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Discovering the Sustainable Innovation Service Process of Organizational Environment, Information Sharing and Satisfaction: The Moderating Roles of Pressure

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Abstract: Sustainability issues have been highly impacted during the pandemic period, and issues of sustainability are receiving increasing attention and have been embedded in tourism and hospitality management. To follow customer changes and sustainability requirements, employee behavior is a significant determinant of organizations' sustainable service innovation. Data were collected from 454 restaurant employees to confirm the proposed hypothesis and investigate the organization of sustainable service innovation processes. The results showed that organizational environments may encourage employees to engage in information sharing and satisfaction to enhance sustainable service innovation through achievement and improvement. Further, this study also asserts that pressure is a critical attribute that moderates the relationship between achievement and improvement for sustainable service innovation. Theoretical and managerial implications are also introduced and discussed.

Keywords: organizational environment; sustainable service innovation; information sharing; satisfaction; achievement; improvement; pressure

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1. Introduction

Due to the devastating effects of the COVID-19 epidemic, tourism and hospitality organizations are focusing on crisis management, as well as sustainability, as key issues for future research [1]. Today, science and technology are developing strongly, producing products that help to support people's lives in many fields [2], bringing amazing benefits; for example, the appearance of the GPT chat application can help us to search for complex information and knowledge like no other application has been able to do previously. By manipulating new technology, firms following an innovation service strategy provide advanced services, along with basic sustainability activities, aiming to make important contributions to SDGs [3]. These businesses concentrate on innovative solutions and techniques for waste, energy, and water savings management with the aim of ensuring both profitable operations and an effective marketing strategy tailored to customers who advocate for ecologically sustainable practices [1,4]. In addition, innovation is considered a way for restaurants to achieve a competitive advantage in the industry [5]. The restaurant industry contributes greatly to economic health in general and the tourism and hospitality field in particular. Global food service revenue in 2020 reached 3.5 trillion U.S. dollars [6]. However, as a result of lockdown orders and other restrictions implemented to control human mobility, restaurants were among the most hard-hit sectors during the pandemic [7]. Ref. [8], indicating that innovation activities could make significant contributions to the restaurant industry's resilience. Therefore, sustainable innovation service is a factor that deserves attention in the restaurant industry, leading to the first research question:

1) What factors may help to enhance sustainable innovation service?

Studies examining green innovation and environmental strategies in the context of the hospitality industry have been scarce [9]. Hence, as part of its study's primary contribution, this study aims to address this disparity by developing a comprehensive model that delineates the factors influencing restaurants' sustainable innovation services.

Although various innovation activities have been identified, the study of the role of employees in the theoretical framework has been considerably limited [8]. The interaction of people and their organizational environment produces innovation [10]. Ref. [11] pointed out that elements of the workplace environment, including resources, encouragement, challenges, and work pressure, have impacts on organizational innovation. The effectiveness of service innovation is positively impacted by organizational resources, according to empirical studies in the hospitality industry [12]. By fulfilling organizational requirements, resources are allocated, stimulating organizational members to embark upon risk-taking endeavors and embrace innovative initiatives during the initial phase [10]. From there, we can note that there is a connection between organizational environment and employees' psychological status and then help to support innovation services. Thus, this realization leads to the second research question:

(2) What direct and indirect effects may exist in the relationship between the organizational environment and sustainable innovation services.

Ref. [13] also claimed that restaurant sustainable innovation services should include multiple aspects, including new concepts of development processes. According to Rogers's theory of innovation diffusion, the viewpoint of innovation recognized by organization members establishes whether they embrace a new idea or technological advancement to meet performance targets [10]. To allow employees to have a willing psychology to accept innovation, it is necessary to have an organizational environment that allows them to easily access new ideas. Thus, this theory suggests an interaction mechanism between the organizational environment and sustainable innovation. Ref. [14] employed sustainability innovation and environmental opinion leadership in the healthcare sector to research the function of the diffusion of innovation theory indicators in environmental sustainability. Ref. [15] investigated the innovation diffusion of mobile applications from the social networks standpoint. Ref. [16] examined the elements that affected OpenStreetMap's innovation diffusion in the fields of science, technology, engineering, and mathematics education. Despite these researchers' studies contributing to fostering the development of innovation diffusion theory, their research on the application of innovation diffusion is not comprehensive, and fewer findings are available related to the restaurant industry's sustainable innovation services. Therefore, further research is still required to determine how the organizational environment affects restaurants' ability to provide sustainable services from the employees' aspect [17,18]. In light of the aforementioned points, the second notable contribution of this study in the literature domain involves delving into the correlation between organizational environment and sustainable innovation services using second-order factor mediation-moderation analysis.

Information sharing could help both managers and employees to discuss the terms and conditions of service and resolve their grievances without it leading to strikes or other forms of industrial conflict. The best approach in working communication is to provide employees with a good organizational environment with a well-organized flow of information sharing to settle operational problems, which will in turn improve their productivity and lead to higher organizational performance and the obtaining of significant achievements [19]. Therefore, the findings of this study would be of major importance in assessing how organizational environments and information sharing could be the major tools in improving sustainable innovation services through achievement and improvement. In addition, in an organizational environment in which human resource management practices encourage employees' development of learning, as well as their competency, employees are expected to be willing to handle improvements and deliver satisfaction for customers [20]; thus, satisfaction is also believed to mediate the relationship between the organizational environment and improvement. Furthermore, this study also examines

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the moderating effect of pressure in sustainable innovation service-forming processes, extending on the discovery of [21], who implied that innovation capability development can be facilitated by institutional pressures.

This study involved integrating concepts and insights from the existing literature, which utilized the theoretical frameworks from sustainable innovations [22], to provide a comprehensive understanding of employees' psychology and behavior regarding sustainable innovation. This study's findings reveal how sustainable innovation service development processes can be strengthened while improving employees' psychological status, which is significantly affected by the organizational environment. This study could enable academic researchers to better understand the uniqueness of restaurant organizations and provide a mediation–moderation mechanism for the attributes that influence sustainable innovation services as a theoretical basis for the tourism and hospitality industry. In addition, this study could also help restaurant managers to realize the important factors that help to promote the development of sustainable innovation services, and it provides many suggestions for developing efficient strategies for restaurant owners.

2. Literature Review and Research Hypotheses

2.1. Organizational Environment

There is a direct correlation between the organizational environment and employee behavior [23]. According to [24], an organization's environment consists of all the factors and powers that may affect its operation and performance, including the external environment and internal environment. The organizational environment was defined by [25] as the aggregate of the social variables that affect the work environment of an employee. The organizational environment is defined as the employee's perception of the firm's observable environment and its relationship to organizational members, feelings, and behaviors [26]. In some analyses of the organizational environment, scholars have mentioned excitation as a factor that needs to be considered [27,28]. Ref. [29] examined the effects of project team autonomy on performance via an organizational policy experiment; they assumed that autonomous reconfigurations could help project teams to adapt to their specific environments and contribute to better performance. Ref. [30] indicated that, since resiliency is innate to an organization and depends on its resources and capabilities, which vary between firms and also between industries, it is evident that resilience differs for each industry or company. Therefore, from the recent research related to the organizational environment, we propose three items for measuring the organizational environment: excitation, resources, and autonomy.

2.2. Information Sharing

A well-organized flow of information sharing makes it easier for an organization to respond swiftly to the market's changing needs [31]. Ref. [32] defined information sharing as direct information exchange between those participating in a problem-solving effort. Information sharing is an crucial attribute of an empowering work environment for workers to receive authority, power, and responsibility [33]. Ref. [34] discovered that information sharing improves with encouragement and practice and can be understood as an exchange of cues that facilitates both parties' comprehension toward achieving a specific goal. Information sharing can be associated with the term *knowledge sharing*, describing the process by which people exchange knowledge to produce new knowledge [35].

2.3. Sustainable Innovation Service

Innovation is the introduction of something new, whether it is a merchandise, procedures, services, marketing strategies, the structure of an organization, or a market [36]. Sustainable innovations give businesses the opportunity to use multiple approaches to adopt solutions to build and expand their business environments in ways that minimize negative social or environmental effects, potentially producing additional advantages or innovative features [17]. Innovation in service is a critically important factor for restaurants

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to perform better in the future [12]. Organizational environments and information sharing can be major tools for improving sustainable innovation services [19]. According to [37], a sustainable innovation service is an innovation that, through renewal or improvement of service, improves not only economic performance but also social and environmental performance, and it has the potential to have a positive social and environmental impacts, both immediately and over time.

2.4. Achievement

Information sharing helps to improve productivity, leading to higher organizational performance and significant achievements [19]. Achievement, according to [38], consists of the ways in which professional standing entitles incumbents to various levels of deference from others. According to [39], achievement consists of levels of compensation, job stability, and other rewards. Ref. [40] proposed that the aim of achievement is being personally successful by proving one's ability to meet social expectations. Common pursuit-related terms, such as *successful*, *competent*, *aspiring*, and *powerful*, indicate achievement [41].

2.5. Improvement

Changes that make product more efficient, more effective, less expensive, and safer, or a modification that increases customer satisfaction can be characterized as an improvement [42]. Improvements involve adjusting marketing plans (e.g., resources, services, people), responding promptly to customer requests, and making appropriate decisions [43]. Improvement is about the adoption of new operating methods and how organizational operations are enhanced [44]. Some green practices that can increase hotels' cost-effectiveness and earn income are stimulated by improvements [45]. Improvements in operational procedures, supportive organizational structures, and networks help to exploit innovation [46].

2.6. Satisfaction

The key to every hospitality company's success is customer satisfaction [47]. Satisfaction may have a connection to the relationship between organizational environments and improvement [20]. Satisfaction was defined as awareness of a process as helpful, effective, and productive [48]. Ref. [49] conceptualized satisfaction as the consumer's feelings based on his or her experiences following consumption. Customer satisfaction is a term in psychology that refers to the happiness and enjoyment that come from receiving what one wishes and desires from attractive goods or service [50].

2.7. Pressures

Furthermore, [21] implied that innovation capability development can be facilitated by institutional pressures. Work pressure can be described as an individual's cognitive-energetic condition, which results in the feeling of strain or pressure and is connected to ongoing and anticipated completion of work activities [51]. Pressure is described as the degree to which people are forced to work quickly and have much work to complete [52]. Employees are under constant pressure, for example, the KPIs, to provide quick success in acquiring innovation [53]. Strong competition forces businesses to develop undiscovered and unique tourism products to appeal to customers and minimize expenses, increasing the effort expended engaging in innovative activities [54].

2.8. Innovation Diffusion Theory

The diffusion of innovation theory fundamentally illustrates the perspective and phases of innovation acceptance for any merchandise, service, or policy [14]. This theory aims to explain the reasons and methods for new ideas and technologies and how quickly they spread [55]. Several scholars have combined innovation diffusion theory (IDT) with other theoretical models to carry out experiments because IDT can serve as an exhaustive theoretical framework to gain more comprehension of behavioral intentions in sustainable innovation adoption [16]. Recent studies have employed social exchange theory and

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signaling theory to address issues of sustainable innovation [56–60]. Therefore, this research attempts to expand IDT by integrating it with social exchange theory and signaling theory to develop a theoretical model for examining sustainable innovation.

2.9. Organizational Environment, Information Sharing, and Achievement

Social exchange theory considers social interactions in which individuals believe that they will derive certain benefits from exchange behaviors [61]. According to social exchange theory, the attachment between employees and their organizations is formed when employees perceive positive signals from the business, such as social support, fairness in the rewards system, and fairness in working relationships [62]. Therefore, employees' psychological status tends to be affected by the organizational environment. The organizational environment's resources, such as technology, help to enhance learning effectiveness, and the integration of digital tools into classroom instruction has become a trend in modern teaching to help students learn effectively [63], thus enhancing the information-sharing process. According to [64], to remove obstacles to data sharing, the Singaporean government has implemented rules and procedures for autonomous systems. Information sharing has been found to significantly boost organizational performance, and a well-organized flow of information sharing makes it easier for an organization to respond swiftly to the market's changing needs [31]. Ref. [65] reported that network members are affiliated with independent businesses and therefore aim to accomplish a variety of objectives when sharing information. Information sharing takes many different forms, including overall knowledge being widely considered the most important competitive variable that can significantly help and encourage an enterprise's achievement based on adaptation, survival, and excellent performance [66,67].

Hypothesis 1a. The organizational environment affects achievement through information sharing.

To save operational costs, improve performance, and increase customer satisfaction, the appearance of new technologies, applications, and paradigms is forcing businesses to take advantage of the benefits of information sharing [68]. Ref. [69] also found that any information that can be shared safely and explicitly will clear the way for more effective cooperation among fragmented participants and therefore improved project efficiency, which makes all information sharing in the digital twin responsible.

Hypothesis 1b. *The organizational environment affects improvement through information sharing.*

2.10. Information Sharing, Achievement, Improvement, and Sustainable Innovation Service

Innovation diffusion theory suggests that the degree of adaptation to innovation depends on the psychological state of each person [70]. People who are more interested in new ideas will want to embrace change opportunities more and be the first to try innovations. Applying this theory to the restaurant industry, when the management board has a policy of stimulating the positive working psychology of employees by building an efficient information sharing system so that information is given to or shared with others effectively, it can be used to facilitate innovation by being elaborated upon, infused with additional knowledge, and thoroughly explored by other people or groups [71]. Optimizing information sharing platforms will enable capabilities and competencies that enhance innovation performance [72]. Successful knowledge sharing plays a special role in fostering the innovation ability of an organization [73].

Moreover, taking advantage of information sharing is expected to create many outstanding achievements [74]. The development of indicators of achievement has been associated with various creative–innovative aspects [75]. Ref. [76] concluded that innovation and achievement have a significant and positive association.

Hypothesis 2. *Information sharing affects sustainable innovation service through achievement.*

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By enabling a comprehensive approach toward resulting information sharing and transparency, the adoption of Industry 4.0-enabling technologies is anticipated to result in significant performance improvements in management [77]. Ref. [78] researched social media and fake news phenomena in health and discovered that information sharing can help to improve the coordination of public health systems' responses. Ref. [79] indicated that improvement at the research and development level could promote the innovation of green products. Ref. [80] found that it might be necessary to have significant improvement in education curricula so that the education sector can take advantage of and harness innovations related to the Fourth Industrial Revolution through research and teaching to enhance learners' experience.

Hypothesis 3. *Information sharing affects sustainable innovation services through improvement.*

2.11. Mediating Role of Satisfaction

One of the most systematic aspects of hospitality research is customer satisfaction [81]. According to signal theory, an organization might create a reputation as a good place to work for employees to differentiate itself from its competitors, which can help to highlight its unique characteristics and make it attractive to potential customers, for example, sending signals by demonstrating social responsibility through activities [82]. Employees perceive empowerment positively, and they are more likely to improve their performance to obtain customer satisfaction when they are more autonomous [83]. These authors mentioned that employees may not improve their job performance when they feel that their companies' compensation does not match their requirements and demand, that certain performance reviews are unjust, and that promotion rates are slow. The purpose of customer satisfaction surveys is to capture customer feedback regarding products and services that they have purchased, and through corrective and preventive measures, improvements can be attained [84]. Increasing customer satisfaction is a widespread business strategy for improving performance, as well as firm value [85,86].

Hypothesis 4. Satisfaction positively mediates the relationship between the organization environment and improvement.

2.12. Moderating Role of Pressure

Today, pressure on firms is mounting, requiring them not only to obtain achievements of profit but also to improve and contribute to sustainable development [3]. Environmental statutes are being enforced with increasing rigor in an effort to pressure businesses that use substantial energy and produce substantial pollution to embrace green innovations [87]. Companies may be motivated to upgrade their technology and equipment to comply with new government laws as a result of pressure to absorb environmental externalities, and doing so may change the trajectory of the company in the direction of sustainable green innovation [88]. Ref. [89] suggested that exerting pressure on organizations by developing environmental regulations may encourage them to innovate for sustainability.

Hypothesis 5a. *Pressure plays a positive moderating role in the relationship between achievement and sustainable innovation service.*

Hypothesis 5b. *Pressure plays a positive moderating role in the relationship between improvement and sustainable innovation service.*

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3. Methodology

3.1. Sampling and Data Collection

The analysis focused on restaurant employees based on information from scholarly publications in both domestic and international sources. The sample selection process followed suggestions from [90], including the requirement for restaurants to meet sustainable development criteria set by the Ministry of Economic Affairs or be recognized as environmental protection restaurants according to green management standards. Subsequently, a pilot survey was carried out, which was then distributed to 38 individuals in managerial or ownership positions in the restaurant industry, who voluntarily participated, with the aims of gathering feedback and ensuring questionnaire comprehension. Research assistants distributed and reviewed the questionnaires personally to enhance response rates. After analyzing the pilot test results, a final version of 45 items across 13 variables was generated. Two research assistants aided in facilitated data collection by directly contacting the respondents or distributing questionnaires via email or postal mail. A follow-up was conducted two weeks later to confirm receipt. The questionnaire covered various topics, starting with fundamental background information, followed by sustainable services, perceived innovation, the organizational environment, and organizational performance. The processing of gathering data occurred between 20 May and 30 August 2021. Of the 620 distributed questionnaires, 490 were returned. However, 36 of the received questionnaires were deemed inadequate or had omitted values, resulting in their exclusion from the analysis. The rate of effective response was calculated to be 73.23%, resulting in a final sample size of 454. Detailed demographic information for the participants can be found in Table 1.

3.2. Variable Measurements

In this study, the major assumptions were investigated across seven constructs: organizational environment, information sharing, satisfaction, achievement, improvement, pressure, and sustainable innovation service. Participants were asked to evaluate and express their degree of agreement utilizing a Likert scale ranging from 1 to 7. It is worth noting that guidelines associated with the scale stipulated that the lowest value corresponded to disagreement, whereas the highest value signified agreement [91]. The initial dimension was the organizational environment, which had three subdimensions: excitation, resources, and autonomous [10]. These terms are widely used in academic research and literature on organizations and their functioning. The sources of these concepts can be traced back to [92]. Second, the dimension of information sharing is rooted in the functionalities of social media platforms, encompassing aspects such as the exchange of information, the unrestricted sharing facilitated by social media, user-generated content (UGC), and image categorization [93]. Third, the satisfaction dimension describes how sustainable innovation may bring the advantages of increased satisfaction, attracting new customers, and increasing customer willingness to spend, adopted from [94]. Fourth, the achievement dimension was adopted from [95], based on the ideas of goals setting, willingness to face challenges, and accepting more difficulty. Fifth, the improvement dimension used concepts from [44], founded on the notions of seeking ways to improve organizational operations and willingness to challenge new operating methods. Sixth, the pressure dimension was adopted from [52], reflecting heavy workloads, not being given enough time, and hindering employees' ability to innovate. Finally, the dimension of sustainable innovation service was adopted from [96], including subdimensions such as food, production, management, space, and service, founded on the diffusion of innovations theory (DIT).

The obtained results, depicted in Table 2, demonstrate satisfactory levels of reliability and validity for the proposed constructs. To assess internal consistency, Cronbach's alpha values were computed, ranging from 0.7325 to 0.9206, all of which align with the acceptable threshold of 0.6 to 0.8. Notably, a value of 0.9206 was obtained, further confirming its adherence to the acceptable ranges [97]. The results of the study reveal that the latent variables exhibit strong reliability, as evidenced by the composite reliability (CR) values

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ranging from 0.733 to 0.923. These values exceed the acceptable threshold of 0.6, indicating a high level of dependability for each variable [98]. The assessment of average variance extracted (AVE) across the various dimensions resulted in a range of values from 0.476 to 0.799. Hence, convergent validity was confirmed since most of the constructs exhibited values greater than 0.6 [99].

Table 1. Respondents' demographic profile.

Characteristics	Frequency (n)	Percentage (%)	Accumulate (%)
Gender			
Male	191	42.07	42.07
Female	263	57.93	100.00
Age			
Younger than 20 years old	108	23.79	23.79
21–30 years old	254	55.95	79.74
31–40 years old	59	13.00	92.73
41–50 years old	23	5.07	97.80
51–60 years old	10	2.20	100.00
Education level			
Senior high school	73	16.08	16.08
College	70	15.42	31.50
University	310	68.28	99.78
Graduate school	1	0.22	100.00
Work experience	1	0.22	100.00
Fewer than 5 years	383	84.36	84.36
6–10 years	43	9.47	93.83
11–20 years	22	4.85	98.68
21–30 years	5	1.10	99.78
More than 30 years	1	0.22	100.00
Job level	1	0.22	100.00
Grassroots employee	365	80.40	80.40
Supervisor	41	9.03	89.43
Manager	41	9.03	98.46
Senior executive	7	1.54	100.00
Residence	/	1.54	100.00
Northern Taiwan	353	77.75	77.75
Central Taiwan	48	10.57	88.33
Southern Taiwan	38	8.37	96.70
Eastern Taiwan	36 15	3.30	100.00
	13	3.30	100.00
Other			
Restaurant type	107	07 7E	27.75
Hotel restaurant	126	27.75	27.75
Restaurant	230	50.66	78.41
Fast food restaurant	80	17.62	96.04
Snack shop	4	0.88	96.92
Beverage shop	11	2.42	99.34
Other	3	0.66	100.00
Department			
Kitchen	116	25.55	25.55
Service	306	67.40	92.95
Other	32	7.05	100.00

The presence of common method variance (CMV) is often regarded as a potential issue in cross-sectional studies. To assess the potential influence of common method bias (CMB), researchers have employed Harman's single-factor test and confirmatory factor analysis [100]. The analysis was conducted using IBM SPSS statistical software, version 27.0. The findings revealed that CMB accounted for 27.160% of the total variance, which was less than the predetermined cut-off value. This result indicates that the overall variance attributed to a single factor did not exceed 50%, suggesting that the influence of common method bias was limited in the study [101]. In addition, the study's confirmatory

factor analysis (CFA) yielded satisfactory fit indices, indicating minimal variance in the hypothesized model (i.e., $\chi^2=1973.37$, p=0.001; df = 614; $\chi^2/\text{df}=3.214$; GFI = 0.805; NFI = 0.830; RFI = 0.816; IFI = 0.876; TLI = 0.865; CFI = 0.876; and RMSEA = 0.070). Consequently, the findings from both Harman's single-factor test and confirmatory factor analysis indicated that common method variance was not observed in this study [100].

Table 2. Analysis of construct validity for measurement items.

Measurement Variables	Mean	Standard Deviation	Factor Loading	Composite Reliability	Average Variance Extracted
Organizational Environment				0.045	0.701
Excitation (Cronbach's Alpha = 0.8431)				0.845	0.731
The company has a sound internal mechanism that	5.12	1.235	0.821		
encourages employees to develop new ideas.					
The company highly values the cultivation and retention of related technical talents.	5.13	1.222	0.888		
Resources (Cronbach's Alpha = 0.8545)				0.858	0.670
The company can fully supply the necessary funds or				0.030	0.070
budgets for innovation.	5.13	1.148	0.808		
The company can provide human resource support					
for innovation.	5.09	1.179	0.888		
The company can fully provide the required equipment.	5.19	1.142	0.754		
Autonomous (Cronbach's Alpha = 0.8952)				0.899	0.692
Employees are free to choose what work they want to do.	4.64	1.378	0.728		
Employees are free to decide how to implement their	4.70				
own plans.	4.72	1.371	0.867		
Employees can independently decide on the content of	1.62	1 200	0.018		
their work.	4.63	1.390	0.918		
Employees can independently control their own	4.66	1.410	0.802		
work progress.	4.00	1.410	0.002		
Information Sharing (Cronbach's Alpha = 0.8745)				0.875	0.701
Companies provide us with opportunities to share unique	4.91	1.324	0.783		
life experiences.	1.71	1.021	0.7.00		
The company encourages its members to share	5.04	1.260	0.854		
work experiences.					
The company encourages its members to share	5.11	1.209	0.872		
learning experiences.				0.012	0.722
Achievement (Cronbach's Alpha = 0.9109)				0.913	0.723
Company members set goals for themselves and are willing to achieve them.	5.38	1.167	0.825		
Company members are willing to accept more difficult but					
achievable tasks.	5.29	1.182	0.901		
Company members are willing to face challenges.	5.34	1.149	0.879		
Company members have a strong will and are willing to					
pursue higher achievements.	5.28	1.172	0.793		
Improvement (Cronbach's Alpha = 0.8272)				0.841	0.729
Company members actively seek ways to improve	- 4-	1.210	0.050		
organizational operations.	5.15	1.218	0.953		
Most company members are willing to challenge new	F 10	1.160	0.741		
operating methods.	5.12	1.160	0.741		
Sustainable Innovation Service					
Food (Cronbach's Alpha = 0.8727)				0.878	0.707
The restaurant actively seeks and uses local ingredients for	5.11	1.226	0.817		
sustainable innovation.	5.11	1.220	0.017		
The restaurant uses seasonal ingredients to develop	5.30	1.185	0.917		
innovative products.	0.00	1.100	0.717		
The restaurant encourages the use of natural ingredients	5.34	1.212	0.783		
for new product development.					

Table 2. Cont.

Measurement Variables	Mean	Standard Deviation	Factor Loading	Composite Reliability	Average Variance Extracted
Production (Cronbach's Alpha = 0.7325)				0.733	0.578
The restaurant encourages customers to bring their own	F 10	1 150	0.7/2		
utensils and bags to reduce disposable waste.	5.12	1.152	0.763		
The restaurant uses energy-saving and water-saving	5.31	1.169	0.758		
innovative cooking equipment.	3.31	1.109	0.738		
Management (Cronbach's Alpha = 0.8789)				0.882	0.653
Sustainable innovation is included in the restaurant's	5.32	1.215	0.791		
management policy.	3.32	1.215	0.791		
Innovative management is used to reduce waste and costs.	5.19	1.138	0.847		
The company provides employees with new concepts of	5.20	1.226	0.863		
pollution prevention and control management.	5.20	1.220	0.003		
The company uses a new management system to improve	5.27	1.125	0.724		
efficiency and reduce waste.	0.27	1.120	0.721		
$Space\ (Cronbach's\ Alpha=0.7918)$				0.797	0.569
Most of my restaurant uses green building materials.	4.85	1.364	0.847		
The restaurant's space uses innovative energy-saving	5.07	1.226	0.758		
designs for ventilation, lighting, and insulation.	0.07	1.220	0.700		
Recyclable or second-hand furniture is used in the	4.88	1.341	0.645		
restaurant's decor as much as possible.	1.00	1.011	0.010		
Service (Cronbach's $Alpha = 0.7735$)				0.781	0.476
We use online marketing as much as possible to reduce	5.12	1.211	0.688		
printing waste.	J.12	1.211	0.000		
The restaurant's service process understands the					
production history of ingredients through	5.10	1.290	0.520		
information systems.					
The restaurant's service uses more environmentally					
friendly ordering methods, such as barcodes, PDAs, or	5.10	1.421	0.749		
online tools.					
We promote more environmentally friendly service					
methods (such as bringing one's own utensils) to	4.92	1.532	0.775		
customers during the service process.					o = oo
Pressure (Cronbach's Alpha = 0.9206)				0.923	0.799
The company gives employees a heavy workload, making	4.43	1.548	0.843		
it impossible for them to innovate.					
The company usually does not give us enough time when	4.35	1.542	0.944		
we are innovating.					
Company policies often hinder our ability to innovate.	4.37	1.585	0.892	0.001	0.722
Satisfaction (Cronbach's Alpha = 0.8883)				0.891	0.732
Sustainable innovation services can increase	5.42	1.080	0.804		
customer satisfaction.					
Sustainable innovation services bring more new customers	5.46	1.083	0.919		
to the restaurant.					
Sustainable innovation services can increase customer	5.52	1.115	0.840		
willingness to spend.					

3.3. Data Analysis

In this study, the chosen methodology, namely structural equation modeling (SEM), aims to verify the hypothesized relationship. SEM was employed in this work to analyze the associations of numerous variables at the same time, and the investigation of latent variables involved the utilization of AMOS software, version 24.0, and SPSS Statistics software, version 26, to examine the mediating and moderating effects. Data were collected from 454 restaurant employees in Taiwan to confirm the proposed hypothesis and investigate the organization sustainable service innovation process. Hence, our data analysis followed a two-step modeling process. In the first step, we conducted an analysis of the measurement model. In the second step, we examined the structural model, which involved hypothesis

testing [102]. It is worth noting that the selection of appropriate software and methodologies is crucial to ensure alignment with the specific research context and objectives. To mitigate the covariate discrepancy between the sample and theoretical framework, we employed IBM's AMOS software, version 24.0, to conduct covariance-based structural equation modeling (CB-SEM) during our investigation [103].

Furthermore, we used a sample of 454 respondents. It is recommended to have a sample size for SEM that is at least 10 times greater than the number of latent variables [104]. Additionally, a minimum sample size of 200 is also advised to ensure adequate statistical power and reliable model estimation [105].

To assess the suitability of the confirmatory factor analysis (CFA) model in validating the integrity of the data structure and its appropriateness for the given purpose, a first-order model with 13 constructs (excitation, resources, autonomous, information sharing, achievement, improvement, food, product, management, space, service, pressure, and satisfaction) achieved an acceptable fit (χ^2 = 1848.516, p = 0.001; df = 662; χ^2 /df = 2.792; GFI = 0.829; NFI = 0.858; RFI = 0.833; IFI = 0.904; TLI = 0.886; CFI = 0.903; and RMSEA = 0.063). The results of the second-order model with organizational environment, information sharing, achievement, improvement, sustainable innovation service, pressure, and satisfaction showed an acceptable model fit (χ^2 = 2141.397, p = 0.001; df = 711; χ^2 /df = 3.012; GFI = 0.800; NFI = 0.835; RFI = 0.819; IFI = 0.884; TLI = 0.872; CFI = 0.883; and RMSEA = 0.067). These results support the unidimensionality of the measures employed in the analysis [106]. Additionally, each factor loading surpassed the prescribed threshold of 0.50, affirming the strong convergent validity [99].

Pearson's correlation coefficients, means, standard deviations, and variance inflation factors (VIFs) are shown in Table 3. The data show that the highest correlation value was 0.6152. Pearson's correlation coefficients are useful for identifying and addressing collinearity in a dataset, particularly when the correlation coefficient is less than 0.8 [107]. To detect multicollinearity, one can examine the interconstruct correlation values. If these values exceed the square root of the AVE, it suggests the presence of multicollinearity. Analyzing the relative relevance of the variables collectively is crucial to understanding their significance and impact. The concepts examined in this study are treated as separate and distinct entities, and the relationships among indicators within the same construct are found to be stronger and more reliable than the relationships observed between indicators belonging to different constructs [108]. According to [10], excitation, resources, and autonomous are all components of the organizational environment construct, and these components play crucial roles in shaping the dynamics and effectiveness of an organization. Furthermore, the context of a sustainable innovation service construct incorporates various aspects: food, production, management, space, and service. These dimensions collectively shape the organization's approach to incorporating sustainable practices and promoting eco-friendly solutions. In addition, the inclusion of pressure moderator factors introduces a notable degree of multicollinearity, primarily attributed to the interaction terms. Although this outcome was unexpected, it can still be considered during the analysis [109]. Another metric used in this study is the VIF. According to [110], it is recommended to employ a variance inflation factor (VIF) test when assessing multicollinearity. These authors suggested that VIF values should ideally be less than 10 to ensure a satisfactory level of multicollinearity.

Table 3. Means, standard deviations, correlations, and discriminant validity.

Construct	E	R	Au	IS	S	Ac	I	P	F	Pr	M	Sp	Se	Variance Inflation Factor
Organization														
Environment (OE)														
Excitation (E)	(0.8431)													1.94
Resources (R)	0.5626 ***	(0.8545)												1.87
Autonomous (Au)	0.1681 ***	0.2805 ***	(0.8952)											1.51
Information Sharing (IS)	0.4629 ***	0.4021 ***	0.1989 ***	(0.8745)										2.01
Satisfaction (S)	0.3533 ***	0.3425 ***	0.0149	0.3070 ***	(0.8883)									1.30
Achievement (Ac)	0.3923 ***	0.3638 ***	0.0627	0.3694 ***	0.3576 ***	(0.9109)								1.53
Improvement (I)	0.3961 ***	0.3970 ***	0.1543 ***	0.6575 ***	0.3120 ***	0.4508 ***	(0.8272)							1.99
Pressure(P)	-0.0158	0.0030	0.4836 ***	0.0527	-0.0762	-0.1395**	-0.0037	(0.9206)						1.41
Sustainable								,						
Innovation														
Service (SIS)														
Food (F)	0.3054 ***	0.3702 ***	0.1336 **	0.2953 ***	0.2822 ***	0.3123 ***	0.2892 ***	0.0145	(0.8727)					1.53
Production (Pr)	0.3603 ***	0.4210 ***	0.2000 ***	0.3277 ***	0.2685 ***	0.3347 ***	0.3119 ***	-0.0011	0.5171 ***	(0.7325)				1.88
Management (M)	0.4546 ***	0.4522 ***	0.1163 ***	0.3912 ***	0.3367 ***	0.4410 ***	0.3896 ***	-0.0865 *	0.5040 ***	0.6152 ***	(0.8789)			2.27
Space (Sp)	0.3757 ***	0.4783 ***	0.3068 ***	0.3945 ***	0.1992 ***	0.2361 ***	0.3496 ***	0.1409 **	0.3603 ***	0.4764 ***	0.5444 ***	(0.7918)		1.89
Service (Se)	0.5445 ***	0.4397 ***	0.1668 ***	0.3773 ***	0.2740 ***	0.2757 ***	0.3492 ***	0.0657	0.2964 ***	0.3697 ***	0.4363 ***	0.4930 ***	(0.7735)	1.70
Mean	5.129	5.137	4.663	5.020	5.470	5.322	5.134	4.384	5.252	5.217	5.245	4.933	5.060	
S.D.	1.142	1.018	1.210	1.131	0.988	1.037	1.098	1.448	1.078	1.031	1.008	1.102	1.057	

^{*} p < 0.050, ** p < 0.010, *** p < 0.001. Internal consistency and reliability are shown on the diagonal in bold.

4. Results

SEM was employed in this work to analyze the associations of numerous variables at the same time [111]. SEM analysis was also conducted to evaluate the hypotheses. From the discussed hypotheses, we propose the Conceptual research framework as depicted in Figure 1. The results indicate that the overall model fit, as depicted in Figure 2, is satisfactory. The direct impacts observed in the model are found to be substantial and predominantly positive, supported by statistically significant outcomes as follows: $\chi^2 = 1973.37$, p = 0.001; df = 614; $\chi^2/\text{df} = 3.214$; GFI = 0.805; NFI = 0.830; RFI = 0.816; IFI = 0.876; TLI = 0.865; CFI = 0.876; and RMSEA = 0.070. These outcomes indicate that the model fits well. The investigation of latent variables involved the utilization of AMOS software, version 24.0, and SPSS Statistics software, version 26, to examine the mediating and moderating effects. For the assessment of indirect impact paths, a robust approach was employed, utilizing a bootstrap confidence interval technique. This process involved performing 2000 resampling iterations, conducting a two-tailed test, calculating a 95% bias-corrected confidence interval (CI), determining p-values based on [112]'s method, and utilizing user-defined estimands that were appropriate for the study.

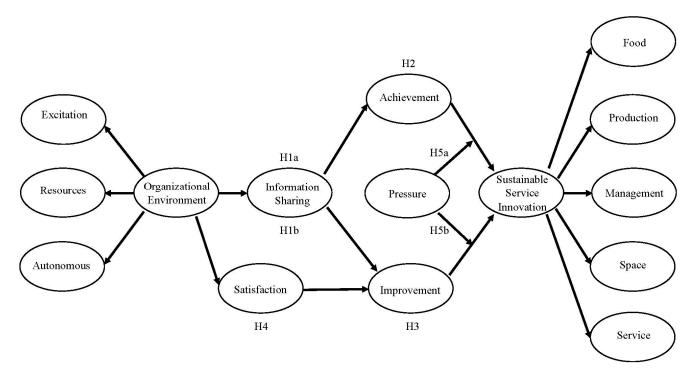


Figure 1. Conceptual research framework and hypotheses.

The mediation of information sharing revealed statistically significant and positive indirect effects of the organizational environment on achievement (β = 0.316, p < 0.001) and of organizational environment on improvement (β = 0.650, p < 0.001). Importantly, the 95% bias-corrected CI did not include zero for either of these indirect effects, further supporting their significance. Thus, the findings of the study provided support for Hypotheses 1a and 1b. As hypothesized in Hypothesis 2, this study proposed achievement mediation. The study found a significant and positive effect of information sharing on sustainable innovation services, indicated by a coefficient of β = 0.078 and a p-value less than 0.001; the 95% bias-corrected CI for this effect excluded zero, thereby supporting Hypothesis 2. Hypothesis 3 asserted that improvement serves as a mediator between information sharing and sustainable innovation service. The study provided strong support for Hypothesis 3, as the finding revealed a statistically significant and positive, indirect effect (β = 0.206, p < 0.001). The presence of non-zero values in the bootstrapping result provides additional support for the validity of the hypothesis and serves as reaffirmation of the

mediation outcome. Next, the study further investigated Hypothesis 4, which proposed the mediating role of satisfaction in the relationship between the organizational environment and improvement. Hypothesis 4 is supported by the analysis, as it revealed a statistically significant and indirect impact ($\beta = 0.056$, p < 0.050). The findings of the mediating effect analysis are shown in Table 4 and Figure 2.

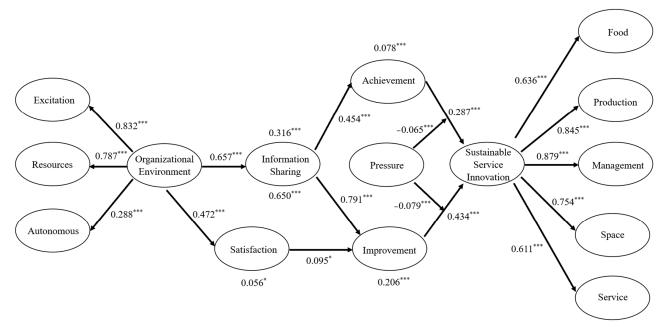


Figure 2. Results of proposed research framework. Note: * p < 0.050, *** p < 0.001.

Table 4. Analysis of mediating effects in the optimal model.

No	Constructs	Indirect	Percentil	e 95% CI	Bias-correc	ted 95% CI	<i>p</i> -Value	Results
NO	Constructs	Effect	Lower	Upper	Lower	Upper	ρ-varue	Results
	Organization Environment >							
1	Information Sharing > Achievement	0.316	0.223	0.443	0.221	0.440	***	Support
	Organization Environment >							
2	Information Sharing > Improvement	0.650	0.509	0.838	0.507	0.834	***	Support
	Information Sharing >							
3	Achievement > Sustainable Innovation Service	0.078	0.038	0.131	0.038	0.132	***	Support
	Information Sharing >	0.206	0.120	0.205	0.101	0.200	***	
4	Improvement > Sustainable Innovation Service	0.206	0.128	0.295	0.131	0.298	***	Support
5	Organization Environment > Satisfaction > Improvement	0.056	0.001	0.110	0.004	0.113	*	Support

Note: * p < 0.050, *** p < 0.001.

This study investigated the role of pressure as a moderator in the relationship between achievement and sustainable innovation service, as well as that between improvement and sustainable innovation service. The interaction between achievement and sustainable innovation service ($\beta = -0.065$ ***, p < 0.001) and between improvement and sustainable innovation service ($\beta = -0.079$ ***, p < 0.001) were found to be significant but negative, thereby providing support for Hypothesis 5. Through a simple slope analysis, Figure 3 indicates that a high degree of pressure weakens the influence of both achievement of sustainable innovation service and improvement on sustainable innovation service.

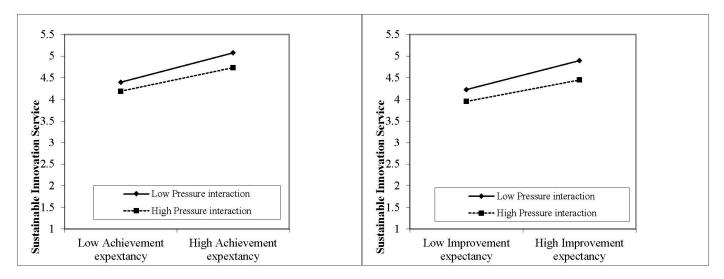


Figure 3. Moderation results of pressure interaction.

This study aimed to evaluate the adequacy of three alternative models compared to the initially suggested framework for testing hypotheses. In Figure 4, the alternative models are visually presented, showcasing the operationalization of second-order variables as first-order factors. This visual representation highlights the conversion of the second-order variables into first-order factors within the alternative models.

Initially, as shown in Figure 4a, our study translated second-order organizational environment components into first-order elements reflecting excitation, resources, and autonomy. This alternative model fits as follows: $\chi^2 = 2171.541$, p = 0.000; df = 613; $\chi^2/df = 3.542$; GFI = 0.788; NFI = 0.813; RFI = 0.797; IFI = 0.858; TLI = 0.845; CFI = 0.858; and RMSEA = 0.075. The findings of the examination of alternative mediation effects model 1 indicate that certain indirect effects are non-significant, suggesting complete mediation, as presented in Table 5a.

Second, the second-order factor of sustainable innovation service was transformed into first-order factors, namely food, production, management, space, and service, with the following model fit: $\chi^2 = 2288.398$, p = 0.000; df = 611; χ^2 /df = 3.745; GFI = 0.766; NFI = 0.803; RFI = 0.785; IFI = 0.847; TLI = 0.833; CFI = 0.847; and RMSEA = 0.078 (Figure 4b). The results from analyzing the mediating effects of the alternative model 2 demonstrate that more effects are not significant and do not support the premise, as depicted in Table 5b.

Third, the study entailed the simulation and concurrent conversion of the second-order factors associated with the organizational environment and sustainable innovation service, which were originally derived from the preceding alternative models. This computational procedure involved transforming these second-order factors into first-order factors. Hence, this transformation yielded a model fit as follows: $\chi^2 = 2485.454$, p = 0.000; df = 610; $\chi^2/\text{df} = 4.075$; GFI = 0.752; NFI = 0.786; RFI = 0.766; IFI = 0.829; TLI = 0.813; CFI = 0.829; and RMSEA = 0.082 (Figure 4c). The analysis of mediation effects within the alternative model 3 is summarized in Table 5c. The outcome reveals that nearly half of the computed mediation effects do not provide support for the hypotheses that were proposed. Compared to the initial proposed conceptual model, the obtained model fit for the subsequent model is as follows: $\chi^2 = 1973.37$, p = 0.001; df = 614; $\chi^2/\text{df} = 3.214$; GFI = 0.805; NFI = 0.830; RFI = 0.816; IFI = 0.876; TLI = 0.865; CFI = 0.876; and RMSEA = 0.070. All three alternative models had poorer outcomes. Hence, following a thorough examination of three alternative models, we have reached a definitive determination that the initially proposed model demonstrates a high degree of compatibility in facilitating advanced hypothesis testing.

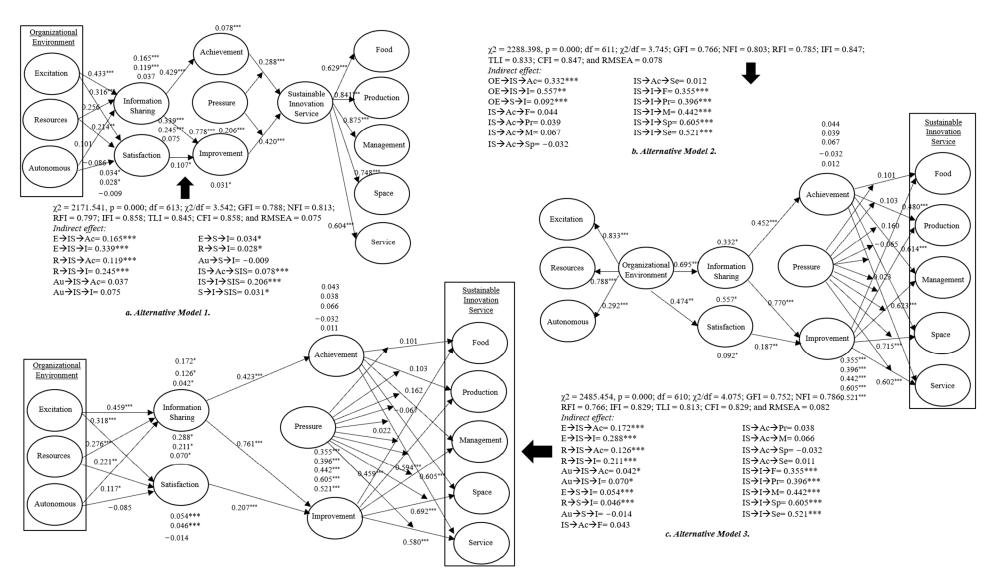


Figure 4. Results of alternative models. Note: * p < 0.050, ** p < 0.010, *** p < 0.001.

Table 5. (a) Analysis of mediation effects in alternative model 1. (b) Analysis of mediation effects in alternative model 2. (c) Analysis of mediation effects in alternative model 3.

(a`) Analys	sis of N	Mediation	Effects in	Alternative	Model 1

NI-	Constructo	Indirect Effect	Percentil	e 95% CI	Bias-Corre	cted 95% CI	− <i>p</i> -Value	Results
No	Constructs	mairect Effect –	Lower	Upper	Lower	Upper	— p-varue	Results
1	Excitation > Information Sharing > Achievement	0.165	0.107	0.236	0.109	0.238	***	Support
2	Excitation > Information Sharing > Improvement	0.339	0.233	0.449	0.233	0.449	***	Support
3	Resources > Information Sharing > Achievement	0.119	0.051	0.203	0.051	0.204	***	Support
4	Resources > Information Sharing > Improvement	0.245	0.115	0.380	0.111	0.375	***	Support
5	Autonomous > Information Sharing > Achievement	0.037	-0.004	0.077	-0.006	0.074	insignificant	Not support
6	Autonomous > Information Sharing > Improvement	0.075	-0.008	0.164	-0.015	0.159	insignificant	Not support
7	Excitation > Satisfaction > Improvement	0.034	0.004	0.067	0.007	0.073	*	Support
8	Resources > Satisfaction > Improvement	0.028	0.002	0.065	0.005	0.070	*	Support
9	Autonomous > Satisfaction > Improvement	-0.009	-0.025	0.003	-0.028	0.001	insignificant	Not support
10	Information Sharing > Achievement > Sustainable Innovation Service	0.078	0.038	0.130	0.038	0.131	***	Support
11	Information Sharing > Improvement > Sustainable Innovation Service	0.206	0.128	0.294	0.131	0.299	***	Support
12	Satisfaction > Improvement > Sustainable Innovation Service	0.031	0.004	0.071	0.006	0.078	*	Support

(b) Analysis of Mediation Effects in Alternative Model 2

NI-	Constructs	Indirect Effect	Percentil	le 95% CI	Bias-Corre	cted 95% CI	— p-Value	D 16 -
No	Constructs	munect Effect —	Lower	Upper	Lower	Upper	— p-value	Results
1	Organizational Environment > Information Sharing > Achievement	0.332	0.229	0.466	0.232	0.474	***	Support
2	Organizational Environment > Information Sharing > Improvement	0.557	0.300	0.797	0.280	0.766	**	Support
3	Organizational Environment > Satisfaction > Improvement	0.092	0.033	0.148	0.043	0.160	***	Support
4	Information Sharing > Achievement > Food	0.044	-0.034	0.135	-0.035	0.131	insignificant	Not support
5	Information Sharing > Achievement > Production	0.039	-0.036	0.143	-0.039	0.138	insignificant	Not support
6	Information Sharing > Achievement > Management	0.067	-0.010	0.171	-0.010	0.171	insignificant	Not support
7	Information Sharing > Achievement > Space	-0.032	-0.123	0.074	-0.138	0.060	insignificant	Not support
8	Information Sharing > Achievement > Service	0.012	-0.059	0.109	-0.070	0.100	insignificant	Not support
9	Information Sharing > Improvement > Food	0.355	0.167	0.488	0.194	0.514	***	Support
10	Information Sharing > Improvement > Production	0.396	0.180	0.536	0.203	0.557	***	Support
11	Information Sharing > Improvement > Management	0.442	0.227	0.577	0.255	0.597	***	Support
12	Information Sharing > Improvement > Space	0.605	0.361	0.755	0.429	0.807	***	Support
13	Information Sharing > Improvement > Service	0.521	0.306	0.665	0.371	0.726	***	Support

Table 5. Cont.

3. T	Constructs	* 11 . 7% .	Percenti	Percentile 95% CI		cted 95% CI	X7.1	
No		Indirect Effect —	Lower	Upper	Lower	Upper	— <i>p</i> -Value	Results
1	Excitation > Information Sharing > Achievement	0.172	0.112	0.243	0.115	0.247	***	Support
2	Excitation > Information Sharing > Improvement	0.288	0.153	0.421	0.151	0.417	***	Support
3	Resources > Information Sharing > Achievement	0.126	0.054	0.214	0.059	0.221	***	Support
4	Resources > Information Sharing > Improvement	0.211	0.081	0.350	0.083	0.354	***	Support
5	Autonomous > Information Sharing > Achievement	0.042	0.002	0.082	0.001	0.082	*	Support
6	Autonomous > Information Sharing > Improvement	0.070	0.003	0.144	0.003	0.145	*	Support
7	Excitation > Satisfaction > Improvement	0.054	0.020	0.087	0.026	0.098	***	Support
8	Resources > Satisfaction > Improvement	0.046	0.011	0.087	0.015	0.097	***	Support
9	Autonomous > Satisfaction > Improvement	-0.014	-0.032	0.004	-036	0.001	insignificant	Not support
10	Information Sharing > Achievement > Food	0.043	-0.034	0.133	-0.035	0.130	insignificant	Not support
11	Information Sharing > Achievement > Production	0.038	-0.036	0.142	-0.040	0.135	insignificant	Not support
12	Information Sharing > Achievement > Management	0.066	-0.010	0.169	-0.010	0.169	insignificant	Not support
13	Information Sharing > Achievement > Space	-0.032	-0.122	0.073	-0.137	0.059	insignificant	Not support
14	Information Sharing > Achievement > Service	0.011	-0.059	0.107	-0.069	0.098	insignificant	Not support
15	Information Sharing > Improvement > Food	0.355	0.168	0.486	0.193	0.509	***	Support
16	Information Sharing > Improvement > Production	0.396	0.180	0.533	0.204	0.551	***	Support
17	Information Sharing > Improvement > Management	0.442	0.227	0.573	0.256	0.594	***	Support
18	Information Sharing > Improvement > Space	0.605	0.361	0.751	0.430	0.803	***	Support
19	Information Sharing > Improvement > Service	0.521	0.306	0.660	0.373	0.724	***	Support

Note: * *p* < 0.050, ** *p* < 0.010, *** *p* < 0.001.

5. Conclusions and Discussion

The results show that restaurants provide a good organizational environment with a well-organized flow of information sharing can effectively obtain improvements and achievements, which could have significant effects on sustainable innovation service. These results indicate that employees tend to make more contributions to sustainable innovation service when they work in an ideal organizational environment where they have opportunities to share unique life experiences, work experiences, or learning experiences comfortably through earning achievement and improvement processes. In addition, the improvement also tends to be enhanced when organizations try to satisfy customer needs. Furthermore, the findings of the study emphasize that exerting pressure on a restaurant's employees to pursue higher achievements or to seek ways to improve organizational operations can make it impossible for them to innovate.

5.1. Theoretical Contribution

This study determined and explained employees' psychological status regarding sustainable innovation behavior prediction. Previous research has demonstrated that the organizational environment helps to support employee creativity performance in the tourism and hospitality sector [113,114]. First, this study again confirms that organizational environment is a critical, leading factor that will decide employees' psychological status and extends the literature on this topic when examining its influence on sustainable innovation service in the restaurant industry. This outcome is in line with a previous study of sustainable restaurant services [10]. This finding emphasizes the nature of social exchange theory that an employee's willingness to contribute to the job and the organization depends on the resources and environment that he or she receives from the organization.

Second, the current study provides a research framework for sustainable innovation behavior prediction by constructing a second-order analysis model of the organizational environment with important mediating factors, such as information sharing, achievement, and improvement. Ref. [112] reported that hospitality organizations' internal processes support information sharing and exploiting performance. This finding is in line with some researchers who indicated that hospitality employees' information sharing is substantial in boosting positive organizational achievements [110,115]. This research responds to further research suggestions to consider other mechanisms underlying knowledge sharing among hospitality employees [116]. The result further highlights the mediation effects of achievement and improvement between information sharing and sustainable innovation service. Thus, this study expands on the notion that knowledge is a crucial strategic resource for organizational innovation that helps to create a competitive advantage for a business [117], as well as to develop and examine mechanisms for enabling organizations to utilize the benefits from information sharing [68]. This result gives prominence to the essence of innovation diffusion theory because this theory assumes that effective communication channels or information sharing elements, which are established so that employees can easily access new ideas or experiments, will help them to obtain a willing psychology; then, innovation will be adopted and spread more quickly.

Third, this study investigates the relationship between organizational environment and improvement, considering the potential mediation effect of satisfaction. According to signal theory, an organization might create a reputation as a good place to work for employees to differentiate itself from its competitors, which can help to highlight its unique characteristics, bringing about satisfied feelings and attracting potential customers. The results show that the direct impact of the environment on satisfaction is significant; the theory is therefore supported. This result expands the idea of [118], who supposed that employee productivity is expected to rise when organizations improve internal information sharing and employee satisfaction, and the expedition of information sharing among satisfied workers serves as a catalyst for further improved company outcomes. The results further highlight the moderation effects of pressure on the relationship between achievement and sustainable innovation service and on the relationship between improvement

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and sustainable innovation service. Thus, this research responds to [87] by conducting more fine-grained analyses related to pressure and green innovation.

5.2. Managerial Contribution

We identify various managerial implications and recommendations based on the aforementioned findings for upgrading the organizational environment and promoting sustainable innovation services in the restaurant industry. First, the organizational environment becomes the main reason that employees are satisfied or unsatisfied [119]. Restaurant owners must give their staff better environmental conditions to execute sustainable services. They should pay attention to updating technology and facilities, redesigning the workplace, optimizing the use of capital, assets, brand names, skilled personnel machinery, knowledge, and value. In addition, they should consider an appropriate leadership approach and style, organizational politics, and organizational culture to enhance enthusiasm. Managers also should be aware of organizational autonomy in some situations so that employees can make instant decisions to address issues without consulting the manager. To meet consumer expectations and enhance company responsiveness, managers should foster a work climate that is innovative, results-driven, and challenging. This environment should encourage employee initiative and serve as a catalyst for the organization-wide production of new product or service ideas. On the other hand, a work environment that is trustworthy, people-centered, and supportive should also be considered because it may promote collaboration across the entire organization, capitalize on the knowledge and skills of all team members, facilitate employee participation in decision-making, enhance intelligence gathering, and heighten customer and rival orientations.

Second, managers should invest in education development to support informationsharing factors because restaurant employees will place more effort on achieving better results based on how much their perceived innovation can be improved [10]. By routinely disclosing the outcomes of sustainable service innovation, managers can encourage staff members to engage in innovation by demonstrating to them the value of sustainable services. Moreover, by fusing individual performance assessments and awards with organizational performance goals, employees can also see the value of sustainable management and then offer opinions about how to accomplish the pertinent goals, as well as how to decrease the energy and material costs to managers. Additionally, the majority of restaurant employees are from the neighborhood. As a result, the restaurant can explain to its staff the benefits to local areas from fostering sustainable practices, for example, boosting the local financial situation and safeguarding the environment through education and training. Restaurant personnel will be more motivated to participate in sustainable services and improve organizational performance by boosting the perceived spread of the innovation process. Managers should think about some kind of intervention that encourages staff to openly share knowledge with coworkers from diverse cultures. This process can increase the team members' capacity to successfully coordinate their knowledge and talents in achieving innovative outcomes for the restaurant.

Third, employee performance depends on job satisfaction, and awards are among the most effective management techniques to enhance employee satisfaction [120]. Pay, promotions, bonuses, and other sorts of awards are only a few ways that managers can encourage staff and improve output. Customers' overall impression of a restaurant's physical space design will decide their satisfaction [12]; thus, future restaurant designs may be more successful in generating graceful, comfortable, trendy, beautiful, and eco-friendly spaces, and the key concepts of space design must be clear and distinct.

Fourth, the owner of a restaurant should think about investing in leadership development, try to ensure that managers fully understand the harmful effects of employee exploitation, and avoid bad management habits, such as placing too much pressure on their staff. Managers should put appropriate pressure on employees to participate in sustainable services, encourage them to enroll in training programs related to sustainable services to improve their capacity for creative thought, give them more chances to learn

new knowledge, organize creative competitions and teams to be in charge of developing and implementing sustainable services, and give employees a clear understanding of the objectives of sustainable service [10]. The variety of jobs assigned to employees should be increased by the management, as doing so could improve both their level of performance and their job enrichment. The jobs should be modified, and the workers should be given more authority to attain these outcomes. To help the restaurant's staff to develop a positive attitude toward sustainable innovation perception and confidence in handling work pressure, managers should routinely organize social activities linked to sustainable innovative behavior.

Fifth, by gamifying the innovation process through competitions in which each team's duty is to submit new ideas for products, technology, or business procedures, restaurant entrepreneurs may inspire personnel to participate in innovation. The winning team is then given recognition and rewards for their efforts and resources used to develop the idea. In some ways, this process might be an improvement in management, and it has been proven to enhance internal coordination and cooperation processes within businesses [121]. This exercise develops creative thinking, inventiveness, and openness among staff members, which are necessary to develop and implement innovation. In addition, managers should consider either annual prizes or advancements for employees, which could be based on the achievement of key performance indicators related to the implementation of innovation. Doing so not only might reflect the leader's encouragement of staff members who perform well in terms of innovation but also could help to stimulate employees' eagerness about innovation practices.

5.3. Limitations and Future Suggestions

This study acknowledges the presence of several limitations that warrant attention and that could be addressed in future research. First, in the present study, the measurement of the organizational environment factor relied on three subdimensions, including excitation, resources, and autonomy, for organizational environment factor measurement. However, to measure the organizational environment, some researchers have used other subdimensions, such as organizational culture, organizational politics, and leadership [122]; encouragement, support, resources, challenges, freedom, hindrance, and pressure [11]; and resources, encouragement, and pressure [123]. Thus, future research may consider examining organizational environments using different subdimensions. Second, this research collected data from the main sample, which consisted of restaurants. Further studies may consider collecting data from other tourism and hospitality organizations, for example, hotels and destination management organizations. Third, in this work, the relationships among organizational environment, information sharing, achievement, improvement, satisfaction, pressure, and sustainable innovation service were examined using a quantitative method. To strengthen the validity of the identified mediating and moderating effects discovered in this study, the use of mixed approaches is advised.

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