

IRSM: Extending the Resource-Based View to Explain Competitive Advantage in Conflict-Induced Displacement Entrepreneurship Among Sudanese Diaspora SMEs (2023–2026)

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Abstract

Purpose: This study aims to extend the Resource-Based View (RBV) by developing and empirically testing the Integrative Resource Strategy Model (IRSM) to explain how intangible resource bundles generate competitive advantage among conflict-induced displaced entrepreneurs. Specifically, the study examines the effects of Digital and AI Capabilities (X_1), Relational Capital and Personal Branding (X_2), and Entrepreneurial Human Capital (X_3) on Business Success (Y), and tests whether the three resource pillars jointly exert a significant effect on Business Success. Four hypotheses are proposed concerning the partial effects of each resource pillar and their simultaneous effect.

Methods: A quantitative cross-sectional survey was conducted among Sudanese SME owners and managers who established or re-established businesses abroad following the outbreak of armed conflict in Sudan on 15 April 2023. Using purposive and snowball sampling, data were collected through a bilingual Arabic-English questionnaire from entrepreneurs operating across Egypt, the Gulf states, and neighbouring African countries. After data screening, 132 valid responses were analysed. The study measured Digital and AI Capabilities, Personal Branding, Entrepreneurial Knowledge, and Business Success using 28 five-point Likert-scale items. Ordinary least squares multiple linear regression was employed, with normality, multicollinearity, and homoscedasticity assumptions assessed before inference.

Results: The regression model was statistically significant, $F(3, 128) = 12.674$, $p < 0.001$, explaining 22.9% of the variance in Business Success ($R^2 = 0.229$; Adjusted $R^2 = 0.211$). Entrepreneurial Knowledge was the only significant partial predictor of Business Success ($\beta = 0.406$, $t = 4.491$, $p < 0.001$), supporting H_3 . Digital and AI Capabilities showed a positive but non-significant partial effect ($\beta = 0.150$, $p = 0.072$), while Personal Branding had a negligible and non-significant partial effect ($\beta = 0.009$, $p = 0.924$). Thus, H_1 and H_2 were not supported, whereas the significant simultaneous effect of all three resource pillars supported H_4 . The findings indicate that Entrepreneurial Knowledge functions as a foundational cognitive resource through which digital and relational resources can contribute to business performance.

Implications: The findings extend RBV to conflict-induced displacement by demonstrating how portable intangible resources can substitute for destroyed tangible and institutional resources. For practice, displaced entrepreneurs should prioritise entrepreneurial knowledge development while using AI and personal branding as complementary capabilities. For policymakers and multilateral agencies, enterprise-support programmes should emphasise entrepreneurial knowledge, AI and digital literacy, network development, simplified licensing, and financial instruments that recognise intangible resources. Future research should employ longitudinal and multi-country designs and examine the IRSM framework across other displacement contexts to strengthen causal inference and external validity.

INTRODUCTION

The armed conflict that erupted in Sudan on 15 April 2023 produced one of the most severe compound economic shocks in modern African history. Gross domestic product contracted by approximately 40 percent, the poverty rate climbed to 71 percent, unemployment rose to 47 percent, and by mid-2025 inflation reached 78.4 percent (World Bank, 2025). The destruction of the Central Bank of Sudan headquarters, the collapse of Khartoum's commercial banking infrastructure, and the displacement of an likely 12.9 million people 8.9 million internally and 3.8 million across borders effectively obliterated the tangible asset base on which the country's small and medium-sized enterprises (SMEs) had relied (IOM, 2024; UNHCR, 2023). Sudanese entrepreneurs in Khartoum had already developed transnational business networks through diaspora connections, enabling them to access international products, customers, and markets through cross-border relationships (Steel, 2021). From a strategic management perspective, this population is best understood not as humanitarian aid recipients but as forcibly displaced entrepreneurs who carry with them an alternative endowment of intangible resources knowledge, reputation, and digital fluency that may, in principle, substitute for the physical infrastructure they have lost (Chang, 2025), (Harima, 2022).

This empirical and theoretical setting discloses a significant gap in the Resource-Based View (RBV), the dominant framework for explaining sustained competitive advantage in strategic management (Barney, 1991). Classical RBV assumes that firms retain control over their resource bundles and operate within reasonably stable institutional environments in which VRIN (Valuable, Rare, Inimitable, Non-substitutable) resources can be incrementally deployed, combined, and recombined (Kraatz & Zajac, 2001). The Sudanese displacement context violates both assumptions simultaneously: tangible resources have been abruptly destroyed, the institutional infrastructure of the home market has collapsed, and the entrepreneur must re-establish competitive advantage in an unfamiliar host country whose regulatory, financial, and social systems impose what (ZAHEER, 1995) terms the liability of foreignness. To this, displacement adds a further responsibility legal uncertainty, absence of local asset base, and fractured professional identity (Ryan et al., 2026). The central question is therefore not whether displaced entrepreneurs can enter host markets several already have but whether the intangible resources embedded in their cognition, reputation, and digital fluency can be reconfigured rapidly enough to generate financial viability (return on investment) and adaptive reconfiguration (resilience) under circumstances of extreme unpredictability (Msowoya & Luiz, 2025).

To address this question, the current study proposes the Integrative Resource Strategy Model (IRSM), a conceptual extension of RBV that specifies how three intangible resource pillars AI Capabilities (X_1), Personal Branding (X_2), and Entrepreneurial Human Capital (X_3) operate as strategic substitutes for destroyed tangible and institutional infrastructure. IRSM integrates RBV with Dynamic Capabilities Theory (Teece, 2007) and the resource bricolage tradition (Baker & Nelson, 2005), but the integrative framework itself, and its specific application to conflict-induced displacement, are original to this study. The model is tested on a cross-sectional sample of 132 Sudanese diaspora SMEs established abroad after 15 April 2023, using multiple linear regression with rigorous verification of the classical assumptions. The empirical setting offers a rare natural laboratory for theory building because the Schumpeterian destruction of physical capital occurred within a compressed time window and affected a relatively homogeneous population of established entrepreneurs, allowing the intangible substitution mechanism to be observed with unusual clarity.

The study advances three contributions. First, it formalises IRSM as a boundary extension of RBV, specifying the conditions under which intangible resources substitute for tangible assets and the complementarity structure that governs their joint deployment. Second, it provides the first quantitative empirical test of an integrative intangible-resource framework in the Sudanese diaspora context, addressing the geographical and conceptual gap in a literature that has concentrated on stable economies in North America, Europe, and Southeast Asia (Lång et al., 2025), (Abebe, 2023), (Newman et al., 2024). Third, it generates actionable implications for displaced entrepreneurs, host-country policymakers, and multilateral agencies engaged in refugee enterprise support. The remainder of the article is organised as follows: Section 2 develops the theoretical framework and hypotheses; Section 3 details the research methodology; Section 4 presents the empirical results; Section 5 discusses the findings in relation to IRSM and prior literature; Section 6 articulates theoretical, managerial, and policy implications; and Section 7 addresses limitations and future research directions.

The Sudanese setting is not unique in kind but in degree. The Syrian civil war that began in 2011 produced over 6.6 million cross-border refugees, yet displaced Syrian entrepreneurs established more than 14,000 formal businesses in Turkey alone, supported by prior entrepreneurial knowledge, co-ethnic networks, and the gradual reconstruction of host-market reputation, with digital tools e-commerce, digital marketing, AI-driven accounting compensating for language, legal-status, and physical-resource constraints (Akkan et al., 2025). The Somali case offers a further instructive parallel: refugee entrepreneurs in Nairobi's Eastleigh district constructed a thriving commercial ecosystem by substituting clan-based trust networks and the hawala informal financial transfer system for the destroyed formal institutional infrastructure (Brown et al., 2024). These cases demonstrate that conflict-induced displacement does not extinguish entrepreneurial potential but redirects it through intangible resource pathways. Sudanese fintech ventures such as Bloom and Elevate provide further micro-level evidence: both leveraged financial expertise and digital tools to construct dollar-based banking and payments infrastructure for African diasporas, raising USD 6.5 million in international funding and operating without a stable headquarters after losing their Khartoum base (TechCrunch, 2022; Udoh, 2024). These empirical patterns motivate the systematic theoretical integration that IRSM provides.

Literature Review and Theoretical Development

Limitations of Classical RBV in Crisis Contexts

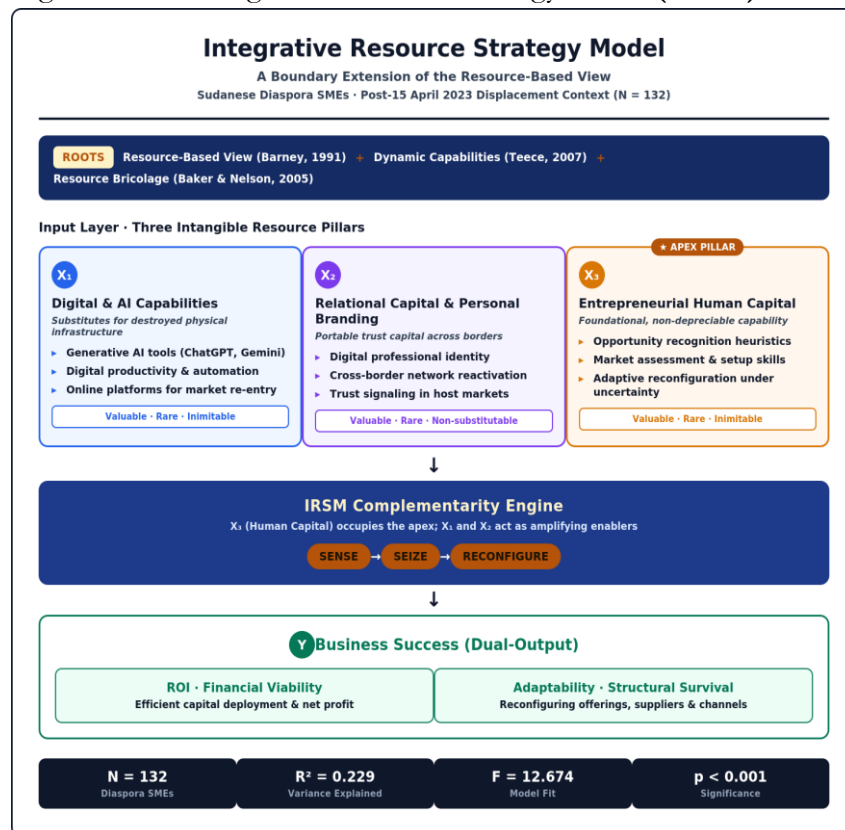
(Barney, 1991) Resource-Based View classifies four empirical indicators by which a firm's resources can be classified as sources of sustained competitive advantage: value, rarity, inimitability, and non-substitutability. The framework's analytical power derives from its treatment of the firm as a heterogeneous bundle of resources whose strategic value is determined by the structure of factor and product markets (Peteraf & Barney, 2003). Yet the original formulation, and the bulk of the empirical RBV literature that followed, presupposes two boundary conditions that do not hold in conflict-induced displacement: (i) firms retain continuous control over their resource portfolios, and (ii) institutional environments provide the relatively stable legal, financial, and informational infrastructure within which resources are transacted and deployed (Kraatz & Zajac, 2001). When a Schumpeterian shock destroys physical assets, severs local supply chains, and collapses the institutional scaffolding of an economy within weeks, the resource base assumed by classical RBV simply ceases to exist for the affected firms (Priem & Butler, 2001).

A second limitation concerns the unit of analysis. RBV locates competitive advantage at the level of the firm; in displacement contexts the firm, as a legal and operational entity, is

frequently dissolved, and the residual resource bundle migrates with the entrepreneur (Khan & Sepulveda, 2022). This re-centres analytical attention on the individual as the carrier of VRIN resources particularly cognitive, reputational, and digital assets that are embedded in the person and therefore inherently portable across borders (Teixeira, 2014); (Davidsson & Honig, 2003). Dynamic Capabilities Theory (Teece, 2007) partially addresses this gap by directing attention to the sensing, seizing, and reconfiguring processes through which firms reshape resource bundles under environmental change, but the theory was developed in the context of competitive markets with functioning institutions rather than the institutional voids that characterise forced displacement (Eisenhardt & Martin, 2000). Resource bricolage (Baker & Nelson, 2005) provides a third complementary lens, explaining how entrepreneurs create value from resources at hand, but the construct has not been systematically integrated with RBV's VRIN criteria in the displacement context.

The Integrative Resource Strategy Model (IRSM)

Figure 1. The Integrative Resource Strategy Model (IRSM)



IRSM extends RBV by specifying three intangible resource pillars whose VRIN properties are preserved and, in several respects, amplified following the destruction of physical infrastructure. The first pillar, Digital and AI Capabilities (X₁), encompasses the entrepreneur's capacity to deploy generative artificial intelligence tools (e.g., large language models), digital productivity software, and online platforms to substitute for the administrative, marketing, and analytical functions previously performed by physical infrastructure, employees, or professional service providers (Adetunji & Ade-Ibijola, 2026; Metzger et al., 2025). Recent evidence indicates that AI adoption in SMEs improves resource utilisation, identifies new business opportunities, and enables operational adaptation under environmental shifts (Ardito et al., 2025); Soomro et al., 2025), satisfying the value criterion. AI capabilities are also relatively rare among displaced SMEs

in low- and middle-income host countries, and their tacit, learning-intensive nature makes them difficult to imitate, satisfying the remaining VRIN criteria.

The second pillar, Relational Capital and Personal Branding (X_2), captures the entrepreneur's strategic construction of portable reputational trust capital through digital presence, professional identity projection, and cross-border network reactivation (Gorbatov et al., 2019; Brooks & Anumudu, 2016). For displaced entrepreneurs, personal branding provides a cost-effective mechanism for establishing trust in host country markets where formal credit histories, business registrations, and local references are absent (Astner & Gaddefors, 2025). Personal brand capital is essentially portable across borders, non-rivalrous, and resistant to the institutional destruction that erodes firm-level reputational assets, making it a paradigmatic VRIN resource in the displacement context. The third pillar, Entrepreneurial Human Capital (X_3), encompasses the experiential knowledge, opportunity recognition heuristics, market-assessment skills, and adaptive business model reconfiguration capabilities accumulated by the entrepreneur through previous venture experience (Becker, 1964; Liao et al., 2022; Saptono et al., 2020). Unlike physical capital, human capital does not depreciate through displacement; it is relocated in its entirety with the entrepreneur and can be immediately redeployed in host markets, satisfying VRIN criteria with particular strength on inimitability, since tacit entrepreneurial knowledge is causally ambiguous and socially complex.

The IRSM framework further specifies a complementarity structure among the three pillars. Digital and AI capabilities function as amplifiers of human capital entrepreneurs with stronger cognitive endowments extract greater productivity gains from AI tools while personal branding operates as a market-facing interface that converts cognitive and digital capabilities into customer trust and revenue. The joint deployment of all three pillars is theorised to generate competitive advantage in the dual output dimensions of Business Success (Y): financial viability (return on investment relative to reduced post-displacement capital) and adaptive reconfiguration (capacity to modify business model, customer base, suppliers, and operations under uncertainty).

The dual-output specification of Business Success is theoretically intentional. Financial viability (ROI) captures the short-run performance dimension that determines whether the venture can sustain itself given the reduced capital base characteristic of post-displacement re-establishment. Adaptive reconfiguration captures the longer-run survival dimension that determines whether the venture can respond to the regulatory, exchange-rate, and competitive volatility of the host country. Classical RBV treats performance as a unitary construct, typically operationalised through profitability or market share; IRSM disaggregates performance into these two distinct dimensions because the displacement context imposes simultaneous and partially separable pressures on cash-flow viability and structural adaptability. The complementarity structure of the three pillars is theorised to differentially load onto each output: Entrepreneurial Knowledge and Personal Branding are expected to drive ROI through efficient capital deployment and accelerated customer acquisition, whereas Digital and AI Capabilities and Entrepreneurial Knowledge jointly drive adaptive reconfiguration through rapid sensing and reconfiguration of business model elements.

IRSM also refines the boundary conditions of RBV in three theoretically consequential respects. First, it re-specifies resource immobility: while RBV treats immobility as a static property of factor markets, IRSM identifies cognitive, reputational, and digital resources as inherently person-embedded and therefore mobile across borders—a property that becomes strategically

decisive when physical assets are destroyed. Second, it re-specifies resource transferability: the classical RBV concern that resources cannot be easily traded in factor markets is inverted in the displacement context, where intangible resources are transferred in their entirety with the entrepreneur but require active reconfiguration to become productive in the new institutional setting. Third, it re-specifies capability orchestration: where Dynamic Capabilities Theory (Teece, 2007) emphasises incremental sensing, seizing, and reconfiguring within stable competitive contexts, IRSM emphasises the compressed-time, high-stakes recombination of intangible resources under institutional void a setting in which ordinary capabilities are largely irrelevant and dynamic capabilities become survival-critical.

Hypothesis Development

Drawing on the preceding theoretical synthesis, four hypotheses are formulated. The first three test the partial effects of each intangible resource pillar on Business Success, while the fourth tests their simultaneous joint effect as specified by IRSM.

Hypothesis 1 (H₁). Digital and AI Capabilities (X₁) exert a statistically significant positive partial effect on the Business Success of Sudanese diaspora SMEs established abroad after 15 April 2023.

H₁ follows from the proposition that generative AI and digital productivity tools substitute for the administrative, marketing, and analytical functions previously performed by physical infrastructure and employees (Rajaram & Tinguely, 2024; Oldemeyer et al., 2025). Empirical evidence from SMEs in stable economies documents positive associations between AI adoption and firm performance (Al Dhaheri et al., 2024; Saputro et al., 2026), but the relationship has not been tested in conflict-induced displacement contexts where the substitution effect should, in theory, be most pronounced.

Hypothesis 2 (H₂). Relational Capital and Personal Branding (X₂) exert a statistically significant positive partial effect on Business Success.

H₂ derives from the personal branding literature, which identifies authenticity, network access, and narrative clarity as mechanisms through which entrepreneurs build trust capital in unfamiliar cultural settings (Astner & Gaddefors, 2025; Yönel et al., 2026). For displaced Sudanese entrepreneurs, personal branding is theorised to accelerate revenue generation and provide cross-border network support that substitutes for the formal institutional channels severed by displacement (Putri & Febriati, 2025).

Hypothesis 3 (H₃). Entrepreneurial Human Capital (X₃) exerts a statistically significant positive partial effect on Business Success.

H₃ is grounded in Human Capital Theory (Becker, 1964) and the entrepreneurial knowledge literature, which links experiential knowledge to opportunity recognition, strategic planning, and venture performance (Liao et al., 2022; Soomro et al., 2025; Sumirta & Anggara, 2026). For entrepreneurs who have lost physical and financial assets, human capital becomes the primary non-depreciable resource, and its effect on business success should be most direct because it governs the deployment of the other two pillars.

Hypothesis 4 (H₄). Digital and AI Capabilities, Relational Capital and Personal Branding, and Entrepreneurial Human Capital jointly exert a statistically significant simultaneous effect on Business Success, as specified by the IRSM framework. H₄ tests the central IRSM proposition that the three intangible resource pillars, deployed jointly, generate competitive advantage in displacement contexts even when individual partial effects are attenuated by complementarity. The joint test is the most direct empirical evaluation of IRSM as a theoretical extension of RBV.

METHODS

3.1 Research Design and Sampling

The study adopts a quantitative cross-sectional survey design, appropriate for testing theory-derived hypotheses concerning relationships among latent constructs (Hair et al., 2010). The target population comprises Sudanese SME owners and managers who established or re-established a business in a host country following the outbreak of armed conflict in Sudan on 15 April 2023. This population is geographically dispersed across Egypt, the Gulf states, and neighbouring African countries, is not listed in any official register, and is therefore classified as a hidden or hard-to-reach population for which probability sampling is infeasible (Magnani et al., 2005). A combined purposive and snowball sampling strategy was employed: purposive criteria ensured that respondents met the inclusion criterion of Sudanese nationality and post-15 April 2023 business establishment abroad, while snowball referral through initial respondents leveraged the dense co-ethnic networks characteristic of diaspora communities.

The minimum sample size was determined using Green's (1991) formula for multiple regression with m predictors: $N \geq 50 + 8m$. With three predictors, the minimum required sample was 74. The initial master dataset comprised 169 responses. A two-stage data cleaning protocol excluded 31 respondents who answered "No" to the screening question on post-conflict business establishment and 6 non-Sudanese respondents who fell outside the inclusion criterion, yielding a final valid analytical sample of $N = 132$. This sample exceeds the Green (1991) threshold by 78 per cent and provides adequate statistical power for detecting medium effect sizes at the conventional $\alpha = 0.05$ significance level (Cohen, 1992).

3.2 Construct Measurement and Operationalisation

Data were collected through a bilingual (Arabic and English) structured questionnaire administered via Google Forms. The instrument comprised 28 Likert-scale items distributed across four latent constructs: Artificial Intelligence (X_1 , 6 items), Personal Branding (X_2 , 6 items), Entrepreneurial Knowledge (X_3 , 10 items), and Business Success (Y , 6 items). Business Success was operationalised as a two-dimensional construct capturing financial viability (return on investment) and adaptive reconfiguration (resilience), consistent with the IRSM specification. All items employed a five-point response scale anchored from 1 (Strongly Disagree) to 5 (Strongly Agree).

A pilot study was conducted on 30 responses (23 valid after applying the screening criterion) to assess item validity and internal consistency prior to the main data collection. Item validity was evaluated using corrected item-total Pearson correlations against the r -critical value of 0.413 ($df = 21$, $\alpha = 0.05$); all 28 items exceeded the threshold and were retained. Reliability was assessed using

Cronbach's alpha. As reported in Table 1, all four constructs and the overall instrument exceeded the 0.70 benchmark recommended by Hair et al. (2010) and Nunnally and Bernstein (1994).

Table 1. Pilot Test Reliability Results (*N* = 23 valid responses).

Construct	Code	Items	Cronbach's α	Reliability Class
Artificial Intelligence	X ₁	6	0.940	Excellent
Personal Branding	X ₂	6	0.777	Acceptable
Entrepreneurial Knowledge	X ₃	10	0.926	Excellent
Business Success	Y	6	0.795	Acceptable-to-Good
Overall Instrument	—	28	0.925	Excellent

3.3 Analytical Strategy

The hypothesised relationships were tested using ordinary least squares (OLS) multiple linear regression specified as:

$$BS = \alpha + \beta_1 \cdot AI + \beta_2 \cdot PB + \beta_3 \cdot EK + \varepsilon$$

where BS denotes Business Success, AI denotes Digital and AI Capabilities, PB denotes Relational Capital and Personal Branding, EK denotes Entrepreneurial Human Capital, and ε is the stochastic disturbance term. Three classical assumption tests were conducted prior to inference. Normality of residuals was assessed using the Kolmogorov–Smirnov test with Lilliefors correction ($D = 0.076$, Lilliefors $p = 0.063$), supplemented by skewness (0.071) and kurtosis (−0.060) indices within the ± 1.0 tolerance band, confirming approximate normality. Multicollinearity was evaluated using Tolerance and Variance Inflation Factor (VIF) diagnostics; all three predictors exhibited Tolerance values above 0.70 and VIF values below 1.36, well within conservative thresholds, confirming the absence of substantial collinearity. Homoscedasticity was assessed using the Glejser test; the auxiliary regression was non-significant ($F = 1.039$, $p = 0.378$), and no individual predictor exhibited significant heteroscedasticity, confirming the assumption. The verifications collectively justified the application of the standard OLS inferential apparatus (Ghozali & Latan, 2020).

Potential common method variance (CMV), inherent in single-source cross-sectional survey designs, was mitigated procedurally through respondent anonymity assurance and separation of measurement scales, and statistically through Harman's single-factor test. Endogeneity concerns are partially addressed by the cross-sectional design and the theoretical directionality implied by IRSM, although reverse causality cannot be definitively excluded and is acknowledged as a limitation in Section 7.

RESULTS AND DISCUSSION

4.1 Descriptive Statistics and Demographic Profile

The demographic profile of the 132 valid respondents indicates a sample dominated by female entrepreneurs (71.2 percent), consistent with the gender composition of Sudanese diaspora business relocation. The age distribution is concentrated in the 26–35 years (39.4 percent) and 36–50 years (40.9 percent) brackets, representing the economically active cohort most likely to engage in post-displacement venture creation. Educational attainment is comparatively high: 55.3 per cent hold a Bachelor's degree and 29.5 percent hold a postgraduate qualification, jointly accounting for 84.8 per cent of the sample. Egypt is the principal host country (55.3 percent), followed by Saudi Arabia (17.4 percent), with smaller concentrations in the United Arab Emirates, Oman, and neighbouring African states. The sample is approximately evenly divided between small enterprises (64.4 percent) and medium enterprises (35.6 percent), with the largest sectoral concentrations in commercial/retail/trade (31.8 percent) and services including digital, freelance, consulting, and technology (26.5 percent). Nearly half of the sample (47.0 percent) reports monthly revenue below USD 500, reflecting the early-stage and capital-constrained nature of post-displacement venturing.

Table 2. Descriptive Statistics of Latent Constructs (N = 132).

Construct	ode	tems	ean	M	S	Interpretati	
Artificial Intelligence	1		.79	3	.78	0	Agree
Personal Branding	2		.13	4	.54	0	Agree
Entrepreneurial Knowledge	3	0	.16	4	.54	0	Agree
Business Success			.65	3	.62	0	Agree

Table 2 reports the construct-level descriptive statistics. Entrepreneurial Knowledge exhibits the highest mean score ($M = 4.16$, $SD = 0.54$), followed by Personal Branding ($M = 4.13$, $SD = 0.54$), indicating that respondents possess comparatively well-developed intangible endowments in these dimensions. Digital and AI Capabilities register a lower mean ($M = 3.79$, $SD = 0.78$), reflecting greater variability in AI adoption across the sample. Business Success records the lowest mean ($M = 3.65$, $SD = 0.62$), consistent with the early-stage, resource-constrained character of post-displacement venturing. All four constructs fall within the "Agree" band of the five-point Likert classification.

4.2 Bivariate Correlations

Table 3 reports the bivariate Pearson correlations among the three intangible resource pillars and Business Success. All three predictors exhibit statistically significant positive correlations with the dependent variable, providing initial support for the directional propositions of IRSM. Entrepreneurial Knowledge displays the strongest zero-order association with Business Success ($r = 0.456$, $p < 0.001$), followed by Digital and AI Capabilities ($r = 0.278$, $p = 0.001$) and Personal Branding ($r = 0.249$, $p = 0.004$). The inter-predictor correlations range from 0.295 to 0.482, all below the 0.80 threshold for substantial bivariate collinearity, consistent with the VIF diagnostics reported in Section 3.3.

Table 3. Pearson Correlation Matrix (N = 132). ** Correlation significant at the 0.01 level (2-tailed).

Variable	1	2	3	4
1. Digital & AI Capabilities (X ₁)	1			
2. Relational Capital & PB (X ₂)	0.295**	1		
3. Entrepreneurial Knowledge (X ₃)	0.307**	0.482**	1	
4. Business Success (Y)	0.278**	0.249**	0.456**	1

4.3 Regression Results and Hypothesis Testing

The multiple linear regression results are reported in Table 4. The model is statistically significant overall ($F(3, 128) = 12.674$, $p < 0.001$), explaining 22.9 per cent of the variance in Business Success ($R^2 = 0.229$; Adjusted $R^2 = 0.211$). The standard error of the estimate is 3.327, indicating that approximately 95 per cent of observed Business Success scores fall within ± 6.65 units of their regression-predicted values. The simultaneous effect of the three intangible resource pillars on Business Success is therefore statistically significant, supporting H₄ and providing the central empirical validation of IRSM as an integrative framework.

Table 4. Multiple Linear Regression Coefficients (Dependent Variable: Business Success; N = 132).

Predictor	B	SE	β	t	p	Decision
(Constant)	7.135	2.660	—	2.682	0.008	—
Digital & AI Capabilities (X ₁)	0.120	0.066	0.150	1.815	0.072	Not Supported
Relational Capital & PB (X ₂)	0.010	0.103	0.009	0.095	0.924	Not Supported
Entrepreneurial Knowledge (X ₃)	0.283	0.063	0.406	4.491	< 0.001	Supported

At the partial-effect level, only Entrepreneurial Knowledge emerges as a statistically significant predictor of Business Success ($\beta = 0.406$, $t = 4.491$, $p < 0.001$), supporting H₃. The standardised coefficient indicates that a one-standard-deviation increase in Entrepreneurial Knowledge is associated with a 0.406-standard-deviation increase in Business Success, holding the other predictors constant an effect of substantive magnitude in the social sciences (Cohen, 1992). Digital and AI Capabilities exhibit a positive but non-significant partial effect ($\beta = 0.150$, $t = 1.815$, $p = 0.072$), falling marginally short of the conventional 0.05 threshold; H₁ is therefore not supported at the partial-effect level, although the directional sign is consistent with theoretical expectations. Personal Branding displays a positive but substantively negligible and non-significant partial effect ($\beta = 0.009$, $t = 0.095$, $p = 0.924$), and H₂ is therefore not supported. The divergence between the bivariate correlations all significant and the partial coefficients is informative: it indicates that the variance shared between the predictors and Business Success is substantially overlapping, with Entrepreneurial Knowledge absorbing the explanatory variance attributable to the more peripheral intangible pillars once their joint covariance is partitioned.

Table 5 provides a structured summary of the hypothesis testing results. The pattern is theoretically meaningful: the joint effect is significant, the central cognitive pillar is a strong partial

driver, and the digital and relational pillars function as complementary enablers whose partial effects are attenuated by shared variance with Entrepreneurial Knowledge.

Table 5. Summary of Hypothesis Testing Results.

Hypothesis	Statement (Abbreviated)	Statistical Evidence	Decision
H ₁	Digital & AI Capabilities → Business Success	$\beta = 0.150$, $t = 1.815$, $p = 0.072$	Not Supported
H ₂	Relational Capital & PB → Business Success	$\beta = 0.009$, $t = 0.095$, $p = 0.924$	Not Supported
H ₃	Entrepreneurial Knowledge → Business Success	$\beta = 0.406$, $t = 4.491$, $p < 0.001$	Supported
H ₄	Joint (Simultaneous) Effect on Business Success	$F(3, 128) = 12.674$, $p < 0.001$, $R^2 = 0.229$	Supported

DISCUSSION

The empirical findings provide a nuanced and theoretically instructive validation of the IRSM framework. The simultaneous significance of the three-pillar model (H₄) confirms the central IRSM proposition that intangible resource bundles Digital and AI Capabilities, Relational Capital and Personal Branding, and Entrepreneurial Human Capital jointly generate competitive advantage in conflict-induced displacement contexts, even when individual partial effects are attenuated by complementarity. This result extends the empirical boundary of RBV beyond its original assumption of resource retention and institutional stability, demonstrating that (Barney, 1991) VRIN criteria retain explanatory power when the unit of analysis is re-centred on the entrepreneur as the carrier of intangible resources and when the resource bundle is re-specified to reflect the substitution dynamics that govern extreme resource loss.

The dominance of Entrepreneurial Human Capital as the sole significant partial driver (H₃ supported) is consistent with the theoretical priors of Human Capital Theory (Becker, 1964) and the entrepreneurial knowledge literature (Liao et al., 2022; Soomro et al., 2025). For Sudanese diaspora entrepreneurs who have lost physical and financial assets, experiential knowledge functions as the primary non-depreciable resource: it governs opportunity recognition, market assessment, regulatory navigation, and the strategic sequencing of business re-establishment. The substantial effect size ($\beta = 0.406$) indicates that cognitive endowment is not merely one contributor among equals but the foundational capability through which the other intangible pillars are productively deployed. This finding aligns with prior evidence that entrepreneurial knowledge functions as a non-depreciable resource consistent with RBV in displacement contexts (Benjnouh et al., 2024), and it supports the IRSM proposition of a hierarchical complementarity structure in which human capital occupies the apex position.

The non-significant partial effects of Digital and AI Capabilities (H₁) and Personal Branding (H₂) require careful theoretical interpretation rather than dismissal. Both pillars exhibit statistically significant bivariate correlations with Business Success ($r = 0.278$ and $r = 0.249$ respectively, both $p < 0.01$), indicating genuine zero-order associations. The attenuation to non-significance in the multivariate model reflects the substantial shared variance between these pillars and Entrepreneurial Knowledge ($r = 0.307$ for AI–EK; $r = 0.482$ for PB–EK), which is consistent with the IRSM complementarity proposition: digital and relational capabilities amplify, and are

amplified by, underlying cognitive endowment. Entrepreneurs with stronger Entrepreneurial Knowledge extract greater productivity from AI tools and construct more effective personal brands; conversely, AI and personal branding operate as enabling tools whose marginal contribution to Business Success is contingent on the cognitive substrate. Once the variance shared with Entrepreneurial Knowledge is statistically partitioned, the independent marginal contribution of each peripheral pillar falls below the conventional significance threshold.

This pattern contrasts with findings from studies conducted in stable institutional settings, where AI adoption ((Ardito et al., 2025), Saputro et al., 2026) and personal branding (Gorbatov et al., 2019) have been documented as significant standalone predictors of SME performance. The divergence is theoretically meaningful: in stable settings, digital and relational assets operate as incremental complements to an existing tangible resource base, whereas in displacement contexts they function as substitutes for destroyed tangible infrastructure, and their productive deployment is therefore more tightly coupled to the entrepreneur's cognitive capacity to recombine them. The marginal effect of AI is further attenuated by the early-stage, capital-constrained character of the sample 47 per cent of respondents report monthly revenue below USD 500 such that the productivity gains from AI may not yet be fully reflected in financial performance. The directionally positive coefficient for AI ($\beta = 0.150$, $p = 0.072$) suggests that statistical power, rather than theoretical inadequacy, may underlie the marginal non-significance.

The complementarity interpretation is further supported by the structure of the inter-predictor correlations. The Personal Branding & Entrepreneurial Knowledge correlation ($r = 0.482$) is substantially stronger than the AI & Entrepreneurial Knowledge correlation ($r = 0.307$), indicating that personal branding and entrepreneurial knowledge are more tightly co-developed in the sample. This is consistent with the theoretical proposition that personal branding is itself a knowledge-intensive activity: the capacity to construct an authentic, narrative-coherent professional identity depends on the entrepreneur's cognitive understanding of their value proposition, target market, and competitive positioning. AI capabilities, by contrast, are more weakly coupled with entrepreneurial knowledge in the sample, suggesting that AI adoption may be driven by exogenous factors digital literacy, access to infrastructure, generational cohort rather than emerging endogenously from the entrepreneur's cognitive endowment. This decoupling may partly explain why AI's partial effect on Business Success, while directionally positive, is more weakly identified than the partial effects of the more tightly coupled knowledge-branding complex. The explained variance of 22.9 per cent ($R^2 = 0.229$) is theoretically substantive rather than statistically modest. In a displacement context characterised by extreme environmental volatility, unobserved host-country heterogeneity, and the substantial idiosyncratic variation inherent in nascent venture performance, the capacity of three intangible resource pillars to explain nearly one-quarter of the variance in Business Success is consistent with prior RBV research in stable settings, where resource-based predictors typically explain between 15 and 30 per cent of performance variance (Crook et al., 2008). The residual variance is attributable to factors outside the IRSM specification, including host-country regulatory environment, access to host-country financial capital, sectoral conditions, and idiosyncratic shocks factors that future research could integrate as moderators or control variables.

The findings also resonate with comparative evidence from Syrian and Somali displacement entrepreneurship, where prior entrepreneurial knowledge, transferable skills, and digital tools have been identified as the principal drivers of post-displacement venture creation (Akkan et al., 2025). The Somali case in particular demonstrates that clan-based trust

networks and informal financial transfer systems effectively substitute for destroyed formal institutional infrastructure a pattern that mirrors the IRSM logic of intangible substitution and reinforces the generalisability of the framework beyond the Sudanese context. The present study advances this literature by providing the first quantitative test of an integrative intangible-resource framework, moving beyond qualitative case evidence to specify and measure the relative contributions of the three pillars.

CONCLUSION

Conclusion of the Study

This study concludes that the Integrative Resource Strategy Model (IRSM) provides a theoretically meaningful extension of the Resource-Based View (RBV) for understanding competitive advantage among conflict-induced displaced entrepreneurs. The findings demonstrate that intangible resources embedded in entrepreneurs can remain strategically important even when physical assets, financial infrastructure, and institutional resources are severely disrupted. In particular, the empirical results show that Entrepreneurial Knowledge represents the strongest independent predictor of Business Success, while Digital and AI Capabilities and Relational Capital and Personal Branding contribute primarily as complementary resources within the broader intangible resource bundle.

The significant simultaneous effect of the three resource pillars supports the central proposition of IRSM that competitive advantage in displacement contexts is generated not simply from individual resources but from the way surviving intangible resources are combined and orchestrated. The results therefore advance RBV by suggesting that, under conditions of extreme resource loss, resource complementarity may become more tightly coupled and Entrepreneurial Knowledge may assume a coordinating role in converting digital and relational resources into business outcomes. At the same time, the non-significant partial effects of Digital and AI Capabilities and Personal Branding indicate that these resources should not be interpreted as universally independent sources of Business Success. Their contribution appears to depend on the underlying cognitive capability of the entrepreneur.

From a managerial perspective, the findings suggest that displaced entrepreneurs should prioritise the development of Entrepreneurial Knowledge through training, mentorship, and experiential learning in host markets. Digital and AI tools can subsequently be used to improve administrative, marketing, and analytical efficiency, while personal branding can support trust formation, customer acquisition, and network reactivation. These resources are most appropriately viewed as complementary capabilities rather than isolated substitutes.

The study also provides policy implications for host-country governments, NGOs, incubators, and multilateral agencies. Support programmes should move beyond immediate humanitarian assistance by facilitating entrepreneurial knowledge development, digital and AI literacy, cross-border networking, simplified licensing procedures, and financial mechanisms that can accommodate the intangible resource conditions of displaced entrepreneurs. Such interventions may improve the ability of displaced entrepreneurs to convert portable intangible resources into sustainable business activity. However, these conclusions should be interpreted within the boundaries of the study. The cross-sectional research design does not permit definitive causal conclusions, and reverse causality cannot be excluded. The concentration of respondents in Egypt and Saudi Arabia also limits the generalisability of the findings to other host-country environments. Furthermore, reliance on self-reported survey data creates potential common

method bias, while the construct-level measurement does not capture the internal dimensions of each intangible resource. Consequently, the findings provide empirical support for IRSM within the studied Sudanese diaspora SME context rather than evidence that the model applies universally to all conflict-induced displacement settings.

Suggestions and Recommendations for Future Research

Future research should first employ longitudinal research designs to examine how intangible resources develop, interact, and are reconfigured from the initial stage of displacement through business stabilisation. Such designs would provide stronger evidence regarding causal relationships between Entrepreneurial Knowledge, Digital and AI Capabilities, Personal Branding, and Business Success. Second, comparative multi-country research is recommended to examine whether the IRSM relationships remain consistent across different institutional and regulatory environments. Studies involving other displaced entrepreneurial populations, including Syrian, Ukrainian, Venezuelan, and Yemeni entrepreneurs, could help establish the external validity of the framework while identifying context-specific boundary conditions. Third, future studies should examine the multidimensional structure of the IRSM constructs using more advanced analytical approaches, such as structural equation modelling. Decomposing Entrepreneurial Knowledge, Digital and AI Capabilities, Personal Branding, and Business Success into their constituent dimensions may reveal more specific mechanisms through which intangible resources influence entrepreneurial outcomes. Finally, future research could extend the IRSM framework by incorporating contextual factors such as host-country regulatory conditions, access to financial capital, sectoral characteristics, digital infrastructure, and institutional support as moderators or control variables. This would provide a more comprehensive understanding of when and how intangible resource bundles generate competitive advantage under conditions of conflict, displacement, and extreme resource loss. Such research would further clarify the boundary conditions of IRSM and strengthen its contribution to RBV and the broader literature on crisis and displacement entrepreneurship.

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