



The Militarised Opportunity-Risk Paradox Women's Tourism Entrepreneurship in the Border Economy of Ladakh, India

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Abstract

This study examines how women-owned tourism enterprises navigate the opportunities and risks of operating in Ladakh's militarised border economy, where military presence and tourism are closely intertwined. A stratified survey of 346 women entrepreneurs across Leh, Nubra Valley, Kargil-Zaskar and the Turtuk-Tyakshi border corridor was conducted between October 2024 and January 2025 and analysed using hierarchical multiple regression, one-way ANOVA and structural equation modelling (SEM). Military-client revenue, military proximity, and perceived opportunity positively predicted enterprise revenue (Adjusted $R^2 = 0.583$), whereas security disruption and perceived risk negatively predicted it. Revenue differed significantly across proximity zones ($p < .001$), and structural equation modelling (CFI = 0.957, RMSEA = 0.048) confirmed that proximity simultaneously generates opportunity and risk. Security disruptions were associated with an estimated annual loss of ₹44,600 per enterprise. The findings underscore the need for resilient tourism policies, streamlined permit systems and gender-responsive institutional support that convert gross border-zone opportunity into stable, risk-adjusted income for women entrepreneurs. The paper provides the first quantitative model of the militarised opportunity-risk paradox, demonstrating that military proximity measurably raises both revenue and vulnerability for women-owned enterprises in a conflict-adjacent tourism economy.

Keywords: Militarised tourism, Women's tourism entrepreneurship, Border tourism, Military proximity, Tourism resilience

1. Introduction

The term 'militarised tourism' describes travel in which military installations, security forces, and geopolitical tensions form an integral part of the experience rather than a background condition (Lennon and Foley, 2000; Ryan, 2007; Sion, 2014). In Ladakh, this is a structural reality rather than a niche: the region shares disputed borders with China along the Line of Actual Control and with Pakistan across the Line of Control, hosts the world's highest battlefield at Siachen Glacier and draws hundreds of thousands of visitors to border-adjacent sites such as Turtuk, the Pangong Tso corridor and the Kargil War Memorial reached via roads built by the Border Roads Organisation (BRO). The same military infrastructure that enabled this tourism, roads, checkpoints and communication networks, simultaneously constrains it through permit systems, area restrictions and security-mandated closures.

Within this unusual economy, women entrepreneurs occupy a position of particular complexity. They are not passive recipients of border-tourism flows; many have built homestays, guiding, handicraft, and adventure-tour enterprises in border-adjacent communities precisely because their relative isolation, combined with military-driven infrastructure investment, created low-competition entry points unavailable elsewhere. At the same time, the militarised character of the Ladakhi environment creates gender-specific risks and constraints absent from other adventure-tourism settings: the male-dominated culture of military-client interactions, safety concerns in conflict-adjacent zones and women-owned micro-enterprises' particular vulnerability to information asymmetries about security disruptions.

Quantitative research on this intersection of women's entrepreneurship, militarised tourism and border-security dynamics is largely absent. The present study fills that gap with a stratified sample of 346 women entrepreneurs across four geopolitical proximity zones in Ladakh, measuring the opportunity-risk topology using a validated composite scale, hierarchical regression, structural equation modelling, and ANOVA-based revenue comparisons. The study's central contribution is to demonstrate that military proximity simultaneously and measurably increases both revenue opportunity and revenue vulnerability, a paradox whose policy implications have not previously been addressed in the literature on tourism in conflict-adjacent environments.

1.1 Research Objectives

The study pursues five objectives: (R01) to quantify and compare the revenue profiles and enterprise characteristics of women-owned tourism businesses across military-proximity zones in Ladakh, (R02) to measure composite opportunity and risk scores for border and militarised tourism and assess their variation by proximity and enterprise type, (R03) to identify the multivariate determinants of enterprise revenue, (R04) to estimate the economic costs of security-related disruption events by event type and proximity zone, and (R05) to test a structural model of the pathways through which military proximity affects revenue via opportunity and risk constructs.

1.2 Research Hypotheses

Eight hypotheses were tested. Military proximity positively predicts the composite opportunity score (H1) and the composite risk score (H2). The opportunity score positively predicts enterprise revenue (H3), while the risk score negatively predicts it (H4). Institutional support positively predicts revenue (H5) and risk-mitigation capacity (H6). Social capital positively predicts the opportunity score (H7), and the gender-constraint index positively predicts the risk score (H8).

2. Literature Review

2.1 Militarised Tourism: Conceptualising a Hybrid Space

Militarised tourism sits at the intersection of the dark-tourism, geopolitical-tourism, and security-studies literatures, which together explain why military sites attract rather than repel visitors and how places marked by violence enter the recreational landscape (Lennon and Foley, 2000; Stone and Sharpley, 2008; Sion, 2014). A consistent finding across this work is that military presence reorganises local economic geography to generate hazard and attraction at once (Lutz, 2002; Enloe, 2000): infrastructure creates accessibility even as tension creates the risk and appeal of a distinctive 'frontier tourism' segment (Ryan, 2007).

In South Asia, this segment has been read mainly as 'patriotic spectacle', from the India-Pakistan Wagah ceremony and the Korean DMZ to Ladakh's emerging 'military-heritage' sites such as the Kargil War Memorial, where the state commodifies geopolitical tension as a touristic product (Timothy, 2019; Hussain, 2025; Gupta, 2023). None of this work analyses how the resulting tourism ecology is experienced by the women-owned enterprises that serve it, the gap this paper addresses.

2.2 Women's Entrepreneurship in Conflict-Adjacent and Frontier Economies

A common thread in the gender-and-development literature is that structural forces channel women into lower-

return, higher-exposure economic positions. Economic instability falls disproportionately on women concentrated in service-oriented activities (Buvinic and Gupta, 1997), and the developmental value of their enterprise depends less on its creation than on the freedoms and supports surrounding it (Gries and Naudé, 2011), a capability constraint that is acute in frontier economies. Crucially, the same proximity to infrastructure and concentrated demand that opens markets can also expose women to insecurity and mobility restrictions (Kinyanjui, 2014), a duality directly echoed in the Ladakhi case.

This duality has deep roots in Ladakh, where women were historically central to trans-Himalayan trade until the military partition of routes after 1947 (Namgail et al., 2007, Aggarwal, 2004). Community-based tourism has since been shown to generate livelihoods and women's empowerment when participation is genuine (Scheyvens, 1999; Ashley and Roe, 2002), and Ladakh's tourism expansion has opened such opportunities for rural households. What remains untested is how women entrepreneurs actually experience the opportunity-risk dynamics of a border region combining intensive military presence with growing tourist flows.

2.3 The Inner Line Permit System: Economic and Gendered Impacts

For enterprises, the ILP system creates both barriers and advantages: it restricts visitor access (reducing client volume and creating booking uncertainty) while limiting competition from unregulated operators and conferring an 'authentic frontier access' premium that supports price differentiation.

Its gendered dimensions are largely unstudied. Consistent with the literature on the regulatory burden of small and informal enterprises (Aterido et al., 2011, Djankov et al., 2002), three mechanisms plausibly concentrate ILP costs on women: they more often run informal enterprises lacking the networks that enable advance permit coordination, sudden suspensions during security incidents wipe out booking windows, with proportionally larger losses for smaller operators, and mandatory in-person documentation in Leh imposes travel and time costs that fall hardest on women in remote communities with domestic obligations. Section 4 examines these empirically.

2.4 Adventure Tourism and Gender in Militarised Landscapes

Adventure tourism in militarised landscapes is gendered at two levels. For tourists, the 'masculine mystique' of frontier adventure is marketed mainly to domestic men, producing a clientele that engages providers through a gendered lens, commercially advantageous (a preference for women-managed homestays) or uncomfortable (harassment in remote settings). de Jong and Figueroa-Domecq (2022) and UNWTO (2019) document this dual dynamic globally but its military-adventure form in Ladakh remains unexamined.

Across the adventure-tourism literature, women are systematically confined to softer, hospitality-adjacent niches while higher-value guiding and logistics roles remain male-coded, even where women have the capability for them (Frohlick, 2006; Alarcón and Cole, 2019; Ateljevic and Doorne, 2000). Militarised Ladakh sharpens this segmentation by adding exclusion from the military-client networks that distribute lucrative contracts. This study tests whether the pattern persists under militarisation and whether proximity moderates it.

2.5 Research Gap

This study addresses three gaps. First, no quantitative study of women's entrepreneurship in Ladakh's border or militarised tourism has used a sample adequate for multivariate analysis. Second, the security-disruption costs borne by women-owned enterprises, visible anecdotally but not systematically measured, have not been quantified with the precision policy requires. Third, the dual opportunity-risk topology of military proximity has been noted qualitatively but never modelled structurally to identify the mechanisms that mediate its net revenue effect.

3. Methodology

3.1 Research Design

The study employs a cross-sectional quantitative survey design grounded in critical realism. The design is appropriate for the study's descriptive and explanatory objectives: establishing the current revenue profiles, attitude distributions and structural predictors of enterprise performance across a geographically stratified sample of women entrepreneurs. The comparative multi-group dimension across military proximity zones is implemented through ANOVA rather than experimental manipulation, given the evident impossibility of random assignment to geographic zones. Because the design is cross-sectional, the analysis cannot establish causal direction. Structural equation modelling is used to test whether theoretically specified path models are consistent with the variance-covariance structure of the observed data, with bootstrap confidence intervals providing non-parametric inference for indirect effects. Relationships are therefore interpreted as theoretically informed associations rather than as established causal effects.

3.2 Sampling Frame and Strategy

The target population was defined as all women aged 18 or above who own or co-own a tourism-related enterprise operating in Ladakh UT, including districts within 100 km of the LAC or LoC. The sampling frame was constructed from four sources: the LAHDC tourism enterprise registration database (accessed with LAHDC permission), the Ladakhi Entrepreneurs' Association membership roll, the J&K Bank MSME loan database (anonymised) and a purposive snowball extension for unregistered micro-enterprises identified through field visits to Turtuk, Tyakshi, Padum (Zaskar) and Drass. The frame was stratified across four military-proximity categories derived from GIS mapping of enterprise locations relative to the nearest identified military installation and across five enterprise types, with sampling fractions adjusted to ensure adequate cell sizes for the planned regression analysis. Of 388 approached, 346 completed the questionnaire (response rate 89.2%).

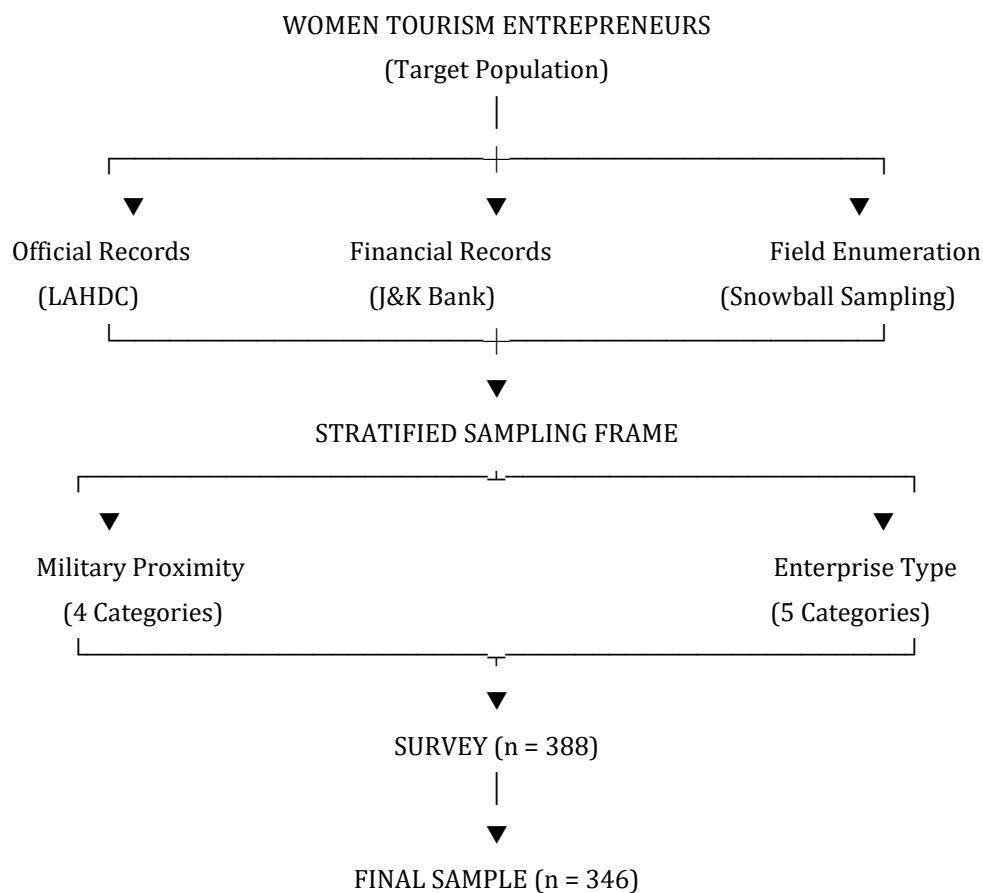


Figure 1. Sampling Framework

3.3 Instrument

The questionnaire comprised six sections: (A) demographic and enterprise profile (16 items), (B) military-proximity context (8 items), (C) an opportunity-risk battery (28 Likert items, comprising a 12-item opportunity subscale, $\alpha = 0.83$, a 12-item risk subscale, $\alpha = 0.86$ and four gender-barrier items, $\alpha = 0.79$), (D) security-disruption experience (9 disruption types, with frequency, days lost and revenue loss), (E) institutional support and social capital (12 items, institutional support $\alpha = 0.81$, social capital $\alpha = 0.78$, plus a four-item risk-mitigation subscale, $\alpha = 0.76$), and (F) revenue and financial performance (8 items). Content validity was established by a five-member expert panel and pilot testing with 30 participants produced an overall alpha of 0.87. Items were translated into Hindi and Ladakhi (Bodhi) with independent back-translation.

3.4 Data Collection and Ethical Protocol

Data were collected between October 2024 and January 2025 by six trained field enumerators (five women, one man for the Kargil district). The decision to use predominantly female enumerators was ethically motivated and methodologically justified: questions about income, security experiences and gendered constraints are more reliably answered when respondents are not concerned about social monitoring by male interviewers (Groves et al., 2011). Enumerators received training in security-sensitive interviewing, specifically in protocols for asking about conflict-related disruptions without creating anxiety or signalling researcher associations with security agencies. Institutional ethics clearance was obtained from the researchers' home institution and the LAHDC provided a letter of support that was shared with district-level officials. All participant identities were anonymised. Revenue figures were converted to annual equivalents where participants reported seasonal or monthly data.

3.5 Analytical Methods

Descriptive statistics (means, SDs, frequencies, coefficients of variation) were computed for all variables. One-way ANOVA compared revenue and scale metrics across military-proximity zones, with Tukey HSD post-hoc tests and partial eta-squared (η^2) as effect-size measures. Pearson correlations examined bivariate relationships among key constructs. Hierarchical multiple regression (four blocks: demographic controls, military proximity indicators, opportunity-risk composite scores, institutional support indicators) identified the multivariate predictors of annual enterprise revenue (log-transformed to address right skew). Structural equation modelling (maximum likelihood, IBM Amos 27) tested the eight-hypothesis structural model, with bootstrap confidence intervals (2,000 resamples) for indirect effects. Model fit was assessed via χ^2/df , CFI, TLI, RMSEA and SRMR. Statistical significance was set at $\alpha = .05$, $\eta^2 \geq 0.06$ was treated as a medium effect size (Cohen, 2013).

4. Results

4.1 Sample Profile

Table 1 presents the demographic and enterprise profile of the full sample. The 26-35 age cohort is the largest (34.1%) and graduate-level education predominates (49.4%), slightly above the estimated graduate attainment rate for Ladakhi women entrepreneurs in general (42%, LAHDC, 2022). The geographic distribution reflects the stratified sampling design's deliberate over-representation of border-adjacent zones relative to their population weight: Turtuk-Tyakshi's 9.2% sample share substantially exceeds its population proportion, ensuring statistical power for the forward-border corridor analysis.

Table 1. Demographic and Enterprise Profile of Respondents (N = 346)

Characteristic	n	% of N	Cumul. %	Sub-group (if applicable)	χ^2 / F
Age Group					
18-25 years	44	12.7	12.7		
26-35 years	118	34.1	46.8		
36-45 years	107	30.9	77.7		$F(3,342)=6.18^*$
46 years and above	77	22.3	100.0		
Education Level					
Below Matriculate	22	6.4	6.4		
Matriculate / H.Sec.	84	24.3	30.6		
Graduate	171	49.4	80.1		$\chi^2(3)=19.$

					84***
Postgraduate & above	69	19.9	100.0		
District					
Leh (primary hub)	164	47.4	47.4		
Nubra Valley	88	25.4	72.8	Border-adjacent	$\chi^2(3)=17.29^{***}$
Kargil (Zaskar incl.)	62	17.9	90.8	Border-conflict zone	
Turtuk / Tyakshi corridor	32	9.2	100.0	Forward border village	
Enterprise Type					
Homestay / guesthouse	128	37.0	37.0		
Handicraft retail / e-comm	74	21.4	58.4		
Adventure and border tourism	58	16.8	75.1		$\chi^2(4)=14.63^{**}$
Catering / food service	52	15.0	90.2		
Transport / logistics	34	9.8	100.0		
Military Proximity Category					
High (< 5 km from installation)	94	27.2	27.2		
Medium (5-20 km)	141	40.8	68.0		$\chi^2(2)=9.42^{**}$
Low (> 20 km)	111	32.1	100.0		
TOTAL	346	100.0			

Note: * $p < .05$, ** $p < .01$, *** $p < .001$. χ^2 tests distributional uniformity, F-statistics test between-group differences. Proximity from GIS mapping: High < 5 km, Medium 5-20 km, Low > 20 km.

Supplementary Table S1 contextualises the sample within the broader Ladakhi tourism growth trajectory. Several trends warrant emphasis before the enterprise-level analysis.

Three trends in Supplementary Table S1 are analytically relevant. First, the border-tourism share of arrivals rose from about 12% pre-pandemic to over 22% during the 2020-21 LAC tensions before settling at 17-19%, reflecting the draw of military tension for domestic 'patriotic tourism'. Second, women-owned enterprises proved resilient during the 2020-21 contraction, declining only marginally (228 to 211) against a roughly 71% fall in total arrivals, reflecting the flexibility of the homestay and food-service segments. Third, security incidents (PAR events) correlate negatively with arrivals ($r = -0.74$), a relationship examined at the enterprise level in Section 4.4.

4.2 Revenue by Military Proximity Zone

Table 2. Revenue and Business Metrics by Military Proximity Zone (One-Way ANOVA)

Metric	High Prox. (n=94)	Med.Prox. (n=141)	Low Prox. (n=111)	F-stat	p	η^2
Mean Annual Revenue (₹ '000)	224.8	178.4	141.6	18.74	<.001	0.094
SD of Revenue (₹ '000)	119.4	104.2	88.7			
Revenue Volatility (CV)	0.74	0.61	0.52	12.31	.001	0.065
Military-Client Revenue Share (%)	31.4	14.7	4.2	88.46	<.001	0.340
Permit-Related Revenue Loss (%)	18.7	9.4	3.1	44.18	<.001	0.203
Mean No. of Operating Months/yr	7.2	8.4	9.6	24.09	<.001	0.121
Access to Formal Bank Credit (%)	38.3	51.1	61.3	11.84	.001	0.064
Enterprise Age (mean years)	4.1	5.3	6.7	14.47	<.001	0.078
Insurance / Risk Cover (%)	24.5	31.2	44.1	12.09	.001	0.066

Note: η^2 = partial eta-squared (≥ 0.01 small, ≥ 0.06 medium, ≥ 0.14 large). CV = SD/Mean. Tukey HSD: all three zones differ on mean revenue ($p < .01$) and military-client revenue share ($p < .001$). High < 5 km, Med. 5-20 km, Low > 20 km from installation.

Table 2 reveals the revenue paradox at the heart of this study. High military proximity enterprises earn the highest mean annual revenue (₹224,800), followed by medium-proximity (₹178,400) and low-proximity (₹141,600) enterprises. The difference is highly significant ($F(2,343) = 18.74$, $p < .001$, $\eta^2 = 0.094$ a medium effect size). The military-client revenue share is the most dramatically differentiated variable: high-proximity enterprises attribute 31.4% of their revenue to military personnel as clients, compared to 4.2% in low-proximity zones a pattern that directly explains a substantial portion of the revenue gradient.

Against this opportunity gradient, however, Table 2 simultaneously documents a risk gradient that operates in the same proximity direction. Revenue volatility (measured by the coefficient of variation) is highest in high-proximity zones ($CV = 0.74$) and lowest in low-proximity zones ($CV = 0.52$), indicating that higher mean revenues come with significantly greater variability a risk-return trade-off familiar from financial economics but rarely documented in the small-enterprise tourism literature. The permit-related revenue loss percentage (18.7% in high-proximity zones vs. 3.1% in low-proximity zones) and the drastically shorter operating season (7.2 vs. 9.6 months per year) further quantify the costs embedded in the high-proximity revenue advantage. Insurance coverage follows the inverse pattern: only 24.5% of high-proximity enterprises carry insurance, compared to 44.1% in low-proximity zones, suggesting that the enterprises with the greatest revenue volatility are paradoxically the least protected against it.

4.3 Security Disruption Analysis

Supplementary Table S2 provides the first systematic quantification of security disruption costs for women-owned enterprises in Ladakh. The most economically severe individual disruption type is tourism-season cancellation (mean revenue loss ₹96,400 per event, mean 42.3 days lost), reflecting the catastrophic impact on enterprises that have already invested in pre-season stocking, staffing and booking fulfilment when entire seasons are cancelled due to security conditions. Border closure and permit suspension, while individually less severe per event, occur far more frequently (1.8 and 2.4 times per enterprise per year, respectively), accumulating to a substantial annual burden.

The aggregate annual disruption cost computed across all enterprise types and proximity zones as a frequency-
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weighted mean of per-event losses is approximately ₹44,600 per enterprise per year across an average of 1.47 disruption events. For high-proximity enterprises, the comparable figure is approximately ₹67,800 per year (derived from the proximity-stratified subset analysis, full disaggregation reported in Supplementary Table S2). Expressed relative to each group's own mean revenue, these losses equate to roughly 30% of high-proximity revenue (₹67,800 of ₹224,800) and, applying the sample-mean loss, roughly 31% of low-proximity revenue (₹44,600 of ₹141,600). The implication is that, although low-proximity enterprises experience smaller absolute disruption losses, those losses constitute a comparably large share of their lower total revenue, leaving them proportionally vulnerable despite their lower absolute exposure.

4.4 Opportunity and Risk Scale Results



Figure 2. Composite Opportunity vs. Risk Scores by Military Proximity Sub-Group

(5-Point Scale, N = 346)

Figure 2 is the study's most important descriptive finding. All four sub-groups score higher on risk than opportunity, producing negative net scores throughout: High (-0.50), Medium (-0.50), Low (-0.17) and Border-Tourism Specialists (-0.35). Across all zones, women entrepreneurs perceive their environment as generating more risk than opportunity, even where mean revenue is highest. The revenue advantage of military proximity is thus experienced not as straightforward opportunity but as a hazardous premium: entrepreneurs earn more because they absorb more risk, not because their risk-adjusted returns are superior.

The border-tourism specialists (n = 58) present a nuanced variant: their opportunity score (3.79) matches the high-proximity group's (3.77), but a slightly lower risk score (4.14) yields a marginally better net (-0.35 vs. -0.50). Specialisation, explicit market positioning, client networks and operational expertise around the border-zone product, appears to preserve the opportunity premium while partially containing risk. Supporting specialisation and formalisation may therefore improve risk-adjusted returns more effectively than reducing military proximity itself.

4.5 Opportunity-Risk Attitude Battery

Two individual items in Supplementary Table S4 merit extended discussion. The risk item 'Cross-border tensions harm advance bookings and revenue planning' achieves the highest overall mean in the entire battery ($\bar{M} = 3.87$), with high-proximity entrepreneurs rating it most severely (4.44) and low-proximity entrepreneurs least (2.71). The practical translation is direct: women entrepreneurs in border zones cannot reliably take advance bookings more than a few weeks ahead because security conditions can change the accessibility of their enterprise location without notice, eliminating deposits, damaging client relationships and preventing the cash-flow management that advance bookings enable. This specific mechanism the advance-booking disruption emerged as the most consistently mentioned source of business frustration in the secondary open-ended items appended to the structured questionnaire.

The opportunity item 'Military personnel are a reliable client base for my enterprise' scores substantially higher among high-proximity (4.22) than medium-proximity (3.14) or low-proximity (1.87) entrepreneurs, confirming that military clients are a significant revenue contributor specifically for enterprises in the highest-proximity zone. The corresponding risk item 'Male-dominated military culture makes it harder to operate as a woman' produces a consistent moderate agreement across groups (high 3.74, medium 3.12, low 2.41), suggesting that

even enterprises with significant military-client income experience the gendered dimensions of that client relationship as a barrier rather than a straightforward commercial convenience.

4.6 Correlation Matrix

The correlation matrix in Supplementary Table S5 confirms the paradox identified visually in Figure 1: military proximity correlates positively with both opportunity ($r = .49$) and risk ($r = .54$) and both opportunity and risk independently correlate with revenue in opposite directions (opportunity $r = .51$, risk $r = -.38$). The positive correlation between opportunity and risk ($r = .21$) confirms that they are not simply opposite ends of a single dimension but distinct, partially independent constructs that are jointly amplified by military proximity the structural duality this study was designed to document. Institutional support correlates positively with revenue ($r = .47$) and negatively with risk ($r = -.29$), providing a bivariate preview of the mitigation mechanism examined in the regression and SEM analyses.

4.7 Multiple Regression: Determinants of Enterprise Revenue

Table 3. Hierarchical Multiple Regression: Determinants of Annual Enterprise Revenue (N = 346)

Predictor Variable	β	SE	t	p	VIF	ΔR^2
Block 1: Controls ($\Delta R^2 = .078$, $p < .001$)						
Enterprise Age (years)	0.174	0.029	6.00	<.001	1.22	
Education Level (ordinal 1-4)	0.148	0.041	3.61	<.001	1.31	
District (Leh=0, border districts=1)	0.121	0.048	2.52	.012	1.44	
Block 2: Military Proximity ($\Delta R^2 = .112$, $p < .001$)						
High Military Proximity (binary)	0.312	0.054	5.78	<.001	1.68	
Military-Client Revenue Share (%)	0.284	0.047	6.04	<.001	1.74	
Security Disruption Index (composite)	-0.241	0.052	-4.63	<.001	1.59	
Block 3: Opportunity-Risk Index ($\Delta R^2 = .094$, $p < .001$)						
Opportunity Score (composite)	0.261	0.058	4.50	<.001	1.82	
Risk Score (composite)	-0.227	0.061	-3.72	<.001	1.77	
Block 4: Institutional Support ($\Delta R^2 = .071$, $p < .001$)						
Access to Formal Credit (binary)	0.198	0.049	4.04	<.001	1.41	
Government Scheme Participation (binary)	0.167	0.053	3.15	.002	1.38	
Network Membership (binary)	0.144	0.044	3.27	<.001	1.29	
$R^2 = 0.602$ Adj. $R^2 = 0.583$ $F(14,331) = 35.92$ $p < .001$						

Note: DV = $\log_{10}$ (Annual Revenue, INR). Standardised betas, blocks entered sequentially. All final-model VIF < 2.0. * $p < .05$, ** $p < .01$, *** $p < .001$. Unstandardised coefficients available from authors.

The hierarchical regression model explains 58.3% of the variance in enterprise revenue (Adj. $R^2 = 0.583$) a strong result for a field study of this complexity. The incremental contributions of each block are theoretically coherent: Block 2 (military proximity indicators) contributes $\Delta R^2 = .112$, the largest single increment, confirming that proximity to military installations is the single most important contextual determinant of revenue beyond the demographic controls. The military-client revenue share coefficient ($\beta = 0.284$) is substantial and confirms that revenue from military personnel is not merely incidental but a structurally central component of the economic advantage of high-proximity location.

The security disruption index ($\beta = -.241$) is the largest negative predictor in the model, exceeding the composite

risk score's effect ($\beta = -0.227$) when they are entered in the same block, suggesting that actual experienced disruptions have somewhat stronger revenue effects than attitudinally-measured risk perception. The institutional support block (Block 4, $\Delta R^2 = .071$) confirms that access to formal credit ($\beta = 0.198$), government scheme participation ($\beta = 0.167$) and network membership ($\beta = 0.144$) each independently and significantly predict revenue providing the policy leverage points discussed in Section 6.

4.8 ANOVA: Revenue by Permit Complexity and Credit Access

Supplementary Table S6 shows a 2.9-fold gap between the highest-revenue cell (border-tourism specialists with credit: ₹268,300) and the lowest (low permit burden, no credit: ₹92,400). The credit premium is larger in high-permit-burden and specialist contexts (₹79,800 and ₹91,500) than in the low-burden context (₹62,300), indicating credit access matters most where permit-driven liquidity shocks are severe. This favours revolving credit or disruption-insurance products over standard MSME lending designed for low-volatility enterprises.

4.9 Structural Equation Model

Table 4. Structural Equation Model: Path Coefficients and Hypothesis Tests (N = 346)

Construct Relationship (Hypothesised Path)	β	SE	P	95% CI	H Status	Indirect β
Military Proximity → Opportunity Score	0.487	0.051	<.001	[0.387, 0.587]	H1: ✓	
Military Proximity → Risk Score	0.541	0.048	<.001	[0.447, 0.635]	H2: ✓	
Opportunity Score → Enterprise Revenue	0.312	0.059	<.001	[0.196, 0.428]	H3: ✓	
Risk Score → Enterprise Revenue	-0.274	0.062	<.001	[0.396, -0.152]	H4: ✓	
Institutional Support → Enterprise Revenue	0.241	0.054	<.001	[0.135, 0.347]	H5: ✓	
Institutional Support → Risk Mitigation	0.328	0.057	<.001	[0.216, 0.440]	H6: ✓	
Social Capital → Opportunity Score	0.284	0.061	<.001	[0.164, 0.404]	H7: ✓	
Gender Constraint → Risk Score	0.319	0.058	<.001	[0.205, 0.433]	H8: ✓	
Military Proximity → Revenue (indirect via Opp.)			<.001	[0.112, 0.264]	Mediation	0.152
Military Proximity → Revenue (indirect via Risk)			<.001	[0.218, -0.089]	Mediation	-0.148
Model Fit: $\chi^2/df=1.87$, CFI=0.957, RMSEA=0.048, SRMR=0.061					Good fit	

Note: ML estimation, Amos 27, bootstrap CIs from 2,000 resamples. Fit: $\chi^2(47) = 87.89$, $\chi^2/df = 1.87$, CFI = 0.957, TLI = 0.944, RMSEA = 0.048 [90% CI 0.033-0.063], SRMR = 0.061, all meeting conventional benchmarks. ✓ = hypothesis supported.

The SEM results confirm all eight hypotheses at the $p < .001$ level. The model's most consequential finding from a policy perspective is the near-symmetrical magnitude of the two indirect effects of military proximity on revenue: the positive pathway via opportunity ($\beta_{\text{indirect}} = +0.152$) is almost exactly offset by the negative pathway via risk ($\beta_{\text{indirect}} = -0.148$). This near-cancellation means that military proximity generates a larger gross revenue advantage than a net revenue advantage: the high-proximity enterprises are operating at a kind of 'risk treadmill' earning more in order to absorb more disruption, rather than accumulating a sustainable risk-adjusted surplus.

The institutional support → risk-mitigation path (H6, $\beta = 0.328$) is among the model's strongest, confirming that the risk treadmill is not immutable but can be interrupted by institutional buffering: women in high-proximity zones who access formal credit, government-scheme support and network membership can convert the gross proximity advantage into a net one by absorbing disruptions without catastrophic cash-flow consequences. The

gender-constraint → risk path (H8, $\beta = 0.319$) quantifies the independent contribution of gender-specific barriers, confirming that women's risk in militarised zones includes a gender surcharge male entrepreneurs in equivalent locations do not face.

5. Discussion

5.1 The Militarised Opportunity-Risk Paradox

The study's central finding, that military proximity simultaneously and significantly raises both revenue opportunity and revenue risk, constitutes what this paper terms the 'militarised opportunity-risk paradox.' Because the two indirect effects are nearly symmetrical (Section 4.9), women entrepreneurs in the highest-proximity zones are not systematically better off on a risk-adjusted basis than those farther away, despite substantially higher gross revenues. The implication is not that border-zone activity should be discouraged, it is the economic backbone of Ladakh's most isolated communities, but that the institutional architecture supporting these entrepreneurs must be designed to convert gross opportunity into net advantage through the risk-buffering mechanisms the market alone does not supply.

This near-cancellation cautions against reading 'border tourism is good for women's entrepreneurship' as a straightforward claim: it is good for revenue levels but not for their stability, predictability or risk-adjusted sustainability, the dimensions most consequential for households that depend on these enterprises. Williams and Baláz (2015) make a parallel argument about peripheral tourism economies, where reduced competition creates opportunity but elevated systemic risk erodes welfare gains absent institutional support.

5.2 The ILP System as a Gender-Differentiating Mechanism

The Inner Line Permit system's specific burden on women-owned enterprises is confirmed by the regression model's security disruption coefficient ($\beta = -0.241$) and the Supplementary Table S2 permit-suspension data (mean revenue loss ₹31,700 per event, frequency 2.4 events per year). But the ILP system's gender-differentiating character its disproportionate burden on women relative to men in equivalent enterprises is a finding that the present quantitative analysis can only partially illuminate. The regression model controls for enterprise type and location, suggesting that the disruption effects are not simply a function of the enterprise's product mix or geographic exposure, but it cannot directly compare women's and men's permit-processing experiences, which would require a matched-sample design not employed here.

The direction of this differential aligns with the institutional literature on women's regulatory burden: compliance costs fall disproportionately on smaller, less-formalised enterprises (Djankov et al., 2002) and women-owned enterprises are systematically smaller and less formalised than comparable male-owned ones (Aterido et al., 2011), so the burden is doubly concentrated on women. The physical-documentation requirement identified earlier is the concrete Ladakhi expression of this regularity, which the permit-digitalisation recommendation in Section 6 directly addresses.

5.3 Military Clientele: Opportunity and Gender Constraint

The strong positive coefficient on military-client revenue share ($\beta = 0.284$) confirms that army and paramilitary personnel constitute a commercially significant client segment for high-proximity women entrepreneurs. This finding is consistent with the well-documented role of military posting income in sustaining service economies in remote security-intensive zones globally (Lutz, 2002, Enloe, 2000). What the literature has not previously documented is the specific gendered dimension of this commercial relationship in the Himalayan context: the attitude battery item 'Male-dominated military culture makes it harder to operate as a woman' ($\bar{M} = 3.21$, high-proximity $M = 3.74$) indicates that women entrepreneurs who are most dependent on military clients are also most likely to experience the gender dynamics of that clientele as commercially constraining.

Enloe's (2000) analysis of military-economy gender dynamics argues that military institutions construct economic geographies in which women's roles are simultaneously enabled (as service providers) and constrained (by the masculine institutional culture setting the terms of that provision). The Ladakhi homestay economy instantiates this: women-managed homestays receive consistent military-client traffic partly because personnel prefer their hospitality quality, but booking terms, pricing and ancillary services are negotiated through channels that structurally disadvantage proprietors without formal business training or military-institutional familiarity.

6. Policy Recommendations

6.1 'Secure Enterprise' Certification Framework

The central policy implication, that institutional buffering can convert the gross opportunity of military proximity into a net advantage, suggests a dedicated 'Secure Enterprise' certification for women-owned border-zone businesses. It should confer three benefits: (a) priority access to a revolving credit facility for disruption-event cash-flow emergencies, with a 30-day draw-down and repayment deferred until the season resumes, (b)

inclusion in the real-time security-notification system (Section 6.3), and (c) exemption from standard ILP processing for business movements within the enterprise's primary district, reducing the burden quantified in Tables 4 and 8. Criteria should require LAHDC registration, a minimum one-year operating history and a 16-hour frontier-business management module.

6.2 ILP Digitalisation and Women's Enterprise Processing Lanes

The permit-related revenue loss and processing burden documented in Section 4 make ILP digitalisation the single highest-return administrative intervention available. The Ministry of Home Affairs' eTourist Permit portal should be extended to include a Business Enterprise ILP category with a dedicated processing lane for LAHDC-registered women-owned enterprises, targeting a 72-hour guarantee. A mobile-application interface operable under Ladakh's low-bandwidth conditions would eliminate the physical Leh submission requirement that disproportionately burdens remote border-community women entrepreneurs. Estimated annual savings from processing-time reduction alone, at a median opportunity cost of ₹480/day, are roughly ₹8,640 per enterprise, meaningful for enterprises with mean revenues under ₹225,000.

6.3 Gender-Responsive Security Early-Warning Information System

The item 'lack of early-warning information about security changes hurts planning' records the battery's second-highest severity mean (3.74), identifying an information asymmetry with a tractable technological fix. The LAHDC tourism cell, with the J&K Police and the BRO liaison office, should develop a tiered early-warning system: Tier 1 (yellow, possible restriction within 30 days) to all registered enterprises in affected districts, Tier 2 (orange, restriction likely within 7 days) triggering permit-issuance suspension and direct notice to enterprises with confirmed bookings, and Tier 3 (red, restriction confirmed) activating the Secure Enterprise credit facility (Section 6.1). Women's enterprise networks should be mandatory notification recipients, directly addressing the asymmetry that disadvantages women relative to male operators with better military-institutional channels.

6.4 Military-Economy Integration Programme for Women's Enterprises

The commercial opportunity of military clientele (regression $\beta = 0.284$) is currently accessed through informal personal connections rather than formal procurement. A structured 'Military-Economy Integration Programme', run through the LAHDC with the Northern Command's welfare directorate, should formalise procurement between military canteens, officers' mess facilities and verified women-owned food, hospitality and handicraft enterprises. Since local service economies become structurally dependent on military demand (Enloe, 2000, Lutz, 2002), formalising it through transparent procurement would convert informal dependency into a stable commercial relationship, providing the income stability that current arrangements lack and addressing the revenue volatility (CV = 0.74) among high-proximity enterprises.

7. Limitations And Future Research

Five limitations qualify these findings. First, the cross-sectional design cannot establish causal direction: the revenue-proximity association may partly reflect higher-earning women self-selecting into border-zone enterprises and a longitudinal design would be needed to separate selection from treatment effects. Second, revenue is self-reported and subject to recall bias and informal-sector under-reporting, which would render the documented gaps conservative. Third, without a male comparison group, the gender component of the opportunity-risk differential is inferred through the gender-constraint sub-scale rather than directly quantified. Fourth, the data (October 2024-January 2025) reflect relative stabilisation after the 2020-21 LAC tensions and may not capture periods of elevated tension. Fifth, reliance on LAHDC and bank registers underrepresents the most informal micro-enterprises, likely the most precarious women-owned businesses and those most in need of policy support.

Future research should prioritise: (a) a matched-sample study comparing women's and men's enterprise experiences in equivalent border-proximity zones to directly quantify the gender premium in risk burden, (b) a longitudinal panel study tracking a cohort of Ladakhi women entrepreneurs through a full security cycle, including a tension period and stabilisation phase, (c) qualitative depth investigation of the military-client interaction dynamic and its gender dimensions and (d) a quasi-experimental evaluation of the ILP digitalisation and early-warning system recommendations, using the staggered rollout design that any phased implementation would naturally generate.

8. Conclusion

This study provides the first quantitative mapping of women's entrepreneurial experience at the intersection of border tourism, security dynamics and military presence in Ladakh, a context with no precise parallel in the literature. Its 346-respondent sample, regression model (Adj. $R^2 = 0.583$) and structural equation framework establish three claims. First, military proximity generates a substantial gross revenue advantage (high-proximity mean ₹224,800 vs. low-proximity ₹141,600) that is almost exactly offset in net terms by higher volatility, shorter seasons, permit losses and security disruptions averaging ₹44,600 per enterprise per year. Second, institutional

support, formal credit, government-scheme participation and network membership, is the primary mechanism converting gross opportunity into a sustainable net premium ($\Delta R^2 = .071$ beyond all proximity and attitude measures). Third, gender-specific constraints, male-dominated military culture, information asymmetries and the compounded regulatory burden on informal women-owned enterprises, constitute an independent risk surcharge adding about 0.319 standard deviations to women's composite risk score beyond physical proximity alone.

The policy message is neither that border-zone women's entrepreneurship should be discouraged nor that its risks are an acceptable cost of opportunity. It is that the current institutional architecture is failing to convert a genuine economic opportunity into a stable, equitable development outcome for Ladakh's most exposed women entrepreneurs. The three interventions proposed, Secure Enterprise certification, ILP digitalisation and a gender-responsive early-warning system, together address the structural mechanisms that perpetuate this failure. Their implementation would require not new legislative authority but coordination of existing administrative, tourism-regulatory and financial systems, a tractable challenge given the political will to prioritise women's economic security in Ladakh's border economy.

Declarations

Ethics approval and consent to participate. The study was conducted in accordance with the principles of the Declaration of Helsinki. Ethical clearance was obtained from the Institutional Ethics Committee of the researchers' home institution prior to data collection. Participation was voluntary, the study's purpose, the voluntary nature of participation and confidentiality safeguards were explained to each respondent and informed consent was obtained before interview. Respondents could decline any question or withdraw at any point without consequence.

Data confidentiality and security. No personal identifiers were retained in the analytic dataset. Given the security-sensitive nature of the research setting, enumerators were trained to ask about conflict-related disruptions without eliciting information about individuals, installations or security operations and no location data precise enough to identify individual enterprises are reported.

Consent for publication. Not applicable, no individually identifiable data are presented.

Availability of data and materials. The anonymised dataset and the survey instrument are available from the corresponding author on reasonable request, subject to the confidentiality and security constraints noted above. Six additional tables are provided as online Supplementary Material: S1 (Ladakh tourism-arrival trends and women-owned enterprise growth), S2 (security-disruption event analysis), S3 (composite opportunity-score sub-components), S4 (the full opportunity-risk attitude battery), S5 (the Pearson correlation matrix) and S6 (revenue by permit burden $\times$ credit access), together with the full variable dictionary.

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References

1. Aggarwal, R. (2004). *Beyond Lines of Control: Performance and Politics on the Disputed Borders of Ladakh, India*. Duke University Press.
2. Alarcón, D. M., & Cole, S. (2019). No sustainability for tourism without gender equality. *Journal of Sustainable Tourism*, 27(7), 903-919. <https://doi.org/10.1080/09669582.2019.1588283>
3. Ashley, C., & Roe, D. (2002). Making tourism work for the poor: Strategies and challenges in southern Africa. *Development Southern Africa*, 19(1), 61-82. <https://doi.org/10.1080/03768350220123855>
4. Ateljevic, I., & Doorne, S. (2000). 'Staying within the fence': Lifestyle entrepreneurship in tourism. *Journal of Sustainable Tourism*, 8(5), 378-392. <https://doi.org/10.1080/09669580008667374>
5. Aterido, R., Beck, T., & Iacovone, L. (2011). *Gender and finance in Sub-Saharan Africa: Are women disadvantaged?* Policy Research Working Paper No. WPS 5571. World Bank.
6. Buvinic, M., & Gupta, G. R. (1997). Female-headed households and female-maintained families: Are they worth targeting to reduce poverty in developing countries? *Economic Development and Cultural Change*, 45(2), 259-280. <https://doi.org/10.1086/452273>
7. Cohen, J. (2013). *Statistical power analysis for the behavioural sciences*. routledge.
8. de Jong, A., & Figueroa-Domecq, C. (2022). Assessing the UNWTOs global report on women in tourism: tourism's impact on gender equality. In *Handbook of Tourism impacts* (pp. 151-165). Edward Elgar Publishing.

9. Djankov, S., La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (2002). The regulation of entry. *Quarterly Journal of Economics*, 117(1), 1-37. <https://doi.org/10.1162/003355302753399436>
10. Enloe, C. (2000). *Maneuvers: The International Politics of Militarizing Women's Lives*. University of California Press.
11. Frohlick, S. (2006). 'Wanting the children and wanting K2': The incommensurability of motherhood and mountaineering in late modernity. *Gender, Place & Culture*, 13(5), 477-490. <https://doi.org/10.1080/09663690600858820>
12. Gries, T., & Naude, W. (2011). Entrepreneurship and human development: A capability approach. *Journal of Public Economics*, 95(3-4), 216-224. <https://doi.org/10.1016/j.jpubeco.2010.11.008>
13. Groves, R. M., Fowler Jr, F. J., Couper, M. P., Lepkowski, J. M., Singer, E., & Tourangeau, R. (2011). *Survey methodology*. John Wiley & Sons.
14. Gupta, R. (2023). *Freedom in Captivity* (Vol. 21). Cambridge University Press.
15. Hussain, A. (2025). Discussion, Conclusion and Recommendations. In *Urbanisation and Development Challenges in Kargil, Ladakh: The Transformation of the Indian Trans-Himalayan Perspective* (pp. 141-161). Cham: Springer Nature Switzerland.
16. Kinyanjui, M. N. (2014). *Women and the Informal Economy in Urban Africa: From the Margins to the Centre*. Zed Books.
17. Ladakh Autonomous Hill Development Council (LAHDC). (2022). *Economic Survey of Ladakh UT 2021-22*. LAHDC Press.
18. Ladakh Tourism Department. (2016-2023). *Annual Tourism Statistical Reports (2016-2023)*. Government of Ladakh UT.
19. Lennon, J., & Foley, M. (2000). *Dark Tourism: The Attraction of Death and Disaster*. Continuum.
20. Lutz, C. (2002). Making War at Home in the United States: Militarisation and the current crisis. *American Anthropologist*, 104(3), 723-735. <https://doi.org/10.1525/aa.2002.104.3.723>
21. Namgail, T., Bhatnagar, Y. V., Mishra, C., & Bagchi, S. (2007). Pastoral nomads of the Indian Changthang: Production system, landuse and socioeconomic changes. *Human Ecology*, 35(4), 497-504. <https://doi.org/10.1007/s10745-006-9107-0>
22. Ryan, C. (Ed.). (2007). *Battlefield Tourism: History, Place and Interpretation*. Elsevier.
23. Scheyvens, R. (1999). Ecotourism and the empowerment of local communities. *Tourism management*, 20(2), 245-249. [https://doi.org/10.1016/S0261-5177\(98\)00069-7](https://doi.org/10.1016/S0261-5177(98)00069-7)
24. Sion, B. (Ed.). (2014). *Death tourism: Disaster sites as recreational landscape*. Seagull Books.
25. Stone, P., & Sharpley, R. (2008). Consuming dark tourism: A thanatological perspective. *Annals of Tourism Research*, 35(2), 574-595. <https://doi.org/10.1016/j.annals.2008.02.003>
26. Timothy, D. J. (2019). Tourism, border disputes and claims to territorial sovereignty. In *Tourism and hospitality in conflict-ridden destinations* (pp. 25-38). Routledge.
27. UNWTO. (2019). *Global Report on Women in Tourism* (2nd ed.). World Tourism Organization.
28. Williams, A. M., & Baláz, V. (2015). Tourism risk and uncertainty: Theoretical reflections. *Journal of Travel Research*, 54(3), 271-287. <https://doi.org/10.1177/0047287514523334>