

Blowing minds with exploding dish names/images: The effect of implied explosion on consumer behavior in a restaurant context

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5	Blowing minds with exploding dish names/images: the effect of implied explosion on
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Blowing minds with exploding dish names/images: the effect of implied explosion on consumer behavior in a restaurant context

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35 Abstract:

Dish names and dish images can be widely found online, providing consumers with important information. 36 Meanwhile, implied explosion (i.e., the perception of explosion induced by static stimuli) is increasingly 37 utilized by real-world restaurants. The present research thus combines dish names, dish images, and implied 38 explosion to examine the impact of implied explosion on various aspects of consumer behavior within a 39 restaurant context. Three experiments demonstrated that exploding dish names and exploding dish images 40 (i.e., dish names/dish images showing implied explosion) can create a more intense taste perception and a 41 more favorable taste evaluation. Additionally, exploding dish images can enhance perceived dish liking 42 and increase consumers' willingness to pay. The present research suggests that exploding dish names/dish 43 images are subtle but effective communication tools for the tourism industry, helping to deliver a more 44 45 stimulating perception and experience to consumers and to generate higher margins. By exploring the effects of implied explosion, we also introduce the implied motion concept to the tourism management 46 47 literature.

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Key words: Implied motion, dish names, dish images, sensory marketing, restaurant, dish perception, dish
evaluation, willingness to pay

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52 Highlights:

- 53 This research introduces implied motion to the tourism management literature
- 54 This research explores implied explosion as a specific type of implied motion within a restaurant context
- 55 This research examines the effect of exploding dish names/images on consumer behavior
- 56 Exploding dish names/images give consumers a more stimulating perception
- 57 Exploding dish names/images can yield higher margins for restaurants by increasing willingness to pay
- 58 Implied explosion is a new option for restaurants to conduct sensory marketing online
- 59 A data cleaning protocol is developed for online panels
- 60 The significance of conceptual replications is highlighted
- 61

62 **1. Introduction**

63 Consumers frequently search for different information to form a composite perception for their decision64 making (Frias et al., 2008). In a restaurant context, consumers increasingly rely on the Internet to search
65 for restaurant information and help with their restaurant choices (Filieri et al., 2015; Litvin et al., 2005).

66 As a result, consumers often exchange their restaurant reviews with others online, while restaurants create

- official websites and complementary social network homepages in order to reach their target markets
- 68 (Bilgihan et al., 2016). Accordingly, the extant tourism literature examines consumer-generated reviews

extensively in the context of food tourism, restaurants, and the hospitality industry. Recent research, for 69 70 instance, found that online textual reviews can impact consumers' decision-making, especially when they use mainstream language and display certain emotions (Wang et al., 2019). Taking this a further step, the 71 reviews and ratings consumers assign to a restaurant are shown to be largely subjective, involving a 72 "herding" effect moderated by various constructs such as temporal distance, experience valence, posting 73 74 devices, reviewers' nationality, and cultural background (Li et al., 2021; Nakayama and Wan, 2018; Vu et al., 2019). With the rise of sensory marketing, emerging studies show that when consumers select and 75 76 review a restaurant, information searching/sharing behaviors are primarily related to taste and other sensory information (Duarte Alonso et al., 2013; Li et al., 2019; Mehraliyev et al., 2020), probably because dining 77 experiences are essentially multisensory (Cai et al., 2021; Piqueras-Fiszman and Spence, 2014). 78

- While most research in the tourism literature focuses on textual reviews and numerical ratings, a 80 limited stream of research has examined other types of information that are widely available online, 81 frequently used by consumers, and can presumably signal sensory information. Dish names and dish 82 images (largely conditioned by dish plating designed by restaurants) are important information that can be 83 found at diverse online sources and are subsequently used by consumers to guide their restaurant choice. 84 For example, restaurants typically detail their dishes on their website and include a special gallery to 85 showcase their dining area and culinary creations. Dishes are also intentionally designed to encourage 86 consumers to take photos so they can post their restaurant experience on social media and start an online 87 discussion (Spence, 2017). Consumers, on the other hand, often upload dish images along with their 88 reviews through different online channels, and these are subsequently used by other diners to make their 89 restaurant choices (Oliveira and Casais, 2019). Moreover, dish names frequently mentioned by patrons are 90 likely to be reiterated by potential consumers (Brewer and Sebby, 2021; Zhang et al., 2011). Furthermore, 91 a growing number of studies suggest that dish names and dish images may embed restaurant-related 92 sensory information (Zhao et al., 2018; Wansink et al., 2005). Unlike textual reviews and numerical ratings, 93 for instance, dish names and dish images are more directly linked to dishes, giving consumers a more 94 objective basis on which to elaborate the sensory aspects of the restaurant experience by themselves 95 (Krishna, 2011). As a result, dish names and dish images have been shown to effectively communicate 96 sensory aspects of a restaurant experience and to influence subsequent behavior (Michel et al., 2015; 97 Youssef et al., 2015). 98
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As to sensory aspects of food perception and restaurant experience, food research and the restaurant sector have been exploring the role of motion and dynamic information in shaping consumer behavior for many years. For instance, some upscale American restaurants display live fish *swimming around* in aquariums as an environmental cue to signal product quality (Campbell-Smith, 1970). Asian chefs frequently use

extremely fresh ingredients and special cooking methods to make foods *dance/move* on a plate (Mouritsen 104 105 and Styrbæk, 2018; Spence, 2018), which indicates tastiness for certain Asian consumers. Nonetheless, the application of real motion is limited, as it is challenging and expensive for restaurants to create. Fortunately, 106 a perception of motion can be statically induced. In other words, we have the general ability to extract 107 dynamic states from static stimuli (i.e., implied motion, Açık et al., 2014; Shirai and Imura, 2014) by 108 playing back motion-related memories in our mind (Elder and Krishna, 2012; Freyd, 1983). Compared to 109 real motion, implied motion is easier to create and can be widely applied to different elements, presenting 110 a new opportunity to infuse dynamism and enhance sensory perception. Recent marketing literature found 111 that static images depicting beverages being poured into a glass or splashing in the air can evoke motion 112 perception and consequently receive higher sensory ratings (Gvili et al., 2017), generating stronger 113 purchase intention and more frequent choice (Yu et al., 2022). Taking this further, a growing body of 114 marketing research has begun to explore how implied motion impacts sensory perception by taking specific 115 motion types into account (e.g., implied upward motion, Van Rompay et al., 2014), suggesting that the 116 effect of implied motion is largely determined by its type (Baxter and Ilicic, 2018). In line with emerging 117 research on implied motion and the emphasis on its various types, pioneering restaurants and 118 establishments have begun to explore a specific type of implied motion, namely, explosive motion, in the 119 hope that implied explosion (i.e., the perception of explosion created by static stimuli) will enhance diners' 120 perceptions, generate a more stimulating experience, and create more profit. To this end, restaurants create 121 implied explosion using dish names and dish images. Chefs at the iconic Parisian brasserie, Source Infinie, 122 for instance, bang tartare sauce onto a plat with a spoon, creating an explosive distribution of the condiment. 123 Thus, the brasserie's signature fresh salmon tartare is served with an exploding sauce (Source Infinie, 2021), 124 and its account managers have pinned the dish image on Tripadvisor as its homepage cover. Likewise, 125 Michelin-starred chef, Jean-François Rouquette, tops olive oil ice cream with exploding chocolate chips to 126 create a luxurious and intense experience at his renowned restaurant 'Pur' (iansheppard68, 2019). In 127 addition, several dish (beverage) names, both new and traditional, imply explosion. The classic cocktail 128 *depth charge*, for instance, is also widely known as a *bomb shot*. The popular street beverage sold by the 129 chain store, Coco, is called *double cracker* of passion fruit (literally translated from "Bai Xiang Guo 130 Shuang Xiang Pao") in mainland China. When reading these names, consumers will spontaneously 131 visualize an explosion, either in the glass or in their mouth (Wyer et al., 2008). Thus, chefs have 132 successfully created implied explosion in terms of visuals and texts, producing many exploding dish names 133 and exploding dish images that can add to a restaurant experience. Despite the increasing use of exploding 134 dish names and exploding dish images, their functionality has not been investigated to date. Given the 135 growing popularity of implied explosion in real-world business and the emerging literature on implied 136 motion and its specific types, investigating the effect of exploding dish names and exploding dish images 137 is theoretically necessary and managerially relevant. First, a more scientific investigation can reveal the 138

benefits of implied explosion in a restaurant context. More importantly, exploring implied explosion as a specific type of implied motion can help to establish implied motion as a new research avenue in the tourism management literature and illustrate how consumer behavior is shaped by its specific types.

To fill this gap, the present research combines dish names, dish images, implied motion, and implied 142 explosion in a restaurant context. Adopting an interdisciplinary method, a theoretical framework is 143 proposed to introduce implied explosion and subsequently analyze its potential to communicate dishes' 144 sensory information (i.e., perceived taste intensity, perceived taste liking) and to consequently shape 145 146 downstream consumer behavior (i.e., perceived dish liking and willingness to pay (WTP)) when applied to dish names or dish images. More specifically, we adopt the following theoretical path: we first review the 147 concept of implied motion and its implications in restaurant-related contexts. Following the 148 conceptualization of implied motion, we move on to implied explosion as a specific case of implied motion 149 and discuss how exploding dish names and exploding dish images can be created. We then analyze the 150 effect of implied explosion on taste perception and its downstream effect on consumer behavior, mainly 151 drawing on conceptual metaphors and the tourism/marketing literature. Through three conceptual 152 replications, we find that exploding dish names and exploding dish images can generate a broad-spectrum 153 positive effect on different aspects of consumer behavior, creating a win-win situation for both consumers 154 and restaurants. The present research therefore suggests that as a specific implied motion type, implied 155 explosion can help to signal rich sensory information, create a more stimulating perception for customers, 156 and generate higher margins via exploding dish names and exploding dish images. 157

The rest of the paper is organized as follows. We first present an interdisciplinary literature review. Second, three conceptual replications are presented. In other words, the hypothesized effect of implied explosion is empirically investigated through three online experiments using both exploding dish names and exploding dish images. Finally, we present a general discussion that outlines both the theoretical and the managerial contributions. The research limitations and potential avenues for further research are also discussed.

164

165 2. Literature review, conceptual framework, and hypotheses

166

167 *2.1. Dish names and dish images*

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Dish names offer fundamental information about a restaurant and its offerings. They are displayed on physical menus, restaurant websites, review websites, and social media. Dish names provide rich information (e.g., ingredients, ethnicity/authenticity, sensory experience, geographic features, brand, and taste), highlight the sensory aspects of a dish, and generate food-related mental images (Piqueras-Fiszman and Spence, 2015; Bacon and Krpan, 2018; Jacob et al., 2017). In addition, the visual and physical

presentation of dish names (i.e., font and weight of menu) can also impact restaurant perception and 174 increase service quality expectations (Magnini and Kim, 2016). Consequently, an appropriate dish name 175 can boost purchase intention, encourage dish consumption, and lead to higher sales for restaurants (Gavrieli 176 et al., 2020; Gottschall et al., 2018; Papies, 2013; Wansink et al., 2001). Likewise, dish images are often 177 uploaded online as supplementary information, facilitating consumers' choice of restaurant (Oliveira and 178 Casais, 2019). Since humans have evolved to process visual stimuli rapidly and effortlessly (Zurawicki, 179 2010), such images should communicate the sensory features of dishes, altering purchasing behavior 180 naturally and efficiently. In line with this reasoning, recent research from various fields suggests that dish 181 images play a vital role in shaping consumers' dish perception and hedonic evaluation (Hoegg and Alba, 182 2007; Szocs and Lefebvre, 2017; Toet et la., 2019), actual dining experience (Michel et al., 2014), and 183 purchase intention (Brewer and Shebby, 2021). Given that both dish names and dish images signal rich 184 information about a restaurant, they lend themselves to communicating sensory experiences and impacting 185 consumer behavior. 186

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188 *2.2. Implied motion and consumer behavior*

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Motion is part of almost every aspect of daily life and is critical for humans to function in the world 190 (Oberzaucher and Grammer, 2008). Thus, relevant research suggests that humans are physically and 191 psychologically attuned to detecting, processing, and deciphering information from motion (Bardi et al., 192 2011; Brasel and Hagtvedt, 2016; Lakoff and Johnson, 2008). While processing static visuals/verbals 193 related to motion, we can mentally extract the corresponding dynamic state by using motion-related 194 memories and recruiting the motor cortex (Cutting, 2002; Freyd, 1983; Kourtzi and Kanwisher, 2000; 195 Moseley and Pulvermüller, 2014). As a result, we have the general ability to "see" motion from static 196 stimuli containing motion-related information (i.e., implied motion, Shirai and Imura, 2014). Thus, in real-197 world practice, chefs, among others, have acknowledged the potential of implied motion in restaurant-198 related contexts. To give just a few examples, American chef, Michael Laiskonis, argues that implied 199 motion can be created by changing the plating composition to make food presentation more appealing 200 201 (Institute of Culinary Education, 2016), and Paris-based fine-dining restaurant, Boutary, often uses wavelike tableware to present its dishes ("Boutary gallery"). However, the benefits of implied motion reported 202 by chefs are anecdotal. More scientific evidence on the effects of implied motion on consumer behavior 203 comes from the marketing literature. For example, as motion requires processing priority, visuals 204 displaying implied motion are found to attract/engage consumers and communicate persuasive messages 205 (Cian et al., 2014; 2015a). In food-related contexts, emerging research indicates that implied motion can 206 influence consumers' food evaluation. More specifically, while implied motion can communicate taste-207 related attributes and accordingly increase both food attractiveness and purchase intention (Gvili et al., 208

2015; 2017; Li and Liu, 2022; Yu et al., 2022), it can also signal food healthiness (Amar et al., 2020). Thus, 209 both the marketing literature and real-world restaurant practices suggest that implied motion can serve as 210 a powerful tool to shape consumer behavior in food-related contexts. 211

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2.3 Implied explosion and consumer behavior

Motion takes diverse forms. Some researchers thus approach motion from a physical perspective to reveal 215 216 persuasive information specific to different forms of motion (Baxter and Ilicic, 2018). To this end, emerging research has begun to investigate implied motion in terms of direction, finding that different implied motion 217 types, such as implied forward motion and implied upward motion, help to communicate abstract meanings 218 such as modernity (Cian et al., 2014), the passing of time/events (Mead et al., 2020), and lightness (Van 219 Rompay et al., 2014). Similarly, the authors of the present research note that motion can also be grouped 220 in terms of energy; certain forms, such as floating, involve little energy release and are thus highly subtle 221 and delicate, while other forms, especially explosion, are more flagrant, characterized by the sudden release 222 of substantial energy (Keller et al., 2014). From a conceptual metaphor view, our cognitive system uses 223 bodily experience to understand abstract information (Lakoff and Johnson, 1999). Thus, a unique message 224 may derive from explosive motion since it offers a unique movement pattern and generates unique 225 experiences. However, it is hard, if not impossible, to create real explosion on a dining table without leaving 226 a mess. An alternative is to create explosion statically through dish names and dish images. Noticeably, 227 explosion is a dynamic event that we frequently experience (Liberman, 2010). Thus, according to the 228 memory-based mechanism of implied motion (Elder and Krishna, 2012; Freyd, 1983), enough explosion-229 related memories should be obtained to help us perceive implied explosion from static stimuli. In other 230 words, implied explosion is a specific and unique case of implied motion that can easily be created in a 231 restaurant context. For instance, although implied motion can be created via different visual techniques 232 (for a review, see Cutting, 2002), the most common way is to capture an instantaneous frame of an object 233 in motion (Cian et al., 2014). Thus, implied explosion can be created by spreading sauce with a centrifugal 234 splashing pattern to create an explosion-like impression, producing an exploding dish image as in the case 235 of the Source Infinie (2021). On the other hand, as humans simulate a concept (e.g., explosion) when they 236 read a text about it (for a review, see Barsalou, 2008), exploding dish names can be created by including 237 detonation-related words in a dish name (e.g., explosion, bomb and cracker) (Farace et al., 2020; Wyer et 238 al., 2008). 239

240

Since implied explosion is easy to create and can presumably signal unique information, it has gained 241 increasing popularity among chefs worldwide. For instance, many western restaurants, including the afore-242 mentioned Parisian Source Infinie brasserie and Pur restaurant, occasionally design dishes with explosion-243

like dish plating to add to their menu. Taking this a further step, some restaurants use implied explosion as 244 a major aspect of their gastronomical creations. French Michelin-starred restaurant, IMA, for example, 245 creates implied explosion by manipulating the distribution of sauces/powders for multiple dishes in a 246 tasting menu. They also select tableware with explosion-like patterns to present their dishes. Accordingly, 247 customers have written of "an explosion of flavors from the first bite!" on review websites when describing 248 249 IMA's exploding dishes (Vivagastronomia, 2018). Regarding exploding dish names, a traditional cooking method in China that relies on extremely high temperatures to create strong flavor is called "explosive stir-250 251 fry" (literally translated from "Bao Chao") and the term is a prefix to many dish names in China, regardless of the region or style of cuisine. Similarly, OCF Singapore, a modern European cuisine restaurant, uses the 252 word explosion directly for its refreshing entrée ("Tomato Tartare Explosion") (Rach Ang, 2013). Despite 253 its emerging use in restaurant contexts, the effect of implied explosion on dish perception and evaluation 254 remains unclear, making it theoretically necessary and practically relevant to examine how implied 255 explosion can help restaurants to communicate dining experiences and consequently impact consumer 256 behavior. 257

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259 2.4. Implied explosion and dish perception

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Specific types of motion generate different experiences, giving rise to unique meanings associated with the 261 motion in question (Lakoff and Johnson, 1999; Shapiro, 2019). Notably, these messages produced by 262 various experiences largely shape consumers' product perception and decision-making in different ways 263 (Cian et al., 2015b; Krishna et al., 2017), shedding light on the potential of distinct implied motion types 264 to impact consumer behavior. More specifically, conceptual metaphor theory argues that when individuals 265 regularly experience an activity and an abstract concept simultaneously, the activity and the concept will 266 be linked at a conceptual level (Lakoff and Johnson, 2008; Lacey et al., 2012). Consequently, experiences 267 related to the activity are often used to facilitate inferences about the corresponding abstract concept (Adu-268 Ampong, 2016; Belhassen, 2020). Following this metaphorical view, it has been shown that in countries 269 where people usually write from left to right, implied forward motion (left \rightarrow right) is conceptually linked 270 to modernity and the passing of time and consequently produces differentiated evaluation and purchasing 271 behavior (Cian et al., 2014; Mead et al., 2020). Similarly, implied upward motion is related to lightness, 272 since light objects tend to move upward more easily (Van Rompay et al., 2014). 273

274

Regarding explosion, it is often experienced in everyday life as an intense type of motion. For example,
people may experience explosion when blowing up a balloon, or watching a firework show or a movie.
Whenever we encounter explosion, a unique experience is perceived. Consumers are therefore likely to
take explosion as a heuristic way of understanding certain properties of a dish (e.g., taste intensity). Taking

this further, whenever we encounter explosion, we experience intense shock waves, intense sound, and 279 even intense heat and luminance (Goel, 2015; Liberman, 2010). In this sense, explosion and sensory 280 intensity can be conceptually linked, since people frequently experience explosion and intense sensorial 281 input synchronously. Given that the perception of explosion can be activated by static stimuli, it is 282 reasonable to expect sensory intensity to also be inferred from exploding dish names and exploding dish 283 images. As the specific meaning of a conceptual link is also shaped by contexts (Kövecses, 2015), in a 284 restaurant context where taste is the main criteria (Agapito et al., 2014), a dish's taste intensity can thus be 285 286 highlighted by implied explosion. Hence, we hypothesize that:

287

288 H1a: Implied explosion will enhance perceived taste intensity

289

On the other hand, individuals may also use mental imagery to understand explosion-related meanings. 290 When people process the explosion concept, they form a mental image of explosions (Barsalou, 2008; 291 Williams, 1993). While "viewing" the imagined image, individuals extract the most prominent property of 292 the imagined explosion with the help of explosion-related knowledge and situational information, and then 293 utilize the extracted property to understand the abstract concept (i.e., taste intensity) within the context (El 294 Refaie, 2015; Lakoff, 2014). Specifically, given that explosion is characterized by the sudden and rapid 295 release of a large amount of energy (Keller et al., 2014; Goel, 2015), it is likely that consumers will imagine 296 the explosion activity and subsequently discern the rapid release of considerable energy. Through this rapid 297 release of energy, consumers in a restaurant context may infer that abundant taste has been released in the 298 same way as energy is released in an explosion, potentially increasing perceived taste intensity. We 299 therefore hypothesize that: 300

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H1b: The effect of implied explosion on perceived taste intensity will be mediated by the perceivedenergy released

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305 *2.5. Dish perception and dish evaluation*

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It is well-established that consumers' evaluative behavior usually starts from the perception of desirable product attributes (O'keefe, 2015). The tourism literature suggests that a primary motivation for dining out in restaurants is the search for a hedonic experience, especially that of taste (Kim et al., 2020; Jun et al., 2014). As a result, when selecting a restaurant, consumers are likely to view taste intensity as a desirable attribute, at least to a certain extent, since intense taste in general gives consumers greater hedonic stimulation and sensory pleasure (Yeomans et al., 2007). The positive relationship between taste intensity and taste liking is also found in experiments conducted in well-controlled laboratories. For example, when

a simple glucose/citric acid solution is tasted, a positive relationship between taste intensity and 314 pleasantness is observed (Moskowitz et al., 1975). Similarly, when a taste is complex and desirable, 315 reported liking is positively related to taste intensity (Nguyen and Wismer, 2019; Schwieterman et al., 316 2014). Since gustatory experience often constitutes the most important aspect of a restaurant experience, 317 the positive relationship between perceived taste intensity and perceived taste liking is liable to be 318 319 generalized to a more complex restaurant setting. We thus hypothesize that:

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- 321 H2: Perceived taste intensity will increase perceived taste liking
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Once a critical product attribute has been appraised, consumers typically utilize it to evaluate the overall 323 product (Brown and Dacin, 1997; Haase et al., 2020; Park et al., 2022). Consequently, apart from taste 324 evaluation, dish evaluation is also an important aspect of consumers' reaction to a dish. Many professional 325 gastronomy guides, such as the well-known French Michelin guide and China's emerging Black Pearl 326 restaurant guide, take a dish's taste as a primary scoring criterion (Black Pearl restaurant guide; Michelin 327 guide). Similarly, the significance of taste in forming consumers' dish evaluations has also been noted in 328 the relevant literature. For instance, taste is found to be the dominant factor contributing to dining 329 experience and overall dish evaluation for both average consumers and dining connoisseurs, although 330 dining experience is grounded in a multisensory manner (Mehraliyev et al., 2020; Liu and Tse., 2018; 331 Trubek 2008). Given the influence of taste in creating dish evaluation, a dish delivering a more desirable 332 taste will also receive a more favorable evaluation. Therefore, we hypothesize that: 333

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H3: Perceived taste liking will increase perceived dish liking

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2.6. Dish evaluation and willingness to pay 337

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In addition to consumers' perceptual and evaluative response, the way implied explosion influences 339 consumers' behavioral intention, especially WTP, is of particular theoretical and managerial interest. WTP 340 refers to the maximum price a buyer is willing to pay (Barber et al., 2012) and is a major factor in 341 determining a restaurant's profitability, future growth, and overall performance (Sukhu et al., 2017). The 342 hierarchy of effects model argues that consumers' purchase behavior is an outcome of product evaluation 343 and related attitude (O'Shaugnessy and O'Shaughnessy, 2003). More specifically, consumers tend to pay 344 more money for more positively evaluated products as the latter are likely to provide more values desired 345 by consumers (Smith and Colgate, 2007). Accordingly, the role of product evaluation in shaping consumers' 346 WTP has been repeatedly demonstrated in tourism-related settings (Ivanov and Webster, 2021) and in the 347 marketing literature (Homburg et al., 2005). Recent experiments have further confirmed the effect of dish 348

evaluation on consumers' WTP in different restaurant settings, finding that dish evaluation has a stronger
impact when consumers visit a fine-dining restaurant (Parsa et al., 2017). Thus, in a restaurant context,
how much a consumer is ready to pay for a dish is largely determined by how much he/she likes the dish.
Thus, we hypothesize that:

- 353 354
- H4: Perceived dish liking will generate higher willingness to pay
- 355

356 **3. Experiment overview**

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In Study 1, the authors implicitly examine the explosion-intensity link through a name-description 358 matching task (H1a). In Study 2, the authors replicate Study 1 using another set of dish names and examine 359 the effect of implied explosion on taste liking via an explicit test (H1a and H2). Study 3 further generalizes 360 the findings of previous experiments using exploding dish images, examining the underlying process of 361 the effect of implied explosion on taste intensity in greater detail (H1b). It also examines the downstream 362 effect on consumer behavior (H2, H3, and H4) through an explicit test. The three experiments thus 363 constitute conceptual replications by using different measurements (implicit vs. explicit), samples (British 364 vs. American), and stimuli (dessert name vs. fish soup name vs. dish image), thus broadening the 365 366 generalizability of the findings. Fig. 1. offers a theoretical summary and overview of the hypotheses investigated in the three studies. 367

Insert here Fig. 1.

369

370 Fig. 1.



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4. Study 1 - Dish names with implied explosion (implicit test)

Study 1 first investigates the hypothesized conceptual link between implied explosion and perceived taste
intensity using a highly ecologically valid dish name stimuli and an implicit measurement.

379

380 *4.1. Participants*

381

382 One hundred and forty-one UK citizens were recruited from Prolific. Prolific is a crowd-sourcing platform similar to Amazon Mechanical Turk (AMT). However, it offers more convenient access to a large pool of 383 384 native UK participants compared to AMT and can generate better data quality (Eyal et al., 2022). Consequently, it has been increasingly used in marketing and tourism research (Chen et al., 2021; Grewal 385 et al., 2021). To recruit UK citizens, participants were pre-screened in terms of nationality (i.e., British) 386 and current country of residence (i.e., UK). Gender is automatically matched by Prolific. There have been 387 increasing calls for data cleaning when participants are recruited from online panels (Chmielewski and 388 Kucher, 2020; Ford, 2017), with multiple-step cleaning advocated for better control of noise in particular 389 (Babin et al., 2016). We thus designed a multiple-step data cleaning protocol for the study, which is also 390 applicable to other studies using online panel data and Qualtrics (Appendix A). As a result, 60 participants 391 were excluded from the analysis, primarily due to a failed attention check, resulting in 81 valid responses 392 (for the exclusion list, see Appendix B). The final valid sample consisted of 81 adults (50% women), 393 ranging in age from 18 to 71 years (Mage = 34.79, SD = 12.89). 394

395

396 *4.2. Apparatus, materials, and pretests*

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Two different descriptions of a dessert and two corresponding dessert names were adapted from Youssef 398 399 et al. (2015). With regards to the dessert description, two brief sentences were added at the end of the original description to prime intense vs. delicate taste perception, yielding two dessert descriptions ("This 400 dessert includes smoked cox apple crème, cobb nuts, home-made curd, apple caviar & beetroot reduction. 401 It provides you with a very intense taste (intense description)/a very delicate taste (delicate description)"). 402 Likewise, the original name "Taste of nature" was considered as a control name, while "Exploding taste of 403 nature" was used for the exploding name (see Fig. 2). The original description and name were created for 404 a dessert by professional chefs and were written in British English. Consequently, we believe that the 405 intense/delicate descriptions as well as the exploding/control names provide high ecological validity for 406 UK participants. 407

408

Two pretests were conducted to assess the effectiveness of the dessert description/dessert name manipulation. The first pretest (n = 36) showed that the intense description indeed created a more intense taste perception compared to the delicate description (p = .000). The second pretest (n = 40) showed that the exploding name effectively resulted in a higher perceived amount of explosion compared to the control name (p = .004) (for detailed measures, see Appendix D). Overall, the manipulations' effectiveness is confirmed.

- 415
- 416 *4.3. Experiment design and procedure*
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Study 1 adopted a between-subjects design (intense description condition vs. delicate description 418 condition). The experiment was administered online via Qualtrics. An implicit description-name matching 419 task was adapted from Romero and Biswas (2016). The implicit matching task is resistant to demand 420 characteristics (Greenwald et al., 2009), thereby reducing potential subject-related bias. Participants were 421 randomly assigned to either the intense description condition or the delicate description condition, which 422 was presented with both the control name and the exploding name. The order of the two dish names was 423 automatically randomized to control the order effect. In both conditions, participants were instructed to 424 read a description of a dessert dish and to select a dish name that best fit the dessert description (Fig. 2.). 425 At the end of the experiment, they were also asked general control questions, including age, gender, dining 426 frequency, cooking frequency, culinary knowledge, hunger level, general category liking (dessert), and 427 relevant work experience (for detailed measures, see Appendix E). 428

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431

432 **Fig. 2.**

433 Task requested in Study 1

A restaurant has created a new dessert. Its description is presented on the next page. Please read the dish description below carefully and select a name that best fits the description.

Insert here Fig. 2.

Delicate description condition:

"This dessert includes smoked cox apple crème, cobb nuts, home-made curd, apple caviar & beetroot reduction. It provides you with a very delicate taste."

Intense description condition:

"This dessert includes smoked cox apple crème, cobb nuts, home-made curd, apple caviar & beetroot reduction. It provides you with a very intense taste."

Now please select a dish name that best fits the description:

- $\circ \quad \text{Exploding taste of nature} \\$
 - Taste of nature

General control variables

436

437 *4.4.1. Sample comparability*

The mean and standard deviations of individual variables (age, gender, dining frequency, cooking frequency, culinary knowledge, hunger level, general category liking (dessert), and relevant work experience) were compared to ensure that the two groups ($n_{intense} = 39$; $n_{delicate} = 42$) were comparable. No significant difference was found between the two groups with regard to these variables (p>.05) (for more details, see Appendix F).

443

444 *4.4.2. Hypothesis tests*

The description-name matching task implicitly examines the effect of implied explosion on perceived taste 445 intensity. If explosion is indeed conceptually linked to taste intensity, individuals should process stimuli 446 reflecting the existing explosion-intensity link more fluently, making participants more likely to select an 447 intense (delicate) description for an exploding (control) dish name (Cian et al., 2014). Consistent with our 448 prediction (H1a), the intense description was more frequently associated with an exploding name 449 (Exploding taste of nature) vs. the control name (Taste of nature) (32% vs. 16%, $X^2(1) = 25.91$, p = .000). 450 The results indicate that implied explosion is conceptually linked to perceived taste intensity, providing 451 preliminary evidence for the hypothesized effect of implied explosion on perceived taste intensity. 452

453

454 5. Study 2 – Dish names with implied explosion (explicit test)

455

Study 2 has two objectives. First, it generalizes the findings of Study 1 by using fish soup names, explicit
measurement, and American participants. Second, it investigates how an exploding dish name influences
consumers' taste liking.

459

460 5.1. Participants

461

462 One hundred and seventy American participants were recruited from Amazon Mechanical Turk (AMT) in terms of location (i.e., US). AMT provides access to more representative American participants with 463 diverse demographic profiles (Minton et al., 2013; Wei and Zhang, 2019). Hence, it is widely used in 464 tourism and marketing research (e.g., Ang et al., 2018; Zenker et al., 2021). An identical data cleaning 465 protocol was applied as in Study 1 (Appendix A). As a result, 80 participants were excluded, primarily due 466 to a failed attention check and VPN usage, generating 90 valid responses (for the exclusion list, see 467 Appendix B). The final valid sample consisted of 90 adults (38% women) ranging in age from 22 to 69 468 years (Mage = 38.38, SD = 11.10). 469

- 471 5.2. Apparatus, materials, and pretest
- 472

To enhance external validity, a fish soup (vs. dessert in Study 1) was selected to create dish names. Two versions of a fish soup name were devised. The control version did not contain implied explosion ("Chef's signature fish soup: A taste of the sea in your mouth"), while the exploding version contained semantically implied explosion ("Chef's signature fish soup: A taste of the sea *explodes* in your mouth").

477

A pretest (n = 51) was conducted to assess the effectiveness of the dish name manipulation. It showed that the exploding fish soup name indeed resulted in a higher perceived amount of explosion compared to the control name (p = .026) (for detailed measures, see Appendix D), confirming the effectiveness of the dish name manipulation.

482

483 *5.3. Experimental design and procedure*

484

A between-subjects design was adopted (control condition vs. exploding condition). The experiment was 485 administered online via Qualtrics. Participants were randomly assigned to either the control condition or 486 the exploding condition. In the control condition, the control version of the dish name was presented, while 487 the exploding version of the dish name was presented in the exploding condition (Fig. 3). Participants were 488 asked a number of questions according to the dish name. Specifically, they first indicated the perceived 489 taste intensity and perceived taste liking (for detailed measures, see Appendix C). To control for potential 490 differences between the two versions of the dish name, the participants were then asked to rate several dish 491 name properties, including appropriateness, novelty, familiarity, and informativeness. At the end of the 492 experiment, they were also asked several general control variable questions, including age, gender, dining 493 frequency, cooking frequency, culinary knowledge, hunger level, general category liking (fish soup), and 494 relevant work experience (for detailed measures, see Appendix E). 495

- 496
- 497
- 498
- 499 **Fig. 3**.

Insert here Fig. 3.

500 Task requested in Study 2

A restaurant has created a new dish.				
You can see its name below. This name is likely to appear on a menu later.				
Please read the dish name and answer some questions accordingly.				
Control condition:	Exploding condition:			
"Chef's signature fish soup: "Chef's signature fish soup:				

A taste of the sea in your mouth"	A taste of the sea explodes in your mouth"		
According to the dish name, what are your expectations for the dish's taste? (Perceived taste intensity; Perceived taste liking)			
Dish name property variables and general control variables			

501

502 *5.4. Results*

503

504 *5.4.1. Sample comparability*

The mean and standard deviations of evaluations of the dish name properties (appropriateness, novelty, familiarity, informativeness), and individual variables (age, gender, dining frequency, cooking frequency, culinary knowledge, hunger level, general category liking (fish soup), relevant work experience) were compared to ensure that the two groups ($n_{control} = 45$; $n_{exploding} = 45$) were comparable. There was no significant difference between the two groups with regard to these variables (p>.05) (for more details, see Appendix F).

511

512 *5.4.2. Hypothesis tests*

Descriptive statistics of collected data are first estimated for dependent variables (see Appendix G). 513 Subsequently, using an independent T test, the authors found a main effect of implied explosion on 514 perceived taste intensity ($M_{control} = 7.09$, SD = 1.41, $M_{exploding} = 7.81$, SD = 1.11, t(88) = -2.67, p = .009). 515 When exposed to the exploding condition, participants indicated a higher perceived taste intensity than in 516 517 the control condition. Hence, H1a is supported. Moreover, the results of the linear regression indicate that perceived taste liking increases significantly and positively with perceived taste intensity (b = .248, p = .018, 518 Adjusted $R^2 = .05$). Thus, H2 is supported. However, the linear fit is only able to explain a small part of 519 the variance of the data (Adjusted $R^2 = .05$), meaning that only 5% of perceived taste liking is explained 520 by perceived taste intensity. 521

- 522
- 523 5.5. Discussion of Study 1 and Study 2
- 524

525 Study 1 invited UK samples to participate in an implicit name-description matching task. The exploding 526 dessert name is more frequently associated with the intense dessert description (vs. the delicate dessert 527 description). Likewise, Study 2 recruited American participants and explicitly asked how they perceive the 528 soup dish according to the different dish names. It found that an exploding dish name makes participants 529 believe that a dish has a more intense taste. Moreover, perceived taste intensity significantly explains, but 530 with a small effect size, the improvement in perceived taste liking. Overall, Study 1 and Study 2 suggest that a dish name can significantly influence consumers' dish perception and evaluation. More importantly, an exploding dish name is found to enhance perceived taste intensity and to generate a more favorable evaluation. Moreover, the dish name and description used in Study 1 (e.g., "taste of nature", "crème", "hand-made curd", "caviar") reflects a fine-dining setting, while the soup name in Study 2 (e.g., "chef's signature fish soup") is more casual in style. Consequently, the results of Study 1 and Study 2 indicate that the effect of implied explosion on perceived taste intensity is robust, largely independent of diners' cultural backgrounds, dining contexts, and measurements.

538

Nevertheless, it remains unclear if the effects observed in Study 1 and Study 2 hold true when explosion is implied visually (i.e., dish image). Indeed, pictures of dishes are frequently found on restaurant websites, review websites, and diners' social media. Investigating the effect of visually implied explosion on consumers' reactions can therefore contribute to both theoretical understanding and managerial practice. Additionally, what process underlies the effect of implied explosion on taste intensity? How about the downstream effect of implied explosion on consumer reactions, especially WTP? These questions are addressed in Study 3, with exploding/control dish images as stimuli.

546

547 6. Study 3 - Dish image with implied explosion (explicit test)

548

549 Study 3 aims to generalize the findings of the previous experiments using dish images as stimuli. It also 550 examines the proposed underlying mechanism of the effect of implied explosion on perceived taste 551 intensity (i.e., perceived energy released) (H1b). In addition, it tests the downstream effect of visually 552 implied explosion on perceived taste liking (H2), perceived dish liking (H3), and WTP (H4).

553

554 *6.1. Participants*

555

556 One hundred and ninety-one American participants were recruited from AMT in terms of location (i.e., 557 US), and an identical data cleaning procedure was conducted as in the previous experiments (Appendix A). 558 As a result, 87 participants were excluded, primarily due to a failed attention check and VPN issue, 559 generating 104 valid responses (for the exclusion list, see Appendix B). The final valid sample consisted 560 of 104 adults (35% women), ranging in age from 23 to 61 years (Mage = 36.89, SD = 8.84).

561

562 6.2. Apparatus, materials, and pretest

563

564 Chocolate cake was chosen to create the dish image stimuli, since it is a common dessert that is widely 565 served in restaurants. Two designs (exploding coulis vs. static coulis) were prepared and presented by the authors on a white, 30 cm. porcelain plate. Identical types and similar amounts of ingredients were used for both designs. The two designs were placed on a beige linen tablecloth, with similar lighting conditions for the photo shoot. The two dish images were created with one featuring an exploding coulis (i.e., exploding dish image) and the other featuring a static coulis (i.e., static dish image). All the other visual details apart from the coulis shapes were kept as similar as possible. Fig. 4 shows the dish images.

571

A pretest (n = 34) was conducted to assess the effectiveness of the dish image manipulation. It showed that the exploding dish image indeed results in a higher perceived amount of explosion compared to the control dish image (p = .05) (for detailed measures, see Appendix D), confirming the effectiveness of the dish image manipulation.

576

577 6.3. Experimental design and procedure

578

A between-subject design was adopted (control condition vs. exploding condition). The experiment was 579 administered online via Qualtrics. Participants were randomly assigned to either the control or the 580 exploding condition. In the exploding condition, the exploding dish image was shown, while in the control 581 condition, the static dish image was displayed (Fig. 4). In both conditions, the participants were instructed 582 to look at a dessert image and to answer some questions accordingly. Following the instructions, they were 583 then shown a dessert image and asked to rate perceived taste intensity and perceived taste liking. The 584 participants were then asked to rate perceived dish liking and WTP. Subsequently, they were asked to 585 indicate the amount of perceived energy released from the plating design (for detailed measures, see 586 Appendix C). At the end of the experiment, they were also asked general control questions, including age, 587 588 gender, dining frequency, cooking frequency, culinary knowledge, hunger level, general category liking (chocolate cake), and relevant work experience (for detailed measures, see Appendix E). 589

- 590
- 591 592

Insert here Fig. 4.

593 Fig. 4.

594 Task requested in Study 3

 We want to know your opinions about the food plating design created for a dessert.

 You will see a picture of a dessert.

 Please look at the dessert picture and answer some questions.

 Control condition:
 Exploding condition:



595

596 *6.4. Results*

597

598 *6.4.1. Sample comparability*

The mean and standard deviations of individual variables (age, gender, dining frequency, cooking frequency, culinary knowledge, hunger level, general category liking (chocolate cake), and relevant work experience) were compared to ensure that the two groups ($n_{control} = 51$; $n_{exploding} = 53$) were comparable. No significant difference was found between the two groups with regard to these variables (p>.05) (for more details, see Appendix F).

604

605 *6.4.2. Hypothesis tests*

Descriptive statistics of collected data were first estimated for the dependent variables (see Appendix H). 606 To test the mediating effect of perceived energy released on the relationship between implied explosion 607 608 and perceived taste intensity, we used the PROCESS Mediation Model 4 (bootstrapping of 5000 resamples) (Haves, 2017). We found that implied explosion had a positive impact on perceived energy released (b = 609 1.10, SE = .36, p = .003), and perceived energy released had a positive impact on perceived taste intensity 610 (b = .54, SE = .07, p = .000). The indirect effect of implied explosion on perceived taste intensity through 611 energy released was significant and positive (b = .60, SE = .23, 95%CI = [.21; 1.16]), while the direct effect 612 of implied explosion on perceived taste intensity was not significant (b = -.28, SE = .27, p = .299). Thus, 613 H1b, which predicted that perceived energy released mediates the effect of implied explosion on perceived 614 taste intensity, is supported, with the experiment revealing an "indirect-only mediation" (Zhao et al., 2010) 615 (Fig. 5.). 616

617

As in Study 2, the results of the linear regression indicate that perceived taste liking increases



The main results of all studies are summarized in a table, including sample size, effect size, and power (seeAppendix I).

641

642 7. General discussion

643

644 7.1. Theoretical implications

The present research contributes to the tourism literature in several ways. First, it shows the huge potential 645 of dish names and dish images as a specific type of information, a factor largely under-investigated by the 646 tourism literature. Consumers generally search for information online, especially online reviews, before 647 deciding on a restaurant (Huifeng and Ha, 2021). Therefore, the tourism literature often concentrates on 648 textual reviews and numerical ratings, leaving other types of information largely unexplored. However, 649 650 tourism research has recently begun to explore how dish names and dish images influence consumer behavior. For example, coupling a dish image with a descriptive dish name is found to generate a more 651 652 favorable attitude and prompt purchasing behavior, with dish image being more effective in influencing behavior (Hou et al., 2017; Chen et al., 2020). Consistent with these studies, the current research showed 653 that consumers spontaneously extract a considerable amount of sensory information from dish names and 654 dish images, which is subsequently used to develop dish evaluation and WTP, demonstrating that dish 655 names and dish images provide a unique type of information that deserves further investigation in the 656 tourism management literature. In addition, consumers' perceptual, evaluative, and behavioral responses 657 are integrated into an overall model (Fig. 1), providing future research with a global framework to 658 understand and analyze the way dish names and dish images influence consumer behavior. 659

Second, despite the increasing use of implied explosion in the real-world restaurant sector, its 661 functionality remains uninvestigated. The present research found that implied explosion can enhance 662 perceived taste intensity, perceived taste liking, and perceived dish liking, and increase consumers' WTP 663 for a dish. In other words, the findings suggest that implied explosion can present consumers with a more 664 stimulating perception, while yielding higher margins for restaurants, thus validating the benefits of implied 665 explosion. Furthermore, communicating sensory information, especially taste, is difficult in online settings 666 (Labrecque, 2020). Although some researchers have explored sensory-enabling technologies (SETs), such 667 as virtual reality and augmented reality, to provide additional visual, tactile, and auditory information (e.g., 668 Alyahya and McLean, 2021; Park and Stangl, 2020), gustatory information cannot be easily provided 669 online by recent SETs (Pelet et al., 2021). Nevertheless, gustation can be tickled online if marketers can 670 encourage consumers to elaborate on taste by themselves (Krishna, 2011; Petit et al., 2019). Following this 671 view, the current research demonstrated that consumers make taste-related inferences based on their 672 explosion-related experience. Thus, implied explosion is an affordable yet effective tool to set gustatory 673 perceptions, serving as an important complement to SETs in the restaurant sector to create a more 674 multisensory presence online. 675

676

660

677 Third, for the first time, to the best of our knowledge, the present research reported a positive effect 678 of dynamic information (i.e., implied explosion) on consumer behavior in a restaurant context. In a recent 679 review, Spence (2018) discussed both the positive and the negative role of motion in dish/food presentation.

In particular, Spence case-studied three dish plating styles exhibiting motion, noting that Westerners display 680 a largely negative reaction to dishes displaying real life-like motion (e.g., dancing squid sushi) due to an 681 evoked fear of asphyxiation and increasing concern over animal welfare, often resulting in business failure. 682 Following on from Spence's exploration of real life-like motion, the present study investigated implied 683 inanimate explosion and found that implied explosion increases perceived taste intensity and generates 684 685 multiple favorable downstream effects. Two factors may explain this phenomenon. First, implied explosion is less visually intrusive than real motion. Second, as implied explosion is not directly related to the animate 686 687 (e.g., live squid), it is unlikely to evoke asphyxiation fear or animal welfare concerns. Implied inanimate motion, such as the implied explosion studied in the present research, thus provides researchers with a new 688 lens to explore the potential of dynamic information in the restaurant sector. Taking this further, the present 689 research suggests that future research should take diverse motion types into consideration when 690 investigating implied motion, since different bodily experiences with various motion types can create 691 distinctive understandings of motion and its related effects (Lakoff and Johnson, 2008). To this end, while 692 prior research has addressed implied motion types in terms of different directions (Cian et al., 2014; Baxter 693 and Ilicic, 2018; Van Rompay et al., 2014), the present study illustrates a new dimension (i.e., energy 694 released) and explores a new type (i.e., implied explosion). 695

696

Fourth, while a growing body of tourism research has investigated restaurants from a strategic 697 perspective (e.g., restaurant innovation, Lee et al., 2016; location selection, Chen and Tsai, 2016; board 698 capital, Song et al., 2021; new business models, Kim et al., 2020), operational factors, such as dish names, 699 dish images, and menu, have often been overlooked in the tourism literature, possibly because these factors 700 are widely believed to be up to the chefs to decide on, or are informed by other industrial know-how. 701 However, restaurant management should be investigated at both strategic and operational level in order to 702 ascertain more innovative methods. Accordingly, recent tourism and marketing research has investigated 703 how consumer behavior can be influenced at operational level in restaurant-related contexts (plating design, 704 Szocs and Lefebvre, 2017; menu design, Magnini and Kim, 2016; Brewer and Shebby, 2021). Consistent 705 706 with these studies, the current research shows that adding implied explosion to dish names and dish images 707 can help to enhance consumer perceptions, evaluation, and WTP. It thus extends the tourism literature by demonstrating the critical role of operational factors in creating a win-win situation for both consumers 708 and restaurants. 709

710

In addition, our study places conceptual replications under the spotlight and offers suggestions on how they can be conducted in tourism-related research. Conceptual replications refer to the academic endeavor to operationalize the same effect/concept in a different way to rule out the usually unexpected effect of systematic bias created by background factors (e.g., samples and stimuli) and to examine the

generalizability of findings (Feest, 2019; Lynch, 1982). As in other fields, such as psychology, marketing, 715 and medicine (Crandall and Sherman, 2016; Lynch et al., 2015; Coiera et al., 2018), conceptual replications 716 have been increasingly advocated in the tourism literature (Pike and Page, 2014; Suhartanto et al., 2020). 717 In particular, since tourism faces greater complexity as a result of globalization (Wahab and Cooper, 2001; 718 Gonzalez, 2008), it is of both theoretical and managerial interest to replicate findings with participants 719 720 recruited from different countries or segments. Apart from new samples, new stimuli and new measurements are also needed to better characterize a phenomenon, validate a theory, and confirm the 721 722 value of managerial implications (Maxwell et al., 2015; Machery, 2020). Consequently, we recommend establishing simple conceptual replications within a research project by conducting multiple studies and 723 using new samples, new stimuli, and new methods/measurements. Following the call for conceptual 724 replications, our research offers an example of how to conduct them in tourism research, using three 725 experiments to create conceptual replications with different samples (UK participants vs. US participants), 726 various stimuli (fine-dining dessert name/description vs. casual-dining soup name vs. dish image), and 727 divergent paradigms and measurements (implicit matching task vs. explicit declarative measure). We thus 728 found that the effect of implied explosion is robust, regardless of the participants' cultural profile, 729 experimental context, type of stimuli, or specific task, providing researchers with brief guidance on how to 730 consider and conduct conceptual replications in tourism research. 731

732

733 7.2. Managerial implications

734

This research explores implied explosion as a new technique to signal taste intensity, enhance food 735 perception, and shape downstream behavior, providing practical insights for restaurants and various food-736 related contexts in the tourism industry. First, revenue and margin are critical to a restaurant's long-term 737 survival and profitability (Raab et al., 2009). Traditionally, margins are increased by a demand-based 738 pricing strategy (e.g., weekday price vs. weekend price; lunch price vs. dinner price), which is often 739 considered as unfair by consumers (Kimes and Wirtz, 2002). Since exploding dish names/dish images can 740 increase WTP, they give managers a way to grow their margins and profitability by communicating the 741 dishes' values more clearly without sacrificing consumer satisfaction. Second, with the rise of food tourism, 742 creating an intense and attractive perception of food matters, not only for restaurants, but also for food 743 festivals and food-souvenir retailing (Chen et al., 2022; Ellis et al., 2018). Restaurant managers can thus 744 collaborate with chefs to find clever and artful ways to create exploding dish names/dish plating that can 745 generate positive effects both in situ (e.g., physical menu, plating design) and online (e.g., uploaded menu 746 and dish gallery). Meanwhile, a menu placed on a table along with carefully designed plating may also 747 incite customers to take photos and share different exploding elements with their friends. Additionally, 748 implied explosion can also be used in various communication materials for tourism events, such as on food 749

festival posters and programs to signal the intensity of the upcoming experience to attract more visitors. It 750 can also be used on promotional materials in souvenir food stores as well as on the packaging of products 751 sold in these stores. As food souvenirs are often renowned for their traditional recipes, authentic ingredients, 752 and flavorful tastes (Ho et al., 2021), implied explosion can highlight their intense and savory tastes. Third, 753 the effect of implied explosion was reliably observed in two major Western countries (i.e., UK and US). It 754 is very likely to generate a similar effect with consumers from more diverse cultural backgrounds, since 755 different nationalities all experience explosion (therefore the explosion-intensity link) in a similar way. 756 Thus, international chains in the tourism sector can recruit expert teams to design stimuli showing implied 757 explosion in their headquarters, offering their regional branches a repertoire to rapidly develop their own 758 communication practices, improve efficiency, and build a consistent brand image. 759

760

762

761 *7.3. Limitations and avenues for future research*

The present research also has certain limitations that need to be acknowledged, but which nonetheless 763 764 provide opportunities for future tourism research. First, as we examined the impact of exploding dish 765 names/dish images separately, potential interactions await further exploration. For example, since dish names and dish images are often displayed side by side (Brewer and Sebby, 2021), pairing an exploding 766 dish name with an exploding dish image may trigger a stronger effect on consumer behavior due to 767 heightened processing fluency (Torelli and Ahluwalia, 2012; Sunaga et al., 2016). Likewise, exploding 768 dish names/dish images may interact with restaurant positioning. While many restaurants' gastronomic 769 creations are designed to deliver stimulating and intense flavors, other restaurants may favor a lighter or 770 more natural taste (Gault, 1995). Accordingly, exploding dish names/dish images may be more suitable for 771 restaurants that offer a highly stimulating dining experience. Second, UK and US participants were 772 recruited from online panels to create conceptual replications. However, these countries are relatively close 773 in terms of culture and economy. Future research could replicate the present work with more distinctive 774 samples, such as average Chinese participants or French dining connoisseurs. Third, while the present 775 article examined the effect of implied explosion on taste perception in a restaurant context, implied 776 explosion may signal the intensity of other sensory experiences in different tourism settings. An 777 image/slogan featuring exploding lavender, for example, may indicate a travel experience with an intense 778 floral fragrance during the blooming season. Fourth, future research could explore diverse types of implied 779 motion in various tourism settings. Implied floating motion, for example, as a gentler type of implied 780 motion, may help to signal delicacy/lightness for restaurants and relaxation/calmness for resorts, hotels, 781 and SPA services. 782

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- 784

785 Appendix A. Proposed Data Cleaning Protocol for Online Panel

	Procedure	Practice	Objective	
	Step 1: survey	A survey code is displayed at the end of	To control for incomplete questionnaires	
	code check	the questionnaire. Participants are asked	or answers that cheat	
		to copy it to the AMT/Prolific task page.		
		The survey code is checked when the		
		experiment ends		
	Step 2: IP check	IP addresses were checked on IPHUB	To remove non-target IP sources and	
		(https://iphub.info)	check potential VPN/VPS addresses (i.e.,	
			fake geolocation) (Kennedy et al., 2020)	
General	Step 3: attention	An attention check question is included	To control for inattention or random	
five-step	check	in the questionnaire. Participants who	responses (Wang and Li, 2022; Mead et	
protocol		failed the attention check question were	al., 2020)	
exclud		excluded from the dataset		
	Step 4: bot and	Detection of bots and relevant ID was	To control for bot/script-based answers	
	relevant ID check	also turned on in Qualtrics and the	and prevent participants from doing the	
		returning results were taken into	same or a related survey multiple times	
		account during the cleaning process	(Qualtrics1)	
Step 5: abnormal		Participants who spent an extremely	To check speeding-up behavior (Kees et	
duration check		short time on the questionnaire were	al., 2017)	
		excluded		
Device	Step 6: portable	Meta information is recorded by	To avoid bias created by legibility issues	
check	device check	Qualtrics. Portable devices such as	on portable devices (Qualtrics2). Pretests	
specific		smart phones and tablets were excluded	showed that when opening 9-point scales	
to the			on portable devices, the layout is	
present			sometimes inverted and often confusing.	
research				

789 Appendix B. Detailed data cleaning list

Study 1	
Sample size before cleaning	141
Failed attention check	49
Portable device	4
VPN or non-UK IP	3
Failed attention check and portable device	2
Failed attention check and abnormal duration	2
Total exclusion	60
Sample size after cleaning	81

Study 2	
Sample size before cleaning	170
VPN/non-US IP	24
Failed attention check	23
VPN/non-US IP and failed attention check	14
Abnormal duration	6
Bot	4
Failed attention and relevant ID	2
VPN/non-US IP and relevant ID	1
VPN/non-US IP, failed attention check and abnormal duration	1
VPN/non-US IP, failed attention check and bot	1
VPN/non-US IP and bot	1
Failed attention check and abnormal duration	1
Bot and abnormal duration	1
Portable device, failed attention check, abnormal	1
Total exclusion	80
Sample size after cleaning	90

Study 3	
Sample size before cleaning	191
VPN/non-US IP	31
Failed attention check	31
VPN/non-US IP and failed attention check	12
Failed attention check and bot	4
VPN/non-US IP and bot	3
Abnormal duration	2
Bot	1

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795 Appendix C. Measures of Model Constructs

Construct	Item	Source
Perceived	According to the [], what are your expectations for the	adapted from Pleyers, 2021
taste	[]'s taste?	
intensity	INT1: not intense at all - very intense	
	INT2: not strong at all - very strong	
	INT3: not powerful at all - very powerful	
	(3-item, 9-point semantic differential, $\alpha = .883$ in Study 2 and	
	$\alpha = .902$ in Study 3)	
Perceived	According to the [], what are your expectations for the	adapted from Zellner et al., 2011
taste liking	[]'s taste?	
	I wouldn't enjoy its taste at all - I would enjoy its taste very	
	much	
	(9-point semantic differential)	
Perceived	How much do you like this [] in general?	adapted from Piqueras-Fiszman et
dish liking	extremely dislike - extremely like	al., 2012
	(9-point semantic differential)	
WTP	How much (in US dollars) would you be ready to pay for this	adapted from Michel et al., 2014
	dessert in a restaurant?	
Perceived	For the following questions, please indicate to what extent	adapted from Keller et al., 2014
energy	you agree with the statements about the plating of this	
released	dessert.	
	ENE1: "In the plating of this dessert, I can see that a lot of	
	energy is released."	
	ENE2: "In the plating of this dessert, I can see that a lot of	
	energy is rapidly released."	
	ENE3: "In the plating of this dessert, I can see that a lot of	
	energy is suddenly released."	
	ENE4: "In the plating of this dessert, I can see that a lot of	
	energy is released in a short time."	
	strongly disagree - strongly agree	
	(4-item, 9-point Likert scale, $\alpha = .934$ in Study 3)	

801 Appendix D. Pretests

802

803 Pretest 1 (Study 1)

804 The sample consisted of 36 British adults (55% women) recruited from Prolific, ranging in age from 20 to

58 years (Mage = 39.08, SD = 11.35). Participants were randomly assigned to either the Delicate

description condition (n = 17) or the Intense description condition (n = 19). No significant difference was found between the two groups with regard to gender and age (p>.05). Perceived taste intensity was

- measured with a 3-item (intense, strong, powerful), 9-point semantic differential, $\alpha = .968$ (adapted from
- 809 Pleyers, 2021).

810

Q 11	Sample comparabilit	v
OTT	Sample comparation	۰y

	J		
Control variables	value	df	P value
Gender	.089	1	.765
Age	-1.351	34	.186

812

813 T-test for comparison of means for 2 independent samples

	Condition	n	Mean	SD	t	df	P value
Banagized tests intensity	Delicate	17	5.66	2.04	-4.491	22.102	.000
Perceived taste intensity	Intense	19	8.10	.95			

814 815

816	Pretest 2 (Study	y 1)	

The sample consisted of 40 British adults (67% women) recruited from Prolific, ranging in age from 22 to 70 years (Mage = 40.48, SD = 13.01). Participants were randomly assigned to either the Control condition (n = 22) or the Exploding condition (n = 18). No significant difference was found between the two groups with regard to gender and age (p>.05). The perceived amount of explosion was measured with 1-item (not at all – a lot of, adapted from Cian et al., 2014).

822 823

Sample comparability

Control variables	value	df	P value
Gender	.609	1	.435
Age	-2.696	38	.100

824

825 T-test for comparison of means for 2 independent samples

	Condition	n	Mean	SD	t	df	P value
Perceived amount of	Control	22	2.91	2.136	-3.158	30.601	.004
explosion	Exploding	18	5.50	2.895			

826 827

828 Pretest 3 (Study 2)

The sample consisted of 51 American adults (40% women) recruited from AMT, ranging in age from 21

to 54 years (Mage = 33.67, SD = 7.53). Participants were randomly assigned to either the Control condition

831 (n = 26) or the Exploding condition (n = 25). No significant difference was found between the two groups

with regard to gender and age (p>.05). The perceived amount of explosion was measured with 1-item (not

at all -a lot of, adapted from Cian et al., 2014).

834	
001	

835	Sample comparability

Control variables	value	df	P value
Gender	.213	1	.645
Age	418	49	.678

836

837 T-test for comparison of means for 2 independent samples

			Condition	n	Mean	SD	t	df	P value
Perceived	amount	of	Control	26	6.38	1.89	-2.29	49	.026
explosion			Exploding	25	7.48	1.47			

838 839

840 Pretest 4 (Study 3)

841 The sample consisted of 34 American adults (33% women) recruited from AMT, ranging in age from 25

to 63 years (Mage = 38.94, SD = 9.46). Participants were randomly assigned to either the Control condition

843 (n = 17) or the Exploding condition (n = 17). No significant difference was found between the two groups

844 with regard to gender and age (p>.05). The perceived amount of explosion was measured with 1-item (not

at all -a lot of, adapted from Cian et al., 2014).

846

847 Sample comparability

Con	trol variables	value	df	P value
Gen	der	.134	1	.714
Age		683	32	.500

848

849 T-test for comparison of means for 2 independent samples

			Condition	1	n	Mean	SD	t	df	P value
Perceived	amount	of	Control		17	5	2.91	-2.03	28.91	0.05
explosion			Exploding		17	6.76	2.07			

850

854 Appendix E. Control Variable Measures

Construct	Item
	General control variable
Age	How old are you? (please enter numbers)
Gender	What is your gender?
	• male
	• female
	• non-binary/third gender
Dining	How often do you dine at a restaurant on average?
frequency	• one or fewer times a year
	• two or more times a year
	\circ one or more times a month
	• one or more times a week
Cooking	How often do you cook dishes by yourself?
frequency	• never
	• sometimes
	• about half the time
	• most of the time
	• always
Culinary	To what extent do you agree with the following statement:
knowledge	"I know a lot about culinary practices"
	strongly disagree - strongly agree
	(9-point Likert scale)
Hunger level	How hungry are you right now?
	not hungry at all - very hungry
	(9-point semantic differential)
General	How much do you like [] in general?
category liking	extremely dislike - extremely like
	(9-point semantic differential)
Work	Do you have any work experience in the following
experience	industries?
	-Hospitality industry
	-Restaurants in particular
	-Food industry
	-Marketing
	(binary: yes vs. no)
Annomistaria	Disn name property variable
Appropriateness	riteria
	not appropriate at all very appropriate
	(9-point semantic differential)
Novelty	
	not novel at all - very novel

	(9-point semantic differential)
Familiarity	~
	not familiar to me at all - very familiar to me
	(9-point semantic differential)
Informativeness	~
	not informative at all - very informative
	(9-point semantic differential)

858 Appendix F. Sample comparability of main studies

Study 1. Sample comparability

Control Variables	value	df	p value
Chi square tests			
Gender	2.768	1	.096
Dining frequency	4.918	3	.178
Cooking frequency	6.702	3	.082
Working experience in hospitality industry	.731	1	.393
Working experience in restaurants	.016	1	.899
Working experience in food industry	3.504	1	.061
Working experience in marketing	1.271	1	.260
T tests			
Age	1.427	79	.158
Culinary knowledge	-1.198	79	.235
Hunger level	-1170	79	.246
General category liking (dessert)	-342	79	.733

Study 2. Sample comparability

Control Variables	value	df	p value
Chi square tests			
Gender	.189	1	.664
Dining frequency	4.990	3	.173
Cooking frequency	1.679	3	.794
Working experience in hospitality industry	.421	1	.517
Working experience in restaurants	.741	1	.389
Working experience in food industry	.045	1	.832
Working experience in marketing	1.640	1	.200
<i>T tests</i>			
Dish name properties (Appropriate)	.658	88	.512
Dish name properties (Novel)	.395	88	.694
Dish name properties (Informative)	.672	88	.503
Dish name properties (Familiar)	.192	88	.848
Age	142	88	.888
Culinary knowledge	871	88	.386
Hunger level	349	88	.728
General category liking (fish soup)	.852	88	.397

Study 3. Sample comparability

Control Variables	value	df	p value
Chi square tests			
Gender	1.197	1	.274
Dining frequency	4.250	3	.236
Cooking frequency	2.441	3	.486
Working experience in hospitality industry	.610	1	.435
Working experience in restaurants	1.363	1	.243
Working experience in food industry	.324	1	.569
Working experience in marketing	.163	1	.686
T tests			
Age	3.848	102	.426
Culinary knowledge	-1.596	102	.114
Hunger level	045	102	.964
General category liking (chocolate cake)	-1.183	102	.240

867 Appendix G. Descriptive statistics for Study 2

Construct	Condition	Means	Standard	Skewness	Kurtosis
			deviations		
Taste intensity	control	7.09	1.41	718	328
	exploding	7.81	1.11	878	.259
Taste liking	control	6.24	2.28	613	516
	exploding	6.02	2.57	798	483

870	Appendix	H.	Descripti	ve statistics	for	Study	3
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Construct	Condition	Means	Standard	Skewness	Kurtosis
			deviations		
Taste intensity	control	7.05	1.97	-1.444	1.816
	exploding	7.37	1.33	774	240
Taste liking	control	7.10	1.92	-1.184	1.118
	exploding	7.64	1.34	830	087
Dish liking	control	6.98	1.98	-1.393	1.344
	exploding	7.49	1.40	944	.669
WTP	control	11.43	9.49	1.202	1.014
	exploding	18.12	16.47	1.423	1.207
Energy released	control	6.20	2.37	998	275
	exploding	7.31	1.18	-1.114	1.567

Appendix I. Main results including sample size, effect size, and power for all experiments 876

Study	Hypotheses	Tests	Main results	Sample size	Effect size	Power*
Study 1	Hla	Chi-square	$X^{2}(1) = 25.91, p = .000$	N = 81	w = .591	.999
	Implied	test			Large	
	explosion =>				effect	
	Perceived taste					
	intensity					
Study 2	Hla	Independent	t(88) = -2.67, p = .009	N = 90	d = .567	.758
	Implied	t-test		Control	Medium	
	explosion =>			group $n = 45$	effect	
	Perceived taste			Exploding		
	intensity			group $n = 45$		
	H2	Regression	b = .248, p = .018		$f^2 = .064$.666
	Perceived taste				Small	
	intensity =>				effect	
	Perceived taste					
~	lıkıng	2.6.41.1	2 41 22			1.0.0.0
Study 3	Hlb	Mediation	Indirect effect	N =104	$f^2 = .600$	1.000
	Implied	Process	b = .60, SE = .23, 95%CI	Control	Large	
	explosion =>	Model 4	= [.21; 1.16]	group $n = 51$	effect	
	Perceived			Exploding		
	energy released			group $n = 53$		
	=> Perceived					
		Desmasian	h = 74 = 000		£2 1 227	1 000
	Π2 Perceived teste	Regression	b = .74, p = .000		$1^2 = 1.257$	1.000
	intensity =>				affect	
	Perceived taste				chiect	
	liking					
	H3	Regression	b = 75 $n = 000$		$f^2 - 1.347$	1 000
	Perceived taste	Regression	0 .75, p .000		Large	1.000
	liking =>				effect	
	Perceived dish					
	liking					
	H4	Regression	b = .25, p = .013	1	$f^2 = .068$.752
	Perceived dish	6			Small	-
	liking => WTP				effect	

* Observed power computed with G^* Power software 3.1.9.7. (a err prob = .05)

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