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Covid-19 and small lodging establishments: A break-even calibration analysis (CBA) model

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**ABSTRACT**

The COVID-19 pandemic foiled the hospitality industry offering no clear insight as to what to expect regarding the emergence of possible new industry standards as likely corollaries of the pandemic. The accommodation sector is one of the most affected sectors in the hospitality industry, especially small lodging establishments incurring the most dramatic brunt of the pandemic’s long-tail effects. This study employed a breakeven (BC) analysis to examine the pandemic’s opportunity cost and the financial resilience efforts that SLEs should undertake to bounce back or bounce forward. The case study centers on the Superior Small Lodgings (SSL) of Florida, USA. The results suggest that the opportunity cost varies depending on the SLE profiles, and hence resilience approaches should consider heterogeneous business responses.

1. Introduction

The distinctive and sudden disruptions caused by the fast spread of the novel coronavirus, acute respiratory syndrome (COVID-19 or pandemic hereafter), continue to present economic and financial challenges globally with growing repercussions for more than 200 countries. The pandemic has not only hit the global economy hard but also imposed broader inter and intra-country restrictions (e.g., commerce in commodities, travel, border shut-downs, countrywide lockdowns, tourism, etc.) that have triggered an unprecedented financial stress causing governments to alleviate and remedy the immediate issues with massive economic stimuli packages. In addition to geo-economic challenges posed by COVID-19, domestic efforts and responses to contain the spreading coronavirus have caused a surge in layoffs or outright loss of employment in a variety of industries, especially restaurants, bars and entertainment venues, brick-and-mortar retail, airlines, hotels and lodging establishments, and mass manufacturing. To name some of the major contractions; unemployment claims have risen to nearly 20.0% levels in some developed countries (e.g., U.S.), oil prices dipped below $0.0 per barrel due to maximized storage capacity. Equities in major stock indices saw their biggest drop in late March and early April 2020 since the subprime mortgage crisis of 2007-09, and global consumer spending (i.e., core household items) has declined drastically to almost “ground 0” levels, etc. (Matthews, 2020; Ganong and Noel, 2020).

By searching past pandemics (i.e., SARS) for lessons on how best to mitigate damage to the economy and the chain of financial shocks that pulse over time, advocates have tried to connect-the-dots using different theories from different disciplines and doctrines such as economics, pedagogy, and philosophy. Lazarus and Folkman (1984) theoretical model of learning from errors, coined from Bandura’s (1962) cognitive learning theory, demonstrates that individuals learn from their mistakes and errors in their efforts to reduce the negative outcomes of crises, pandemics, and/or undesirable events, doing so with the convictions of their level of accumulated experiences and intuitions (Tulis et al., 2016; Kapur, 2008; Mathan and Koedinger, 2005). As widely studied in recovery prediction papers regarding moving from times of hardship to times of prosperity, main postulations of Lorenz’s (1963, 1972) chaos theory (aka Butterfly Theory) signify that “the present determines the future, but the approximate present does not approximately determine the future”. That is, diverging outcomes rendering long-term predictions have a sensitive dependence on initial conditions as a small change in a state of a deterministic condition/event/aggressor can result in large differences in a later state (Wernli, 2009).

Linking the prism and principles encapsulated by chaos theory to the management and resistance of the COVID-19 pandemic, one should anticipate and prepare to respond with step-by-step contingency plans and recovery blueprints to small and low probability events that have the potential to result in major harmful impacts threatening to the organization’s status quo. To be specific, the whole context of organizations’ chief operational strategies and activities should be examined as a
non-linear, non-deterministic operating system. In other words, recovery attempts should be characterized according to the several elements in complex network relationships that occur in a dynamic manner with constant changes (e.g., new information) and stimuli (Boukas and Zia- kas, 2014; Mckercher, 1999).

Preceding arguments and discussions are quite relevant and vital to lodging industry companies. More specifically to small lodging establishments (SLEs), as they have been the first to experience the influences of COVID-19’s cyclical contractions, adverse effects, and enormous repercussions on lodging operations and economies of scale. While the American Hotel and Lodging Association (AHLA) has estimated that U. S. hotels will lose billions of dollars due to the COVID-19 pandemic, a comprehensive and accurate picture of this impact to the U.S. hotel industry is as yet not available (AHLA, 2020). Moreover, the lodging industry was one of the hardest-hit by the COVID-19 pandemic as both domestic and international travel were restricted to contain the spread of the coronavirus.

Furthermore, uncoordinated and varying policies implemented by the federal and state governments and by local jurisdictions have furthered the disruption to the entire supply chain of hotel companies. Lodging establishments are substantially embedded in the pandemic cycles with all the stakeholders, employees, customers, and the society as a whole. This is because these establishments are very well aware of their public and corporate image in the aftermath of COVID-19, which could be destroyed by possible negative press for failing to comply with health, sanitation, safety, security, and community standards (Madanoglu et al., 2018; Dogru et al., 2020). Especially, the more sensitive nature of SLEs to external shocks, combined with their higher fixed asset, high fixed cost, and higher leverage structure compared to that of other service sectors have made this sub-sector of the hotel industry more vulnerable to the COVID-19 pandemic (Kizildag, 2015; Kizildag and Ozdemir, 2017).

It is even more critical that SLEs’ sensitive and fragile levels of liquidity/earnings and leverage, tight risk diversification nature, inability to compete on all fronts with the large all-inclusive multinational operations, and constricted ownership structure (e.g., single owner and/or family operated) are much more prone to be crippled by the adverse effects of COVID-19 (Clarke et al., 2017; Hall and Rusher, 2004; Madanoglu et al., 2012). SLEs are generally in a bed and breakfast (B&B) operational format, which is a “nontraditional” form of accommodation (e.g., boutique or specialist accommodation), and they provide guests with personal service and high-levels of host–guest and guest–host interactions, usually in rural settings where the establishment is owner-operated (Yuan et al., 2018). Unlike larger hotels, SLEs are mostly ignored as a segment. Most industry indices do not tally the capacity to manage the effect of economic changes on the firm—other service sectors have made this sub-sector of the hotel industry more vulnerable to the COVID-19 pandemic (Kizildag, 2015; Kizildag and Ozdemir, 2017).

Our key contribution is that we put forward intrinsic recipes of recovery strategies and solutions that report resiliency against financial uncertainty, thus providing enlightenment to the entire SLE industry in the State of Florida.

2. Review of related literature

In response to crisis management and resilience actions, advocates have developed specific crisis management blueprints, recovery strategies, and operational scenarios to help mitigate the adverse effects of major global crises such as the COVID-19 pandemic given the complex global business culture and its related dynamics (Swanson and Hsu, 2011). These plans and strategies have put forth a greater emphasis on robust and transformative financial relief policies and situation-specific economic strategies for a healthy turnaround during and post-COVID-19 pandemic circumstances.

2.1. Crisis resilience and survival framework

Any subtle crisis resilience process and survival framework for business establishments and companies have multiple stages regardless of their size, operations, brand name, and geographical location, etc. Businesses’ responses to the crisis management and recovery process correspond with two major connotations of resilience activities: (1) bouncing back and (2) bouncing forward (e.g., Davoudi et al., 2012; Lengnick-Hall and Beck, 2005; Engeset, 2020). In that conjecture, Dahles and Susilowati (2015) use three perspectives on crisis resilience to describe the underlying responses to these activities: survival as a return to the previous state of perceived normality, adaptation as the capacity of restoration of damaged infrastructure and the building of new markets, and innovation and change as a transition to a new state of conducting business (i.e., a new business concept, partners, markets, products or leadership). Parallel to this, the prolonged prevalence of any major global crisis (such as the COVID-19 pandemic) has highlighted the ultimate need for guidance and forward-looking crisis resilience plans and frameworks for the lodging establishments (e.g., SLE) that can support the core of the operations (Racherla and Hu, 2009; Barton, 1994).

Although there is no magic plan or formulation to cope with global crises, phases in the crisis resilience plans and framework indicate key policies and strategies that recovery attempts equate to a return to normal operations, and later a resumed-growth in the operations (Faulkner and Vikulov, 2001; Laws et al., 2007; Mair et al., 2016; Campiraron and Scott, 2014). Table 1 provides niche frameworks to mitigate the adverse effects of the COVID-19 pandemic on the operational vulnerability of small lodging establishments:

Adhering to the above-mentioned stages of crisis and preceding comprehension related to crisis management and recovery acts, the prevalence of the prolonged COVID-19 pandemic has highlighted the ultimate need for solid and forward-looking recovery strategies and plans for the lodging establishments that support: (a) the operational stabilization, (b) financial re-emergence, (c), revenue generation, (d) coping mechanisms of employment structure for the affected labor force, and (e) marketing/re-branding policies and efforts (Mair et al., 2016; Campiraron and Scott, 2014). However, even if there have been some governing strides made in contemporary crisis recovery approaches, the opinions and findings by which strategies appear paramount for heterogeneous corporate structures across different industries present distinctions. The primary reasons for this conjecture might depend highly on industry focus, operational sensitivity to crisis, business dynamics and culture, different corporate governance provisions, etc. Thus, one cannot expect to have a flawless set or combination of best practice recovery strategies to neutralize the catastrophic impact of the COVID-19 pandemic. That is, a universal theory of crisis recovery management would be logically much more coherent when a homogeneous operational nature of companies in chorus is analyzed.
Further, as part of the strategic implementation process, strategy evaluation and strategic control, crisis communication and control, resource management, and understanding and collaborating with stakeholders have been identified as the major elements of a short- and long-term disaster recovery agenda. Table 2 details Ritchie’s (2004) comprehensive framework based on the above-discussed stages and plans in the crisis management and resilience frameworks that can also be implemented for small lodging establishments in the State of Florida in the aftermath of the COVID-19 pandemic. In particular, the foremost step and strategy in recovering from COVID-19 could be restoring the guest and tourism traffic as well as implementing the “new normal” in the operational infrastructure that sets the foundation for the hygiene, safety, cleanliness, social distancing rules, mask/face coverings, and additional housekeeping tasks, such as renewed room sanitation. Parallel to this, often times these measures related to the sales volume, and guest and tourist traffic are out of the reach of the SLEs and involve a wider range of stakeholders including government agencies. For instance, communicating with the local media (e.g., DMOs, tourism bureaus, etc.) for the positive marketing and promotion efforts has been deemed a very critical strategy and collaboration in terms of solid resilience and recovery during an on-going pandemic for SLEs. This action is almost a must to rebuild the tourists’ trust and confidence in traveling and to assure the public that COVID-related accommodation measures and precautions are taken. Arguably, the main challenge for SLEs establishments remains revenue recovery and growth given that the pandemic has thwarted SLEs demand. Clearly, the lack of revenues compels a deep look at potential financial recovery strategies.

2.2. Key financial recovery strategies

Financial stimuli, bailouts, unemployment paychecks, and easy-payoff government relief funds/loans extend well beyond the immediate incident and quick recovery actions. However, businesses will possibly need more in the long run since COVID-19 is proven to be a long-tail event occurring with intense frequency. In other words, not only quick financial efforts are needed but also direct and indirect key strategies are very critical to promote financial recovery of lodging establishments in COVID-19’s aftermath.

Minimizing expenses and preserving cash is the key strategy for financial recovery during a crisis (Israéli, 2002). For example, reducing investment in advertising and promotion expenses and deferring capital spending is one of the most essential cost-cutting strategies to financially cope with crisis (Del Mar Alonso-Almeida and Bremser, 2013). Another possible means of cutting costs is to reduce factor variable costs, achievable through negotiation with suppliers to lower the purchasing cost of goods, and with staff/support employees for a reduction in pay, or outright furloughs. Controlling variable cost items are another critical short-term economic recovery approach to respond to heavily inverted financial conditions due to the pandemic (Pavlatos and Kostakis, 2015). Further, as Kizildag (2015) mentioned, lodging establishments should also aim to lower their leverage by spreading out their debt obligations (both short-term and fixed) over longer durations if possible, with small business/government funds during the COVID-19 pandemic.

In addition, SLEs may offer discounts or other promotional forms to entice potential customers to stay at the lodging properties. Capitalizing on the people’s current emphasis on health and strengthening their trust, some SLEs may offer special “anti-COVID” check-in/out processes. Parallel to this, the availability of discounts and bundle pricing scenarios for accommodation services have also been widely used as revenue enhancing and financial turnaround strategies to attract potential customers during crisis (Del Mar Alonso-Almeida and Bremser, 2013). According to Novoselov (2000), a “must” action when setting a new standard of budgeting is to focus on immediate expenditure items. It is necessary to assess the necessity and vulnerability of a particular expense properly. Depending on the specific business activities of a company’s allocation of certain costs, the necessary expenses should be

### Table 1

| Phases for the Resumption of Recovery Framework | Faulkner (2001) | Roberts (1994) | Fink (1986) |
|-----------------------------------------------|-----------------|---------------|-------------|
| 1 Immediate Pre-crisis: creation of contingency actions and scenarios | Pre-event: growth of plans to mitigate the effects of disasters | Pre-event: implementation of rescue actions | Prodromal: initiation of crisis plans |
| 2 Prodromal: warning system and contingency plans are initiated | Emergency: calculation of the effects and damage of crisis | Emergency: implementation of rescue actions | Acute: the assessment of the damage |
| 3 Emergency: calculation of the effects and damage of crisis | Intermediate: short-term actions, communication, and strategies | Intermediate: restoring utilities and essential services | Chronic: analysis, post-mortem, and healing |
| 4 Intermediate: short-term actions, communication, and strategies | Long-term: re-building and responding to the damaged operations | Long-term: repair of damaged infrastructure, correcting environmental problems, counseling victims, reinvestment strategies, debriefings to provide input to revisions of disaster strategies | Resolution: restoration and adjustment to a new stage |
| 5 Long-term: re-building and responding to the damaged operations | Resolution: re-assessing the initial phases to recapture growth |

Sources: Faulkner (2001), Roberts (1994), and Fink (1986)

### Table 2

A Comprehensive Crisis and Disaster Revival Plan.

| Focus Areas | Strategic Actions |
|-------------|-------------------|
| Strategy Implementation and Control: Formulation of strategic alternatives, evaluation of alternatives, selection of appropriate strategies; making effective decisions quickly; influence or control over crises/disasters. | - Spur of the moment decisions - Not always in the organizations’ control – other agencies (govt. etc.) might have a role - Controlling sensationalizing of the news - Providing facts and quickly – nature of media - Media crucial in rebuilding brand and restoring confidence in destination - Resources include financial and HR - Excellent crisis public relations skills, however, cannot save bad management, poor policies, and weak strategy. - Organizational structure and culture and important - Key internal and external stakeholders - Different impact on each group |
| Crisis Communication and Control: Control over crisis communication; development of crisis communication strategy including use of a public relations plan; appointment of a spokesperson; use of crisis communication to recover from incident; short versus long-term crisis communication strategies. | |
| Resource Management: Responsive organizational structures; redeployment or generation of financial resources; leadership styles and employee empowerment. | |
| Understanding and Collaborating with Stakeholders: Internal (employees, managers, shareholders) and external (tourists, industry sectors, government agencies, general public, media) stakeholders; need for collaboration between stakeholders at different levels to resolve crises or disasters. | |

Source: The components of this comprehensive crisis and disaster revival plan are taken from Ritchie (2004)
paid first. These actions might free up working capital and/or internal reserves, allowing for crisis survival by preserving necessary cash (Lawless et al., 2015).

3. Methodological procedures

3.1. Sample selection and data description

The final sample for this study comprises operators from Superior Small Lodgings (SSL) of Florida. This organization originated in Fort Lauderdale in 1989 with the goal of facilitating traveler’s efforts to find those small gems that offer a unique, authentic Florida vacation experience. SSL consists of 170 independent innkeepers operating throughout Florida. The vast majority are located in the coastal areas and are considered legacy properties that have maintained their historical and/or cultural significance over multiple generations. An online survey was developed because of logistic ease, financial constraints, and safety. The survey consisted of 15 questions related to financial performance in order to perform break-even calibration analysis (CBA). The online questionnaire distribution took place over two-weeks between April 19, 2020 and May 4, 2020. The reason for this was to measure the impact of state shut-downs on SLEs’ financial operations and simulate the scenarios of financial losses during the shut-down period. Out of 170 independent innkeepers, 120 surveys were collected. We were able to establish our final sample with 99 completed surveys. This figure represents a 54.4% valid responses rate, a sufficient sample size representing SLE properties in Florida. The characteristics of the sample are presented in Table 3.

The properties in the final sample were categorized into 4 different portfolios as: (a) 28 properties from 10 rooms or less, (b) 29 properties from 11–20 rooms, (c) 15 properties from 21–29 rooms, and (d) 27 properties from 30 or more rooms. On average, these properties have 2 portfolios as: (a) 28 properties from 10 rooms or less, (b) 29 properties from 11–20 rooms, (c) 15 properties from 21–29 rooms, and (d) 27 properties from 30 or more rooms. The main purpose of running sensitivity testing is to determine how the effect of different values varies for room nights sold and ADR (our changing parameters) under ±5.0% assumption criteria. We specified a plausible region for the sensitivity parameters and reported estimates of the lower (15% less from the current levels) and upper bounds (15% up from the current levels) from this range in SLE properties’ profit margins. The accounting for the variability accompanying these bounds was a 95% confidence region. Thus, we increased (decreased) the sensitivity intervals by 5% in our computations. A 95% confidence region due to uncertainty in sensitivity models is suggested by Molenberghs and Kenward (2007). Our intention is to demonstrate how sensitive SLE properties’ profits are when there is a drastic change in number of rooms sold and the ADR under a given set of assumptions for prediction purposes.

Table 3 Sample Characteristics.

| # Properties          | 10 or less rooms | 11–20 rooms | 21–30 rooms | More than 30 rooms | Total |
|-----------------------|------------------|-------------|-------------|--------------------|-------|
| Properties by category| 28               | 29          | 15          | 27                 | 99    |
| Number of Employees   |                  |             |             |                    |       |
| Salary Employees (Avg. #) | 1.81            | 1.52        | 1.77        | 1.90               | 2.21  |
| Hourly Employees (Avg. #) | 7.63            | 2.04        | 5.86        | 10.25              | 15.68 |
| Legacy Properties     |                  |             |             |                    |       |
| Avg. # of years in operation | 17.24      | 17.61       | 17.71       | 20.94              | 18.19 |
| Type of ownership     |                  |             |             |                    |       |
| Family Owned          | 100%             | 91%         | 67%         | 89%                | 91%   |
| Other type of ownership | 0%              | 9%          | 33%         | 11%                | 9%    |

4. Results and findings

We first focused on the demand-side analysis that would give us significant insights and inferences regarding the room sales capabilities of SLE properties. Table 4 reports our findings from our examination of the margin of safety. Our results reveal that before COVID-19, roughly the 2020 Q1 window of time, the number of room nights at the breakeven (BE_Room Nights (\$)) was between 946 to 8209 rooms corresponding to 41.24%–48.58% (BE_Occ.%I) room occupancy with an average ADR of $182.53 (BE_ADR) from properties with 10 rooms or less to 30 or more rooms, respectively. Interestingly, SLE properties with 30 or more rooms scored the lowest ADR at the breakeven ($166.13) when expressed as [(TR – VC) / TR] where, “VC” is the total variable cost and “TR” represents the total revenue. We constructed our fourth factor as the BE$_{\$}$ that represents the total revenue needed to achieve financial break-even through room sales. This factor is measured by the proportions of total fixed cost to CMR$_{\$}$ (FC$_{\$}$ / CMR$_{\$}$). The last factor we measured is the ADR to be generated at the breakeven levels. We calculated this factor as: (BE_Room Nights$_{\$}$ / BE$_{\$}$).
compared to the other SLE property groups. This also is reflected in weighted average room contribution margin (CMR\textsubscript{w}) figures that these properties achieved the second lowest contribution margin from the room sales (39.37%). The main reason can be attributed to the room size/inventory of this SLE property group since those establishments have much more overhead expenses to deal with when generating room and other revenues in their operations. Also, having to set different price levels relating to various levels of demand due to the seasonality and price elastic nature of all SLEs in the region could be another potential reason for this result. In addition, CMR\textsubscript{w} for the SLE property group with 11–20 room capabilities were the highest among the others. Thus, it shows that these properties are the most profitable in comparison to the other SLE properties in the area. Thus, we concluded that room prices are set at the near-optimal levels reflective of their contribution towards room revenues while greatly supporting the hotel’s total fixed costs (SLE with 11–20 rooms achieved the second lowest BE\textsubscript{Occ.}%).

We also report the estimates of the benefit cost analysis (B–C hereafter) in Table 5 to forward better insights regarding monetary opportunities missed during a statewide shut down period of Q2, 2020. In our B–C configurations, we first concentrated on the B–C ratio that determines the relationship between the expected incremental benefit from a particular operation and the corresponding costs that would be incurred for the overall operation. One of the most intriguing inferences of our B–C results is that none of the SLE properties reported a B–C ratio less than an absolute value of 1.0 (ranging from 1.09 to 1.19 with a \(\sigma\) of 0.14 and a very narrow \(\sigma\) of 0.04 in absolute values). To elaborate, the total dollar amount of revenues generated from the room sales for each of the SLE properties had outrun the costs associated with room operations immediately before the adverse effects of COVID-19 on all the groups of SLE properties. Parallel to our B–C ratio estimates, we also presented the economic and financial values against the sunk cost of a state-mandated shut-down decision and policy for all of the SLE properties in four different portfolios. The results derived from our B–C reporting also yielded that the overall operations of all of the SLE properties, regardless of their size, are expected to deliver a positive net present value (NPV) of the cash flows before the statewide shut-downs. These results are also reflected in our NPV of B–C analysis also lies in the fact that it is used for assessing the feasibility of an opportunity, comparing operations, appraising opportunity costs and building real-life, scenario-based sensitivity testing with variables pertaining to SLE properties’ core operations. Thus, we contend that this technique helps us in ascertaining the accuracy of financial operations and in providing a comprehensive platform for what could have been achieved/lost, as well as how profits from room sales have been affected based on changes in room nights sold and ADR before the pandemic and during the shut-downs.

With regard to our sensitivity testing, it would appear from our analyses in Table 5 that profits have to be $37,705.43 (ADR of $200.23 with 1408 rooms sold), $47,507.67 (ADR of $177.06 with 2895 rooms sold), and $314,374.14 (ADR of $167.81 with 12,777 rooms sold) at the current breakeven levels for 10 rooms or less, 11–20 rooms, 21–29 rooms, and 30 rooms or more of SLE property portfolios, respectively, during the entire month of March right before the statewide shut-downs. Based on the panels in Table 6, one of the most striking results is that (on average) SLE properties falling under 21–30 rooms are those that might be severely affected by the shut-down since the number of room nights to be sold are the second highest with almost the same levels of ADRs when compared to the ones in SLE portfolios of 11–20 rooms and 30 rooms or more. This pattern most likely means that overhead and overall operational costs associated with room sales and revenues for this segment are high enough that shrinks the contribution margin, and eventually yields high sales volumes to achieve the breakeven points vs. lower sales volumes with almost the same ADR levels needed for the breakeven levels. Further, we also forecasted possible “what-if” scenarios (best case vs. worst case) and outcomes for profit calibration based on the varying number of room nights sold and ADR (by--+ 5%). Our intention was to

### Table 4

| Proxies | Property Type | 10 or Less (n = 28) | 11–20 (n = 29) | 21–30 (n = 15) | 30 or More (n = 27) | \(\Sigma\) (n = 99) | \(\mu\) | \(x\) | \(\sigma\) |
|---------|---------------|------------------|--------------|----------------|-----------------|-------------|------|------|--------|
| BE_Room Nights (n) | 946 | 2168 | 4023 | 8209 | 15,346 | 6139 | 3096 | 11,078 |
| BE_Occ. % | 41.24% | 43.88% | 44.81% | 48.58% | – | 44.63% | 44.35% | 3.04% |
| CMR\textsubscript{w} (room) | 42.73% | 44.04% | 36.50% | 39.37% | – | 40.66% | 41.05% | 3.40% |
| BE_S (TR room) | $180,974.62 | $410,421.31 | $737,962.79 | $1,363,728.30 | $2,693,087.02 | $673,271.75 | $574,192.05 | $513,926.71 |
| BE_ADR | $191.26 | $189.31 | $183.41 | $166.13 | $730.12 | $182.53 | $186.36 | $11.43 |

Notes: (1) Property types are sorted based on the room nights available. (2) BE Units is rounded up/down (n) to the nearest integer due to a unit of measurement for room nights.

### Table 5

| Proxies | Property Type | 10 or Less (n = 28) | 11–20 (n = 29) | 21–30 (n = 15) | 30 or More (n = 27) | \(\Sigma\) (n = 99) | \(\mu\) | \(x\) | \(\sigma\) |
|---------|---------------|------------------|--------------|----------------|-----------------|-------------|------|------|--------|
| B–C Ratio | 1.19 | 1.09 | 1.12 | 1.17 | – | 1.14 | 1.14 | 0.04 |
| NPV_B–C Cfs | $44,038.58 | $40,211.26 | $106,572.67 | $282,810.05 | $473,632.56 | $118,408.14 | $75,305.63 | $113,744.82 |

Notes: (1) Property types are sorted based on the room nights available. (2) Discount rate for the Net Present Value (NPV) calculations are taken as the total of risk free rate (\(R_f\)) set around 3.0% plus the market risk premium (\(R_m - R_f\)), set around 4.0%, which is equal to 7.0% for the existing stabilized assets in the final sample.
lay out ups and downs in profits generated by room sales using both ADR and number of rooms sold to make informed decisions for the optimum business policies, strategies, and operational improvements (e.g., renewed marketing efforts to reestablish the customer traffic) after reopening the State of Florida.

5. Discussion and conclusion

Although the four hotel sub-groups belong to small hotels and share a similar location near the coast, their resilience towards external shocks varies. The pandemic reveals their strengths and vulnerabilities, captured by a novel breakeven calibration analysis (BCA) method. The similarities end when the demand situation pivots to the pandemic reality that included the lock-down dramatically restricting demand and hence thwarting revenue streams.

The findings suggest that all four small hotel subgroups enjoyed a relatively high ADR, ranging from $166.13 to $191.26 during the pre-pandemic situation. The high ADR level, across the four subgroups, is relatively stable as characterized by the low standard deviation (sigma = 0.04). The relatively high ADR suggests that this small hotel category engages with a price inelastic customers’ niche, enjoying the intimacy of an ecosystem’s exclusivity in such a hotel environment. This ecosystem consists of the beach’s location, authentic and personalized experience, and a one-on-one relationship with the owner and staff. All four groups were destined to enjoy positive profit margins were it not for the pandemic.

The other plausible explanation for the relative stable ADR is that the four sub-groups of small hotels lack differentiation. They only seem to distinguish themselves through room inventory (size), with a seeming business strategy centered only on selling rooms. They do not provide other unique offerings, including F&B, fitness center, and sauna. The other plausible explanation for the ADR stability is that these hotels do not engage in yield management due to the lack of technological infrastructure, or yield management knowledge, or resources. Moreover, they seem to lack the knowhow in engaging with sophisticated platforms to match and expand their customers’ base. Selecting trusted information platforms is a daunting but necessary task for these small hotels. These platforms can facilitate the optimal communication with potential customers which could then lower transaction costs. Realistically, the most significant transaction costs for any hospitality business is in seeking to convince customers that the hotel provider is reliable in its desire and ability to serve.

Arguably, it is critical for any business to have real time information regarding revenues and cost, especially in a perishable business such as the hotel business. This perspective undergirds the introduction of a novel BCA framework to capture the opportunity cost, sensitivity, and novelty of each one of the four sub-groups of small hotels triggered by the novel BCA framework to capture the opportunity cost, sensitivity, and novelty of each one of the four sub-groups of small hotels triggered by the pandemic reorganization. The perspective undergirds the introduction of a novel BCA framework to capture the opportunity cost, sensitivity, and novelty of each one of the four sub-groups of small hotels triggered by the pandemic reorganization.
sensitivity applications in what-if scenarios. The method provides meaningful insights that facilitate informative business decision-making. The BCA results indicated that SLEs are a heterogeneous group of small hotels with clear differences in financial performance, resilience, and recovery opportunities. For example, the subgroup of small hotels consisting of 21–29 rooms is the most vulnerable small hotel group with the lowest contribution margin ratio. This subgroup is the most severely affected by the pandemic and will also face the most daunting financial challenges in the recovery phase. The results also reveal that, due to supply heterogeneity, an aggregated market perspective can prompt unrealistic analyses with inadequate business intelligence insights. Therefore, this study underlines the importance of studying the differences between small hotel subgroups because of their heterogeneous behavior patterns and business recovery opportunities.

6. Implications & future extensions

The SLEs desperately need heuristics to facilitate quick, informed business decisions to face rapid change and shocks. The bouncing forward of the group of small hotels (SSL) requires developing an operational framework consisting of financial analyses to support their revenue optimization focus. Their revenue optimization focus should center on financial benchmarking and business viability stress under different levels of shock scenarios. The CBA model could be such a revenue optimization framework. The CBA model as a tool could impact further scholarship with the hospitality industry by addressing the needs of the small hotel sector.

Arguably, the units comprising the SLEs are too small to muster the changes required to bounce forward. Given the new competitive landscape, SLEs must establish cooperation and collaboration efforts to find pathways for financial success. Business associations such as Superior Small Lodging could offer a collective voice to steer change and to do so with strategic intent. In addition, destination management organizations (DMOs) have a stake in the bouncing back efforts of SLEs because a destination’s reputation depends on its multiple stakeholders’ behavioral patterns. From this perspective, a DMO should attempt to balance individual and collective interests to facilitate the continued delivery of quality customers’ experience. Future research should investigate the optimal methods to integrate academic scholarship with industry needs and how DMOs could facilitate and deepen this symbiotic process to protect and enhance the destination’s reputation.

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