Achieving customer loyalty during post-pandemic: an asymmetric approach

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Abstract

The study aims to investigate causal recipes to improve restaurant customers' loyalty (LOY) during COVID-19 post-pandemic. The study utilizes Fuzzy-set Qualitative Comparative Analysis (fsQCA) within the framework of complexity theory to examine the intricate relationship between antecedent conditions, including Socially Responsible COVID-19 practices (CSR), Service Quality (SR), Customer Experience (EXP), Customer Satisfaction (SAT), Trust (TR), and Customer Commitment (COMM). The study used a quantitative survey approach, using a Likert scale to achieve the study aim. The survey has been strategically developed to gather intricate replies, taking influence from well-established scales within the area. The research purposefully recruited customers from the restaurant industry in Pakistan. A total of 450 full and valid replies were obtained via the use of Google Forms and paper questionnaires. The fsQCA approach is used to examine the data and ascertain configurations or combinations of antecedent situations that contribute to enhanced levels of loyalty. The results indicate that LOY is a multifaceted phenomenon in the post-pandemic phase of COVID-19 and is not only influenced by individual antecedent situations. This study identifies many routes that lead to increased levels of loyalty, highlighting the need to adopt a comprehensive and integrated strategy. The research emphasizes the diverse impacts of important factors, including CSR, SR, EXP, SAT, TR, and COMM, on loyalty. The novelty of this study is in its utilization of fsQCA and complexity theory to investigate LOY inside the restaurant sector among the distinctive circumstances of the post-pandemic period of COVID-19. This paper presents a critique of conventional symmetrical methods and proposes a comprehensive viewpoint on LOY, highlighting the need for sophisticated and integrated theoretical frameworks. Through the exploration of several routes to increased levels of LOY and the identification of the intricate influences of numerous preceding factors, this study enhances both theoretical and practical comprehension. The study places significant importance on an innovative research methodology and its potential impact on restaurant management, making it a noteworthy contribution to the current body of literature.

Keywords Causal recipes, fsQCA, Customer loyalty, Restaurants, COVID-19, COVID-19 post-pandemic

Introduction

The World Health Organization (WHO) officially designated the COVID-19 outbreak as a Public Health Emergency of International Concern in January 2020 and subsequently classified it as a pandemic in March 2020

[79]. The COVID-19 pandemic posed a substantial threat to global public health security [74]. To reduce the spread of the pandemic, governmental officials swiftly enacted several measures, including the imposition of lockdowns, the implementation of travel restrictions, and the enforcement of quarantine regulations [75].

Public health officials agree that even though the pandemic is over, it is not over yet [51]. What does this mean for professionals, powerful businesspeople, and experts in their fields? Some of the problems are making peace with hybrid workplaces, working hard to make up for missed deadlines, and not becoming "lethally inflexible"

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if the virus changes into a more dangerous threat. The restaurant business needs to figure out how to be ready for a disaster like the COVID-19 pandemic. The fear of getting COVID-19 could lead to mistrust in places where different groups share space.

Lai and Cai [30] noted that the pandemic has made the hospitality industry even more unstable and has pushed for a more casual work environment. Many companies in the restaurant business use cutting-edge technologies like artificial intelligence, contactless automation, and virtual reality in their operations and marketing plans to protect the health and safety of their customers and staff [30]. As we move toward the COVID-19 post-pandemic era [73, 76], it is important to know how the restaurant's future operations would create an emotional bond with customers that would make them more likely to interact and buy from the restaurant.

Evaluating customer loyalty (LOY) has become a complex task, particularly with the increased challenges posed by the spread of COVID-19 [34]. Traditional academic research methods such as regressions and structural equation models have proven insufficient in providing insights into how to enhance LOY [34] (Kurtulmuşolu and Atalay 2020). Since they focus on the individual effects of different factors on LOY rather than their combined effects. Due to the intricate nature of LOY, understanding the specific combinations of various factors (antecedents) that contribute to increase LOY in the post-COVID-19 era can be challenging. Mainstream studies that use standard symmetrical methods only show the direct link between study constructs [78]. Symmetrical methods may not be enough to figure out what makes customers more loyal in post-pandemic due to their focus on the net effects. The net effects estimation approach primarily aims to assess the impact size of each predictor on the outcome. However, regression analysis, which relies on this approach, has its limitations. One such limitation is the assumption of a linear relationship, which is often not met. Additionally, dependence on the net effects of individual variables can lead to multicollinearity [68]. With multicollinearity, the regression estimator may produce statistically insignificant results. Moreover, the significance of predictors' net effects may change from significant to insignificant based on the inclusion of additional variables (Woodside 2013).

LOY is a complex construct that has developed into one of the critical strategic marketing tools for business survival [34]. Existing research has assessed how different factors directly or indirectly affect loyalty in the restaurant sector industry through symmetric methods. However, there is still no consensus on the factors that generate customer loyalty [56] (Huang et al. 2017). Although limited, there has been some research on how different factors can impact customer loyalty during COVID-19 using the conventional symmetric approaches. Cai et al. [8] assessed the impact of a green/healthy physical environment, well-being perception (WBP), and tourist satisfaction (TS), on tourist loyalty (TL). Ding and Jiang [13] assessed the inter-relationship between customer awareness of restaurant philanthropy, customer social benevolence trust, perceived restaurant reputation, affective commitment, and loyalty. Management and marketing research reveals that symmetric methods have significant limitations since they view loyalty as primarily an outcome of several isolated antecedents [15] and that existing research based on symmetric methods is less informative and has limited theoretical implications than a study based on asymmetric methodology (Woodside 2013), [77]. The arguments further strengthen the notion that the constructs on their own may not be enough to lead to improved loyalty and there is a need for further research on the causal recipes that could lead to improved customer loyalty.

Fuzzy-set Qualitative Comparative Analysis (fsQCA) is used to describe combinatory situations instead of estimating regression models that only find statistical significance based on steady increase or decrease [49]. fsQCA helps find different ways to attain an outcome. This is a step beyond the "all or nothing" paradigm [49]. By setting up the combinatory criteria, fsQCA gives a complete picture of how the parts relate to each other. Hence, the main advantage of fsQCA over regression analysis is that it can measure the effects of multiple antecedent conditions at once [68]. The results of asymmetric analysis depend on how the factors that make up an algorithm are put together [47, 78]. fsQCA is often able to find the hidden patterns [54]. Additionally, it is not used very often in the field of hospitality [11].

Due to how hard and vague it is to define loyalty, especially during COVID-19 post-pandemic, it can be helpful for the restaurant market to look at how different factors interact with each other to affect LOY. Prentice and Loureiro [52] noted that complexity theory suggests that the same results can be looked at from different or even contradictory points of view. Using fsQCA, it can be figured out how predictors fit together to make recipes of necessary and sufficient conditions that lead to the underlying outcomes [54]. Prentice and Loureiro [52] noted that complexity theory can be used to test the idea that similar results can be studied using different or opposing methods. The theory looks at the Socially Responsible COVID-19 initiatives (CSR), Service Quality (SR), Customer Experience (EXP), Customer Satisfaction (SAT), Trust (TR), and Commitment (COMM) as predictors that could improve loyalty in COVID-19 post-pandemic.

CSR is a significant predictor of LOY (Martínez and Rodríguez del Bosque 2013); [26, 48], (Chubchuwong 2019; Yu and Hwang 2019). However, there is little research that considers CSR as an antecedent for causal conditions in configuration to attain an outcome (complexity theory) [32]. Furthermore, the impact of socially responsible activities during COVID-19 on restaurant operations from the customer perspective needs to be investigated [13]. Consequently, for COVID-19 post-pandemic, this research examines how socially responsible acts impact restaurants' future operations, particularly from consumers' perspectives. Existing research supports the notion that poor Service Quality (SR) can result in a loss of loyalty [4]. The influence of Customer Satisfaction (SAT) on LOY in the hotel industry is also evident [4, 28]. In both theory and practice, Customer Experience (EXP is a relatively recent marketing term, it focuses on creating a memorable, entertaining, and distinctive experience (Jain et al. 2017; Shoaib et al. 2022). EXP has been proven to primarily influence LOY [23]. Previous research in the hotel sector has shown that Trust (TR) impacts customer loyalty [55]. Commitment (COMM) has been identified as a fundamental determinant of loyalty (LOY) [1].

This configuration-based study examines COVID-19 post-pandemic LOY circumstances. Before COVID-19, several studies employed fsQCA (e.g., [61]), but this study is innovative since it examines strategies to enhance LOY. The restaurant industry seldom sees causal configurations, particularly when symmetric approaches are used. Understanding how multiple components might work together to improve company success is less well-recognized yet crucial [52]. Configuration-based research on how consumers' perceptions of CSR, SR, EXP, SAT, TR, and COMM contribute to LOY has yet to be examined when applying complexity theory to the restaurant business during COVID-19 post-pandemic. This research examines CSR, SR, EXP, SAT, TR, and COMM elements that explain how to create a loyal client base during COVID-19 post-pandemic.

During COVID-19, empirical data evaluate how successfully complexity theory is applied to restaurant loyalty literature. Based on complexity theory, the study investigates how CSR, SR, EXP, SAT, TR, and COMM interact to produce LOY, which prior research has demonstrated is a major consequence of restaurant customer experience [39]. Complexity theory favors fsQCA applications because they provide a fuller data view [35, 47]. Pappas [50] predicted client behavior in salons and spas and online shopping using fsQCA and complexity theory. Olya and Altinay [47] employed four complicated configurational ingredients—risk perception, the anticipation of the weather, scheduling of visits, and disconfirmation—to identify causal recipes for predicting destination loyalty and purchasing weather insurance. Risk perception, weather expectation, visit scheduling, and disconfirmation. They also requested LOY-improving cause combinations.

Based on the identified limitations in the existing research, the study offers numerous contributions. First, this is one of the first research studies to utilize a configurations approach to assess the combination of conditions that could lead to improved customer loyalty in COVID-related settings. Furthermore, even before COVID-19, there was a relative dearth of research studies using fsQCA, this study answers numerous calls to assess the different causal configurations that could lead to improved customer loyalty [47, 61]. To the best of the author(s) knowledge and through search in peer-reviewed databases, restaurant-related research has not yet taken into consideration and assessed the configurational approach using customer perception of CSR, SR, EXP, SAT, TR, and COMM in a configurational study to explain their influence on LOY considering the complexity theory during COVID19. Consequently, in the restaurant sector (hospitality industry) related literature, understanding of different routes that lead to heightened LOY is limited (Rivera et al. 2016) and further scarce in the context of COVID-19.

Additionally, this study contributes to the existing literature by employing empirical data to ascertain the application of tenets of complexity theory (Woodside 2013) [77]. This is significant since there is a significant lack of literature on the ways to attain loyalty during COVID-19 using complexity theory. Based on complexity theory, the study endeavors to further the understanding of how the interaction of CSR, SR, EXP, SAT, TR, and COMM lead to LOY; a critical outcome of customer experience with the restaurant sector recognized by existing research [39]. fsQCA has recently received increased attention as it allows researchers to gain a deeper and richer perspective on the data, together with complexity theory [47, 77]. Finally, Existing research on the LOY has extensively focused on data collected before the COVID-19 pandemic. Data collection and research design might be different if undertaken under current circumstances where, for example, customer mobility is drastically reduced, and customer demands more safety measures in the restaurant than required under normal circumstances.

Literature review
Complexity theory
In complexity theory, the focus is on a deeper understanding of patterns of causal "antecedents" that lead to the desired outcome [82]. Instead of highlighting the main outcome, complexity theory goes beyond and incorporates the equifinality principle that reveals

different sets of causal conditions, combined in sufficient configurations, explaining the outcome [16, 77].

As per the first tenet of complexity theory, individual factors are hardly sufficient to predict the expected outcomes. In other words, a high score of loyalty might not sufficiently be achieved through a simple antecedent (e.g., service quality), even though it is an important ingredient of loyalty [52]. Tenet 2 notes that it is sufficient based on the take complex recipe of two or more conditions for the consistently high outcome. This means that a sufficiently high score of LOY is possible through complex configurations, which emerged through a blend of antecedents (for instance, CSR, SR, EXP, SAT, TR, and COMM). Tenet 3 notes that by following the equifinality principles, the outcome might not necessarily be achieved through sufficient modeling. Accordingly, multiple pathways (or solutions) could achieve them [77, 78]. The current study proposes that multiple patterns (for instance, CSR, SR, EXP, SAT, TR, and/or COMM) are sufficient to achieve high loyalty through a blend of different factors. Tenet 4 suggests a causal asymmetry, pointing toward causal recipes that can predict loyalty, are rare, and do not oppose any other outcome.

According to tenet 5, to indicate that a high score of recipes is linked with a high score of a similar outcome, a unique blend of ingredients is included in each recipe. For instance, a complex condition describing customers' loyalty might be led through CSR, SR, and a high EXP. Meanwhile, a similarly high score of loyalty could be achieved through improved CSR, SR, and the lack of SAT and high COMM. In tenet 6, a narrow-focused generalization principle (X makes a significant relationship with Y positively/negatively) is challenged. The foremost focus of this tenet is on "conditions," for example, under what condition X makes a significant positive/negative relationship with Y? To achieve a high-scored loyalty, the given causal configuration has relevance, but not in all cases. While the overall results, provided through symmetric methods, disregard the individual cases, asymmetric methods take them into account. Meanwhile, it must be considered that customers may have different antecedent conditions of loyalty; therefore, for a diverse group of customers, loyalty can be shaped differently.

Cases with very high (low) predictors may not influence the outcome unless these cases also are very high in R and T (additional conditions) (Tenet 7). Accordingly, if a restaurant has low CSR, low quality of service, and a bad image, it cannot achieve a high customer loyalty score. Tenet 8 reflects that a significantly meaningful, deeper insightful and accurate prediction of the outcome can be achieved by measuring loyalty as a configuration of antecedent conditions.

Customer loyalty (LOY)

According to Lai et al. [29], the operationalization of LOY is based on the customers' behavioral intentions and determined as repurchase, recommendation, and word-of-mouth intentions. Assaker [4] observed that it is likely to receive positive word-of-mouth from loyal customers, this is particularly important in COVID-19 post-pandemic as customers are likely to recommend (or take recommendations) their friends and family to have a safer experience. Attaining LOY has received a severe dent during COVID-19 due to the increased intention of customers to stay home and avoid crowded places like restaurants. Accordingly, the restaurant managers are more focused on retaining their customers, especially during the eased lockdown situation. In the hospitality market context, the scholars (i.e., [44, 55]) showed interest in comprehending better factors that can lead to LOY, specifically in the context of COVID-19 post-pandemic. The bond established between the brand and consumer during this crisis can be more meaningful and lasting than during "peaceful" times. Therefore, the COVID-19 post-pandemic could be a significant opportunity for restaurants to actively engage with their customers through adequate strategies and agendas [21].

Drivers of customer loyalty during COVID-19
Socially responsible COVID-19 practices (CSR)
COVID-19 poses challenges to businesses concerning CSR. However, some firms/retailers have tried to profit from this crisis. Fortunately, many firms stood firm against unethical business practices during the crisis and actively participated in various CSR initiatives [21]. Customers have built up high expectations from leading brands, especially their favorable brands, during the current crisis regarding their efforts to combat the virus, so a restaurant's genuine and authentic CSR can create a stronger rapport among its customers [21]. Palacios-Florencio et al. [48] and Ming et al. [41] observed that the companies actively engaged in CSR have positive word-of-mouth and powerful customers' willingness to purchase frequently. In this way, the customers reflect positive assessments and show encouraging customer attitudes, leading to increased loyalty [40]. Various scholars (e.g., [26, 48, 82]) have observed a positive relationship between CSR and LOY in the hospitality market context.

Service quality (SR)
The comparison between "actual performance" and "the expectations of the customers" is described as service quality [81]. Liat et al. [37] argued that since service quality cannot be conveniently established, comparing actual

performance and customer expectations is a real challenge. This challenge has become severe due to COVID-19, "customers" expectations from the hospitality sector have significantly increased. Since COVID-19 has led to swift and unanticipated changes for the restaurant and its customers, responsiveness to customer requirements has become even more critical. The ability of the business to understand "customers" emotions and their prompt reactions to customer expectations can lead to improved service interactions [5, 42]. In COVID-19, consumer interactions are reshaped by how well companies offer quality service by displaying empathy, care, and consideration for consumers and the environment [12]. A positive relationship between SR and LOY is observed in the existing studies (e.g., [4, 33]). Besides, the weak SR might result in losing customers [72]. The hospitality industry has also identified the significance of the relationship, where Anabila et al. [3] found that several components of SR directly affect LOY. With an improved level of SR, a business can have heightened LOY that can lead to improved performance [19].

Customer emotional experience (EXP)
Customer experience (EXP) is the interaction of a customer with a company and its products. Overall, the experience reflects how the customer feels about the restaurant and its offerings [64]. Loyalty is identified as a primary outcome of EXP [9, 38, 69]. EXP can help shape improved loyalty to the service provider [27, 38, 69]. While there is not much research on how customer experience impacts loyalty in a restaurant, Manyanga et al. [38] found a significant impact of customer experience on loyalty. In their study, Hussein et al. [23] found that social interaction (experience quality) significantly impacts customer loyalty. Due to COVID-19, customer experience is at the very top of every business priority list. The traditional value proposition may not be adequate for creating differentiation for customers, businesses need to focus on the customers' experience, like products and services, to create a seamless total experience. Throughout the process, consumers' thoughts about the threat are likely to interfere with their service experiences. Individuals can feel various emotions because of a threat, and these emotions can interfere with their sense of legitimacy toward restaurants and their behavioral intentions [80].

Customer satisfaction (SAT)
Gerdt et al. [18] describe SAT as customers' pleasure resulting from the fulfillment of service expectations. The SAT stimulates LOY behavior since satisfaction is a signpost for heightened customer engagement [17]. Usage satisfaction reflects customers' product/service quality beliefs and generates a repurchase intention [24].

Various studies (e.g., [4, 24, 28, 46]) affirm the positive relationship between SAT and LOY in the hospitality market context. This shows that the level of satisfaction with the service provided will stimulate future commitment to the service provider. For hospitality, among the potent indicators of LOY are satisfaction with service provision, referral, and recommendation [56, 58]. Due to COVID-19, the customer may be a lot more demanding in comparison to the pre-COVID-19 period. This would require businesses to be more vigilant to the customers' needs and focus on issues that can significantly shape customer satisfaction, reduce the risks, and improve the feel-good factor during COVID-19 post-pandemic. However, if SAT is sustained when the economy regains its position and there is a higher disposable income, LOY will increase [71].

Customer trust (TR)
Customer trust (TR) refers to "confidence in an exchange partner's reliability and integrity" ([43], p. 23). According to Martinez and Rodriguez del Bosque (2013), it reflects the customer's belief that the business offers reliable products/services and will endeavor to serve the customer's interest, thereby illustrating its positive contribution to loyalty and representing a strategic imperative for hospitality sector [55]. According to the literature, trust is necessary to establish and maintain long-term relationships between a business and its customers [48]. Previous research in the hospitality sector has shown that consumers trust determines their subsequent loyalty and engagement, trust represents the customer's willingness to maintain the relationship, thus stimulating loyalty [45, 48, 55]. This is particularly important during COVID-19 post-pandemic, where restaurants that can build trust will retain their customer base. Mistakes that may not have been severe during COVID-19 can be fatal for businesses in COVID-19 post-pandemic. During COVID-19, trust is based on a sense of security, and it is another important impetus for overcoming the barrier of perceived risk [7].

Customer commitment (COMM)
To develop successful relationship marketing, relationship commitment and trust are considered critical and essential factors [43]. Emotional or affective commitment is described in this study as liking a partner (firm), enjoying the relationship, and feeling a sense of belongingness [43]. Commitment has significantly affected loyalty [25], and affective commitment is central to hospitality loyalty [25]. COVID-19 has affected businesses and made customers more vigilant, it has also offered restaurants a long-term relationship with the customers and improved their commitment. This can also be achieved

during COVID-19 post-pandemic but through focusing on the customers' needs complemented by the issues pertinent to COVID-19. This is possible if customers start to believe that a restaurant has the best intentions for their customers and is making every possible effort to improve the security of their customers. The mentioned literature justifies an assumption of the following hypothesis:

H1 Disparate configurations of causal conditions (CSR, SR, EXP, SAT, TR, and COMM) are equifinality in achieving high LOY.

Research methodology

The conscious choice to use the quantitative survey research approach in this study was made to bolster the robustness and reliability of the findings, while also ensuring alignment with the research issue. The study used a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree) to evaluate the influence of socially responsible COVID-19 practices on LOY within the restaurant industry in Pakistan.

The Likert scale was selected based on its widespread renown in the field of social science research for effectively capturing nuanced responses. The research conducted by Latif et al. [31] showcased the efficacy of using this method for evaluating intricate structures, establishing a precedent for its use in the present investigation. The scale underwent a meticulous adaptation process based on previous research and was subjected to comprehensive modifications, directed by investigations conducted by Latif et al. [32] and Sahibzada et al. [63], to ensure its appropriateness and dependability. Validation was also guaranteed by a thorough assessment conducted by two professionals, namely a renowned professor specializing in the field of hospitality and an expert in social responsibility. This rigorous review process instilled a sense of assurance over the appropriateness and validity of the subject matter.

The selection of variables for the model was conducted after an extensive assessment of relevant literature, hence assuring compliance with established frameworks and the use of effective approaches.

The measurement items were primarily based on existing research and were modified to suit the COVID-19 pandemic. The modified scale was reviewed by two experts, one a senior professor in the hospitality sector and the other expert has published in social responsibility and the hospitality industry. The socially responsible COVID-19 practices scale was self-developed and had 7 items. To evaluate the quality of service, four items were derived from the work of Ryu et al. [62], a scale that is well-recognized for its effectiveness in many contexts. The concept of Customer Experience, which consists

of seven distinct items, has been derived from research conducted by Serra-Cantallops et al. [64]. This study is well-acknowledged for its comprehensive examination of customer interactions. The researchers used a Customer Satisfaction measure consisting of six items, which was derived from the work of Ruiz et al. [60], due to its well-documented dependability. The measurement of trust in this study was conducted using a four-item scale developed by Rather and Hollebeek [55], which is recognized for its comprehensive assessment of trust within the context of business contacts. To measure Customer Commitment, we used a scale consisting of five items developed by Bridson et al. [6]. This scale has been well-recognized for its ability to effectively capture various aspects of customer loyalty. The study's basis was reinforced by the inclusion of the six-item customer loyalty measure, as established, and validated by Bridson et al. [6].

The process of data collecting included the deliberate selection of participants from the restaurant business in Pakistan, with the specific criterion of having engaged in at least one restaurant visit during the COVID-19 period. The use of Google Forms and paper surveys enabled the collection of responses in a flexible manner.

The total number of responses was 459, and 450 of them were complete and useable, with a response rate of 92%. About 27 years was the median age of the people who participated in the survey. There was a total of 290 male respondents (64.44%), compared to 160 female respondents (35.56%), in the sample.

Data analysis and results
Measurement model
Confirmative Factor Analysis (CFA) results show that the standardized factor loadings for each item exceed the recommended limit (0.50). One item (CSR1) was removed due to the high modification indices. Item's factor loading ranged from 0.78 to 0.89 (Table 1). The results of selected fit statistics, the overall fit of the measurement model was appropriate ($x^2 = 1562.996$, $df = 631$, $x^2/df = 2.477$, CFI = 0.941, TLI = 0.934, SRMR = 0.048, and RMSEA = 0.057). Cronbach's Alpha and Composite Reliability (CR) were used to ensure the constructs' reliability [20]. Reliability and validity results with the item's factor loading are presented in Table 1. The Cronbach's and CR values are greater than the minimum value required (0.70). AVE (> 0.50) [20] established convergent validity. All AVE values for structures are greater than the minimum threshold of 0.50. Finally, the discriminant validity was estimated using the Fornell and Larker's (1998) criteria and the Heterotrait–Monotrait (HTMT) ratio. The square root of AVE for each construct transcends the interaction of the construct with other constructs (Fornell and

Table 1 Factor loadings, reliability and convergent validity

	λ	Alpha	CR	AVE
Corporate social responsibility		0.945	0.943	0.733
CSR2	0.789			
CSR3	0.829			
CSR4	0.893			
CSR5	0.893			
CSR6	0.873			
CSR7	0.854			
Service quality		0.880	0.879	0.646
SR1	0.786			
SR2	0.799			
SR3	0.800			
SR5	0.829			
Customer experience		0.919	0.917	0.612
EXP1	0.740			
EXP2	0.769			
EXP3	0.777			
EXP4	0.830			
EXP5	0.810			
EXP6	0.782			
EXP7	0.764			
Customer satisfaction		0.938	0.938	0.706
SAT1	0.879			
SAT2	0.886			
SAT3	0.890			
SAT4	0.795			
SAT5	0.859			
SAT6	0.756			
Customer trust		0.896	0.897	0.684
TR1	0.847			
TR2	0.819			
TR3	0.811			
TR4	0.835			
Customer commitment		0.926	0.929	0.721
COMM1	0.864			
COMM2	0.848			
COMM3	0.839			
COMM4	0.876			
COMM5	0.821			
Customer loyalty		0.940	0.939	0.717
LOY1	0.841			
LOY2	0.868			
LOY3	0.879			
LOY4	0.848			
LOY5	0.845			
LOY6	0.807			

Larker 1988). In addition, the HTMT ratio was found to be less than the required limit of 0.85 [22]. Therefore, discriminant validity is established (Table 2).

fsQCA Approach

The study employed fsQCA to analyze the combination of antecedent conditions (CSR, SR, EXP, SAT, TR, and COMM) leading to LOY. fsQCA analysis was performed using fsQCA V.3.0.

Calibration

By utilizing Ragin's [53] suggested procedure, three qualitative anchors [16] were identified to perform calibration: (1) 95th percentile for full membership, (2) 5th percentile for full non-membership, and (3) 50th percentile as cross-over point.

Necessity conditions

According to Rihoux and Ragin [59], a condition becomes necessary when the outcomes might not occur in its absence. A cutoff point of 0.9 indicates "always necessary," 0.8 indicates "almost always necessary," and 0.65 indicates "usually necessary" causal conditions [53]. As per the results shown in Table 3, not even a single condition can be considered "always necessary." It means that on its own, no condition might lead toward enhanced customer loyalty.

Solution

The consistency can be evaluated after the identification and calibration of the required conditions. According to Ragin and Fiss [54], an above 0.75 consistency score indicates a sufficient configuration to attain the expected results.

The fsQCA results show multiple configuration paths leading to LOY based on the notation of Ragin and Fiss [54] (Table 5). Solution consistency is greater than 0.80, indicating that a large portion of the result is covered by the detected configuration, with a significant proportion of the detected configuration result. Solutions that improve LOY involve a specific combination of antecedents. The existence of multiple solutions for LOY indicates equifinality [16]. Therefore, H1 is supported (Table 4).

Grounded on the parsimonious and intermediate solution, the core and peripheral conditions are identified with the help of the fsQCA results. A peripheral condition appears only in one of the two solutions in either

Table 2 Discriminant validity—HTMT and Fornell and Larcker

	CSR	SR	EXP	SAT	TR	COMM	LOY
CSR	*0.856*	0.502	0.562	0.587	0.649	0.633	0.639
SR	0.499	*0.803*	0.674	0.839	0.812	0.433	0.605
EXP	0.563	0.677	*0.782*	0.708	0.742	0.630	0.711
SAT	0.573	0.856	0.688	*0.840*	0.824	0.491	0.695
TR	0.637	0.815	0.742	0.821	*0.827*	0.539	0.701
COMM	0.623	0.440	0.614	0.472	0.532	*0.849*	0.763
LOY	0.636	0.609	0.719	0.685	0.704	0.755	*0.846*

Bold and Italics show the AVE. Values for HTMT are above the diagonal and Correlations are shown below the diagonal

Table 3 Necessary conditions

Factors	Consistency	Coverage
CSR	0.792598[a]	0.813851
~CSR	0.564759	0.536867
SR	0.802323[a]	0.756581
~SR	0.559852	0.579929
EXP	0.816638[a]	0.829978
~EXP	0.570927	0.547960
SAT	0.824427[a]	0.805428
~SAT	0.557106	0.555855
TR	0.784135[a]	0.826988
~TR	0.605592	0.561952
COMM	0.811778[a]	0.842696
~COMM	0.555440	0.522752

~Indicates the absence of a condition. [a]Meets 0.65 consistency threshold for usually necessary conditions

Table 4 Intermediate solutions

Conditions	1	2	3	4
CSR	●			
SR		●		●
EXP	●		●	●
SAT				●
TR				●
COMM		●	●	
Raw coverage	0.69	0.67	0.70	0.61
Unique coverage	0.01	0.06	0.01	0.02
Consistency	0.90	0.92	0.93	0.91
Solution coverage	0.85			
Solution consistency	0.86			

Large circles: Core conditions, small circles: peripheral condition, and blank space: do not care

parsimonious or intermediate solutions. When a condition appears in both parsimonious and intermediate solutions, it is referred to as a core condition. Five conditions, identified as CSR, SR, EXP, SAT, and COMM, were found as the core; whereas, TR was found as the peripheral condition. fsQCA results show a total solution coverage of > 0.50, which is in the acceptable range of 0.25–0.90 [54].

Predictive validity

The ability of a model to predict the outcomes with different datasets is considerably important [47]. For predictive validity, the study sample was subdivided into two sub-samples. Subsample 1 was compared to the total sample, the results of which showed a consistency of 0.90. This is like the overall sample results. Further, an example of a predictive validity test was implemented to indicate a high score in LOY in combination with algorithm (EXP * COMM), fsQCA results from subsample 1 (consistency: 0.97) are available in the overall sample and found to be similar (Table 4).

In addition, the configuration model of subsample 1 (CSR * SR * SAT * TR * COMM) (consistency: 0.97 and coverage: 0.54) was tested using the holdout sample (Subsample 2). The subsample 2 results show almost the same asymmetric relationship (consistency: 0.97 and coverage: 0.50). This establishes the model's ability to estimate the resulting conditions with different datasets.

Discussion

The study utilized fsQCA with complexity theory to identify various recipes for improved Customer Loyalty (LOY) during COVID-19 post-pandemic in the restaurant sector. The antecedent conditions in the study include customer perceptions of Socially responsible COVID-19 practices (CSR), Service Quality (SR), Customer Experience (EXP), Customer Satisfaction (SAT), Trust (TR), and Customer Commitment (COMM). Based on the assessment of the necessary conditions (Table 3), the results show that none of the conditions is always necessary. Thus, the results reveal that a combination of conditions would improve loyalty in the restaurant sector during COVID-19 post-pandemic. Further, highlights the complexity of LOY [34] in crises like COVID.

The fsQCA solution (Table 4) revealed that during COVID-19, individual antecedent conditions are not enough to predict high LOY, supporting Tenet 1 in modeling loyalty [77]. The study found support for Tenet 2, the recipe principle. Since LOY cannot merely be achieved through the focus on antecedents and their net effects, the notion that LOY is a complex concept [34] has been further strengthened. In this sense, understanding the drivers or causal conditions of LOY and how they gather to describe an appropriate strategy is highly essential [66]. This is further highlighted during COVID-19 post-pandemic, where the restaurant cannot merely focus on one or two factors to improve loyalty. Businesses need to have a more integrated approach and increased consideration of different factors that can influence LOY.

Considering tenet three, based on the equifinality principle, the results show multiple solutions for attaining higher LOY, supporting equifinality. This could help businesses in COVID-19 post-pandemic to focus on antecedent conditions that are their strength and focus on the factors that they are good at to improve the LOY of the customers. Tenet four points to causal asymmetry and notes that causal recipes predicting improved loyalty are unique. To ascertain tenet 4, recipes for predicting negation of LOY were analyzed; causal configuration ($\sim$ CSR* $\sim$ SR* $\sim$ EXP* $\sim$ SAT* $\sim$ TR* $\sim$ COMM) with consistency (0.96) and coverage (0.56), when compared with other solutions, was novel and not opposite to any causal recipe.

Tenet 5 states that each recipe contains a mixture of specific ingredients, indicating that high scores on these recipes are linked to high scores on the same result. Comparing different solutions provides strong evidence to support tenet five. Solution 1 contains CSR that contributes toward higher loyalty, while it does not appear in other solutions. To achieve a higher score of loyalty, some cases (tenet 6) might be related to a particular recipe. The coverage for any configuration (<1) is revealed through fsQCA. In addition, the evidence is extracted from the sample; as for the different customers, loyalty is shaped differently.

Tenet 7 believes that a subject with a very high/low X does not affect Y unless these cases are too high/low even in R and T. This is also evident as the LOY (solution 1) is not achieved unless the restaurant is high on CSR and facilitates the enhanced customer experience (see Table 4). Unfortunately, the leading research practice is to study factors affecting loyalty individually. Examining loyalty as a configuration of the simple condition can be a valuable procedure to deepen the understanding of pathways leading to an outcome, explain the combinations of antecedents, and add to the estimation of outcomes. Following this approach will help researchers identify

anomalies and achieve the diversity they expect to make effective decisions. Multiple casual approaches (complex conditions of antecedents) are likely to support such a complex outcome (Tenet 8) [77, 78].

fsQCA results showed that CSR was a core condition in only one solution, and it did not makeup as a configuration in the other configurations. This shows a certain lack of the need for CSR to serve as a critical condition in improving LOY and that the absence of CSR is found in other configurations that culminate in improved LOY. To increase LOY, CSR is merely not sufficient. The fsQCA contradicts the social identity theory [70] and observes that customer affiliations do not influence their social identity. Since CSR was not found as a core condition in multiple configurations and was part of just a single configuration, this shows that during the COVID-19 post-pandemic, attaining improved LOY is contingent on other factors apart from CSR. The lack of identification of CSR as the core condition is contrary to the previous expectations identified in this research. Existing research has also shown contradictory results pertinent to the role of CSR in shaping loyalty. On one hand, CSR has been found to have a significant impact in shaping customer loyalty [31, 32]; whereas, García de los Salmones et al. [17] found that CSR has an insignificant impact on LOY, CSR may not be a significant factor in customers' evaluation of their choice of the restaurant during COVID-19 post-pandemic.

Service quality is seen as a major condition in two solutions, while in the rest of the configurations, it is "not important" (i.e., "ignored"), indicating that for both configurations, the SR score may be higher, lesser, or Intermediate for different people. SR as a condition aligns with existing research where SR has significantly affected LOY [28, 42]. The lack of presence of SRQT as a condition contradicts existing research where SRQT has been found to significantly affect CLOY [28]. On the other hand, the lack of role of SR in fostering LOY was observed by Shi et al. [65], predicting an insignificant effect of SR on LOY. Furthermore, recent research confirmed that during COVID-19 post-pandemic, there is an increased need for heightened service reliability in the service industry [2].

EXP was core in three configurations and not important in one. Existing literature consistently highlights a strong connection between customer experience (EXP) and loyalty (LOY). Studies by Srivastava and Kaul [69] and Manyanga et al. [38] have specifically identified loyalty as a prominent outcome of positive customer experiences. These findings collectively underscore the importance of customer experience in driving customer loyalty. This significantly highlights the role of customer experience during COVID-19 post-pandemic in shaping improved LOY. The ability of EXP to shape LOY further

highlights the notion that emotional experiences can interact with "consumers" perceived legitimacy and their behavioral intention [80].

Both SAT and TR were core conditions in the one solution while unimportant in the three configurations. Indicating that for these three configurations, SAT and TR scores may increase, decrease, or remain moderate for various people in similar configurations; nevertheless, it does not characteristically define that configuration. The fsQCA method confirms that SAT and TR are not entirely important to LOY when considered conjecturally with all other antecedent conditions. Although the significance of SAT [4, 46, 55] and TR [45, 48] is evident in previous symmetric research. However, this does not mean that both SAT and TR are not critical in COVID-19 post-pandemic. Existing research has identified SAT as a critical factor in shaping loyalty which is a direct outcome of customer satisfaction in the hospitality industry [28]. Further, Trust is also identified as a key factor in driving customer loyalty [57]. Trustworthiness, including expertise, competence, and benevolence, also significantly impacts customer loyalty in the hotel sector [14]. These findings highlight the critical role of trust in fostering customer loyalty in the hospitality sector.

COMM was found to be a core condition in two of the solutions; whereas, it was "unimportant" (i.e., "do not care") in the rest of the configurations; hence, it is not a defining characteristic in two configurations. Although COMM has been identified as a core condition in two configurations whereas it was unimportant in the other two, it is a significant factor leading to customer loyalty in existing research. COMM as a condition aligns with existing literature where COMM has significantly affected LOY [25]. Customer commitment has been found to have a positive impact on customer loyalty in the hospitality sector [57]. Since it is part of two configurations, the restaurant managers shall focus on building customer commitment during COVID-19 post-pandemic. It is part of two pathways that can lead to improved LOY during COVID-19 post-pandemic. Hence, to attain LOY, customers must believe that the restaurant has the best intentions for its customers and is making every possible effort to improve the security of its customers.

Theoretical implications

The study presented an alternative perspective that leads toward various methods, providing holistic insights into the complex concept of loyalty, for instance, through untying the antecedent conditions of LOY with the help of the fsQCA application. A breakthrough is achieved using the complexity theory in terms of an in-depth understanding of different constructs (CSR, SR, EXP, SAT, TR, COMM, and CLOY) as a combined test model for the restaurant market. Moreover, it is noted that some advanced and integrative test models are required to acknowledge the complex phenomenon of loyalty further and that the relationship between LOY and its antecedent is difficult to examine [48]. Since there are limited numbers of existing studies that examined antecedents of LOY for the restaurant market, the outcomes of this study have served as a supplement. Even among such limited numbers, the focus was to rely on multiple regressions and structural equation modeling, overlooking various other analytical techniques such as fsQCA. Through fsQCA, a provision of analysis can be made on how LOY can be enhanced through a blend of its antecedents (CSR, SR, EXP, SAT, TR, and COMM) and how the complex causal configurations can be better understood (methodology) [47], (Woodside et al. 2018). fsQCA shows that different causal pathways lead equivocally to consumer loyalty, while current research based on traditional statistical analysis such as SEM does not count adequately. The outcomes suggest antecedents like CSR, SR, EXP, SAT, TR, and COMM, and their loyalty relationship is asymmetric. This study provides a comprehensive framework that explains how customers' perceptions in the restaurant sector can impact CLOY.

With limited existing research that can identify how the blend of different recipes affects LOY in a post-COVID setting. Finally, this study identified new avenues for research that are opened for the hospitality sector by focusing on a new research approach (fsQCA) instead of conventional (on multiple regressions and structural equation modeling).

Managerial implications

The findings showed that LOY could not be improved on its own by applying any of the conditions detailed in Table 3. This shows that CSR, SR, EXP, SAT, TR, and COMM on their own are not enough to keep customers loyal. A distinctive focus on these antecedents will not yield the desired results, and the restaurant authorities during COVID-19 post-pandemic shall focus on the interaction of these conditions. These results can assist restaurant authorities in understanding the complexity of LOY better.

Through asymmetries, restaurants can strike an appropriate balance between different antecedent conditions whose combination may lead to the expected results of loyalty during COVID-19 post-pandemic. The causal recipes might be utilized as a guide for allocating suitable resources to achieve optimal results. For instance, the study results (solution 1) revealed that customer loyalty is not attained unless the restaurant is high on CSR and provides an improved experience (see Table 4). Focusing

on CSR and EXP is a more effective way to achieve LOY. Such recipes serve as examples; each recipe found in the findings, which can guide restaurant managers, is of potential benefit to those looking to design and develop local restaurant offerings that promote LOY during COVID-19 post-pandemic.

Policy implications

The COVID-19 outbreak has highlighted the need for flexible policies within the restaurant sector in Pakistan. First and foremost, it is essential to promote the use of hybrid work environments. It is recommended that policies be implemented to facilitate a combination of traditional office-based work and remote work. Additionally, it is suggested that financial incentives be offered to restaurants that want to embrace this hybrid work paradigm. This promotes operational flexibility, assuring readiness for unforeseen circumstances and ensures the safety of both consumers and staff.

Furthermore, the incorporation of cutting-edge technology such as artificial intelligence and contactless automation is of utmost importance. It is essential for policymakers to actively encourage the widespread use of these technologies to bolster safety protocols. The establishment of standards for implementation via collaboration between regulatory agencies and technology suppliers may enhance the industry's innovation and resilience in addressing health threats.

Furthermore, it is essential to enforce comprehensive disaster preparation policies that explicitly focus on pandemics. Policymakers have the authority to mandate the filing of these plans as a necessary condition for acquiring or renewing licenses. Government entities can provide guidelines, templates, and training programs to effectively equip restaurants in managing emergencies. This initiative serves to inspire consumer confidence and make a positive contribution to public health.

In addition, policymakers need to provide incentives and acknowledgements for socially responsible actions within the restaurant industry during times of crisis. The implementation of rewards or tax incentives for community service and safety promotion contributes to the cultivation of a favorable industrial reputation, the enhancement of community resilience, and the development of social cohesion.

Finally, it is important to gather data about client views and industry dynamics in times of crisis. The implementation of rules that require continuous data gathering and analysis, either via a centralized platform or industry cooperation, will contribute to improved policymaking and industry responses. The approaches together strive to foster a restaurant business in Pakistan that is characterized by enhanced adaptability, technological integration, and social responsibility.

Conclusion

The use of Fuzzy-set Qualitative Comparative Analysis (fsQCA) in this research is a departure from conventional symmetric methodologies, hence providing a more holistic perspective on loyalty in the aftermath of the epidemic. The use of this methodology, which is seldom employed within the hospitality industry, establishes a benchmark for the examination of concealed patterns and configurations. The use of complexity theory, specifically in the context of fsQCA, is crucial for gaining a comprehensive knowledge of loyalty, particularly in the complex and demanding circumstances that have arisen in the wake of the COVID-19 pandemic. This study offers significant insights into restaurants via the examination of socially responsible efforts, service quality, customer experience, satisfaction, trust, and commitment.

Theoretical implications underscore the need to incorporate multiple views and approaches in comprehending loyalty, hence questioning the constraints imposed by conventional regression and structural equation models. The research emphasizes intricate arrangements of preceding factors, enhancing comprehension of loyalty, particularly within the restaurant sector in the aftermath of the pandemic.

The research recommends that restaurant managers adopt a comprehensive approach to loyalty from a management standpoint, emphasizing the interconnectedness of many components rather than isolated elements. The results underscore the insufficiency of independent endeavors in corporate social responsibility, service quality, customer experience, satisfaction, trust, and commitment to guaranteeing customer loyalty. Causal recipes, which are produced from fsQCA (fuzzy-set qualitative comparative analysis), have the potential to guide resource allocation and strategy development. By using these recipes, organizations may develop more effective and integrated methods to nurture loyalty in the post-pandemic world.

In summary, this study, which is based on complexity theory and employs fsQCA, enhances the comprehension of consumer loyalty within the restaurant sector in the aftermath of the COVID-19 epidemic. The results of this study, together with their theoretical implications and managerial insights, provide a substantial contribution to the current body of knowledge. This contribution has the potential to guide future research endeavors and inform strategic decision-making in the restaurant industry, ultimately shaping its future trajectory.

Limitations and future research directions

The investigation of customer loyalty within the restaurant sector in Pakistan has several constraints that need careful consideration. The generalizability of the results may be limited due to their contextual specificity within the cultural and economic landscape of Pakistan. Moreover, the research emphasizes quantitative methodology, thus disregarding the depth and complexity of individual subjective experiences. Potential avenues for future study may include the exploration of these identified constraints via the implementation of cross-cultural investigations in diverse nations. Additionally, the adoption of a longitudinal framework would enable the observation of loyalty fluctuations over an extended period. Furthermore, the integration of qualitative methodologies would provide a more comprehensive understanding of consumer views by delving into their underlying motivations and perspectives.

Regarding future study areas, it is essential to delve into supplementary aspects that exert influence on customer loyalty, including perceived risks, brand reputation, and the ramifications of service advancements. The inclusion of comparative studies of approaches, specifically examining the results of the fsQCA methodology about classic symmetric methods, has the potential to enhance and refine research procedures. There is a need to construct dynamic models that account for the dynamic character of loyalty, taking into consideration how loyalty evolves in response to changing circumstances and the influence of external influences on consumer loyalty.

Abbreviations
fsQCA	Fuzzy sets qualitative comparative analysis
LOY	Loyalty
CSR	Socially responsible COVID-19 initiatives
SR	Service quality
EXP	Customer experience
SAT	Customer satisfaction
TR	Trust
COMM	Commitment

Availability of data and materials
Data and materials used in this study are available upon request. Please contact the corresponding author for access.

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