in Ethical Supply Chains*. Accountability Framework initiative. Retrieved from https://accountability-framework.org/fileadmin/uploads/afi/Documents/Operational_Guidance/OG_Smallholder_Inclusion-2020-5.pdf
- Ahmed, S., & Eklund, E. (2019). Rural Accessibility, Rural Development, and Natural Disasters in Bangladesh. *Journal of Developing Societies*, 35(3), 391–411. <https://doi.org/10.1177/0169796X19868318>
- Alemu, M., & Dachito, A. (2020). Rural infrastructure and smallholders commercialization: analysis of crop input market from Jimma Zone, South-West Ethiopia. *International Journal of Financial, Accounting, and Management*, 2(3), 185–197. <https://doi.org/10.35912/ijfam.v2i3.202>
- Ames, H., Glenton, C., & Lewin, S. (2019). Purposive sampling in a qualitative evidence synthesis: a worked example from a synthesis on parental perceptions of vaccination communication. *BMC Medical Research Methodology*, 19, 26. <https://doi.org/10.1186/s12874-019-0665-4>
- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411–423. <https://doi.org/10.1037/0033-2909.103.3.411>
- Andrianto, A., Fauzi, A., & Falatehan, A. F. (2019). The typologies and the sustainability in oil palm plantation controlled by independent smallholders in Central Kalimantan. In R. Kinseng, A. Dharmawan, D. Lubis, & A. Seminar (Eds.), *Rural Socio-Economic Transformation: Agrarian, Ecology, Communication and Community Development Perspectives* (1st Editio, pp. 3–14). London: CRC Press. <https://doi.org/10.1201/9780429280702-1>
- Asian Development Bank [ADB]. (2012). *Infrastructure for Supporting Inclusive Growth and Poverty Reduction in Asia*. Manila. Retrieved from <https://www.adb.org/sites/default/files/publication/29823/infrastructure-supporting-inclusive-growth.pdf>
- Askar, M. W., Ouattara, B., & Zhang, Y.-F. (2020). *Financial Literacy and Poverty Reduction: The Case of Indonesia* (ADBI Working Paper 1097). Tokyo. Retrieved from <https://www.adb.org/sites/default/files/publication/574816/adbi-wp1097.pdf>

- Bakhtary, H., Haupt, F., Luttrell, C., Landholm, D., & Jelsma, I. (2021). *Promoting sustainable oil palm production by independent smallholders in Indonesia: Perspectives from non-state actors*. Retrieved from https://merid.org/wp-content/uploads/2021/02/Indonesian-Palm-Oil-Smallholders_Briefing-Paper.pdf
- Bancilhon, Charlotte, Karge, C., & Norton, T. (2018). *Win-Win-Win: The Sustainable Supply Chain Finance Opportunity*. Paris. Retrieved from https://www.bsr.org/reports/BSR_The_Sustainable_Supply_Chain_Finance_Opportunity.pdf
- Battistoni, E., Bonacelli, A., Colladon, A. F., & Schiraldi, M. M. (2013). An Analysis of the Effect of Operations Management Practices on Performance. *International Journal of Engineering Business Management*, 5, 44. <https://doi.org/10.5772/56919>
- Benston, G. J., & Smith, C. W. (1976). A Transactions Cost Approach to the Theory of Financial Intermediation. *The Journal of Finance*, 31(2), 215. <https://doi.org/10.2307/2326596>
- BPS-Statistics Indonesia. (2020). *Statistics Kelapa Sawit Indonesia (Indonesian Oil Palm Statistics)*. Jakarta: BPS-Statistics Indonesia.
- Bronkhorst, E., Cavallo, E., van Dorth tot Medler, M.-M., Klinghammer, S., Smit, H. H., Gijsenbergh, A., & Laan, C. van der. (2017). *Current practices and innovations in smallholder palm oil finance in Indonesia and Malaysia: Long-term financing solutions to promote sustainable supply chains* (Occasional). Bogor: CIFOR. <https://doi.org/10.17528/cifor/006612>
- Cervantes-Godoy, D., Kimura, S., & Antón, J. (2013). *Smallholder Risk Management in Developing Countries* (No. No. 61). Paris.
- Cham, H., Reshetnyak, E., Rosenfeld, B., & Breitbart, W. (2017). Full Information Maximum Likelihood Estimation for Latent Variable Interactions With Incomplete Indicators. *Multivariate Behavioral Research*, 52(1), 12–30. <https://doi.org/10.1080/00273171.2016.1245600>
- Chiriaco, M. V., Bellotta, M., Jusić, J., & Perugini, L. (2022). Palm oil's contribution to the United Nations sustainable development goals: outcomes of a review of socio-economic aspects. *Environmental Research Letters*, 17, 063007. <https://doi.org/10.1088/1748-9326/ac6e77>
- Chrisendo, D., Siregar, H., & Qaim, M. (2022). Oil palm cultivation improves living standards and human capital formation in smallholder farm households. *World Development*, 159, 106034. <https://doi.org/10.1016/j.worlddev.2022.106034>
- Cooksey, R. W. (2020). Descriptive Statistics for Summarising Data. In *Illustrating Statistical Procedures: Finding Meaning in Quantitative Data* (pp. 61–139). Singapore: Springer. https://doi.org/10.1007/978-981-15-2537-7_5
- Dawadi, S., Shrestha, S., & Giri, R. A. (2021). Mixed-Methods Research: A Discussion on its Types, Challenges, and Criticisms. *Journal of Practical Studies in Education*, 2(2), 25–36. <https://doi.org/10.46809/jpse.v2i2.20>
- Deng, L., Chen, L., Zhao, J., & Wang, R. (2021). Comparative analysis on environmental and economic performance of agricultural cooperatives and smallholder farmers: The case of grape production in Hebei, China. *PLOS ONE*, 16(1), e0245981. <https://doi.org/10.1371/journal.pone.0245981>

- Dharmawan, A. H., Mardiyarningsih, D. I., Komarudin, H., Ghazoul, J., Pacheco, P., & Rahmadian, F. (2020). Dynamics of Rural Economy: A Socio-Economic Understanding of Oil Palm Expansion and Landscape Changes in East Kalimantan, Indonesia. *Land*, 9(7), 213. <https://doi.org/10.3390/land9070213>
- Dikshit, S., & Pandey, D. A. (2021). Role of financial inclusion in realising sustainable development goals (SDGs). *International Journal of Research in Finance and Management*, 4(2), 35–39. <https://doi.org/10.33545/26175754.2021.v4.i2a.103>
- Donnges, C. (2003). *Improving Access in Rural Areas: Guidelines for Integrated Rural Accessibility Planning* (1st ed.). Bangkok: International Labour Office. Retrieved from https://www.ilo.org/wcmsp5/groups/public/---asia/---ro-bangkok/documents/publication/wcms_bk_pb_216_en.pdf
- Doyle, J. L. (2018). Government co-option of civil society: exploring the AKP's role within Turkish women's CSOs. *Democratization*, 25(3), 445–463. <https://doi.org/10.1080/13510347.2017.1373096>
- Giacomini, D., Chiaf, E., & Mazzoleni, M. B. (2017). How to Measure Performance in Cooperatives?: A Multiple Case Study. In V. Potocan, M. Ünğan, & Z. Nedelko (Eds.), *Handbook of Research on Managerial Solutions in Non-Profit Organizations* (pp. 343–361). IGI Global. <https://doi.org/10.4018/978-1-5225-0731-4.ch016>
- Hamdani, H., Yanti, N. D., & Budiwati, N. (2016). Structure, Conduct, and Performance of Nucleus Estate and Smallholder (Nes) Scheme in Oil Palm Sector in South Kalimantan. *Tropical Wetland Journal*, 2(3), 15–21. <https://doi.org/10.20527/twj.v2i3.35>
- Hill, H. (2021). What's Happened to Poverty and Inequality in Indonesia over Half a Century? *Asian Development Review*, 38(1), 68–97. https://doi.org/10.1162/adev_a_00158
- Ichsan, M., Saputra, W., & Permatasari, A. (2021). *Oil palm smallholders on the edge: Why business partnerships need to be redefined*. Jakarta. Retrieved from <https://sposindonesia.org/wp-content/uploads/2021/07/28.-eng-Oil-palm-smallholders-on-the-edge-Why-business-partnerships.pdf>
- International Finance Corporation. (2016). *A Handbook for Firms Building Sustainable Supply Chains*. Washington, D.C.: World Bank. <https://doi.org/10.1596/25786>
- International Fund for Agricultural Development [IFAD]. (2016). *Rural Development Report 2016: Fostering inclusive rural transformation*. Rome: the International Fund for Agricultural Development (IFAD). Retrieved from <https://www.ifad.org/documents/38714170/40724622/Rural+development+report+2016.pdf/347402dd-a37f-41b7-9990-aa745dc113b9?t=1632401149187>
- International Labour Office. (2017). *Providing access to quality services in the rural economy to promote growth and social development: Decent Works in The Rural Economy Policy Guidance Notes*. Geneva: International Labour Office. Retrieved from https://www.ilo.org/wcmsp5/groups/public/---ed_dialogue/---sector/documents/publication/wcms_437191.pdf
- Irawan, U. S., & Purwanto, E. (2020). *Profile of Smallholder Oil-palm Plantation in Ketapang District, West Kalimantan*. Bogor: Tropenbos Indonesia.

- Jia, S., Qiu, Y., & Yang, C. (2021). Sustainable Development Goals, Financial Inclusion, and Grain Security Efficiency. *Agronomy*, 11(12), 2542. <https://doi.org/10.3390/agronomy11122542>
- Kaiser, N., & Barstow, C. K. (2022). Rural Transportation Infrastructure in Low- and Middle-Income Countries: A Review of Impacts, Implications, and Interventions. *Sustainability*, 14(4), 2149. <https://doi.org/10.3390/su14042149>
- Kang, H., & Ahn, J.-W. (2021). Model Setting and Interpretation of Results in Research Using Structural Equation Modeling: A Checklist with Guiding Questions for Reporting. *Asian Nursing Research*, 15(3), 157–162. <https://doi.org/10.1016/j.anr.2021.06.001>
- Karakaya-Ozyer, K., & Aksu-Dunya, B. (2018). A Review of Structural Equation Modeling Applications in Turkish Educational Science Literature, 2010-2015. *International Journal of Research in Education and Science (IJRES)*, 4(1), 279–291. <https://doi.org/10.21890/ijres.383177>
- Koomson, I., Ansong, D., Okumu, M., & Achulo, S. (2022). Effect of Financial Literacy on Poverty Reduction Across Kenya, Tanzania, and Uganda. *Global Social Welfare*, 10(1), 93–103. <https://doi.org/10.1007/s40609-022-00259-2>
- Kosec, K., & Wantchekon, L. (2020). Can information improve rural governance and service delivery? *World Development*, 125, 104376. <https://doi.org/10.1016/j.worlddev.2018.07.017>
- Loeper, W. J. von, Drimie, S., & Blignaut, J. (2018). The Struggles of Smallholder Farmers: A Cause of Modern Agricultural Value Chains in South Africa. In G. Egilmez (Ed.), *Agricultural Value Chain*. Rijeka: InTechOpen. <https://doi.org/10.5772/intechopen.75710>
- Ma, Y., & Liu, F.-X. (2020). Literature Review and Analysis of Current Research Status of Rural Financial Efficiency. *E3S Web of Conferences*, 218, 01038. <https://doi.org/10.1051/e3sconf/202021801038>
- Marshall, N., Brown, M., Fritz, G. B., & Johnson, R. (2018). Managing Resource Allocation. In *Mastering VMware vSphere® 6.7* (pp. 591–644). New Jersey: Wiley. <https://doi.org/10.1002/9781119549291.ch11>
- Măță, L., Clipa, O., & Tzafilkou, K. (2020). The Development and Validation of a Scale to Measure University Teachers' Attitude towards Ethical Use of Information Technology for a Sustainable Education. *Sustainability*, 12(15), 6268. <https://doi.org/10.3390/su12156268>
- McKnight, A. (2019). *Understanding the relationship between poverty, inequality and growth: a review of existing evidence* (CASEpaper 216/LIPpaper 8). London. Retrieved from <https://sticerd.lse.ac.uk/dps/case/cp/casepaper216.pdf>
- Medina-García, C., Nagarajan, S., Castillo-Vysokolan, L., Béatse, E., & Van den Broeck, P. (2021). Innovative Multi-Actor Collaborations as Collective Actors and Institutionalized Spaces. The Case of Food Governance Transformation in Leuven (Belgium). *Frontiers in Sustainable Food Systems*, 5. <https://doi.org/10.3389/fsufs.2021.788934>
- Meemken, E.-M., & Bellemare, M. F. (2020). Smallholder farmers and contract farming in developing countries. *Proceedings of the National Academy of Sciences*, 117(1), 259–264. <https://doi.org/10.1073/pnas.1909501116>

- Mikolajczyk, S., Mikulcak, F., Thompson, A., & Long, I. (2021). *Unlocking Smallholder Finance for Sustainable Agriculture in Southeast Asia* (J. Aechtner, Ed.). Amsterdam: WWF German and Climate Focus. Retrieved from <https://sustainablefinanceasia.org/wp-content/uploads/2021/03/WWF-2021-Unlocking-Smallholder-Finance-for-Sustainable-Agriculture.pdf>
- Mulaik, S. A., James, L. R., Van Alstine, J., Bennett, N., Lind, S., & Stilwell, C. D. (1989). Evaluation of goodness-of-fit indices for structural equation models. *Psychological Bulletin*, 105(3), 430–445. <https://doi.org/10.1037/0033-2909.105.3.430>
- Musa, M., Ismail, M. M., Ismail, W. I., & Elpawati. (2019). Effectiveness of Extension Agent Services in Influencing the Adoption of Modern Hive in Sustainable Stingless Beekeeping. *Journal of Sustainability Science and Management* 2, 14(4), 14–24.
- Mutaqin, D. J., & Usami, K. (2019). Smallholder Farmers' Willingness to Pay for Agricultural Production Cost Insurance in Rural West Java, Indonesia: A Contingent Valuation Method (CVM) Approach. *Risks*, 7(2), 69. <https://doi.org/10.3390/risks7020069>
- Nashr, F., Putri, E. I. K., Dharmawan, A. H., & Fauzi, A. (2021). The Sustainability of Independent Palm Oil Smallholders in Multi-Tier Supply Chains in East Kalimantan Indonesia. *International Journal of Sustainable Development and Planning*, 16(4), 771–781. <https://doi.org/10.18280/ijstdp.160418>
- Ngobeni, E., & Muchopa, C. L. (2022). The Impact of Government Expenditure in Agriculture and Other Selected Variables on the Value of Agricultural Production in South Africa (1983–2019): Vector Autoregressive Approach. *Economies*, 10(9), 205. <https://doi.org/10.3390/economies10090205>
- Nurlinah, Haryanto, & Sunardi. (2020). New development, old migration, and governance at two villages in Jeneponto, Indonesia. *World Development Perspectives*, 19, 100223. <https://doi.org/10.1016/j.wdp.2020.100223>
- Nurliza, N., Dolorosa, E., & Suryadi, U. E. (2018). The Discrepancy between Knowledge and Competency of Independent Smallholder Farmer's. *Jurnal Penyuluhan*, 14(2). <https://doi.org/10.25015/penyuluhan.v14i1.18898>
- Nurliza, N., Ruliyansyah, A., & Hazriani, R. (2020). Performance Behavior of Corn Smallholders for Sustainable Cooperative Change in West Kalimantan. *AGRARIS: Journal of Agribusiness and Rural Development Research*, 6(1). <https://doi.org/10.18196/agr.6186>
- Nurliza, Nugraha, A., Muthahhari, M., Pamela, & Suyatno, A. (2022). Do Sustainability Standards Provide Environmental, Social and Economic Benefits for Independent Oil Palm Smallholders? *Jurnal Penyuluhan*, 18(02), 232–245. <https://doi.org/10.25015/18202240523>
- OECD. (2016). Using the fiscal levers to escape the low-growth trap. In *ECD Economic Outlook, Volume 2016 Issue 2* (pp. 63–99). Paris: OECD Publishing. https://doi.org/10.1787/eco_outlook-v2016-2-3-en
- Ogahara, Z., Jespersen, K., Theilade, I., & Nielsen, M. R. (2022). Review of smallholder palm oil sustainability reveals limited positive impacts and identifies key implementation and knowledge gaps. *Land Use Policy*, 120, 106258. <https://doi.org/10.1016/j.landusepol.2022.106258>

- Okoye, H. C., Okoye, L. U., Omankhanlen, A. E., Urhie, E., Okoh, J. I., & Ezeji, F. N. (2021). The Role of Financial Literacy in Poverty Reduction. *Journal of Science Technology and Education*, 9(3), 199–207.
- Pacheco, P., Schoneveld, G., Dermawan, A., Komarudin, H., & Djama, M. (2020). Governing sustainable palm oil supply: Disconnects, complementarities, and antagonisms between state regulations and private standards. *Regulation & Governance*, 14(3), 568–598. <https://doi.org/10.1111/rego.12220>
- Papenfus, M. M. (2000). *Investing in Oil Palm: An Analysis of Independent Smallholder Oil Palm Adoption in Sumatra, Indonesia* (No.15). Bogor. Retrieved from <https://apps.worldagroforestry.org/sea/Publications/files/workingpaper/WP0033-04.pdf>
- Popoola, A., Magidimisha-Chipungu, H., & Chipungu, L. (2022). Towards rural inclusion: improving the governance of service delivery in Nigeria. *Cogent Social Sciences*, 8(1). <https://doi.org/10.1080/23311886.2022.2118793>
- Premchand, A. (1994). *Public Expenditure Management*. Washington, D.C.: International Monetary Fund. <https://doi.org/10.5089/9781557753793.071>
- Pretorius, C., & Pretorius, N. (2009). *Public Financial Management Reform Literature Review*. London: Department for International Development-DFID.
- Qaim, M., Sibhatu, K. T., Siregar, H., & Grass, I. (2020). Environmental, Economic, and Social Consequences of the Oil Palm Boom. *Annual Review of Resource Economics*, 12(1), 321–344. <https://doi.org/10.1146/annurev-resource-110119-024922>
- Raharja, S., Marimin, Machfud, Papilo, P., Safriyana, Massijaya, M. Y., ... Darmawan, M. A. (2020). Institutional strengthening model of oil palm independent smallholder in Riau and Jambi Provinces, Indonesia. *Heliyon*, 6(5), e03875. <https://doi.org/10.1016/j.heliyon.2020.e03875>
- Rokhani, R., Asrofi, A., Adi, A. H., Khasan, A. F., & Rondhi, M. (2021). The Effect of Agricultural Extension Access on The Performance of Smallholder Sugarcane Farmers in Indonesia. *AGRARIS: Journal of Agribusiness and Rural Development Research*, 7(2), 142–159. <https://doi.org/10.18196/agraris.v7i2.11224>
- Roopa, S., & Rani, M. (2012). Questionnaire Designing for a Survey. *Journal of Indian Orthodontic Society*, 46(4_suppl1), 273–277. <https://doi.org/10.1177/0974909820120509S>
- Rosegrant, M. W. (2020). *Rural Development Ensuring Protection of Water*. Retrieved from https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/publication/WSR_2021_BG_Rosegrant.pdf
- Rosenberg, B. D., & Navarro, M. A. (2018). Semantic Differential Scaling. In B. B. Frey (Ed.), *The SAGE Encyclopedia of Educational Research, Measurement, and Evaluation*. Thousand Oaks: SAGE Publications, Inc. <https://doi.org/10.4135/9781506326139>
- Ruml, A., Chrisendo, D., Iddrisu, A. M., Karakara, A. A., Nuryartono, N., Osabuohien, E., & Lay, J. (2022). Smallholders in agro-industrial production: Lessons for rural development from a comparative analysis of Ghana's and Indonesia's oil palm sectors. *Land Use Policy*, 119, 106196. <https://doi.org/10.1016/j.landusepol.2022.106196>

- Sahara, Haryadi, & Kusumowardhani, N. (2017). *Smallholder finance in the oil palm sector: Analyzing the gaps between existing credit schemes and smallholder realities* (Occasional). Bogor: Center for International Forestry Research (CIFOR). <https://doi.org/10.17528/cifor/006610>
- Sgroi, F., & Sciancalepore, V. D. (2022). Dynamics of structural change in agriculture, transaction cost theory and market efficiency: The case of cultivation contracts between agricultural enterprises and the food industry. *Journal of Agriculture and Food Research*, 10, 100396. <https://doi.org/10.1016/j.jafr.2022.100396>
- Singh, D., Ansari, N. A., & Singh, S. (2009). Good Governance & Implementation in Era of Globalization. *The Indian Journal of Political Science*, 70(4), 1109–1120.
- Soseco, T. (2016). The Relationship between of Rural Accessibility and Development. *Jurnal Ekonomi Dan Ekonomi Studi Pembangunan*, 8(2), 131–140. <https://doi.org/10.17977/um002v8i22016p31>
- Srinivas, K. (2019). Process of Risk Management. In *Perspectives on Risk, Assessment and Management Paradigms*. Rijeka: IntechOpen. <https://doi.org/10.5772/intechopen.80804>
- Sukiyono, K., Romdhon, M. M., Mulyasari, G., Yuliarso, M. Z., Nabiu, M., Trisusilo, A., ... Masliani. (2022). The Contribution of Oil Palm Smallholders Farms to the Implementation of the Sustainable Development Goals-Measurement Attempt. *Sustainability*, 14(11), 6843. <https://doi.org/10.3390/su14116843>
- Takahashi, H., Ban, M., & Asada, M. (2016). Semantic Differential Scale Method Can Reveal Multi-Dimensional Aspects of Mind Perception. *Frontiers in Psychology*, 7. <https://doi.org/10.3389/fpsyg.2016.01717>
- Takhumova, O. (2020). Rural Development as a Leading Factor in Economic Growth. *Proceedings of the 6th International Conference on Social, Economic, and Academic Leadership (ICSEAL-6-2019)*. Paris, France: Atlantis Press. <https://doi.org/10.2991/assehr.k.200526.040>
- Taufiq, M., & Yatminiwati, M. (2020). Urgency of The Village of Financial Management Under The Government Regulations. *Wiga : Jurnal Penelitian Ilmu Ekonomi*, 10(1), 45–59. <https://doi.org/10.30741/wiga.v10i1.512>
- Tejero, E. P., Pilongo, L. W. R., & Pamaran, F. T. (2019). Financial Literacy in Relation to Financial Management. *University of Bohol Multidisciplinary Research Journal*, 7(1), 45–59. <https://doi.org/10.15631/ub.mrj.v7i0.125>
- Thacker, S., Adshead, D., Morgan, G., Crosskey, S., Bajpai, A., Ceppi, P., ... O'Regan, N. (2018). *N. Infrastructure: Underpinning Sustainable Development*. Copenhagen. Retrieved from https://content.unops.org/publications/Infrastructure_underpinning_sustainable_development_EN.pdf
- Tok, Y. W., & Heng, D. (2022). *Fintech: Financial Inclusion or Exclusion?* (No. WP/22/80). Retrieved from <https://www.elibrary.imf.org/view/journals/001/2022/080/001.2022.issue-080-en.xml?Tabs=toc-102773>
- Topuz, S. G. (2022). The Relationship Between Income Inequality and Economic Growth: Are Transmission Channels Effective? *Social Indicators Research*, 162(3), 1177–1231. <https://doi.org/10.1007/s11205-022-02882-0>

- United Nation and Inter-agency Task Force on Financing for Development. (2022). *Financing for Sustainable Development Report 2022*. New York: United Nations. Retrieved from United Nations website: <https://developmentfinance.un.org/fsdr2022>
- United Nations Department of Economic and Social Affairs [UN DESA]. (2021). *World social reports 2021: Reconsidering rural development strategies*. New York. Retrieved from https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2021/05/World-Social-Report-2021_web_FINAL.pdf
- Varina, F., Hartoyo, S., Kusnadi, N., & Rifin, A. (2021). Technical Efficiency of Independent Oil Palm Smallholder In Indonesia. *Jurnal Ekonomi Kuantitatif Terapan*, 14(1), 59. <https://doi.org/10.24843/jekt.2021.v14.i01.p04>
- Verhofstadt, E., & Maertens, M. (2014). Smallholder cooperatives and agricultural performance in Rwanda: do organizational differences matter? *Agricultural Economics*, 45(S1), 39–52. <https://doi.org/10.1111/agec.12128>
- Wieliczko, B., Kurdyś-Kujawska, A., & Sompolska-Rzechuła, A. (2020). Savings of Small Farms: Their Magnitude, Determinants and Role in Sustainable Development. Example of Poland. *Agriculture*, 10(11), 525. <https://doi.org/10.3390/agriculture10110525>
- Williamson, O. E. (1998). Transaction Cost Economics and Organization Theory. In G. Dosi, D. J. Teece, & J. Chytry (Eds.), *Technology, Organization, and Competitiveness: Perspectives on Industrial and Corporate Change* (pp. 17–66). Oxford: Oxford University PressOxford. <https://doi.org/10.1093/0198290969.003.0002>
- Wilson, K. E. (2019). Social Impact Investment: The Impact Imperative for Sustainable Development. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.3331887>
- Wojtowicz, K., & Hodzic, S. (2021). Relationship between fiscal sustainability and efficiency: Evidence from large cities in Poland. *Economics & Sociology*, 14(3), 163–184. <https://doi.org/10.14254/2071-789X.2021/14-3/9>
- World Health Organization [WHO]. (2019). *Economic and Social Impacts and Benefits of Health System*. Copenhagen. Retrieved from <https://iris.who.int/bitstream/handle/10665/346019/WHO-EURO-2019-3521-43280-60657-eng.pdf?sequence=3>
- Yarkova, M. (2020). Basic aspects of rural social infrastructure development. *International Review*, (3–4), 98–104. <https://doi.org/10.5937/intrev2003098Y>
- Zhou, Q., Chen, X., & Li, S. (2018). Innovative Financial Approach for Agricultural Sustainability: A Case Study of Alibaba. *Sustainability*, 10(3), 891. <https://doi.org/10.3390/su10030891>