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Analysis of Consumer Surplus and Producer Surplus in Achieving Market Efficiency through the Mechanism of Supply and Demand Equilibrium

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Abstract

Market mechanisms determine the price and quantity of goods traded, while consumer and producer surplus measure the resulting welfare. Indonesian studies have frequently described supply–demand equilibrium but have rarely examined surplus, efficiency, and sources of market inefficiency within a common framework. This study examined the relationship between market equilibrium and efficiency, the contribution of both surplus measures to welfare, and the effects of monopoly, price regulation, taxation, and subsidies. A qualitative systematic literature review examined six selected national journal articles through thematic and comparative analysis, supplemented by recalculation of published vegetable-market equations. The reconstructed equilibrium at Teratai Market in Bengkayang yielded approximately 86.6 kilograms at IDR 29,658, with consumer surplus of IDR 1,169,700 and producer surplus of IDR 1,067,100. Their ratio was approximately 1.10, compared with 3.29 reported in the original study. Under competitive assumptions, equilibrium maximized total surplus, whereas monopoly restricted output and generated deadweight loss. Price interventions could redistribute benefits while reducing aggregate welfare, and subsidy effects depended on policy design. Tax incidence could not be quantified from the selected literature. The proposed analytical matrix distinguishes redistribution from efficiency losses and identifies priorities for empirical verification of market-level welfare outcomes using transparent calculations and consistently documented transaction-level evidence.

Keywords: *Consumer Surplus, Economic Welfare, Market Efficiency, Market Equilibrium, Producer Surplus.*

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INTRODUCTION

Market equilibrium remains a fundamental concern in economic analysis because changes in prices, production capacity, and consumer preferences influence both resource allocation and the distribution of benefits among market participants. The interaction between supply and demand establishes a competitive benchmark for determining equilibrium prices and quantities, while market entry and exit may alter the position and responsiveness of the underlying curves (Eisenhauer, 2024). Price elasticity further determines the extent to which consumers and producers adjust their quantities in response to changing market conditions, influencing the distribution of economic benefits across different equilibrium outcomes (Mudrik Agil et al., 2024). Nevertheless, the existence of market transactions does not automatically establish allocative efficiency because deviations from competitive conditions can generate shortages, excess supply, and unrealized gains from exchange. Experimental approaches to market analysis provide opportunities to examine the relationship between economic behavior and theoretical equilibrium assumptions under structured trading conditions (Cartwright & Cartwright, 2024). Empirical research on local vegetable trading in Bengkayang illustrates the application of demand and supply functions to equilibrium determination and the measurement of economic benefits received by consumers and producers (Beni & Manggu, 2022). These considerations establish the analytical significance of examining consumer surplus and producer surplus simultaneously rather than treating market equilibrium as a sufficient indicator of economic efficiency.

Contemporary research on market welfare has increasingly examined how policy interventions, market structures, and uncertainty influence the allocation of economic benefits between producers and consumers. Agricultural policy analysis demonstrates that minimum support prices and production cost

subsidies can generate different welfare consequences for farmers and consumers, indicating that the design of intervention influences the distribution of market benefits (Chintapalli & Tang, 2022). Comparative evaluations of fixed and variable cost subsidies across profit-oriented, nonprofit, and mixed markets further illustrate how institutional characteristics affect the welfare implications of governmental support (Jegers et al., 2024). Research concerning agricultural input and output subsidies extends this discussion by examining farmer welfare, income disparities, and consumer surplus within an integrated policy assessment (Tang et al., 2024). Market welfare analysis has also incorporated uncertainty regarding the composition of consumer segments, suggesting that aggregate welfare outcomes depend partly on the distribution of demand characteristics among market participants (Wang et al., 2024). These approaches demonstrate that efficiency assessment requires more than identifying a market-clearing price because the distribution and magnitude of economic gains may change under different institutional and market conditions.

Despite substantial research on market equilibrium and welfare, the selected literature reveals differences in analytical emphasis that limit direct comparability between equilibrium determination, surplus calculation, and the evaluation of allocative efficiency. Research on Indonesian citrus trade policy evaluates the welfare consequences experienced by producers and consumers, providing an applied basis for understanding how market interventions redistribute economic benefits (Nugrahapsari et al., 2024). Supply-chain analysis incorporating consumer surplus likewise examines firm decisions and government subsidies, although its primary analytical orientation concerns strategic decisions within a particular market organization (Xiao et al., 2024). Theoretical examinations of market entry and exit explain adjustments in linear supply and demand relationships but do not independently establish how the resulting equilibrium changes should be interpreted across different welfare distributions (Eisenhauer, 2024). Meanwhile, research on vegetable markets in Bengkayang directly addresses consumer and producer surplus through commodity-specific demand and supply analysis, offering a quantitative reference for evaluating market equilibrium at the local level (Beni & Manggu, 2022). These approaches provide complementary insights but employ different units of analysis, assumptions, and welfare objectives, complicating their integration into a consistent explanatory framework. The research gap addressed here concerns the need for an explicit connection between equilibrium determination, reproducible surplus measurement, and the interpretation of market efficiency using a common analytical sequence, rather than an absence of previous research on these individual concepts.

The distinction between equilibrium prices and efficient welfare outcomes has practical significance for evaluating policies that alter production incentives, consumer expenditure, and market participation. Policies supporting agricultural producers may improve particular dimensions of producer welfare while generating different consequences for consumers, making a simultaneous assessment of both groups necessary (Chintapalli & Tang, 2022). Differences between fixed and variable subsidy arrangements also demonstrate that the economic consequences of intervention depend on market organization and the mechanisms through which assistance affects production decisions (Jegers et al., 2024). Uncertainty in consumer composition further complicates welfare evaluation because market adjustments may affect groups with different demand characteristics in unequal ways (Wang et al., 2024). When equilibrium prices are interpreted without calculating the corresponding changes in consumer and producer surplus, economic analysis risks overlooking transfers of benefits and potential reductions in aggregate gains from exchange. A transparent surplus-based assessment is consequently relevant to market policy evaluation, particularly when interventions intended to stabilize prices or support producers may generate competing welfare effects.

The present study positions supply–demand equilibrium as the analytical foundation for examining the relationship between consumer surplus, producer surplus, and allocative efficiency through a combined conceptual and calculation-based approach. Its quantitative reference is the published analysis of local vegetable trading at Teratai Market in Bengkayang, which provides demand and supply relationships for examining market equilibrium and the economic benefits received by trading participants (Beni & Manggu, 2022). Rather than generating new primary observations, the study incorporates an independent recalculation of the published equilibrium and surplus estimates to examine the consistency between the reported functions, market outcomes, and underlying economic interpretations. The conceptual analysis also considers demand and supply elasticity as determinants of market responsiveness, allowing equilibrium adjustments to be interpreted through changes in

economic incentives and quantities exchanged (Mudrik Agil et al., 2024). Experimental market literature offers a complementary reference for distinguishing the theoretical properties of equilibrium from the behavioral and institutional conditions influencing actual exchange (Cartwright & Cartwright, 2024). Research incorporating consumer surplus into supply-chain decisions and subsidy evaluations further demonstrates the analytical value of examining welfare consequences alongside changes in producer incentives (Xiao et al., 2024). The proposed contribution is a structured integration of equilibrium reconstruction, surplus verification, and comparative welfare interpretation that connects conventional market-efficiency principles with an existing commodity-market case.

This study aims to analyze how the equilibrium mechanism of supply and demand determines consumer surplus, producer surplus, and total economic surplus as indicators of market efficiency. The analysis first examines the theoretical conditions under which equilibrium prices and quantities coordinate market transactions and maximize aggregate gains from exchange. It subsequently reconstructs the equilibrium relationship and evaluates the consistency of surplus calculations using published demand and supply equations from the Bengkayang vegetable market without collecting additional primary market data. The study also examines how changes in market conditions, monopoly characteristics, and policy interventions may influence the distribution of economic benefits and generate departures from allocative efficiency. Particular attention is directed toward distinguishing changes in consumer and producer welfare from variations in total surplus, ensuring that redistribution is not automatically interpreted as an improvement in aggregate economic performance. Its contribution lies in providing a transparent conceptual and calculation-based framework for connecting equilibrium determination with surplus measurement and the economic interpretation of market efficiency.

RESEARCH METHODS

This study employed a qualitative systematic literature review with a descriptive–analytical and comparative orientation, relying on published secondary sources without experimentation or primary data collection. The authors initially assembled 15 articles and identified one additional article through a supplementary search, from which six national journal articles were retained following eligibility assessment. The selected literature addressed supply–demand equilibrium, consumer and producer surplus, market efficiency, market structures, and government intervention, consistent with literature-based approaches to economic analysis (Harahap & Saputra, 2026). A published investigation of vegetable trading at Teratai Market in Bengkayang was used to examine existing equilibrium calculations and surplus measurements (Beni & Manggu, 2022). Research concerning Indonesian dairy-sector policies provided additional material for comparing the welfare implications of market interventions for consumers and producers (Agustia et al., 2026). The selected publications served as the basis for thematic synthesis, conceptual comparison, and verification of previously published calculations rather than the construction of a new empirical market dataset.

The supplementary search was conducted in October 2026 through web search engines and journal websites using terms including consumer surplus, producer surplus, tax, subsidy, maximum retail price, and welfare. Eligible publications addressed market equilibrium, economic surplus, welfare, market structures, or policy interventions, were published between 2017 and 2026, and had accessible full texts and traceable metadata, while news reports, blogs, teaching materials, undergraduate theses, and unverifiable sources were excluded. The analytical procedure involved extracting relevant concepts into a literature matrix, classifying thematic relationships, and comparing findings concerning equilibrium conditions, surplus distribution, and market inefficiency, including monopoly-related welfare implications (Ramadhani et al., 2025). Legal-economic considerations concerning monopolistic and monopsonistic structures were incorporated where relevant to the interpretation of market power and economic welfare (Arliman, 2017). For the Bengkayang case, published demand and supply functions were recalculated using $Q^* = (a - c)/(b + d)$, $P^* = a - bQ^*$, consumer surplus $= \frac{1}{2}Q^*(a - P^*)$, and producer surplus $= \frac{1}{2}Q^*(P^* - c)$, retaining the original price and quantity units (Beni & Manggu, 2022). Analytical credibility was addressed through comparative interpretation, assessment of methodological clarity, verification of numerical consistency, and source traceability, without reconstructing unreported search totals or claiming a documented PRISMA screening process.

Table 1. Literature Selection Matrix

Source	Research Method	Analytical Focus	Selection Decision
Agustia et al. (2026)	Systematic literature review and static comparative analysis	Dairy policy, consumer surplus, producer surplus, and stakeholder welfare	Included; provides a policy and welfare analysis perspective
Arliman (2017)	Normative legal research with descriptive analysis	Market power, economic exploitation, and protection of small enterprises	Included; supports the analysis of market structure and fairness
Beni & Manggu (2022)	Qualitative interviews and demand–supply analysis	Market equilibrium, consumer surplus, and producer surplus in local vegetable trading	Included; serves as the principal reference for surplus calculations
Chintya et al. (2025)	Descriptive qualitative literature review	Non-price determinants of demand and supply and shifts in market equilibrium	Included; supports the analysis of changes in market equilibrium
Mudrik Agil et al. (2024)	Literature review	Demand elasticity, supply elasticity, and price responsiveness	Included; provides a conceptual foundation for price responsiveness
Ramadhani et al. (2025)	Qualitative economic analysis	Monopoly equilibrium, consumer surplus, and social welfare	Included; supports the analysis of market inefficiency

RESULTS AND DISCUSSION

Supply–Demand Equilibrium and the Distribution of Consumer and Producer Surplus

Market equilibrium represents the coordination of consumer purchasing decisions and producer supply responses through a price at which the quantities demanded and supplied are equal. In conventional microeconomic analysis, changes in market entry, exit, and production capacity influence the position of supply and demand curves and consequently alter equilibrium outcomes (Eisenhauer, 2024). The equilibrium mechanism operates through price adjustments that reconcile the quantities consumers are willing to purchase with those producers are prepared to offer under prevailing market conditions. Non-price determinants, including consumer preferences, purchasing capacity, production conditions, and related commodity prices, can shift market demand or supply without requiring an initial change in the commodity's own price (Chintya et al., 2025). The responsiveness of market participants to these adjustments is associated with the elasticity of demand and supply, which influences the magnitude of equilibrium price and quantity changes (Mudrik Agil et al., 2024). Experimental examinations of market exchange provide an additional basis for assessing how transactions and observed outcomes relate to theoretical equilibrium conditions (Cartwright & Cartwright, 2024). Market efficiency must nevertheless be distinguished from the mere existence of an equilibrium because maximizing economic gains requires additional assumptions concerning competition, information, and the absence of relevant market failures.

Movements in equilibrium prices and quantities affect the economic benefits obtained by consumers and producers through changes in expenditure, revenue, and the volume of transactions. An outward demand shift under unchanged supply conditions generally increases equilibrium prices and quantities, while an outward supply shift tends to expand traded quantities and reduce equilibrium prices. The magnitude of these adjustments depends on the relative price responsiveness of buyers and sellers, making elasticity an important determinant of how market changes are distributed across participants (Mudrik Agil et al., 2024). Changes in income, consumption preferences, production technology, and input availability can also modify the underlying equilibrium relationships by shifting the demand or supply schedules (Chintya et al., 2025). The analytical distinction between movements along curves and shifts of entire curves is relevant because each mechanism produces different implications for the interpretation of price changes (Eisenhauer, 2024). Welfare evaluations become

more complex when consumer characteristics are heterogeneous, since uncertainty concerning market segment proportions can affect the estimated distribution of economic benefits (Wang et al., 2024).

The published study of vegetable trading at Teratai Market in Bengkayang provides a local-market case through which equilibrium determination and surplus measurement can be examined using previously reported demand and supply relationships (Beni & Manggu, 2022). The inverse demand function is expressed as $P = 56{,}688 - 312.3Q$, indicating a negative relationship between commodity prices and quantities demanded along the specified schedule. The corresponding supply function is $P = 5{,}000 + 284.9Q$, representing a positive relationship between commodity prices and quantities supplied. Equilibrium is obtained by equating the two functions, allowing the market-clearing quantity to be calculated from the intercepts and slopes of the demand and supply schedules. For the general linear relationships $P = a - bQ$ and $P = c + dQ$, the equilibrium quantity is calculated as $Q^* = (a - c)/(b + d)$, while the equilibrium price is obtained through substitution into either function. The original study reported an equilibrium quantity of approximately 86 kg and a corresponding price of approximately IDR 30,000, which serve as rounded reference values for the present recalculation (Beni & Manggu, 2022). Reconstructing the equilibrium from the published equations permits a direct assessment of numerical consistency without assuming that the observed local market satisfies every theoretical condition required for allocative efficiency.

Applying the published linear functions produces an equilibrium quantity of approximately 86.6 kg and an equilibrium price of approximately IDR 29,658, closely corresponding to the rounded figures reported in the original study (Beni & Manggu, 2022). Consumer surplus is calculated using $CS = \frac{1}{2}Q^*(a - P^*)$, producing an estimated value of IDR 1,169,700 from the demand intercept, equilibrium price, and traded quantity. Producer surplus is calculated using $PS = \frac{1}{2}Q^*(P^* - c)$, resulting in approximately IDR 1,067,100 under the same equilibrium conditions. Combining the two components generates an estimated total economic surplus of IDR 2,236,800, representing the aggregate gains from exchange implied by the published linear relationships. The recalculated consumer-to-producer surplus ratio is approximately 1.10, differing from the ratio of 3.29 stated in the original publication (Beni & Manggu, 2022). Table 2 presents the original recalculation matrix and distinguishes values directly reported in the source from estimates derived through independent application of the published functions.

Table 2. Recalculated Surplus for Vegetables Traded at Teratai Market

Parameter	Recalculated Value	Value Reported in Source
Demand function	$P = 56{,}688 - 312.3Q$	Same function
Supply function	$P = 5{,}000 + 284.9Q$	Same function
Equilibrium quantity (Q^*)	Approximately 86.6 kg	86 kg
Equilibrium price (P^*)	Approximately IDR 29,658	IDR 30,000
Consumer surplus	Approximately IDR 1,169,700	Not reported
Producer surplus	Approximately IDR 1,067,100	Not reported
Total surplus	Approximately IDR 2,236,800	Not reported
Consumer/producer surplus ratio	Approximately 1.10	3.29

The comparison in Table 2 indicates that the published equilibrium price and quantity are broadly reproducible from the reported linear equations, with differences attributable to rounding. The principal inconsistency concerns the relative magnitude of consumer and producer surplus rather than the location of the equilibrium itself. A ratio of approximately 1.10 indicates that the calculated consumer surplus is slightly greater than producer surplus under the specified functions, whereas the originally reported ratio of 3.29 implies a substantially larger relative consumer gain (Beni & Manggu, 2022). The difference cannot be resolved from the available equations because the source does not provide sufficient intermediate calculations to identify the inputs responsible for the larger reported ratio. The original study also contains differences between its descriptions of respondent selection, creating an additional reason for caution when assessing the evidentiary strength of the local-market findings (Beni & Manggu, 2022). These limitations do not invalidate the reconstructed equilibrium but restrict the interpretation of the published surplus ratio as a reliable measure of relative welfare. The

geometric relationship between the reported demand function, supply function, equilibrium point, and calculated surplus areas is identified in Figure 1.

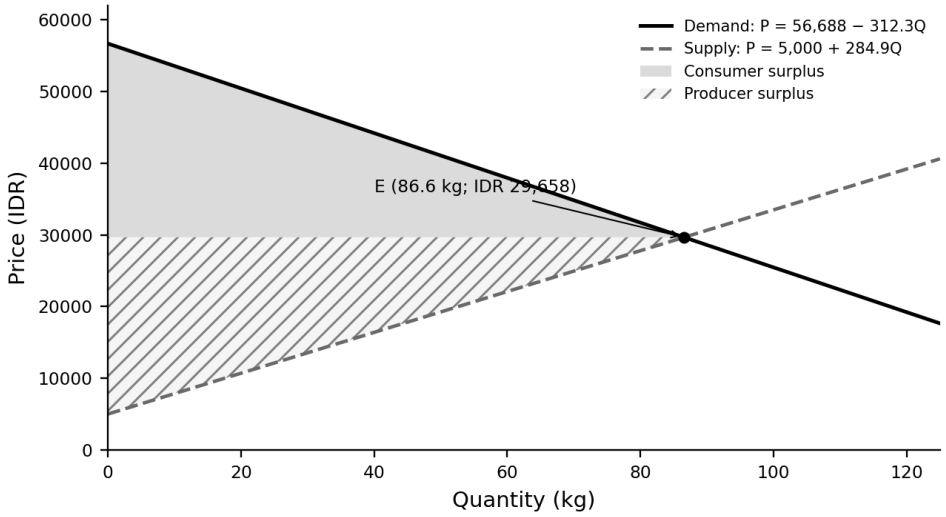


Figure 1. Demand and Supply Curves for the Local Vegetable Market at Teratai

The linear demand and supply relationships associated with Figure 1 describe how changes in traded quantities correspond to different prices under the market conditions represented by the original model. The demand schedule slopes downward, indicating that higher quantities correspond to lower willingness-to-pay thresholds, while the supply schedule slopes upward as additional production requires higher compensating prices. Their intersection defines the equilibrium quantity and price, establishing the reference point from which consumer and producer surplus can be calculated. Consumer surplus corresponds to the area between the demand curve and equilibrium price, whereas producer surplus is represented by the area between the equilibrium price and supply curve over the quantity exchanged. These geometric measurements follow the properties of linear demand and supply relationships, although changes in market entry or production conditions may alter the relevant curves and equilibrium outcomes (Eisenhauer, 2024). The reconstructed relationships are derived from published secondary data and should not be interpreted as independent field observations or evidence of market conditions beyond those documented by Beni and Manggu (2022).

Consumer surplus provides a monetary representation of the gains consumers receive when their willingness to pay exceeds the prevailing transaction price. The Bengkayang vegetable-market study identifies affordability, product freshness, the perceived absence of pesticides, purchasing habits, and seller services as considerations associated with consumer preferences for locally traded vegetables (Beni & Manggu, 2022). These characteristics suggest that economic benefits cannot be interpreted solely through price differences because product attributes may influence the valuation underlying market demand. Research incorporating uncertainty in consumer segment proportions demonstrates the analytical relevance of heterogeneous demand characteristics when evaluating economic welfare (Wang et al., 2024). Producer surplus, by comparison, measures the economic benefit received above the minimum compensation represented by the supply relationship and depends on the price and quantity obtained through exchange. Beni and Manggu (2022) reported that more than 50 sellers participated in morning trading activities at the local market, excluding itinerant traders, illustrating the importance of market access for small-scale commercial participants. Legal-economic analysis of small-enterprise exploitation identifies unequal bargaining positions and dependence on stronger trading intermediaries as potential constraints on economic opportunities, although such conditions cannot be assigned a numerical surplus effect without additional evidence (Arliman, 2017).

The recalculated total surplus of approximately IDR 2,236,800 represents the combined consumer and producer gains implied by the published equilibrium functions rather than an independently observed measure of community welfare. Under the conventional competitive framework, total surplus provides an indicator of allocative efficiency because the equilibrium quantity is associated with the realization of mutually beneficial transactions within the specified market model

(Cartwright & Cartwright, 2024). The relatively close calculated consumer and producer surplus values indicate a more balanced monetary distribution than the reported ratio of 3.29 would suggest, but they do not establish equality in income, bargaining power, or actual welfare. The interpretation remains conditional on the functional forms, underlying units, and assumptions employed in reconstructing the Bengkayang market calculations (Beni & Manggu, 2022). Research on welfare analysis under uncertain market segmentation further demonstrates that aggregate economic benefits may conceal differences in outcomes among participants with heterogeneous market characteristics (Wang et al., 2024). These findings establish equilibrium reconstruction and surplus measurement as complementary analytical procedures while identifying market structure, competitive conditions, and potential distortions as necessary considerations for evaluating allocative efficiency beyond the calculated equilibrium.

Market Efficiency, Monopoly, and Sources of Allocative Inefficiency

Competitive market equilibrium provides an analytical benchmark for identifying the conditions under which resources are allocated toward transactions that generate the greatest aggregate economic benefits. Under the conventional competitive model, buyers and sellers act as price takers, while equilibrium prices coordinate production and consumption decisions without persistent excess demand or supply. Changes in market entry and exit can modify supply conditions and consequently influence the equilibrium price, traded quantity, and distribution of economic gains (Eisenhauer, 2024). The efficient allocation of resources also depends on sufficiently accessible market information, limited barriers to entry, and the absence of distortions affecting competitive exchange. Experimental investigations of market trading offer a basis for examining how exchange processes and observed transactions correspond to theoretical predictions of competitive equilibrium (Cartwright & Cartwright, 2024). Equilibrium models incorporating manufacturing and retail distribution further demonstrate that the organization of production and distribution activities influences market outcomes beyond the immediate interaction of aggregate demand and supply (Bronnenberg, 2024). These conditions establish the conceptual distinction between a market that reaches an observable equilibrium and one that achieves allocative efficiency under the assumptions of competitive welfare analysis.

Monopoly represents a departure from competitive price formation because a dominant supplier can influence market prices by controlling the quantity of goods offered for exchange. Within the conventional monopoly model, the profit-maximizing quantity is determined by the relationship between marginal revenue and marginal cost, rather than by the equality of market price and marginal cost. Research examining monopoly equilibrium identifies higher prices and restricted production as mechanisms through which market power can reduce consumer surplus and generate inefficient resource allocation (Ramadhani et al., 2025). The illustrative comparison reported in the reviewed manuscript presents a monopoly price of IDR 200,000 against a competitive price of IDR 150,000, representing a price difference of IDR 50,000. The corresponding quantities are 500 units under monopoly and 800 units under competitive conditions, indicating a reduction of 300 units in the illustrative market. The theoretical relevance of monopoly pricing also extends to the organization of resale and price-setting mechanisms, where market power influences transaction conditions and the distribution of economic benefits (Loertscher & Muir, 2022).

The reduction in traded quantity under monopoly indicates that some transactions potentially beneficial to consumers and producers are not completed at the restricted output level. In the illustrative comparison, the reviewed manuscript associates monopoly conditions with a deadweight loss of approximately 15% of potential welfare, although the underlying empirical observations and complete calculation procedure are not documented. This percentage must therefore be treated as an illustrative estimate rather than a verified measurement of welfare losses in a particular commodity market. Higher monopoly prices can redistribute part of consumer surplus toward the producer, while restrictions on economically beneficial transactions create losses that are not recovered by either group. Research examining rising markups demonstrates the relevance of consumer preferences and changes in pricing margins to the interpretation of market power and its economic consequences (Döpper et al., 2025). Legal-economic analysis of small-enterprise exploitation also identifies unequal bargaining positions and dependence on stronger commercial intermediaries as conditions that may constrain the economic opportunities available to smaller market participants (Arliman, 2017). These mechanisms demonstrate why the existence of producer gains under concentrated market conditions cannot independently establish improved aggregate welfare or an efficient allocation of resources.

Allocative inefficiency is not limited to monopoly pricing because information asymmetries, barriers to market participation, and restrictions affecting the organization of exchange can also alter market outcomes. Research concerning information disclosure and market outcomes establishes the significance of informational arrangements in determining the conditions under which economic transactions occur (Hopenhayn & Saeedi, 2023). The relationship between market organization and welfare is further demonstrated by evidence that vertical integration may reduce consumer surplus and welfare under particular bargaining and production-cost conditions (Mukherjee & Sinha, 2024). These findings indicate that market concentration, transactional information, and the allocation of bargaining power require separate consideration when identifying the mechanisms responsible for departures from efficient exchange. The reviewed literature consequently supports a comparative classification of competitive and inefficient market conditions based on price formation, traded quantities, total surplus, resource allocation, market structure, distributional consequences, and governmental responsibilities. Table 3 presents these distinctions using the comparative characteristics identified in the original analytical framework.

Table 3. Comparison of Efficient and Inefficient Markets

Aspect	Efficient (Competitive) Market	Inefficient Market
Price formation	Prices emerge from supply and demand; participants act as price takers	Prices may be influenced by dominant buyers or sellers or constrained by regulation
Traded quantity	Quantity demanded equals quantity supplied	Monopoly restricts output; price limits may generate shortages or excess supply
Total surplus	Maximized at efficient equilibrium	Reduced when deadweight loss occurs
Resource allocation	No persistent excess demand or supply under model assumptions	Resources allocated inefficiently
Structure and information	Many buyers and sellers; low barriers; relatively homogeneous products; accessible information	Market power, entry barriers, or information asymmetries
Distribution of benefits	Gains shared between consumers and producers	Surplus may shift toward market-power holders or policy beneficiaries
Government role	Maintain fair competition and market oversight	Corrective interventions may introduce new distortions

Table 3 distinguishes competitive efficiency from inefficient market arrangements through the mechanisms governing price formation, production decisions, resource allocation, and economic welfare. Under competitive assumptions, market-clearing prices coordinate transactions and establish the quantity at which aggregate gains from exchange are maximized. Monopoly conditions differ because market participants possessing substantial pricing power may restrict output and sustain prices above competitive levels, reducing the opportunities available for mutually beneficial transactions (Ramadhani et al., 2025). Information asymmetry introduces another source of inefficiency because economic decisions may be formed under unequal informational conditions rather than through fully informed exchange (Hopenhayn & Saeedi, 2023). The relationship between market structure and welfare is nevertheless conditional, as theoretical findings concerning bilateral monopoly demonstrate that particular forms of vertical integration can reduce rather than improve consumer surplus and aggregate welfare (Mukherjee & Sinha, 2024). These distinctions indicate that ownership concentration, organizational integration, and market efficiency should not be treated as interchangeable analytical categories. The classification also emphasizes that changes in the distribution of economic benefits require examination alongside potential reductions in total surplus rather than being interpreted automatically as evidence of inefficiency.

Market intermediation constitutes an additional mechanism through which commercial organization can influence prices, information, and the distribution of benefits between producers and consumers. Economic analysis of market intermediaries, storage, and policy reforms demonstrates the

importance of distribution arrangements and inventory decisions for evaluating agricultural market outcomes (McCorriston & MacLaren, 2024). Such arrangements may facilitate trade by connecting dispersed participants, although concentrated control over distribution channels can also influence bargaining conditions and market accessibility. Legal research on the economic exploitation of small enterprises identifies the potential consequences of unequal commercial relationships, particularly when smaller businesses lack sufficient bargaining strength in transactions with more powerful market participants (Arliman, 2017). Research concerning consumer preferences and increasing markups further suggests that observed changes in prices cannot be attributed exclusively to production costs or market concentration without considering demand-side characteristics (Döpper et al., 2025). The available secondary literature does not provide sufficient comparable observations to quantify how much of the economic surplus in the Bengkayang vegetable market was transferred through intermediary bargaining or other potentially restrictive commercial arrangements.

A distinction between surplus redistribution and aggregate welfare loss is essential for assessing whether observed market changes represent inefficient resource allocation. Redistribution occurs when economic benefits shift between consumers and producers, whereas deadweight loss arises when mutually beneficial transactions are prevented or economic resources are allocated away from their efficient uses. Research concerning dairy-sector policies in Indonesia illustrates that regulatory arrangements can increase producer surplus while reducing consumer surplus and net social welfare under the conditions examined (Agustia et al., 2026). Trade-policy analysis of Indonesian citrus markets similarly provides an applied reference for evaluating changes in the welfare of producers and consumers as separate but related economic outcomes (Nugrahapsari et al., 2024). Comparisons between minimum support prices and production cost subsidies demonstrate that alternative policy instruments can produce different consequences for agricultural producers and consumers (Chintapalli & Tang, 2022). Research on agricultural input and output subsidies extends this assessment by considering farmer welfare, income disparities, and consumer surplus within the same policy environment (Tang et al., 2024). These findings establish that the direction of a change in individual surplus is insufficient to determine market efficiency unless the corresponding changes in aggregate gains, production incentives, and resource allocation are also examined.

The comparative analysis establishes that allocative efficiency depends on the conditions under which equilibrium is formed rather than merely on the equality of quantities demanded and supplied at an observed price. Competitive price formation provides a useful benchmark, while monopoly power, information asymmetry, and institutional restrictions can modify traded quantities and redistribute economic benefits in ways that depart from the efficient allocation. The experimental investigation of market transactions reinforces the relevance of distinguishing theoretical equilibrium properties from the processes through which market participants interact and complete exchanges (Cartwright & Cartwright, 2024). Theoretical evidence concerning bilateral monopoly further indicates that the welfare consequences of market organization depend on production costs, bargaining conditions, and the resulting quantity of output (Mukherjee & Sinha, 2024). The findings also identify an evidentiary limitation because the reviewed sources do not provide sufficiently comparable market-level observations to calculate a common magnitude of deadweight loss across monopoly, information asymmetry, and intermediary-related distortions. Assessing government intervention therefore requires an additional examination of the mechanisms through which price controls, taxation, subsidies, and production obligations redistribute consumer and producer surplus while potentially changing total economic welfare.

Government Intervention, Surplus Redistribution, and the Evaluation of Market Welfare

Government intervention influences market equilibrium by modifying the incentives, costs, and institutional conditions under which consumers and producers participate in economic transactions. Price regulations, taxation, subsidies, and mandatory production-related obligations can change equilibrium quantities and redistribute economic benefits even when their principal objectives involve price stabilization or welfare protection. Comparative research on agricultural support policies demonstrates that different intervention instruments may produce contrasting outcomes for producer earnings and consumer welfare (Chintapalli & Tang, 2022). Trade-policy analysis in Indonesia similarly identifies the welfare consequences experienced by citrus producers and consumers as relevant dimensions of governmental economic intervention (Nugrahapsari et al., 2024). The assessment of

policy effectiveness consequently requires distinguishing between changes in individual surplus and changes in the total economic benefits generated through market exchange. Research concerning the harmonization of rice production and trade policies emphasizes the relevance of policy coordination when agricultural market interventions pursue related economic objectives (Vadilaksono et al., 2023). An intervention that increases the gains received by a particular market participant cannot independently be classified as allocatively efficient when the corresponding consequences for other participants and aggregate surplus remain unexamined.

The Indonesian dairy-sector policy examined by Agustia et al. (2026) provides a relevant illustration of how production-related obligations can redistribute economic benefits between consumers and producers. The reviewed analysis of mandatory fresh-milk absorption requirements, represented by the BUSEP ratio, indicates an increase in producer surplus accompanied by a reduction in consumer surplus and net social welfare under the policy conditions considered. This relationship demonstrates that improving producer welfare through mandatory market arrangements does not necessarily increase the aggregate benefits generated by exchange. Comparative analysis of agricultural minimum support prices and production cost subsidies similarly illustrates the importance of distinguishing alternative support mechanisms according to their effects on farmers and consumers (Chintapalli & Tang, 2022). Research on input and output farm subsidies extends the welfare assessment by examining how policy design relates to farmer income disparities and consumer surplus (Tang et al., 2024). These findings identify the allocation of policy benefits and costs as a necessary component of market-efficiency evaluation, particularly when the intervention redistributes surplus without demonstrating a corresponding increase in aggregate economic welfare.

Direct price regulation can influence allocative efficiency by separating administratively determined transaction prices from the equilibrium prices generated through prevailing demand and supply relationships. A binding price ceiling below competitive equilibrium may create excess demand and restrict the quantity available for exchange, while a binding price floor above equilibrium may generate excess supply when the quantity offered exceeds consumer demand. The relevance of demand and supply relationships to market adjustments is established by theoretical examinations of linear market curves and their responses to changing market conditions (Eisenhauer, 2024). The distributional consequences of price intervention depend partly on how restricted quantities are allocated, whether producers adjust output, and whether consumers can obtain commodities at the regulated price. Taxation similarly changes the effective prices faced by buyers and sellers, although the allocation of the tax burden depends on the responsiveness of demand and supply rather than exclusively on the party legally responsible for payment. Comparative welfare research demonstrates that the economic consequences of governmental support and intervention vary with market organization and the structure of the policy instrument (Jegers et al., 2024). The six-article national literature synthesis did not provide sufficient quantitative evidence to estimate tax incidence or the associated deadweight loss, preventing numerical comparisons between taxation and other identified sources of market inefficiency.

Subsidies influence market outcomes through different mechanisms depending on whether assistance targets production inputs, marketed output, or other components of commercial activity. Research on agricultural input and output subsidies demonstrates the relevance of policy design to farmer welfare, income disparities, and consumer surplus, indicating that subsidy instruments should not be treated as economically interchangeable (Tang et al., 2024). Economic modeling of fresh-produce wholesale markets under yield uncertainty further establishes the importance of production conditions when assessing subsidy arrangements (Dan et al., 2023). Comparative examinations of fixed and variable cost subsidies identify differences in welfare consequences across profit-oriented, nonprofit, and mixed markets, suggesting that institutional characteristics also influence policy outcomes (Jegers et al., 2024). The potential expansion of production and consumer access must nevertheless be considered alongside fiscal expenditure, market incentives, and the distribution of policy benefits before identifying a net improvement in economic welfare. Table 4 retains the directional comparison of consumer surplus, producer surplus, and total surplus across the five sources of market inefficiency identified in the original analytical matrix.

Table 4. Expected Direction of Surplus Changes by Source of Market Inefficiency

Source	Consumer Surplus	Producer Surplus	Total Surplus
Monopoly	Decreases	Increases	Decreases
Mandatory absorption (BUSEP)	Decreases	Increases	Decreases
Price regulation	Uncertain; shortages may offset low prices	May decline with weaker production incentives	Tends to decrease
Taxation	Not quantified	Not quantified	Not quantified
Subsidies	Tends to increase	Increases when directed toward production inputs; otherwise unclear	Depends on design

Table 4 distinguishes the expected direction of changes in consumer and producer surplus from the corresponding implications for aggregate economic welfare. The monopoly and mandatory absorption categories illustrate how the redistribution of benefits toward producers may coincide with reductions in consumer gains and total surplus under the conditions examined in the reviewed literature (Agustia et al., 2026). The producer-surplus increase recorded for monopoly should nevertheless be interpreted as a conditional analytical expectation rather than a universal empirical result, since actual gains depend on production costs, demand characteristics, and the structure of market power (Loertscher & Muir, 2022). Price regulation introduces additional uncertainty because reduced transaction prices may benefit consumers who obtain the regulated commodity while shortages and weaker production incentives can restrict the realization of those benefits. The absence of quantified taxation effects in Table 4 reflects the limitations of the selected national literature rather than evidence that taxation has no consequences for market welfare. Subsidy-related changes likewise depend on the policy instrument, the distribution of financial assistance, and the resulting responses of consumers and producers (Tang et al., 2024). The matrix consequently provides a comparative diagnostic framework for interpreting potential surplus redistribution and efficiency losses without presenting its directional categories as independently estimated causal effects.

The analytical contribution of this study consists of three connected elements addressing equilibrium reconstruction, the interpretation of surplus distribution, and the classification of market inefficiency. The first contribution is the independent recalculation of equilibrium and surplus estimates for the Teratai vegetable market, which identifies a consumer-to-producer surplus ratio of approximately 1.10 rather than the reported value of 3.29 using the available published functions (Beni & Manggu, 2022). The second contribution is the comparative interpretation of market interventions that may increase producer surplus while reducing consumer gains and aggregate welfare, as illustrated by the Indonesian dairy-policy analysis (Agustia et al., 2026). The third contribution is the diagnostic classification of monopoly, mandatory absorption, price regulation, taxation, and subsidies according to their expected implications for consumer, producer, and total surplus. This classification extends the conceptual treatment of market equilibrium by connecting changes in demand and supply conditions with their distributional and efficiency consequences (Chintya et al., 2025). The resulting framework represents a synthesis of existing economic concepts and secondary research findings rather than a new equilibrium theory or an independently estimated model of market behavior.

The policy implications emphasize the need to identify the economic mechanism responsible for a market imbalance before selecting instruments intended to correct prices or redistribute welfare. When shortages originate from limited production capacity or uncertain agricultural output, support directed toward productive inputs and supply conditions may address the underlying constraints more directly than restrictions on transaction prices (Dan et al., 2023). Trade-policy research concerning Indonesian citrus producers and consumers reinforces the importance of evaluating the consequences of intervention for both market participants rather than prioritizing a single welfare category (Nugrahapsari et al., 2024). Policies addressing concentrated market power also require consideration of the bargaining conditions experienced by smaller enterprises, particularly where unequal commercial relationships affect access to economic opportunities (Arliman, 2017). Subsidy design warrants equivalent scrutiny because assistance affecting firm decisions and production incentives may change consumer surplus alongside the financial benefits received by producers (Xiao et al., 2024). These

considerations support the use of equilibrium quantities, consumer surplus, producer surplus, and total surplus as complementary indicators during the assessment of governmental market policies. The practical value of these indicators depends on the availability of reliable transaction data, transparent calculation procedures, and explicit consideration of the assumptions underlying each welfare estimate.

Several methodological limitations restrict the extent to which the findings can be generalized beyond the secondary literature and theoretical relationships examined. The review retained six national journal articles for its principal comparative analysis, while the available documentation did not provide complete search-result counts or a reproducible database-level screening record. The Bengkayang surplus calculations were reconstructed from published linear functions rather than original transaction observations, and the unresolved difference between reported and recalculated surplus ratios limits the interpretation of the case-specific welfare distribution (Beni & Manggu, 2022). The reviewed national evidence also lacked sufficiently detailed estimates of tax incidence, policy-specific deadweight losses, and the welfare consequences of alternative subsidy arrangements. Future empirical studies should employ observed market prices, traded quantities, production costs, and policy exposure data to estimate consumer and producer surplus under comparable competitive and intervention scenarios. The findings establish a calculation-based and comparative approach to market-efficiency evaluation while leaving the magnitude and causal interpretation of individual market distortions to subsequent empirical investigation.

CONCLUSION

Supply–demand equilibrium provided the benchmark for market efficiency because, under competitive assumptions, equilibrium transactions maximized the combined gains of consumers and producers. Consumer surplus measured economic benefits above actual expenditure, while producer surplus represented returns exceeding the minimum compensation required to supply goods. The comparative analysis established that changes in these two components were interconnected, although an increase in either component did not necessarily indicate an improvement in total economic welfare. Recalculation of the published Teratai vegetable market equations produced an equilibrium quantity of approximately 86.6 kg and an equilibrium price of IDR 29,658, generating consumer surplus of approximately IDR 1,169,700 and producer surplus of IDR 1,067,100. The combined surplus reached approximately IDR 2,236,800, with a consumer-to-producer surplus ratio of 1.10 rather than the 3.29 reported in the original study. This discrepancy demonstrated the importance of transparent calculation procedures and reproducible economic measurements when interpreting market efficiency and the distribution of benefits between consumers and producers.

Market inefficiency arose when monopoly power, restrictive market arrangements, or governmental interventions altered equilibrium conditions and prevented the realization of potentially beneficial transactions. Monopoly pricing could reduce consumer surplus and generate deadweight loss, while binding price regulations could weaken production incentives and create shortages or excess supply under particular market conditions. The reviewed evidence concerning mandatory fresh-milk absorption indicated that producer-surplus gains could coincide with declining consumer surplus and aggregate welfare, whereas the consequences of subsidies depended on their design and distributional effects. The available literature did not provide sufficient quantitative evidence to estimate tax incidence or compare the magnitude of welfare losses across different intervention mechanisms. The study was limited by its reliance on secondary literature, a relatively small national literature selection, and equilibrium calculations reconstructed from published functions rather than independently observed market transactions. Future research should employ documented price and quantity observations, production-cost information, and reproducible welfare calculations to evaluate tax incidence, quantify intervention-related deadweight losses, and verify consumer and producer surplus estimates across different market structures.

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REFERENCES

Agustia, D., Fitri, A., Andriyanty, R., Suryadi, D., Maifianti, K. S., & Sirait, S. (2026). Dampak kebijakan persusuan di Indonesia terhadap kesejahteraan stakeholder. *Mimbar Agribisnis, 12*(1). https://doi.org/10.25157/ma.v12i1.22465

Arliman, L. (2017). Perlindungan hukum UMKM dari eksploitasi ekonomi dalam rangka peningkatan kesejahteraan masyarakat. *Jurnal Rechts Vinding Media Pembinaan Hukum Nasional*, *6*(3), 387-402. http://dx.doi.org/10.33331/rechtsvinding.v6i3.194

Awaya, Y., & Krishna, V. (2024). Panics and prices. *Journal of Economic Theory, 217*, Article 105818. https://doi.org/10.1016/j.jet.2024.105818

Beni, S., & Manggu, B. (2022). Surplus produsen dan surplus konsumen sayuran lokal di Pasar Teratai Bengkayang. *Cendekia Niaga, 6*(2), 129–137. https://doi.org/10.52391/jcn.v6i2.715

Bronnenberg, B. J. (2024). Innovation and distribution: An equilibrium model of manufacturing and retailing. *The Economic Journal, 134*(660), 1379–1400. https://doi.org/10.1093/ej/uead113

Cartwright, A., & Cartwright, E. (2024). A classroom market experiment: Data and reflections. *The Journal of Economic Education, 55*(3), 276–291. https://doi.org/10.1080/00220485.2024.2351853

Chintapalli, P., & Tang, C. S. (2022). Crop minimum support price versus cost subsidy: Farmer and consumer welfare. *Production and Operations Management, 31*(4), 1753–1769. https://doi.org/10.1111/poms.13642

Chintya, L. F., Mondoringin, A. Z. L., Hanny, A. C., Langi, Y. A., & Sumual, A. K. (2025). Analisis Konseptual Faktor-Faktor Non-Harga yang Mempengaruhi Permintaan dan Penawaran: Tinjauan Pustaka Ekonomi Mikro. *SIGARUDA JOURNAL: Jurnal Ilmiah Bidang Sosial, Ekonomi, Budaya, Teknologi dan Pendidikan*, *1*(2), 346-351. https://ejournal.sociovisionary.com/index.php/garudajournal/article/view/132

Damanik, S. K., & Harahap, M. A. (2026). Tren makanan melalui sosial media: Solusi alternatif perilaku konsumsi Islam tinjauan systematic literature review. [Nama jurnal belum teridentifikasi], *(3)*, 1074–1086. https://doi.org/10.60036/jbm.1110

Dan, B., Lei, T., Zhang, X., Liu, M., & Ma, S. (2023). Modeling of the subsidy policy in fresh produce wholesale markets under yield uncertainty. *Economic Modelling, 126*, Article 106413. https://doi.org/10.1016/j.econmod.2023.106413

Döpper, H., MacKay, A., Miller, N. H., & Stiebale, J. (2025). Rising markups and the role of consumer preferences. *Journal of Political Economy, 133*(8), 2462–2505. https://doi.org/10.1086/735510

Eisenhauer, J. G. (2024). Shift or pivot? Market entry and exit with linear supply and demand curves. *The American Economist, 69*(1), 168–186. https://doi.org/10.1177/05694345231209228

Harahap, M. A., & Saputra, J. (2026). Eksplorasi resiliensi ekonomi perspektif islam: Tinjauan literatur terpilih. *Journal of Economics Research and Policy Studies*, *6*(1), 225-240. https://doi.org/10.53088/jerps.v6i1.3040

Hopenhayn, H., & Saeedi, M. (2023). Optimal information disclosure and market outcomes. *Theoretical Economics, 18*(4), 1317–1344. https://doi.org/10.3982/TE5104

Jegers, M., Buts, C., & Van Puyvelde, S. (2024). Welfare effects of variable and fixed cost subsidies in profit, non-profit and mixed markets. *Managerial and Decision Economics, 45*(6), 4138–4156. https://doi.org/10.1002/mde.4238

Kaufmann, M., Andre, P., & Kőszegi, B. (2024). Understanding markets with socially responsible consumers. *The Quarterly Journal of Economics, 139*(3), 1989–2035. https://doi.org/10.1093/qje/qjae009

Loertscher, S., & Muir, E. V. (2022). Monopoly pricing, optimal randomization, and resale. *Journal of Political Economy, 130*(3), 566–635. https://doi.org/10.1086/717894

Manik, S., Irnad, Mulyasari, G., Yuliarso, M. Z., & Cahyadinata, I. (2024). Determinant factors of visitors to Parhonasan Daihonas agrotourism in North Sumatera, Indonesia. *Journal of Agribusiness Management and Development, 5*(1), 31–39. https://doi.org/10.22146/jamadev.v5i1.11927

McCorriston, S., & MacLaren, D. (2024). Market intermediaries, storage and policy reforms. *Journal of Agricultural Economics, 75*(1), 114–136. https://doi.org/10.1111/1477-9552.12542

Mudrik Agil, A., Firdaus, A., & Buhaerah. (2024). Analisis elastisitas permintaan dan penawaran dalam ekonomi modern. *Buana Matematika: Jurnal Ilmiah Matematika dan Pendidikan Matematika, 14*(1), 83–94. https://doi.org/10.36456/buanamatematika.v14i1.8517

Mukherjee, A., & Sinha, U. B. (2024). Welfare reducing vertical integration in a bilateral monopoly under Nash bargaining. *Journal of Public Economic Theory, 26*(3), Article e12701. https://doi.org/10.1111/jpet.12701

Muna, N., Mulyo, J. H., & Irham. (2023). Economic valuation of agrotourism: A case study of "Bhumi Merapi" in Sleman Regency. *Journal of Agribusiness Management and Development, 4*(1), 40–49. https://doi.org/10.22146/jamadev.v4i1.9986

Nasution, A. H., Matondang, K. A., Simbolon, A. V. D., Pandia, Y. B. B., & Sitorus, S. F. A. (2024). Peran Konsumen dalam Menciptakan Keseimbangan Persaingan Pasar Sempura. *Socius: Jurnal Penelitian Ilmu-Ilmu Sosial*, *2*(5). https://doi.org/10.5281/zenodo.14545417

Nugrahapsari, R. A., Hasibuan, A. M., & Novianti, T. (2024). Impacts of trade policy on the welfare of citrus producers and consumers in Indonesia. *International Journal of Social Economics, 51*(10), 1278–1297. https://doi.org/10.1108/IJSE-02-2023-0148

Nurzakiah, S., Nurmalina, R., & Tinaprilla, N. (2025). Market structure and competition of Indonesian eel in the Chinese market. *Jurnal Manajemen dan Agribisnis, 22*(2), 146. https://doi.org/10.17358/jma.22.2.146

Purnomo, B., & Risdianto, A. M. (2025). Risk analysis of farmers and rice milling businesses: A study on the rice supply chain in Yogyakarta. *Jurnal Manajemen dan Agribisnis, 22*(2), 133. https://doi.org/10.17358/jma.22.2.133

Ramadhani, S., Manullang, R. M. V., & Purba, T. K. A. B. (2025). Keseimbangan Pasar Monopoli dalam Teori Permintaan dan Penawaran Serta Dampaknya Terhadap Kesejahteraan Sosial. *Jurnal Mutiara Ilmu Akuntansi*, *3*(3), 90-94. https://doi.org/10.55606/jumia.v3i1.3564

Ray, S., & Giannakas, K. (2024). An economic analysis of the "Buy Local" trend. *Journal of the Agricultural and Applied Economics Association, 3*(1), 117–134. https://doi.org/10.1002/jaa2.101

Safitri, M. A., Suryantini, A., & Irham. (2024). Unraveling the dynamics price volatility and risk of live broiler chicken in Jawa Tengah Province. *Jurnal Manajemen dan Agribisnis, 21*(3), 348. https://doi.org/10.17358/jma.21.3.348

Sibuea, F. A., Sibuea, M. B., & Safitri, S. A. (2024). Indonesian soybean import in international trade. *Jurnal Manajemen dan Agribisnis, 21*(1), 122. https://doi.org/10.17358/jma.21.1.122

Taena, W., Binsasi, Y., Blegur, W. A., & Binsasi, R. (2025). Economic valuation of Bifemnasi Sonmahole forest area (case: Taekas and Femnasi Village in North Central Timor Regency). *Jurnal Ilmu Lingkungan, 23*(2), 491–499. https://doi.org/10.14710/jil.23.2.491-499

Tang, C. S., Wang, Y., & Zhao, M. (2024). The impact of input and output farm subsidies on farmer welfare, income disparity, and consumer surplus. *Management Science, 70*(5), 3144–3161. https://doi.org/10.1287/mnsc.2023.4850

Vadilaksono, M. I., Syaukat, Y., & Widyastutik. (2023). Harmonization of rice production policy and rice trade policy in Indonesia. *Jurnal Manajemen dan Agribisnis, 20*(1), 154. https://doi.org/10.17358/jma.20.1.154

Wang, Y., Ren, S., Zhou, X., & Kang, J. (2024). Welfare analysis with uncertain market segment proportions. *Journal of Management Science and Engineering, 9*(4), 535–552. https://doi.org/10.1016/j.jmse.2024.06.002

Xiao, Y., Zhang, X., & Wu, X. (2024). Firm decisions and government subsidies in a supply chain with consumer surplus consideration. *Naval Research Logistics, 71*(8), 1113–1132. https://doi.org/10.1002/nav.22207