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Structural Divergence in Reproductive Agency: Unraveling the 'Matrilineal Buffer' Against Contraceptive Discontinuation in Indonesia Using Multi-Group SEM

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A B S T R A C T

Despite the historical success of Indonesia's family planning program, the contraceptive prevalence rate (CPR) has stagnated, driven largely by high rates of contraceptive discontinuation (29%). Conventional demographic analyses often attribute this to biomedical side effects, overlooking the structural influence of kinship systems and the potential confounding role of socioeconomic status. This study aims to analyze the structural pathways linking patriarchal gender norms to contraceptive discontinuation, mediated by reproductive autonomy, while explicitly controlling for educational attainment. We compare Indonesia's two dominant cultural groups: the matrilineal Minangkabau and the patriarchal Javanese. A comparative cross-sectional study was conducted with 1,450 married women of reproductive age in West Sumatra (Minangkabau, n=725) and Central Java (Javanese, n=725). We employed Multi-Group Structural Equation Modeling (MG-SEM) with a rigorous invariance testing protocol. The model tested the "Patriarchal Norms → Reproductive Autonomy → Discontinuation Propensity" pathway, adjusting for age and education level. Measurement invariance (Configural and Metric) was established, allowing for valid group comparisons. The Minangkabau group exhibited significantly higher education levels ($p<0.001$). However, even after controlling for education, the structural analysis revealed a distinct divergence. Among Javanese women, patriarchal norms significantly suppressed autonomy ($\beta = -0.58$, $p < 0.001$), leading to higher discontinuation propensity. Conversely, Minangkabau women displayed a "Matrilineal Buffer"; the path from patriarchal norms to autonomy was non-significant ($\beta = -0.09$, $p > 0.05$), suggesting that cultural leverage protects decision-making power regardless of internalized gender norms. In conclusion, the mechanism of contraceptive discontinuation is culturally distinct. The "Matrilineal Buffer" is a robust structural phenomenon that persists independent of educational advantages. Interventions in patriarchal settings must dismantle barriers to female autonomy, while programs in matrilineal settings should focus on quality of care.

1. Introduction

The global demographic transition has evolved beyond the Malthusian struggles of the twentieth century.[1] In the contemporary landscape of global health, the primary challenge facing many developing nations is no longer the initial uptake of contraception, but the sustainability of its use. This shift from access to adherence represents a complex "second phase" of the family planning revolution. Indonesia stands as a paradigmatic case study of this transition.[2] Once

heralded by the World Bank and the global development community as a "family planning success story" for its rapid fertility decline under the *Keluarga Berencana* (Family Planning) program during the New Order era, the nation now faces a demographic plateau.[3]

Over the last decade, the decline in the total fertility rate (TFR) has decelerated, and the contraceptive prevalence rate (CPR) has stagnated.[4] Beneath these aggregate statistics lies a paradoxical reality: while awareness of contraceptive methods is near-universal and physical access to clinics is widespread, the system is hemorrhaging users. National demographic data indicate that approximately 29% of Indonesian contraceptive users discontinue their method within the first 12 months of adoption. This "leaking bucket" phenomenon represents a critical inefficiency in the national health system. It acts as a primary driver of fertility volatility, unintended pregnancies, and the persistently high maternal morbidity rates that continue to plague the archipelago despite economic growth.

Conventional epidemiological and demographic analyses predominantly attribute this churn to biomedical factors. In survey after survey, "side effects," "health concerns," and "method dissatisfaction" emerge as the leading self-reported reasons for discontinuation. Consequently, programmatic interventions have largely focused on the supply side: improving clinical counseling, managing bleeding irregularities, and expanding the menu of available methods. While necessary, this biomedical reductionism is insufficient. It fails to account for the "social life" of medical technology.[5]

Side effects are, undeniably, biological events—a change in menstruation, weight gain, or hormonal shifts. However, the decision to discontinue a method in response to a side effect is a fundamentally social act. It is a decision deeply embedded in the micro-politics of the household. When a woman experiences a side effect, her capacity to endure it, or her agency to negotiate switching to an alternative method rather than abandoning protection entirely, is not merely a function of her pain tolerance. It is contingent upon her reproductive autonomy. This autonomy is not a vacuum; it is structured, constrained, and facilitated by the kinship systems, religious interpretations, and gender norms that govern her community. For instance, irregular bleeding may be a medical nuisance, but in a conservative marital bed, it may be interpreted as a disruption to a husband's sexual access or a violation of religious purity laws, thereby transforming a biological symptom into a marital crisis that necessitates discontinuation.[6]

Indonesia offers a unique "natural laboratory" for investigating these structural dynamics due to its immense ethno-cultural diversity. The archipelago is home to distinct kinship systems that prescribe vastly different roles for women, offering a comparative framework that is rare in global demography.[7] Specifically, the juxtaposition of the Javanese and the Minangkabau ethnic groups presents a compelling opportunity to isolate the influence of culture on reproductive agency. The Javanese, who constitute the demographic and political majority of Indonesia, traditionally adhere to a bilateral kinship system. However, in practice, Javanese social structure is heavily influenced by tiered social hierarchies and specific Islamic interpretations of male authority, known locally as *bapakism* (father-leadership). Javanese cultural philosophy places a supreme value on *rukun* (social harmony) and *nrima* (acceptance/resignation). In the context of marriage, this often translates into an expectation of female domesticity and conflict avoidance. A Javanese woman's autonomy is frequently subsumed by the imperative to maintain the equilibrium of the household.[8] Consequently, contraceptive decision-making can become a locus of silent submission, where discontinuation is less an act of medical rejection and more an act of maintaining marital harmony in the face of spousal disapproval.

Conversely, the Minangkabau of West Sumatra represent the world's largest surviving matrilineal society. In this distinct social order, ancestral property (*harta pusako*), including land and the traditional "Big House" (*Rumah Gadang*), is passed down strictly through the female line. Women in Minangkabau society hold a central, revered role as the *Limpapeh Rumah Nan Gadang* (the central pillar of the house). They possess economic leverage and a structural safety net that is largely absent in patriarchal societies. Yet, the Minangkabau are also known for their devout adherence to Islam. This creates what anthropologists have termed the "Matrilineal Paradox": a society where high female structural power coexists with religious doctrines that theoretically privilege male leadership in the public and religious spheres. The interaction between *Adat* (customary law), which empowers women, and religious interpretation, which may constrain them, creates a complex landscape for reproductive negotiation that differs fundamentally from the Javanese experience.[9]

A critical gap in existing sociological and demographic literature on these groups is the failure to rigorously disentangle "culture" from "class." The Minangkabau culture places a high premium on *merantau* (out-migration for success) and education for both genders. Consequently, Minangkabau women often possess significantly higher educational attainment than their Javanese counterparts. This demographic reality raises a pivotal methodological question that threatens the validity of cultural comparisons: Is the presumed high autonomy of Minangkabau women a genuine product of their matrilineal kinship structure (*Adat*), or is it merely a function of their higher education levels? It is well-established globally that education is a "universal solvent" of traditional patriarchy; educated women, regardless of culture, tend to have greater agency. If the observed differences in reproductive behavior are driven solely by education, then the "culture" argument dissolves into a standard socioeconomic gradient. This distinction has profound policy implications. If education is the sole driver, interventions should focus purely on female schooling. If, however, the kinship structure exerts an independent "buffering" effect, then culturally tailored family planning interventions are necessitated.[10]

This study aims to resolve these complexities by moving beyond the binary logistic regression models typical of demographic determinants research. We employ Multi-Group Structural Equation Modeling (MG-SEM) to rigorously test the causal pathways linking cultural norms to reproductive behavior. The specific aim of this study is to analyze the structural pathways linking Patriarchal Gender Norms to Contraceptive Discontinuation, mediated by Reproductive Autonomy, while explicitly comparing the Javanese and Minangkabau populations. The novelty of this research is twofold: (1) Methodological Rigor and Control: Unlike previous descriptive studies, we address the threat of omitted variable bias by explicitly controlling for the confounding roles of Education and Age within the SEM framework. Furthermore, we employ a rigorous Measurement Invariance testing protocol. This ensures that any observed differences between the groups are structural realities, rather than statistical artifacts caused by differing interpretations of survey questions or disparate socioeconomic baselines; (2) Theoretical Refinement of Discontinuation: We reject the simplistic binary classification of discontinuation. Instead, we operationalize "Contraceptive Discontinuation" as a latent propensity. This construct captures the nuance of the phenomenon, driven by three distinct dimensions: the intensity of abandonment, the failure to switch methods despite desire (switching failure), and discordant reporting (discontinuing due to husband's disapproval despite personal desire). We hypothesize that even after strictly controlling for the higher education levels of West Sumatran women, the "Matrilineal Buffer" will persist. We posit that in the Minangkabau context,

patriarchal gender norms will fail to suppress reproductive autonomy, whereas in the Javanese context, these same norms will significantly erode autonomy, leading to higher rates of involuntary discontinuation. This study seeks to prove that culture is not merely a background variable, but a structural scaffold that determines the resilience of women's reproductive choices.

2. Methods

This research employed a comparative cross-sectional design, executed between January and October 2024, to facilitate a direct structural comparison between Indonesia's two primary kinship systems. To ensure that the data captured the authentic influence of traditional norms rather than diluted urban variants, the study sites were purposively selected to represent the "cultural cores" of each ethnic group. For the Minangkabau sample, the study was situated in the province of West Sumatra. This area is historically designated as the *darek*—the ancestral heartland where Minangkabau Adat (customary law) originated and remains most potent. Unlike the coastal trade cities, where cultural mixing is common, the *darek* maintains rigid adherence to matrilineal land inheritance and the clan system. For the Javanese sample, data collection occurred in Central Java and D.I. Yogyakarta, focusing on rural and peri-urban clusters. These regions were chosen because they represent the epicenter of traditional Javanese culture, where social hierarchies (*unggah-ungguh*) and the philosophy of *rukun* (harmony) exert a strong influence on daily life. By targeting these specific locales, the study minimized the noise of cosmopolitanism and maximized the visibility of the "natural experiment" between matrilineal and patriarchal structures.

To ensure the sample was not only culturally representative but also demographically robust, we employed a multi-stage stratified cluster sampling technique. This rigorous approach was designed to capture the heterogeneity of contraceptive experiences across different levels of service access. In the first stage, districts within the selected provinces were stratified based on their Contraceptive Prevalence Rates (CPR)—categorized as "low" versus "high" using the most recent Indonesian Demographic and Health Survey (IDHS) data. This stratification was critical to prevent bias toward areas with exceptionally good or poor family planning services. In the second stage, villages (*Nagari* in West Sumatra; *Desa* in Java) were randomly selected from these strata to serve as the primary sampling units (PSUs).

Within the selected clusters, households were identified using a systematic random sampling method. Enumerators proceeded from a random starting point and selected every fifth household to minimize selection bias. The study population comprised married women of reproductive age (15–49 years) who had used a modern contraceptive method (pill, injection, implant, IUD) within the last 24 months. This 24-month window was chosen to ensure recall accuracy regarding discontinuation decisions while capturing recent behaviors. We excluded women who were currently pregnant (unless the pregnancy was a direct result of contraceptive failure categorized as discontinuation) and those with medically diagnosed infertility, as their discontinuation dynamics differ fundamentally from the general population.

The sample size was determined via an a priori power analysis specifically for Multi-Group Structural Equation Modeling (MG-SEM). Following the guidelines of MacCallum et al. (1996) for testing differences in fit indices (RMSEA), a minimum of 300 participants per group was deemed necessary to achieve a power of 0.80. To account for design effects inherent in cluster sampling and potential non-response, we oversampled to recruit 1,500 women. After data cleaning and validation, the final analytic sample consisted of 1,450 women (725 Minangkabau and 725 Javanese), providing ample statistical power

for complex invariance testing.

The operationalization of variables moved beyond standard demographic binaries to include latent psychological and sociological constructs. (1) Exogenous Covariates (Control Variables): To address the critical threat of omitted variable bias, we strictly controlled for Education Level and Age. Education was measured on an ordinal scale (1=Primary, 2=Junior High, 3=Senior High, 4=Diploma/University). As noted in the introduction, this variable is the primary potential confounder, given the Minangkabau tendency toward higher educational attainment. Age was measured as a continuous variable in years; (2) Exogenous Latent Variable: Patriarchal Gender Norms (PGN): We utilized a modified 10-item version of the Gender-Equitable Men (GEM) scale. While originally designed for men, this scale was adapted to measure women's internalization of patriarchal norms. This adaptation is crucial because a woman's reproductive agency is constrained not only by her husband's external pressure but by her own acceptance of gender hierarchies; Example Item: "A woman's most important role is to take care of her home and cook for her family". Responses were captured on a 4-point Likert scale ranging from 1 (Strongly Disagree) to 4 (Strongly Agree); (3) Mediating Latent Variable: Reproductive Decision-Making Autonomy (RDMA): This construct was adapted from the validated Reproductive Autonomy Scale (RAS). Unlike generic empowerment measures, the RAS specifically targets the domain of fertility. The latent variable was formed by three sub-constructs: (i) Decision-making power: Who holds the final say in method selection?; (ii) Freedom from coercion: The absence of pressure to use or not use a specific method; (iii) Communication comfort: The ability to discuss side effects and desires openly with a spouse; Example Item: "If I want to use a different family planning method, I can tell my husband"; (4) Endogenous Latent Variable: Propensity for Contraceptive Discontinuation: A key methodological innovation of this study is the treatment of discontinuation not as a binary event (Stop/Go), but as a latent "Propensity" construct. This approach allows us to capture the intensity and intent behind the behavior. It was measured by three continuous indicators scored on frequency and intensity scales over the last 24 months: (i) Abandonment Intensity: The degree to which a woman stopped using contraception while still wishing to avoid pregnancy (unmet need); (ii) Switching Failure: The frequency of desiring to switch methods due to side effects but stopping instead due to access or social barriers; (iii) Discordant Reporting: Instances where discontinuation occurred primarily due to husband's disapproval, despite the woman's personal desire to continue. Treating these behaviors as indicators of a single underlying propensity allows the SEM to model the "pressure" to discontinue, rather than just the final outcome.

The analytical framework was anchored in Multi-Group Structural Equation Modeling (MG-SEM), performed using AMOS 26.0 and SPSS 29.0. The analysis proceeded in three rigorous steps to ensure validity: Step 1: Psychometric Validation (CFA) Before testing structural paths, we conducted Confirmatory Factor Analysis (CFA) for each group separately. We assessed the measurement model using standard thresholds: Factor Loadings > 0.50, Composite Reliability (CR) > 0.70, and Average Variance Extracted (AVE) > 0.50. Crucially, to address cross-cultural validity, Cronbach's alpha was calculated independently for the Javanese and Minangkabau samples. This ensured that the scales (GEM, RAS) were reliable instruments within each specific cultural context; Step 2: Measurement Invariance Testing To validly compare regression coefficients between groups, one must first prove that the constructs mean the same thing to all participants. We followed the hierarchical invariance testing protocol: (1) Configural Invariance: Testing if the factor structure (number of factors and items) is identical across groups; (2) Metric Invariance: Constraining factor loadings to be equal

across groups. This step is mandatory for comparing path coefficients. Criterion: Invariance was accepted if the change in the Comparative Fit Index (ΔCFI) was less than 0.01 between the unconstrained and constrained models; Step 3: Structural Equation Modeling (SEM) Finally, we tested the hypothesized structural model: Education + Age + PGN → RDMA → Discontinuation. We employed the Critical Ratio for Difference (z-score) to statistically compare the standardized path coefficients (β) between the Minangkabau and Javanese groups. This allowed us to determine if the "Matrilineal Buffer"—the specific breakage of the link between patriarchal norms and autonomy—was a statistically significant divergence.

3. Results and Discussion

Table 1 presents the comparative sociodemographic profile of the 1,450 respondents, revealing critical structural disparities between the two ethnic cohorts. While the groups were age-matched with no statistically significant difference (Minangkabau: 31.4 years vs. Javanese: 30.8 years; p=0.412), a profound divergence was observed in educational attainment (p<0.001). The matrilineal Minangkabau women were over twice as likely to hold university diplomas (39.5%) compared to the Javanese women (16.3%), confirming the necessity of controlling for socioeconomic status in the subsequent structural model. In terms of reproductive behavior, the Javanese cohort exhibited a significantly higher rate of contraceptive discontinuation (31.2%) relative to the Minangkabau group (24.1%; p=0.003). Most illuminating, however, were the reasons underlying these cessations (p<0.001). The data unveiled a "biomedical versus patriarchal" dichotomy: discontinuation among Minangkabau women was predominantly driven by biomedical side effects (55.0%), whereas nearly half of Javanese discontinuation events (42.0%) were precipitated by husband disapproval. This stark contrast underscores that while Minangkabau women struggle with the physical method, Javanese women struggle with the spousal permission to use it.

Table 1. Socio-demographic characteristics.

Characteristic	Minangkabau (Matrilineal) n = 725	Javanese (Patriarchal) n = 725	p-value[a]
Mean Age (SD)	31.4 (5.2)	30.8 (4.9)	*0.412*
EDUCATION LEVEL			
Primary / Junior High	15.2%	38.5%	
Senior High	45.3%	45.2%	*<0.001**
University / Diploma	**39.5%**	16.3%	
CONTRACEPTIVE STATUS (LAST 12 MO)			
Discontinued	24.1%	**31.2%**	*0.003**
PRIMARY REASON FOR DISCONTINUATION			
Side Effects	**55.0%**	35.0%	*<0.001**
Husband Disapproval	12.0%	**42.0%**	

Note: Values are presented as percentages (%) or Mean (Standard Deviation).
[a] P-values calculated using Chi-square test for categorical variables and independent t-test for continuous variables.
* Indicates statistical significance at $p < 0.05$.
Interpretation: Minangkabau women are significantly more educated and more likely to discontinue due to side effects, whereas Javanese women are more likely to discontinue due to husband disapproval.

Table 2 details the psychometric validation of the three latent constructs—Patriarchal gender norms (PGN), reproductive decision-making autonomy (RDMA), and the newly operationalized Propensity for Contraceptive Discontinuation. To ensure that the instruments were not biased by the distinct cultural settings, confirmatory factor analysis and reliability testing were conducted separately for the Minangkabau and Javanese cohorts. The results demonstrate exceptional internal consistency across both groups, with Cronbach's alpha coefficients exceeding the 0.80 threshold for all constructs (range: 0.84–0.91), indicating robust reliability. Crucially, the factor loadings for the endogenous "Discontinuation Propensity" variable were uniformly high (>0.70) across both samples (such as Abandonment Intensity: Minang λ=0.76; Java λ=0.82). This strong convergent validity justifies the decision to treat discontinuation as a continuous latent trait rather than a simple binary outcome. Furthermore, the Average Variance Extracted (AVE) values consistently exceeded 0.50, confirming that the constructs captured significantly more variance than was attributable to measurement error. Collectively, these metrics establish a solid foundation for the subsequent structural comparison, ensuring that any observed differences in path coefficients are due to structural sociological divergence, not measurement artifact.

Table 2. Validity and reliability of latent constructs.

Construct & Indicators		Factor Loadings (λ)		Internal Consistency (Cronbach's α)		AVE (Convergent Validity)	
		Minangkabau (Matrilineal)	Javanese (Patriarchal)	Minangkabau	Javanese	Minangkabau	Javanese
Patriarchal Gender Norms (PGN)	*Items 1-10 (Aggregated)*	0.74 - 0.88	0.72 - 0.89	**0.89**	**0.91**	0.67	0.69
	(Modified GEM Scale)						
Reproductive Autonomy (RDMA)	*Decision Making*	0.82	0.85	**0.88**	**0.86**	0.72	0.70
	Freedom from Coercion	0.79	0.81				
	Communication Comfort	0.85	0.78				
Discontinuati... Propensity	*Abandonment Intensity*	0.76	0.82	**0.84**	**0.87**	0.64	0.66
	Switching Failure	0.81	0.79				
	Discordant Reporting	0.72	0.88				

Notes:
- **Factor Loadings (λ):** All standardized loadings are statistically significant at $p < 0.001$. Threshold > 0.50 met for all indicators.
- **Cronbach's α:** Indicates internal consistency reliability; values > 0.80 indicate good to excellent reliability.
- **AVE (Average Variance Extracted):** Values > 0.50 indicate adequate convergent validity.
- The "Patriarchal Norms" construct uses the mean score of 10 items; individual loadings ranged as shown.

Table 3 delineates the results of the hierarchical measurement invariance testing, a prerequisite for validating the cross-cultural comparability of the structural paths. The process began with the assessment of configural invariance, which yielded an excellent model fit ($x^2/df < 3.0$, CFI = 0.965), confirming that the factor structure of patriarchal norms and autonomy is conceptually equivalent across Minangkabau and Javanese groups. Subsequently, metric invariance was tested by

constraining factor loadings to be equal. The results indicated full metric invariance, evidenced by a non-significant Chi-square difference ($\Delta x^2 = 16.3$, $p > 0.05$) and a negligible degradation in the Comparative Fit Index ($\Delta CFI = 0.002$), well within the stringent threshold of <0.01 recommended by Cheung and Rensvold. This critical finding confirms that the latent constructs are measured with the same unit of intervals in both cultures. While the subsequent test for scalar invariance (constraining intercepts) was not supported ($\Delta CFI = 0.022$), this level of equivalence is strictly necessary only for comparing latent means. Since the primary aim of this study is to compare structural regression coefficients (β), the establishment of metric invariance provides a sufficient and robust statistical license to proceed with the Multi-Group Structural Equation Modeling.

Table 3. Measurement invariance fit indices.

Model Hierarchy	Absolute Fit Indices				Comparison Metrics		Result / Conclusion
	χ^2	*df*	RMSEA	CFI	$\Delta\chi^2$ (p)	ΔCFI	
1. Unconstrained (Configural)	542.1	145	0.041	0.965	-	-	BASELINE GOOD FIT
2. Metric Invariance (Constrained Loadings)	558.4	162	0.040	0.963	16.3 (>0.05)	0.002	SUPPORTED
3. Scalar Invariance (Constrained Intercepts)	610.2	185	0.052	0.941	51.8 (<0.01)	0.022	NOT SUPPORTED

Abbreviations: χ^2 = Chi-square; **df** = Degrees of Freedom; **RMSEA** = Root Mean Square Error of Approximation; **CFI** = Comparative Fit Index.

Criteria for Invariance: Metric invariance is established if the change in CFI (ΔCFI) is ≤ 0.01 compared to the less constrained model.
Interpretation: The non-significant $\Delta\chi^2$ and negligible ΔCFI (0.002) at the Metric level indicate that factor loadings are equivalent across groups, allowing for valid comparison of regression paths (Betas).

Table 4 presents the definitive Multi-Group Structural Equation Modeling results, explicitly adjusting for the potential confounding effects of education and age. The analysis reveals that while education serves as a universal enhancer of reproductive autonomy in both cohorts (β Minang = 0.25; β Java = 0.31, $p < 0.01$), it fails to homogenize the distinct cultural mechanisms at play. The pivotal finding is the statistical non-significance of the pathway from Patriarchal Norms to Autonomy among Minangkabau women (β = -0.09, $p > 0.05$). This lack of association empirically validates the "Matrilineal Buffer" hypothesis, suggesting that in West Sumatra, a woman's decision-making power is structurally insulated from her internalized gender ideology by her kinship status. In sharp contrast, the Javanese model exposes a robust, highly significant negative pathway (β = -0.58, $p < 0.001$), where patriarchal norms actively suppress autonomy, explaining a substantial 55% of the variance ($R^2 = 0.55$). Consequently, low autonomy emerges as a massive driver of discontinuation for Javanese women (β = -0.71), whereas for Minangkabau women, the link is moderate (β = -0.35). The *z*-score difference of 4.92 confirms these pathways are statistically distinct, proving that identical patriarchal norms produce divergent reproductive outcomes depending on the underlying kinship structure.

Table 4. Standardized path coefficients (β) controlling for education.

Structural Pathway	Minangkabau (Matrilineal)	Javanese (Patriarchal)	z-score Diff (Group Comparison)	Interpretation
CONTROL VARIABLES				
Education → Autonomy	0.25**	0.31***	0.82 (ns)	*Education improves autonomy in both groups equally.*
Age → Autonomy	0.10*	0.08 (ns)	0.31 (ns)	*Older women have marginally higher autonomy.*
CORE STRUCTURAL MODEL				
Patriarchal Norms → Autonomy	**-0.09** (ns)	**-0.58***	**4.92***	***The "Matrilineal Buffer":** Norms suppress autonomy in Java, but NOT in West Sumatra.*
Autonomy → Discontinuation	-0.35***	-0.71***	3.45*	*Low autonomy is a stronger driver of discontinuation in Java.*
Patriarchal Norms → Discontinuation (Direct)	0.18*	0.24**	0.65 (ns)	*Direct pressure exists in both, but is secondary to autonomy.*
Model R^2 (Variance Explained in Autonomy)	**0.18**	**0.55**	-	***Model explains Javanese behavior significantly better.***

Significance Levels: *** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$; (ns) = non-significant ($p > 0.05$).
Note: Standardized path coefficients (β) are reported. All values are adjusted for Age and Education level.
Result: The z-score difference of 4.92 for the "Patriarchal Norms → Autonomy" path confirms a statistically significant structural difference between the two ethnic groups.

This study represents the first multi-group structural equation analysis to explicitly disentangle the complex web of cultural kinship, educational attainment, and patriarchal gender norms in the context of contraceptive discontinuation in Indonesia. By employing a rigorous measurement invariance protocol and statistically controlling for the robust confounding effect of education, we have moved beyond descriptive associations to validate the existence of a "Matrilineal Buffer." This finding challenges the monolithic narrative of Indonesian fertility transition and posits that the mechanisms of reproductive agency are fundamentally distinct across the archipelago's cultural fault lines.[11]

A persistent critique in the sociology of Southeast Asian development is that observed "cultural" differences are often merely masquerading as socioeconomic disparities.[12] Specifically, the high autonomy observed in Minangkabau women has historically been dismissed as a byproduct of their superior educational attainment—a result of the region's strong *merantau* (migration) tradition, which necessitates formal schooling. Our descriptive results (Table 1) confirmed this disparity, with Minangkabau women being significantly more likely to hold university degrees. If education were the sole driver of autonomy, the inclusion of "Education Level" as a control variable in our Structural Equation Model should have rendered the cultural differences insignificant.

However, our results decisively refute this reductionist view. While education indeed acts as a "universal emancipator"—showing a positive, significant path to autonomy in both groups ($\beta \approx 0.25$–0.31)—it is not the only story. The multi-group analysis reveals that even when comparing a

Minangkabau woman and a Javanese woman of identical education and age, their structural reality differs. The "Matrilineal Buffer" is not a statistical artifact of schooling; it is a profound sociological reality.[13] In the Javanese model, education competes against a massive structural headwind (Patriarchal Norms: β = -0.58). For a Javanese woman, education provides tools for negotiation, but it does not dismantle the "glass ceiling" of the household hierarchy. Conversely, for the Minangkabau woman, education acts as an accelerant to an autonomy that is already structurally protected by *Adat* (customary law).

The strong negative coefficient (β = -0.58) linking patriarchal norms to autonomy among Javanese women offers a quantitative window into the cultural concept of *bapakism* (father-leadership). In Javanese agrarian and court culture, social order is maintained through *rukun* (harmony) and strict adherence to hierarchy. In the domestic sphere, this often translates to a wife's implicit duty to preserve marital equilibrium, even at the cost of her own health preferences.[14]

Our data suggests that when a Javanese woman internalizes high patriarchal norms—believing that her primary role is domestic submission—her capacity to negotiate contraceptive use collapses. This is not merely a theoretical loss of power; it translates directly into "Discontinuation". The high R-squared value (0.55) indicates that over half the variance in Javanese women's autonomy is dictated by these norms.[15] When she encounters a side effect, such as libido loss or irregular spotting from hormonal methods, she lacks the political capital within the marriage to assertively switch methods or demand condom use. Instead, she engages in what demographic literature calls "silent withdrawal". Discontinuation here is less a rejection of the technology and more a capitulation to the imperative of *nrima* (acceptance) to avoid spousal conflict. The husband's disapproval (Table 1: 42.0%) becomes the terminal barrier.

In stark contrast, the Minangkabau model presents a "broken path" (β = -0.09, ns) between patriarchal norms and autonomy. This non-significant finding is the statistical signature of the "Matrilineal Buffer." It implies that a Minangkabau woman can simultaneously hold conservative religious views (agreeing that a wife should obey her husband in principle) while exercising high practical autonomy over her reproductive body.[16]

How is this paradox sustained? The answer lies in the structural leverage provided by Minangkabau *Adat*. As the *Limpapeh Rumah Nan Gadang* (the central pillar of the house), a Minangkabau woman derives her status not from her husband, but from her lineage. She controls the ancestral land and the physical home. This economic and symbolic ownership creates a firewall. Even if her husband holds traditional patriarchal views, he lacks the structural leverage to enforce them unilaterally in the domain of family management.[17] Consequently, her decision-making autonomy is decoupled from her gender ideology. She does not need to be a "modern feminist" to reject a contraceptive method; she simply exercises her prerogative as the matriarch. This explains why discontinuation in the Minangkabau group is driven predominantly by "Side Effects" (55.0%) rather than "Husband Disapproval" (12.0%). Her discontinuation is an assertive rejection of a poor biomedical product, not a submission to patriarchal will. She stops using the injection not because she is forbidden, but because it causes discomfort, and she has the agency to say "no" to the side effect.[18]

Methodologically, the validation of "Discontinuation Propensity" as a latent variable allows for a more nuanced understanding of "stopping." By combining "Abandonment," "Switching Failure," and "Discordant Reporting," we captured the pressure to discontinue rather than just the event. The strong link between low autonomy and high discontinuation propensity in Java (β = -0.71) confirms that for these women, discontinuation is a

symptom of powerlessness. It represents a failure of the family planning system to provide methods that are culturally compatible with a low-autonomy environment (such as methods that are easily concealable or have fewer sexual side effects).[19] In West Sumatra, the weaker link (β = -0.35) suggests that discontinuation is often a rational consumer choice—a "testing and rejecting" phase typical of empowered users navigating a market of imperfect medical options.

While this study employs robust statistical controls, it is limited by its cross-sectional design, which precludes definitive causal claims regarding the directionality of norms and autonomy. It is plausible that women who successfully negotiate contraception subsequently develop more egalitarian gender views (reverse causality). Additionally, while we controlled for education, we did not explicitly model household wealth index or religiosity intensity as separate latent variables. Future research should employ longitudinal mixed-methods designs to track the "negotiation episodes" within households over time, observing how specific acts of discontinuation unfold following side-effect events.[20]

4. Conclusion

This study provides robust empirical evidence that the stagnation of contraceptive prevalence in Indonesia is not a uniform failure of service delivery, but a complex reflection of divergent kinship structures. By rigorously correcting for educational disparities, we have demonstrated that the "Matrilineal Buffer" is a genuine sociological phenomenon, not a statistical artifact. Culture acts as a structural moderator that determines whether patriarchal norms will translate into reproductive suppression.

The implications for national family planning policy are profound and necessitate a bifurcation of strategy: (1) In the Bilateral/Patriarchal Context (Java): Discontinuation is a symptom of suppressed autonomy. Interventions here cannot simply focus on "better counseling." They must be gender-transformative. Programs must target men ("husband engagement") to dismantle the patriarchal barriers that equate contraceptive side effects with marital disobedience. Promoting methods that require less daily negotiation (like implants) may also bypass the "permission" bottleneck; (2) In the Matrilineal Context (West Sumatra): Discontinuation is an assertive rejection of poor biomedical experiences. These women have the power to decide, but they lack the medical support to sustain use in the face of discomfort. Policy here must focus strictly on "Quality of Care"—improving side-effect management, offering a wider mix of method choices, and treating the woman as a discerning consumer who demands high-quality health services. Ultimately, Indonesia's family planning program cannot be "one size fits all." It must be as diverse as the kinship systems it seeks to serve, recognizing that in one corner of the archipelago, a woman stops contraception because she is told to, and in another, she stops because she chooses to.

5. References

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