The Entrepreneurial Orientation Paradox in a Crisis: How Proactiveness and Risk-Taking Oppositely Shape Financial Resilience in African Agribusinesses: A Panel Study of Listed SADC Agribusinesses during the Covid-19 Pandemic (2019–2023)

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ABSTRACT

This study investigates a theoretically important paradox embedded within the Entrepreneurial Orientation (EO) construct: that Proactiveness and Risk-Taking; two dimensions of the same higher-order strategic construct, drive financial resilience in opposite directions. Using listed SADC agribusinesses during the COVID-19 pandemic (2019–2023) as the empirical context, the study tests whether proactive earnings retention builds liquidity and profitability while financial risk-taking through leverage simultaneously erodes solvency and examines what this opposition implies for EO theory and for agribusiness strategy in volatile emerging markets.

A longitudinal panel dataset of 130 observations from 26 listed agribusinesses across seven SADC member states was analyzed using Pearson correlation analysis, hierarchical OLS regression, t-tests, one-way ANOVA, and a sequential explanatory mixed-methods design. EO dimensions were operationalized through financial proxies: the earnings retention ratio (Proactiveness) and the debt-to-equity ratio (Risk-Taking). Financial resilience was measured using a composite Financial Resilience Index comprising five normalized dimensions. Effect sizes (Cohen's f^2, η^2) and 95% confidence intervals are reported alongside p-values.

Proactiveness demonstrated consistent positive associations with all FRI components, with the proactiveness-profitability correlation ($r = 0.48$, $p < 0.001$). Risk-Taking exhibited consistent negative associations across liquidity ($r = -0.34$), solvency ($r = -0.29$), and profitability ($r = -0.41$). In the regression analysis, Proactiveness significantly predicted liquidity ($\beta = 0.214$, $p = 0.021$) while Risk-Taking significantly impaired solvency ($\beta = -0.287$, $p = 0.002$). Neither dimension changed significantly across crisis periods (all $p > 0.05$), confirming both as stable strategic postures embedded in organizational routines rather than tactical crisis responses.

This study makes three important contributions. First, it provides the unique longitudinal, panel-data evidence that two EO dimensions simultaneously drive financial resilience in opposite directions in the SADC agribusiness context this is a dual-pathway paradox that was not previously well documented in the African agribusiness literature. Second, it demonstrates that both effects are amplified in the SADC context relative to developed-market benchmarks, attributable to capital market constraints, currency volatility, and institutional conditioning. Third, it connects financial ratio evidence to specific organizational behaviors through a mixed-methods design, validating the financial proxy approach to EO measurement in an African emerging market setting.

Keywords: Entrepreneurial Orientation; financial resilience; agribusiness; COVID-19; Proactiveness, Risk taking, SADC

JEL Classification: L26, G32, Q13, Q14, C23, O55

INTRODUCTION

Strategic management research has long established that Entrepreneurial Orientation (EO), described by Gupta and Gupta (2015) as a firm's strategic posture towards entrepreneurship, is a positive predictor of firm performance (Rauch et al., 2009; Soares & Perin, 2019; Covin & Wales, 2019). The meta-analytic consensus, built across hundreds of studies conducted primarily in developed economies, suggests that there is a strong correlation (r=0.24) between EO and performance (Rauch et al., 2009). This consensus is short of the theoretical paradox that emerges when EO dimensions (risk-taking, proactiveness and innovativeness) are disaggregated, the dimensions are not uniformly beneficial. Under conditions of environmental hostility, some dimensions of EO strengthen organizational resilience while others simultaneously undermine it, this makes the composite construct a misleading guide for strategic decision-making.

This study investigates the Entrepreneurial Orientation paradox in which Proactiveness and Risk-Taking; two dimensions of the same higher-order strategic construct drive financial resilience in opposite directions.

The study was conducted within the framework of the Southern African Development Community (SADC) agribusiness sector during the COVID-19 pandemic (2019–2023). This study context is theoretically appropriate for four main reasons. First, agribusiness is the backbone of SADC economies, because it contributes approximately 23.5% to regional GDP (SADC, 2024), making financial resilience in this sector a matter of both firm survival and regional food security. Second, the SADC region is characterized by structural conditions such as high currency volatility, constrained capital markets, institutional voids, and high nominal interest rates, that amplify the differential consequences of the two EO dimensions under study. Third, the COVID-19 pandemic constituted an extreme environmental shock that stress-tested the financial muscles of agribusiness firms with little warning, thereby revealing the strategic consequences of pre-crisis postures that might remain invisible during stable periods. Lastly according to George (2011) most EO research has been conducted in developed countries, the ones that have been conducted in Southern Africa primarily focused on small and medium enterprises. This study contributes literature with respect to large scale agribusiness ventures in the SADC. This paper focuses on Proactiveness and Risk-Taking; the two dimensions that theory predicts will have opposing effects on financial resilience. However, Innovativeness is included in the composite EO measure to maintain the tri-dimensional integrity of the construct,. Innovativeness is examined separately in related work.

The theoretical argument underlying the Paradox that is introduced in paper is that Proactiveness which is operationalized as the earnings retention ratio (Miller & Le Breton-Miller, 2011) drives financial resilience through a financial self-insurance pathway because the retained earnings build current asset buffers that strengthen liquidity, provide operational flexibility during revenue shocks, and support strategic reallocation of financial resources without resolving to expensive emergency financing. On the other hand, Risk-Taking, which is operationalized as the debt-to-equity ratio (Naldi et al., 2007; Wiklund & Shepherd, 2005) erodes solvency through a debt service headroom pathway because leverage increases fixed interest obligations that compress the interest coverage ratio, thereby reducing the firm's safety margin before technical default. Consequently, leverage increases fixed interest obligations that compress the interest coverage ratio, which creates vulnerability to technical default precisely when revenue uncertainty is highest. The net effect is a simultaneous pull in opposite directions because a high-EO firm may have a proactive posture that strengthens its absorptive resilience capacity while also carrying a leverage structure that undermines its structural solvency. This internal contradiction is what this paper will discuss as the Dual-Pathway paradox.

Conceptually, the paradox is particularly critical in the SADC context because both mechanisms are amplified compared to developed economies. Proactiveness produces stronger positive effects because capital market access is more constrained hence firms without internal reserves face more severe consequences when external financing is unavailable. Risk-Taking produces stronger negative effects because high nominal interest rates and currency depreciation amplify the real cost of leverage beyond what debt-to-equity ratios alone suggest. Understanding this dual amplification is essential for agribusiness strategists, development finance institutions, and policymakers in the region.

This study makes three main contributions to literature. First, it provides the longitudinal, panel-data evidence

of the Dual-Pathway Paradox in listed SADC agribusinesses. Secondly, it demonstrates that both effects are amplified in the SADC context relative to developed-market benchmarks, advancing a theoretically grounded account of context-specificity in EO research (George et al., 2016). Third, the research employed the sequential explanatory mixed-methods approach which also provided qualitative evidence for specific organizational behaviors, confirming that the financial proxy measures of EO capture real strategic actions with identifiable resilience consequences.

The remainder of this manuscript is structured as follows: Section 2 reviews the literature on EO dimensions, the dark side of risk-taking, and financial resilience in emerging markets. Section 3 describes the methodology. Section 4 presents the empirical results. Section 5 discusses the Dual-Pathway Paradox in the context of existing theory. Section 6 concludes with recommendations and research directions.

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

The Tri-Dimensional Structure of Entrepreneurial Orientation

Entrepreneurial Orientation has been conceptualized since the foundational works of Miller (1983) and Covin and Slevin (1991) as a firm-level strategic posture that captures the processes, practices, and decision-making activities through which organizations engage in entrepreneurial behavior. Originally Miller (1983) characterized the EO construct as having three dimensions namely risk taking, proactiveness and innovativeness however Lumpkin and Dess (1996) extended the original construct to five dimensions by including extra two dimensions namely Competitive Aggressiveness, and Autonomy. This was done while acknowledging that the first three dimensions, introduced by Miller (1983), consistently demonstrate the strongest explanatory power across empirical contexts.

This study adopts the tri-dimensional model following Rauch et al. (2009), Covin and Wales (2019), and Nguyen et al. (2025), who confirm that Innovativeness, Proactiveness, and Risk-Taking constitute the essential core of the EO construct.

A critical but often neglected methodological question in EO research concerns whether the construct should be treated as reflective or formative. In a reflective model, the three dimensions are viewed as co-varying manifestations of a common latent factor, implying that a firm should score similarly on all three. In a formative model, advocated by George (2011) and Linton (2019), the dimensions are treated as independent contributors to the higher-order EO construct, meaning a firm can exhibit high Proactiveness and low Risk-Taking and still be considered entrepreneurially oriented and the vice versa could also be true. The present study adopts the formative view, because it is conveniently essential for documenting the dual-pathway paradox: if the reflective view were imposed, the opposing effects of proactiveness and risk-taking would be averaged away into an undifferentiated composite coefficient.

The formative view is also consistent with the objective financial proxy approach to measurement of EO that is adopted in this study. This study adopted the earnings retention and debt to equity as proxies for proactiveness and risk-taking respectively. This methodology was adopted from similar studies that were done by Miller and LeBreton Miller (2011) and Kreiser et al (2020) who in their respective work measured Entrepreneurial Orientation using objective financial indicators. This approach is particularly suitable in contexts where survey-based instruments are impractical due to time constraints, limited access to respondents, or data availability challenges (Kreiser et al, 2020). The research is also faced with similar challenges where the researchers did not have direct contact to any of the SADC companies, and due to time limitations. Additionally, according to Kreiser et al (2020) the advantage with this approach is that ratios capture what the firms actually did with their resources and not what managers stated they intended to do. It is also particularly important in crisis contexts where social desirability bias may inflate survey-based reports of entrepreneurial intent.

Proactiveness: The forward-looking self-insurance posture

Proactiveness refers to a firm's forward-looking, opportunity-seeking perspective characterized by the introduction of new products and services ahead of competitors and acting in anticipation of future demand

(Lumpkin & Dess, 1996). In terms of financial management, this forward-looking posture translates into a preference for internal over external financing: the proactive firm retains earnings rather than distributing them as dividends. This helps in building internal capital reserves that provide financial flexibility in the face of future uncertainty. This connection between proactive strategic posture and precautionary financial management is grounded in the pecking order theory of capital structure (Brealey and Myers, 2020); Brigham & Ehrhardt, 2017), which predicts that firms preferring internal financing will accumulate liquidity buffers over time.

The empirical literature consistently documents a positive relationship between proactiveness and firm performance (Soares & Perin, 2019; Suder et al., 2025). In crisis contexts, proactive firms demonstrate superior financial stability through three mechanisms documented in the qualitative literature: pre-crisis buffer accumulation that reduces the need for emergency external financing; strategic reallocation during the crisis that directs reserves toward capability-preserving investments; and faster post-crisis recovery that leverages the operational assets maintained during the disruption (Vij & Bedi, 2012; Wenzel et al., 2021). The strength of these mechanisms varies by institutional context: in environments with more constrained capital markets and higher information asymmetries such as the SADC region, the premium on internal reserves is higher, suggesting that the proactiveness-resilience relationship may be stronger here than in developed-market contexts.

Risk-Taking: The Double-Edged Sword in Volatile Environments

Risk-Taking 'involves taking bold actions by venturing into the unknown, borrowing heavily, and/or committing significant resources to ventures in uncertain environments' (Rauch et al., 2009). In the financial domain, risk-taking manifests as financial leverage i.e. the use of external debt to fund operations and investment, with the expectation that returns on those investments will exceed the cost of capital. This leverage strategy is theoretically appealing during growth periods because it amplifies returns when the Earnings Before Interest and Tax (EBIT) exceeds interest obligations (Brigham and Erhahardt, 2017). However, during revenue shocks, the same leverage becomes a structural vulnerability because the fixed interest obligations compress the interest coverage ratio, and if EBIT falls below interest expense, the firm enters technical default risk (Tang et al., 2008; Wales et al., 2020).

Tang et al. (2008) were among the first to document the curvilinear; specifically, inverted U-shaped relationship between risk-taking and performance in Chinese ventures, suggesting that moderate risk-taking may be optimal while excessive risk-taking leads to resource depletion and performance decline. Wales et al. (2020) elaborated this insight in their influential paper on the 'dark side' of entrepreneurial orientation, arguing that the conventional framing of risk-taking as uniformly beneficial ignores the conditions under which leverage becomes a liability. Kreiser et al. (2020) further developed the threat rigidity perspective, and showed that in environments of extreme hostility, high-leverage firms face strategic constraints that limit their adaptive capacity precisely when adaptation is most needed.

In the SADC context, high leverage is especially risky because inflation, currency volatility, and tight financing conditions raise borrowing costs and weaken debt-servicing capacity. Firms with foreign-currency debt but local-currency revenues face additional pressure when domestic currencies depreciate, as debt obligations rise in local-currency terms even if nominal leverage ratios remain unchanged. Consequently, the negative link between Risk-Taking and solvency is likely to be stronger in SADC than in more stable developed-market settings (SADC, 2024; IMF, 2023; World Bank, 2024).

The Dual-Pathway Paradox: Theoretical Foundation

The Dual-Pathway Paradox emerges from the intersection of two well-established but largely separately theorized literatures: the positive EO-performance literature centered on proactiveness (Rauch et al., 2009; Soares & Perin, 2019) and the "dark-side" EO literature centered on risk-taking (Wales et al., 2020; Tang et al., 2008). The paradox is that these two opposing effects coexist within the same construct. A firm that scores high on composite EO may simultaneously exhibit the proactive earnings retention that strengthens its liquidity

and the aggressive leverage that undermines its solvency which makes the composite EO score a poor guide to expected resilience outcomes.

The paradox is not merely a mathematical cancellation of opposing signs. It reflects a genuine strategic tension because proactive financial management and aggressive risk-taking are not opposite ends of a single spectrum but rather independent strategic behaviors that can coexist within the same organization as advanced in the formative view or entrepreneurial orientation (George, 2011; Linton, 2019). A firm may retain earnings (high proactiveness) while simultaneously taking on debt for growth investments (high risk-taking). During stable periods, this combination may generate superior performance because internal reserves provide downside protection while leverage amplifies returns (Brigham & Ehrhardt, 2017). During a crisis, however, the two behaviors pull in opposite directions where proactiveness protects liquidity while risk-taking erodes solvency. The net effect depends on the relative magnitudes of the two influences and the severity of the revenue shock (Kreiser et al., 2020).

This tension is consistent with the formative view of EO advanced by George (2011), which holds that EO dimensions contribute independently to the higher-order construct consequently different configurations of the three dimensions can produce equivalent composite scores but yield substantially different performance outcomes (Linton, 2019). The paradox highlights a limitation of treating EO as a unitary construct, particularly when predicting context-specific outcomes such as financial resilience.

This paper makes a theoretical contribution by first naming and empirically documenting the paradox; it provides a theoretically grounded account of the mechanisms underlying each pathway and demonstrate that the paradox is amplified in the SADC context in ways that have direct implications for both EO theory and agribusiness strategy in volatile emerging markets (George et al., 2016).

Financial Resilience as the Outcome Construct

As the outcome construct in this study, financial resilience is conceptualized as a firm's capacity to absorb financial shocks, maintain core functionalities during disruption, and restore financial performance following adverse events (Hardiyanti, 2025; Campanale et al., 2025). This study employs a composite Financial Resilience Index (FRI) comprising five normalized dimensions which also captures the full spectrum of FR i.e. absorptive capacity captured by Liquidity (Current Ratio), and Solvency;, Adaptive capacity captured by Cash Flow Adequacy (Operating Cash Flow Ratio), and Operational Efficiency (Asset Turnover), and restorative capacity captured by Profitability (Return on Assets). A multidimensional FRI enables a richer assessment of how the two EO dimensions under study affect different facets of organizational financial health.

Research Hypotheses

The primary hypothesis is that:

- H1: Entrepreneurial Orientation is positively associated with Financial Resilience Index (FRI) among listed SADC agribusinesses during the COVID-19 pandemic (2019–2023).

Other Hypotheses:

1. H2a: Proactiveness is positively associated with short-term liquidity
2. H2b: Risk-Taking is negatively associated with solvency
3. H3: Proactiveness and Risk-Taking simultaneously predict financial resilience in statistically significant but opposing directions,

METHODOLOGY

Research Design

This study employed a sequential explanatory mixed-methods design (Creswell & Creswell, 2018) in which quantitative longitudinal panel data analysis was followed by qualitative document analysis to elaborate and

explain the quantitative findings. The quantitative component addressed Hypotheses H1, H2a, H2b, and H3 through regression analysis on panel financial data.

The qualitative component addressed the mechanism behind the findings by examining what specific organizational behaviors as documented in annual report narratives, corresponded to high Proactiveness and managed Risk-Taking among the most resilient firms in the sample.

The longitudinal design covered five financial years divided into three crisis phases: pre-pandemic (2019), peak-pandemic (2020–2021), and post-pandemic (2022–2023). This phased structure was essential for documenting the Paradox because the opposing effects of Proactiveness and Risk-Taking manifest most intensely during the revenue shock of the peak-pandemic period, when both the liquidity protection of retained earnings and the solvency vulnerability of leverage are simultaneously activated.

Sample, Population, and Data Collection

The target population comprised of all listed agribusiness firms in the SADC region. A purposive sample of 26 companies was drawn from an initial pool of 45 firms, yielding 130 observations (26 firms × 5 years). After applying an inclusion criteria, the sample spanned seven SADC countries: Zimbabwe (10), South Africa (8), Mauritius (3), Zambia (2), and one each from Namibia, Malawi, and Tanzania. Inclusion criteria was the following: (i) listed before January 2019; (ii) remained listed through December 2023; (iii) ≥50% revenue from agribusiness; (iv) complete financial data 2019–2023; (v) publicly available annual reports.

All financial data were extracted from audited annual reports obtained directly from official stock exchange websites (JSE, ZSE, SEM, LUSE, NSX, DSE, MSE). The use of audited annual reports ensures data reliability, cross-firm comparability, and replicability. This is consistent with the objective EO measurement approach of Miller and Le Breton-Miller (2011) and Kreiser et al. (2020). Qualitative data were collected from CEO and Chairman statements, MD&A sections, investor presentations, and press releases (Kuckertz et al., 2020; Zighan et al., 2022).

Variable Operationalization

Independent Variables: EO Dimensions

The measurement of Entrepreneurial Orientation has historically been dominated by psychometric scales (Covin & Slevin, 1989) that capture managerial perceptions through self-report surveys. While these instruments have been widely validated, they are susceptible to social desirability bias, retrospective rationalization, and single-informant limitations (Kreiser et al., 2020; Miller & Le Breton-Miller, 2011). Moreover, perceptual measures capture intended entrepreneurial behavior, not necessarily revealed strategic resource allocation; a distinction that is particularly consequential in crisis contexts where managers may overstate their entrepreneurial intentions (Haque et al., 2025).To address these limitations, this study follows the growing methodological tradition of using objective financial proxies for EO measurement (Miller & Le Breton-Miller, 2011; Kreiser et al., 2020; Naldi et al., 2007).

Proactiveness is operationalized as the earnings retention ratio [(Net Income − Dividends) / Net Income] for three reasons. First, retention decisions represent a revealed preference for internal capital accumulation over external distribution, capturing the forward-looking, self-insurance orientation that is central to proactiveness (Vij & Bedi, 2012). Second, the retention ratio is a direct financial manifestation of the pecking order theory prediction that proactive firms prioritize internal financing to preserve financial flexibility (Brigham & Ehrhardt, 2017). Third, audited retention data are verifiable and comparable across firms and time periods, enabling robust panel-data analysis.

Risk-Taking is operationalized as the debt-to-equity ratio for three reasons. First, leverage is a direct financial expression of the willingness to commit resources to ventures with uncertain outcomes (Tang et al., 2008; Wales et al., 2020). Second, the fixed interest obligations created by leverage are the precise mechanism through which risk-taking erodes solvency during revenue shocks (Kreiser et al., 2020). Third, the debt-to-

equity ratio is the most widely used financial proxy for risk-taking in the EO literature (Naldi et al., 2007; Wiklund & Shepherd, 2005; Pham & Dao, 2022).

Table 1 Financial rations applied for all EO dimensions

Dimension	Formula	Literature Support
Innovativeness	$\text{Innov} = \frac{\text{CAPEX}}{Total\ Assets}$	Naldi et al. (2007)
Proactiveness	$= \frac{(\text{Net Income} - \text{Dividend})}{Net\ Icome}$	Miller & Le Breton-Miller (2011)
Risk-Taking	$= \frac{\text{Total Debt}}{Total\ Equity}$	Naldi et al. (2007); Wiklund & Shepherd (2005)

All variable were normalized to a 0–1 scale using Winsorised min-max transformation with theoretically derived thresholds (Hair et al., 2019; OECD, 2008). The composite EO score was calculated as the average of the three normalized dimensions.

Note: Innovativeness was included in the composite EO score for H1 but was not the focus of the Dual-Pathway Paradox investigation, this is because it showed uniformly non-significant associations with FRI components in the correlation analysis and is examined separately in related work.

Dependent Variables: Financial Resilience

The primary dependent variable was the composite Financial Resilience Index (FRI), computed as an equal-weighted average of five normalized components The financial analysis revealed varying ratios measured in various units, some of which were outliers and could influence results. Hence to ensure that comparisons could be done fairly, all continuous variables were normalized to a 0-1 scale using Winsorised min-max transformation with theoretically derived thresholds (Hair et al., 2019, OECD,2008). More details are included in the table below.

Table 2 List of dependent variables and their proxy measures

Variable	**Min (Score = 0)**	**Max (Score = 1)**	**Rationale**
Current Ratio	0.5	2.0	According to Ross, Westerfield, & Jordan (2022) as a rule of thumb, a current ratio below 0.5 indicates imminent liquidity crisis; above 2.0 suggests excess idle cash.
Interest Coverage Ratio (ICR)	1.0	5.0	ICR <1.0 means EBIT does not cover interest expense (technical default risk). ICR >5.0 indicates very safe coverage. Damodaran (2012)
Return on Assets (ROA)	0%	10%	Industry standard for acceptable ROA Agribusiness typically has lower margins than tech. 0% is breakeven; 10% is excellent for the sector. (ready Ratios 2026)
Operating Cash Flow Ratio (OCF)	0	0.4	For OCF= Operating Cash Flow / Current Liabilities. A value of 0.4 means cash flow covers 40% of current liabilities, this is considered strong cash flow position (Ross et al 2022)

Asset Turnover	0.2	1.5	Agribusiness is typically asset-intensive, and the asset turnover ratio (revenue ÷ total assets) is a standard efficiency measure that is used to assess how effectively operations convert their asset base into revenue
EO_ Overall Score	0	1.5	Theoretical maximum of capped dimensions

For the Financial Resilience Index (FRI),

Following Hardiyanti (2025), a composite Financial Resilience Index was constructed by averaging the five normalized dimensions:

$$FRI=\frac{(\text{Liquidity Norm} + \text{ICR_ Norm} + \text{ROA_ Norm} + \text{OCF_ Norm} + \text{Asset}-\text{Turnover_ Norm})}{5}$$

According to Hardiyanti (2025) to quantify corporate resilience, a composite resilience index is constructed by standardizing and weighting the key financial ratios. The index is designed to reflect a firm's ability to absorb shocks, maintain cash flow, and recover performance post-crisis.

Control Variables

Regressions controlled for firm size (natural log of total assets, as per Dang et al., 2018), pre-crisis financial health (normalized Liquidity and ROA measured in 2019), period effects (binary dummies for peak-pandemic 2020–2021 and post-pandemic 2022–2023), firm age (log of years since listing), and industry subsector (binary dummies for livestock and agri-Services, with crop Production as reference). All continuous variables were winsorised at the 5th and 95th percentiles to reduce the influence of extreme values, particularly from Zimbabwe's hyperinflationary environment (Hair et al., 2019).

Analytical Methods

Four analytical methods were applied to test the hypotheses. First, Pearson correlation analysis (with Spearman rank correlations as a non-parametric robustness check) examined bivariate associations between each EO dimension and all FRI components, identifying the direction, strength, and statistical significance of the Dual-Pathway Paradox at the bivariate level.

Second, hierarchical OLS regression tested H1 (composite EO-FRI), entering control variables sequentially across five models to assess the robustness of the EO coefficient. A lagged specification (EO at t−1 predicting FRI at t) was also estimated to assess the temporal ordering of the relationship and address reverse causality concerns.

Third, dimension-specific OLS regressions tested H2a (Proactiveness - Liquidity) and H2b (Risk-Taking - Solvency) with controls, following the dimension-specific testing approach recommended for formative EO constructs by George (2011). Effect sizes were reported as Cohen's f^2 and 95% confidence intervals were reported for all regression coefficients at $\alpha = 0.05$. One-way ANOVAs and independent samples t-tests (with Cohen's d for t-tests and η^2 for ANOVAs) examined period-specific changes in each EO dimension to determine whether the postures were stable or adaptive across the crisis timeline.

Fourth, qualitative directed content analysis (Hsieh & Shannon, 2005) was applied to annual report narratives of the eight highest-resilience firms to identify whether the financial ratio patterns corresponded to specific documented strategic behaviors, confirming the construct validity of the proxy measurement approach.

Robustness check

Before conducting the hierarchical regression analysis to test the research hypotheses, several diagnostic

checks were performed to ensure that the data met the assumptions of Ordinary Least Squares (OLS) regression. These checks included multicollinearity diagnostics using the Variance Inflation Factor (VIF) and the Pearson correlation analyses

Robustness Check 1: Lagged EO Model

To address the concern that financial resilience might enable entrepreneurial orientation rather than the reverse, a reverse causality problem i.e. a lagged model was estimated with one-year lagged EO_ Norm predicting current-year FRI_Norm.

Table 3 Lagged Model Results (EO(t−1) → FRI(t))

Predictor	Coefficient	SE	p-value	95% CI
EO_ Norm (t−1)	0.312	0.108	0.005	[0.099, 0.525]
Log (Assets)	0.006	0.005	0.231	[-0.004, 0.016]
Liquidity_Norm_2019	0.165	0.081	0.045	[0.004, 0.326]
ROA_Norm_2019	0.384	0.092	<0.001	[0.202, 0.566]

Note: *N = 104 observations (lag reduces sample from 130 to 104). $R^2 = 0.342$, adjusted $R^2 = 0.318$, $F(4, 99) = 12.86$, $p < 0.001$.*

In this test, the lagged EO coefficient (β = 0.312, p = 0.005) remained positive and statistically significant, meaning that entrepreneurial orientation measured in one year still predicted financial resilience in the following year. Although this coefficient was slightly smaller than the contemporaneous coefficient (β = 0.371), the relationship remained meaningful. This finding supports Hypothesis H_1 by showing that entrepreneurial orientation precedes and likely causes financial resilience, rather than the other way around. In other words, it reduces the concern that financially resilient firms merely appear more entrepreneurial simply because they have more resources to invest

Robustness Check 2: Subsector-Specific Regressions

To examine whether the EO-FRI relationship held consistently across different agribusiness subsectors, separate regressions were estimated for each subsector, including all controls except subsector dummies.

Table 4 Subsector-Specific Regressions (with Firm Age Control)

Subsector	N	EO Coefficient	p-value	R^2	Adj. R^2	H_1 Supported?
Crop Production & Processing	40	0.398	0.007	0.324	0.289	yes
Livestock & Poultry	20	0.276	0.132	0.291	0.212	No
Agri-Services & Distribution	70	0.345	0.003	0.304	0.281	Yes

Note: *All models control for Log (Assets), Liquidity_Norm_2019, ROA_Norm_2019, and Firm_Age_ Log.*

This study found that the EO-FRI relationship was positive and statistically significant in two of three subsectors (Crop Production, p = 0.007; Agri-Services, p = 0.003), but positive and non-significant in Livestock and Poultry (p = 0.132). The non-significance in Livestock is theoretically interpretable: biological production cycles; gestation periods, feed conversion ratios, and growth timelines, impose physical constraints

on the speed at which entrepreneurial behaviors translate into financial outcomes in this subsector, consistent with the contingency theoretical perspective of Surin et al. (2023).

Robustness checks 3: Correlation analyses.

Lastly correlation analyses were also conducted. Overall, the correlation analyses indicated that the three Entrepreneurial Orientation dimensions were sufficiently distinct to be treated as formative components of EO. Innovativeness was not significantly related to the other EO dimensions or to any Financial Resilience Index component. In contrast, Proactiveness was positively associated with liquidity, solvency, profitability, and cash-flow adequacy, with the strongest relationship observed for profitability ($r = 0.48$, $p < 0.001$). Risk-Taking was negatively associated with liquidity ($r = -0.34$, $p < 0.001$), solvency ($r = -0.29$, $p = 0.001$), profitability ($r = -0.41$, $p < 0.001$), and cash-flow adequacy ($r = -0.22$, $p = 0.012$). These results suggest that earnings retention strengthened financial resilience, whereas greater leverage increased firms' short- and long-term financial vulnerability

RESULTS

Descriptive Statistics and Period Comparisons

Table 5 presents descriptive statistics for all primary variables across the three crisis periods. Two findings deserve immediate attention.

First, both Proactiveness ($F(2, 127) = 0.41$, $p = 0.662$, $\eta^2 = 0.006$) and Risk-Taking ($F(2, 127) = 0.06$, $p = 0.947$, $\eta^2 = 0.001$) were statistically stable across the three crisis periods, confirming that neither dimension adapted significantly in response to the pandemic. This stability is a foundational result for the Dual-Pathway Paradox: the opposing effects documented below reflect pre-existing strategic postures, not crisis-induced behavioral shifts. Firms that entered the pandemic with high proactiveness and firms that entered with high leverage carried those postures through the crisis and their financial consequences followed accordingly.

Second, the FRI declined from 0.477 before the pandemic to 0.424 after the pandemic (−11.1%), with the most severe impairment in Profitability (ROA −26.9% in normalized terms) and the only net improvement in Operational Efficiency (+19.1%). Liquidity was countercyclical, rising 42.4% during the peak-pandemic period as firms accumulated precautionary buffers, before declining post-pandemic as those buffers were deployed. This pattern provides the backdrop against which the dimension-specific EO effects are interpreted.

Table 5 Descriptive Statistics by Crisis Period (N = 130 firm-year observations, 26 firms)

Variable	**2019 Mean**	**2019 SD**	**2020-21 Mean**	**2020-21 SD**	**2022-23 Mean**	**2022-23 SD**	**ANOVA p**
Proactiveness (Retention Ratio)	0.647	0.183	0.642	0.191	0.573	0.198	.662
Risk-Taking (D/E Ratio)	1.159	0.847	1.062	0.791	1.099	0.814	.947
Innovativeness (CAPEX/Assets)	0.039	0.041	0.044	0.048	0.041	0.044	.838
FRI (Composite, 0–1)	**0.477**	**0.142**	**0.464**	**0.138**	**0.424**	**0.151**	**—**
Liquidity (Current Ratio)	2.90	1.82	4.13	2.94	2.76	1.79	—
Solvency (ICR)	15.63	12.41	18.29	14.17	15.42	11.83	—
Profitability (ROA, %)	6.78	4.91	5.43	4.62	4.14	4.38	—

Cash Flow (OCF Ratio)	0.445	0.218	0.412	0.201	0.389	0.194	—
Efficiency (Asset Turnover)	0.68	0.31	0.73	0.34	0.81	0.38	—

Note. *D/E = Debt-to-Equity Ratio; ICR = Interest Coverage Ratio; ROA = Return on Assets; OCF = Operating Cash Flow Ratio; FRI = Financial Resilience Index. ANOVA p-values test for differences across the three crisis periods. SD = standard deviation. All normalized variables use Winsorised min-max transformation.*

Source: Author's own calculations from audited annual reports (JSE, ZSE, SEM, LUSE, NSX, DSE, MSE; 2019–2023).

Correlation Analysis: The Paradox in bivariate form

The correlation matrix as indicated in the table 6 below, provides the first direct evidence of the EO paradox. Proactiveness showed consistent positive associations with four resilience components: ROA ($r = 0.48$, $p < .001$), Interest Coverage ($r = 0.35$, $p < .001$), Current Ratio ($r = 0.21$, $p = .021$), and OCF Ratio ($r = 0.19$, $p = .032$). Risk-Taking simultaneously showed consistent negative associations with the same components: ROA ($r = −0.41$, $p < .001$), Current Ratio ($r = −0.34$, $p < .001$), Interest Coverage ($r = −0.29$, $p = .001$), and OCF Ratio ($r = −0.22$, $p = .012$). Innovativeness showed uniformly non-significant correlations (all $|r| < 0.10$, all $p > .30$). Innovativeness, measured as CAPEX intensity, dd not translate into resilience within the observation window because capital investments in agribusiness have long payback periods and often require complementary organizational changes to generate returns (Naldi et al., 2007; Abebe et al., 2022). Moreover, CAPEX intensity captures only physical capital investment, thereby understating intangible innovations such as digital transformation and business model adaptation, which were critical during the pandemic.

Importantly, the intercorrelation between Proactiveness and Risk-Taking was negative but moderate ($r = −0.24$, $p = 0.006$), This s consistent with the pecking order theory prediction that firms retaining more earnings have less need for external debt. This negative correlation means that high-proactiveness, low-risk firms and low-proactiveness, high-risk firms are the two extreme poles of the strategic spectrum, and the financial resilience consequences of this contrast are what the Dual-Pathway Paradox documents.

Table 6 Pearson Correlation Matrix — EO Dimensions and FRI Components (N = 130)

	Variable	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
1	Proactiveness	—							
2	Risk-Taking	−.24	—						
3	Innovativeness	.08	−.11	—					
4	Liquidity (CR)	.21	−.34	−.09	—				
5	Solvency (ICR)	.35	−.29	−.06	.15	—			
6	Profitability (ROA)	.48	−.41	.03	.18	.52	—		
7	Cash Flow (OCF)	.19	−.22	−.05	.12	.31	.38	—	
8	Efficiency (AT)	−.11	.08	−.07	−.14	−.09	−.03	−.02	—

Note. *$p < .05$; $p < .01$; $p < .001$ (two-tailed). All variables Winsorised at 5th/95th percentiles and normalized to a 0–1 scale. CR = Current Ratio; ICR = Interest Coverage Ratio; OCF = Operating Cash Flow Ratio; AT = Asset Turnover. Source: Author's own calculations from audited annual reports (2019–2023).*

Hypothesis Testing

Composite EO and Financial Resilience (H1)

Composite EO positively and significantly predicted FRI across all five hierarchical models, with the fully specified model yielding β = 0.371 (p = 0.002, 95% CI [0.141, 0.601]), explaining 35.4% of variance in financial resilience (adjusted R^2 = 0.325). The EO coefficient was remarkably stable as controls were added sequentially it declined only marginally from 0.421 in the baseline to 0.371 in the full model. This indicates that EO's contribution to financial resilience is not spuriously explained by firm size, pre-crisis financial health, period effects, firm age, or industry subsector. Therefore, H1 is supported.

The lagged specification (EO at t−1 predicting FRI at t, n = 104) produced a significant coefficient of β = 0.312 (p = 0.005, 95% CI [0.099, 0.525]), confirming that the relationship is temporally ordered: entrepreneurial orientation precedes and likely contributes to financial resilience rather than merely reflecting it. The unique contribution of EO in the full model was Cohen's f^2 = 0.051, a small but practically meaningful effect size given the strength of the pre-crisis profitability predictor (standardized β = 0.372).

Table 7 Hierarchical OLS Regression: Composite EO Predicting FRI (N = 130)

Predictor	**Model 1 Baseline**	**Model 2 + Size**	**Model 3 + Fin. Health**	**Model 4 + Period**	**Model 5 Full**
EO_Norm	0.421(.089)	0.418(.090)	0.382 (.118)	0.379 (.119)	0.371 (.117)
Log (Assets)	—	0.008(.005)	0.006 (.005)	0.006 (.005)	0.005 (.005)
Liquidity_Norm_2019	—	—	0.189 (.082)	0.187 (.083)	0.178 (.081)
ROA_Norm_2019	—	—	0.412 (094)	0.408 (.095)	0.394 (.093)
Pandemic dummy	—	—	—	−0.031 (.041)	−0.029 (.040)
Post Pandemic dummy	—	—	—	−0.045 (.043)	−0.042 (.042)
Firm Age_Log	—	—	—	—	0.028 (.021)
Subsector: Livestock	—	—	—	—	−0.087 (.062)
Subsector: Agri-Services	—	—	—	—	0.041 (.048)
R^2	**0.148**	**0.151**	**0.341**	**0.344**	**0.354**
Adj. R^2	**0.141**	**0.138**	**0.321**	**0.315**	**0.325**
ΔR^2	**—**	**0.003**	**0.190**	**0.003**	**0.010**
Cohen's f^2 (EO)	**0.174**	**0.170**	**0.073**	**0.072**	**0.051**

Note. *Unstandardized β coefficients; standard errors in parentheses. $p < .05$; $p < .01$; $p < .001$. Dependent variable = FRI_Norm (composite Financial Resilience Index). Model 5 is the preferred specification. Source: Author's own calculations.*

Hypothesis Two: The Dual Pathways: H2a and H2b

Results of the H2 testing are included in the table 8 below,

Table 8 Dimension specific OLS regression

	Panel A: H2a Proactiveness → Liquidity β (SE)	**Panel B: H2b Risk-Taking → Solvency β (SE)**	**Direction of Effect**
Main EO predictor	0.214 (.091)	−0.287 (.091)	**OPPOSITE**
Log (Assets)	0.004 (.006)	0.003 (.007)	—
Baseline control (2019)	0.241 (.088)	0.198 (.091)	—
R^2	0.089	0.114	—
Adjusted R^2	0.068	0.094	—
95% CI	[0.034, 0.394]	[−0.469, −0.105]	—
Cohen's f^2	0.028	0.054	—
Decision	**H2a SUPPORTED**	**H2b SUPPORTED**	**PARADOX CONFIRMED**

Note. *Panel A dependent variable: Liquidity_Norm (normalized Current Ratio). Panel B dependent variable: Solvency Norm (normalized Interest Coverage Ratio). All models control Log(Total Assets) and 2019 baseline value of the dependent variable. $p < .05$; $p < .01$. The OPPOSITE direction label in the Panel A/B row confirms the Dual-Pathway Paradox: Proactiveness and Risk-Taking drive financial resilience in statistically significant but opposing directions within the same empirical context. Source: Author's own calculations.*

Panel A shows the Proactiveness-Liquidity results (H2a) and Panel B shows the Risk-Taking-Solvency results (H2b). Both effects are statistically significant and opposite in sign, providing direct empirical confirmation of the paradox at the regression level.

H2a: Proactiveness significantly and positively predicted Liquidity in the full model (β = 0.214, p = 0.021, 95% CI [0.034, 0.394], Cohen's $f^2 = 0.028$). The coefficient was stable across all three model specifications, confirming that the proactiveness-liquidity relationship is not confounded by firm size or pre-crisis liquidity. This finding confirms the financial self-insurance mechanism: proactive SADC agribusinesses retaining a higher proportion of earnings; they maintained significantly stronger current asset positions, which provided them with greater short-term absorptive capacity during the revenue shock of the pandemic.

H2b: Risk-Taking significantly and negatively predicted Solvency in the full model (β = −0.287, p = 0.002, 95% CI [−0.469, −0.105], Cohen's $f^2 = 0.054$). The effect was larger in magnitude and statistical strength than the Proactiveness-Liquidity effect; this is consistent with the theoretical expectation that the SADC amplification of the leverage-solvency constraint operates more forcefully than the self-insurance mechanism. This finding confirms the debt service headroom constraint that highly leveraged SADC agribusinesses were significantly less able to service their interest obligations from operating income during the pandemic, approaching technical default risk precisely when alternative financing options were most constrained.

The Paradox Formally Stated (H3)

The paradox was confirmed at three levels:

i. Bivariate correlations show systematically opposing sign profiles for Proactiveness and Risk-Taking across all resilience dimensions;

ii. Dimension-specific regressions confirm statistically significant opposing effects on the primary resilience outcome for each mechanism; and

iii. Both effects are stable postures (non-significant period ANOVAs) embedded in pre-crisis organizational structures rather than adaptive crisis responses.

Table 9 synthesis of evidence for H3

EO Dimension	**Mechanism**	**Primary Resilience Effect**	**Coefficient**	**p-value**	**Direction of Paradox**
Proactiveness (Retention Ratio)	Financial Self-Insurance Pathway: Retained earnings → liquidity buffer → absorptive capacity	Liquidity (+) Profitability (+) Solvency (+)	β = +0.214 r = +0.48	p = .021 p < .001	↑ BUILDS resilience
Risk-Taking (D/E Ratio)	Debt Service Headroom Pathway: Leverage → ICR compression → solvency constraint	Solvency (−) Profitability (−) Liquidity (−)	β = −0.287 r = −0.41	p = .002 p < .001	↓ ERODES resilience
Net Effect of Paradox	**Both mechanisms coexist simultaneously in high-EO firms**	**Opposing effects on different resilience dimensions**	**Direction depends on relative magnitude of each pathway**	**—**	**PARADOX CONFIRMED**

Note. *β = unstandardized regression coefficient from dimension-specific OLS regressions controlling for firm size and 2019 baseline. r = Pearson correlation with the dimension's most strongly associated FRI component (ROA for both Proactiveness and Risk-Taking). D/E = Debt-to-Equity Ratio. ICR = Interest Coverage Ratio. Source: Author's own synthesis of empirical results.*

Qualitative Evidence: The Paradox in Organizational Practice

The qualitative analysis of annual report narratives from the eight high-resilience firms — SeedCo International, AVI Limited, National Foods, Zambezi Sugar, Padenga, Hippo Valley, RFG Holdings, and Tanganda, confirmed that the Dual-Pathway Paradox manifests as observable organizational behaviors, not merely financial ratio patterns. Table 10 summarizes the strategic activities.

Table 10 Strategic activities undertaken by high resilience firms- aligned to the dual pathway framework

Strategic Activity	**ERSDF Pathway**	**N**	**%**	**Illustrative Evidence**
Supply chain diversification	Proactiveness (Self-Insurance)	7	88%	Seed Co International activated pre-established alternative supply chains across three SADC countries (Seed Co, 2020 Annual Report)
Government support utilization	Proactiveness (Self-Insurance)	7	88%	AVI Limited utilized South Africa's COVID-19 TERS to preserve 12,000+ jobs (AVI Limited, 2021 Annual Report; SA Dept. Labour, 2020)
Strategic cost rationalization	Managed Risk-Taking	7	88%	National Foods reduced non-essential expenditure while protecting core capital investments in milling

				infrastructure (National Foods, 2021 Annual Report)
Digital transformation acceleration	Proactiveness (Innovation)	6	75%	AVI Limited integrated e-commerce platforms within six weeks, accelerating digital strategy by 18 months (AVI Limited, 2021 Annual Report)
Talent retention (no retrenchments)	Proactiveness (Self-Insurance)	6	75%	Hippo Valley reallocated 300 workers to ethanol production and packaging (Hippo Valley, 2021 Annual Report)
Inventory management optimization	Proactiveness (Innovation)	6	75%	National Foods reduced grain spoilage from 8% to 3% through warehouse management systems (National Foods, 2020 Annual Report)
Debt reduction / currency refinancing	Risk Calibration (Managed Risk-Taking)	5	63%	Zambezi Sugar converted dollar-denominated debt to local currency at lower rates, preserving ICR (Zambezi Sugar, 2021 Annual Report)
Product / service pivots	Proactiveness (Innovation)	5	63%	RFG Holdings expanded ambient food range to replace disrupted fresh-food channels (RFG Holdings, 2021 Annual Report)

Note. *N = number of high-resilience firms (n = 8 total) documenting each activity in CEO statements, MD&A sections, investor presentations, or press releases. ERSDF = EO–Resilience Strategic Driver Framework. Source: Author's own qualitative content analysis of audited annual reports (2020–2021).*

Overall, the qualitative evidence provided above shows that high-resilience firms responded to the pandemic through a combination of proactive self-insurance actions and calibrated risk-management practices. The most frequently reported activities were supply chain diversification, government support utilization, and strategic cost rationalization, each observed in 88% of the high-resilience firms, indicating that resilient agribusinesses were able to preserve operations by mobilizing financial buffers, protecting core investments, and adapting quickly to disrupted market conditions.

Other commonly observed responses, included digital transformation, talent retention, and inventory optimization, further demonstrate that proactive firms used their internal capabilities to maintain operational continuity and improve efficiency. At the same time, debt reduction and currency refinancing, reported by 63% of firms, show that resilient firms did not avoid risk entirely but actively recalibrated financial exposure to preserve solvency. Taken together, the results support the Dual-Pathway Paradox by showing that financial resilience was strengthened where firms combined proactive resource deployment with disciplined management of leverage-related risks.

Low-resilience firms, by contrast, showed neither the proactive reserves to fund strategic responses nor the risk management sophistication to restructure leverage. Their annual report narratives documented generic cost containment responses without specificity on investment protection or debt management, consistent with the threat rigidity prediction of Kreiser et al. (2020): reactive, undifferentiated retrenchment that leaves the firm without either the financial flexibility of proactiveness or the solvency headroom of managed risk-taking. Solvency headroom should be understood as the safety margin between a firm's operating earnings and its interest obligations; the gap that determines how much revenue decline the firm can absorb before technical default.

DISCUSSION

Dual-Pathway Paradox Confirmation

The empirical evidence presented in Section 4 confirms the Dual-Pathway Paradox at multiple levels of

analysis.

i. At the bivariate level, Proactiveness is consistently positively associated with FRI components, while Risk-Taking is also consistently negatively associated with them.

ii. At the regression level, both effects remain significant after controlling for firm size, pre-crisis financial health, crisis period, firm age, and industry subsector.

iii. At the qualitative level, the financial ratio results align with observable organizational behaviors, this also supports the validity of the proxy measures of EO dimensions.

Together, these three levels of evidence constitute the most comprehensive empirical documentation of the EO dimension paradox in the African agribusiness literature.

These findings extend the “dark side” literature on Entrepreneurial Orientation (EO). Previous studies show that EO is not always beneficial: Tang et al, (2008) and Wales et al (2008) argued that very high risk-taking can reduce performance, especially when firms face uncetainty, downturns, or weak institutional support. In this study, that dark side is visible through leverage. Firms that relied heavily on debt became more exposed during the pandemic because fixed interest payments reduced their ability to remain solvent when revenues were under pressure.

The Dual-Pathway Paradox adds a clearer explanation. It shows that the positive and negative effects of EO can occur at the same time within the same firm as proposed in the formative view by George, (2011). A firm may be proactive because it retains earnings and builds liquidity buffers, while also being risky because it carries high debt. During a crisis, these two behaviors work in opposite directions: retained earnings protect liquidity, but debt weakens solvency. This means that a high composite EO score can hide an important internal contradiction (Linton, 2019).

This finding also has important implications for how EO should be measured. When researchers use only a single composite EO score, the positive effect of Proactiveness and the negative effect of Risk-Taking may offset each other, producing weaker or insignificant results. For crisis and resilience studies, EO should therefore be examined dimension by dimension, because Proactiveness and Risk-Taking do not necessarily move together or affect firm outcomes in the same way George, (2011), Linton, (2019) and Wales et al., (2020).

Why both effects are amplified in the SADC context

Both the positive proactiveness effect and the negative risk-taking effect appear amplified in the SADC context relative to developed-market benchmarks. The proactiveness-profitability correlation ($r = 0.48$) is approximately twice the meta-analytic mean of $r = 0.24$ (Rauch et al., 2009). The risk-taking-profitability correlation ($r = -0.41$) is stronger in absolute value than typically reported in developed-market EO studies, where the risk-taking-performance link is often described as "positive but weak" (Pham et al., 2022).

Three structural features explain this double amplification. First, capital market constraints create a higher premium on internal reserves. In developed economies, firms without adequate retained earnings can access emergency credit lines or refinancing at relatively low cost. In SADC, where capital markets are shallower and refinancing options more constrained, the self-insurance value of retained earnings is higher (George et al., 2016; SADC, 2024).

Second, currency volatility amplifies the consequences of leverage. The SADC region includes Zimbabwe's hyperinflationary environment, Malawi's persistent kwacha depreciation, and Zambia's history of currency instability. Firms with dollar-denominated debt and local-currency revenues face *de facto* leverage amplification because as the local currency weakens, the cost of servicing foreign debt rises even when the nominal debt-to-equity ratio is unchanged. This currency-leverage interaction makes the solvency consequences of high leverage more severe in SADC than in stable-currency environments (UNCTAD, 2024).

Third, institutional conditioning may have created more extreme variance in the proactiveness dimension. Firms that have operated in chronically volatile environments where macro shocks arrive more frequently than in OECD economies, may have learned to retain earnings more aggressively as a survival instinct (George et al., 2016). The mean listing age of 32.4 years suggests many firms have navigated multiple prior crises currency collapses, droughts, commodity price shocks and their retention policies reflect accumulated institutional wisdom (Suder et al., 2025).

Stability of both dimensions: The Pre-crisis capability argument

The result that neither Proactiveness nor Risk-Taking was affected by the pandemic is theoretically significant to the Dual Pathway Paradox. The reason for this is that the contrasting influence shown in the regressions is that of pre-crisis organizational postures, and not of crisis-induced behavior change. Organizations that entered the pandemic as proactive exhibited through earnings retention, stayed that way through the crisis. and organizations that entered the pandemic as high-risk and highly levered firms maintained that posture – de-levering only marginally and insignificantly during the peak pandemic time.

The findings support the threat rigidity theory of Kreiser et al. (2020), which holds that in the face of highly hostile environment, organizations tend to rigidify their strategy rather than adapt it. The findings also support the organizational rigidity theory of de Figueiredo Jr. et al. (2023), in which they observed organizational rigidity based on the age of firms and institutional maturity; The attributes possessed by mature SADC agribusinesses included in the sample. Both EO constructs seem to be entrenched in routines, governance structures, and reward systems that remain largely unchanged when faced with environmental shock.

The implication for practice is straightforward: the Dual-Pathway Paradox is impossible to resolve through behavior modification during the crisis. This is because the strengths of proactiveness and weaknesses of risk-taking are both strategies formed over many years, rather than tactics which one can resort to on demand. This implies that the agribusinesses will have to deal with the dual-pathway paradox by balancing the proactiveness strategy and the risk-taking strategy when forming the strategic architecture at times when things are relatively calm

The Paradox and EO Theory: Implications for the Literature

The Dual-Pathway Paradox contributes to EO theory in three main ways.

First, it supports the formative view of EO by showing that two EO dimensions can significantly affect the same outcome in opposite directions (George, (2011) and Linton, (2019). This would be difficult to explain under a reflective view, where dimensions are expected to move together, but it fits the formative view, where each dimension contributes independently.

Second, it challenges the idea that EO always has a uniformly positive effect on performance. The composite EO effect may simply reflect the net result of opposing forces: Proactiveness strengthens resilience, while Risk-Taking can weaken it. This helps explain why EO-performance findings vary across studies and contexts (Wales, 2016).

Third, it extends the dark-side EO literature by identifying debt service pressure as the mechanism through which Risk-Taking harms resilience. This aligns with Tang et al. (2008), where risk-taking improves performance only up to the point where leverage begins to reduce financial flexibility. In this study, the interest coverage ratio shows when debt shifts from a growth tool to a resilience threat (Wales et al., 2020).

The SADC-Specific Contribution

The stronger-than-expected magnitudes of both EO dimension effects in the SADC context contribute to the growing literature on context-specificity in strategic management research. George et al. (2016) called for more contextually grounded African management research, arguing that findings from Western developed economies cannot be assumed to generalize. The present study provides concrete evidence in support of this call: the EO-resilience relationship in SADC agribusiness is not merely directionally consistent with the global

literature but it is quantitatively different. The proactiveness-profitability correlation of r = 0.48 and the risk-taking-profitability correlation of r = −0.41 are both outside the ranges typically reported in meta-analyses of developed-market studies.

This context-specificity is not random: it follows from identifiable structural features of the SADC environment that theory would predict. Capital market constraints amplify the self-insurance value of retained earnings. Currency volatility amplifies the solvency consequences of leverage. Institutional conditioning amplifies the variance in proactiveness across the sample.

Understanding these amplification mechanisms allows the context-specificity finding to be theory-generating rather than merely empirical: it suggests hypotheses about other contexts where similar amplifications would be expected e.g. South Asia, West Africa, Central America and provides a template for testing those hypotheses.

CONCLUSION

What this study proved

This study set out to document and explain the Dual-Pathway Paradox of Entrepreneurial Orientation in SADC agribusinesses during the COVID-19 pandemic; the empirical phenomenon in which Proactiveness and Risk-Taking being two dimensions of the same higher-order EO construct, drive financial resilience in statistically significant and opposing directions.

The evidence confirms the paradox at the bivariate, regression, and qualitative levels. Proactiveness (earnings retention ratio) significantly and positively predicts liquidity (β = 0.214, p = 0.021) and shows the strongest positive association with profitability of any variable in the study (r = 0.48). Risk-Taking (debt-to-equity ratio) simultaneously and significantly impairs solvency (β = −0.287, p = 0.002) and negatively co-varies with liquidity, profitability, and cash flow adequacy. Both effects are stable postures not tactical crisis responses embedded in pre-crisis organizational structures.

The composite EO construct remains a significant positive predictor of overall financial resilience (β = 0.371, p = 0.002), but this aggregate coefficient conceals the opposing tensions that determine how different dimensions of EO translate into different resilience outcomes. For agribusiness strategy in volatile emerging markets, the composite coefficient is a less useful guide than the dimension-specific findings: the strategic question is not whether to be more entrepreneurial in aggregate, but which entrepreneurial posture to cultivate and how to calibrate the tension between self-insurance and leverage.

Practical Recommendations

For agribusiness boards and executives, the Dual-Pathway Paradox generates three specific, evidence-based recommendations.

First, institutionalize proactive earnings retention as a strategic resilience policy, not merely a passive financial outcome. The evidence confirms that retained earnings are the primary mechanism through which proactive firms build the financial flexibility that enables them to fund supply chain diversification, talent retention, and strategic investment during a crisis, without recourse to expensive emergency financing. Boards should formalize dividend suspension triggers linked to defined early-warning financial indicators, treating earnings retention as a deliberate corporate self-insurance program.

Second, calibrate leverage to preserve solvency safety margin under crisis-scenario revenue assumptions. The risk-taking-solvency relationship (β = −0.287, p = 0.002) confirms that beyond a certain leverage threshold i.e. when the interest coverage ratio falls below 3.0, debt becomes a structural resilience vulnerability rather than a growth enabler. In the SADC context, where currency depreciation amplifies the real cost of foreign-currency debt, the appropriate leverage ceiling is lower than developed-market benchmarks suggest. Firms should model their ICR under pessimistic revenue scenarios before committing to leverage-increasing investment programs.

Third, manage the paradox explicitly at board level. The Dual-Pathway Paradox is not a theoretical curiosity but a practical governance challenge: the same firm that builds resilience through retained earnings may be simultaneously undermining it through leverage. Boards should monitor both dimensions of the paradox simultaneously by tracking earnings retention as a forward-looking resilience investment and tracking the interest coverage ratio as the real-time indicator of solvency headroom/safety margin; and treat them as complementary governance metrics rather than separate financial management concerns.

For policymakers and development finance institutions in SADC, the findings suggest that resilience-oriented credit assessment frameworks should incorporate both proactiveness metrics (earnings retention ratio, dividend history relative to cash flow) and risk calibration metrics (interest coverage ratio under stress scenarios) alongside traditional balance sheet ratios. This would reward firms that demonstrate dual-pathway resilience management i.e. high proactiveness and calibrated risk-taking not simply those with the largest asset base or the lowest current leverage.

Study Limitations and Future Research

This study has four main limitations.

First, the sample covers only 26 listed firms from seven SADC countries, excluding most unlisted agribusiness corporations, smallholders and SME agribusinesses. The Dual-Pathway Paradox may therefore differ in firms with other ownership, governance, and capital structures. Therefore, the findings may be generalizable to other unlisted firms. Moreover, the geographical concentration of most firms in Zimbabwe may reflect country specific institutional factors that warrant separate investigations. Future research should test the framework among unlisted firms using surveys or administrative financial data.

Second, the earnings retention and debt-to-equity ratios capture only the financial expressions of proactiveness and risk-taking. They do not fully measure non-financial behaviors such as market intelligence, new product launches, strategic foresight, or market expansion which may produce different resilience results. Future studies should combine financial proxies with survey or qualitative measures. As Wales et al. (2020) note, a multi-method approach to EO measurement is essential for capturing the full scope of the construct.

Third, the five-year period from 2019 to 2023 may be too short to capture the long-term effects of the paradox, especially because post-pandemic recovery was incomplete by 2023. Extending the panel to 2027 or beyond would show whether the effects are temporary or persistent.

Fourth, the non-significant COVID-19 moderation result may reflect limited statistical power, especially in the small pre-pandemic sub-sample. Larger samples should test whether each EO dimension interacts with crisis severity and whether the paradox intensifies under extreme environmental hostility.

Overall, the Dual-Pathway Paradox creates a useful agenda for EO research in volatile emerging markets. Because capital market constraints, currency volatility, and institutional conditioning also characterize many Sub-Saharan African, South Asian, and Latin American economies, comparative studies across regions could clarify where the paradox is strongest and how it shapes agribusiness resilience.

Further Paradox reveals that the pursuit of entrepreneurship in volatile markets requires more than ambition, it demands financial discipline. Firms that master the balance between proactive self-insurance and prudent leverage management are not merely more resilient; they are better positioned to emerge stronger from the crises that will inevitably come.

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