INTELLECTUAL CAPITAL AS A DRIVER OF SUSTAINABILITY AMONG SOCIAL ENTREPRENEURS

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INFORMASI ARTIKEL	ABSTRAK
	Wirausaha sosial berperan dalam pembangunan inklusif namun menghadapi hambatan keuangan, institusional, dan risiko tinggi. Penelitian ini menguji bagaimana modal intelektual (MI)—manusia, struktural, dan relasional—mendukung keberlanjutan wirausaha sosial di Bali. Berdasarkan survei terhadap 100 responden yang dianalisis dengan PLS-SEM, hasil menunjukkan hambatan tidak signifikan, risiko berpengaruh negatif, dan MI berpengaruh positif secara langsung tanpa efek moderasi. MI berfungsi sebagai pendorong independen keberlanjutan. Studi ini menekankan pentingnya penguatan kapasitas dan dukungan ekosistem untuk meningkatkan kinerja wirausaha sosial berkelanjutan. Kata Kunci: modal intelektual, wirausaha sosial, hambatan, risiko, keberlanjutan

ABSTRACT

Social entrepreneurs drive inclusive development but face financial, institutional, and risk-related barriers. This study investigates how intellectual capital (IC)—human, structural, and relational—supports the sustainability of social enterprises in Bali, Indonesia. Using survey data from 100 entrepreneurs analysed with PLS-SEM, the results show that perceived barriers are insignificant, while risks negatively affect sustainability. IC has a positive direct impact but no moderating effect, indicating that it acts as an independent driver. The study contributes to the understanding IC's role in resource-constrained contexts and recommends strengthening capacity-building and ecosystem support to enhance sustainable enterprise performance.

Keywords: intellectual capital, social entrepreneur, barriers, risk, sustainability

1. Introduction

Social entrepreneurs have become central to advancing inclusive and sustainable development, particularly in regions experiencing post-crisis recovery. In Bali—an economy that was deeply affected by the COVID-19 pandemic—social enterprises are recognised for their dual mission of generating economic value while addressing social and environmental problems. Their role aligns with Indonesia's National Entrepreneurship

Development Policy (Presidential Regulation No. 2/2022) and global sustainability imperatives (Hoogendoorn et al., 2019).

Despite their potential, social entrepreneurs continue to face financial constraints, limited institutional support, and heightened risk exposure, all of which undermine growth and resilience (Davies et al., 2018; Staicu, 2018). Prior research identifies these obstacles as perceived barriers and sustainability risks that threaten enterprise continuity (Shahverdi et al., 2018; Pinkse & Groot, 2015). However, much of the literature remains descriptive, focusing on identifying obstacles rather than explaining how social enterprises can mobilise internal resources to overcome them. Few studies have examined the role of intangible assets—particularly intellectual capital (IC)—as a strategic capability that strengthens sustainability in developing economy contexts (Abhayawansa & Guthrie, 2016; Abhayawansa et al., 2018; Stewart & Ruckdeschel, 1998).

This study addresses this gap by investigating how, and to what extent IC—comprising human, structural, and relational capital—directly enhances the sustainability of social entrepreneurs in Bali. Previous studies have linked IC to financial or environmental performance in large or commercial enterprises (Prado et al., 2022; Yusliza et al., 2020; Ahmad, 2023), but evidence from micro- and small-scale social enterprises remains scarce (Prado et al., 2022; ul Rehman et al., 2024). This omission is critical because such ventures often depend on intangible knowledge assets, stakeholder trust, and relational capital rather than on financial resources or formal support mechanisms.

The urgency of this research stems from the post-pandemic challenges faced by social entrepreneurs as they rebuild amid resource scarcity and institutional asymmetry (Siregar & Yusri, 2022). Understanding how IC contributes to sustainability provides timely insights into capability building, resilience, and innovation in constrained environments. This perspective is reinforced by studies showing that the management of intellectual resources can determine both long-term survival and social impact (Mottiar et al., 2018; Yanti et al., 2018).

Accordingly, this study aims to examine whether perceived barriers and risks affect sustainability, and whether IC serves as a strategic driver that strengthens resilience and performance. The analysis integrates Resource-Based Theory (RBT; Wernerfelt, 1984), which emphasises internal capabilities, and Resource Dependence Theory (RDT; Biermann & Harsch, 2017; Tashman, 2021), which highlights environmental constraints. Unlike previous research that conceptualised IC as a moderating variable, this study finds that IC's influence is primarily direct—thereby clarifying its independent role as a driver of sustainability rather than a buffer against contextual risks.

The novelty of this research lies in extending RBT and RDT to the social entrepreneurship context in a developing economy, empirically demonstrating IC's direct effect on sustainability. This approach provides a more nuanced understanding of how internal intangible assets interact with external institutional limitations to shape enterprise outcomes. Theoretically, this study enriches the IC and social entrepreneurship literature by integrating firm-centric and context-sensitive perspectives to explain sustainability under constraints. Practically, it identifies human, structural, and relational capital as key capability areas for training and enterprise development. At the policy level, it offers evidence-based insights for designing capacity-building, institutional support, and

partnership programmes that enhance the utilisation of IC within the social enterprise ecosystem.

2. Literature Review and Hypothesis Development

Social entrepreneurs operate in environments characterised by limited institutional support, resource scarcity, and market uncertainty (Davies et al., 2018; Siregar & Yusri, 2022). Unlike conventional businesses, social entrepreneurs' dual mission of achieving both financial viability and social impact often places them in structurally disadvantaged positions, where access to capital, infrastructure, and policy support is highly uneven. These challenges are particularly acute in developing economies such as Indonesia, where formal financial institutions, regulatory frameworks, and market systems are less developed or inconsistently enforced. In such contexts, social enterprises depend heavily on informal institutions, personal networks, and community relationships to mobilise resources and maintain legitimacy (Mottiar et al., 2018; Shahverdi et al., 2018). Understanding how these organisations achieve sustainability despite such institutional thinness requires a framework that integrates both internal and external determinants of performance.

This study, therefore, draws on Resource-Based Theory (RBT; Wernerfelt, 1984) and Resource Dependence Theory (RDT) (Biermann & Harsch, 2017; Tashman, 2021) as complementary perspectives. RBT posits that organisations achieve competitive advantage through internal resources that are valuable, rare, inimitable, and non-substitutable (the VRIN criteria). These resources may include tangible assets, such as capital and technology, but in knowledge-intensive and mission-driven settings like social entrepreneurship, intangible resources—particularly human expertise, organisational learning, reputation, and stakeholder trust—are often more decisive for long-term sustainability (Abhayawansa & Guthrie, 2016; Stewart & Ruckdeschel, 1998). From this perspective, intellectual capital (IC)—comprising human, structural, and relational capital—becomes the key source of distinctive capability that enables social enterprises to innovate, adapt, and deliver social value in resource-poor environments. RBT thus provides an internally oriented lens to explain how these capabilities generate resilience and differentiation.

However, RBT alone is insufficient to capture the institutional and environmental constraints that characterise social entrepreneurship in developing contexts. For this reason, the study also employs Resource Dependence Theory (RDT), which emphasises how organisations are embedded in and constrained by their external environments (Pfeffer & Salancik, 1978; Biermann & Harsch, 2017). RDT argues that no organisation is entirely self-sufficient; survival depends on managing dependencies on external actors such as governments, financial institutions, and markets. Social entrepreneurs in developing economies often operate under high levels of dependence and uncertainty—conditions that expose them to financial risks, institutional instability, and information asymmetry. In these circumstances, strategic success involves not only possessing valuable internal resources but also having the capacity to negotiate, build alliances, and adapt to fluctuating external demands (Tashman, 2021).

Integrating RBT and RDT allows for a more holistic understanding of sustainability as a function of both internal capabilities and external constraints. While RBT explains how intellectual capital strengthens innovation, efficiency, and adaptive learning, RDT highlights the vulnerabilities created by structural dependencies and institutional weaknesses. The intersection of the two theories provides an analytical framework for explaining why some social enterprises remain resilient despite resource scarcity, while others fail under similar conditions. In this integrated view, sustainability arises when organisations can both leverage internal capabilities (as emphasised by RBT) and manage environmental dependencies (as emphasised by RDT). For social enterprises in Bali, this means using intellectual capital not only to enhance operational performance but also to reduce vulnerability to external shocks by building trust-based relationships and flexible community partnerships.

This theoretical integration also informs the study's conceptualisation of intellectual capital as a dynamic capability. Beyond being a stock of knowledge and skills, IC enables learning, innovation, and relational governance that help social entrepreneurs navigate institutional asymmetry. Human capital—manifested in entrepreneurs' education, experience, and creativity—supports innovation and problem-solving. Structural capital—such as routines, systems, and organisational culture—embeds this knowledge in operational stability. Relational capital—embodied in networks of trust with communities, partners, and regulators—extends access to external resources and legitimacy (Abhayawansa et al., 2018; Yusliza et al., 2020). Collectively, these intangible resources serve as a bridge between the firm's internal competencies and the external institutional landscape.

In developing economies, where financial capital and formal support systems are scarce, the ability to mobilise and transform intellectual capital becomes a critical survival mechanism. Social entrepreneurs who can convert knowledge and relationships into adaptive capacity are better positioned to withstand market fluctuations, regulatory ambiguity, and socio-economic shocks. While RDT underscores the significance of external dependencies, RBT highlights the internal resources that enable organisations to withstand and strategically respond to those dependencies. By combining these two theoretical lenses, this study moves beyond deterministic views of constraints to emphasise agency and capability within structural limitations. The following hypotheses are therefore developed to empirically test how perceived barriers, risks, and intellectual capital interact to influence the sustainability of social enterprises in Bali.

Financial and non-financial barriers remain among the most persistent constraints for social entrepreneurs. Financial barriers, such as limited access to credit, dependence on personal funds, and lack of investor confidence, restrict growth and innovation (Hoogendoorn et al., 2019; Staicu, 2018). Non-financial barriers, including weak legal support, administrative complexity, and low managerial expertise, further hinder long-term viability (Pinkse & Groot, 2015; Smith, 2019). These barriers drain resources and reduce entrepreneurs' ability to invest in capability development, thereby undermining sustainability (Shahverdi et al., 2018). Consistent with RD RDT, when organisations lack supportive external structures, such limitations intensify vulnerability and decrease survival prospects. Hence, it is expected that:

H_1: Perceived financial barriers negatively affect business sustainability.
H_2:Perceived non-financial barriers negatively affect business sustainability.

Social entrepreneurs often face multiple forms of risk—financial, operational, and reputational—that are linked to uncertainty and mission tension (Hoogendoorn et al., 2019; Prado et al., 2022). Under RDT, high exposure to environmental and market risks weakens an organisation's ability to manage dependencies, while RBT suggests that inadequate internal systems exacerbate these threats. Prior studies confirm that higher perceived risk diminishes both performance and the likelihood of survival (Yanti et al., 2018; Mottiar et al., 2018). Accordingly:

H_3: Perceived risk negatively affects business sustainability.

Within the RBT framework, intellectual capital (IC) is a critical intangible asset comprising human, structural, and relational capital (Stewart & Ruckdeschel, 1998; Abhayawansa & Guthrie, 2016). Human capital captures knowledge, creativity, and leadership; structural capital includes routines, processes, and innovation systems; and relational capital reflects trust-based stakeholder relationships (Abhayawansa et al., 2018; Yusliza et al., 2020). IC enables organisations to leverage learning, enhance adaptability, and build resilience (Ahmad, 2023; ul Rehman et al., 2024). Empirical evidence shows that IC improves performance and sustainability across sectors (Pulic, 2000; Yusliza et al., 2020), suggesting that social enterprises with strong intangible assets can better navigate constraints. Thus:

H_4: Intellectual capital positively affects business sustainability.

Although IC is expected to directly enhance sustainability, it may also act as a buffer against external challenges. From a combined RBT–RDT perspective, organisations that possess rich knowledge resources can better manage external dependencies and mitigate the impact of barriers and risks (Biermann & Harsch, 2017; Wernerfelt, 1984). Prior studies indicate that intellectual resources strengthen strategic agility and adaptive capacity (Abhayawansa et al., 2018; Yusliza et al., 2020), suggesting a potential moderating effect. Social enterprises with high IC may convert external limitations into learning opportunities, thereby lessening the negative consequences of financial, institutional, and risk-related pressures. Therefore:

H_{5a}: Intellectual capital moderates the effect of financial barriers on sustainability.
H_{5b}: Intellectual capital moderates the effect of non-financial barriers on sustainability.
H_{5c}: Intellectual capital moderates the effect of risk on sustainability.

3. Research Method

This study adopts a quantitative explanatory research design to examine how intellectual capital (IC) influences the sustainability of social entrepreneurs in Bali, Indonesia. The model is grounded in the integration of Resource-Based Theory (RBT; Wernerfelt, 1984) and Resource Dependence Theory (RDT; Biermann & Harsch, 2017; Tashman, 2021). Data were collected through a structured questionnaire and analysed using Partial Least Squares Structural Equation Modeling (PLS-SEM), as this technique is

suitable for small to medium samples and complex latent-variable models (Hair et al., 2017).

Respondents were selected using non-probability purposive sampling to ensure participants were relevant to the study's objectives. Selection criteria included:

1. Operating a social enterprise in Bali for at least one year.
2. The enterprise demonstrates social or environmental value creation as part of its mission.
3. The respondent holds a managerial or ownership role in the enterprise.
4. The enterprise engages in community-based or sustainability-oriented activities.
5. Willingness to participate voluntarily in the survey.

A total of 100 valid responses were obtained from nine districts in Bali, representing diverse sectors, including innovation-based enterprises, community-driven ventures, and social-impact businesses.

Each latent construct was operationalised using multiple indicators adapted from prior validated studies and measured on a 7-point Likert scale (1 = strongly disagree; 7 = strongly agree). All constructs were measured reflectively. All indicators were pretested for content validity and reliability before the final distribution.

Table 1. Measurement of Variables and Indicators

Construct / Latent Variable	Indicators (Reflective)	Source(s)
Perceived Financial Barriers (FB)	Reliance on personal/family capital; difficulty accessing bank loans; lack of investors; limited external funding options.	Hoogendoorn et al. (2019); Staicu (2018)
Perceived Non-Financial Barriers (NFB)	Lack of business administration skills; legal/administrative obstacles; difficulty identifying markets; limited access to information and networks.	Shahverdi et al. (2018); Pinkse & Groot (2015)
Perceived Risk (RISK)	Exposure to financial losses; uncertainty in revenue; customer dissatisfaction risk; reputational or operational risks.	Hoogendoorn et al. (2019); Prado et al. (2022)
Intellectual Capital (IC)	*Human capital:* employee knowledge, innovation, and training; *Structural capital:* routines, systems, innovation culture; *Relational capital:* customer satisfaction, stakeholder trust.	Stewart & Ruckdeschel (1998); Abhayawansa & Guthrie (2016); Abhayawansa et al. (2018); Yusliza et al. (2020); Ahmad (2023)
Business Sustainability (SUST)	Financial continuity; market competitiveness; product quality; adaptability to environmental and social changes.	Yanti et al. (2018); Davies et al. (2018)

In PLS-SEM, the outer model specifies the relationships between latent constructs and their observed indicators. Each latent variable η_j is measured by its indicators $x_{ij}a$As:

$$x_{ij} = \lambda_{ij}\eta_j + \varepsilon_{ij}$$

where λ_{ij} is the outer loading, and ε_{ij} is the measurement error term. Convergent validity is confirmed when outer loadings ≥ 0.70 and average variance extracted (AVE) ≥ 0.50. Discriminant validity is evaluated using the Fornell–Larcker criterion and the HTMT ratio (<0.85). Reliability is evaluated using composite reliability (CR) ≥ 0.70.

The inner model specifies causal relationships among latent constructs. The structural equations are expressed as follows:

$$\text{SUST} = \beta_1\text{FB} + \beta_2\text{NFB} + \beta_3\text{RISK} + \beta_4\text{IC} + \beta_5(\text{FB} \times \text{IC}) + \beta_6(\text{NFB} \times \text{IC})$$
$$+ \beta_7(\text{RISK} \times \text{IC}) + \zeta$$

where β_i are path coefficients, and ζ represents the residual error. The model tests four direct effects (H1–H4) and three moderation effects (H5a–H5c). Model evaluation includes:

1) Coefficient of determination (R^2): variance in SUST explained by the predictors.
2) Effect size (f^2): magnitude of each predictor's contribution.
3) Predictive relevance (Q^2): assessed via blindfolding.
4) Path significance: evaluated using bootstrapping (5,000 resamples) with $t > 1.96$ ($p < 0.05$) as the significance threshold.

All statistical analyses were performed using SmartPLS version 4, a variance-based structural equation modeling (SEM) software widely applied in management and social science research. The use of PLS-SEM was appropriate given the study's relatively small sample size ($n = 100$), the model's inclusion of multiple latent constructs and interaction terms, and the exploratory nature of testing moderating effects. The analytical procedure followed five systematic stages consistent with the guidelines of Hair et al. (2017), ensuring methodological rigour and reliability in estimating both measurement and structural relationships.

The first stage involved data screening and preparation, aimed at ensuring data quality and conformity with SEM assumptions. The dataset was checked for missing values, extreme observations, and normality of indicator distributions. No substantial missing data were found, and all items fell within acceptable ranges for skewness and kurtosis. Outliers were examined using Mahalanobis distance and standardised residuals, confirming that all observations were within reasonable limits. These preliminary diagnostics established that the dataset was suitable for PLS analysis, which is robust to non-normality but still benefits from well-conditioned data.

The second stage comprised the measurement model evaluation, focusing on assessing the reliability and validity of each construct before testing causal paths. Reliability was assessed using Cronbach's alpha and composite reliability (CR), both of which exceeded the threshold of 0.70, confirming internal consistency among indicators. Convergent validity was evaluated using outer loadings and the average variance extracted (AVE); all indicators loaded above 0.70, and AVE values surpassed 0.50, demonstrating that the latent constructs adequately captured the variance of their observed indicators. Discriminant validity was assessed using the Fornell–Larcker criterion and the heterotrait–monotrait ratio (HTMT). The square root of AVE for each construct exceeded inter-construct correlations, and all HTMT values were below 0.85, confirming that each construct measured a distinct conceptual domain.

The third stage involved structural model evaluation, which tested the hypothesised relationships among latent constructs. This step examined the direct and moderating paths specified in the research framework, including the interaction terms representing the moderating effects of intellectual capital on the relationships among perceived barriers, risk, and sustainability. Multicollinearity was assessed using variance inflation factor (VIF) values, all of which were below the recommended limit of 3.3, indicating the absence of multicollinearity problems. Path coefficients were estimated through the PLS algorithm, followed by a bootstrapping procedure to generate robust t-statistics and p-values for hypothesis testing. This non-parametric resampling method allows the estimation of standard errors without assuming normality of the data, thereby enhancing the accuracy of significance testing.

The fourth stage concerned model fit assessment, conducted using the standardised root mean square residual (SRMR) as the primary goodness-of-fit index. The SRMR value of 0.062 indicated a satisfactory global model fit, below the maximum threshold of 0.08 recommended by Hair et al. (2017). The coefficient of determination (R^2) for the endogenous construct (business sustainability) was 0.64, signifying that 64 percent of the variance in sustainability was explained jointly by perceived financial barriers, non-financial barriers, risk, and intellectual capital. This represents moderate to substantial explanatory power. In addition, the Stone–Geisser's Q^2 test (obtained via blindfolding) produced positive values, confirming the model's predictive relevance.

Finally, the fifth stage involved hypothesis testing and interpretation, where the magnitude, direction, and significance of all structural paths were examined. Direct effects were evaluated for hypotheses H1–H4, and interaction terms were analysed for hypotheses H5a–H5c. The interpretation of path coefficients considered both statistical significance ($t > 1.96$, $p < 0.05$) and practical effect sizes (f^2) to gauge the substantive importance of each relationship. Moderation effects were further explored through interaction plots to visualise the differences in slopes at high and low levels of the moderating variable. The integrated findings from these analyses were then interpreted in relation to theoretical expectations and contextual realities, forming the basis for the discussion and conclusions presented in subsequent sections.

4. Results and Discussion

Before model estimation, data screening was conducted to identify missing values, test normality, and detect outliers. No significant outliers were found, and all indicators met acceptable distributional assumptions for PLS-SEM analysis. Table 2 presents the demographic characteristics of the 100 respondents who participated in this study. The data show that most enterprises are classified as innovation-driven (30%) or community-based civil society initiatives (23%), reflecting the diversity of Bali's social enterprise ecosystem. The majority of businesses have operated for 1–3 years (56%), suggesting that most respondents are in early growth stages. Educational attainment is relatively high—48% hold a bachelor's degree and 10% a master's degree—indicating substantial human capital among social entrepreneurs. Annual income data show that 84% earn IDR 50–100 million, consistent with the micro and small enterprise profile. Most respondents operate in Denpasar (40%) and Badung (35%), where infrastructure and markets are more developed.

These demographics confirm that the sample represents emerging, educated entrepreneurs operating in resource-constrained but opportunity-rich environments.

Table 2. Demographic Profile of Respondents (N = 100)

Enterprise Type	Frequency
Civil Society (initiated from community-driven efforts to optimize local resources)	23
Innovation (emerged within an existing social context using different methods)	30
Economic Activity (profit is not the main business objective)	14
Social Impact (business generates a positive influence on surrounding community)	22
Social Value (business explicitly creates social value)	11
Total	100
Years in Operation	**Frequency**
1-3 Years	56
4-6 Years	23
Years	9
> 9 Years	12
Total	100
Highest Education Level	**Frequency**
Primary School	3
Junior High School	1
Senior High School	24
Diploma	14
Bachelor's Degree	48
Master's Degree	10
Total	100
Average Annual Business Income (IDR)	**Frequency**
50–100 million	84
101–150 million	5
151–200 million	5
> 200 million	6
Total	100
Business Location	**Frequency**
Bangli	1
Badung	35
Buleleng	3
Denpasar	40
Gianyar	5
Jembrana	6
Karangasem	2
Klungkung	1
Tabanan	7
Total	100

Before testing the structural model, the measurement model was assessed to confirm the validity and reliability of the constructs. Table 3 reports the convergent validity results. All indicator loadings exceed 0.70, and all AVE values exceed 0.50, satisfying the Hair et al. (2017) criteria. These results confirm that each indicator accurately represents its respective latent construct—Financial Barriers, Non-Financial Barriers, Risk, Intellectual Capital, and Sustainability.

Table 3. Convergent Validity (Outer Loadings and AVE)

Construct / Latent Variable	Indicator	Outer Loading	Average Variance Extracted (AVE)	Interpretation
Perceived Financial Barriers (FB)	FB1	0.812		
	FB2	0.844	0.685	Valid
	FB3	0.808		
Perceived Non-Financial Barriers (NFB)	NFB1	0.775		
	NFB2	0.812	0.661	Valid
	NFB3	0.832		
Perceived Risk (RISK)	R1	0.858		
	R2	0.849	0.702	Valid
	R3	0.813		
Intellectual Capital (IC)	IC1	0.809		
	IC2	0.851	0.716	Valid
	IC3	0.867		
Business Sustainability (SUST)	S1	0.854		
	S2	0.876	0.731	Valid
	S3	0.841		

Note: All outer loadings > 0.70 and AVE > 0.50, indicating adequate convergent validity.(Hair et al., 2017).

Next, Table 4 presents the discriminant validity results using the Fornell–Larcker criterion. The square root of AVE (diagonal values) for each construct is greater than its correlations with all other constructs, demonstrating that each construct captures a distinct conceptual dimension.

Table 4. Discriminant Validity (Fornell–Larcker Criterion)

Construct	FB	NFB	RISK	IC	SUST
Perceived Financial Barriers (FB)	**0.828**				
Perceived Non-Financial Barriers (NFB)	0.512	**0.813**			
Perceived Risk (RISK)	0.423	0.444	**0.838**		
Intellectual Capital (IC)	0.298	0.316	0.281	**0.846**	
Business Sustainability (SUST)	-0.410	-0.379	-0.572	0.601	**0.855**

Note: The square root of AVE (bold diagonal) for each construct exceeds its correlations with other constructs, confirming discriminant validity.

To confirm internal consistency, Table 5 reports Cronbach's alpha and composite reliability (CR). All values exceed 0.70, indicating that each construct is reliable and that the measurement items consistently represent their latent variables. Collectively, the results from Tables 3–5 confirm that the measurement model meets the validity and reliability requirements, allowing for robust testing of the structural model.

Table 5. Reliability Tests (Cronbach's Alpha and Composite Reliability)

Construct	Cronbach's Alpha	Composite Reliability	Interpretation
Perceived Financial Barriers (FB)	0.822	0.879	Reliable
Perceived Non-Financial Barriers (NFB)	0.845	0.893	Reliable
Perceived Risk (RISK)	0.854	0.905	Reliable
Intellectual Capital (IC)	0.871	0.919	Reliable
Business Sustainability (SUST)	0.866	0.918	Reliable

Note: Internal consistency reliability is adequate (Cronbach's Alpha and CR > 0.70).

After confirming measurement quality, the inner model was analysed to test hypothesised relationships among constructs. Figure 1 illustrates the full structural model tested, including direct effects (H1–H4) and moderating effects (H5a–H5c) of Intellectual Capital. Each arrow represents a hypothesised path, examined via bootstrapping in SmartPLS 4.
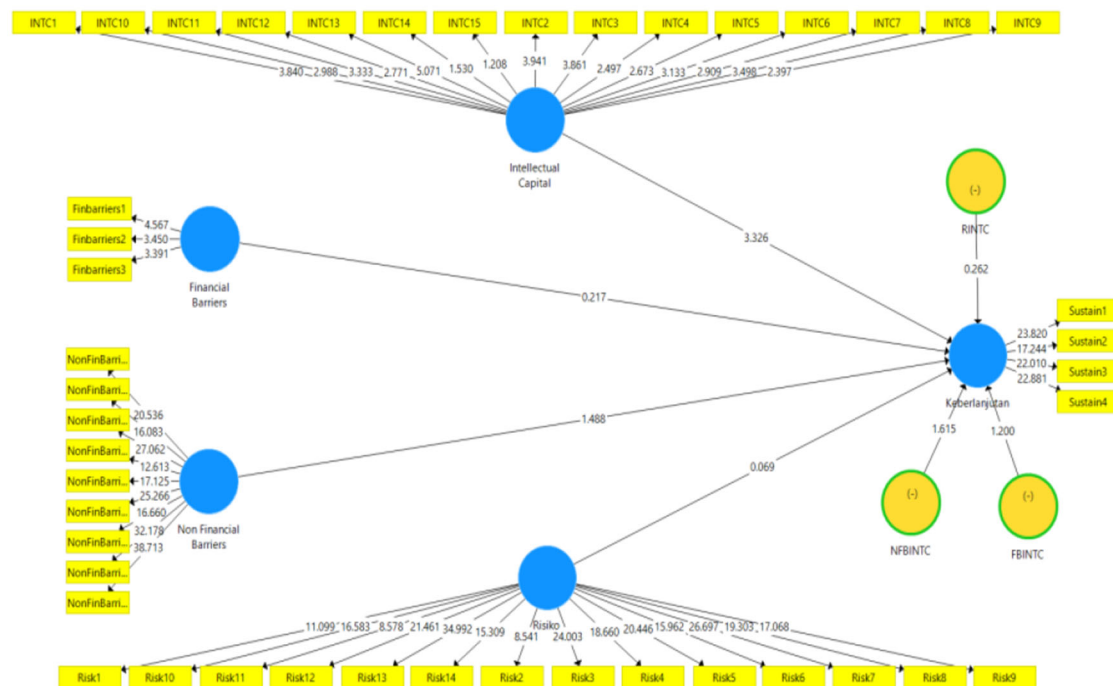
Figure 1. Inner Model Test

Model fit was assessed using the standardised root mean square residual (SRMR) and R^2 values. The SRMR of 0.062 indicated a good model fit (below the 0.08 threshold), while the R^2 for business sustainability (0.64) demonstrates moderate explanatory power (Hair et al., 2017). Table 6 presents the bootstrapping results for all structural paths, including coefficients, t-statistics, p-values, and corresponding hypotheses. The results showed that perceived financial (H1) and non-financial barriers (H2) did not significantly influence sustainability. Perceived risk (H3) had a significant negative effect (p = 0.004), confirming that higher uncertainty reduces enterprise resilience. Intellectual Capital (H4) showed a positive and significant direct effect (p = 0.045), underscoring its strategic role in

enhancing sustainability. However, the moderating effects (H5a–H5c) were insignificant, suggesting that IC operates as an independent driver rather than a buffering variable.

To ensure clarity and avoid potential confusion, the numerical values shown in Figure 2 represent t-statistics generated by SmartPLS during the bootstrapping process, while Table 6 reports the standardised path coefficients (β), t-statistics, and p-values obtained from the same analysis. Because SmartPLS displays different numerical outputs depending on the selected view (e.g., original sample, sample mean, t-values, or p-values), the values in the figure may not correspond directly to those in the table. However, both outputs are derived from the same structural model and reflect the same relationships.

Table 6. Structural Model Results (Bootstrapping)

Pathway	Coefficient	t-Statistic	p-Value	Interpretation	Hypothesis
FB → SUST	-0.109	1.098	0.273	Not significant	H1
NFB → SUST	-0.157	0.685	0.494	Not significant	H2
RISK → SUST	-0.630	2.886	0.004	Significant negative effect	H3
IC → SUST	0.128	2.009	0.045	Significant positive effect	H4
IC x FB → SUST	0.215	1.200	0.231	Not significant (no moderation)	H5a
IC x NFB → SUST	1.754	1.615	0.107	Not significant (no moderation)	H5b
IC x RISK → SUST	0.254	0.262	0.794	Not significant (no moderation)	H5c

The results of this study advance the understanding of how intellectual capital (IC) operates within social enterprises under conditions of institutional and resource constraints. Drawing on Resource-Based Theory (RBT) and Resource Dependence Theory (RDT), the findings confirm that IC functions as a direct strategic driver of sustainability, but not as a moderating variable. This outcome implies that IC strengthens organisational resilience and adaptability primarily through its intrinsic value rather than through interactive buffering mechanisms. In other words, intellectual capital in this study acts as a *predictor moderator*—a construct that exerts a significant direct effect on the dependent variable without significantly interacting with other predictors, as defined by Sharma et al. (1981).

The insignificant moderation effects require deeper interpretation through both measurement indicators and respondent characteristics. The IC construct in this study was operationalised through human, structural, and relational dimensions, each of which demonstrated high outer loadings (all above 0.80) and strong internal consistency reliability (Cronbach's alpha and Composite Reliability above 0.87). These values confirm that the construct was measured validly and robustly. Thus, the lack of moderation is not due to measurement weakness but to contextual dynamics revealed by the demographic data. Most respondents (56%) are early-stage social entrepreneurs with less than three years of operation, and a large proportion (84%) report annual incomes below IDR 100 million. Despite relatively high educational attainment (58% with a diploma or bachelor's degree), these entrepreneurs typically manage micro or small-scale ventures with limited formal structures. This profile indicates that intellectual capital among respondents exists primarily in individual knowledge, skills, and relationships, but has not yet been

institutionalised into formal systems or innovation platforms capable of buffering external shocks. Consequently, while IC improves internal learning, efficiency, and stakeholder trust, it does not moderate the effects of external risks or barriers because these enterprises lack the organisational maturity and systemic support necessary for such interactions to occur.

The finding that financial and non-financial barriers do not significantly affect sustainability also aligns with this interpretation. Many social enterprises in Bali operate through community-based models that rely on informal trust networks and reciprocal social norms (*gotong royong*) rather than on formal financial or bureaucratic channels. This relational embeddedness enables entrepreneurs to mitigate the practical impact of financial and administrative obstacles, thereby effectively substituting social capital for institutional infrastructure. Similar mechanisms have been observed in studies of micro-enterprise resilience in developing economies, where community legitimacy and social reciprocity compensate for weak regulatory and financial systems (Davies et al., 2018; Staicu, 2018). Hence, the non-significance of perceived barriers does not suggest their absence, but rather their successful neutralisation through informal institutional practices that reduce dependence on external structures.

Conversely, perceived risk demonstrated a strong, negative effect on sustainability, confirming that uncertainty remains a fundamental constraint for social enterprises. This finding aligns with RDT, which posits that high dependence on unstable environments reduces organisational control and resilience. In Bali, risk exposure is particularly salient due to the lingering effects of the pandemic, dependence on tourism-related markets, and fluctuating consumer demand. These contextual conditions magnify perceived risk beyond what internal knowledge resources can mitigate. Similar observations have been made by Mottiar et al. (2018) and Yanti et al. (2018), who found that operational uncertainty and market volatility are the most persistent challenges facing small-scale enterprises in emerging contexts. Therefore, the persistence of risk as a significant predictor underscores the limits of IC's protective influence in fragile institutional ecosystems.

However, the direct positive relationship between IC and sustainability is both theoretically and empirically robust. This finding supports the RBT proposition that valuable, rare, inimitable, and non-substitutable resources underpin sustainable advantage (Wernerfelt, 1984). In practice, human capital—represented by the entrepreneurs' education, creativity, and learning capacity—enhances innovation and responsiveness. Structural capital, though modest, provides routines and systems that stabilise operations, while relational capital fosters trust and cooperation among stakeholders. These three dimensions collectively enable social entrepreneurs to adapt, coordinate, and sustain their missions even amid systemic constraints. This outcome confirms prior findings by Abhayawansa and Guthrie (2016), Yusliza et al. (2020), and Ahmad (2023), who established that intellectual resources directly enhance organisational performance and sustainability. It also extends this evidence by demonstrating that IC retains its predictive power even in resource-limited and institutionally fragmented settings such as Bali.

At the same time, the absence of moderation effects diverges from findings reported in studies conducted in more developed ecosystems. For instance, Ahmad (2023) and ul Rehman et al. (2024) found that IC effectively moderated environmental pressures when

supported by mature institutional infrastructures and technology-based knowledge systems. The difference lies in the level of institutional maturity: in developed contexts, intellectual capital can be leveraged externally through partnerships, data-driven decision-making, and innovation networks. In contrast, the social enterprises in this study operate in an ecosystem that remains fragmented and thinly institutionalised, limiting IC's capacity to strengthen external relationships. Thus, the moderating power of IC is not inherently absent but contextually constrained. As institutional infrastructures—such as access to finance, digital ecosystems, and knowledge-sharing networks—become more established, IC may evolve from an internal predictor to an interactive moderator.

Taken together, these results deepen the theoretical understanding of sustainability under constraints. They demonstrate that while intellectual capital can independently drive organisational resilience and innovation, its interactive potential depends on institutional maturity. This integrative interpretation advances both RBT and RDT by showing that internal capabilities can partially substitute for external deficiencies, but such substitution remains incomplete in developing contexts. Social entrepreneurs in Bali exemplify a hybrid condition: capability-rich yet institutionally thin. Sustainability, therefore, arises not from eliminating barriers or risks but from creatively mobilising intangible resources within those constraints. From a theoretical standpoint, this study refines the conceptualisation of IC by distinguishing between its predictive and moderating roles across stages of institutional development. For practitioners and policymakers, it highlights the need to invest in human and relational capital while simultaneously strengthening the ecosystem—through training, mentorship, and collaborative platforms—that enables intellectual capital to mature into a system-level capability. Only through this dual strategy can intellectual capital evolve from an internal driver into a broader moderating force that enhances collective resilience and sustainability in developing economies.

5. Conclusions, Implications, and Limitations

This study examined how Intellectual Capital (IC), perceived barriers, and perceived risk influence the sustainability of social entrepreneurs in Bali. Based on PLS-SEM with five latent constructs and seven tested paths, the results provide several key empirical insights. First, IC has a significant positive direct effect on sustainability, demonstrating that human, structural, and relational resources are strategic assets that enhance enterprise resilience and innovation. Second, perceived risk has a significant negative effect, confirming that uncertainty and environmental volatility remain significant challenges. Third, financial and non-financial barriers were not significant, suggesting that social entrepreneurs adapt through informal networks and community support. Finally, the moderating effects of IC were not significant, indicating that IC functions as a predictor rather than a moderator—a direct enabler rather than a buffering mechanism. Collectively, these findings show that sustainability in developing contexts depends more on internal capabilities than external conditions, enriching the understanding of resource dynamics among social enterprises.

This research extends Resource-Based Theory (RBT) and Resource Dependence Theory (RDT) by demonstrating how intellectual capital functions as a predictive strategic resource in institutionally thin environments. It clarifies that IC can sustain performance

even when it does not moderate external constraints. For social entrepreneurs, the results highlight the importance of investing in human development, organisational learning, and stakeholder relationships to achieve long-term sustainability. For policymakers, the findings suggest the need for ecosystem-level interventions—training programmes, mentorship networks, and knowledge-sharing platforms—that transform intellectual capital into collective resilience. By strengthening the capabilities of social enterprises, IC contributes to inclusive growth and community empowerment, aligning with Indonesia's entrepreneurship and sustainability agendas.

This study's scope is limited to 100 social entrepreneurs in Bali, which may limit generalisability to other regions or sectors. Data were collected cross-sectionally, thereby limiting causal inference. In addition, only three dimensions of IC were examined; future studies could include spiritual, environmental, or digital capital to capture broader sustainability drivers. Longitudinal and comparative studies across different provinces or developing economies are recommended to observe how IC's moderating role evolves as institutional support systems mature.

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