

# **Has the Coronavirus Crisis Ended Innovation Inertia? An Analysis of Accommodation Providers**



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Article

# Has the Coronavirus Crisis Ended Innovation Inertia? An Analysis of Accommodation Providers

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**Abstract** The hospitality industry shows comparatively modest innovation activity. However, the coronavirus crisis challenged the industry and increased the need to implement new practices. Following a mixed methods, explanatory sequential research design, this study aims to examine the impact the crisis had on the innovation activity and implementation of different innovation types in the hospitality industry. For data collection, a structured survey of accommodation providers and complementary expert interviews were employed. The findings indicate three different phases in the accommodation providers' response to the crisis, namely shock, acknowledgment, and adaptation and change. Each phase is characterized by distinct innovation behavior. In the shock phase, the businesses improvised and executed governmental orders. They tried to make sense of the crisis and recognized the need for change and innovation. In the acknowledgment phase, the businesses adapted their service offer to the "new normal" and communicated with their stakeholders to find individual solutions. Finally, in the adaptation and change phase, some accommodation providers were able to implement long-planned innovations and seize spontaneous innovation opportunities. Overall, incremental innovations were preferred to radical innovations, presumably due to cost reasons. Contrary to expectations, the accommodation providers did not show a preference for temporary innovations. Based on the findings, specific recommendations are formulated to increase the accommodation providers' innovation efforts and prepare their resilience to future crises.

**Keywords** innovation; coronavirus crisis; hospitality; crisis management

## 1. Introduction

Innovation serves as an engine for economic and social development that shapes, transforms, and improves our lived experience as citizens, employees, and customers. It is responsible for up to 50% of the Gross Domestic Product (GDP); innovative businesses create jobs, are more productive, and, through targeted innovation efforts, can contribute to solving pressing sustainability problems [1]. Despite these proven benefits of innovation, the hospitality industry is, however, described as innovation-cautious [2–8] so the adoption and implementation of new practices remain comparatively rare [9]. This reticence can be explained with respect to several of the industry's key characteristics. For example, hospitality businesses are less technology-intense when compared with, for example, manufacturing. Hospitality's basic service product is intangible and difficult to standardize. Furthermore, the industry's dispersed structure discourages centralized R&D efforts. Consequently, the economic incentive to develop, adopt, and implement innovations is comparatively limited [10]. However, the coronavirus crisis challenged the hospitality industry and its innovation-cautious behavior and demanded adaptations to many business-as-usual procedures [11,12]. Failure to implement these adaptations would have endangered the industry's general business model, particularly since the coronavirus spreads via a characteristic host-guest interaction [6,12].

Given the disastrous consequences of the coronavirus crisis, finding effective remedies is of fundamental importance not just from an economic, but also from a societal point of view [13]. Hence, it is crucial to evaluate the potential of innovation to help overcome such a crisis. An innovative hospitality sector, in turn, will be better able to master change, improve productivity, and provide better customer service [14]. Finally, an improved understanding of the industry's crisis and innovation behavior is important because it can inform the development of tailored support instruments.

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Beyond its practical relevance, this paper's theoretical contribution is a deeper understanding of crisis and innovation behavior of human-interaction-centered service industries like hospitality. This means, guided by theory and taking the example of the coronavirus crisis, to retrace how the crisis unfolded in the hospitality industry, which innovations were adopted during the course of the crisis, and which innovation strategy appears successful and transferable to the overall sector. These results then help in evaluating the explanatory power of general crisis and innovation models for the hospitality sector.

Summarizing the above and by employing the example of accommodation providers, the basic research question is:

*What is the impact of the coronavirus crisis on innovation behavior in the hospitality industry?*

## 2. Literature Review

### 2.1. Innovation Theory

This study takes an organizational lens on innovation. Organizational theory differentiates two basic routes that lead businesses to adopt innovations: Competition-wealth and adaptation-progression. The former is rooted in economic theory and explains the advantages of innovations, especially with respect to their commercial utility and the prospect of pioneer gains, implying the primacy of technological innovations [15]. This view is represented by Austrian economist Joseph Schumpeter (1883–1950). Schumpeter [16] considers innovations to be adaptations toward societal changes. These changes may be increases in population or capital, progression in production methods, progression in the economic organization of the industrial society, or development and diversification of consumer needs. To benefit from the changing conditions, entrepreneurs implement new combinations of production factors.

The latter approach, in turn, regards organizations as rather reactive to environmental changes. According to this view, innovations are adopted to assert the vitality of the business under changing external conditions [15]. In line with this approach, Taalbi [17] identifies pressing problems (e.g., environmental or economic) as important innovation catalysts. Accordingly, the adaptation-progression approach is less focused on technological innovation and commercial utility as all innovation types can, in principle, strengthen a business' overall resilience or address important problems [15].

What combines both approaches is their open-system perspective on organizations. Organizations are viewed as open to environmental influences to which they react with innovations [15].

From these theoretical explanations, an argument can be derived that the coronavirus crisis might indeed have led to increased innovation adoption: An open-system perspective would acknowledge that businesses were exposed to the crisis as they cannot isolate themselves from their environment without losing their means of existence. A competition-wealth logic-driven argument would emphasize the chances that innovations offer to gain customer trust and market share during the crisis, while an adaptation-progression view would stress the necessity to innovate in order to prevent severe damage to the business or even risk insolvency.

### 2.2. Innovation Activity in the Hospitality Industry

Hospitality services are interrelated bundles of different value-creating activities. Most of these activities are based on human contact, so value is naturally co-created between host and guest [18]. In general, service innovations differ from product innovations because the perception of the service as innovative by the guest is an important requirement. The involvement of the guest and the insecurity and risk inherent in buying a non-standardizable product favor incremental innovations which do not overburden the visitor [15,19].

The interrelated bundling nature of services implies that hospitality innovation rarely comprises isolated measures in one area only. Rather, simultaneous changes in different areas (e.g., organizational, marketing, technological) are necessary to impact the guests' holistic service perception and improve their experience [20].

The hospitality industry rarely creates its own exclusive innovations but rather adopts, albeit behind the curve, innovations created for other industries. An example is the implementation of contactless payment, which was first developed for the retail industry. Likewise, innovation diffusion proceeds from several pioneer industries and eventually reaches the hospitality industry [3,21,22]. This logic explains why the newness of innovation often refers only to the hospitality industry, not to the whole economy [15,23,24].

Hospitality innovation is mainly driven by supply- and demand-related factors and the level of competition [19]. While an important supply factor is the availability of market-ready technology, demand-related factors refer to societal changes which find their expression in new consumption trends and routines [6,19]. Further significant factors influencing the sector's innovation activity are public authorities. These provide the legal framework and basic complementary infrastructure; through economic and other policies, they shape the "living conditions" of the businesses and determine their agency [25,26].

### 2.3. The Coronavirus Crisis

The coronavirus crisis was a major economic and societal disruption following the break-out and spread of the SARS-CoV-2 virus in China in late 2019. As the virus mainly spreads through human contact, service industries were among the first to face governmental restrictions, accompanied by a general sharp decrease in customer numbers and the cautionary consumption and spending behavior of the remaining customers [27,28]. While the crisis forced many hospitality businesses to leave the market, the remaining businesses were faced with the challenge of attracting the remaining reduced demand to cover their fixed costs [14].

From an innovation-theoretical perspective, the coronavirus crisis constituted a rare, discrete, and disruptive event ("black swan") that caused economic and organizational problems on the part of businesses [29–31]. Considering multiple innovation triggers, Gursoy et al. [32] attest both a regulatory push induced by several governmental requirements, restrictions, and prohibitions and a demand-pull by sensitive and health-conscious consumers.

Accordingly, further studies indicate that the coronavirus crisis indeed spurred innovation and change in the hospitality industry. Breier et al. [31] find that the crisis acted as a trigger event for business model innovation. Duarte Alonso et al. [27] find that the extreme context of COVID-19 had a direct innovation-enhancing effect by demanding adjustments to work-based activities. Hao et al. [33] find that the adoption and use of human contact-reducing technology clearly increased in the Chinese hospitality industry because of the crisis. The authors hypothesize that many of the coronavirus-induced innovations will also be kept after the crisis. Dahlke et al. [13] quantify coronavirus crisis-driven innovations and find that the travel sector (including hotels) is responsible for 6.6% of them. Different types of innovations (e.g., organizational, business model, technological) were introduced in hospitality, driven by the desire to fulfill customer needs despite the crisis conditions. Hidalgo et al. [14] show that hotels reacted to the crisis with different strategies, one of which is innovation. They also argue for a differentiated analysis of the crisis response: Initial actions were taken when the hotels had to suspend their operations, while planned strategies were executed when they were allowed to reopen.

Considering the results of these previous studies and taking into account the ambiguous and complex nature of the crisis, it appears reasonable that businesses will react to it with a mix of different kinds of innovations. These could constitute radical innovations that "produce fundamental changes in the activities of an organization" ([34], p. 561), or incremental innovations which "result in little departure from existing practices" ([34], p. 561).

### 2.4. Derivation of a Working Definition of Innovation

Innovation can generally be defined as "an idea, practice, or object that is perceived as new by an individual or other unit of adoption" ([22], p. 12). While widely cited, this innovation definition is very broad, takes a subjective view, and effectively labels phenomena as innovations that most market participants consider already established practice, i.e., imitations [35].

Addressing this shortcoming, Chandy & Prabhu [23] differentiate with respect to the newness of a phenomenon between "new to the firm", "new to the world", and "new to the customer". Hauser et al.'s ([36], p. 687) definition of innovation as a "process of bringing new products and services to market" adds a dynamic, commercial element. The definitional effort by Sundbo [37], in turn, emphasizes change as the major characteristic of and motivation for innovation. Economic definitions like Damanpour [15] and Schumpeter [16] emphasize the generation of competitive advantage.

With respect to the different innovation phases, this study focuses on innovation adoption, i.e., the decision to utilize an innovation, and innovation implementation, i.e., its use in regular business operations [22]. This adds *agency* [25], contextualized here as the freedom of an

organization to adopt and implement a new practice and the freedom of the consumer to use it, as another layer to the working definition of innovation.

Hence, for the purposes of this study as a synthesis, an innovation is defined as a practice that is at least new to the accommodation provider *and* its guests, implies agency and change compared to the business-as-usual procedures on the part of the accommodation provider and/or the guest, and has the potential to create a competitive advantage. A practical consequence of this narrowed definition for this study is that practices that were a reaction to the coronavirus crisis but have a high likelihood of already sometimes being performed before the crisis (e.g., cost reductions, postponement of investments) are not counted as innovations. Also, mere executions of governmental orders were not counted as innovations.

## 2.5. Hypotheses

The aim of this study is to understand the impact of the coronavirus crisis on hospitality organizations and their respective responses. Building on this understanding, the study will examine whether and how the crisis led to the increased adoption and implementation of different innovation types. The study employs a mixed methods, explanatory sequential research design. It starts with a survey of accommodation providers whose results build the basis for complementary expert interviews [38].

The existing evidence supports a prevailing adaptation-progression view that explains innovation behavior because the businesses are trying to cope with the situation and ensure their own survival. However, although the mentioned studies find evidence of the positive effect of the coronavirus crisis on the industry's innovative activity, their qualitative approach limits their explanatory power. This study, in turn, aims to give a more comprehensive picture by using a mixed methods research design.

From the literature review, it can be followed that the conditions for increased innovative activity in the hospitality industry appear favorable. However, while some innovations are likely to be permanent, it can be hypothesized that innovations that constitute a reaction to the crisis become redundant afterward. Accordingly, the following hypothesis is derived:

*H1: At the aggregate level, the majority of the implemented innovations will be temporary.*

The industry's conservative business model, its limited financial resources, and the nature of the coronavirus crisis as a temporary event allow for the formulation of the second hypothesis:

*H2: The coronavirus crisis increases the implementation of incremental innovations in the hospitality industry more than the implementation of radical innovations.*

## 3. Methodology

This study follows a mixed methods, explanatory sequential research design. The quantitative part consists of a structured survey whose results informed the succeeding qualitative expert interviews. The overall research area was Germany, however, with a regional predominance of the state of Saxony, and the city of Dresden in particular. The reason for this predominance was the access to local hotel directories, and existing contacts to local hotel managers. Data processing was conducted with Microsoft Excel as no complex statistical analyses were required.

To approach the research questions and assess the derived hypotheses, a structured survey was developed based on the literature review. The first part of the survey consists of five-point Likert scales measuring innovation drivers and innovation activity. The second part asks which concrete innovations had been implemented and assesses their newness and permanence. The final part of the survey assesses the general economic impact of the coronavirus crisis and the governmental support the businesses received and measures several control variables. The survey was programmed using the software SoSci Survey. A link to the survey was widely distributed via newsletters, social media, and personal contacts. Twenty-eight accommodation providers participated in the survey in the time frame between November 2020 and April 2022. The sample statistics show that most of the responding businesses were independent, medium to large city establishments that were well-established on the market (Table 1).

As a complement to the survey, three interviews were conducted with experts (i.e., industry practitioners who had managed an individual hotel or a hotel group during the coronavirus crisis) from the German hotel industry, comprising one hotel group manager, one hotel group manager/consultant, and one hotel general manager. The interview content was geared to the survey

**Table 1.** Sample statistics (quantitative part).

Criterion	Sample Constitution
No. of employees	1 to 10: 4
	11 to 20: 3
	21 to 30: 1
	31 to 50: 5
	51 to 100: 6
	More than 100: 8
Annual revenue	Not stated: 1
	Less than 100,000 Euro: 1
	100,000 to less than 250,000 Euro: 1
	250,000 to less than 500,000 Euro: 2
	500,000 Euro to less than 1 Mio. Euro: 2
	1 Mio. Euro to less than 2.5 Mio. Euro: 4
Management	2.5 Euro to less than 5 Mio. Euro: 8
	5 Mio. Euro or more: 7
	Not stated: 3
	Independent: 13
	Franchise: 6
Place	Chain property: 6
	Association: 2
	Other: 1
	City, suburbia: 24
Time of establishment	Rural area: 3
	Not stated: 1
	1 year up to less than 3 years: 5
	3 years up to less than 5 years: 2
	5 years up to less than 10 years: 2
	10 years up to less than 15 years: 6
	15 years up to less than 20 years: 3
	20 years and longer: 10

content, and open questions were posed addressing different crisis and innovation aspects. In addition, the experts were encouraged to provide further information on the impact of the crisis on their hotel. The interview material was transcribed and subsequently analyzed using inductive category development [39]. Units were summarized into categories which were then merged into overarching themes.

After the inductive category development, links were drawn to a well-established theoretical reference frame for how organizations respond to crises by Fink et al. [40] whose model differentiates four consecutive phases: “shock”, “defensive retreat”, “acknowledgment”, and “adaptation and change”. Accordingly, these phases were used for a deductive reanalysis of the data with the aim of finding overlaps and complements with the original categories. From the description of the interviewees, all phases apart from “defensive retreat” could be identified in the proposed order in the hospitality organizations (Table 2).

**Table 2.** Inductive category development.

Crisis Phase	Subcategories	Corresponding (Innovation) Behavior	Representative Data
Shock	Insecurity	Improvisation	“At the beginning, it was a huge shock. [...] A huge insecurity was present, actually even for the first months.”
	Emotional distress	Execution of governmental orders	“We have written hygiene concepts, we have marked walkways, we had masks available [...]”
	Economic distress	Sensemaking; recognizing the need for change/innovations	“We actually tested new systems during that time; we had quick tests, we organized direct coronavirus packages for our guests [...]”

**Table 2.** (Continued)

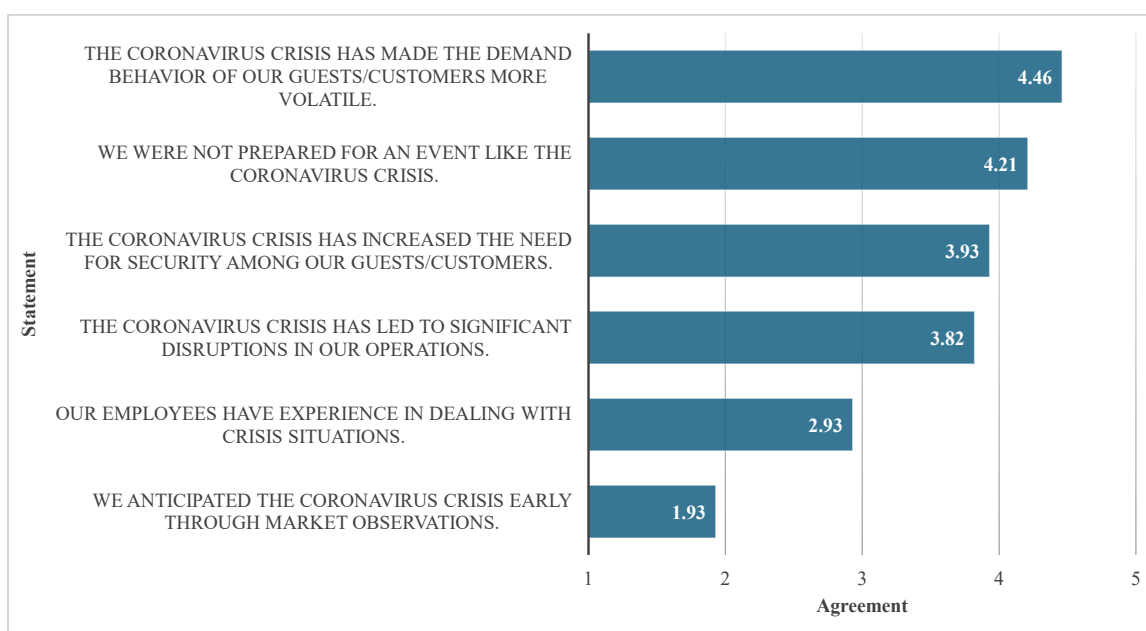
Acknowledgment	Reaffirmation of own crisis management capability	Adaptation of service offer to “new normal”	“[...] [I]t’s the employee who gets it right, informing himself about each guest in advance; taking care of the guest during the stay as if he [sic] were a good friend [...]”
	Time for reflection and change		“[...] [W]e now finally understand how important service is.”
	Unity/“Gemeinschaft” (“sharing the hardships”)	Communication with stakeholders to find solutions	“We talked to the landlords early on and found good solutions. [...] They [the hotel operators] kept their businesses open, never closed and optimally used the time.”
	Difficulties with support measures, bureaucracy		“You were supported, [...] but toward the end it became more and more complicated.”
Adaptation and Change	Looking for/reliance on/trust in state support		
	Increasing own competitiveness	Implementation of long-planned innovations	“We completely restructured our head office [...] so that after the crisis we are prepared to deal with enquiries in all areas and can provide support to our counterparts.”
	Benefiting from the crisis, taking opportunities	Spontaneous innovations due to market situation	“We have a completely new property, and we found building land during the corona [coronavirus] time in Munich. It was very cheap; we wanted to go to Munich anyway, and the time was right; the prices were at rock bottom, and then we bought. [...] That was more out of the situation.”

**4. Description of Findings**

From the analysis of the expert interviews and the survey results, it can be concluded that the crisis consisted of three consecutive phases: A “shock” phase of emotional distress, contestation, and insecurity, an “acknowledgment” phase characterized by different coping strategies, and a phase of “adaptation and change” led by opportunism and preparation for future crises. The shock phase was characterized by emotional distress, contestation, and insecurity about possible reactions:

- “At the beginning, it was a huge shock. [...] A huge insecurity was present, actually even for the first months.”
- “Of course, we had to cope with the situation – few of us had had contact before with things like short-time work.”
- “It was a nerve-wracking time and an insecure time for our employees.”
- “The employees suffered most due to coronavirus. [...] Because of the single restrictions, it was on/off. [...] To cope with this different strain, work-related strain, was extremely difficult for the employees, especially as we, of course, also lost employees.”

The survey answers confirm that the crisis hit the accommodation providers, their guests, and employees unprepared and consequently had a huge negative effect (Figure 1).



**Figure 1.** Accommodation providers’ self-assessment of the impact of the coronavirus crisis (agreement on a five-point Likert scale), n = 28.

The unstable guest demand and increased emotional needs of the remaining guests put additional strain on the employees, as one manager remarks:

*“The greatest challenge for us [...] was to calm them [the remaining guests] down, reach them a hand and say: ‘We also do not know much more, but we will get through this together.’”*

Specific innovation behavior in the shock phase is apparent. As this phase did not allow searching for or even developing new practices, innovation opportunities in this phase were limited and often required improvisation. Business behavior was largely driven by the execution of governmental orders. The resulting changes, however, can largely not be considered innovation as the governmental orders had to be executed by all businesses, leaving limited agency, and new practices, therefore, did not necessarily result in any competitive advantage.

*“We have written hygiene concepts, we have marked walkways, we had masks available, we have been able to procure tests relatively well [...] for our employees, also for guests.”*

However, one manager explains how his hotel still implemented innovations within the new regulatory framework and tested their adoption by guests:

*“We actually tested new systems during that time; we had quick tests, we organized direct coronavirus packages for our guests so that they really had everything with them from the day they arrived to the day they left; [...] you could actually try things out a bit [...].”*

At the same time, the difficult situation highlighted to the same manager that further, more fundamental changes/innovations were necessary. He even reflected that his entire business model was under threat:

*“That is a very big fact, the cordiality and house led with heart. The employees are trained for this, and we simply couldn’t live it out anymore. [...] We could no longer stand out in this way [...] [and] our unique selling proposition disappeared at that moment.”*

The manager’s reaction was a slight change in the understanding of the hotel’s service model, built on emotional instead of physical contact:

*“This has really impressed me as I recognized for the first time that I should train my employees rather toward understanding [...] so that they would [...] become a bit of a minister for the guests with their fears.”*

From the survey, typical crisis-specific organizational measures of the shock phase are apparent, e.g., the introduction of short-time work or new restaurant concepts. Only 28% and 13% of businesses, respectively, plan to keep these innovations after the crisis has ended. An explanation is that these innovations can be considered redundant in times of normal business activity.

The second, “acknowledgment” phase was characterized by adaptation-progression. The accommodation providers reacted to the new situation by reaffirming and executing their crisis management capabilities. In this phase, the accommodation providers showed what Lombardi et al. [41] call “paradoxical leadership”, i.e., they maintained regular operations and at the same time, allowed for learning and improvisation of these operations in the unfolding of the crisis. In contrast to the shock phase, the accommodation providers did not remain inward-oriented but rather increased communication with various stakeholders, including suppliers and public authorities:

*“We talked to the landlords early on and found good solutions. [...] They [the hotel operators] kept their businesses open, never closed, and optimally used the time.”*

*“You were supported, it [the losses] was capped in a certain way. [...] In the beginning, it [state support] worked quite well, but toward the end it became more and more complicated.”*

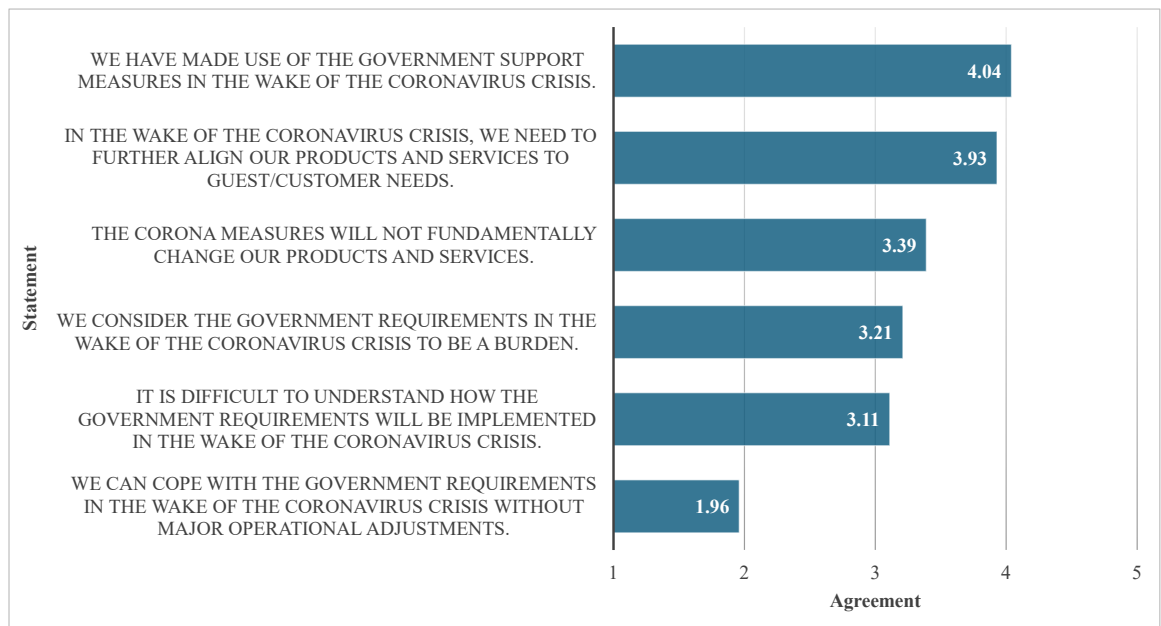
*“We were ready to fill out everything, we had also filled out everything, [...] but actually when you called [the public authorities], they actually didn’t know the answers, so they were just as badly informed as we were partly about the measures.”*

The innovation behavior in the acknowledgment phase benefitted from the experience of the shock phase so that the hotels adapted their service offer better to the crisis-induced special requirements of guests (Figure 2). One manager reports on a learning effect of the crisis:

*“Corona [i.e., the coronavirus crisis] has had a positive influence on us in that we now finally understand how*



*important service is. That we finally know that it's not the extra-soft, gold-embroidered mattress and satin bedding but that it's the employee who gets it right, informing himself about each guest in advance; taking care of the guest during the stay as if he [sic] were a good friend and taking care of little things that maybe didn't exist before."*



**Figure 2.** Accommodation providers' self-assessment of their adaptation to the coronavirus crisis (agreement on a five-point Likert scale),  $n = 28$ .

Finally, in the adaptation and change phase, the competition-wealth logic became the driving force behind the businesses' innovation behavior again. Two of the experts seized opportunities arising from the new situation and used the available time to implement long-planned innovations to be prepared for the expected return of the market and to increase their hotels' overall competitiveness:

*"We even grew in the crisis and have newly gained three hotels. [...] [We] know that the hotel industry will bounce back and will bounce back in good shape."*

*"We completely restructured our head office [...] so that after the crisis, we are prepared to deal with inquiries in all areas and can provide support to our counterparts."*

*"We implemented digitalization in particular [...] which, of course, you do not like to do in the running business [...] and were able to implement the digitalization – which we had planned anyway – much quicker."*

The other interviewed expert reports a spontaneous innovation:

*"We have a completely new property, and we found building land during the corona [coronavirus] time in Munich. It was very cheap; we wanted to go to Munich anyway, and the time was right; the prices were at rock bottom, and then we bought. [...] That was more out of the situation."*

However, it is unclear if the accommodation providers, in general, could take the opportunities the crisis and its aftermath brought; the survey items highlight that financial means could be an innovation bottleneck for many businesses. Furthermore, although the surveyed accommodation providers generally appreciate innovation, not all of them found sufficient time to think about new practices (Figure 3). In line with this finding, most businesses preferred incremental over radical innovations: 17 out of 28 accommodation providers stated that most new measures constitute modifications, improvements, or additions of hitherto practices (Figure 4).

In line with the long-term perspective that the accommodation providers took in the adaptation and change phase, temporary innovations do not constitute the majority, so the first hypothesis is not supported. On average, each accommodation provider implemented 9.8 innovations of which 7.1 were permanent. This confirms the hypothesis of Hao et al. [33]. Examples of innovations to be kept after the crisis are home office possibilities (eight out of ten implementing businesses planned to keep it permanently) and new processes in guest service (twelve out of

twenty businesses). Digital meeting software is also to be used permanently (nine out of thirteen businesses). These innovations are reactions to stakeholder expectations that have permanently changed due to the crisis.

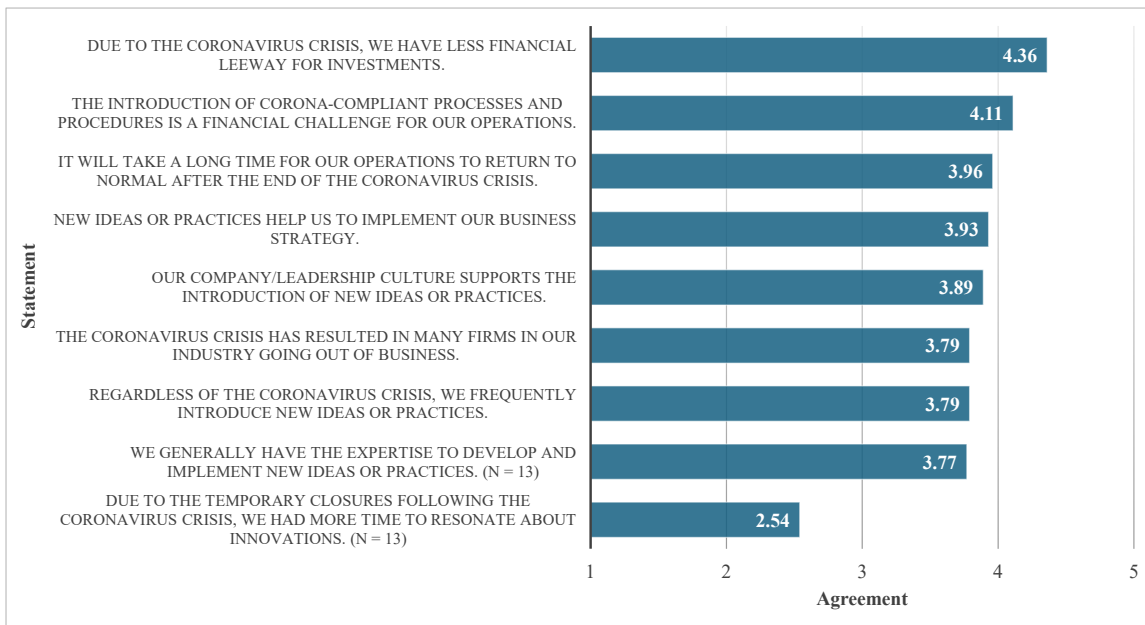


Figure 3. Accommodation providers' self-assessment of their innovation behavior (agreement on a five-point Likert scale), n = 28.

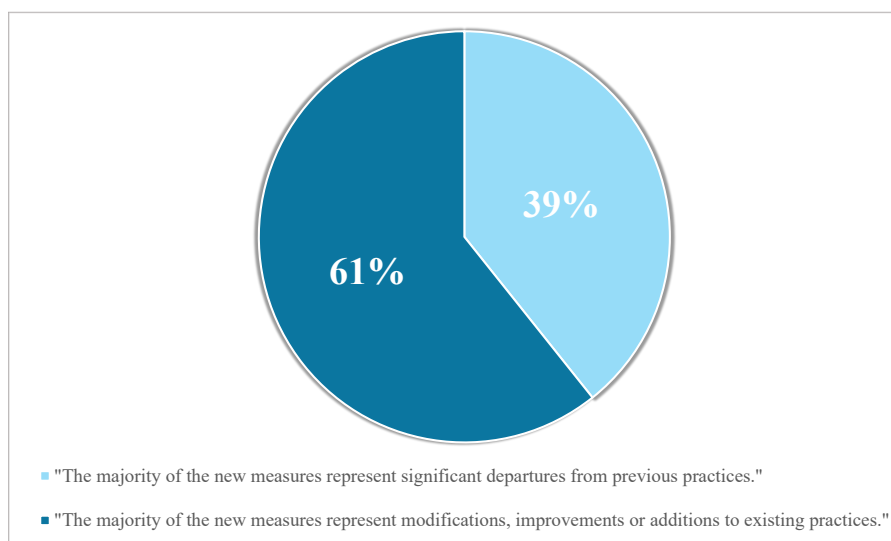
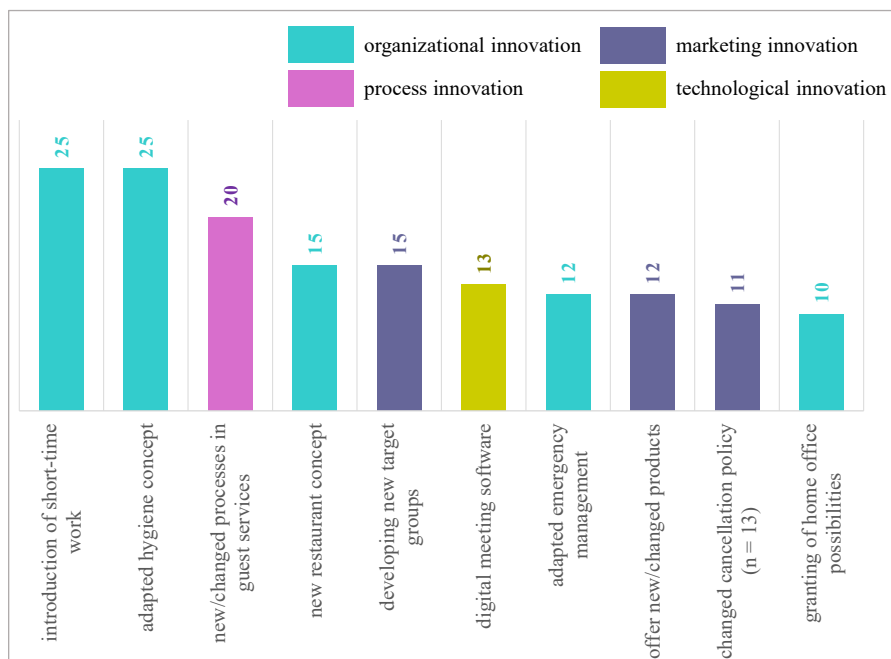


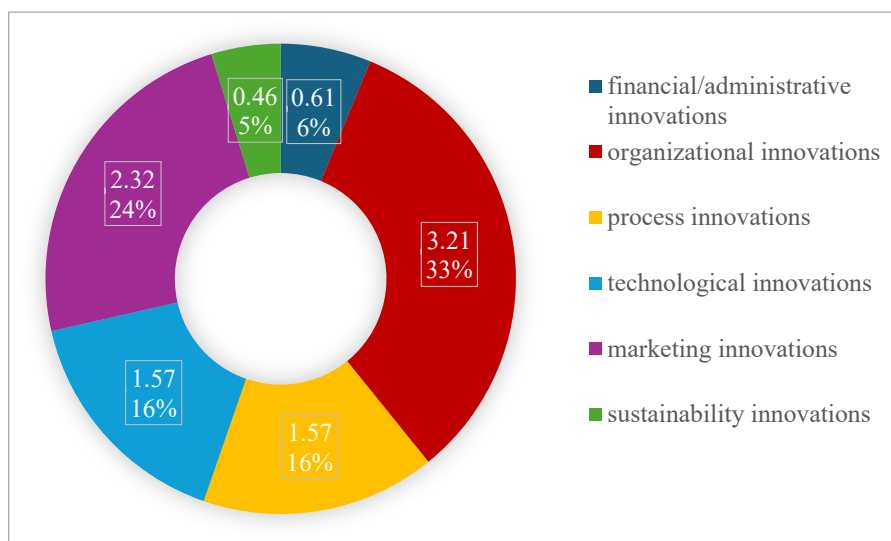
Figure 4. "What is your overall assessment of the degree of novelty of the measures introduced or planned as a result of the coronavirus crisis?" (two answer options, n = 28).

With respect to the different innovation types, the highest innovation activity was found with organizational innovations. Less often stated were marketing, technological, and process innovations (Figure 5). The fact that the accommodation providers on average implemented innovations from different areas confirms the inter-relational logic of service innovations (Figure 6).

Overall, the coronavirus crisis increased the immediate innovative effort as a reaction to the new situation and forced the accommodation providers to fulfill the newly introduced legal requirements. Most of the implemented innovations are incremental and are intended to make the existing business model more resilient, competitive, and efficient instead of overthrowing it completely. Given the moderate demand-pull for innovations by customers, this can be considered a rational strategy.



**Figure 5.** Most frequently adopted/implemented innovations (no. of accommodation providers that have adopted/implemented the innovation,  $n = 28$ ).



**Figure 6.** Average no. of adopted/implemented innovations per accommodation provider by type ( $n = 28$ ).

### 5. Discussion

This research empirically confirms the dramatic impact of the coronavirus crisis on the hospitality industry whose customer-centered business model was severely affected by the phenomenon. However, in contrast to Breier et al.’s [31] finding this did not imply the introduction of a completely new business model. Rather, in accordance with Duarte Alonso et al. [27], various adjustments were made to keep the existing model viable under crisis conditions. This tendency towards incremental innovations confirms Martínez-Ros & Orfila-Sintes [6]. Surprisingly, these adjustments were not primarily related to the use of technology, contradicting Hao et al. [33]. This discrepancy might point toward differences in the crisis and innovation behavior between Chinese and German hoteliers. The latter may not yet have understood the positive impact of technological innovations on guest satisfaction and revisit intention [42]. An alternative explanation is that the surveyed businesses were primarily driven by an adaptation-progression view towards innovation [15].

In light of these findings, one could argue that while innovation inertia was reduced [43], a significant level of cautiousness at least with respect to radical and technological innovations has

prevailed. Hence, it remains to be seen if the crisis marked the starting point for a change in the hospitality industry toward an *adaptive culture* [44]. Overall, the findings show great overlap with Hidalgo et al. [14] who identify different, phase-dependent crisis responses, i.e., initial “State of Alarm” actions to ensure business survival, and planned strategies to ensure business success under crisis conditions. Also, Dahlke et al.’s [13] finding that businesses tried to fulfill customer needs during the crisis with an innovation mix of different types is confirmed. In line with Hao et al. [33], many of these coronavirus-induced innovations will also be kept after the crisis.

Furthermore, this study confirms the pivotal role of legal requirements for hospitality businesses’ crisis behavior [45]. During the crisis’ shock phase, strict and unambiguous rules forced the accommodation providers to implement similar practices. In the later phases of the crisis, when the legal frame allowed for more initiative, the role of organizational culture, leadership, and managerial and employee support for successful innovation adoption became evident [46]. Overall, it is apparent that during the crisis, the accommodation providers were norm takers instead of norm setters.

With respect to innovation triggers, this means that an inverted regulatory push induced by the *suspension* of governmental requirements, restrictions, and prohibitions can be attested. In contrast, the demand-pull by sensitive and health-conscious consumers [32] was very moderate. It might be that consumers themselves have not sufficiently recognized the potential of innovations to improve their own service experience or do not perceive the hospitality industry willing or capable to leverage on innovations for their guests’ advantage.

## 6. Conclusions

Hospitality businesses are less innovative compared to their counterparts from other industries. However, for a period of more than two years, the industry’s stable business model was challenged by the coronavirus crisis, which had a significant negative effect on nearly all business areas. All surveyed and interviewed accommodation providers showed an adaptive reaction to this unforeseen disruption. Thus, innovation inertia ended, at least for the crisis period. It remains to be seen if this development is permanent, not least due to the industry’s notorious bottleneck, the financial means for investment.

With respect to the aim of this study to understand the impact of the coronavirus crisis on hospitality organizations and their respective responses, it can be concluded that the impact was drastic, and the responses were dependent on the crisis phase. The crisis can be divided into three consecutive phases whereby innovation behavior changes from phase to phase. Taking a theoretical perspective, a shift in innovation motives from adaptation-progression to competition-wealth is apparent.

Overall, the crisis led to the increased adoption and implementation of different innovation types. In the majority of cases, these were permanent and incremental, refuting *H1*, but supporting *H2*. A theory-related conclusion is that existing models of innovation and crisis behavior do keep their explanatory power if they are applied in the hospitality context. Grasping the crisis with a phase model, and the assessment of innovation from both an adaptation-progression and a competition-wealth view each proved to be fruitful strategies as they helped to understand both complex phenomena under study in a more structured and comprehensive way. Hence, future studies should consider these perspectives when studying crises and innovation. Furthermore, some specifics of the German hotel industry such as its relative technology-reluctance and its tendency for incrementalism were carved out. Future studies may build up on these findings and investigate these phenomena further.

Differentiating between three crisis phases also allows for more specific support for the industry’s innovation efforts. In the shock phase, hotels and guesthouses should be informed about readily available innovations and how these can be implemented. In the acknowledgment phase, management training should be provided to encourage the implementation of organizational innovations that allow for profitability under crisis conditions. In the adaptation and change phase, long-term monetary support is necessary to finance costly innovations that increase the hotels and guesthouses’ competitiveness.

This study also highlighted that the accommodation providers’ risk and crisis management capabilities should be improved. Foreseeing future crises and being able to react appropriately to them, inter alia with innovations, saves businesses from bankruptcy and thus prevents economic and social damage.

Although this study increased the understanding of the effect of the coronavirus crisis on business behavior, due to the small sample size, the findings cannot be applied in a general way. A further limiting factor in this respect is the study's regional focus. Following, future research efforts should increase the sample size and sample frame to provide further empirical evidence for the implied phase model of reaction to the coronavirus crisis.

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### Conflicts of Interest

The author has no conflict of interest to declare.

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