

# **The Quad Helix Interpersonal Communication Pattern in Improving the Bargaining Position of Vegetable Farmers in Cinangneng Village Bogor**

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## **Abstract**

*This study aims to analyze the interpersonal communication patterns within the Quad Helix network to formulate strategies for strengthening the bargaining power of vegetable farmers against supply chain dominance in Cinangneng Village, Bogor. Utilizing a qualitative case study approach, data were gathered through participatory observations of daily transactional dialogues, Focus Group Discussions (FGD), and in-depth interviews with 14 purposively selected informants, comprising one local bureaucrat, two middlemen/distributors, two customers, and nine independent farmers. The findings reveal that interpersonal communication patterns between farmers and middlemen are highly asymmetric and paternalistic, which inherently weakens the farmers' verbal negotiation skills. The primary communication barrier centers on persistent price information gaps. This structural vulnerability is further exacerbated by the absence of institutionalized farmer organizations, forcing individuals to operate traditionally and rely entirely on themselves from harvest to marketing. Consequently, this study concludes that enhancing farmers' bargaining power must commence with interactional reconstruction through a hybrid digital-interpersonal communication pattern model. This proposed model aims to eliminate information asymmetry, establish collaborative spaces among cross-sectoral actors, and foster group solidarity as crucial social capital for future pioneer farming cooperatives.*

**Keywords:** *Quad Helix, Interpersonal Communication, Bargaining Power, Vegetable Farmers, Transactional Asymmetry.*

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# **Pola Komunikasi Interpersonal Quad Helix dalam Meningkatkan Posisi Tawar Petani Sayur Desa Cinangneng, Kampung Babakan Girang Bogor**

## **Abstrak**

Tujuan penelitian untuk menganalisis pola komunikasi interpersonal jaringan *Quad Helix* guna merumuskan strategi penguatan posisi tawar petani sayur terhadap dominasi rantai pasok di Desa Cinangneng, Bogor. Menggunakan pendekatan studi kasus kualitatif, data dihimpun melalui observasi partisipatif terhadap dialog transaksi harian, *Focus Group Discussion* (FGD), serta wawancara mendalam terhadap 14 informan *purposive* yang terdiri dari 1 birokrat lokal, 2

distributor/tengkulak, 2 konsumen, dan 9 petani mandiri. Temuan penelitian menunjukkan bahwa pola komunikasi interpersonal antara petani dan tengkulak bersifat asimetris dan paternalistik, sehingga melemahkan kemampuan negosiasi verbal petani. Hambatan komunikasi utama berpusat pada kesenjangan informasi harga. Kerentanan struktural diperburuk oleh tiadanya lembaga atau organisasi petani, sehingga memaksa petani bekerja secara tradisional dan bergantung sepenuhnya pada diri sendiri mulai dari proses panen hingga pemasaran. Oleh karena itu, penelitian ini menyimpulkan bahwa penguatan daya tawar petani harus dimulai dari rekonstruksi interaksi melalui model “pola komunikasi digital-interpersonal hibrida” yang berfungsi memotong asimetri informasi, membangun ruang kolaboratif antar-aktor, serta menumbuhkan solidaritas kelompok sebagai modal sosial krusial untuk merintis koperasi petani di masa depan.

**Kata Kunci:** *Quad Helix, Komunikasi Interpersonal, Daya Tawar, Petani Sayur, Asimetri Transaksi.*

## INTRODUCTION

The structural vulnerability of smallholder farmers within the global agricultural supply chain remains a persistent challenge in developing economies, deeply rooted in communication and information asymmetries. In the local context of Western Java, specifically in vegetable-producing hubs like Bogor, this systemic issue manifests as smallholder vegetable farmers in Cinangneng Village continue to suffer from severely suppressed bargaining power. Despite their critical role in food security, these independent farmers are heavily trapped in exploitative dependency structures dominated by traditional middlemen (*tengkulak*). This local phenomenon reflects a broader, well-documented practical crisis across the Global South where agricultural producers are systematically marginalized at the interface of market transactions. Recent empirical literature confirms that a lack of formal institutional networks forces smallholders to manage capital-intensive and highly perishable yields entirely on their own, leaving them unable to dictate prices or access diversified market networks. Consequently, analyzing how localized interactional dynamics shape

these economic dependencies is paramount to shifting farmers from passive price-takers into empowered market actors.

To understand the mechanics of this marginalization, recent scholarship has increasingly shifted from purely macroeconomic analysis toward the praxis of communication. Previous studies on interpersonal communication in agricultural development have demonstrated that the nature of dialogues between farmers and buyers heavily influences transaction outcomes. When communication is heavily paternalistic and structurally asymmetric, it strips the weaker party of their rhetorical agency and subverts their economic bargaining power. Furthermore, while contemporary research often champions digital-driven agricultural interventions, such as mobile applications for market tracking, scholars argue that technological adoption fails without being anchored in trust-building interpersonal channels. This necessitates the deployment of a Quad Helix communication framework, which conceptualizes multi-directional dialogic collaboration among the government, academia, market actors (consumers/distributors), and civil society (farmers). While previous applications

of the Quad Helix model have largely focused on macro-level public policy and regional administration innovation, its integration with micro-level interpersonal communication patterns among vegetable farmers remains significantly under-researched. Therefore, this study bridges this theoretical gap by examining how cross-sectoral dialogic structures can be reconstructed to eliminate the digital-interpersonal divide and foster collective socio-economic solidarity.

To provide a rigorous analytical foundation for examining the interactional dynamics within the agricultural supply chain, this study constructs a theoretical framework that synthesizes micro-level interpersonal communication theories with macro-level structural collaboration models. The primary engine of this framework is Social Exchange Theory, originally conceptualized by George Homans and further developed by John Thibaut and Harold Kelley (Corrêa & Gosling, 2021) (Cropanzano et al., 2017). This theory posits that human psychological interactions are governed by a continuous, subjective cost-benefit analysis where individuals evaluate their relationships based on rewards, costs, and the availability of viable alternatives (Ahmad et al., 2023) (Madison et al., 2025) (Thomas & Gupta, 2021). Within rural socioeconomic ecosystems, a farmer's decision to maintain or sever a communicative relationship with a middleman depends heavily on their *Comparison Level* (the standard of rewards they expect) and their *Comparison Level for Alternatives* (the perceived rewards from other available market channels). When applied to marginalized vegetable

farmers who lack formal institutional representation, Social Exchange Theory reveals that transactional submission is often a calculated mechanism to minimize the high risks of crop spoilage and immediate cash-flow deficits, even when the economic rewards are systematically suppressed by the gatekeeping buyer.

To fully capture how these power imbalances manifest during face-to-face market transactions, this framework integrates Communication Accommodation Theory (CAT), formulated by Howard Giles (Giles et al., 2023) (Bibi & Hamida, 2024) (Barlow et al., 2024). CAT explains the cognitive motivations and behavioral adjustments individuals employ to adjust their verbal and non-verbal communication behaviors during social encounters. In highly stratified, paternalistic environments, accommodation typically manifests as *convergence*, where the socioeconomically vulnerable party (the farmer) submissively adopts the rhetorical habitus, communication style, and linguistic demands of the dominant party (the middleman) to maintain social harmony and secure transactional certainty. This interactional asymmetry is deeply locked in place by severe price information gaps and low communication literacy, creating a defensive anxiety that strips the farmer of their persuasive competence. By utilizing CAT, this study moves beyond superficial economic indicators to dissect how linguistic submission and communicative apprehension are socially produced and reinforced within localized, face-to-face bargaining spaces.

Finally, to transition these micro-level interactional insights into a scalable model

for systemic empowerment, the framework deploys the Quad Helix Model pioneered by Elias Carayannis and David Campbell (Okonofua et al., 2020)(Carayannis & Campbell, 2022)(Carayannis et al., 2022) (Carayannis & Campbell, 2021). While traditional agricultural interventions rely heavily on a linear, state-driven or market-driven approach, the Quad Helix framework conceptualizes development as a multi-directional, dynamic knowledge and communication exchange system driven by four tightly interconnected institutional spheres: government/local bureaucrats, academia/researchers, civil society (the farming community), and market actors (middlemen and consumers). This study adapts the macro-level Quad Helix model by embedding it directly within the micro-level interpersonal matrix of rural development. By framing these four entities not merely as administrative categories but as interdependent interactional nodes, the framework theorizes how structural interventions, such as digital literacy mentoring by academics and regulatory backstopping by local authorities, can systematically inject verified information into the live transaction space. Consequently, this multidimensional framework enables the study to deduce how a hybrid digital-interpersonal communication pattern can fundamentally alter the cost-benefit equations of social exchange, liberate farmers from submissive accommodation, and ultimately transform a predatory, asymmetric supply chain into an equitable and collaborative ecosystem.

## LITERATURE REVIEW

Based on a search conducted using the *Publish or Perish* application with the

keyword filter “*Interpersonal Communication Patterns between Farmers, Distributors, and Consumers in Strengthening Farmers’ Bargaining Power*” within the period 2020–2025, five relevant journals/articles were identified:

1. “Marketing Patterns of Community-Grown Oranges in Besitang Subdistrict, Langkat Regency (2023)”. This study shows that interpersonal communication among farmers, distributors, and consumers influences the efficiency of agricultural product distribution. Communication models based on trust and direct interaction proved to be more effective than formal contract-based approaches. Cultural factors also play a role in shaping how information is exchanged within the supply chain (Ziaulhaq & TJ, 2023).
2. “Social Exchange Relations: Shallot Farmers and Middlemen in Nganjuk, East Java (2023)”. The findings indicate that farmers’ bargaining position in the supply chain is strongly affected by their economic dependence on middlemen. Farmers with their own capital tend to be stronger in price negotiations compared to those dependent on intermediaries. Social factors and trust-based networks are also important in sustaining farmer–middleman relationships (Yessica et al., 2023).
3. “Behavioral Intentions of Independent Palm Oil Farmers for Sustainable Business Development in Sambas Regency, West Kalimantan (2021)”. This study reveals that the implementation of digital technology in the agricultural supply chain can increase price transparency

and strengthen farmers' bargaining position. Through digital applications connecting farmers directly to the market, dependency on middlemen can be reduced, giving farmers greater control over product pricing (Vicki et al., 2021).

4. "Analysis of Middlemen–Farmer Relations in Rice Trading Activities in Mayang Village, Jember Regency (2024)". This research analyzes the social and economic relationships between farmers and middlemen. Findings indicate that although farmers depend on middlemen for market access and capital, trust mechanisms help maintain stability in these relationships. However, farmers' bargaining power remains weak due to limited access to broader price information (Ananda Ines Putri Winanti et al., 2024).
5. (By the Lead Researcher) "Strategies for Enhancing Brand Positioning for Products and Services: Community Outreach for the UMKM Komunitas Sukses Berjamaah Indonesia (KSBI) in South Jakarta (2025)". This article aims to build the business capacity of KSBI members in improving the brand positioning of their products and services. Brand positioning is a key factor in business success, especially for MSMEs seeking to differentiate themselves in competitive markets. This concept is also highly relevant for improving farmers' bargaining power (Hiswanti, Misnan, Alamsyah, Alfian Bachtiar, 2024)(Wilantara et al., 2025). In summary, this research demonstrates clear novelty. One of its main contributions

lies in adopting the Quad Helix approach. Most prior studies focus only on farmer–middleman communication or the use of digital technology in distribution systems, while this study integrates the involvement of strategic actors to develop a stronger and more sustainable communication system. Furthermore, this study emphasizes the integration of communication patterns with the reinforcement of farmers' bargaining power. Whereas previous research has largely discussed price transparency or distribution efficiency, the present study specifically designs communication strategies that can provide farmers with greater bargaining leverage in negotiations with distributors and markets.

Several earlier studies highlight the role of digital technology in improving transparency and reducing farmers' dependence on middlemen. This research, however, develops a hybrid approach: maintaining trust-based direct interactions while simultaneously leveraging digital technology to expand communication networks and marketing opportunities. In this framework, the term «hybrid» denotes a specialized socio-technical paradigm that synthesizes high-trust, face-to-face relational communication with the structural efficiency of computer-mediated communication. This hybridity directly redefines the praxeology of interpersonal communication by altering the power dynamics inherent in transactional dialogues. Rather than naively substituting human relationships with digital platforms, a deterministic shift that often collapses due to cultural resistance, the hybrid model infuses digital data streams into live, face-to-face negotiations. Theoretically grounded

in *Media Richness* and *Social Exchange* theories, this approach weaponizes objective digital market information to disrupt the information monopoly traditionally held by middlemen. Consequently, the farmer's interpersonal communication competence is structurally upgraded; they enter verbal negotiations emancipated from psychological apprehension, transforming what was once an asymmetric, submissive dialogue into an equitable, data-backed interactional exchange.

To critically evaluate and reconstruct the power dynamics within the agricultural supply chain, this study adopts the epistemological lens of Jürgen Habermas's Theory of Communicative Action and Public Sphere Theory. Habermas bifurcates societal interaction into the *lifeworld* (*Lebenswelt*), the realm of shared meanings, cultural norms, and communicative actions aimed at reaching mutual understanding (*Verständigung*), and the *system*, which is driven by functional, instrumental, and strategic actions (*erfolgsorientiertes Handeln*) steered by the media of money and power (McIvor, 2020)(Zakiyah, Raisa Agnia, Hani Sri handayani, 2024)(Puspita & Syobah, 2023) (Zakiyah, Raisa Agnia, Hani Sri handayani, 2024). Ideally, a democratic public sphere, or in this context, an egalitarian Quad Helix ecosystem, should operate under the condition of an *ideal speech situation*, where all human actors possess equal communicative competence, freedom from coercion, and mutual access to unmanipulated information to achieve a rational consensus.

## METHODS

The research approach is qualitative (Fadli, 2021)(Yusanto, 2020), employing

a case study method to analyze patterns of interpersonal communication within the Quad Helix model, which involves farmers, distributors, consumers, and local government in strengthening the bargaining position of vegetable farmers. The empirical execution of this study is systematically structured across three subsequent phases, beginning with a rigorous data collection stage that utilizes multiple qualitative instruments:

1. Communication barriers among farmers, distributors, and consumers. The main issue is not just technology or infrastructure, but the anxiety and passive speaking habits during negotiations. Because of this, farmers often accept prices set by others, even when they have market data.
2. Unequal communication networks. Farmers interact with middlemen very frequently, but instead of building trust, this only deepens their dependence. Middlemen control price information, leaving both farmers and consumers without real bargaining power.
3. Weak bargaining position of farmers. Attempts to form farmer groups or collective distribution often fail due to poor communication skills among farmers and external pressure from middlemen. As a result, farmers remain disadvantaged.

In conclusion, the current communication system does not empower farmers, it reinforces their dependence on middlemen. That's why a Quad Helix intervention (farmers, distributors, government, consumers) is urgently needed to create more balanced communication and strengthen farmers' bargaining power.

Participatory observation is conducted by directly observing the live interactions and communicative exchanges between vegetable farmers and other cross-sectoral actors within the Quad Helix network, specifically focusing on decoding the distinct communication forms used during critical price negotiations and product distribution channels. This observational data is deeply enriched through in-depth interviews conducted with fourteen purposively selected informants, comprising independent farmers, academics, village government representatives, and agribusiness middlemen, to comprehensively explore their perspectives on the existing interactional status quo while identifying the underlying communicative barriers and structural opportunities that directly dictate the farmers' bargaining power. To foster collaborative synthesis, Focus Group Discussions (FGD) are organized with representatives from each Quad Helix element to identify effective communication strategies and to systematically test their collective responses toward preliminary recommendations derived from the prior observation and interview findings. This field-based data is further supported by a meticulous documentation and archival study, which involves gathering regulatory and administrative texts related to regional agricultural policies, localized pricing regulations, and historical reports of communication activities between the farming community and external stakeholders.

Following the collection phase, the research transitions into a rigorous data analysis stage grounded in a systematic

qualitative framework. This stage initiates with data reduction, wherein the vast array of field transcripts, field notes, and archival documents is rigorously sorted, filtered, and organized into specific theoretical categories encompassing interpersonal communication patterns, verbal negotiation effectiveness, and the institutional roles played by each Quad Helix actor. The minimized data is then transitioned into the data display phase, which presents the refined empirical evidence through contextual matrices, thick descriptive narratives, and conceptual communication models designed to illuminate the intricate interactional mechanics of the field site. The analysis culminates in interpretation and conclusion drawing, where the synthesized meanings are juxtaposed against communication theory to construct a finalized, robust Quad Helix interpersonal communication model capable of structurally strengthening the bargaining power of vegetable farmers.

To guarantee the academic integrity and scientific rigor of these findings, the final phase implements a strict validation and data trustworthiness testing stage. Methodological validation is primarily achieved through data triangulation (Baidowi, 2022)(Bramasta & Jadmiko, 2023)(FAUZI, 2021), which continuously compares and cross-examines the empirical consistency between interview transcripts, direct participatory observations, and formal documentation to eliminate subjective researcher bias. This is complemented by member checking protocols, which involve returning the preliminary research interpretations to the original field participants to confirm total alignment

between academic data interpretation and the lived realities of the rural community. Finally, expert discussions are formally engaged with leading academics and seasoned practitioners in agribusiness and communication science to critically evaluate the theoretical validity, ethical robustness, and practical viability of the study's findings and recommended models.

## RESULTS AND DISCUSSION

The findings confirm that the prevailing interpersonal communication patterns among vegetable farmers in Cinangneng Village are still dominated by traditional relationships with middlemen (*tengkulak*), which structurally weaken their bargaining position. Interactions remain predominantly transactional and highly asymmetrical. Within the framework of Social Exchange Theory, farmers' weak position stems from their dependency on the capital and market networks controlled by middlemen. This dependency creates a power imbalance in the supply chain, placing farmers in a subordinated position, metaphorically described as being "pledged since the planting stage." Meanwhile, farmers' interactions with consumers are relatively limited to traditional markets, with very narrow price negotiation margins.

Other actors in the Quad Helix model demonstrate suboptimal roles:

1. Village Government (Local Bureaucrats), limited strategic contribution, evident in their minimal involvement in facilitating meetings between farmers and distributors/middlemen.
2. Academics/External Partners, engagement remains restricted to participation in forums or extension sessions, without evolving into problem-solving partnerships. Nevertheless, academics have begun introducing strategies for institutionalizing farmers' bargaining power.
3. Consumers, direct communication between farmers and consumers is still limited to traditional markets, with narrow room for negotiation, as consumer access is structurally mediated by middlemen's control.

## Communication Barriers and Recommended Model

To establish a scientifically valid communication framework, the formulation of the recommended model must be epistemologically anchored in classical interpersonal communication typologies rather than merely relying on isolated field observations. Historically, foundational interpersonal models, ranging from Shannon-Weaver's linear transmission to transactional paradigms such as Barnlund's Transactional Model and Rogers' Convergence Model, emphasize that communication is an ongoing, shifting process where meanings are co-created through feedback loops and affected by environmental noise. Barnlund particularly argues that interpersonal interaction is a dynamic negotiation where actors decode behavioral cues to reduce environmental uncertainty. When applied to agricultural sociology, however, these classical models often assume a flat, egalitarian playground where all actors possess equal communicative competence and

equal access to information channels. The empirical reality of rural ecosystems sharply disrupts this assumption, as transactional dialogues between marginalized farmers and gatekeeping middlemen are inherently distorted by structural power imbalances. Therefore, transitioning from these established paradigms toward a specialized model requires a rigorous inductive-deductive reasoning process that systematically synthesizes multiple scattered field descriptors into a unified, high-level theoretical abstraction.

The rigorous logical connection between the identified field barriers and the architecture of the proposed model is constructed by mapping three specific empirical descriptors onto corresponding dimensions of communication theory. The first descriptor, the persistent price information gap, represents a severe structural *environmental noise* that creates a state of communicative dependency, as defined by Media Dependency Theory. Because individual farmers lack objective data channels, they are forced to rely entirely on the middleman's verbal cues, which systematically starves them of transactional agency. This structural barrier directly feeds into the second descriptor, which is the farmers' low persuasive communication and submissive verbal negotiation skills. When analyzed through the lens of Communication Accommodation Theory, this lack of persuasion is not an inherent cognitive deficiency of the farmers, but rather a psychological adaptation or *convergent submission* triggered by a history of economic vulnerability and a defensive anxiety to secure immediate cash flow. This interpersonal submissiveness is further

locked in place by the third descriptor: the minimal utilization of digital media. Within the framework of Media Richness Theory, face-to-face transactions (\$FtF\$) that lack external data verification inevitably favor the dominant party who controls the market narrative. By connecting these three descriptors through the principle of interactional asymmetry, it becomes clear that the problem is not merely economic, but rather a systemic breakdown of the communicative feedback loop.

Consequent to this rigorous analytical synthesis, the study proposes the Hybrid Digital-Interpersonal Communication Model, a socio-technical framework designed specifically to reconstruct the power dynamics of agricultural dialogues. This model deviates from purely technological or purely linear communication interventions by structurally inserting a digital data buffer into the live, face-to-face interpersonal encounter. Structurally, the model injects verified, real-time market data directly into the farmer's communication matrix prior to negotiation, thereby neutralizing the middleman's monopoly as an information gatekeeper. By transforming the environment from an information vacuum into a data-rich space, the model effectively reduces the farmer's communication apprehension and elevates their persuasive competence during verbal transactions. Furthermore, this hybrid architecture scales up the interpersonal trust inherent in traditional rural networks by using digital communication channels to connect individual farmers into a larger, digitally coordinated collective. Ultimate integration of this model proves that the proposed hybrid paradigm is not

an arbitrary prescriptive invention, but a theoretically grounded, logically derived intervention that transforms a submissive, asymmetric transactional exchange into a balanced, collaborative, multi-directional Quad Helix dialogue.

The study identified three major communication barriers that undermine farmers' bargaining position:

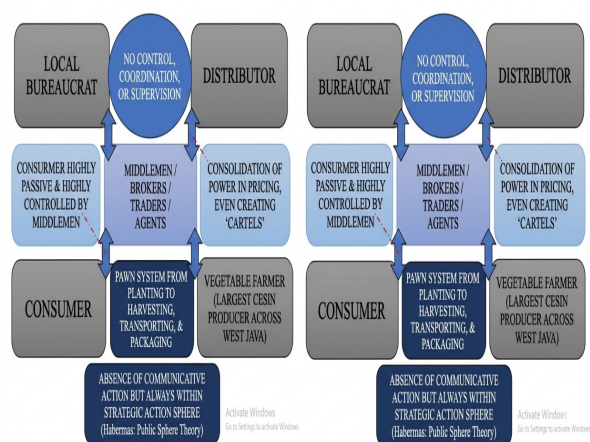
1. Price information gap between farmers and end markets.
2. Low persuasive communication and negotiation capacity among farmers in price-setting.
3. Minimal use of digital media for expanding distribution networks, lobbying, and negotiation.

Within the Quad Helix practice, stakeholders agreed on a pilot plan for collective distribution to reduce dependence on middlemen. However, implementation has stalled due to limited support from the local government. Based on these findings, the study recommends the development of a digital-interpersonal communication model. This model aims to enable farmers to expand their market networks, reduce reliance on middlemen, and build collective support for cooperative formation, drawing inspiration from successful practices in regions such as Cikupa.

### Model Design Formulation

Building upon the identified communication barriers (i.e., price information gaps, weak negotiation skills, and limited digital adoption), the study proposes a Digital-Interpersonal Communication Pattern as an extension of the Quad Helix model, with three key objectives:

1. Market Expansion, encouraging farmers to leverage digital media to reach wider markets and access real-time price information.
2. Dependency Reduction, through broader networks and better information access, farmers can gradually reduce reliance on middlemen.
3. Support Accumulation, this communication design seeks to mobilize support from Quad Helix actors (particularly government and academics) to facilitate cooperative establishment as a collective mechanism for strengthening bargaining power, drawing upon best practices identified in the FGD (e.g., Cikupa).



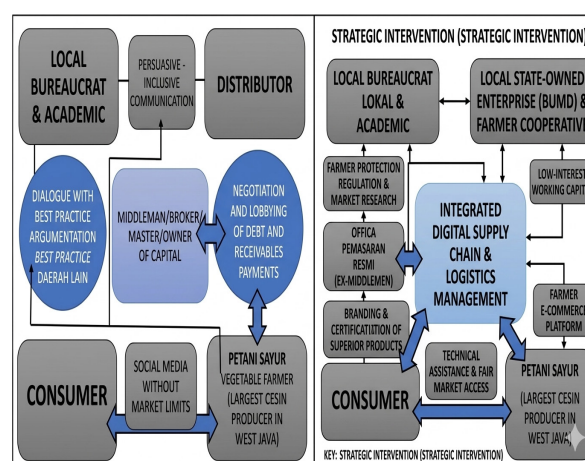
**Figure 1. Existing Integrated Quad Helix + Middlemen Interpersonal Communication Pattern**

Based on the empirical framework mapped in Figure 1. Existing Integrated Quad Helix + Middlemen Interpersonal Communication Pattern, the research uncovers a severe structural anomaly within the agricultural supply chain

ecosystem of the largest *cesin* (Chinese cabbage) producing region in West Java. Ideally, a Quad Helix framework should foster egalitarian collaboration among local bureaucrats, distributors, farmers, and consumers; however, this existing model is heavily intercepted and dominated by a central actor: the middlemen (comprising brokers, traders, and agents). At the foundational level of this supply chain, a coercive patron-client relationship is institutionalized through a pervasive pawn system, which systemically traps vegetable farmers from the initial planting phase through harvesting, transporting, and packaging. This economic subjugation at the hulu (upstream) sector forces the vegetable farmers into absolute structural dependency, stripping them of their economic sovereignty. Concurrently, at the downstream end, the consumer is rendered highly passive and remains tightly controlled by these middlemen, leaving them with zero price transparency or bargaining power.

This systemic distortion is further exacerbated by a total breakdown in governance at the regulatory level. The critical linkage between local bureaucrats and distributors is characterized by a complete absence of control, coordination, or supervision. This regulatory vacuum grants the middlemen an unchecked arena to engage in a consolidation of power in pricing with large-scale distributors, which ultimately manifests in the creation of exploitative cartels. From a communication science perspective, this entire ecosystem represents an absolute absence of communicative action, as the actors are perpetually confined within a

strategic action sphere, heavily mirroring the systemic distortions theorized in Jürgen Habermas's Public Sphere Theory. Rather than utilizing interpersonal communication to achieve a democratic consensus, mutual understanding, or fair-trade alignment, the middlemen systematically deploy their financial hegemony to censor the flow of information between the Quad Helix quadrants. Consequently, communication is strictly weaponized as an instrumental tool to manipulate market prices and lock in profit margins, proving that the structural impoverishment of farmers in this region is fundamentally a crisis of distorted communication and systemic linguistic colonization by capital forces.



**Figure 2. Communication Model Design for Strengthening Farmers' Bargaining Power.**

Source :Researcher's elaboration2025 ,

Figure 2 illustrates the communication ecosystem and actor relations within the vegetable distribution chain (particularly *cesin* farmers in West Java).

### Key Actors and Strategic Positions

In reconstructing the diagram of the vegetable distribution chain, the strategic

positions of the key actors must be critically analyzed through the precise instruments of interpersonal communication theory rather than mere economic routing. The vegetable farmers, as the primary producers of *caisim* in West Java, occupy the upstream core but suffer from a severely restricted communicative agency. When analyzing how these farmers process transactional messages, their information acceptance or rejection is deeply mediated by a low level of functional communication literacy and a pervasive cultural tradition of paternalistic deference. Rather than evaluating market data objectively, farmers tend to look at the middlemen's verbal cues through a psychological lens of defensive compliance, where traditional norms of *utang budi* (moral indebtedness) override rational economic calculations. This communicative submission is heavily exploited by the middlemen or brokers, who do not merely function as logistics coordinators, but act as highly centralized interpersonal gatekeepers. In the face-to-face interactional matrix, these middlemen weaponize their dominant social capital and asymmetric rhetorical strategies to reinforce debt-based dependencies, ensuring that any external price information received by the farmers from digital sources is systematically rejected or dismissed due to a deeply entrenched fear of breaking traditional relational pacts.

Moving further downstream, the distributors and consumers represent interactional nodes that are increasingly disrupting these traditional, rigid interpersonal channels. While traditional distributors historically synchronized their communication exclusively with

middlemen, the rapid evolution of digital platforms allows end consumers to transcend traditional market boundaries, creating an urgent need for computer-mediated interpersonal channels. This structural shift introduces a direct tension between the old, face-to-face relational traditions of the village and the transparent, high-efficiency communicative demands of modern urban markets. To bridge this structural divide, the local bureaucrats and academics must evolve from passive administrative entities into active interpersonal facilitators. Their strategic role within this Quad Helix ecosystem is to design targeted communication literacy interventions that reshape the farmers' interactional habitus. By providing institutional advocacy and validating localized best practices, these supporting actors help farmers transition from a state of communicative apprehension to interpersonal competence. Consequently, this multi-actor relational analysis demonstrates that strengthening the farmers' bargaining power is not a simple matter of changing buyers, but a profound transformation in how individual human actors decode, negotiate, and internalize transactional messages within their immediate social ecosystem.

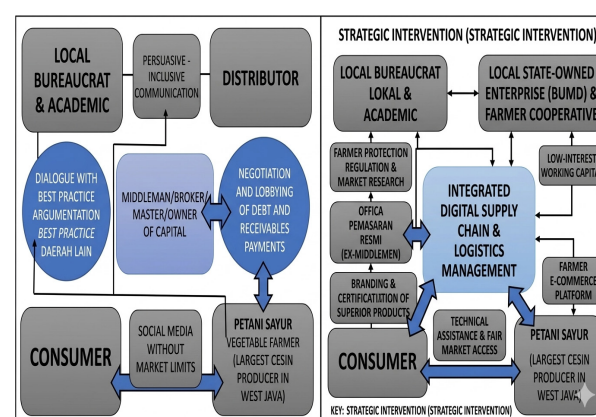
### Interaction and Communication Patterns

Based on the analytical framework mapped in Figure 2. Communication Model Design for Strengthening Farmers' Bargaining Power, the research uncovers a transitional paradigm in the interaction and communication patterns within the vegetable agribusiness supply chain. Within this ecosystem, the Farmer–Middleman dynamic represents a primary relation

centered strictly on negotiation and debt repayment, reflecting the farmers' intense structural dependence on the middleman's capital. Concurrently, the Middleman–Distributor linkage governs the core transactions and negotiations over product flows from upstream to downstream sectors. A critical shift is observed in the Middleman–Consumer interface, which has become increasingly direct via social media, allowing consumers to actively influence market narratives and exert structural pressure. To counterbalance these entrenched dynamics, the involvement of Bureaucrats & Academics introduces two vital interventions: first, they engage with middlemen and farmers through dialogues introducing best practices from other regions to foster knowledge transfer and policy intervention; second, they cultivate a persuasive-inclusive communication model with distributors and consumers to foster mutual understanding among all stakeholders.

These evolving communication constellations yield profound Strategic Implications for the political economy of agribusiness. Despite these emerging channels, an Asymmetrical Dependency persists, as vegetable farmers remain heavily dependent on middlemen for both working capital and conventional distribution networks, keeping their bargaining power structurally weak. This reinforces the positioning of Middlemen as Power Hubs, underscoring their enduring role as central connectors and integrators between the upstream farmers and the downstream distributors and consumers. However, the rise of Social Media as a Disruptor is actively challenging this

absolute dominance, emerging as a new channel that allows consumers and producers to bypass traditional barriers and influence markets directly. Within this tension, Bureaucrats & Academics act as Equalizers, where their roles involve facilitating best practice transfer and promoting persuasive-inclusive communication to effectively balance these unequal relations, advancing the entire ecosystem toward a fairer and more sustainable system. Ultimately, this model illuminates the vivid tension between the old structure, which remains heavily middlemen-dominated, and the emerging structure driven by digital connectivity and academic-policy intervention, capturing the evolving forces that will shape the future of farmers' bargaining power.



**Figure 3. Strategic Intervention**

Based on the structural configuration illustrated in figure 3, titled Strategic Intervention, the research conceptualizes a radical paradigm shift from an exploitative marketplace to an egalitarian, transparent, and digitally-driven agribusiness ecosystem. Within this reconstructed framework, the collaborative nexus between Local Bureaucrats & Academics and the

Local State-Owned Enterprise (BUMD) & Farmer Cooperatives establishes an institutionalized channel dedicated to formulating farmer protection regulations and market research. This regulatory alignment provides a robust legal shield to neutralize predatory middleman activities while equipping producers with vital data. To mitigate socio-economic resistance, the framework facilitates a structural transformation of former intermediaries into an Official Marketing Office (Ex-Middlemen), shifting interpersonal transactions from dark informal networks into formal communication channels secured by the branding and certification of superior products. Central to this entire ecosystem is the implementation of an Integrated Digital Supply Chain & Logistics Management system, which actively dismantles the traditional dependency structures by securing low-interest working capital to eradicate the pawn system, while simultaneously integrating a dedicated farmer e-commerce platform. Consequently, the newly established interface between the Vegetable Farmer and the Consumer is directly bridged by technical assistance and fair market access, transforming farmers from passive market casualties into empowered socio-economic actors who maintain unmediated dialogic connectivity with the end consumers.

These structural interventions yield profound Strategic Implications that fundamentally reshape the political economy of the agricultural supply chain. First, the transition of financial sourcing from systemic *ijon* debts to institutionalized low-interest working capital facilitates comprehensive structural empowerment,

completely restoring the economic sovereignty and price-determination autonomy of the vegetable farmers in West Java. Second, the operationalization of the farmer e-commerce platform and integrated logistics management triggers a democratization of the marketplace, utilizing digital disintermediation to effectively dissolve the information asymmetry previously weaponized by pricing cartels. Finally, this model successfully bridges the gap between critical theory and empirical practice by establishing an institutionalized space for Habermasian communicative action; the manipulative, instrumental communications historically deployed by predatory brokers are systematically replaced by egalitarian, inclusive, and transparent dialogues. By balancing the historically skewed power relations through institutional synergy and digital connectivity, this strategic intervention establishes a highly reproducible blueprint for a fairer, more resilient, and sustainable agricultural communication model.

## CONCLUSION

The research confirms that the prevailing interpersonal communication patterns within the vegetable supply chain, specifically among *cesin* (Chinese cabbage) farmers in Cinangneng Village, West Java, remain highly asymmetrical and thoroughly dominated by middlemen (*tengkulak*). This oppressive patron-client relationship is locked in place through a pervasive pawn system (*ijon*) that ensnares farmers from the initial planting phase up to packaging, resulting in a profound structural and financial dependency that suffocates the farmers' bargaining power.

From a communication science perspective, this conventional ecosystem reflects an absolute absence of communicative action and a systematic colonization of the public sphere by a strategic action sphere. Middlemen thoroughly exploit information asymmetry and a cultural tradition of paternalistic deference (*utang-budi*) as manipulative instruments to dictate market prices, censor cross-sectoral information flows, and build cartel networks alongside large-scale distributors, while the remaining Quad Helix actors, namely the village government, academics, and consumers, have suboptimally executed their strategic roles.

To break this cycle of structural impoverishment, the study identifies three foundational core communication barriers: first, a severe price information gap characterized by structural environmental noise that induces a state of communicative dependency due to the complete lack of objective real-time market data channels; second, a critically low capacity for persuasive communication, where the farmers' verbal submissiveness during price negotiations is identified as a psychological adaptation or convergent submission triggered by chronic economic vulnerability to secure immediate cash flow; and third, a minimal adoption of digital media, where traditional, face-to-face transactions that completely lack external data verification inherently favor the gatekeeping middlemen who control the market narrative.

Consequent to these findings, the study formulates the Hybrid Digital-Interpersonal Communication Model as

an extension of the Quad Helix framework. This socio-technical framework structurally inserts a digital data buffer directly into live, face-to-face interpersonal encounters before negotiation; by providing unmediated access to real-time market price data and integrated e-commerce platforms, the model effectively reduces the farmers' communication apprehension, elevates their persuasive competence, and actively disrupts the middleman's monopoly as an information gatekeeper. Ultimately, the implementation of this reconstructed paradigm through a blueprint of Strategic Intervention offers a sustainable pathway for agribusiness restructuring across four operational pillars: first, establishing regulative stakeholder synergy via active collaboration among Local Bureaucrats, Academics, BUMDs, and Farmer Cooperatives to draft robust farmer protection regulations and market research; second, driving market disintermediation and role formalization by structurally transforming conventional middlemen into an Official Marketing Office to secure transparent transactions backed by product branding and superior product certification; third, executing financial restructurings to permanently eradicate the predatory pawn system by securing low-interest working capital; and fourth, reclaiming market democratization and communicative emancipation to fully restore economic sovereignty and price-determination autonomy to the farmers by transforming manipulative, instrumental exchanges into an egalitarian, inclusive, and transparent Habermasian dialogue between producers and consumers.

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