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Covering Fixed Costs to Survive a Global Crisis: Financial Vulnerability, Coping Strategies and Bankruptcy Risk in South African Accommodation Establishments

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Abstract: The accommodation sector in South Africa was among the economy's most severely impacted sectors during the COVID-19 pandemic, yet individual firms' responses to the financial crisis, and the factors that differentiated business survival from bankruptcy, remain empirically under-researched. This paper addresses this gap. Data were obtained from a cross-sectional, self-administered online survey of 477 accommodation establishments in all nine provinces, conducted in 2020 while strict lockdown rules were in force. The paper examines how establishments responded to the crisis and how their characteristics and financial position related to perceived bankruptcy risk. Frequencies described the extent of disruption; exploratory factor analysis (EFA) identified the main coping types; Kruskal-Wallis and Mann-Whitney tests compared coping across establishment groups; binary logistic regression modelled perceived bankruptcy risk; and K-means cluster analysis grouped establishments by coping pattern. The EFA produced four coping dimensions: operational downsizing, workforce management, financial strategy and support, and business suspension and contraction (overall $\alpha = 0.834$). Ability to meet fixed costs was the only significant correlate of perceived bankruptcy risk (OR = 5.874, $p < 0.001$); revenue decline and establishment size were not significant. Size and category, but not province, separated three coping groups (Passive Withdrawers, Comprehensive Responders and Selective Adapters). When asked about hypothetical lockdown lengths, operators expected them to last at most six months. From a Resource-Based View perspective, financial slack held before the crisis, the ability to pay fixed costs without income- best separated vulnerable from less vulnerable firms. Larger establishments with more resources took a wider range of actions. Because the authors did not measure dynamic capabilities directly, they treat these actions as operational adjustments rather than evidence of dynamic capabilities. The authors propose a Financial Vulnerability Index (FVI) for future crisis research. Managers should build cost flexibility and reserves in normal times, and banks and government should direct crisis support at liquidity and fixed costs, for example, payment holidays on loans, rates and utilities, and deliver it quickly and widely instead of relying mainly on access to credit.

Keywords: COVID-19; accommodation establishments; economic coping strategies; financial resilience; South Africa; hospitality; dynamic capabilities; bankruptcy risk

1. Introduction

The tourism and hospitality sector was perhaps among the economies most severely and immediately disrupted by the COVID-19 pandemic of 2020. Travel bans, border closures, and strict lockdowns announced by governments worldwide brought the accommodation sector to a standstill

within days, wiped out future bookings, and overnight impacted large hospitality workforces. In South Africa, the announcement of a national state of disaster on 15 March 2020, succeeded by a Level 5 national lockdown from 27 March 2020, brought the country's entire accommodation sector to a halt, not gradually or partially, but in a single regulatory decision that provided no lead time to respond nor a definitive plan for recovery. The South African accommodation sector was unprepared for this shock [1, 2]. Most of this sector in South Africa consists of small, independently owned guesthouses, bed & breakfasts, and self-catering units, most with fewer than 10 employees and 10 rooms. These establishments also face low profit margins, tight cash flows, and limited access to credit markets. When the lockdown was introduced, it not only reduced demand but also eliminated it. With zero income, establishments still incurred fixed costs for salaries, rent, utility bills, and loan repayments, and damage escalated faster than the industry could access relief. The study draws on the Resource-Based View (RBV) and Dynamic Capabilities perspectives to frame two questions. Which resources held before the crisis, particularly financial slack, separated more vulnerable establishments from less vulnerable ones [3, 4]? And how far could establishments adjust their operations and staffing once the shock hit [5, 6]? The RBV looks at differences in what firms owned and controlled before the crisis. The Dynamic Capabilities perspective looks at their ability to change that resource base afterwards.

Research on organisational resilience and crisis response in hospitality offers a base for this study. A pre-COVID-19 systematic review of disaster resilience in hotels found the research limited and fragmented, and linked a property's resilience to the economic, social, human, and physical capital it could draw on [7]. Duchek [8] describes organisational resilience as a set of capabilities for anticipating, coping and adapting, all of which depend on available resources. COVID-19 studies of hotels report similar responses, such as managing labour costs, adjusting operations, and delaying capital spending [9]; cutting salaries, laying off staff, and changing revenue management [10]; and shifting practices as the crisis moved from its first stage into the pandemic stage [11]. Among small businesses, many firms had little cash reserves, and their expected chance of survival dropped sharply as the expected crisis length grew [12]. SME resilience studies point to the resources firms could mobilise to absorb the shock [13, 14], and work on tourism firms suggests that capabilities activated early in the crisis shaped later resilience [15]. Early reviews called for research that explains why firms' responses and outcomes differ, beyond describing impacts [16]. Three limitations remain. Few studies have modelled which financial and structural attributes relate to perceived failure risk, and most describe which responses firms adopted. Revenue loss, cost structure and firm size have rarely been tested together in one model. Small, owner-operated establishments in emerging economies, with thin cash buffers and limited access to credit and state support, are underrepresented in a literature centred on larger hotels in developed markets.

Despite the proliferation of COVID-19 hospitality research globally since 2020, four gaps relevant to the South African accommodation context remain. First, international research has predominantly studied large hotel chains in developed economies; consequently, it has paid little attention to the over-concentration of smaller firms in South Africa's independently owned accommodation sector. The most closely related existing study, Sucheran's 2021 examination of guesthouse impacts, was exploratory and mostly descriptive. It did not use the inferential models applied here, which support survey statistics with operators' written comments. Second, although Kim et al. [17] and Gim et al. [9] established differentiated strategy adoption across accommodation

establishments by size and type in response to COVID-19, the author is not aware of any study in the South African accommodation sector that empirically delineates establishment typology by size and examines the extent and intensity of strategy adoption. Third, to the author's knowledge, no study in South African hospitality research has modelled the individual establishment-level predictors of bankruptcy risk identified via logit modelling. Fourth, Bartik et al. [12] asked small US businesses how long they expected to survive under crises of different lengths, but few studies have examined similar projections for accommodation establishments. This study looks at how operators' expected financial outlook worsens under longer hypothetical lockdowns. The answers reflect expectations at a single point in time, not changes observed over time. This study addresses all four gaps. Drawing on empirical survey data collected from 477 accommodation facilities across all nine provinces in South Africa, the study investigated five key issues: determining the nature and extent of the crisis; the emergent factors of crisis-coping strategies; whether the level of crisis-coping strategies varied across establishments; the socio-economic correlates of bankruptcy risk; and how operators' expected outlook changed under longer hypothetical lockdowns.

Several individual findings, such as steep revenue losses, heavy reliance on internal reserves, workforce cuts, and difficulty accessing government relief, are broadly consistent with COVID-19 hospitality research elsewhere. The contribution of this study lies less in these separate findings than in four things not previously done for the South African accommodation sector: (1) modelling establishment-level correlates of bankruptcy risk and showing that fixed-cost coverage, rather than revenue loss or size, is the strongest correlate; (2) mapping the intensity of coping-strategy adoption onto establishment size and type through an empirically derived typology; (3) tracing how the expected financial outlook worsens as the projected lockdown lengthens; and (4) proposing the Financial Vulnerability Index as a compact, reusable measure for future crisis studies. The study also offers an integrated Resource-Based View and Dynamic Capabilities reading of these results, which prior South African work has not attempted. For the international literature on organisational resilience and crisis response, the study adds three points. When demand stops almost completely, the fixed costs a firm carries into the crisis relate more closely to perceived failure risk than the size of its revenue loss; resilience models that focus on adaptation during a crisis should account for this. The evidence comes from small owner-operated establishments in an emerging economy, which international studies rarely cover. Separating resources from operational responses also shows what survey data on coping actions can and cannot reveal about dynamic capabilities, a point often blurred in COVID-19 hospitality research [18, 19].

2. Literature review

The COVID-19 pandemic is undoubtedly the most disruptive event in the history of global tourism. UNWTO [20] reported that international tourist arrivals worldwide decreased by 74% in 2020, effectively erasing three decades worth of growth, with a loss of USD 1.3 trillion in tourism export revenues. As Gössling et al. [21] explained, it was the largest crisis the global tourism industry had faced, threatening international tourism's very survival and, with no comparable precedents, simultaneously suppressing demand and supply in markets worldwide. Whether in hotels or other accommodation services, the short-term impact was catastrophic: occupancies fell to historic lows, forward reservations disappeared, and fixed costs continued to accumulate without turnover. According to Boston Hospitality Review [22], in 2020, North American RevPAR fell by 12% and

aggregate occupancy fell by 43%, significant drops relative to many historical industry performance indicators. The gradual onset of COVID-19 was another defining feature compared with previous crises. Unlike most shocks, which are geographically defined or time-constrained, the pandemic spanned more than a year, with sequential waves of slackening and re-tightening restrictions. This temporal ambiguity was as psychologically devastating as financially devastating for accommodation providers, as it meant that the immediate death toll was only one aspect of what they had to absorb in addition to mapping a road to recovery [23].

Coping strategies, as defined in organisational crisis management as the intentional behaviour firms use to cope with, respond to, or adapt to an external shock, are classified into several intersecting dimensions in the hospitality literature. Gim, Chan, Woo, and Mun [9] present an exhaustive taxonomy of cost-cutting practices hotels used during COVID-19, categorising them as labour cost management, operational adjustment, and capital expenditure deferral, and analysing differences in hotel performance. They found that labour cost management, particularly reductions in food-and-beverage salaries, was the strongest predictor of hotel performance, a conclusion relevant to this study's labour management dimension. Workforce reductions were among the most common crisis responses globally in the hospitality context. Guillet and Chu [10] (p. 4) observed that "most hotels were operating only on salary cuts and/or layoffs". Agarwal [24], Lopes et al. [25], and Guillet & Chu [10] confirmed similar observations across the wider hospitality industry. Simultaneously, a more nuanced picture emerged in the United States lodging industry, where Kim et al. [17] observed post-SARS layoffs, furloughs, and reduced working hours as the primary immediate cost-saving measures. Crisis Financial Strategies: Financial strategies in a crisis involve a range of mechanisms – from raising internally trapped cash flows to external financing and government intervention. Kim et al. [17] reported very high resource use, consistent with the resource-based view's assumption that firms tap their resources before resorting to external financing. Bartik et al. [12] observed a significant negative association between the likelihood of business closure and the financial reserves of US small firms during the COVID-19 pandemic. Risk-averse people are well established as reluctant to leverage during a crisis of uncertain duration; Lozano & Yaman [26] found that life-saving cash holdings, rather than debt-based finance, motivated survival among European distressed firms in a financial crisis, a core issue faced by COVID-19-affected enterprises.

Even before the pandemic, the accommodation sector within the country's hospitality industry rested on an already fragile structure amid the country's macroeconomic stresses. Other pressures in the country's tourism industry included sharply rising energy costs from Eskom load-shedding, high crime undermining tourist confidence, and the constraining effect of rising domestic consumer spending [1, 27]. The South African government announced a level 5 national lockdown on 23 March 2020 and enforced it from the 27th, effectively halting all economic activity except essential services. For the accommodation sector, this meant a cessation of business operations; not a decline in demand, but a prohibition on operating [1] (ibid). The authors reflected that this represented a 'hollowing out' of the South African tourism industry at an agonisingly rapid pace, and that small and micro tourism enterprises were hardest hit. According to Statistics South Africa [28], the number of non-resident visitors plummeted from 14.8 million in 2019 to 3.9 million in 2020, a 73.7% decrease (ibid).

South African accommodation-specific research, although limited, also examined the pandemic's effects, but it did not come from systematic industry studies; rather, it came from sector-specific studies. For example, Sucheran [2] highlighted the devastation within the guesthouse sector

of the accommodation industry as a whole, while Rogerson & Rogerson [1] provided a broad critical reflection of government and industry responses from March through August 2020, which uncovered the competing agendas of constituent stakeholders and the negative attitude of the tourism industry towards chaotic, unpredictable and ever-evolving policy regulations (a governance structure challenge). Gumede [29] and Mkansi [30] both identified tourism, catering, and accommodation as the most adversely affected industry grouping in the South African small- and medium-enterprise (SME) sector, an incidental, South Africa-specific analysis similar to a comparative international report that found this sector to be the hardest hit.

Government support included emergency response programs such as the COVID-19 Tourism Relief Fund, the Unemployment Insurance Fund (UIF)'s Temporary Employer/Employee Relief Scheme (TERS), and the Debt Relief Finance Scheme for Small and Medium-sized Enterprises (SMEs), along with other sector-specific economic responses. Despite these measures, bureaucratic red tape and eligibility criteria prevented many micro-enterprises from accessing them, and the rapid depletion of financial resources overwhelmed relief interventions, undermining recovery efforts. Rogerson & Rogerson [1] documented industry-wide disappointment with the alleviation program, highlighting that crisis response, by its nature, slows the pace at which the industry uses the relief program.

3. Integrated Theoretical Framework

The integrated framework brings together two major schools of thought in strategic management, the Resource-Based View and Dynamic Capabilities Theory, into a single explanatory framework that explains both what firms have as resources and how they respond to evolutionary change in the operating environment (Figure 1).

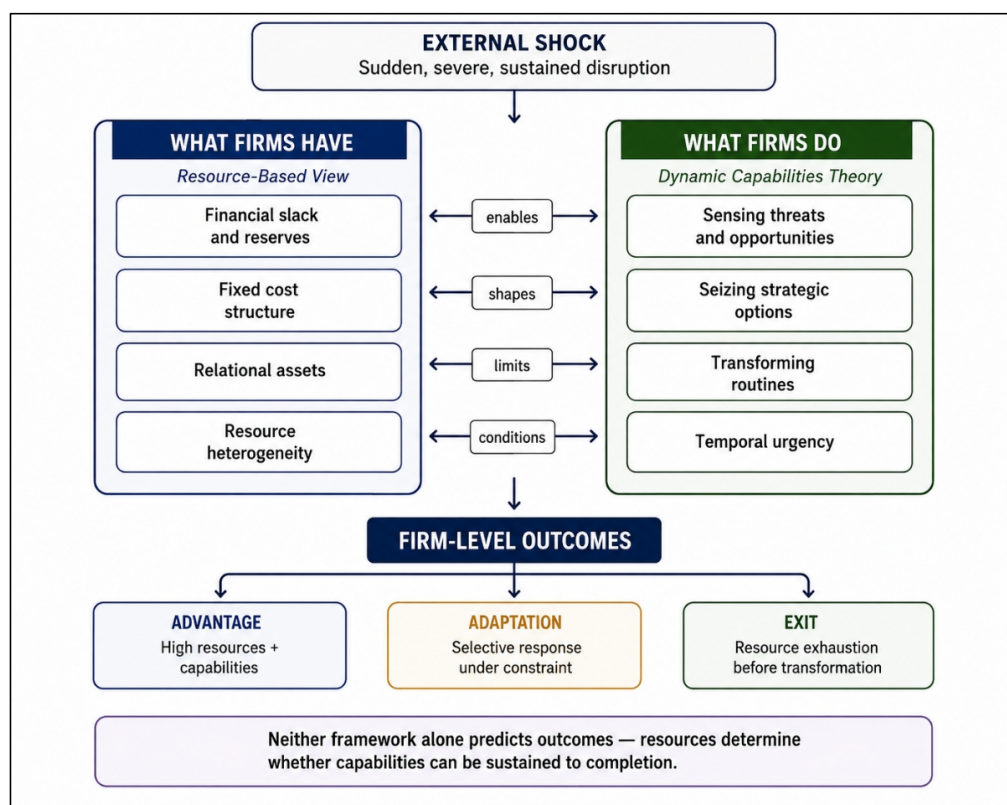


Figure 1. Integrated Theoretical Framework for the Study

Adapted from [3] and [31]

3.1 The Resource-Based View

The Resource-Based View [3] locates the source of competitive advantage within the firm rather than in the external market structure, focusing on the resources firms control, including physical capital, human capital, and organisational capital. Because resources take a long time to develop, acquire and transfer, differences in resources are relatively frozen and therefore stable over time, explaining differences in business performance [3, 31]. A resource has strategic value not only because of its attributes, but also because of the context in which it is employed [4]; this is especially relevant during a deep economic recession. The RBV conceptually harmonises very well with a high-resource-heterogeneity environment. Dierickx & Cool [32] extended the RBV by showing how investment activity can build resource stocks over time, creating persistent strategic irregularities that cannot be eradicated in the short term. This fits South Africa's accommodation sector, a high-end, resource-heterogeneous sector where capital-intensive hotels coexist with micro-guesthouses with no credit and no management infrastructure beyond a single owner-operator. The RBV provides the conceptual language needed to specify which resources matter most in a demand-deflation scenario and why they are unevenly distributed between firms, leading to differential vulnerability.

3.2 Dynamic Capabilities Theory

Dynamic Capabilities Theory [5, 6] addresses a limitation the RBV itself acknowledges in stable environments, resource endowments explain performance adequately, but in turbulent ones, the capacity to reconfigure those resources becomes decisive. According to Eisenhardt & Martin [33], dynamic capabilities are "the antecedent organisational and strategic routines by which managers alter their resource base." Teece [6] organises these reconfiguration activities into three interconnected

processes: sensing threats and opportunities before rivals; seizing strategic options by mobilising resources to support them; and transforming internal configurations (routines, assets, and structures) to match changed circumstances. The theory includes a temporal urgency dimension that the RBV lacks. Delay in activating sensing, seizing, and transforming behaviours causes valuable options to be lost and resources to be further depleted [6]. Wang & Ahmed [34] reinforced this point in their review of the dynamic capabilities construct, identifying reconfiguration as the most strategically critical capability in contexts of rapid, discontinuous change, which are precisely the conditions produced by a sudden operational shutdown. Dynamic Capabilities Theory fits this study because a pandemic lockdown represents the kind of environmental discontinuity the theory was designed to explain. Day-to-day operational control, such as managing occupancy revenue, controlling costs, and optimising distribution, no longer counts once a regulatory action completely closes a property. What matters instead is adaptive capacity: sensing how intense and how long the contagion will last, shifting to all available means, including government relief, workforce breakups and renegotiating costs, and reconfiguring the property's operations and financials to survive an infinite lack of revenue.

3.3 Integration of The Resource-Based View and Dynamic Capabilities Theory

Applying each framework alone can only tell part of the story of how a firm survives and how resource-rich and resource-poor firms compare. RBV, on its own, predicts that a resource-rich firm will outperform a resource-poor one; it can empirically predict this [12, 13], but it cannot explain how resources translate into performance outcomes. Money alone is not enough: firms need the capability to take action in the right way at the right time. Dynamic Capabilities Theory, when used in isolation, assumes that any firm can activate capabilities, rather than being constrained by its resource base, but this assumption is inappropriate in resource-constrained micro-enterprise contexts. The integration specifies the relationship through three hypotheses that propose the underlying mechanisms. The first draws on Amit & Schoemaker [35] and Makadok [36], who both argue, albeit from different angles, that dynamic capabilities require a strong resource base to be activated; the second extends Barney's [3] assumption that resource heterogeneity affects strategy to the behaviour of capability activation, consistent with Eisenhardt and Martin's [33] conclusion that the specific nature of the dynamic capabilities depends entirely on context. The third is that during transformation, resources restrict the period of time during which the firm is able to sustain the new capability (versus strategic intent), as Teece [6] claimed, because if resources are both expensive and slow to transfer, the time window is limited by the firm's resource stock. These three hypotheses define the mechanisms by which the two frameworks relate conclusively, not only theoretically. Prior hospitality research has engaged each framework independently, as noted by Liu & Yang [37] on hotel technology strategy, Ciasullo et al. [13] on SME resilience, and Sucheran [2] on resource constraints in the guesthouse sector. However, none specifies the relational logic connecting the two, which is the integrated framework's theoretical contribution.

To make the framework verifiable, each empirical variable links to a specific element of each theory. Resources (the Resource-Based View component) are captured by the establishment's financial and structural abilities: its ability to cover fixed costs, service debt, and monthly carrying costs; its use of business reserves; and its size, measured by rooms and employees. Dynamic capabilities (the sensing, seizing and transforming component) are measured only indirectly through the coping actions in the B37 scale, namely workforce adjustments, operational downsizing, financial and support-seeking actions, and business suspension. The B37 items record operational responses

and are not direct measures of dynamic capabilities (see Section 4.4). Perceived bankruptcy risk and projected months of viability capture crisis outcomes. The following section examines the three propositions. The Kruskal-Wallis results support Proposition 1, that resources enable capability activation, showing that larger and better-resourced establishments adopted more coping actions (for example, employee count $H = 54.55$, $p < 0.001$). Proposition 2, that resource heterogeneity shapes the form capability activation takes, is supported by the cluster analysis, in which establishment size and category, but not province, distinguished the three coping typologies. Proposition 3, that resource constraints limit the time available for transformation, is consistent with the temporal pattern in Section 5.3.5, where operators expected terminal outcomes once disruption was projected to exceed roughly six months. These relationships are examined as associations rather than a formal causal chain, since the coping actions and outcome measures were recorded at the same time.

4. Materials and Methods

This study used a quantitative, cross-sectional, self-administered survey of accommodation establishments operating in South Africa during the pandemic. The survey also included open-ended questions, and operators' written answers were used to illustrate the statistical findings. Because these answers were not analysed as a separate qualitative strand, the design is a quantitative survey with embedded qualitative responses, not a full mixed-methods design. The data collection instrument was designed to capture establishment profile characteristics; the type, onset, and severity of disruption; financial impact; economic coping strategies utilised or envisaged; and future outlook on viability, psychological concern, and optimism. Accommodation providers from all nine provinces of South Africa provided 477 usable responses. The sample represents 10 different types of accommodation facilities, namely guest houses (37.9%), self-catering units (17.2%), bed and breakfast units (16.1%), bush and country lodges (10.7%), hotels and resorts (10.3%), and small groupings of game lodges, country houses, backpackers, caravan sites and motels. The dominance of independently owned/managed facilities (97.3%) reflects the South African accommodation sector, where nationwide there are very few chain hotels outside the main urban centres. Six indicators measured economic impact: perceived economic impact of the lockdown; estimated revenue decline relative to the same period in 2019; capacity to service existing debts; capacity to meet fixed costs; perceived risk of bankruptcy; and estimated duration of viability. Measures of coping included a 17-item scale (B37.1–B37.17). Finally, a range of psychological constructs were measured on two five-point Likert scales: concern and optimism associated with COVID-19, and a third scale measuring optimism about the future of the tourism industry.

4.1 Study period, population and sampling

Data were collected between April and July 2020, when South Africa was under Level 5 lockdown and interprovincial leisure travel and international arrivals were still banned. The responses reflect conditions during strict restrictions, after the first shock and before leisure travel reopened. They do not reflect the pandemic's early onset or the later recovery. The target population was accommodation establishments operating in South Africa when the pandemic began. No complete list of all establishments exists, so non-probability sampling was used. Using the South African Tourism Grading Council database and regional tourism-authority registers, a sampling frame of 3,200 formally registered establishments across all nine provinces was formulated. Valid email addresses were obtained for 2,334 establishments, and electronic questionnaires were

distributed as a saturation sample between June and September 2020, coinciding with the transition from hard lockdown (Level 5) to partial reopening (Level 3). Overall, 477 valid responses were obtained, relating to a response rate of 20.4%.

4.2 Instrument development

The structured questionnaire was developed using a systematic item-generation process based on COVID-19 hospitality-impact research [21, 38, 39] and a pilot test (n = 20 accommodation operators), following DeVellis's [40] scale-development procedure, and was used to collect data. Questions were drawn from the COVID-19 hospitality and crisis-management literature. The final questionnaire had five sections: establishment profile; type, onset and severity of disruption; financial impact; coping strategies used or planned (1 = have done, 2 = plan to do, 3 = do not plan to do); and outlook, concern and optimism. Operators could also describe their situation in their own words.

4.3 Analytical strategy

All analyses described herein were completed using IBM SPSS Statistics (version 17). The analyses involved were descriptive frequency analysis used to describe the sample and characterize the scale of economic disruption endured by establishments; quantified the internal reliability of the coping scale using the Cronbach's alpha; using Principal Axis Factoring combined with The KMO test of adequacy and a Bartlett's Test of Sphericity, to perform the exploratory factor analysis (EFA) a measure of the under lying construct; provide evidence for significant distribution of variables in categories by using Chi-square goodness-of-fit analysis; employed the Kruskal-Wallis Ha comparison of categorical outcome variables to subgroup data; performed Mann-Whitney U test to compare categorical outcomes of the organizations classified either in the suspected bankruptcy (bankruptcy-likely) group or the non-compromised (bankruptcy-unlikely) group; applied binary logistic regression to prediction of bankruptcy risk; and utilized K-means cluster analysis to determine distinct coping typologies of establishments by their B37 response profiles. Additionally, a Financial Vulnerability Index (FVI) was constructed by standardising and averaging four financial distress variables. Statistical significance was based on $\alpha = 0.05$.

Each technique answers a specific research question. Frequencies and chi-square goodness-of-fit tests describe the nature and extent of the crisis and show whether responses were spread unevenly across categories. EFA identified the main coping dimensions, as the 17 coping items were expected to reflect fewer underlying response types. Sampling adequacy was checked with the KMO measure and Bartlett's test. Factors were kept if their eigenvalues exceeded one, with the scree plot and interpretability as further checks, and Varimax rotation was applied (Section 5.3.1). Coping, size and outcome variables are ordinal and not normally distributed, which is why Kruskal-Wallis and Mann-Whitney tests were used to compare groups. K-means clustering of the standardised B37 items grouped establishments with similar response profiles; solutions with two to six clusters were compared (Section 5.3.6).

Binary logistic regression suited the two-category outcome, perceived bankruptcy risk (0 = unlikely, 1 = likely). The 123 respondents who answered 'unsure' were excluded, leaving N = 354 with no further losses to missing data. All ten predictors were entered in one block (Enter method), with no interaction terms. Ordinal predictors were entered as scores, so each coefficient shows the change in log-odds for a one-category step. Both solvency items ran from 'yes, fully' to 'no', meaning higher values indicate weaker ability to service debts or cover fixed costs. Variance inflation factors were

used to check multicollinearity, and the Hosmer–Lemeshow test, Nagelkerke pseudo- R^2 and classification accuracy were used to check fit. The smaller outcome group had 71 establishments and about seven events per predictor, below the usual guideline of ten; estimates for individual non-significant predictors should be read with caution. Multinomial and ordered logistic models on the full sample of 477, keeping the 'unsure' answers, served as robustness checks (Section 5.3.4). Projected outcomes under four hypothetical lockdown lengths (B16.1–B16.4) were described with frequencies and chi-square tests. They are operators' expectations at one point in time, not repeated observations.

4.4 Operationalisation of the theoretical framework

The RBV and Dynamic Capabilities perspectives guided the choice of variables and the interpretation of results; neither theory is tested directly. For the RBV, the survey captured each establishment's pre-crisis resources through its financial position (ability to cover fixed costs and service debts, monthly carrying costs and use of reserves) and structural features (rooms, employees, years in operation, grading and ownership). It did not assess whether these resources were valuable, rare, inimitable or non-substitutable. The RBV is used to explain differences in resource endowments, not sustained competitive advantage [41]. On the Dynamic Capabilities side, the B37 items record operational actions such as cutting hours and salaries, using reserves, seeking relief and suspending activities. These actions show where resources were reconfigured, but they do not measure sensing, seizing or transforming capabilities. Measuring these would require indicators of market sensing, strategic decision-making, innovation, digitalisation, and service-model change [18, 19], which the questionnaire did not include.

5. Results

5.1 Profile of the sample

Table 1. Establishment Profile (n = 477)

Characteristic	Category	n	%
Province	Western Cape	125	26.2%
	KwaZulu-Natal	116	24.3%
	Eastern Cape	64	13.4%
	Gauteng	58	12.2%
	Mpumalanga	29	6.1%
	Limpopo	27	5.7%
	Northern Cape	25	5.2%
	Northwest	18	3.8%
	Free State	15	3.1%
	Guesthouse	181	37.9%
Type of establishment	Self-Catering	82	17.2%
	Bed and Breakfast	77	16.1%
	Lodge (bush/country)	51	10.7%
	Hotel/Resort	49	10.3%
	Other	37	7.8%
Star grading	1–2 star	11	2.3%
	3 star	175	36.7%
	4 star	191	40.0%
	5 star	39	8.2%

Characteristic	Category	n	%
Number of rooms	Not graded	61	12.8%
	< 10 rooms	261	54.7%
	11–30 rooms	162	34.0%
	31–60 rooms	30	6.3%
	61–100 rooms	15	3.1%
	> 100 rooms	9	1.9%
Number of employees	< 10 employees	333	69.8%
	11–30 employees	100	21.0%
	31+ employees	44	9.2%
Number of years in operation	< 5 years	61	12.8%
	5–10 years	88	18.4%
	11–15 years	130	27.3%
	16–20 years	84	17.6%
	21–25 years	63	13.2%
	> 25 years	51	10.7%
Ownership type	Independent, self-managed	464	97.3%
	Chain-owned	13	2.7%

Table 1 presents the demographic profile of the 477 establishments included in the study. The sample profile fairly represents the structural composition of South Africa's accommodation industry. Nearly two-fifths of establishments in the sample are guesthouses (37.9%), making them the predominant accommodation type. The high number of very small units with fewer than ten rooms (54.7%) and fewer than ten employees (69.8%) is not surprising, given the industry's SME nature in South Africa. The two respondent regions with the highest participation rates, the Western Cape (26.2%) and KwaZulu-Natal (24.3%), are the two most popular tourism regions in South Africa. The finding that almost all owners were independent managers (97.3%) was also unsurprising and corroborated what had been obvious for some time: chain hotels have penetrated only the urban business market in South Africa, and owner-operated establishments still serve most of the market.

5.2 Economic Impact of COVID-19

5.2.1 Severity and onset of the disruption

The magnitude of the disruption captured in this sample is hard to overestimate. Among the 477 participants, 98.3% reported a negative economic impact from the pandemic, and 91.8% said the crisis was extremely disruptive. Respondents described conditions in terms that left little room for ambiguity: *"My business has gone from healthy to zero as a result of lockdown, not COVID!"* and *"It has closed us down and completely drained any funds for future use, no income has been received, so no employees or bills could be paid since March."* Another respondent simply described it as *"an absolute nightmare for small businesses."* The figure confirms that, for all practical purposes, the accommodation sector was devastated in the same way and demonstrates its extreme sensitivity to crises. For 54.3% of operators, business activities halted before the official lockdown date (27 March 2020), which imposed a global ban on international travel and also led to the collapse of domestic consumer confidence in March. This early fall in demand significantly reduced operators' lead time to react. By the time the official lockdown took effect, many in the industry had already experienced a few weeks of cancellations and lost income.

5.2.2 Revenue collapse

Table 2. Revenue decline distribution (n = 477)

Revenue decline	n	%	Cumulative %
Up to 10% decline	3	0.6%	0.6%
11% to 25% decline	3	0.6%	1.2%
26% to 50% decline	21	4.4%	5.7%
51% to 75% decline	49	10.3%	16.0%
More than 75% decline	371	77.8%	93.7%
I don't know	16	3.4%	—
Not applicable	14	2.9%	—

Note. $p < 0.001$ (Chi-square goodness-of-fit).

Table 2 shows the distribution of estimates of how much respondents experienced a decline in revenue over the corresponding period in the previous year. Revenue data indicate that 77.8% of respondents estimated their revenues at more than 75% less than the same period in 2019. Including individuals who estimated reductions of 51-75 per cent, 88.1% of the sample experienced revenue drops of at least 50% over the corresponding period in 2019, while 57.9% experienced a total loss of income. This was not a demand reduction, as the sector had experienced during previous crises; rather, it was a complete halt in revenue. One game lodge operator simply stated, “No income, due to no guests visiting the game farm”. Another reflected on the temporal dimension of the crisis: “No income since March 2020. So, no income for at least 6 to 12 months. Which business can sustain this or keep its employees?” For some, their crash was instantaneous: “From over a Million Rand Turnover to Zero in one day”.

5.2.3 Financial solvency indicators

Table 3. Financial Solvency Indicators (n = 477)

Indicator	Yes, fully	Yes, partially	No	Other
Able to service debts	12.2%	32.9%	46.3%	9.6%
Able to cover fixed costs	14.3%	35.8%	49.1%	0.8%

Note. ‘Other’ includes ‘Don’t know’ and ‘Not applicable’ responses. $p < 0.001$ for both indicators.

Table 3 shows that nearly half of respondents (46.3%) could not service debts, and 49.1% could not cover fixed costs. Only 12.2% of establishments could fully service debts, and just 14.3% could fully cover fixed costs. One respondent described the structural trap precisely: “Luckily, we do not have loans, but the municipality bills, insurances, and security all need to be paid. The little business we do have coming in is not enough to cover our outgoings. Luckily, we did have some savings, but this is being depleted.” The contrast between those with and without pre-existing reserves was stark: “The only reason I am at all confident about making it through this disaster is that our property is paid for and therefore no bond, and over the last five years I managed to save some money which has been used over the last three months.” These figures confirm that the sample experienced severe, widespread financial distress, and that cost structure critically mediated its severity.

5.2.4 Bankruptcy risk and perceived viability

Most businesses (59.3%) felt that, at the time of the study, the chance of going bankrupt was high; 14.9% did not think it was possible, and 25.8% were unsure. Predictions on business viability showed that 30.0% of respondents found this impossible to guess; 8.8% predicted less than one month of

viability; 31.4% predicted 1-3 months; 18.4% predicted 4-6 months; and only 4.8% saw viability beyond ten months as possible. The human resource impacts of these projections were further expressed by a respondent who stated that *"Almost all of our retirement savings have been exhausted. We can last at best about another six weeks. It's now either a make-or-break situation, and we are only concerned with survival, not recovery."* For many operators, the business represented their entire retirement provision, with a respondent confirming, *"My entire retirement was spent on establishing my business; with no income, I will become another social grant statistic."* Another respondent stated that, *"At this point, it is not about profit. It is about survival."* These findings are not consistent with a sector in recovery but rather with one coming to grips with the looming prospect of a mass permanent shutdown.

5.2.5 Financial Vulnerability Index

In order to gain a broader perspective on financial distress than would be captured by any single indicator, a Financial Vulnerability Index (FVI) was created as the average of four distress indicators: economic impact of lockdown, decline in revenues, financial capacity for debt servicing, and ability to cover fixed costs on a 0–1 scale, by averaging the scores. The FVI provides a potentially replicable composite measure that practitioners could use in future comparable crises. For this sample, the mean FVI was 0.558 (SD = 0.122), indicating that, on average, the establishments were highly vulnerable. The FVI was significantly correlated with the perceived likelihood of bankruptcy ($r_s = -0.280$, $p < 0.001$) and the perceived duration the company would survive ($r_s = -0.289$, $p < 0.001$), demonstrating convergent validity. These aggregate scores also cover important size differentials, as one self-catering operator noted, *"small single self-catering units like mine are at most risk of going bankrupt,"* while a guesthouse owner observed that *"larger accommodation establishments will survive but smaller ones, such as ours, will experience serious challenges to fully recover."* Both observations anticipate the Kruskal-Wallis and cluster findings discussed in Section 6.

The index was constructed as follows. Four indicators were used, which were the economic impact of lockdown, the estimated decline in revenue, the ability to service debts, and the ability to cover fixed costs. We rescaled each ordinal item to a 0–1 range and coded it so that higher values indicate greater vulnerability; we then averaged the four rescaled items with equal weights. We chose equal weighting because the four indicators are conceptually equivalent signs of the same financial distress, and because equal weighting is the most transparent and easily replicated option for this kind of composite. To confirm that the results do not depend on this choice, an alternative index was computed using weights derived from principal component analysis; the two versions correlated very highly (approximately $r = 0.96$), indicating that the FVI is strong to the weighting method. The four components also showed acceptable internal consistency for a short composite index.

Neither province (KW $H = 9.31$, $p = 0.317$) nor accommodation category (KW $H = 5.67$, $p = 0.772$) showed statistically significant differences in financial vulnerability. As expected, Northern Cape ($M = 0.575$) and Northwest ($M = 0.574$) ranked highest, while Free State ($M = 0.522$) and Mpumalanga ($M = 0.530$) ranked lowest. Motel and inn ($M = 0.667$) and hotel and resort ($M = 0.576$) ranked highest in the category comparison. But the key trend was coherence. For example, a Western Cape guesthouse was almost as financially vulnerable as a Limpopo lodge. The lack of significant geographic and categorical variation supports the interpretation that the pandemic was a systemic, sector-wide shock rather than one that meaningfully differentiated financial distress across regions or property types.

5.3 Economic Coping Strategies

5.3.1 Scale Validation: Reliability and Factor Analysis

Before substantively analysing the coping strategy data, we assessed the psychometric properties of the 17-item B37 scale. The scale's overall Cronbach's alpha was 0.834, indicating high internal consistency. Of the two sub-scales, Workforce Management (alpha= 0.729) and Business Suspension and Contraction (alpha= 0.773) both exceeded or approached the generally accepted standard of 0.70, while Operational Downsizing (alpha= 0.551) and Financial Strategy and Support (alpha= 0.553) fell short, indicating more variability in operators' approach to cost-cutting and external resource mobilisation strategies. Factor analysis supported the data (KMO = 0.835; Bartlett's $\chi^2 = 2081.881$, $df = 136$, $p < 0.001$). The four dimensions (operational downsizing, workforce management, financial strategy and support, and business suspension and contraction) were both theoretically interpretable and methodologically justifiable. The four factors describe operational responses. They are read in the light of the Dynamic Capabilities perspective but do not directly measure sensing, seizing or transforming capabilities (Section 4.4).

We identified the factors using a common set of criteria: retaining only factors with eigenvalues larger than 1, examining the scree plot, and requiring theoretical interpretability. These all supported a four-factor solution. Principal component analysis with Varimax rotation returned four factors with eigenvalues over 1 (4.80, 1.50, 1.26 and 1.20), accounting for 51.5% of the variance; the fifth component had an eigenvalue of 0.996, so a four-factor solution was a clean cut-off. The four factors explained 16.2%, 14.2%, 10.6%, and 10.5% of the variance, respectively. Items loaded most strongly on their hypothesised factors, with primary loadings ranging from 0.44 to 0.81 and communalities from 0.33 to 0.73. The highest loadings were for the purpose of business suspension and contraction and included closure of facilities (0.81), suspending activities (0.72) and closing floors (0.75); of workforce management which included reducing benefits (0.68), terminating short-term staff (0.68), retrenchment (0.64); operational downsizing which included reducing employment time (0.75), reducing salaries (0.61), and using reserves (0.51); and for financial strategy and support including applying for a loan (0.69), requesting government relief (0.65), and asking landlords for relief (0.65). Cross-loadings were minimal, with no item loading above 0.36 on any factor except its own, so the simple structure was clear. The lowest primary loadings were for sell/close the business (0.44) and asking staff to take paid leave (0.45). Two of the four subscales, Operational Downsizing and Financial Strategy and Support, yielded somewhat lower alpha values at approximately 0.55. The subscales are retained for two reasons: first, each has only three or four items, and Cronbach's alpha may underestimate reliability for short scales; second, the two subscales are conceptually distinct and important, and the full 17-item scale was highly reliable (alpha = 0.834). The lower values here reflect a limitation of these two subscales, not a reason to exclude them.

5.3.2 Descriptive analysis of coping strategies

Table 4. Economic coping strategy adoption rates (n = 477)

Strategy Item	Have Done	Plan to Do	Do Not Plan to Do	χ^2 p-value
Operational downsizing				
Use business reserves/savings	86.2%	4.4%	9.4%	< 0.001
Reduce employment time	74.8%	13.0%	12.2%	< 0.001
Reduce salaries/wages	60.8%	17.8%	21.4%	< 0.001

Strategy Item	Have Done	Plan to Do	Do Not Plan to Do	χ^2 p-value
Ask staff to take paid leave	45.1%	18.4%	36.5%	< 0.001
Workforce management				
Non-hiring of trainees	57.0%	10.5%	32.5%	< 0.001
Termination of short-term employees	42.1%	19.1%	38.8%	< 0.001
Retrenchment of staff	29.4%	39.8%	30.8%	0.010
Reduce employment benefits	23.9%	21.0%	55.1%	< 0.001
Ask staff for unpaid leave	22.2%	21.2%	56.6%	< 0.001
Financial strategy and support				
Obtain government relief funding	58.7%	23.1%	18.2%	< 0.001
Ask landlords/providers for reduced rates	45.5%	14.7%	39.8%	< 0.001
Apply for a new/existing loan	28.1%	18.9%	53.0%	< 0.001
Business suspension and contraction				
Suspend business activities	58.9%	15.1%	26.0%	< 0.001
Close hotel facilities/services	55.3%	10.5%	34.2%	< 0.001
Close floors/parts of the establishment	53.5%	10.1%	36.5%	< 0.001
Cancel contracts with suppliers	45.9%	16.8%	37.3%	< 0.001
Sell/close down hotel	6.1%	30.8%	63.1%	< 0.001

Note. χ^2 = Chi-square goodness-of-fit test. All items coded as a three-point scale: 1 = Have done, 2 = Plan to do, 3 = Do not plan to do.

Table 4 presents the adoption rates for all 17 coping strategies, organised by sub-dimension. By far the most popular strategy establishments adopted was using business reserves or savings (86.2%), consistent with RBV suggestions that firms prioritise deploying internal resources before seeking external support. One respondent confirmed this by stating that *"I am currently using my retirement fund to operate and pay employees full employment even though we have zero guests,"* while another noted that *"all costs have come out of my savings and a bit of income that comes in - I cannot draw a salary at this stage."* Another respondent reflected that, *"one's savings only go so far - we are not blessed to have a regular state-funded income."*

The next most prevalent measures were operational downsizing strategies, such as reducing employment time (74.8%) and salaries (60.8%). Both adjustments were reversible, unlike retrenchment. Establishments also commonly suspended business activities (58.9%) closed premises (55.3%), and closed floors (53.5%). Only 6.1% reported taking steps to sell or permanently close the business, yet another 30.8% said they planned to do so, a finding with serious long-term structural implications for the sector.

The data confirms that 58.7% of establishments accessed government relief, while 18.2% said they had no intention of pursuing funding at any point. Respondents described barriers to accessing relief, stating, *"I have submitted and contacted more than 60 financial institutions for cash flow finance, and all of them answered with not interested, no appetite, as you are in the tourism industry."* For others, BEE and sole proprietor eligibility criteria were the decisive barrier: *"Not one of the so-called relief/help programmes applied to us because of Sole Proprietor status, Level 4 BEE, and not being registered with UIF. Essentially, all benefits from this business over the last five years have been wiped out."* Reflecting the cumulative effect of these barriers, one respondent summed up many people's position by saying, *"I have very little confidence in the promise of Tourism Relief."* Loan applications yielded similar results: while 28.1% sought new or restructured credit, 53.0% did not intend to borrow at all, reflecting

restricted access, limited creditworthiness, and a rational reluctance to take on debt during a crisis of uncertain duration.

5.3.3 Coping Strategy Intensity by Establishment Characteristics

A composite coping intensity score was calculated as the mean across all 17 B37 items, with lower scores indicating greater strategic activity (1 = Have done; higher = less action). Kruskal-Wallis tests revealed significant differences in coping intensity across multiple establishment characteristics.

Table 5. Kruskal-Wallis Tests: Coping Intensity by Establishment Characteristics

Characteristic	H Statistic	p-value	Interpretation
Number of rooms	42.271	< 0.001	Significant
Number of employees	54.549	< 0.001	Significant
Duration of operation	29.475	< 0.001	Significant
Star grading	14.331	0.014	Significant
Accommodation category	31.506	< 0.001	Significant
Province	6.350	0.608	Not significant

Note. Coping intensity = mean score across B37 items (lower = more active). *df* varies by group. A lower coping-intensity score means the establishment had already carried out more of the coping actions, while a higher score means fewer actions were taken.

The pattern of results across Table 5 is theoretically consistent and reveals that the larger, older, higher-graded properties were much more likely to have entered crisis management during the crises. Specifically, small and micro businesses (with fewer than 10 employees) had a mean of 1.977 (1 = Have done, with higher scores indicating less activity), while those with 61-100 employees had a mean of 1.429. Similarly, among properties with the fewest rooms, the corresponding means were 2.000 versus 1.557 (among establishments with 31-60 rooms). These findings align with resource-dependence arguments in that smaller establishments with fewer resources and capabilities had less capacity to activate strategic responses, even when facing impacts of equivalent severity.

5.3.4. Predictors of Bankruptcy Risk: Logistic regression

The core analytical question of this research is what actually predicts which establishments were at risk of bankruptcy. This was answered using binary logistic regression, with perceived bankruptcy risk (Likely versus Unlikely) as the dependent variable. The 123 respondents who indicated they were unsure were excluded from the regression, leaving *N* = 354. Ten predictors were entered at once: six financial and operational measures (economic effect of lockdown, decline in revenue, ability to service debts, ability to cover fixed costs, monthly expenses, size of establishment [by rooms and number of employees]), one structural measure (number of years in operation), and two psychological measures (extent of concern, optimism).

Table 6. Binary Logistic Regression: Predictors of Bankruptcy Risk (*n* = 354)

Predictor	B	OR	95% CI (Lower)	95% CI (Upper)	p-value
Constant	-4.407	0.012	—	—	0.016*
Economic effect of lockdown	0.051	1.052	0.495	1.607	0.857
Percentage revenue decline	0.256	1.292	0.833	1.752	0.236
Ability to service debts	0.157	1.170	0.834	1.481	0.341
Ability to cover fixed costs	1.771	5.874	3.536	9.760	< 0.001***
Monthly expenses	0.122	1.129	0.722	1.521	0.551

Predictor	B	OR	95% CI (Lower)	95% CI (Upper)	p-value
Number of rooms	-0.040	0.961	0.421	1.501	0.885
Number of employees	-0.191	0.826	0.293	1.307	0.468
Duration of operation	0.061	1.063	0.829	1.297	0.607
Level of optimism	-0.238	0.788	0.511	1.013	0.063
Level of concern	0.133	1.142	0.746	1.520	0.501

Note. OR = Odds Ratio. Model: $N = 354$, Pseudo R^2 (Nagelkerke) = 0.271, LLR $p < 0.001$. *** $p < 0.001$, * $p < 0.05$.

The logistic regression model demonstrated a strong overall fit (Pseudo- $R^2 = 0.271$; LLR $p < 0.001$). Only one of ten covariates was statistically significant using the traditional $p < 0.05$ criterion: cost-of-covering fixed costs ($B = 1.771$, $OR = 5.874$, $p < 0.001$). Moving down the scale of fixed costs paid (fully / partly / not paid at all) was associated, in a stepwise fashion, with almost six times greater odds of bankruptcy. This finding suggests that the structural cost burden, that is, the ability to sustain fixed obligations regardless of revenue levels, was much more strongly associated with perceived survival prospects than actual revenue collapse. Notably, revenue decline, debt-servicing ability, monthly expenses, establishment size, and years of operation were all non-significant predictors. The psychological optimism variable approached significance ($B = -0.238$, $p = 0.063$), suggesting a marginal protective role for a positive outlook in survival assessment, though the borderline p-value warrants cautious interpretation.

Several validity checks confirmed the model's appropriateness. Overall, it correctly classified 86.2 per cent of observations, better than the 79.9 per cent expected if the model predicted all establishments were unlikely to go bankrupt. The Hosmer–Lemeshow goodness-of-fit test was non-significant (chi-squared = 7.99, $df = 8$, $p = 0.435$), suggesting the predicted counts aligned closely with the observed values. There was no indication of multicollinearity as all variance inflation factors were small (max = 3.13, mean = 1.67). The dependent variable was coded Unlikely = 0 and Likely = 1, and the 123 survey respondents who indicated Uncertain were omitted from the binary test. Because omitting the sample could bias the estimates, we tested the predictor of interest in two alternative models using the full sample of 477 respondents: a multinomial logistic model and an ordered logistic model (treating unsure respondents as a third outcome category). In both models, fixed-cost coverage ($OR \approx 5.7$, $p < 0.001$) remained the strongest predictor of bankruptcy, indicating that our central result was not an artefact of how we classified uncertain respondents.

The finding that fixed-cost coverage was the stronger predictor has noteworthy implications for crisis management theory and practice. From a Dynamic Capabilities standpoint, the decisive “go/no-go” determining whether to employ a crisis response was not whether an entity owned a portfolio of distinctive coping mechanisms or the physical size of that particular entity, but rather the relatively straightforward structural query of whether an establishment could incur its nondiscretionary costs without profit or revenue. This echoes the RBV argument that, in a demand-cessation crisis, the most vital resource is financial slack: the capacity to pay costs without revenue.

One guesthouse operator identified property ownership and accumulated reserves as the decisive factors and stated, “The only reason I am at all confident about making it through this disaster is that our property is paid for and therefore no bond, and the last five years I managed to save some money which has been used over the last three months.” The protective logic of financial preparation was equally evident in another respondent who indicated, “I made provision in case something goes wrong. I made sure to always have at least one year’s funds available in a crisis.” These accounts confirm that financial

slack, accumulated before the crisis rather than mobilised within it, was the empirically operative survival resource.

These associations should be read with caution. Because the data are cross-sectional and self-reported, the analysis cannot establish that being unable to cover fixed costs caused higher bankruptcy risk. The two measures may instead reflect the same underlying financial distress, so the relationship could run in either direction (reverse causality). An unmeasured factor, such as pre-crisis indebtedness or the owner's personal wealth, may also drive both variables at once (omitted-variable bias). For these reasons, the fixed-cost result is best described as the strongest correlate of perceived bankruptcy risk in this sample, rather than as a proven cause of business failure.

5.3.5 Temporal Dynamics of Crisis Escalation

Another methodologically unique aspect of the instrument was the inclusion of four questions (B16.1–B16.4) that established operators' forward-looking economic outlook under scenarios where the actual lockdown lasted 1-3 months, 4-6 months, 7-9 months, or over nine months. These projected scenarios, which record expectations and not repeated observations, provide a unique window into how anticipated financial distress escalated with the duration of operational disruption.

Table 7. Projected Economic Impact by Lockdown Duration (n = 477)

Lockdown duration	No/slight impact	Moderate decrease	Major decrease	Permanent closure	p-value
1–3 months	2.5%	8.6%	76.7%	12.2%	< 0.001
4–6 months	0.8%	8.0%	55.8%	35.4%	< 0.001
7–9 months	2.5%	5.7%	31.4%	60.4%	< 0.001
More than 9 months	3.5%	4.8%	22.6%	69.0%	< 0.001

Note. *p*-values from Chi-square goodness-of-fit tests.

The projected scenarios indicate a clear trend of worsening crisis severity. Within 1-3 months, 12.2% of operators anticipated a permanent closure, while 76.7% expected a significant drop in gross income, suggesting that most establishments still hoped for short-term recovery. However, by 4-6 months, the expected closure rate increased to 35.4%. At 7-9 months, this figure rose to 60.4%, and after 9 months, it approached 70.0%. Meanwhile, the percentage anticipating a 'major decrease in income' fell from 76.7% to 22.6% across the four regimes, not because circumstances improved, but because the anticipated outcome shifted from 'dramatic effect' to 'endpoint liquidation.' 'How long can a business in this sector survive, in the face of total disruption for that length of time?' the response was, between the 4-6-month impact and the 7-9-month impact.

Respondents who had operated for decades articulated this threshold directly. One lodge owner stated, "If at the very least provincial borders do not open within the next few months, it is extremely unlikely that our establishment will be able to continue operation, after 25 years in the business." Another captured the compounding effect of extended closure and stated, "Pretty devastating. Good to regroup and re-think, but too long in languishment reduces the chance of recovery." The broader sectoral concern was stated plainly by another respondent: "Unless lockdown levels change soon, a lot of tourism businesses are going to close. This will have a devastating impact on all sectors, particularly the people who staff this industry."

This six-month point is a perceived or expected threshold, not an observed one. It is based on operators' projections of what would happen under hypothetical lockdown durations, collected at a single point in time, not on tracking which establishments actually survived. The threshold therefore

reflects operators' expectations of how their viability would change and should be read as an expectation rather than a measured survival rate.

5.3.6 Coping Typologies: Cluster Analysis

K-means cluster analysis was also conducted on the standardised 17-item B37 response profiles to determine whether natural groupings of businesses could be identified based on overall coping patterns. A three-cluster solution was selected based on interpretability and conceptual coherence. The three clusters were designated as follows based on their mean item profiles.

The choice of three clusters was not based on interpretability alone. Solutions with two to five clusters were compared, and the three-cluster solution gave the best balance between statistical separation and clear, non-overlapping profiles. Across candidate solutions from two to six clusters, the within-cluster sum of squares fell steeply at the one-to-two-cluster step (a reduction of about 20%) and then much more gently as further clusters were added (reductions of roughly 7%, 5% and 4% for three, four and five clusters), so the elbow of the curve flattened at around three clusters. Average outline values were low and similar between solutions (~0.19 at two and 0.11 at three), typical for this kind of survey data and suggesting only modest natural separation between identities. Among these measures, the two-cluster solution produced the cleanest separation, but we preferred the three-cluster solution because it sat at the elbow where the curve departs from flattening and produced three interpretable profiles rather than a broader high/low distinction. To test cluster stability, the solution on random subsets of the data was re-run, and the groupings were very similar. The three labels were only added after verifying that they reflected the underlying item means; Passive Withdrawers use the lowest actions across nearly all items, the Comprehensive Responders use the highest actions across all four dimensions, and the Selective Adapters make use of financial measures without delay but are slower to enact labour and structural measures. The typology is a descriptive one which summarises the data patterns and should not be taken to impose on fixed or 'by default' institution categories.

Table 8. Cluster profiles on selected coping strategies and outcomes

Characteristic	Cluster 0: Passive Withdrawers (n=159)	Cluster 1: Comprehensive Responders (n=138)	Cluster 2: Selective Adapters (n=180)
Mean rooms category	1.31 (< 10 rooms)	1.86 (11–30 rooms)	1.76 (11–30 rooms)
Mean employee category	1.13 (< 10 employees)	1.85 (11–30 employees)	1.49 (< 10 employees)
Mean B37.1 (Reduce emp. time)	1.74	1.11	1.26
Mean B37.9 (Use reserves)	1.55	1.07	1.08
Mean B37.11 (Govt. relief)	1.92	1.25	1.48
Mean B37.14 (Suspend activities)	2.40	1.19	1.39
Mean B37.17 (Sell/close hotel)	2.77	2.40	2.52
Mean bankruptcy risk score	1.90	1.46	1.62

Note. B37 items coded 1 = Have done, 2 = Plan to do, 3 = Do not plan to do; lower scores indicate greater strategic activity. Bankruptcy risk: 1 = Likely, 2 = Unlikely, 3 = Unsure; lower scores indicate greater bankruptcy risk. In both scales, a lower number reflects a more active or higher-risk position; keep this reversed direction in mind when reading the cluster means.

The Passive Withdrawers (Cluster 0, n =159) show the lowest adoption levels of virtually all strategies and are the smallest cluster in terms of rooms and employee size. They have the highest mean bankruptcy risk score of all three clusters (1.90), so they are decidedly closer to being 'Likely'

bankrupt according to the measure. More significant, perhaps, is that these organisations do not appear able to activate any of the most widely used strategies. Their mean score for suspending business activities (2.40) shows that many had not yet suspended even this bluntest control, despite the extremity of the measures facing them.

Comprehensive Responders (Cluster 1, $n=138$) are the most action-oriented crisis managers in the sample (they are the definition of 'responders'). They scored lower (on average; lower scores indicate more action taken) on the B 37 items; thus, all four crisis dimensions provide evidence that these businesses, 'least affected,' reduced hours the most (more than the other two clusters), reduced wages, sought government aid, and closed and shut their doors the most. They are also the largest establishments, averaging about three to four times the size of the other responder types. They are also the only phase-two business, with a bankruptcy likelihood score of 1.46, by far the lowest of the three clusters, indicating a low likelihood of a successful exit.

All three adaptation strategy clusters mentioned so far are risk-averse, with bankruptcy probabilities well below the mean. The Selective Adapters (Cluster 2, $n = 180$) are the largest cluster and have the least variation in bankruptcy probability. While they seem confident using financial instruments with relative ease, such as reserve drawdowns and government safety nets, they are the least enthusiastic of the three groups about labour and structural transformation. Whether this pattern reflects a conscious choice to use financial instruments with sequential product/market operations (sequential adaptation) while postponing decisions on labour transformation, or simply reflects a natural calculus to bear banking risk in the same cross-section universe but not labour risk, remains an open question. Their bankruptcy probability of 1.62 remains between the comparatively well-protected Passive Withdrawers and the more aggressive Comprehensive Responders. The chi-square comparisons again confirm the trend observed in the Kruskal-Wallis results, where cluster membership was significantly associated with type of accommodation ($\chi^2 = 42.05$, $p = 0.001$), and with number of rooms ($\chi^2 = 51.12$, $p = 0.001$), and with number of employees ($\chi^2 = 56.34$, $p = 0.001$), but not with province ($\chi^2 = 9.37$, $p = 0.898$).

6. Discussion

The finding that 98.3% of South African accommodation operations were negatively impacted by COVID-19, with 91.8% facing extremely disruptive conditions, is among the highest impact penetration rates seen in hospitality research to date and exceeds comparable studies elsewhere in the world. Gössling et al. [21] found global impact to range from exclusively negative within markets to 100% negative, with wide variation by type of operation and scope of government response. Pre-lockdown onset of disruption for 54.3% of establishments aligns with observed outcomes in other COVID-19 markets. Kim et al. [17], in their research on US lodging, recorded a significant collapse in hotel performance beginning in February 2020, weeks before the formal lockdown. This pattern may reflect an anticipatory demand shock linked to voluntary travel reductions and international cancellations before domestic lockdown measures took effect. Consumer behaviour was not measured, so other causes are possible: travel restrictions in tourists' home countries, business events and conferences cancelled after the national state of disaster was declared on 15 March 2020, perceived health risks and policy uncertainty.

The logistic regression finding that the ability to cover fixed costs ($OR = 5.874$, $p < 0.001$) was the strongest correlate of perceived bankruptcy risk is theoretically important and fits international

evidence on small businesses. In a survey of more than 5,800 US small businesses, Bartik et al. [12] found that many held enough cash for only a few weeks of expenses and that their expected chance of staying open fell sharply as the expected length of the crisis grew. Thin cash buffers relative to ongoing costs made these firms fragile. Ciasullo et al. [13] also link SME resilience in a crisis to the resources firms can draw on. This result extends this evidence to accommodation establishments, where crisis-period costs were more closely tied to perceived bankruptcy risk than to revenue loss.

Two features of the South African case help explain why fixed-cost coverage mattered so much. The Level 5 lockdown prohibited trading outright, so revenue fell to near zero for almost every establishment (Table 2). A loss shared by nearly all firms couldn't distinguish them. What differed was the set of obligations each firm still had to pay: bond and loan repayments, rent, municipal rates, utilities, insurance, security, and permanent salaries. Most establishments in the sample are owner-run micro-enterprises with thin margins, small reserves and little access to credit. For them, the gap between meeting and missing these payments is narrow, and small differences in cost structure become differences in solvency. Respondents who owned their property outright or had savings expected to continue; those with bonds and fixed municipal charges did not (Section 5.2.3).

The non-significance of revenue decline, despite 77.8% of firms reporting losses of more than 75%, was also unexpected but remains theoretically interesting. Revenue declines varied widely and were near the bounds of what was possible, yet they did not predict crisis outcomes; instead, the onus of severity (ability to cover fixed costs) differentiated survivors from non-survivors. This also complements the RBV, where intra-firm endowments matter more than revenue recovery, which was unproductive here. The non-significance of the size of the establishment as a predictor of bankruptcy, despite its presence (significant at 95%) in the Kruskal-Wallis test, can be an example of an unnoticed structural trait in the mere size of an establishment where size has determined the level of activity in a business, but cannot differentiate survivors from non-survivors, as larger establishments have proportionally larger fixed-cost obligations. Size seems to work both ways. Larger establishments have more options: more staff whose hours can be cut, more floors and facilities to close, more supplier contracts to cancel and more administrative capacity to apply for relief. That explains their higher coping intensity. They also carry higher fixed costs, which cancels out much of the benefit, so size shows no link with perceived bankruptcy risk once fixed-cost coverage is controlled for.

The hierarchy of coping-strategy adoption (reserve deployment 86.2%, reduction in employment time 74.8%, remuneration reductions 60.8%, access to govt. relief 58.7%) roughly conforms to international evidence. Kim et al. [17] found a similar order of adoption in the US hospitality industry, with internal resources used first rather than external finance, and Gim et al. [9] confirmed that labour cost management is the key lever in hotel performance. The fact that employment time reduction was more popular (74.8%) than formal retrenchment (29.4%) implies that SA operators used more superficial, reversible indicators in contrast to [42]'s premise that "a firm will temporarily fluctuate this capacity, but with the intent to adapt in the long run." Small establishments likely turned to their own reserves first for several reasons. Reserves are available immediately and require no application. Relief schemes demanded paperwork, registration (for example, with the UIF) and eligibility criteria that many sole proprietors could not meet (Section 5.3.2). Loans required collateral and a good credit record at a time when lenders saw tourism as high-risk, and borrowing with no income and no end date for the lockdown would have raised the risk of failure. In owner-run businesses, business and household money are often mixed, so 'business reserves' frequently meant the owner's personal

savings or retirement funds, as several respondents said. The order matches the precautionary motive for holding cash described by [26].

Less generous SME borrowing, compared with easier access to public support, indicates the structural crowding out of SME credit experienced in SA. Bak et al. [14] highlight the difference between availability constraints, where lenders/creditors are reluctant to lend and preference constraints, where firms are reluctant to take on debt during periods of economic uncertainty; both of which seem prevalent in these findings, as micro-establishments probably had collateral but lacked the desire to take on the debt risk associated with the crisis uncertainty [26, 43]. This finding that 30.8% of outlets planned to sell off or permanently close down (the most irrevocable strategic outcome) has important sectoral implications. Combined with the temporal findings, this suggests a rational, forward-thinking appraisal. As in Bartik et al. [12], operators who believed they would not endure a long-term lockdown were more likely to plan a permanent exit.

Most surprisingly, no statistically significant relationship emerged between access to government relief and bankruptcy risk outcomes. Dube [27] found that relief packages were generally well received, but did not adjust for varying levels of firm distress, whereas Rogerson & Rogerson [1] found that the most distressed establishments were least able to complete the registration process. One potential reason is selection bias: those most in need of relief (and most likely to be in bankruptcy) were also most likely to receive it, weakening the link between relief and outcome. Several respondents commented on this issue. Three other explanations are possible. The main relief schemes covered different costs from those linked to bankruptcy risk: TERS paid part of employees' wages, while rent, bond repayments, rates and utilities were mostly left uncovered, as one respondent's comment that there was 'NOTHING for business owners' shows. Relief often arrived late and was small compared with monthly obligations, so even successful applicants may not have felt a difference by the time of the survey. The survey also asked only whether establishments sought or obtained relief, not how much they received or when, making the effect harder to detect.

One operator captured the targeting failure by stating, *"UIF staff payments helped them, but NOTHING for business owners - even Municipal relief had so many conditions attached, I feel like just closing down."* Another described eligibility barriers, *"The government has put in all these funding measures to assist employers and employees during this time. However, access to these funding measures is extremely difficult, either due to BBE status, declines for no reason, etc."* Administrative dysfunction compounded the problem, as one respondent noted, *"There is little point in offering relief such as TERS funding and making it near impossible to obtain the funds due to technical glitches and outdated UIF and staff recording systems that do not communicate with each other."* Davahli et al. [44] confirmed that government support was significantly influential only when delivered quickly and broadly accessible, something South Africa's relief system failed to do. Future crisis support should prioritise immediate, broad, automatic availability through fixed-cost moratoriums rather than application-based grants.

The pattern of evidence confirms and substantially extends the SME vulnerability theory in the hospitality crisis literature. The Kruskal-Wallis statistic for employee count ($H = 54.55$, $p < 0.001$) was the strongest demographic predictor of coping response intensity, exceeding that for room count ($H = 37.17$, $p < 0.001$) and all other characteristics. Micro-establishments (fewer than 10 employees), which comprised 69.8% of the sample, showed the lowest coping scores and were overrepresented in the Passive Withdrawer cluster. Bak et al. [14] identified restricted access to capital, limited management skills, and inadequate crisis preparedness as the primary drivers of SME vulnerability;

all characteristics of South Africa's micro-enterprise accommodation sector. The association between cluster type and accommodation category further suggests that establishment type shapes vulnerability as much as size. The null provincial finding ($H = 6.35$, $p = 0.608$; $\chi^2 = 9.37$, $p = 0.898$) confirms that the crisis response arena was driven by firm-level characteristics rather than geographic market conditions, as even KwaZulu-Natal and Western Cape establishments showed no differential coping capacity relative to smaller provinces, demonstrating that "COVID-19 constituted a true global, non-discriminatory, systemic shock" [21]. Respondents reinforced the size-vulnerability pattern directly. One self-catering owner noted, *"Small single self-catering units like mine are at most risk of bankruptcy."* Relief access barriers compounded the problem, with another respondent claiming, *"Sole proprietors are not able to access government funding. This is shocking, as a lot of businesses that support a lot of families fall under this category."* Another captured the cumulative pressure: *"We are struggling to stay afloat and keep staff employed and above the starvation line."*

Results for larger hotels in developed economies look different. Studies of those hotels describe responses built around revenue management, labour cost control and delayed capital spending [9, 10, 11], and many could lean on corporate owners, credit lines and broader wage-subsidy and loan schemes. In this sample, 97.3% of establishments were independently owned, most employed fewer than ten people, and only 28.1% had applied for a loan. Their responses were narrower and more defensive, relying on personal reserves and reversible staff cuts, and survival rested more directly on each owner's fixed-cost burden. The fixed-cost effect may be stronger in owner-run sectors in emerging economies than in chain-dominated markets, though comparative data are needed to test this.

These findings require careful interpretation of both theories. Under the RBV, the ability to cover fixed costs is a financial resource, but cash is not a strategic resource unless it is valuable, rare, inimitable, and non-substitutable. Cash is a generic resource that can be substituted easily, and its strategic value here is to absorb costs and losses, not to provide competitive advantage. The RBV, more generally, explains why firms went into the crisis with different kinds of resource bases (cash reserves, property holdings, customer bases, easy access to finance, flexible assets and skilled labour and networks), and why those different resource endowments will have implications for which firms were likely to survive a long shutdown [41]. Resilience research makes this point too, using pre-shock resources as a base for resilience capacity [7, 8]. The coping actions measured here, such as cutting salaries and hours, using reserves, suspending activities and closing parts of the property, are operational and mostly defensive. They are closer to ordinary capabilities and ad hoc problem-solving than to dynamic capabilities, which involve sensing market change, making strategic decisions, innovating, digitalising, adapting the service model and reconfiguring resources [18, 19]. The survey did not measure those processes, and the findings do not confirm Dynamic Capabilities Theory. The wider range of actions among larger establishments suggests only that resources limit the capacity to reconfigure. Some open-ended answers mention new protocols, online check-in, and staff training; future studies should measure these service-model changes directly.

The time-series analysis identifies what might be called 'the 6-month survival-crossing' where permanent closure supplants major income loss as the most common projected outcome, occurring between the 4-6- and 7-9-month scenarios. These are projected (perceived) outcomes reported by operators for theoretical lockdown durations, not observed survivals. After four to six months of lockdown, 55.8% projected a major income loss, compared with 35.4% projecting permanent closure;

by seven to nine months, these proportions reversed to 31.4% and 60.4%, respectively, suggesting six to seven months as the industry's survival threshold. Teece [6] argued that a lack of urgency in fast-moving environments depletes dynamic capabilities, which aligns with the projection that establishments unable to adjust within about six months anticipate poor outcomes, consistent with Prayag et al.'s [15] finding that immediate-time dynamic capabilities drive resilience.

The inverse relation between concern and optimism, and the positive relation between establishment- and industry-level optimism, introduce a psychological view to the crisis-response model. Operator psychology was not merely a dysfunctional byproduct of financial times, as expectations were hierarchically structured and intrinsically related in ways that probably shaped managerial choices. Although optimism did not reach significance as a protective factor in the logistic regression ($B = -0.238$, $p = 0.063$), this may reflect underpowered analyses ($n=354$) rather than a lack of association, and operator accounts illustrate the connection. Several respondents said financial resilience underpinned confidence, with one noting, *"I believe if you can hold on financially, the future looks positive."* Others reframed the crisis, saying, *"I made a decision not to hope for the best, but to use this time to create the best,"* and developed new protocols and online check-in systems, and completed WHO-endorsed training during the shutdown. A rational optimism was noted by a respondent who stated, *"The situation needs adjusting and adopting new ways of doing things. Be alert to opportunities and be proactive. We should survive."*

7. Conclusions

For accommodation operators, the most immediate logistical conclusion concerns financial structure in typical times, not crisis management in exceptional times. Operators with lighter fixed-cost loadings at the beginning of the pandemic, lower rents, less-leveraged balance sheets, and smaller permanent payrolls survived the shock better than those with heavier structural commitments, regardless of pre-crisis turnover or reputation. Businesses need to build that structural slack before the next crisis hits, not just in its midst, through provisions for lease flexibility, prudent gearing, and modest reserve build-up. For government and industry bodies, the paradox that government relief did not lead to better bankruptcy outcomes, perhaps because the worst-off businesses were also most likely to access relief, suggests a targeting problem rather than a resource problem. Future government COVID or similar crisis support measures should optimise speed and accessibility (rather than administrative accuracy) and aim to rely on fixed costs early (such as utility and rate cessations, or cessations on loan service repayments) rather than require lengthy grant applications. This study found that significantly more establishments had no plans to access government relief than were already distressed, suggesting failures in access, eligibility, or advertising that future preparedness planning should identify and rectify.

This research explored how the South African accommodation sector responded to the COVID-19 shock and what defined the gap between those that went bankrupt and those that avoided bankruptcy. The source material, based on data from 477 establishments across all nine provinces of South Africa, revealed several key findings. The near-universal impact (98.3%), the weight of income loss falling into the 'quarterly over-75% decline' bucket, and the 'majority business' bankruptcy risk profile confirm the sector's experience. This was not a distribution of outcomes, but a near-universal catastrophe, with only marginal differentiation. Perhaps the study's most theoretically important finding emerged from the logistic regression: rather than revenue deterioration, fixed-cost coverage

was the strongest correlate of perceived bankruptcy risk ($OR = 5.874$, $p < 0.001$). This reframes crisis survival pathways not as how much revenue fell, but as whether firms could maintain a sustainable cost structure without it. Cluster analysis uncovered three coping typologies (Passive Withdrawers, Comprehensive Responders, Selective Adapters), which differed primarily by size and category; temporal survival analysis established a six-month turning point; afterwards, permanent closure was the norm; empirically derived dimensions of coping strategy revealed four measures; and the new Financial Vulnerability Index was proposed as a ready-made composite index for further crisis studies.

8. Limitations and future research

Because the data are cross-sectional, the study cannot determine the direction of causality, and the positive association between fixed cost coverage and bankruptcy risk could reflect reverse causality or omitted common variables beyond those the regression controls for. The study relies on self-reports of financial distress and viability, which, while the most practical approach here, introduces response bias. The sample likely under-samples the most severely distressed establishments, since those that had gone out of business before the survey could not have responded; therefore, the results likely underestimate financial distress during this period. Future research should explicitly target two further areas. First, a longitudinal follow-up of post-pandemic survival and post-lockdown outcomes for establishments in this sample, compared with their pre-pandemic self-reported coping mechanisms and financial positions, could formally test the predictive validity of the FVI and the cluster typology for survival. Second, comparative cross-national work on non-South African SME-led accommodation sectors in other African markets would clarify the extent to which the documented South African phenomena are generalisable to structurally similar markets.

A further limitation is that the binary bankruptcy-risk model excluded the 123 respondents who were 'Unsure', which could bias the estimates. As reported in Section 5.3.4, the main finding was confirmed when these respondents were retained through multinomial and ordered logistic models.

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