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Post-pandemic restaurant patronage: the importance of neuroticism in shaping in person dining intentions

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Structured Abstract

Purpose

Even after the lifting of all government restrictions, introduced to combat the spread of Covid-19, many consumers remain fearful of in-person dining. This paper seeks to understand this reticence, and explain post-pandemic restaurant dining intentions.

Design/methodology/approach

The paper introduces and tests a conceptual framework for understanding in-person dining intentions in the post-Covid-19 era, utilizing structural equation modelling. To empirically validate the model, survey data collection (n=436) occurred in China after the government lifted its “Zero-Covid” policy.

Findings

Neuroticism, as a personality trait, negatively affects restaurant trust and increases fear of Covid-19 (threat appraisal), which in turn reduces intentions to dine in a restaurant post-pandemic. Neuroticism also increases the importance placed on preventative measures by diners (coping appraisal), with the latter positively affecting in-person dining intentions.

Practical Implications

The paper details the hygiene actions which restaurateurs can take to strengthen consumers’ intentions to dine, post-pandemic. We encourage restaurant managers to communicate the measures they implement to reduce the spread of Covid-19 and other viruses, to encourage

in-person dining. Manager should regard such measures not as short-term actions, but important to long-term, post-pandemic restaurant viability.

Originality

The paper introduces and validates a novel model, which relates neuroticism to Protection Motivation Theory. It identifies that neuroticism increases fear of Covid-19 (threat) and the importance placed on restaurants' preventive measures (coping strategy). Neuroticism is associated with maladaptive coping strategies and underpins reticence to dine out even after the lifting of all government restrictions.

Key words

Restaurants, post-pandemic, neuroticism, preventative measures, Covid-19

Introduction

The Covid-19 pandemic led governments globally to impose restrictions, to protect human health, on businesses' and consumers' activities (Hüsser and Ohnmacht, 2023, Dogru-Dastan et al., 2022), which severely impacted the hospitality sector (Tuzovic et al., 2021). For instance, in the early months of the pandemic, many governments banned in-person dining in restaurants and there was a substantial shift to home delivery services (Wei et al., 2021, Tuzovic et al., 2021). Even after the lifting of governmental restrictions on restaurants, many consumers remain fearful of in-person dining, with restaurants struggling to recover (Fortune Business Insights, 2024, Augsburg et al., 2024, WARC, 2024). Furthermore, the Covid-19 pandemic heightened awareness of health and hygiene in public spaces (Das et al., 2021). This shift in consumer behavior may not be limited to the Covid-19 pandemic, but spillover to other health risks, such as during flu seasons or future pandemics (Kim et al., 2022, Chen et al., 2025). Understanding post-pandemic consumer behavior, often referred to as the “new normal” in the hospitality sector is thus a research priority (Sun et al., 2022, Chen et al., 2025).

The Covid-19 pandemic stimulated both academic and practitioner interest in the factors affecting willingness to dine in restaurants (Yenerall et al., 2022, Rybak et al., 2021, Wei et al., 2021, Wen and Liu-Lastres, 2022, Song et al., 2022). This literature, often drawing on the theory of planned behavior or health protection models (Wei et al., 2021, Wen and Liu-Lastres, 2022, Kim et al., 2022, Ryu et al., 2023), identifies fear of Covid-19, perceived efficacy, dining involvement, risk aversion, and subjective norms as factors that explain variations in behavioral intentions. However, the potential role of neuroticism, as a stable personality trait, in explaining reticence to in-person dining, even after the lifting of all governmental regulations, remains underexplored. This fits with wider calls to better

understand the processes by which neuroticism affects consumer behavior (Hamburger and Ben-Artzi, 2000, Shumanov et al., 2022).

Understanding reticence towards in-person dining can help restaurants recover post-pandemic as well as aiding the hospitality sector to prepare and respond to future pandemics or other biosecurity crises that provoke concerns regarding social contact (Rybak et al., 2021, Correia et al., 2024). This is an important challenge as the probability of pandemics similar to Covid-19 occurring in forthcoming decades, particularly with environmental change, is high (Marani et al., 2021). Preventive measures in restaurants and a deeper understanding of the role of personal traits, therefore, form part of a long-term strategy to reassure consumers and enhance their dining experience.

This paper consequently addresses a key research question – *what factors determine intentions to dine in person in a restaurant, in the post-Covid era?* To answer this research question, the paper draws on a quantitative survey, conducted in China, identifying how neuroticism affects customers fears of Covid-19, restaurant trust, and the importance of preventative measures, to determine intentions to dine out in a restaurant post-pandemic.

Literature Review

Countries varied in their responses to the Covid-19 pandemic in terms of the restrictions placed on the hospitality sector and the timing of their imposition and lifting. Researchers seek to understand both restaurant diner behaviour during and post pandemic, especially the factors that lead some consumers to return to in-person dining, while others choose not to do so. Table 1 provides a summary of relevant research conducted since the beginning of the pandemic, detailing each study's objectives, theoretical framework, sample, methodology and key findings.

Table 1 reveals that the literature draws on a variety of theoretical frameworks, including the Theory of Planned Behaviour (Chou et al., 2022), Protection Motivation Theory (Ryu et al., 2023), Stimulus-Organism-Response (Siddiqi et al., 2022) and proxemics and social exchange theory (Song et al., 2022). Studies cover a variety of countries, including Australia and the USA (Wang et al., 2021, Belarmino and Repetti, 2024), Brazil (Hakim et al., 2021), China (Zhong et al., 2021), and Turkey (Dedeoğlu and Boğan, 2021). Research methods employed include semi-structured interviews (Tuzovic et al., 2021); surveys (Wei et al., 2021) and measuring consumer versus business service expectations (Vandenhoute et al., 2022). Significant factors affecting intentions to dine in a restaurant identified include: consumers' fear of Covid-19 (Siddiqi et al., 2022, Ryu et al., 2023, Wen and Liu-Lastres, 2022), perceived effectiveness of safety / hygiene measures (Wang et al., 2021, Vandenhoute et al., 2022, Tuzovic et al., 2021, Jeong et al., 2022, Sun et al., 2022), restaurant trust (Hakim et al., 2021, Jeong et al., 2022), risk aversion (Yenerall et al., 2022), dining involvement (Wei et al., 2021), and the rewards of dining out (Ryu et al., 2023).

The studies highlight a requirement for restaurant managers to understand what is important for diners in making (non)visit decisions. Importantly, the perception of managers and customers can be inconsistent - Vandenhoute et al. (2022, p.15) in their survey of Belgian consumers and businesses found a marked difference between the two groups' perceptions. For consumers the 'availability of disinfectants, staff wearing masks, extensive cleaning of surfaces, strict handwashing and training employees about sanitary practices were considered the most important precautions to be taken by restaurants.' However, food service managers 'did not expect their customers to attribute that much importance to the safety measures in place at their establishment.' Post-pandemic, hygiene factors have become more important for restaurant patrons, with Siddiqi et al. (2022) finding a link between hygiene factors and consumers' fear of catching Covid-19, which in turn results in psychological distress and

anxiety. Whilst fear may decline over time, for some consumers anxiety around visiting restaurants persists. Explaining variations in diners' willingness to return to an in-restaurant experience, thus remains an important task (Ryu et al., 2023).

Analysis of Table 1 helps identify a key gap in the literature. To date there has been little attention given to psychological traits that may explain diners' behavior, particularly neuroticism. Variations in neuroticism helps explain why consumers react differently in social situations and neuroticism is positively associated with higher stress appraisals and greater reactivity to stressful events (Bellingtier et al., 2023). It explains differences in behavior both during and post the Covid-19 pandemic (Aschwanden et al., 2021, Bellingtier et al., 2023). As far as we are aware, none of the studies of dining intentions during the Covid or post-Covid periods consider neuroticism. The next section theorizes how neuroticism affects threat and coping appraisals, drawing on and augmenting Protection Motivation Theory.

Table 1: Overview of previous research relating to restaurant diner behavior during and post-pandemic

Author(s) and Year	Objective	Theory	Sample	Method	When study conducted	Main results / findings
Dedeoğlu and Boğan (2021)	How individuals' intentions to visit upscale restaurants are affected by dining out motivations under the COVID-19 pandemic.	Protection motivation theory	681 people living in Istanbul	Survey	n/a	Sociability and affect regulation impact on visit intention restaurant. Among participants with low-risk perception, the effect of sociability, pleasure, and social image on visit intention was stronger
Siddiqi et al. (2022)	To assess perceived restaurant hygiene attributes with respect to consumers' fear of COVID-19 and associated psychological distress and the latter's behavioral outcomes	Stimulus-organism-response theory	407 participants	Survey	September 2021	Consumers' fear of COVID-19 caused psychological distress. Psychological distress positively affects restaurant preventive behaviors and revisit intentions, whereas fear has no such effect.
Wang et al. (2021)	How crowdedness and in-restaurant safety measures influence patronage choices (eat-in vs. order takeaway vs. not patronize)	n/a	593 US and 591 Australian consumers	Experiment	September and October 2020	Level of crowdedness and types of safety measures significantly influenced consumer perceptions of the restaurant in terms of safety, comfort, popularity, price, reputation, quality, and social responsibility.
Ryu et al. (2023)	Explain restaurant patrons' intention to practice self-protection	Protection motivation theory	402 participants	Survey	October 2021	Visit frequency and protective behavior influenced by perceived efficacy, self-confidence about protecting oneself, fear of Covid-19, and the expected rewards of dining out.
Hakim et al. (2021)	How consumers' intention to visit restaurants is affected by consumers' risk perception and different types of trust.	n/a	546 Brazil consumers	Survey	October 2020	Consumers' trust in a restaurant and brand, fair price, solidarity with the restaurant sector, disease denial, and health surveillance trust predict intention to visit a restaurant during the COVID-19 pandemic.
Vandenhaute et al. (2022)	Consumers' attitudes towards and transparency perceptions of COVID-19-related safety measures and to identify determinants of intentions once government restrictions limited	n/a	1697 consumers; 780 businesses (3 studies)	Survey	May, June, and November 2020	Higher the importance attributed to (hygiene) measures; the less likely consumers were to (intend to) revisit a restaurant.
Wei et al. (2021)	Effects of perceived importance of preventive measures, dining involvement, brand trust, and customers' intention to dine during the reopening period.	n/a	296 respondents	Survey	June 2020	Customer dining involvement had a direct positive effect on intentions to dine out. Perceived importance of preventive measures may have indirectly increased customers' intentions to dine out.
Chen et al. (2025)	Identify the factors influencing dine-in restaurant choices before and after Covid	Protection Motivation Theory	338 and 603 US citizens (2 studies)	Survey	June and December 2021	Although cleanliness and food quality remain essential, the pandemic reshaped consumer priorities. Post-Covid, spacious seating, improved indoor air quality, and outdoor seating become salient

Author(s) and Year	Objective	Theory	Sample	Method	When the study was conducted	Main results / findings
Chou et al. (2022)	To examine the relationships among government-level, enterprise-level variables, and personal-level variables	Theory of Planned Behavior	1,098 consumers in Taiwan	Survey	April – June 2020	Perceived anxiety strengthens the relationship between attitude towards life and consumption intention. Information and communication mediate the relationships between crisis management and COVID-19 impact.
Wen and Liu-Lastres (2022)	Identify the safety signals that predict consumers' perceived response efficacies of restaurants. Impact of threat appraisal and coping appraisal on consumers' dining behaviors.	Protection motivation theory	351 consumers	Survey	January 2021	Perceived threat of Covid-19 negatively influenced consumers' intention to dine out. Restaurants' active response to the pandemic and safety measures enhance consumer trust and dining activities.
Yenerall et al. (2022)	The influence of risk perception and risk aversion on restaurant utilization (indoor and outdoor dining) and expenditures in the U.S.	Expected utility theory	2000 respondents	Survey	July 2020	Risk aversion and risk perception decreased the use of in-person restaurant services and increased the probability of using take-out and delivery
Filimonau et al. (2022)	To investigate food consumption in households before, during, and after Covid-19, with emphasis on both in-home and away from home consumption.	n/a	16 participants	Semi-structured interviews; survey	June 2020	Restaurants should redesign their settings for better safety (e.g., limiting the number of customers, food provision in outdoor areas), apply preventive and protective health precautions, and hygiene in restaurants.
Zhong et al. (2021)	How consumers' intention to eating out are influenced by subjective norms, perceived physical and psychological risk, enjoyment, restaurant precautionary measures.	Theory of Reasoned Action	508 Chinese and Korean	Survey,	October and November 2020	Subjective norms have a positive effect, and perceived psychological risk has a negative effect on intentions toward dining out. Precautionary procedures within restaurants have no direct impact on consumers' intention towards dining out, but such measures may help to lower consumers' perceived risks
Tuzovic et al. (2021)	Consumers' process of deciding whether to dine out and wellbeing perceptions while practicing social distancing at restaurants.	n/a	15 interviews	Semi-structured interviews	May – June 2020	Reduce restaurant crowding to encourage dining in restaurants
Song et al. (2022)	How social distancing practices, protective wear measures, and social interaction levels influence restaurant customers' perceived risk, social exchange, and intention to avoid restaurant dining.	Proxemics and social exchange theories	404 respondents	Survey	June 2020	Protective wear and social interaction levels influenced customers' risk perception and social exchange quality. The relationship between risk perception and desire for avoidance is moderated by risk propensity
Belarmino and Repetti (2024)	How adherence to Covid-19 restrictions impacts restaurant diners' willingness-to-pay	Rational choice theory	1063 respondents	Conjoint	January 2021	Employees in masks, customers in masks, and seating capacity significantly impacted willingness-to-pay by restaurant consumers.

Source: Developed by authors

Conceptual Framework and Hypotheses Development

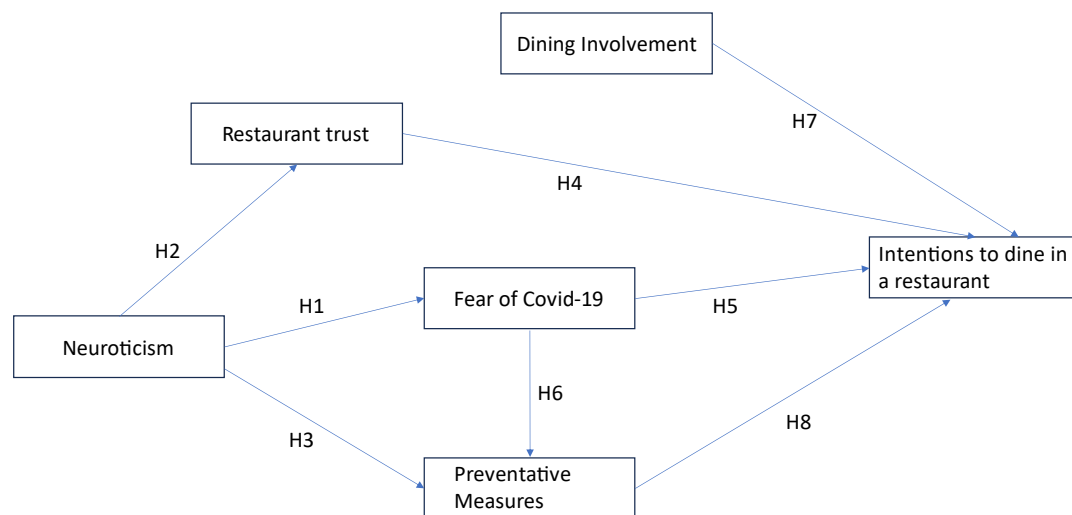
Conceptual Framework

Protection Motivation Theory (PMT) seeks to explain the effects of fear appeals and appraisals on health attitudes and behavior (Rogers, 1975). According to PMT, two cognitive processes determine individuals' responses to a threat: threat appraisal and coping appraisal. Appraisals of a threat relate to its perceived severity and vulnerability (Maddux and Rogers, 1983). Generally, the greater the threat appraisal, the more likely individuals will adopt self-protection measures (Floyd et al., 2000). Evaluation of coping strategies depends on their perceived efficacy. Empirical evidence suggests that PMT can help understand variations in behavior when people confront threats, such as relating to biosecurity, rabies, cancer, and computer viruses (Floyd et al., 2000, Xie et al., 2022, Subedi and Kubickova, 2024). Several studies employ PMT to explain citizens behavior during the Covid-19 pandemic (Pilch et al., 2021, Kim et al., 2022, Subedi and Kubickova, 2024).

The literature introduces several extensions to PMT. For instance, Subedi and Kubickova (2024) augment PMT by considering trust, as trust in relevant institutions (like a government during a pandemic) affects self-protection behavior. Likewise, Xie et al. (2022) identifies user involvement (evaluations of the importance and personal relevance of an activity) affects behavioral intentions in the presence of a threat. Other work considers the relations between PMT and personality traits, such as how neuroticism may predict maladaptive coping behavior (Pilch et al., 2021). These augmentations to PMT inform our model, which seeks to explain factors affecting in-person dining intentions in the post-Covid-19 era.

The model proposes that in person dining intentions relate to fear of Covid-19 (threat appraisal) and restaurant's preventative measures (coping appraisal), as well as trust (restaurant trust) and involvement (dining involvement). To better understand appraisals, we theorize how neuroticism, as a psychological trait associated with fear and anxiety, affects threat and coping appraisals as well as trust. Figure 1 presents the conceptual framework underpinning the study.

Figure 1: Conceptual Framework for factors affecting in-person dining intentions in the post-Covid-19 era



Source: Developed by authors

The rest of this section introduces each construct in turn, outlining the hypotheses for testing.

Neuroticism

Neuroticism is fundamental personality trait, referring to “the sensitivity of a domain-general system to respond to environmental threats” (Denissen and Penke, 2008, p.1289). Trait anxiety and fear are facets of neuroticism, so that individuals who score high on neuroticism tend to experience anxiety, fear, stress, agitation, and loneliness, while those with low levels of neuroticism are calmer and less easily upset (Roccas et al., 2002, Doan et al., 2021). Moreover, PMT posits that vulnerability heightens perceived threat level, encouraging individuals to adopt self-protection strategies (Maddux and Rogers, 1983). Individuals with a higher level of neuroticism experience greater difficulties in dealing with stressful life events, such as a pandemic or other health threats (Bellintier et al., 2023), since they have poorer coping strategies (Frølund Pedersen et al., 2016, Iqbal et al., 2023).

Fear is an intense, negative feeling that arises when there is a real or expected threat (Chen & Eyoun, 2012). During the pandemic, many individuals feared infection, whether to themselves or family members and friends (Ahorsu et al., 2020). Neuroticism is highly correlated with fear (Doty et al., 2013), with empirical evidence indicating that fear of Covid-19 is positively linked with neuroticism (Nazari et al., 2021). Thus, it is hypothesized that fear of Covid-19 will be more pronounced in people with higher levels of neuroticism than in those with lower levels.

Neuroticism is a determinant of individual differences in trust behavior (Thielmann and Hilbig, 2015). Higher levels of neuroticism are associated with greater risk and loss aversion (Bibby and Ferguson, 2011). Similarly, empirical evidence suggests that neuroticism

is negatively correlated with trust, as those with high levels of the trait experience greater anxiety when confronted with external stimuli (Sharan and Romano, 2020). Given the tendency to experience anxiety and fear, individuals with high levels of neuroticism may place greater emphasis on actions to reduce perceived fears – for instance, Aschwanden et al. (2019) identifies a positive association between neuroticism and the likelihood of seeking colorectal cancer screening. Consequently, we expect that:

H1: Neuroticism positively affects customers' fear of Covid-19

H2: Neuroticism negatively affects customers' trust in restaurants

H3: Neuroticism positively affects the importance placed on preventative measures

Restaurant Trust

Trust represents a feeling of safety and readiness to rely on someone or something, which affects behavioral intentions (Chen and Dibb, 2010). Similarly, restaurant trust represents a customer's confidence and reliance on a restaurant because of its perceived reliability and integrity (Wei et al., 2021). Trust is an important antecedent of behavior generally, as well as in the hospitality sector, so that restaurant trust positively influences consumers' intentions (Hakim et al., 2021). Evidence from studies conducted during the pandemic found that restaurant trust positively affects consumers' willingness to dine in a restaurant (Hakim et al., 2021, Wen and Liu-Lastres, 2022) as well as willingness to pay (Jeong et al., 2022). Thus, it is expected that:

H4: Restaurant trust affects intentions to dine in a restaurant.

Customers' fear of Covid-19

Given the severity, consequences, and contagious nature of the Covid-19 virus, fear of infection became widespread (Ahorsu et al., 2022). During the pandemic, many individuals avoided crowded public places and situations in which there was a possibility of becoming infected. One such situation may be dining in a restaurant because of increased contact between diners, and as well as with waiting staff. If individuals perceive dining in a restaurant to be a risky behavior that substantially increases their likelihood contracting Covid-19, it will reduce the attractiveness of dining out (Song et al., 2022, Jeong et al., 2022, Wen and Liu-Lastres, 2022, Ryu et al., 2023, Filimonau et al., 2022).

PMT posits that threat appraisal, such as the assessment of whether Covid-19 is severe and a person feels vulnerable to it, affects the adoption of self-protection measures (Rogers, 1975). Given this reasoning it is expected that consumers' fear of Covid-19 will also affect the importance given by potential diners to preventative measures that may reduce the risk of Covid-19 infection, such as placing hand sanitizers at the restaurant's entry or the obligatory wearing of protective masks (Rizou et al., 2020). Consequently:

H5: Consumers' fear of Covid-19 negatively affects intentions to dine in a restaurant.

H6: Consumers' fear of Covid-19 positively affects the importance placed on preventative measures.

Dining Involvement

Involvement relates to the extent to which an individual regards a particular action or object as personally relevant to their goals, concepts, and values (Zaichkowsky, 1985). Consequently, dining involvement represents the worth, motivation, and interest that a customer feels toward

dining in a restaurant (Wei et al., 2021). Involvement is an important antecedent of behavioral intentions, affecting the degree of attention and frequency of engaging in a particular action (Lai and Chen, 2011). Consequently, dining involvement should predict intentions to dine in a restaurant (Kim et al., 2012). Given that pandemic lockdowns prevented many from visiting restaurants, it was assumed that highly involved customers will have a considerable desire to eat at restaurants after the lifting of restrictions (Ryu et al., 2023). Wei et al. (2021) provides empirical support, finding that a higher level of customer dining involvement is associated with a higher interest in dining in a restaurant.

H7: Dining involvement positively affects intentions to dine in a restaurant.

Restaurants' preventative measures

Following PMT, coping appraisal relates to the perceived effectiveness of preventative measures (Rogers, 1975) - actions that seek to reduce the likelihood of an undesirable outcome (Rosenstock, 1974). In the case of Covid-19, several preventive measures reduce the likelihood of virus transmission (Pradhan et al., 2020). Some of these measures can be implemented at the level of a restaurant, such as hand disinfection upon arrival, greater distance between tables, the wearing of protective masks by employees, and disinfecting surfaces. Given these context related factors, one effect of Covid-19 was that customers began to pay greater attention to cleanliness and sanitation in the dining environment (Jeong et al., 2022, Belarmino and Repetti, 2024). Restaurants that implement preventative measures reassure consumers (Wei et al., 2021) and it is expected that implementing preventative measures that are salient to potential diners in a restaurant will thus increase intentions to dine. This leads to the following hypothesis:

H8: A restaurant's implementation of salient preventative measures positively affects intentions to dine in a restaurant.

The empirical research conducted seeks to test these hypotheses and better understand the determinants of intentions to dine in a restaurant, after the lifting of all government restrictions.

Methodology

Context, data collection and construct measures

Survey data collection occurred in China, the world's largest food market (Statista, 2024). China's restaurant sector has struggled since the pandemic. In 2023, 1.3 million restaurants closed down in China, and in the first half of 2024 another million were lost (WARC, 2024). Ongoing reticence towards in-person dining has combined with weaker purchasing power and the sustained growth of home delivery services to squeeze demand for full-service restaurants (WARC, 2024). Fine dining establishments have been particularly affected (Reuters, 2025).

Sample data were collected using Credamo, a professional research data collection platform, with a very extensive and representative pool of Chinese participants. Data collection occurred in 2023 from participants residing in China, after the government lifted its "Zero-Covid" policy and all dining out restrictions. A total of 436 valid responses were received. Table 2 profiles the socio-demographic characteristics of survey respondents.

Table 2 Socio-demographic characteristics of surveyed sample

		Frequency	Percent
Gender	Female	238	54.6
	Male	198	45.4
Age	18-24	91	20.9
	25-34	242	55.5
	35-54	90	20.6
	55-65	13	3.0
Highest level of education attained	Primary education	3	0.7
	Secondary education	20	4.6
	Associate degree	41	9.4
	Batchelor's or equivalent level	318	72.9
	Master's or equivalent level	49	11.2
	Doctoral or equivalent level	5	1.1
Doses of Covid-19 vaccine	One dose	11	2.5
	Two doses	68	15.6
	Three and more doses	348	79.8
	None	8	1.8
	Prefer not to say	1	0.2
Dining out frequency	Almost everyday	23	5.3
	Twice or three times per week	166	38.1
	Once per week	98	22.5
	Twice per month	62	14.2
	Once per month	65	14.9
	Once per year	19	4.4
	Never	3	0.7
	Total	436	100

Source: developed by authors

The scales and items used in this study were adapted from previous research, as shown in Table 3, with the preventative measures scale derived from Yang et al. (2014). Neuroticism was measured according to the extensively verified 12-item scale of Eysenck et al. (1985). The measures for restaurant trust and dining involvement follow those of Wei et al. (2021), which are ideally suited for, and validated in, a restaurant context. The frequently employed, four-item scale of Zeithaml et al. (1996) captured behavioural intentions, while measures for consumers' fear of Covid-19 derive from Ahorsu et al. (2022). The latter scale has been validated in several country contexts (Reznik et al., 2021). All items were measured using a 7-point Likert scale, with options from strongly disagree (1) to strongly agree (7).

Data analysis

PLS-SEM is one of the most widely employed tools to test structural equation models, that utilizes an iterative approach and accounts for the total variance. PLS is advantageous in explaining paths in a model as it decreases the residual variances and maximizes the explained variance of endogenous constructs (Hair et al., 2011). As this study does not rely on assumptions of normality, PLS was chosen to test the model (Hair et al., 2011).

Research Ethics

The research received ethical approval from the lead author's institution. The research complies with the European Code of Conduct for Research Integrity (ALLEA, 2023) and relevant national laws. No personal data were collected – via Credamo we received anonymized responses only, and participation was entirely voluntary. All respondents are adults. Respondents received a briefing on the nature of the study, noting that they could withdraw at any time, as part of an introduction to the survey, before answering any questions.

Results

Measurement model evaluation

Exploratory Factor Analysis (EFA) was conducted to examine the preventative measures scale. The Kaiser-Meyer-Olkin (KMO) test showed a value of 0.863 (>0.50) and Bartlett's test of sphericity resulted in a p -value of less than 0.001, indicating the appropriateness of the data for conducting factor analysis. The principal axis factoring method was applied, and the result revealed a single factor with eigenvalues higher than 1.00, which was also supported by the Scree Plot. Hence, preventative measures is justified as a unidimensional construct. One item with a loading below 0.50 was removed (i.e., Preventative_7).

The measurement model was assessed by evaluating the indicator loadings, internal consistency reliability, and convergent validity (Table 3). Eight items were removed (i.e., Trust_5, Trust_6, Trust_7, Trust_9, Involvement_1, Preventative_5, Preventative_6, Preventative_8) with a factor loading lower than .708. Though the standardized loading of Preventative_4 is slightly below .708, it is retained as the AVE value for preventative measures is above .5, indicating an acceptable item reliability as the construct accounts for more than 50 per cent of the indicator's variance. In addition, AVE values for all constructs exceeded .5, demonstrating satisfactory convergent validity (Henseler et al., 2009). Furthermore, Composite Reliability (CR) and Cronbach's alpha coefficients are well above the minimum threshold of .7, thereby, establishing the internal consistency (Hair et al., 2011).

Discriminant validity was then tested using the Heterotrait-Monotrait ratio of correlations (HTMT). The HTMT values of all constructs are significantly lower than the conservative threshold value of 0.85 (Table 3), indicating that discriminant validity is also established.

Table 3 - Validity and reliability for constructs

	Item ID	Factor loading	Cronbach's alpha	CR	AVE
Intention adapted from Zeithaml et al. (1996)	Intention_1 - I intend to dine out at a restaurant again	.775	.788	.862	.609
	Intention_2 - I would recommend going to restaurants to my friends or others	.810			
	Intention_3 - I would say positive things about visiting restaurants to others	.738			
	Intention_4 - I intend to dine out in the next few weeks	.798			
Neuroticism adopted from Eysenck et al. (1985)	Neuroticism_1 - Does your mood often go up and down?	.845	.962	.966	.706
	Neuroticism_2 - Do you ever feel 'just miserable' for no reason?	.834			
	Neuroticism_3 - Are you an irritable person?	.749			
	Neuroticism_4 - Are your feelings easily hurt?	.873			
	Neuroticism_5 - Do you often feel 'fed-up'?	.864			
	Neuroticism_6 - Would you call yourself a nervous person?	.865			
	Neuroticism_7 - Are you a worrier?	.891			
	Neuroticism_8 - Would you call yourself tense or 'highly-strung'?	.867			
	Neuroticism_9 - Do you worry too long after an embarrassing experience?	.846			
	Neuroticism_10 - Do you suffer from 'nerves'?	.785			
	Neuroticism_11 - Do you often feel lonely?	.831			
	Neuroticism_12 - Are you often troubled about feelings of guilt?	.825			
Restaurant Trust adapted from Wei et al. (2021)	Trust_1 This restaurant seems to have sound principles that guide its behaviour	.782	.857	.893	.583
	Trust_2 This restaurant seems to keep its commitments.	.763			
	Trust_3 very capable of serving its customers.	.722			
	Trust_4 have necessary knowledge and recourses to fulfil its customers' needs.	.766			
	Trust_8 concerned about its customers' health and safety.	.785			
	Trust_10 interested in its customers' wellbeing, not just its own profit.	.761			
Fear of Covid-19 adapted from Ahorsu et al. (2022)	Fear_1 I am most afraid of COVID-19.	.884	.946	.955	.725
	Fear_2 It makes me uncomfortable to think about COVID-19.	.866			
	Fear_3 My hands become clammy when I think about COVID -19.	.804			
	Fear_4 I am afraid of losing my life because of COVID -19.	.873			
	Fear_5 When watching news and stories about COVID -19 on social media, I become nervous or anxious.	.885			
	Fear_6 I cannot sleep because I'm worrying about getting COVID -19.	.809			
	Fear_7 My heart races or palpitates when I think about getting COVID -19.	.860			
	Fear_8 I am afraid of losing my friends or family member's life because of COVID -19.	.827			
Dining Involvement adapted from Wei et al. (2021)	Involvement_2 I think that where to eat is very important.	.729	.749	.857	.667
	Involvement_3 I am very interested in restaurants.	.871			
	Involvement_4 I enjoyed eating out.	.843			
Preventative measures based on Yang et al. (2014)	Preventative_1 Implement strict handwashing practices that include how and when to wash hands.	.715	.715	.821	.535
	Preventative_2 Implement procedures and practices to clean and sanitize surfaces	.801			
	Preventative_3 Prohibit sick employees in the workplace.	.714			
	Preventative_4 Take employees' temperatures at the operators' discretion.	.690			

Source: developed by authors

Table 4 Discriminant validity: HTMT

	Intention	Neuroticism	Restaurant Trust	Fear of Covid-19	Dining Involvement	Preventative measures
Intention						
Neuroticism	.326					
Restaurant Trust	.618	.287				
Fear of Covid-19	.239	.521	.163			
Dining Involvement	.817	.211	.507	.103		
Preventative measures	.531	.129	.435	.172	.460	

Source: developed by authors

Common Method Bias and Structural model evaluation

We examined firstly for common method bias. As shown in Table 5, the Variance Inflation Factors (VIFs) vary between 1.307 and 2.180, which are all below the recommended threshold of 3.3, indicating that common method bias is not a problem (Kock, 2015). The explanatory power of the model was evaluated through the coefficient of determination (R^2) and the blindfolding-based cross-validated redundancy measure (Q^2) (Shmueli and Koppius, 2011). R^2 results indicate that the model explains 53.4% of the variance for intention. Stone-Geisser's blindfolding test was then applied to evaluate predictive accuracy (Stone, 1974, Geisser, 1974). A Q^2 value greater than zero establishes the predictive accuracy of the proposed model. The Q^2 values for behavioral intention is 0.408, which is between 0.25 and 0.50, depicting a medium sized predictive accuracy of the PLS path model. In addition, we assessed model fit. Henseler et al. (2016) suggest that the Standardized Root Mean-square Residual (SRMR) is the only approximate model fit criterion, with a value of less than 0.08 indicating an adequate model fit. The results indicate a SRMR value of 0.058, suggesting a good fit.

Table 5 Variance Inflation Factors (VIFs)

	VIF
Intention	2.180
Neuroticism	1.279
Trust	1.510
Fear	1.347
Involvement	1.710
Preventative	1.307

Source: developed by authors

Then, a bootstrapping procedure with 5,000 iterations was undertaken to evaluate statistical significance and the relevance of the path coefficients (Table 6). The results indicate that *neuroticism* has significant, positive effect on *fear of Covid-19*, a significant negative effect on *restaurant trust*, and a significant, positive effect on the importance given to *preventative measures*. The results thus provide support for H1, H2, and H3. *Fear of Covid-19* has a significant, positive effect on the importance given to *preventative measures*, thus H6 is also supported. Moreover, the effect of the exogenous variables (i.e., *restaurant trust*, *fear of Covid-19*, *dining involvement*, and *preventative measures*) on *intentions* to dine out in a restaurant are significant, supporting H4, H5, H7, and H8.

Table 6 Path Coefficients

Hypotheses	Support?	Path coefficient	Standard Deviation	T Statistics	P Values	Confidence Interval	
						2.50%	97.50%
H1 Neuroticism -> Fear	Yes	0.507	0.039	13.061	0.000	0.429	0.582
H2 Neuroticism -> Trust	Yes	-0.270	0.045	5.970	0.000	-0.359	-0.181
H3 Neuroticism -> Preventative	Yes	-0.240	0.048	5.012	0.000	-0.338	-0.150
H4 Trust -> Intention	Yes	0.252	0.055	4.566	0.000	0.144	0.359
H5 Fear -> Intention	Yes	-0.166	0.033	5.048	0.000	-0.228	-0.101
H6 Fear -> Preventative_	Yes	0.253	0.050	5.016	0.000	0.155	0.352
H7 Involvement -> Intention	Yes	0.456	0.048	9.431	0.000	0.361	0.553
H8 Preventative -> Intention	Yes	0.186	0.050	3.750	0.000	0.094	0.289

Source: developed by authors

Discussion and Conclusions

Conclusions

Post the Covid-19 pandemic, many consumers globally remain fearful of in-person dining, with restaurants in many countries struggling to recover amidst rising costs and weak demand (Fortune Business Insights, 2024, Augsburg et al., 2024, WARC, 2024). Understanding the factors that affect consumers' willingness to dine out at restaurants and how restaurants can best transform their operations post-pandemic thus constitutes an important challenge for researchers and practitioners (Ryu et al., 2023), particularly given the likelihood of future pandemics (Marani et al., 2021).

This paper contributes to the literature by introducing and validating a novel model, which relates neuroticism to Protection Motivation Theory (PMT) to better understand threat and coping appraisal in a hospitality context. Specifically, we identify that neuroticism as a stable personality trait, associated with undue anxiety and fear (Roccas et al., 2002), increases fear of Covid-19 (threat) and the importance placed on restaurants' preventive measures (coping strategy). Neuroticism is associated with maladaptive coping strategies (Doty et al., 2013) and underpins in our model reticence to dine out even after the lifting of all government restrictions. The paper consequently helps explain the processes by which neuroticism affects behavioral intentions.

Theoretical Implications

Consistent with predictions based on threat appraisal (Wen and Liu-Lastres, 2022) regarding the antecedents of self-protective behavior (Kim et al., 2022, Ryu et al., 2023), the analysis confirms the importance of fear of Covid-19. Specifically, fear of Covid-19

positively affects the perceived importance of preventive measures and negatively affects intentions to dine out in a restaurant. These findings are consistent with those found during the pandemic (Wen and Liu-Lastres, 2022, Wang et al., 2021), underlining that perceived fear of Covid-19 continues to affect restaurant dining intentions even after the lifting of all government restrictions. Similarly, regarding coping appraisal, the perceived effectiveness of preventative measures positively affects intentions to dine in a restaurant. Consequently, patronage is likely to remain sensitive to perceived fears of Covid-19 and assessments of restaurants' security measures, in the post-Covid period.

The research expands the literature on the importance of trust in the hospitality sector (Hakim et al., 2021), identifying restaurant trust as a significant determinant of post-pandemic, in-person dining intentions. In this regard, the results are consistent with evidence that brand trust positively affects behavioral intentions (Wei et al., 2021). While this research focuses on intentions to dine in-person, restaurant trust is likely to have other positive spillover effects such as on willingness to pay (Jeong et al., 2022, Belarmino and Repetti, 2024).

Prior research identifies the importance of involvement in explaining service sector outcomes (Zaichkowsky, 1985), with dining involvement a determinant of intentions to visit restaurants (Kim et al., 2022, Wei et al., 2021). The research extends the relevance of the latter finding to the post-pandemic era. The significance of dining involvement suggests that some restaurants are more vulnerable to reticence, post-pandemic, towards in-person dining than others. Specifically, the clientele of restaurants varies in terms of their level of dining involvement – some eateries attract occasional, non-committed diners, while others have a customer base consisting largely of highly motivated patrons for whom dining out is central

to their identity (Iofrida et al., 2022). Restaurants with the latter customer base, *ceteris paribus*, are likely to be more resilient to pandemic related shocks.

Practical Implications

This paper presents actionable insights regarding post-pandemic restaurant management. The results relating to the preventative measures construct reveal that there are actions which restaurateurs can take to strengthen consumers' intentions to dine, post-pandemic, in a restaurant. Following the construct's items, these include implementing strict handwashing practices for staff, implementing procedures and practices to clean and sanitize surfaces, prohibiting sick employees in the workplace, and taking employees' temperatures at the managers' discretion. Given the relationship between restaurant's preventative measures and dining intentions, we encourage restaurant managers to communicate on their websites and social media the measures they implement to reduce the spread of Covid-19 and other viruses, to encourage in-person dining.

Once attracted to a restaurant, the cleanliness and tidiness of a dining area is conspicuous, and typically acts as a heuristic for evaluating a restaurant's service quality and safety (Ho and Madden-Hallett, 2020, Jeong et al., 2022). Training restaurant staff to effectively implement and communicate preventative measures thus should be a priority, an imperative not always appreciated by industry practitioners (Vandenhoute et al., 2022). Rather than regarding preventative measures as a short-term measure, managers should recognize their importance to long-term, post-pandemic restaurant viability.

Finally, while existing instruments for managers to measure service quality in a restaurant setting, like DINESERV, include items relating to the cleanliness of restrooms and

dining areas (Stevens et al., 1995), diners' attention to such factors post-pandemic appears to be more detailed and critical (Chou et al., 2022). Moreover, instruments such as DINESERV originate from a largely pre-digital era and omit guidance to managers regarding infection control and preventive measures. Managers should thus update the instruments they use to measure restaurant quality, to incorporate factors important to diners' post-pandemic.

Limitations and Further Research

While generating important insights into diners' intentions in the post-Covid-19 pandemic era, this research is not without limitations, which can guide future research. Firstly, the paper draws on cross-sectional data. Future research, establishing a longitudinal consumer panel could track changes in behavioral intentions and outcomes, as well as their antecedents such as fear of Covid-19. Secondly, this study identifies the importance of neuroticism and further research could consider the role of other stable personality traits in explaining post-pandemic diner behavior. For instance, those high on extraversion might be more likely to dine out, while those high on conscientiousness could be more likely to comply with recommendations regarding preventive measures (Krupić et al., 2021). Thirdly, future research could consider additional antecedents of post-pandemic dining intentions, as well incorporating control variables, for instance relating to purchasing power.

Finally, further research could seek to identify interventions that mitigate the negative effects of neuroticism within a restaurant context. For instance, in laboratory-based studies with students, Feltman et al. (2009) found that mindfulness can mitigate the negative tendencies that stem from high levels of neuroticism, and Wenzel et al. (2015) identify that a lack of mindfulness explains around one quarter of the negative association between neuroticism and subjective wellbeing. This suggests that mindfulness may play a useful role

in public messaging, which seeks to alleviate undue reticence to returning to in-person dining.

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