Green food packages' effects on consumers' pre- to post-consumption evaluations of restaurant curbside pickup service

Purpose – This study assesses green food packages' role in sustaining a restaurant's curbside pickup service on three stages of consumer experiences: choosing a restaurant, evaluating their experiences of a recent purchase, and weighing their post-consumption behavioral intentions after the recent purchase.

Design/methodology/approach – The service encounters framework and relevant literature guided the development of the questionnaire. A Qualtrics panel data of 314 valid questionnaires were collected and analyzed with choice experience, OLS regression, and PROCESS modeling.

Findings – First, word-of-mouth (WOM) and function encounters significantly influence consumers' first-time curbside pickup purchasing decisions. Then, service results encounter (besides distributor encounter) most significantly affects consumers' overall curbside pickup experience. Finally, green food packages increase consumers' shares of future purchases through their positive WOM intentions and extra efforts of revisiting the restaurant. Consumers' perceived importance of green restaurant practices strengthens green food packages' positive impact on extra efforts.

Practical implications – This study provides operational and marketing insights for restaurants to use food packages and sustain their curbside pickup service.

Originality/value – Besides assessing consumers' evaluations and behavioral intentions for an off-premises restaurant service expected to stay beyond the pandemic, this research uniquely focuses on green food packages, a sustainability issue lacking research attention. The findings add new empirical insights to studies about sustainability and restaurant/food-retail operations.

Introduction

The COVID-19 pandemic significantly increased consumer interest in contactless shopping experiences from the retailers, such as zero- (e.g., delivery) and minimal-contact service (e.g., curbside pickup) (Kim and Im, 2022). Many restaurants have transformed their traditional dine-in offerings into online food ordering for pickup or delivery to respond to the shifting consumer demands (Pookulangara and Bharath, 2023). As the economy is recovering from the pandemic, many restauranteurs have realized that curbside pickup is a complement instead of cannibalizing service to their existing offerings (Kelso 2020). Curbside pickup service, once helping the food retail businesses survive the pandemic, will remain a prevalent service option in the future. Nevertheless, primarily because off-premises restaurant services (e.g., curbside pickup and delivery) have not experienced phenomenal growth until recent years, only a trivial number of studies began tackling the research topic (Byrd et al., 2021a and 2021b). New research about restaurant curbside pickup service is timely and much needed as the world is moving out of the pandemic. Insights from the restaurant industry can also serve as a reference to other retailers and hospitality/tourism service providers who aim to expand their curbside pickup offerings.

While curbside pickup is becoming a prevalent service option, its adverse impacts on our planet cannot and should not be ignored. For instance, the hospitality industry is already known for consuming significant amounts of energy, water, and disposable products in production and is responsible for a large percentage of greenhouse emissions (Majeed and Kim, 2023; Patwary et al., 2022; Shin and Cho, 2023). The surge of restaurant curbside pickup and delivery service could create even more negative impacts on the environment because many food containers and packages are made of plastic and designed for one-

time usage. A recent report shows that the world produces 130 million tons of single-use plastic a year (including more than just food packages), but only 8% of all plastic products in the U.S. get recycled (Corkery and Sengupta, 2021). Today's consumers have become more ecologically conscious, demanding businesses adopt eco-friendly products/practices in operations, such as using sustainable materials for food packaging (Kwok and Huang, 2019; Luu, 2022). Consumers who care more about the environment might also want to shop in places with higher sustainability standards, which may further affect their attitudes and behaviors toward the takeout and delivery services using single-use non-sustainable packages, an assertion that deserves research attention.

Recent research also reported that consumers showed more concerns about the spread of coronavirus from restaurant food and its packages than food in general (Byrd *et al.*, 2021b), indicating that restaurant patrons tend to pay close attention to food packages during the pandemic. The COVID-19 pandemic also pushed more travelers to choose more sustainable and eco-friendly products (Salem et al., 2023). Surprisingly, in a recent systematic literature review of 56 journal articles on restaurant services relying on online orders (including curbside pickup), Shankar *et al*. (2022) found that the topic of "food packaging" not yet been discussed or researched, regardless of its critical role in off-premises restaurant services. Likewise, Shroff *et al.* (2022) conducted a systematic review of 43 research articles about online food delivery, a service using similar food packages as those in curbside pickup. They also pointed out that research about food packaging waste had not received sufficient attention, even though such a restaurant service is highly correlated to the high use of single-use plastic containers. Now, as the global economy is gradually recovering from the pandemic, it will be beneficial for restaurants and our society to understand what roles sustainable (aka., "green") food packages play in attracting new customers for restaurant curbside pickup service and, at the same time, retaining them after their first visit.

Restaurant pickup service is similar but unique to a regular buy-online-pickup-in-store (BOPS) retail concept, as will be discussed soon in the literature review section. It was not until recent years that off-premises restaurant services (e.g., delivery, curbside pickup, and takeout) experienced phenomenal growth (Byrd *et al.*, 2021a). Therefore, it is not surprising that Byrd *et al.* (2021a, 2021b) reported in their studies that they were among the first groups of scholars who began tackling relevant research topics. To join other pioneer research efforts to discover more insights about the phenomenon in post-pandemic, we designed this study to identify the influential factors that may affect consumer preferences/behaviors from their pre- to post-consumption experiences of a restaurant curbside pickup service. Notably, we recognized consumers' demand for eco-friendly products/services and paid particular interest in identifying what roles green food packages play in sustaining a restaurant's curbside pickup service, a research territory that has not received much scholarly attention (Shankar *et al.*, 2022; Shroff *et al.*, 2022). We aimed to answer three overarching research questions:

RQ1: Do green food packages affect consumers' purchasing decisions before trying a restaurant's curbside pickup service for the first time?

RQ2: What effects do green food packages have on consumers' overall experience of a restaurant's curbside pickup service after trying it?

RQ3: What ripple effects do green food packages have on the restaurant's business (positive WOM behavioral intentions and share of future purchases, etc.)?

Our findings add new insights to a relatively new research territory about off-premises restaurant services, informing society about sustainable food packages' impact on consumer behaviors and helping restaurants sustain or expand their business through the spin of curbside pickup offerings. We expect our work will help restaurateurs develop effective marketing and sustainable strategies to attract new patrons

and, at the same time, retain those first-time customers. Other retail businesses besides restaurants that offer similar curbside pickup services can also gain new ideas from this research.

Literature Review

Restaurant Curbside Pickup vs. Buy-Online and Pickup-in-Store Service

BOPS has received significant attention from scholars researching retail and supply chain management (e.g., Gallino and Moreno, 2014; Gao and Su, 2017). Restaurant curbside pickup is similar but not identical to BOPS, however. For example, many independent restaurants do not develop mobile apps or websites for online orders. Consumers can often place a curbside pickup order by calling a nearby restaurant directly or placing an order through a third-party website or mobile app. Then, consumers using BOPS usually add the products to the shopping cart on a retailer's website before choosing the store where they want to pick up the order. On the contrary, consumers usually specify a preferred location before browsing the nearby restaurants offering curbside pickup service, regardless of whether they use a restaurant or a third-party mobile app or website.

Meanwhile, while it has been a common practice for fast-food and quick-casual restaurants to offer curbside pickup or drive-thru services, it was not until the outbreak of the COVID-19 pandemic that full-service restaurants concentrated on expanding their off-premises offerings (Abdou and Shehata, 2021). Byrd *et al.* (2021a) contributed the reason why the pandemic escalated the restaurant industry's off-premises services to the social distancing mandates and stay-at-home orders, which made on-site dining impossible. Because restaurant curbside pickup service began receiving more traction among both restaurants and consumers since the pandemic but is different from the conventional BOPS, relevant research, or research about restaurant off-premises offerings in general, is scant (Byrd *et al.*, 2021a).

Additional research that helps us gain a deeper understanding of such an offering becomes timely and much-needed.

Service Encounters of a Restaurant's Curbside Pickup Service

Since the 1980s, scholars have shown great interest in the dynamics of service encounters, which can be used to analyze the psychological needs of consumers and employees (Bradley *et al.*, 2010). Walker (1995) defined a service encounter as the timeframe when consumers directly interact with the service provider. He then proposed a conceptual service encounter satisfaction model, allowing researchers and practitioners to analyze consumer satisfaction with a service product in three stages of consumption: prior to consuming the core service, during the time of using the core service, and post-core-service delivery.

In the foodservice context, Zhao *et al.* (2020) used the service encounter framework to study restaurant takeout service as an example of O2O (online-to-offline) business concept. They reviewed restaurant takeout's logistic process and proposed that an O2O restaurant service should include four stages. That is, consumers usually start with the WOM encounter, where they open an app, read the recommendations and reviews about a restaurant, and choose the restaurant. Moving forward to the function encounter stage, consumers will make an electronic payment and wait for the logistic distribution, where consumers may also check their order status online. During the third and distribution encounter stage, consumers will wait and take away the order after arriving at the restaurant, where they will interact with the service staff and pick up the order. The service results encounter is the last stage, where consumers check the package, food temperature, and hygiene and consume the food. After the above four service encounters, consumers may also leave online reviews about the O2O service they just experienced, helping other consumers to make a purchasing decision in the WOM encounter stage. In the end, Zhao *et al.* (2020) concluded that all four encounters significantly affected Chinese consumers'

satisfaction and perceived value of O2O restaurant service. For the most part, US consumers experience similar encounters when using a restaurant's curbside pickup service, except for those who still place an order on the phone. The four service encounter stages proposed by Zhao *et al.* (2020) can provide a solid theoretical foundation to analyze consumer experiences of a restaurant curbside pickup service.

Sustainable Food Packages

Americans alone use approximately 100 billion plastic bags a year and over 380 billion plastic utensils (bags, sacks, and wraps of all sorts), many of which are for food packaging (Jebe, 2020). Food packaging is a coordinating system for food processing, transportation, distribution, and retail, helping foodservice providers meet the industry and customer demands, retain food safety, and protect the food from contamination (Haghighi *et al.*, 2020). While adequate food packing is critical in our ecosystem to help reduce and prevent food waste, it also accumulates a huge number of one-time-use items that eventually become waste, adding a tremendous burden to the environment (Petkoska *et al.*, 2021). Food packages remain to be one of the largest applications in the world's 350 million tons of plastic production per year (Haghighi *et al.*, 2020).

The COVID-19 pandemic has pushed our society to rely more on single-use plastic products for safety and hygiene purposes, with some states also temporarily rolling back or relaxing single-use plastic bans (Vanapalli *et al.*, 2021). Some restaurants have taken action to show their commitment to the environment by banning plastic straws or using food packages made from sustainable materials. Nevertheless, it can be challenging for restaurants to estimate such green initiatives' impacts on consumer behaviors. Now that the world economy is recovering from the pandemic, it becomes prudent to find out how a restaurant's strategy of adopting sustainable food packages for its curbside pickup service would affect consumers' experiences and behavioral intentions toward the restaurant.

Nguyen *et al*. (2020) investigated how consumers define eco-friendly food packages in focused groups. They proposed three dimensions of sustainable food packages, including package materials (e.g., biodegradable, non-toxic, and easily decomposed), manufacturing technology, and market appeal. Because our study focuses on consumers' perceptions of a restaurant's sustainable food packages, Nguyen *et al*. (2020)'s conclusions provide a valuable framework for our empirical analysis. Inspired by Nguyen *et al*. (2020)'s definition of sustainable food packages and Zhao *et al*. (2020)'s service encounter framework, we designed this study to investigate green food packages' effects on consumers' experiences of a restaurant's curbside pickup service and a series of behavioral intentions toward the restaurant offering the service. Furthermore, we acknowledged the dual goal of marketing to attract new customers and retain existing customers (Kotler *et al*., 2015) by testing such effects based on consumers' pre- to post-consumption experiences with three analyses. As follows, we introduce three conceptual ideas that guide our empirical investigations. Each idea corresponds to one research question above and with a visual diagram covering one of the three consumption stages of a restaurant curbside pickup service.

Factors Affecting New Customers' Purchasing Decisions on a Restaurant Curbside Pickup Service (RQ1)

Although restaurant off-promises service had been identified as a growth area before 2019, the restrictions during the pandemic eventually pushed off-promises service to the center stage of restaurant operations (Belarmino *et al*., 2021; Byrd *et al*., 2021a). Still, a great deal of restaurant research during the pandemic focused on the impacts of consumers' risk concerns about health and hygiene on their purchasing intentions/behaviors (e.g., Byrd *et al*., 2021b). Research about restaurant off-premises service, including consumers' perceptions and choices, remained scant (Byrd *et al*., 2021a and 2021b).

Brewer and Sebby (2021) examined how the visual appeal and informativeness of a restaurant's online menu affected consumers' purchasing intentions during COVID. They found that when people perceived risk from COVID, an online menu's visual appeal and informativeness, as well as consumers' perceived convenience of online food ordering, could directly affect their purchasing decisions. In another study, food quality and ease of use (of the platforms) were identified as two consistent motivational factors that influenced whether consumers would use meal delivery platforms before and during quarantine for COVID (Belarmino et al., 2021). The above findings suggest that consumers will very likely pay close attention to a menu's visual appeals and informativeness, food quality, and ease of use of the ordering platforms when deciding if they want to place a restaurant order online. In consequence, we refer to Zhao et al. (2020) service encounter framework that guides our analysis and propose that WOM encounter (i.e., online reviews), function encounter (i.e., the function of the ordering app), and distributor and service results encounters (i.e., service and food quality combined as a measure of consumers' "dining experience" here) would significantly affect consumers' purchasing decisions before trying a restaurant's curbside pickup service.

Current literature also constantly reveals that consumers prefer environmentally friendly restaurants using environmentally safe products (e.g., Han et al., 2019; Salem et al., 2023). Moreover, consumers demand that restaurants and general hospitality businesses address their stricter green requirements (Cho and Yoo, 2021; Yang et al., 2023). Compared to dine-in service, restaurants must package their food in special food containers for curbside pickup service, which are often made of non-disposable plastics. The question of whether green food packages would influence consumers' first-time purchasing decisions regarding a restaurant's curbside pickup service remained untapped in the literature. Figure 1 summarizes our first conceptual idea that is used to address RQ1.

(Figure 1)

Factors Affecting Consumers' First-time Restaurant Curbside Pickup Experiences (RQ2)

Referring to Zhao *et al.* (2020)'s service encounter framework for an O2O restaurant takeout service, the logistics of such a service process does not end after a consumer finish consuming the food. The logistic circle will be completed after consumers evaluate their restaurant's takeout service and share their experience on social media or online review websites. Then, their ratings of a restaurant's curbside pickup experience will, in turn, support the "WOM encounter" for other consumers. Furthermore, Zhao *et al.* (2020) revealed from their empirical analysis that distributor and service results encounters most significantly affect consumers' perceived value of the service, while WOM and service results encounters most significantly influence consumer satisfaction. In a different but similar research setting, Belarmino *et al.* (2021) found that food quality (similar to "service results encounter"), service speed (similar to "distributor encounter"), ease of use (similar to "function encounter"), and confirmation of beliefs would significantly influence consumer satisfaction about online meal delivery platforms.

Regarding food packaging, Byrd *et al.* (2021b) found that most participants in their study showed moderate to high concern about contracting the coronavirus by touching contaminated surfaces. Deviated from Byrd *et al.* (2021b)'s interest in food packages' core functions of packaging food, we also want to recognize consumers' preferences for restaurants exercising environmentally friendly practices (e.g., Kwok *et al.*, 2016; Han *et al.*, 2019; Salem et al., 2023). Particularly, the Theory of Planned Behaviors (Ajzen, 2020) posits that consumers tend to act rationally, and their behavioral intentions and actual behaviors can be influenced by their attitudes, beliefs, subjective norms, and perceived behavioral control. For example, Chen and Lee (2022) reveal in that consumers' perceived biospheric value orientation (e.g., perceiving preventing pollution as a life-guiding principle) can significantly influence their trust in green brands for online food delivery app service, which will further affect their eco-friendly behavior intention. Likewise, if a consumer strongly believes that it is important for restaurants to take on green practices,

s/he may have higher expectations of restaurants' curbside pickup service, demanding sustainable food packages. Therefore, we also want to examine whether consumers' perceived importance of green restaurant practices will positively moderate the relationship between green food packages and their overall rating of a restaurant's curbside pickup experiences. We propose that "green" food packages, along with the four service encounters, may play a critical role in influencing consumers' overall rating of a restaurant's curbside pickup experiences and that such a relationship will be moderated by consumers' perceived importance of green restaurant practices (Figure 2).

(Figure 2)

Green Packages' Ripple Effects (RQ3)

RQ3 is about green food packages' ripple effects on consumers' behavioral intentions toward the restaurant providing the curbside pickup service. However, consumers' overall experience with the restaurant's curbside pickup service cannot be ignored because green food packages could significantly influence consumers' evaluations of such an experience, as suggested in our conceptual idea proposed in Figure 2. As a result, we aim to estimate green packages' ripple effects through consumers' overall rating of the curbside pickup service they experienced. Figure 3 presents our conceptual idea with the following descriptions.

(Figure 3)

According to Zhao *et al*. (2020)'s service encounter framework, consumers will likely post online reviews about a recent purchase with a restaurant's O2O experience. Such WOM behaviors provide additional user-generated content (UGC) on the Internet, enriching the WOM encounter experience when another consumer opens an app for a new O2O order from a restaurant. Extent literature generally supports a positive relationship between satisfaction and positive WOM intentions/behaviors among diners (Kim and Kim, 2017). Therefore, consumers' positive WOM intentions toward (a) the curbside

pickup service and (b) the restaurant that provided such a service become the first sets of ripple effects of our interest.

Regarding green consumption, research generally reported that restaurant patrons having stronger environmental concerns show more favorable attitudes toward ecologically friendly products (Han *et al.*, 2019). Nevertheless, consumers may not want to pay much more to dine in a green restaurant than in a regular restaurant, as reported in a critical review by DiPietro (2017) and empirical analysis by Kwok *et al.* (2016). Later, Kwok and Huang (2019) confirmed in their analysis that average U.S. consumers were willing to make some extra efforts (i.e., to pay more, wait longer, and travel farther) to dine in a green restaurant but at a level that is significantly lower than the restaurant owners or managers anticipated. It is intuitive to find out whether green food packages would encourage consumers to make extra efforts to revisit a restaurant through their overall rating of the restaurant's curbside pickup experiences.

In a systematic review of 234 empirical studies, Lin *et al.* (2022) identified about 30 antecedents of pro-environmental behaviors among consumers, such as willingness to choose or recommend a green hotel or restaurant, pay more, reduce waste, and use/recommend transportation with less pollution. For example, consumers' environmental concerns, attitudes, awareness, and self-identify can significantly influence consumers' pro-environmental behaviors. Thus, we also expect a moderating effect, where consumers' high perceived importance of green restaurant practices may further trigger a stronger willingness to make extra efforts to revisit the restaurant.

Lastly, while positive WOM behaviors and making extra efforts to revisit a business are two desirable outcomes that all restaurants want from their consumers, an increased share of future purchases indicates that consumers want to purchase from the restaurant more than their competitors and is used to measure the strength of the relationship between a consumer and a business (Kim and Kim, 2017). We

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aim to test whether consumers' positive WOM intentions and willingness to make extra efforts to revisit the restaurant will ultimately lead to an increased share of future purchases in the restaurant.

The Research Design

The Sampling Procedure and the Sample

We tested the three conceptual ideas with three analyses, capturing consumers' pre- to post-consumption experiences with their first-time restaurant curbside pickup service. We adopted and modified the existing measures from the current literature to measure the constructs, which are included in Appendixes I-III and will be introduced in later sections about the three analyses. We published the questionnaire online on Qualtrics.com in November 2021 and recruited the informants to complete the questionnaires through Qualtrics' online panels, a paid service provided by the market research firm for representative samples. Qualtrics panel service has been used in numerous restaurant research involving different restaurant samples (e.g., Kwok and Huang, 2019; Pookulangara and Bharath, 2023), and it has a good track record of sample reliability and quality control (Brandon *et al.*, 2014).

While RQ1 was tested in a hypothetical setting, we answered RQ2 and RQ3 based on consumers' real experience, in which informants were asked to recall and evaluate a recent restaurant pickup service. Accordingly, we only targeted the participants who had tried a curbside pickup service from a restaurant for the first time within a three-week timeframe but had never ordered takeout or delivery services from the same restaurant before that first-time curbside pickup experience. Such a criterion prevents us from documenting the bias from habitual consumption (i.e., those who have repeatedly ordered curbside pickup or delivery from the restaurant before). Meanwhile, we expected restaurants would use the same type of food packages for all off-premises services, including curbside pickup, takeout, and delivery service. Such a sampling approach also allows us to accurately measure consumer assessment of a

restaurant's (sustainable) food packages without having the influence of previous consumption experience. Before the actual data collection, we collected 28 responses as a pilot study. We examined Cronbach's alphas, which were all above acceptable standards of 0.7 (Nunnally and Bernstein, 1994). In the end, 319 individuals completed the online survey. After cleaning the outliners and responses with missing data, we included 314 responses in our analysis. Within the sample (Appendix IV), 71.0% (n=223) were female, with 70.1% (n=220) of participants between 26 and 65 years of age. In total, 45.2% (n=142) of participants received a college or above degree education. Finally, we applied the 314 valid questionnaires in three analyses to test the three conceptual ideas corresponding to each research question.

Measures and Data Analysis for RQ1

We answered RQ1 and tested our conceptual idea presented in Figure 1 with an online stated choice experiment. Such a discrete choice experiment helps researchers reveal patterns of respondents' choice preferences. In the context of revealed choice experiments, the respondents can make quasi-real-life choices, including product and service purchases and investments. Revealed preference studies are normally structured as stated preference experiments, where hypothetical choice sets are presented to respondents to choose to reduce the errors (Timmermans *et al.*, 1994). Referring to Zhao e*t al.* (2020)'s service encounter framework and our research interest, we incorporated four attributes in this study: WOM encounter (i.e., online reviews), function encounter (i.e., the function of the ordering app), distributor and service results encounters (i.e., being combined as the "service and food quality" to measure a restaurant's "dining experience"), and green food packages. We measure each attribute with two levels (i.e., low vs. high performance; the choice experiment and all scale items are included in the appendix). We used logistic regression to analyze the choice experiment, where the choice was the dependent variable, and the four attributes were the independent variables. Independent variables were coded as dummy variables, where "1" represented the better-performed scenario in each variable.

Logistic regression has been widely used to analyze choice modeling when the dependent variable is binary (e.g., Lin *et al.*, 2020). Such a method can identify the likelihood of how each variable condition is associated with the choice.

Measures and Data Analysis for RQ2

To answer RQ2 and test our corresponding conceptual idea presented in Figure 2, we revised Zhao *et al.* (2020)'s scale to measure consumers' evaluations of a restaurant's curbside pickup service, including 16 items under the four service encounter dimensions. We added two items to Zhao *et al.* (2020)'s scale to assess consumers' evaluations of the overall value of the order and their overall experience with the service, which were treated as the dependent variable of consumers' overall rating of their experience. These items were measured on a 5-point Likert scale (1="very unsatisfied" and 5="very satisfied"). We adopted two items from Nguyen *et al.* (2020)'s scale to assess consumers' evaluations of whether a restaurant uses sustainable materials in green food packages (under the package material dimension), which were measured in two items (i.e., biodegradable and easily decomposed). A dummy variable was generated by these two items, where 1 represents the package was either biodegradable or easily decomposed, and 0 represents the package was neither biodegradable nor easily decomposed. Additionally, we used Schubert *et al.* (2010)'s scale to measure consumers' perceived importance of green restaurant practices (6 items) on a 5-point Likert scale (1="strongly disagree"; 5="strongly agree"). Before starting this section in the online survey, the informants were asked to recall their first-time curbside pickup service provided by a restaurant within the last three weeks and respond to the questionnaire accordingly.

The dependent variable (DV) was consumers' overall rating of their curbside pickup experience. The independent variables (IV) include consumers' four service encounters during the process. Because we also wanted to examine whether sustainability is a factor that may influence consumers' curbside

pickup experience, especially among those who care more about the environment, we further tested the interaction effect between green food packages and the perceived importance of green restaurant practices. Finally, we added four control variables to control the potential confounding effects: COVID concern, average check per person in the order, chain vs. independent of the restaurant, and the ordering method. We estimated "COVID concern" as the pandemic's impact on respondents' dining behavior, including dine-in (indoor or outdoor seating), takeout, curbside pickup, and delivery, with a 5-point scale where -2="substantially decrease" to 2="substantially increase." We calculated the average check per person based on the total dollar amount of the check and the number of people served, an indicator of a restaurant's service level. We used a dummy variable to measure the type of operations, where 1="national/regional chain" and 0="independent." Finally, we used a dummy variable to document the ordering method, where 1=phone ordering and 0=mobile apps (either a restaurant or third-party ordering app). In terms of data analysis, we first performed a confirmatory factor analysis (CFA) to confirm the validity of the scales. Then, we used OLS (Ordinary Least Squares) regression to test the proposed relationships presented in Figure 2 with a proper model fit.

Measures and Data Analysis for RQ3

To test our conceptual idea presented in Figure 3, we used the same measures from Analysis II for green food packages, consumers' experience of a restaurant's curbside pickup service, and the perceived importance of green restaurant practices. We revised Kim and Kim (2017)'s scales to measure both positive WOM intentions (4 items each) and increased share of future purchases (3 items). We adopted Kwok and Huang (2019)'s scale to measure consumers' extra efforts to revisit the restaurant (3 items). We used 5-point Likert scale in our measurement, where 1="very unlikely" or "strongly disagree" and 5="very likely" or "strongly agree." We kept the same four control variables as we did in Analysis II. Finally, we used a PROCESS model to examine the proposed relationships in Figure 3.

Results

RQ1 Results

We used a discrete choice model to analyze consumer preference with a proper model fit (Table 1). The results indicated that consumers were significantly more likely to choose the restaurants for good WOM encounter performance (Exp(β)=27.055, p<0.01) or those for good function encounter performance (Exp(β)=5.424, p<0.01). Meanwhile, consumers did not show a significant preference for restaurants for good distributor/service results encounter or using green food packages. In summary, the predominant factors for pre-visit choice were WOM encounter (online reviews) and function encounter (the function of the ordering app).

(Table 1)

RQ2 Results

Table 2 shows the factor loadings for four encounter variables from CFA. Factors loading should be at least 0.6 and ideally 0.7 or above (Chin, 1998). Accordingly, two items (i.e., the ability to check the status of the order and the ability to customize the order) were removed from the function encounter variable. The rest of the factor loadings ranged from 0.677 to 0.808. All four encounter variables had satisfactory composite reliability (CR) and average variance extracted (AVE), with CR values of 0.6 or more and AVE values greater than 0.5 (Fornell and Larcker, 1981).

Table 3 presents the findings of our analysis. The results showed that distributor encounter (β=0.155, p<0.01) and service results encounter (β=0.713, p<0.01) positively impacted consumers' overall curbside pickup experience. In addition, the interaction effect between green food packages and the perceived importance of green restaurant practices (β=-0.149, p<0.05) also significantly affected consumers' overall experience. That is, when the level of perceived importance of green restaurant

practices was low, consumers receiving green food packages had significantly higher overall curbside pickup experience than those receiving unsustainable packages. Such a significant difference was not detected when the level of perceived importance of green restaurant practices was high. In summary, the most significant influential factor on consumers' curbside pickup experience came from the service results encounter (i.e., food quality).

(Tables 2 & 3)

RQ3 Results

Our analysis showed two routes that help increase the shares of future purchases of a restaurant with a proper model fit (Table 4). First, the use of green food packages had a significant positive effect on the overall curbside pickup experience (β=0.397, p<0.01). In two routes of analyses, the first route was through positive WOM intentions. The overall curbside pickup experience positively impacted consumers' WOM intentions toward the curbside pickup service (β=0.845, p<0.01), which would further impact their WOM intentions toward the restaurant (β=0.704, p<0.01). Moreover, Consumers' WOM intentions toward the restaurant positively impacted the increased share of future purchases in the restaurant (β=0.550, p<0.01). This indirect effect of this route was significant (CI:[0.066,0.206]). Meanwhile, our analysis also revealed the interaction effect between green packages and consumer perceived importance of green restaurant practices on extra efforts. The interaction effect was significant (β=0.175, p<0.05). Moreover, extra efforts positively impacted the "increased share of future purchases" (β=0.422, p<0.01). The moderated mediation was significant (CI:[0.003, 0.065]).

(Table 4)

Discussion, Implications, and Limitations
Discussion

We tested three conceptual ideas about whether green food packages would have any effects on (a) consumers' purchasing decision before trying a restaurant's curbside pickup service, (b) the overall rating of their first-time curbside pickup service, and (c) their behavioral intentions toward the restaurant. Our work responds to the call for more empirical studies about off-premises restaurant service (Byrd *et al.*, 2021a and 2021b) and addresses the concerns about lacking research on food packages (Shankar *et al.*, 2022; Shroff *et al.*, 2022).

Our analysis under the first conceptual idea (Figure 1) shows that online reviews (WOM encounter) and app performance (function encounter) are the only two critical factors that influence consumers' purchasing decisions. Current literature suggests that a restaurant menu's visual appeal and informativeness (Brewer and Sebby, 2021) and ease of use of the ordering platform (Belarmino *et al.*, 2021) are decisive factors when consumers order foods online. Because online reviews have become an essential form of UGC that influences consumers' purchasing decisions (Kwok *et al.*, 2017; Li *et al.*, 2023), the rich textual and visual content revealed in online reviews can possibly achieve the same purpose as an informative restaurant menu with excellent visual appeal. Meanwhile, app performance (revealed in our analysis) and ease of use of the ordering platform (in Belarmino *et al.*, 2021) are two different but highly relevant measures. It is not surprising to see WOM and function encounters are the two most significant influential factors in consumers' first-time purchasing decisions for a restaurant's curbside pickup service. Nevertheless, whether a restaurant uses green food packages is not a determining factor at this stage.

After trying a restaurant's curbside pickup service, however, the most influential factors affecting consumers' overall experiences of a restaurant's curbside pickup service shifted to food quality (service results encounter), followed by friendly staff (distributor encounter), according to our analysis of the second conceptual idea (Figure 2). To a large extent, such findings echo those in Belarmino *et al.* (2021)'s

study about online meal delivery apps, in which food quality (related to service results encounter in our setting), service speed (related to distributor encounter), and ease of use (related to function encounter) were found to significantly influence customer satisfaction. It appears that consumers still perceive food and beverage quality as a restaurant's "core service" and friendly staff as a critical component of "social interactions" in a restaurant, both of which will drive customer satisfaction (Walter *et al.*, 2010).

Contradicting the proposed moderating relationship in Figure 2, green food packages turned out to be an extra appealing attribute for consumers with low perceived importance of green restaurant practices. Such a finding can be explained by the concepts of consumer satisfaction vs. consumer delight. That is, while the four service encounters are the core of a typical restaurant offering, green food packages are usually not a core service component provided by a restaurant. Wang (2011) compared the effects of a service product's quality in its core service vs. unrelated supporting service in three studies and discovered that unrelated supporting service quality is positively correlated to customer delight but not customer satisfaction. Furthermore, consumer delight and their positive experience of unrelated supporting service quality could lead to repurchase intentions only when they reported a high core service quality. Referring to Wang (2011), consumers with low perceived importance of green restaurant practices would possibly pay special attention to green food packages because they might see that as a "delightful" factor in their curbside pickup experience, which deserves additional research attention.

Our RQ3 results (about Figure 3) suggest that, during the post-consumption stage, through consumers' overall rating of the curbside pickup service, the use of green food packages can positively influence consumers' willingness to make extra efforts to revisit the restaurant and their positive WOM intentions toward both the curbside pickup service itself and the restaurant. Eventually, consumers would also increase their share of future purchases in the restaurant. Referring to what Wang (2011) reported about core vs. unrelated supporting service's effects on consumers' repurchase intentions, consumers are

likely to perceive green food packages as a nice add-on to the core service of a restaurant's curbside pickup service. Consequently, although green food packages might not have a significant positive impact on consumers' satisfaction, adopting sustainable materials in food packaging can be a "delightful" factor that promotes consumers' positive WOM and repurchase behaviors. Because the share of purchases is an essential measure of the strength of a consumer-business relationship (Kim and Kim, 2017), the positive effect of green food packages on an increased share of future purchases can be crucial to a restaurant.

Finally, we must acknowledge the boundary conditions of consumers' perceived importance of green restaurant practices on their willingness to make extra efforts to dine in a restaurant using green food packages. Environmentally conscious consumers are more likely to purchase eco-friendly products/services (Han *et al*., 2019). Some want to make extra efforts to eat in a "green" restaurant (Kwok and Huang, 2019); others see environmental performance as a more critical factor than price value and battery range when purchasing an electronic vehicle (Degirmenci and Breitner, 2017). Hence, it is not surprising to see consumers who appreciate green restaurant practices are willing to travel farther, pay a higher price, and/or wait longer for a restaurant's curbside pickup service if the restaurant uses green food packages.

Societal/Theoretical Implications

This study strongly focuses on a sustainability issue in the restaurant industry after the COVID-19 pandemic significantly increased both consumers' and hospitality/tourism businesses' awareness of sustainability (Colmekcioglu *et al*., 2022). Restaurant consumers, workers, owners, and managers are all critical stakeholders of this planet's plastic waste management system (Vanapalli *et al.*, 2021). However, green food packages have not yet received sufficient attention in the relevant literature (Shankar *et al.,* 2022; Shroff *et al*., 2022). This study assessed the significant role of green food packages in restaurant

curbside pickup service in three consumption stages. Our findings indicate that using green food packages can be especially helpful for restaurants to trigger customers' positive citizen behaviors toward their business in the post-consumption stage, such as positive WOM behavioral intentions, making an extra effort to revisit, and an increased share of future purchases. That is an excellent insight for policymakers, encouraging more restaurants to use green food packages, especially when restaurant curbside pickup service is expected to stay in post-pandemic. When more restaurants use sustainable materials in food packaging, our planet will benefit from less plastic waste.

Theoretically, this study was inspired by Walker (1995)'s service encounters framework to test three conceptual ideas. We developed and tested an 18-item scale based on Zhao *et al.* (2020)'s Service Encounter Theory in our investigation. Such a scale provides a reference for similar research in relevant settings, such as studies about other restaurant off-premises services (e.g., delivery and takeout) and food retail businesses (e.g., supermarkets). Then, our study enriches the BOPS literature because restaurant curbside pickup is very similar to but unique from the regular e-commerce BOPS service. When a large extent of the BOPS literature focuses on the operational efficiency of service design (e.g., Gallino and Moreno, 2014; Gao and Su, 2017), we joined the pioneer researchers' (e.g., Byrd *et al.*, 2021a, 2021b) effort in studying curbside pickup service as an off-premises restaurant offering. Our special interest in sustainable food packaging also responded to Shankar *et al.* (2022)'s and Shroff *et al.* (2022)'s calls for studies to analyze the role of eco-friendly packages in O2O restaurant services.

Practical Implications

Our findings provide a comprehensive understanding of green packages and other influential factors affecting consumers' purchasing decisions and experiences, starting from their pre-consumption to their post-consumption phrases of the curbside pickup service. Such insights provide in-depth business intelligence for restaurants wanting to sustain their curbside pickup service beyond the pandemic.

Accordingly, we strongly recommend that restaurants strategically manage their profiles on websites and apps that publish online consumer reviews. We recommend restaurants and third-party-ordering websites/apps feature visual content (e.g., pictures of food and beverage; green food packages) and motivate their repeat customers to share positive WOM messages. Meanwhile, it is unlikely for restaurants to sustain the curbside pickup service if they fail to meet customer expectations of food and beverage quality and friendly service. Providing exceptional core services is still crucial to survival in post-pandemic. Finally, we encourage restaurants to use green food packages to demonstrate their commitment to sustainable issues, triggering positive WOM and repurchase behaviors among consumers. Besides restaurant owners and managers, our findings of green food packages also provide a reference to other businesses that offer similar curbside pickup services, such as other food retailers and supermarkets. We also advocate that policymakers consider our research findings as they propose new regulations or restrictions on single-use plastic products. Both the costs and benefits (ripple effects) of using green food packages should be considered.

Limitations

First, we collected the data through a consumer panel at Qualtrics.com. There might be a potential bias from the informants. Additionally, we only collected the data from a US sample. The findings might not directly apply to other countries or areas where consumers might have different attitudes toward eco-friendly products. Finally, we conducted our analyses with the same group of informants. We invite additional work with more diverse samples or in multiple studies.

Conclusion

The influential factors on consumers' curbside pickup experiences can shift as consumers move from the pre- to post-consumption stage. We echo Shankar *et al*. (2022) and Shroff *et al*. (2022)'s call

for more interdisciplinary studies about sustainable food packages. Using green food packages is crucial to our planet, beyond its positive ripple effects in restaurant marketing.

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