



Dual Role of Female Tin Panners at Pemali Village in Family Communication Relations

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Abstract

This study aims to analyze the dual roles of informal female tin miners (“pelimbang”) in Pemali Village, Bangka Regency, within the dynamics of family relationships. The main issue addressed is how women manage the burden of working in the informal mining sector while simultaneously fulfilling domestic responsibilities in a strongly patriarchal cultural context. This research employed a qualitative exploratory case study approach, using in-depth interviews, observations, and documentation involving female miners and village officials. The key findings reveal that female “pelimbang” utilize interpersonal communication strategies, such as gradual self-disclosure and open discussion, to negotiate their roles within the family. The Social Penetration Theory (SPT) explains the depth of interpersonal relationships developed through layered disclosure, while the Uncertainty Reduction Theory (URT) illustrates how these women reduce domestic tensions arising from unclear role boundaries. The study concludes that interpersonal communication plays a crucial role in maintaining family stability, despite the economic and cultural pressures these women face. These findings contribute theoretically to family communication studies and offer practical implications for policies that support the empowerment of women in the informal workforce.

Keywords: interpersonal communication, dual roles, female tin miners, SPT, URT

Introduction

The Bangka Belitung Islands Province has long been known as one of the most important tin mining centers in Southeast Asia, dating back to the 4th century and continuing through the colonial era (Anastasia, 2019). This long-standing legacy of resource exploitation has shaped the region’s economic and social structure, including the emergence of informal labor groups such as pelimbang—workers who search for residual tin sand from mining waste. In recent decades, the role of women in this group has become increasingly prominent, especially due to the high household economic dependence on the informal mining sector.

The phenomenon of unconventional or community mining (known locally as TI or tambang inkonvensional) grew rapidly after the 1998 Reformation era, when PT Timah Tbk handed over mining areas deemed economically unviable to local communities. TI activities then expanded to thousands of sites, often without official permits and beyond state control (Jukandi, 2009). The people of Bangka Belitung use simple tools such as pans, woks, plastic carpets, and buckets to extract leftover tin from tailings. For many women, working as a pelimbang is not only a form of economic participation but also the only viable option to support their families amid limited access to education and formal employment (Sulista, 2019; Harahap, 2022).

A pelimbang's income depends heavily on daily tin ore collection. Under normal conditions, they may gather between 1–3 kg of tin per day, with local prices ranging from IDR 100,000 to 130,000 per kg—equivalent to IDR 100,000–300,000 per day (Multatuli, 2022; Dahnur et al., 2022). This income is significantly higher than that of pepper farmers (IDR 592,536/ha/month) or rubber farmers (IDR 122,111/month) (Indra, 2013). However, fluctuations in global tin prices, smelter closures, and the increasing scarcity of high-quality tin sand have drastically reduced incomes. A senior pelimbang in Pemali Village stated that she can now only collect a maximum of three kilograms of tin per week, earning around IDR 360,000 (Interview with Ibu Alis, May 5, 2025).

Beyond economic instability, this work poses serious health and environmental risks. Exposure to heavy metals such as mercury, lead, arsenic, and cadmium, as well as radioactive minerals like monazite and zircon, can cause neurological disorders, kidney failure, cancer, and lung diseases (Mongabay, 2020; Mongabay, 2022). A study in Central Bangka found a hypertension prevalence of 23.49% due to poor lifestyle habits among TI workers (Setyarini, 2019), while abandoned mining pits have become breeding grounds for malaria-carrying mosquitoes (Efrizal, 2020).

Pemali Village, located in Pemali Subdistrict, Bangka Regency, is a highly relevant case for exploring this phenomenon in depth. According to the Pemali Village Profile (2024), of the 1,399 households, more than 50% work as mining laborers, including female pelimbang. The area's rich tin deposits and the community's low educational attainment have made this activity a primary livelihood. Most residents have only completed high school (51.47% of men and 50.21% of women), while nearly 40% of women are housewives without formal employment.

The dual role of pelimbang women is clearly evident in their daily lives. They work up to eight hours a day in open-pit mines without proper protection, while also shouldering full domestic responsibilities such as child-rearing and household chores. This reality reflects a double burden arising from structural inequality and patriarchal cultural norms. Local culture still positions men as the head of the household and the main breadwinner, while women are expected to care for the home even when contributing financially (Barus, 2015; Bangka's P3AKB Office, 2019).

The tension between cultural norms and economic reality creates emotional and social stress within families. Data from the Bangka Belitung Central Bureau of Statistics (2024) show

that out of 972 divorce cases in Bangka Regency, 75.08% were filed by women, mostly for economic reasons and household disharmony (Antaranews, 2023). The Pemali Village Government also recorded a 30% increase in divorce cases by the end of 2024, with most being initiated by women due to economic pressure and role conflict (Interview with Amri Subekti, 2025).

This situation illustrates that *pelimbang* women are not only exposed to economic exploitation and health risks but also face role conflicts within the family that threaten emotional well-being and interpersonal relationships. In this context, it is essential to understand how these women negotiate their dual roles through interpersonal communication with their spouses and other family members.

This study adopts an interpersonal communication theory framework, particularly Social Penetration Theory (SPT) and Uncertainty Reduction Theory (URT). SPT posits that interpersonal closeness develops through gradual self-disclosure, progressing from superficial to deeply emotional aspects (Carpenter & Greene, 2015). In the context of *pelimbang* women, self-disclosure strategies are used to foster empathy and family support for their dual roles. Meanwhile, URT emphasizes how individuals reduce uncertainty in social relationships through active and passive communication strategies (West & Turner, 2008), such as open discussions, observation, and clarification of domestic roles with their partners.

These two theories are key to analyzing how *pelimbang* women manage household tensions, build mutual understanding, and create family relationship structures that are more adaptive to economic pressures. Thus, this study not only contributes to academic understanding of family communication and gender in mining communities but also offers significant policy implications for empowering women informal workers in extractive areas.

Literature Review

Interpersonal communication is a fundamental aspect in maintaining the stability of family relationships, especially when individuals are faced with the challenges of a double burden, as experienced by *pelimbang* (tin-washing) women in Pemali Village. In this context, the theoretical framework used in this study includes the Social Penetration Theory (SPT), the Uncertainty Reduction Theory (URT), and the Family Communication Patterns Theory (FCP).

The Social Penetration Theory (SPT), developed by Altman and Taylor (1973), explains that interpersonal relationships develop over time through a gradual process of self-disclosure, beginning with surface-level information and progressing toward deeper, more personal topics. The theory posits that the depth and breadth of communication are key indicators of emotional closeness between individuals (Altman & Taylor, 1973; West & Turner, 2008). This theory is relevant in analyzing how *pelimbang* women manage interpersonal relationships within their families by sharing emotions, thoughts, and pressures associated with their double burden. Openness in such relationships is seen as a critical tool for building intimacy and trust (Carpenter & Greene, 2015).

The Uncertainty Reduction Theory (URT) by Berger and Calabrese (1975) focuses on how individuals attempt to reduce uncertainty in initial interactions through communication strategies such as passive observation, active questioning, and interactive engagement. Uncertainty within family relationships can lead to anxiety and tension, particularly for women under economic, social, and psychological pressure due to their multiple roles. This theory helps explain how *pelembang* women use communication to build predictability and manage conflict in their domestic relationships (Berger & Calabrese, 1975; Anazuhriah, 2019).

Furthermore, the Family Communication Patterns Theory (FCP), developed by Koerner and Fitzpatrick (as cited in Littlejohn et al., 2017), is used to classify family communication patterns based on two orientations: conversation orientation and conformity orientation. Family types such as consensual, pluralistic, protective, and *laissez-faire* reflect how family members share information and accept authority. For instance, *pelembang* women in consensual families may experience tension between their desire for open communication and the expectation to submit to male authority. Conversely, in pluralistic families, women may have more freedom to express opinions and participate in decision-making processes.

Previous research supports the relevance of these theories. Sari and Wijaya (2022) demonstrated that gradual self-disclosure enhances the development of romantic relationships via social media. Faidlatul Habibah et al. (2021) also emphasized the importance of self-disclosure in forming intimate connections in online dating applications. In the context of uncertainty reduction, Fatwasuci and Irwansyah (2021) confirmed that URT remains applicable in both online and face-to-face interactions, while Azzahra and Yuliarti (2024) found that passive strategies on platforms such as Instagram facilitated self-disclosure among young adults.

Studies focusing on women with double burdens, such as those by Hidayati (2015), Kusumawati (2012), and Zanolvayah and Harahap (2024), emphasize that working women continue to face domestic responsibilities, which lead to psychological stress and unequal power dynamics within households. These studies highlight the significance of healthy interpersonal communication to support women in managing both public and private roles. In this context, FCP provides valuable insight into how communication structures within families can either enable or inhibit female agency.

Taken together, these studies suggest that while self-disclosure and uncertainty reduction are essential mechanisms for fostering emotional bonding and relational stability, their application in gendered, high-stress environments—such as rural communities and informal labor sectors—remains underexplored. Theories such as SPT, URT, and FCP have been widely applied in studies of urban, middle-class families, digital dating, and professional communication settings, often within Western or modern urban contexts.

This study addresses a significant research gap by focusing on *pelembang* women working in artisanal tin mining in a rural Indonesian village. These women operate in informal, economically unstable, and socially conservative settings—conditions that differ markedly from the contexts typically examined in communication research. By analyzing how these women manage emotional intimacy, conflict, and decision-making within family relationships

through interpersonal communication, this study contributes new insights into how communication strategies are adapted to contexts of gendered labor, rural marginality, and cultural patriarchy.

Research Method

This study employs a qualitative approach with an exploratory case study method to gain an in-depth understanding of the dynamics of interpersonal communication among women “pelimbang” (traditional tin miners) in unconventional tin mining within family relationships. The research was conducted in Pemali Village, Pemali Subdistrict, Bangka Regency, which is one of the main areas of community-based tin mining in the Bangka Belitung Islands Province. Research informants were selected purposively and consisted of women “pelimbang” who are actively working in the informal mining sector, their husbands, and local village officials. Data collection techniques included in-depth interviews, participant observation, and field documentation. The data were analyzed thematically using a qualitative content analysis approach, employing Social Penetration Theory (SPT) and Uncertainty Reduction Theory (URT) as analytical tools to examine communication dynamics, processes of self-disclosure, and strategies for managing tension in family relationships.

Result and Discussion

This study aims to understand how women “pelimbang” (tin balancers) in Pemali Village build and navigate interpersonal communication within their families amid the dual burdens of being breadwinners and household managers. The findings are analyzed using the frameworks of Social Penetration Theory (SPT) and Uncertainty Reduction Theory (URT) to examine the dynamics of self-disclosure, emotional depth of relationships, and communication strategies used to handle tension and uncertainty in family relations.

1. Interpersonal Communication within the Framework of Social Penetration Theory (SPT)

SPT explains that interpersonal relationships develop gradually through a process of self-disclosure (Altman & Taylor, 1973). Among pelimbang women, the progression from superficial communication to emotional depth reveals both development and failure of relationships influenced by cultural, psychological, and structural contexts.

a. Orientation Stage: Practical Surface Communication

At the initial stage, communication between pelimbang women and their partners or families is mostly instrumental—consisting of practical conversations related to household needs or work. Emotional openness tends to be avoided due to fear of being perceived as weak or failing in domestic roles. A strong patriarchal culture shapes a “protective” communication pattern, characterized by high conformity but low conversation (Littlejohn et al., 2017), so open discussions rarely occur. The heavy physical burden and emotional exhaustion from balancing work for more than eight hours a day also limit emotional energy reserves, causing emotional conversations to often stop before reaching depth.

b. Affective Exploration Stage: Limited Efforts to Express Feelings

Some women try to share feelings of fatigue or stress with their partners, but often receive unsupportive responses. This hinders the creation of emotional intimacy that should develop at this stage. The failure of reciprocity causes communication to stop at a functional level. As a result, some women seek emotional closeness with their children or empathetic fellow *pelimbang* friends.

c. Affective Exchange Stage: Shifting Intimacy to Alternative Relationships

At this stage, openness begins to touch on emotional and personal aspects. However, when the core partner is unresponsive or uncommunicative, *pelimbang* women transfer intimacy to other channels—children, coworkers, or relatives. This strategy is chosen as a form of coping communication, to maintain psychological balance even when the core relationship is unsupportive. For example, Mrs. Susi shares stories and receives emotional support more often from her child than from her husband. This reinforces criticism of SPT that openness does not always develop within the core relationship, and social contexts such as gender inequality or economic burdens can divert intimacy channels (Griffin et al., 2015).

d. Stable Stage: Emotional and Supportive Communication

Only a small number of couples, such as Mrs. Zubaidah and her husband, demonstrate communication that has reached the stable stage. They have established routines of casual talks before sleep, share emotionally, and listen to each other with empathy. In this context, intimacy is built not only through communication frequency but also through quality of openness and mutual understanding. Relationships like this become a source of psychological resilience in facing everyday life pressures.

This section presents a visualization of the interpersonal communication flow of *pelimbang* women with their families, as analyzed based on the main stages in Social Penetration Theory (SPT), namely the orientation stage, affective exploration stage, affective exchange stage, and stable stage.

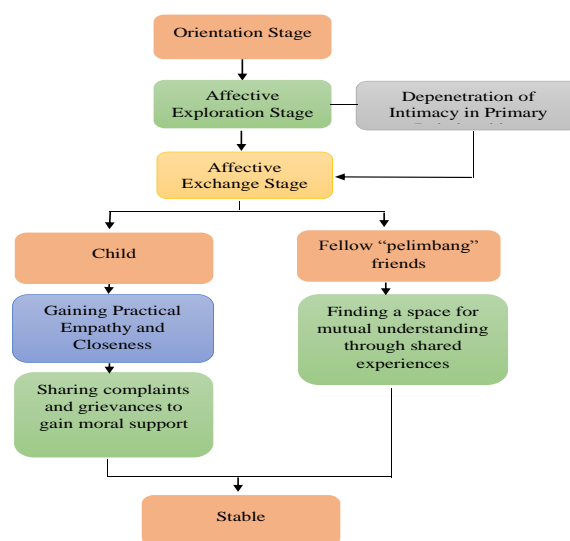


Figure 1. Branching Model of Interpersonal Communication Based on SPT for “Pelimbang” Tin Women

2. Communication Strategies of “Pelimbang” Women in Reducing Uncertainty (URT)

Uncertainty Reduction Theory (URT) explains how individuals use communication to manage uncertainty in social relationships (Berger & Calabrese, 1975). In the context of “pelimbang” women, communication strategies are employed to cope with the pressures of dual roles and uncertainty in family relationships.

a. Verbal Communication

According to URT, verbal communication is the primary tool to reduce uncertainty, especially in the early stages of interaction (Berger & Calabrese, 1975). Findings show that “pelimbang” women use verbal communication both to share emotional burdens and to build relationship predictability. In positive cases such as Mrs. Zubaidah, warm communication before bedtime reduces cognitive and behavioral uncertainty. However, in cases like Mrs. Linda and Mrs. Anisa, verbal communication triggers conflict rather than closeness. This supports Brashers’ (2001) critique that URT is not always linear. In protective family contexts (Littlejohn et al., 2017), verbal communication tends to be one-way rather than open dialogue, resulting in low effectiveness.

b. Nonverbal Affiliation Expressions

When verbal communication is hindered, nonverbal expressions become an important alternative to manage emotions and maintain relationships. Findings indicate that actions such as buying cigarettes, doing household chores without being asked, and physical presence serve as effective nonverbal affection. In cases like Mrs. Yuliana and Mr. Basnan, intentional silence, practical help, or emotional control act as emotional communication tools that strengthen relational cohesion. In the “pelimbang” family context, nonverbal expressions function as a safeguard strategy to maintain household stability.

c. Information Seeking

Information seeking strategies are carried out passively, actively, or interactively (West & Turner, 2008). Mrs. Zubaidah communicates directly with her husband, while Mrs. Susi chooses family moments to disclose problems to her child. Conversely, when the spouse is unresponsive, women redirect information seeking to the workplace or close friends. This shows that the success of information seeking heavily depends on the receiver’s readiness to open healthy communication channels.

d. Intimacy

Intimacy in family relationships is achieved when communication occurs in a safe and empathetic atmosphere. Relationships like that of Mrs. Zubaidah and Mr. Basnan show strong intimacy through routines of emotional communication. Conversely, intimacy also forms between Mrs. Susi and her child due to the failure of the spousal relationship to provide space for openness. This indicates that intimacy can shift from the partner to other family members as a form of psychological adaptation.

e. Reciprocity

Reciprocity is a crucial element in URT, where positively responded openness creates a healthy communication cycle. In couples like Mrs. Zubaidah and her husband, reciprocity appears as mutual support. However, in cases like Mrs. Anisa and Mrs. Yuliana, openness is not reciprocated, leading them to withdraw and seek emotional support through children or friends. This phenomenon supports the view that reciprocity is a two-way process requiring emotional readiness from both parties.

f. Similarity

Similarity in values, experiences, and life views facilitates communication and strengthens emotional closeness. Couples like Mr. Basnan and Mrs. Zubaidah demonstrate that shared perceptions about life enhance intimacy. The mother-child relationship is also influenced by shared life burdens and work experiences. When similarity is absent at home, “pelimbang” women seek and build communicative relationships in more empathetic social environments.

g. Liking

Liking emerges from positive communication experiences and mutual respect. In the case of Mrs. Zubaidah and Mr. Basnan, liking is created through high empathy and responsiveness. The mother-child relationship, such as between Mrs. Susi and Riswandi, also shows strong liking through small but meaningful acts. Conversely, when the core partner shows little attention or positive response, liking shifts to other social circles like children or fellow “pelimbang” friends. This shows that liking results from interactions that foster a sense of being valued and cared for.

This flowchart illustrates how the ideal communication process occurs to reduce uncertainty, while also showing adaptive pathways when communication within the core couple fails, by redirecting emotional needs to children or coworkers. This visualization helps understand the adaptive dynamics of “pelimbang” women in maintaining psychosocial balance amid the pressures of their dual roles.

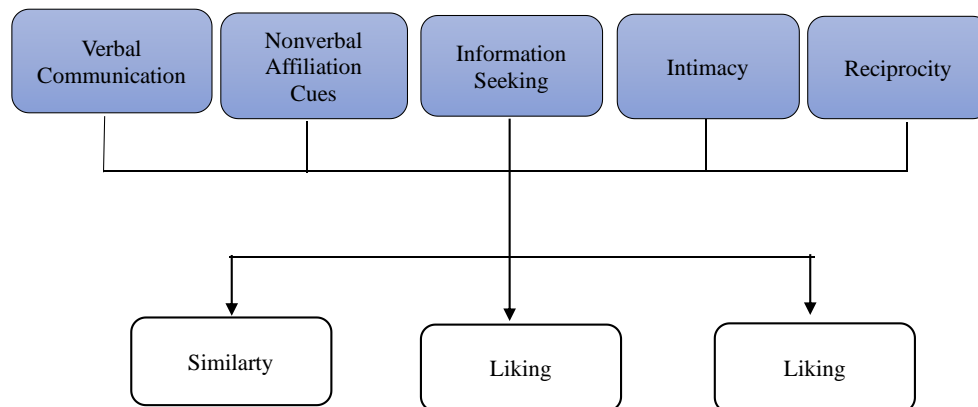


Figure 2. Flowchart of Interpersonal Communication Dynamics of “Pelimbang” Women Based on Uncertainty Reduction Theory (URT)

This study confirms that Social Penetration Theory (SPT) and Uncertainty Reduction Theory (URT) remain relevant in explaining the dynamics of interpersonal communication; however, they require conceptual adjustments when applied to non-Western cultural contexts with strong gender norms. Therefore, this research proposes a new conceptual model called the Informal Women Workers’ Interpersonal Communication Model (MP3I). This model integrates the principles of self-disclosure and uncertainty reduction within an adaptive, responsive, and contextual relational framework, reflecting the social realities of informal women workers in the extractive sector. Below is the visualization of the Informal Women Workers’ Interpersonal Communication Model (MP3I):

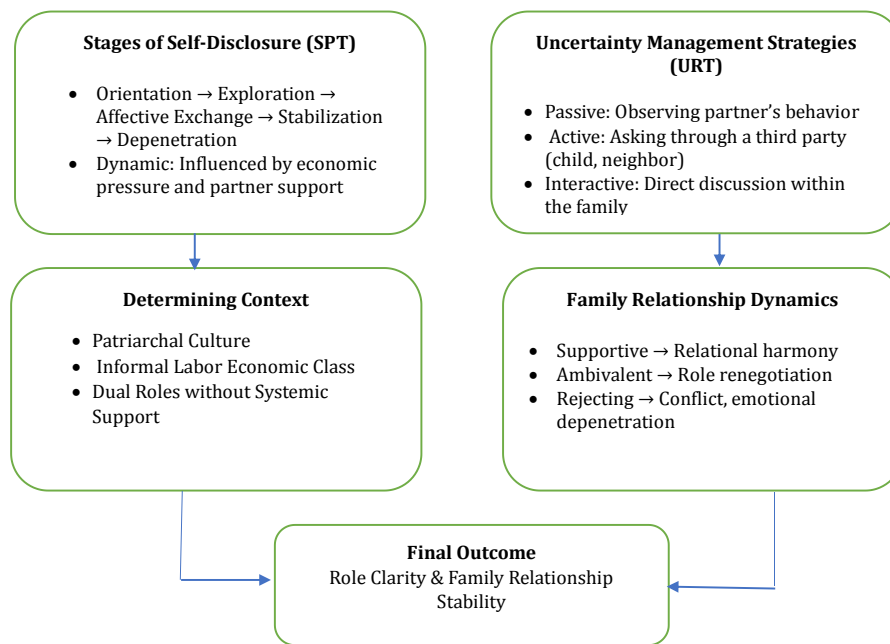


Figure 3. Informal Women Workers' Interpersonal Communication Model (MP3I)

This model is the result of an integration between Social Penetration Theory (SPT) and Uncertainty Reduction Theory (URT) within the context of interpersonal communication among informal women workers, specifically the tin “pelimbang” in Pemali Village. The MP3I illustrates how interpersonal communication is formed, modified, and directed within a social structure characterized by economic pressures, dual role burdens, and patriarchal norms.

1. Stages of Self-Disclosure (SPT)

Referring to the classic stages by Altman & Taylor (1973), but influenced by the socio-economic context:

- a. Orientation: communication is very limited and cautious.
- b. Exploration: openness begins to grow within safe boundaries.
- c. Affect: emotional attachment starts to form, often with children or peers.
- d. Stabilization: occurs in relationships that already understand and support each other.
- e. Depenetration: relationship decline occurs when communication reaches a deadlock.

This process is not linear but dynamic, influenced by:

- f. Economic pressure (dependence on mining, unstable income)
- g. Availability of emotional support from the partner

2. Uncertainty Management Strategies (URT)

Based on Berger & Calabrese (1975), tin “pelimbang” women use three main strategies to manage uncertainty in family relationships:

- a. Passive: quietly observing the partner's behavior.
- b. Active: seeking information through children, neighbors, or third parties.
- c. Interactive: direct discussion, although often limited or avoided.

These strategies are used to adjust communication, avoid conflict, or find safe ways to express feelings and needs.

3. Determining Context

Interpersonal communication of tin “pelimbang” women cannot be separated from three main structural factors:

- a. Patriarchal culture: positioning women as subordinates and domestic caretakers, despite working.
- b. Informal labor economic class: low access to education, job protection, and financial stability.
- c. Dual roles without systemic support: managing family and working without formal assistance or social policies.

This context acts as a social filter shaping how they build, avoid, or shift communication.

4. Family Relationship Dynamics

The partner’s and family’s response to women’s communication forms three main patterns:

- a. Supportive: partners are open and empathetic → creating harmony.
- b. Ambivalent: partners neither reject nor fully engage → requiring role renegotiation.
- c. Rejecting: partners refuse openness → resulting in conflict and emotional depenetration.

These patterns determine the continuation or deterioration of communication in family relationships.

5. Final Output

- a. Role Clarity: occurs when communication is open and responsive.
- b. Family Relationship Stability: formed through maintained emotional closeness and shared ability to face economic and social burdens.

Conclusion

This study examines how tin “pelimbang” women in Pemali Village, Bangka Regency, build and maintain interpersonal communication within the family amid the dual pressures of being informal breadwinners and household managers. Using the Social Penetration Theory (SPT) and Uncertainty Reduction Theory (URT) approaches, this research reveals the adaptive communication strategies employed by these women to manage emotional tension, foster closeness, and maintain relationship stability within patriarchal family structures that are socioeconomically vulnerable.

The results show that the interpersonal communication of pelimbang women develops through the layered stages of SPT, yet only a small portion reaches a stable level of intimacy. Most relationships experience limited openness, emotional withdrawal, or the shifting of intimacy toward children or peers. Verbal communication serves as the primary tool for reducing uncertainty, but it is often ineffective due to minimal empathetic responses from partners. In this context, women rely more on nonverbal expressions, information seeking, and reciprocal actions as safer and more functional communication strategies.

Thus, this study confirms that the success of interpersonal communication within the family is not solely determined by the frequency or openness of communication, but by a relational climate that is safe, strong emotional reciprocity, and the ability to adapt to the norms and structural pressures faced by informal working women.

Declaration of Conflicting Interest

The author(s) declare that there is no conflict of interest regarding the publication of this article.

Ethical Approval

This study did not require formal ethical approval as it did not involve any medical, clinical, or experimental procedures, and it was conducted in accordance with the ethical principles of qualitative research. All participants were informed about the purpose of the study, provided voluntary consent, and were assured of anonymity and confidentiality throughout the research process.

Informed Consent

All participants in this study provided informed consent prior to their involvement. They were given clear and comprehensive information regarding the purpose of the research, the voluntary nature of their participation, their right to withdraw at any time without consequence, and the measures taken to ensure confidentiality and anonymity. Participants agreed to have their responses used for academic purposes only.

References

- Altman, I., & Taylor, D. A. (1973). *Social Penetration: The Development of Interpersonal Relationships*. Holt, Rinehart & Winston.
- Anastasia, L. (2019). The history of tin mining in Bangka Belitung: From the colonial era to the reform period. *Journal of National Civilization History*, 3(2), 145–164.
- Anazuhriah. (2019). Reducing uncertainty through interpersonal communication among adolescents in orphanages. *Common Journal*, 3(1), 34.
- Antara News. (2023, November 29). Divorce cases in Babel reach 29,462. Antara News Bangka Belitung. <https://babel.antaranews.com/berita/381204/perceraian-di-babel-capai-29462-kasus>
- Azzahra, S. N., & Yuliarti, A. (n.d.). Uncertainty reduction and passive strategies in self-disclosure when exploring the beginning of a relationship on Instagram: A case study of late teenagers (18–24 years old) in Banjarmasin. *Jourmics: Journal of Media and Communication Studies*, 2(2).
- Bangka Belitung Central Statistics Agency. (2024). *Bangka Belitung in Figures 2024*.
- Barus, A. (2015). The role of women in village development: A case study in Sungai Batu Village, Sosa Subdistrict, North Padang Lawas Regency. *Sociology Journal*, 11(1), 1–14.

- Carpenter, A., & Greene, K. (2015). Social Penetration Theory. In *The International Encyclopedia of Interpersonal Communication* (pp. 123–145). Wiley-Blackwell. <https://doi.org/10.1002/9781118540190.wbeic160>
- Efrizal, W. (2020). The ecological impact of Bangka Belitung on community nutrition and health status. *Indonesian Journal of Nutrition Science (JIGZI)*, 1(2), 45–52. <https://jurnal.umitra.ac.id/index.php/JIGZI/article/view/537>
- Faidlatul Habibah, S., Shabira, & Irwansyah. (2021). Meta-analysis of the application of Social Penetration Theory. *Journal of Communication and Media*, 9(1), 34–48.
- Fatwasuci, K., & Irwansyah. (2021). The development of Uncertainty Reduction Theory in face-to-face and online interactions. *Syntax Literate: Indonesian Scientific Journal*, 6(2).
- Griffin, E., Ledbetter, A., & Sparks, G. (2015). *A First Look at Communication Theory* (9th ed.). McGraw-Hill Education.
- Harahap, F. R. (2022). Women in the tin mining sector: A reflection on Kartini Day commemoration, April 21, 2022. Bangka Belitung University.
- Hidayati, N. (2015). The double burden of working women (between domestic and public roles). *Muwazah: Journal of Gender Studies*, 7(2), 108–111.
- Indra, C. A. (2013). The impact of unconventional tin mining in Lampung Village, Central Bangka Regency. *Society Journal*, 1(2), 148–164.
- Jukandi, A. (2009). The social impact of unconventional tin mining (TI) on the community in Central Bangka Village, Simpang Pematang Subdistrict, Bangka Belitung. *Sociology Journal*, 15(1), 1–18.
- Kusumawati, Y. (2012). The dual role of female tea pickers. *Komunitas: International Journal of Indonesian Society and Culture*, 4(2), 157–167. <https://journal.unnes.ac.id/nju/index.php/komunitas>
- Littlejohn, S. W., Foss, K. A., & Oetzel, J. G. (2017). *Theories of Human Communication* (11th ed.). Waveland Press.
- Mongabay Indonesia. (2020, April 11). Radioactive impacts of tin mining: Bangka communities vulnerable to COVID-19 exposure. <https://www.mongabay.co.id/2020/04/11/dampak-radioaktif-tambang-timah-masyarakat-bangka-rentan-terpapar-corona/>
- Mongabay Indonesia. (2022, August 30). Due to tin mining, shellfish in Bangka Island contain heavy metals? <https://www.mongabay.co.id/2022/08/30/akibat-penambangan-timah-kerang-di-pulau-bangka-mengandung-logamberat/>
- Multatuli. (2022, October 20). The nightmare of tin miners' children and the destruction of the environment in Bangka Belitung. Project Multatuli.
- Pemali Village Profile. (2024). Statistical Data of Pemali Village 2024.
- Sari, D. K., & Wijaya, M. (2022). The application of Social Penetration Theory in developing romantic relationships through social media. *Journal of Communication*, 18(1), 45–60.

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- Siregar, I. T. N. (2017). Land rehabilitation planning for ex-tin sedimentation ponds at Pit TB 1.42 Pemali, PT Timah (Persero) Tbk, Bangka Regency, Bangka Belitung Province. Proceedings of the 12th National ReTII Seminar.
- Sulista, S. (2019). Unconventional mining: The role of communities and economic attraction for miners. *Journal of Mineral and Coal Technology*, 15(1), 63–75. <https://doi.org/10.30556/jtmb.vol15.no1.2019.348>
- West, R., & Turner, L. H. (2008). *Introduction to Communication Theory: Analysis and Application* (3rd ed.). Salemba Humanika.
- Women Empowerment, Child Protection, Population Control, and Family Planning Office of Bangka Regency. (2019). *Gender Profile of Bangka Regency 2019*.
- Zanovsyah, D., & Harahap, N. (2024). Communication patterns of women with double burdens in child character development in Pajak Baru, Medan Belawan Subdistrict. *Hudan Lin Naas*, 5(1), 95–96. <http://ejournal.idia.ac.id/index.php/hudanlinnaas>