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# **What's inside matters: The impact of ingredient branding on consumers' purchasing behaviours in services**

## **Abstract**

Ingredient branding has been widely used as a marketing strategy to create added value and enhance market competitiveness in a variety of durable and non-durable product categories. Despite its prevalence in practice, current research into ingredient branding offers little guidance for the services sector and is, in any event, limited to studies that analyse intentions rather than actual behaviours. This paper contributes to the literature by using scenario-based and field experiments to examine the impact of ingredient branding on consumers' purchasing behaviours in a service context. The scenario-based experiments highlight the mediating role of quality perception on willingness to pay, which increases by up to 9% for a food item that is ingredient branded. The results of the field experiment show that the actual sales of an item increase by 40% when it is ingredient branded. Consequently, this paper provides both theoretical and managerial insights into the favourable impact of ingredient branding on consumers' purchasing behaviour. This paper concludes by proposing an agenda for future research.

*Keywords: Ingredient branding, willingness to pay, actual choice, field experiment, quality perception, information integration theory*

## 1 Introduction

*'I firmly believe that our future potential will be based, in large part, on our ability to collaborate with the right partners in the right ways.'* (Mark Parker, executive chairman of Nike, in interview with Kan, 2015).

One of the popular ways of collaborating with other partners is through ingredient branding. Ingredient branding is a brand alliance strategy, in which a branded product or service incorporates another brand as a component to differentiate itself through the use of the incorporated brand (Ahn *et al.*, 2009; Desai *et al.*, 2014; Radighieri *et al.*, 2014). Notable marketplace examples of this include Dell with Intel inside, Apple Watches with Hermes leather straps, and The North Face coats with Gore-Tex membranes. Ingredient branding has been widely used as a strategic tool to leverage brand assets, enhance market competitiveness, and create economic value (Dalman and Puranam, 2017; Yan and Cao, 2017). The main motivation behind use of the strategy is to create differentiation via the ingredient's attributes and hence, enhance brand equity (Desai and Keller, 2002; Giakoumaki *et al.*, 2016). Any improvements in the brand equity could drive growth and generate further profitability (Mitchell and Balabanis, 2021). As can be seen from Mark Parker's quote on the importance of the strategy to Nike, the number of brands that are collaborating to form a brand alliance has been increasing rapidly over the last twenty years, such that the estimated annual growth rate reached to 40% (Besharat and Langan, 2014; Dalman and Puranam, 2017).

Ingredient branding, being one of the co-branding strategies, becomes increasingly popular in the fiercely competitive marketplace due its potential to leverage the brand equity of the brands adopting it, if executed well (Leuthesser *et al.*, 2003; Londono *et al.*, 2016). Despite many successful ingredient branding practices,

the strategy comes with challenges that can lead to failure (Mitchell and Balabanis, 2021). Risks stem from inappropriate partner brand selection which could be either detrimental to the host brand, or overpower the host brand (Besharat and Langan, 2014). The meta-analysis performed by Paydas Turan (2021) on co-branding success drivers indicate that brands must focus their attention on finding the right partners for them, emphasizing the importance of brand image fit and product category fit in forming brand collaborations. The strategic decision to implement ingredient-branding strategy depends on parameters to which marketers generally give thorough consideration, such as whether ingredient branding will promote the end offering and create demand (Dalman and Puranam, 2017). Often, the ultimate goal behind the strategy is to convey, through the ingredient, messages about the attributes and values of the product, reinforcing the overall brand image and message. According to a recent poll, up to 73% of consumers state they would be willing to pay more for a product with a known ingredient because of its associated messages of consistency and quality (Dalman and Puraman, 2017). The ingredient branding strategy's promise of adding value to a product when all the necessary conditions are met has tempted a variety of industries to engage with it in products that range from durables (e.g., Mercedes-Benz with Bosch brakes) to fast-moving consumer goods (e.g., Algida's Cornetto Disc Oreo).

Despite its prevalence in practice, ingredient branding has attracted limited attention in the literature (Moon and Spratt, 2016). Focusing predominantly on product-related categories in fast-moving consumer goods and durables (e.g., Desai and Keller, 2002; Radighieri *et al.*, 2014; Swaminathan *et al.*, 2012), the current research into ingredient branding offers little specific guidance for services (Helmig *et al.*, 2008; Naidoo and Hollebeek, 2016). There are different dynamics in service-based contexts vs. tangible goods (Behnam *et al.*, 2021), and the distinctive characteristics of services

and consumer goods require a different approach to branding strategies, including ingredient branding (Bambauer-Sachse and Heinzle, 2018; Helm and Ozergin, 2015, Singh, 2016). Therefore, there is a clear managerial need for insights into the ingredient branding strategy for service brands wishing to incorporate consumer goods brands.

Furthermore, the existing research focuses on the impact of ingredient branding on consumer attitudes and purchase intentions, neglecting actual purchasing behaviour. Current research therefore offers limited practical implications (e.g., Dalman and Puranam, 2017; Eom *et al.*, 2015; Moon and Spratt, 2016). Although attitude is often regarded as the proxy for behaviours (Das, 2014), one's attitude and intentions do not always translate into real behaviours (Dalman and Puranam, 2017). Therefore, complementing the attitude and behavioural intention studies with a field experiment and measuring actual behaviour would offer practical contributions to the literature on the ingredient branding strategy.

Moreover, the contextual factors that might affect the impact of ingredient branding on the consumer's thought process have not attracted enough attention. The current literature has investigated how different levels of brand equity (Norman, 2012; Radighieri *et al.*, 2014, Washburn and Plank, 2002), brand familiarity (Baumgarth, 2004; Simonin and Ruth, 1998), brand awareness of partners (Cordeiro *et al.* 2016; Eom *et al.*, 2015); relative brand strength, image and product category fit between the co-branding partners (Ashton and Scott 2011; Mitchell and Balabanis, 2021); country of origin (Sivaramakrishnan and Carvalho, 2019), ease of knowledge and affect transfer between partners (Jongmans *et al.*, 2019) affect consumers' attitudes and behavioural intentions towards the end product. The impact of contextual factors more generally has been limited to studies of consumers' product and category involvement (Dalman and Puranam, 2017; Ponnampalani and Balaji, 2015) and socioeconomic strata (Cordeiro *et*

*al.*, 2016). However, food eating values (i.e., utilitarian vs. hedonic), one of the contextual factors, are found to be the strong predictors of consumer behaviour, in particular on food choice behaviours (Sadiq *et al.*, 2021). Since consumer motivations play a fundamental role in consumption phenomena by guiding consumer's decision-making process (Chartrand *et al.*, 2008), examining the moderating effect of consumer motivations on the impact of an ingredient branding strategy would be helpful to advancing overall understanding of the strategy.

The author aims to provide theoretical and managerial contributions to the literature on ingredient branding in several ways, namely: (1) highlighting the opportunity for the positive transfer of associations in a hitherto overlooked service industry that faces the challenge of intangibility; (2) increasing the external validity of prior online studies and identifying practical implications by examining the impact of the strategy on 'actual consumer behaviour' in a field experiment; and (3) uncovering the differential effect of motivation on consumers' purchasing behaviour.

The rest of the paper proceeds as follows. First, the theoretical background and hypotheses are presented. Then, the predictions are tested in three scenario-based online experiments and a field experiment. Finally, the results are discussed and directions for future research are offered.

## **2 Theoretical Background**

In this section, the literature is reviewed in terms of the context, theory and the boundary factors, and finally the hypotheses are presented. The context of interest for this research is illustrated in Fig. 1. Services can adopt an ingredient-branding strategy by incorporating a consumer goods brand as an ingredient in its service offering.

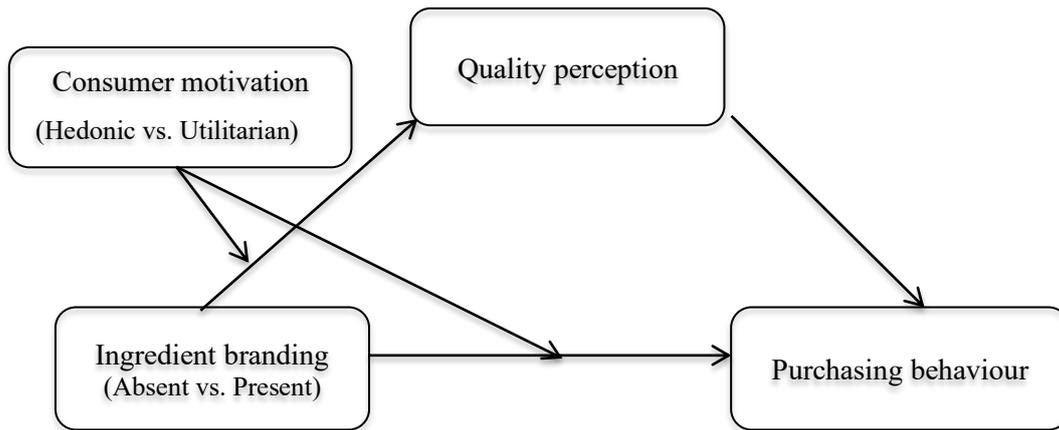


Fig. 1. Research context

The author of this paper proposes that the impact of ingredient branding on consumers' purchasing behaviour of the service offering will be mediated by the quality perception of the ingredient branded item, and the weight of the impact of ingredient branding on quality perception and purchase behaviour will be moderated by the consumers' motivation for consumption, which might be hedonic or utilitarian.

## 2.1 Services versus Goods

Prior research finds that ingredient branding contributes to the development of favourable attitudes towards the end product in durable goods (e.g., Washburn *et al.*, 2000) and B2B (e.g., Helm and Ozergin, 2015), acting as a cue for the quality of the end product and improving purchase intentions (Helm and Ozergin, 2015). However, previous research has been limited to collaborations between fast-moving consumer goods and durable goods (Desai and Keller, 2002; Helmig *et al.*, 2008, Rodrigue and Biswas, 2004), and therefore, criticised for neglecting services (Helmig *et al.*, 2008; Naidoo and Hollebeek, 2016). Unlike consumer goods brands, which can be searched and tested, service offerings are intangible at the moment of the buying decision (Bambauer-Sachse and Heinzle, 2018). Since the experiential attributes of services cannot be easily described, they create uncertainty for consumers at the moment of purchase (Batra and Sinha, 2000). This intangibility also means that there is more

variation in perceived quality than in goods (Bambauer-Sachse and Heinzle, 2018; Yang *et al.*, 2019). Therefore, service providers attempt to provide consumers with signalling cues, enabling them to evaluate the offering's attributes prior to experience (Washburn *et al.*, 2004; Zeithaml *et al.*, 2006). Strong brands are known to enable consumers to visualise the intangible attributes and reduce the risk in purchasing services. Hence, this paper exploits information integration theory (Anderson, 1981) to explain the impact of ingredient branding strategy on consumers' purchasing behaviour.

## **2.2 Information Integration Theory**

Information integration theory (Anderson, 1981) explains how consumers form and modify their attitudes or beliefs as they receive and interpret stimulus information, integrating it with their existing beliefs and attitudes (Anderson, 1981; Helmig *et al.*, 2007; Kalafatis *et al.*, 2016; Norman, 2017; Simonin and Ruth, 1998). It has been used in previous research to describe the thought process of a consumer considering the multiple brands in an alliance (Helmig *et al.*, 2007; Kalafatis *et al.*, 2016; Norman, 2012; Simonin and Ruth, 1998, Swaminathan *et al.*, 2012); in contexts where information regarding manufacturing practices have been exposed to consumers (Rahman and Soesilo, 2018); and cause-related marketing (Barone *et al.*, 2007). Information integration theory (Anderson, 1981) suggests that the valuation of the stimulus information is performed based on two aspects of the information received: its scale value and its weight (Anderson, 1981). The scale value determines the position of the information on the dimension of evaluation, and the weight represents its relevance and importance to the evaluation (Anderson, 1981). Information integration theory states that people integrate these informational stimuli into an overall judgment.

In this paper, the author draws from information integration theory (Anderson, 1981) to provide a theoretical foundation for understanding consumers' evaluation of an ingredient branded service offering. The author applies the two dimensions of information theory, value and weight, to an ingredient-branding context, examining the moderating effect of consumers' purchase motivations on the attached weights assigned to the stimulus information of the ingredient brand. Due to the differential weights, adjusted as per information integration theory (Anderson, 1981), the impact of ingredient branding on consumers' perception of quality and willingness to pay might be different when they have different motivations for consumption.

### **2.3 Impact of Ingredient Branding on Purchasing Behaviour**

The existing research has identified the important variables for success of ingredient branding (e.g., brand fit (Ahn et al., 2009); product fit (Helmig et al., 2007); prior attitudes towards partner brands (Simonin and Ruth, 1998) as synthesized in the meta-analysis of co-branding success drivers (Paydas Turan, 2021). The positive impact of ingredient branding on brand image, and loyalty has found support in previous research (e.g., Kim *et al.*, 2021). However, ingredient branding research is limited to investigating the impact of ingredient branding on consumers' attitude and purchase intention, neglecting their actual behaviour (e.g., Dalman and Puranam, 2017; Eom *et al.*, 2015; Helm and Ozergin, 2015; Giakoumaki *et al.*, 2016, Moon and Sprott, 2016). Attitude is often regarded as the proxy for behaviours (Das, 2014). However, there is evidence that while behaviour can be driven by a specific attitude, that specific attitude is not necessarily the cause of the behaviour (Carrington, 2014).

Previous research finds that when relevant success factors of co-branding are met (i.e., brand image fit between the partner brands, positive attitude towards partner brands, complementarity between core attributes of the partners), the ingredient

branding strategy can stimulate demand by triggering consumers' attention through differentiation via the ingredient (e.g., Giakoumaki *et al.*, 2016; Heo and Hyun, 2015; Panwar and Khan, 2020) and positively impact consumers' purchase intention (e.g., Helm and Ozergin, 2015; Moon and Sprott, 2016). The positive effect of bundling with a strong brand on quality perceptions of the partner brand has found support by previous researchers (i.e., Sheng and Pan, 2009). However, the impact of ingredient branding on willingness to pay has not attracted enough attention (Heo and Hyun, 2015); and, to the best of the author's knowledge, actual purchasing behaviour has not been examined yet.

Willingness to pay is defined as the '*measure of value that is assigned to a consumption or experience in monetary units*' (Homburg *et al.*, 2005, pp. 85). Because it drives important marketing decisions, willingness to pay has been accepted as one of the cornerstones of marketing strategy (Das, 2014; Schmidt and Bijmolt, 2019). Brands have been reported to act as signalling cues to convey unobservable attributes of products (Rao *et al.*, 1999). This research posits that a consumer goods brand, incorporated into a service offering, would increase the willingness to pay for that branded item through the increased quality perception. Next, the mediating role of quality perception in the conceptual model is explained.

## **2.4 Quality Perception**

Perceived quality is a critical determinant in the success of products and services since it provides an opportunity for differentiation (Konuk, 2018). Consumers benefit from available extrinsic cues, such as brands, price, country origin, nutritional and production information, to form quality perceptions (Bodur *et al.*, 2016; Konuk, 2019). Branded products can communicate unobserved quality leveraging their previous advertising and packaging investments (Rahman and Soesilo, 2018). Therefore,

branded products are believed to be higher quality than unbranded products (Rao *et al.*, 1999). Building on signalling theory (Spence, 1973), the role of brands as credible signals of unobservable product quality has been addressed in the field of marketing by various researchers (e.g., Helm and Ozergin, 2015; Rahman and Soesilo, 2018; Rao and Ruekert, 1994).

Building on information integration theory (Anderson, 1981), this paper examines the impact of a branded ingredient on the purchasing behaviour of service offerings, by positing that service providers might reduce the uncertainty of their service offerings by using a consumer goods brand as an ingredient. The consumers might evaluate ingredient brand as a quality signalling cue, which mediates the impact of ingredient branding on willingness to pay for the ingredient branded item. The weight of the value that comes with the ingredient branding might be determined by a contextual factor, consumers' motivation for consumption, and this will be explained next.

## **2.5 Utilitarian vs. Hedonic Consumption**

Consumers with different motivations display distinct shopping patterns (Dennis *et al.*, 2010). Because of different needs and motives for consumption, consumers may have different perceptions of the value of the same product (Marcoz *et al.*, 2016). Thus, it is worth studying the moderating effect of consumers' motivation for consumption, since the perceived value changes depending on the context (Marcoz *et al.*, 2016). The consumer motivation for consumption can be utilitarian or hedonic (Lunardo and Mbengue, 2009). Utilitarian and hedonic motivations are considered to lead to different end goals: task fulfilment and pleasure seeking, respectively (Whitley *et al.*, 2018). Consumers with a utilitarian motivation are concerned with efficiency and achieving their goals in a timely manner with quality, whereas consumers motivated by hedonic

goals give more importance to the potential fun and excitement of the experience (Carpenter and Moore, 2009; Childers *et al.*, 2001). The decision-making and evaluation process for utilitarian-motivated purchases is more cognitively driven and rational than that of hedonic-motivated consumption (Carpenter and Moore, 2009; Whitley *et al.*, 2018). Utilitarian-motivated consumers benefit from extrinsic cues in their evaluation of products, whereas hedonic-motivated consumers, being experiential and affective rather than cognitive, rely more on their intrinsic experiences and feelings during their evaluation process (Ryu *et al.*, 2010). Hepola *et al.* (2020) find that services are consumed for either hedonic or utilitarian reasons, which are influential moderators on the effects of consumer behaviour antecedents. In conclusion, utilitarian (instrumental) and hedonic (experiential) motivations, having distinctive characteristics, are considered fundamental to understanding consumer behaviour in marketing (Hepola *et al.*, 2020; Kwun *et al.*, 2013).

## **2.6 Hypotheses Development**

Building on information integration theory (Anderson, 1981), the author aims to explain the judgment process of the consumer when exposed to informational stimuli that have dimensions of value and weight, in the context of an ingredient branding strategy in a service. The value of the stimuli is derived from the quality-signalling effect of the ingredient brand and the relevance of the ingredient branding (i.e., the weight assigned to the stimuli) might change with the consumers' motivations for eating out: utilitarian or hedonic. Hence, this paper posits that the impact of ingredient branding on purchase behaviour is mediated by quality perception and moderated by consumers' consumption motivations. These proposals form the basis of the hypotheses of this research.

In services, consumers need signalling cues for evaluating attributes that are difficult to assess without being experienced (Washburn *et al.*, 2004; Zeithaml *et al.*, 2006). It has been reported that taste, aroma, and texture are some examples of the experience qualities of a product, whereas its search qualities are those that can be searched for or viewed through accessible sources prior to purchase, such as packaging (Batra and Sinha, 2000). It has been shown that consumers pay more for branded products because of the trust conveyed by the brand (Stanton and Herbst, 2005). Hence, a consumer goods brand that is used as an ingredient in a service offering might help consumers to assess how likely the service performance is to satisfy, creating a reassurance as to the service's quality even before experiencing it. Therefore, this research posits that ingredient branding will have a positive effect on willingness to pay for an intangible service offering. Tangibilising an intangible service with a branded ingredient might help the consumer to better visualise the performance of the end offering (Heo and Hyun, 2015), and therefore assign a higher value to the experience in monetary units (Goebel *et al.*, 2012).

*H1: The presence of a branded ingredient has a positive effect on consumers' willingness to pay for the branded item, when all other co-branding conditions are met.*

Service offerings are mainly intangible at the moment of purchase and the lack of a label or packaging means that consumers cannot scrutinise the service offering (Bambauer-Sachse and Heinzle, 2018). Consumer goods brands, on the other hand, are tangible and can signal quality attributes when incorporated into the service offerings. Extant research has shown that brand names drive consumers' expectations about performance and quality of the products; consumers perceive better taste in informed conditions versus in blind conditions with no revealed brands (Rossi *et al.*, 2015).

Brands can act as credible sources, signalling product quality (Spence, 1973; Helm and Ozergin, 2015; McCarthy and Norris, 1999; Rao *et al.*, 1999). Previous research on packaged goods has proved that revealing the ingredient image on the packaging acts as an extrinsic cue, enhancing the quality perceptions and evoking greater willingness to try the product (Capelli and Thomas, 2020). Leuthesser *et al.* (2003) suggest that a strong brand (i.e., modifier brand) may lend quality perceptions to the partner (i.e., host brand), which can be an unknown brand, a weaker brand or a brand for which quality is difficult to judge. Acting as a surrogate for product benefits, a branded ingredient can help validate the quality of the co-branded product (Kumar, 2005; Leuthesser *et al.* 2003). Therefore, drawing from prior research (e.g., Rao *et al.*, 1999; Rossi *et al.*, 2015; Yan and Cao, 2017) and information integration theory (Anderson, 1981), this paper expects the branded ingredient to provide stimulus information that addresses the unobservable attributes of the service offering, and signals quality.

*H2: The presence of a branded ingredient has a positive effect on consumers' perceptions of the ingredient branded item's quality, when all other co-branding conditions are met.*

Perceived quality is one of the most significant drivers of customer satisfaction and behavioural intention (Cal and Adams, 2014; Das, 2014; Konuk, 2018; Lee *et al.*, 2007; Ryu *et al.*, 2012). Erdem and Swait (1998) state that in a category where the attributes are more related to experience, purchase likelihood is higher for a well-respected brand because branding reduces the level of perceived risk. Moreover, brands enable better visualisation of the performance of the end offering (Heo and Hyun, 2015), leading consumers to assign a higher value to the usage experience in monetary units (Goebel *et al.*, 2012). The positive relationship between perceived quality and willingness to pay premium prices has been confirmed in prior empirical studies

(Anselmsson *et al.*, 2014; Konuk, 2018; Konuk, 2019; Li *et al.*, 2012). Drawing from previous research and the theory of information integration, this paper posits that ingredient branding in a service offering provides a cue for the quality aspects of the unobservable attributes of a service offering, and the valuation of this information stimulus positively affects willingness to pay for an ingredient branded item. Consequently, as hypothesised:

*H3: The positive effects of branded ingredient on consumers' willingness to pay are mediated by consumers' perceptions of the quality.*

Information integration theory argues that the motivational state of the individual affects the judgment of the informational stimulus by altering the weight assigned to it (Anderson, 1981). This paper proposes that the weight of the value of ingredient branding is a function of the consumer motivations, which may be hedonic or utilitarian. The decision-making and evaluation process for utilitarian-motivated purchases is more cognitively driven and rational than that of hedonic-motivated consumption, which is joy and pleasure driven (Carpenter and Moore, 2009; Lunardo and Mbengue, 2009; Whitley *et al.*, 2018). Because utilitarian-motivated consumers are more task oriented and rational in their thought processes, they benefit from extrinsic cues in their evaluation of products (Ryu *et al.*, 2010). Consumers with utilitarian motivation are expected to not only utilise the extrinsic cue that is transmitted by a tangible consumer goods brand, but also to value the assurance of quality more than hedonic-motivated consumers. Hence, this paper posits that consumers with utilitarian motivation, being more cognitively driven and task oriented (Whitley, *et al.*, 2018), will give more weight to a branded ingredient, which signals quality and reduces perceived risk, than consumers with hedonic motivation.

*H4a: The positive effect of a branded ingredient on consumers' perceptions of quality is stronger in the context of utilitarian motivation.*

*H4b: The positive mediation effect of branded ingredient on consumers' willingness to pay through perceived quality is stronger in the context of utilitarian motivation.*

Conversely, the evaluation process of hedonic-motivated consumers is subjective and unique to the consumer (Maimaran and Simonson, 2011). Hedonic motivation, being experiential and affective rather than cognitive, is mostly related to the non-tangible attributes of products (Ryu *et al.*, 2010). Consumers with hedonic motivation give more importance to the potential pleasure and adventure generated by the experience (Carpenter and Moore, 2009; Lunardo and Mbengue, 2009; Childers *et al.*, 2001; Whitley *et al.*, 2018). Since they rely more on their intrinsic experiences and feelings during their evaluation process (Ryu *et al.*, 2010), and prefer uniqueness, the author expects them to assign less weight to the tangibility of a specific ingredient branding. The adventurous nature of hedonic-motivated consumers means they do not require reassurance that an ingredient brand signals. Hedonic-motivated consumers, valuing intrinsic experiences more than extrinsic cues, are expected to accord less weight to the cue signalled by ingredient branding because their end goal is to receive pleasure rather than cognitively fulfil a task. This leads to the following hypotheses:

*H5a: The positive effect of a branded ingredient on consumers' perceptions of quality is weaker in the context of hedonic motivation.*

*H5b: The positive mediation effect of branded ingredient on consumers' willingness to pay through perceived quality is weaker in the context of hedonic motivation.*

### **3 Methodology**

The current research adopts a scenario-based experimental design and a field experiment to test its hypotheses in four studies as summarized in Table 1. The scenario-based experimental studies aim to measure the impact of an ingredient branding strategy on consumers' behavioural intention under a controlled setting. The field experiment study, on the other hand, focuses on the actual behaviour of consumers, studying the impact of the ingredient branding strategy on actual sales in an unobtrusive environment.

#### **3.1 Study 1**

##### **3.1.1 Method**

The first scenario-based online study was designed as a pre-study to test the constructs and pre-assess the effectiveness of ingredient branding in a restaurant setting scenario. The scenario-based experimental design gives the researcher control over unmanageable factors through manipulation (Viglia and Dolnicar, 2020). The impact of the presence of a branded ingredient on the perceived quality, purchase intention, and willingness to pay for the food item was tested in that the menu presented to the participants either had or did not have an ingredient branding.

*Design and participants.* Study 1 employed a between-subjects single factor design with two conditions (ingredient branding: absent vs. ingredient branding: present), as in previous research in the marketing literature. A sample of UK participants was recruited by Prolific, an online participant recruitment panel, which has been found to be a viable source of data in experiments in previous marketing research (Peer *et al.*, 2017; Singh *et al.*, 2019). After excluding those respondents who failed the attention and manipulation checks, 115 valid responses were obtained, giving a successful response rate of 69%. The sample size was justified by G-power analysis performed for

independent samples t-test with the input parameters of effect size  $d = 0.5$ ,  $\alpha = 0.05$  and power of 0.80 ( $\beta = 0.20$ ) used as rules of thumb (Viglia and Dolnicar, 2020). The mean age of respondents was 34 (SD = 9.68) and 76% were female.

Table 1. Overview of Studies

Study	Measure	Experiment	Design	Independent variables	Dependent variables	Host service brand with modifier consumer brand
1	Behavioural intention	Scenario-based	Between-subjects	2x1 (IB: present/absent)	Perceived quality, WTP	Hillside Pizza with Galbani cheese
2	Behavioural intention	Scenario-based	Between-subjects	2x2 (IB: present/absent) x (MOT: hedonic/utilitarian)	Perceived quality, WTP	Hillside Pizza with Galbani cheese
3	Behavioural intention	Scenario-based	Between-subjects	2x2 (IB: present/absent) x (MOT: hedonic/utilitarian)	Perceived quality, WTP	Luigi's Brownie with Lindt chocolate
4	Actual behaviour	Field	Quasi-experimental	2x1 (IB: present/absent)	Actual unit sales	The Hub Smoothie Drink with Love Smoothies

Abbreviations: IB, ingredient branding; MOT, motivations; WTP, willingness to pay.

*Procedure.* The participants were randomly assigned to one of the two menu conditions (ingredient branding: absent or present) as shown in Appendix 1. In the ‘ingredient branding: absent’ control group, participants were exposed to a restaurant menu without any ingredient branding. The restaurant brand was fictitiously named Hillside. The use of a fictitious brand avoided any additional brand associations that could bias the participants’ evaluations arising from previous experience with real brands in a specific context (Bleijerveld *et al.*, 2015). The food items on the menu presented to the control group consisted of no other brands. The participants in the ‘ingredient branding: present’ condition were exposed to the same Hillside restaurant menu with exactly the same food items, except that one of the food items was assigned an ingredient branding. The mozzarella on the Hillside pizza was branded as ‘Galbani’ in the ‘ingredient branding: present’ treatment group whereas the mozzarella in the ‘ingredient branding: absent’ control group was unbranded. In order to eliminate any artificiality in the manipulation of the ingredient brand, a real brand, Galbani, towards

which consumers have positive attitude was chosen (e.g., Brady *et al.*, 2008). After viewing the menu, participants were asked to respond to the dependent measures, manipulation check items, and the demographic questions that followed the questionnaire.

*Measures.* Consumers' perception of the branded ingredient item's quality, purchase intention, and willingness to pay were assessed using measures drawn or adapted from prior research as seen in Table 2.

Table 2. Multi-item scale

Construct items	$\alpha$
<b>Perceived quality scale (adapted by Bodur <i>et al.</i>, 2016; Johnson and Folkes, 2007)*</b>	0.924
I would expect the main course, "Hillside pizza with Galbani mozzarella cheese and toppings of your choice" is	
Poor / excellent quality	
Low / high quality	
<b>Purchase intention scale (Sweeney <i>et al.</i>, 1999)**</b>	0.967
I would consider buying the main course,	
There is a strong likelihood that I will buy the main course,	
I will purchase the main course,	
<b>Willingness to pay (Homburg <i>et al.</i>, 2005)***</b>	0.859
Please think of yourself as a restaurant manager and decide how much you would charge for the main course	
Please think of yourself as a customer and decide how much you would be willing to pay for the main course	

*Note.*  $\alpha$  Cronbach's alpha. \* Items are on a 7-point bipolar scale. \*\* Items are on a 7-point Likert-type scale (1 = strongly disagree, 7 = strongly agree). \*\*\* Measured with open-ended question.

To verify participants' awareness of the ingredient branding manipulation, participants were asked if they had noticed any branded ingredients. Also, participants were asked to evaluate the brand attitude towards Galbani by three seven-point bi-polar items drawn from prior research (Simonin and Ruth, 1998): 'my overall attitude towards Galbani is: ...' with endpoints of 'negative/positive', 'bad/good' and 'unfavourable/favourable' ( $\alpha = 0.986$ ). Cronbach's alpha reliability coefficients, which indicate the internal consistency of the items measured in the constructs, are all above

the accepted threshold of 0.700:  $\alpha = 0.924$  for 'perceived quality',  $\alpha = 0.967$  for 'purchase intention' and  $\alpha = 0.859$  for 'willingness to pay' (Santos, 1999).

### **3.1.2 Analysis and Results**

First, the manipulation check was conducted, and 97% correctly identified the presence of brands on the menu. To control for the likeability of the chosen brand, the participants were asked to rate their brand attitude, and they indicated an overall high brand attitude towards Galbani ( $M = 4.32$ ,  $SD = 0.96$ ). As an initial examination of the effect of ingredient branding on consumers' perceived quality of the food item, purchase intention and willingness to pay, an independent samples t-test was performed separately for the dependent variables. The results reveal a significant effect of ingredient branding on willingness to pay ( $t(113) = 2.12$ ,  $p < 0.05$ ) and a significant effect of ingredient branding on perceived quality ( $t(113) = 1.87$ ,  $p < 0.05$ , one-sided tail). The effect of ingredient branding on purchase intention is not statistically significant ( $p = 0.34$ ). As shown in the descriptive statistics in Table 3, the means for perceived quality are higher in the 'ingredient branding: present' treatment group ( $M = 5.62$ ,  $SD = 0.89$ ) vs. 'ingredient branding: absent' control group ( $M = 5.28$ ,  $SD = 1.06$ ); and the mean for willingness to pay in the treatment group ( $M = 9.03$ ,  $SD = 2.05$ ) is significantly higher than the mean for willingness to pay in the control group ( $M = 8.29$ ,  $SD = 1.66$ ).

### **3.1.3 Discussion of Study 1**

Study 1 was conducted as a pre-study to test the measures and examine the main effect of ingredient branding on the dependent variables. The findings of Study 1 indicate that there are some benefits to adopting an ingredient-branding strategy in restaurants. They also show that the presence of ingredient branding has a significant and positive direct effect on willingness to pay and quality perception of the food item. Consumers are

willing to pay 9% more for the same food item when it is ingredient branded. To further advance the understanding of the underlying cognitive mechanism in the causality relationship between the presence of ingredient branding strategy and willingness to pay, Study 2 extends the first study by introducing the mediation and moderation effects.

Table 3. Descriptive statistics

Dependent variable	IB	Mean	SD	N
<b>Perceived quality</b>	Absent	5.28	1.06	57
	Present	5.62	0.89	58
<b>Purchase intention</b>	Absent	5.36	1.60	57
	Present	5.62	1.33	58
<b>Willingness to pay</b>	Absent	8.29	1.66	57
	Present	9.03	2.05	58

*Note.* SD = Standard Deviation; N = sample size

## 3.2 Study 2

### 3.2.1 Method

The first study tested the main effect of ingredient branding, following which another scenario-based online study was designed to (i) assess the impact of ingredient branding on willingness to pay, and (ii) test the mediating effect of perceived quality on the effectiveness of ingredient branding in a restaurant setting scenario in which the motivations of participants were manipulated as hedonic or utilitarian.

*Design and participants.* Study 2 employed a between-subjects design with 2x2 conditions: ingredient branding (absent vs. present) and consumers' motivation (hedonic vs. utilitarian). The menu (ingredient branding absent versus ingredient branding present) and consumer motivations (hedonic versus utilitarian), as seen in Appendix 2, were manipulated in a priming text, as in prior marketing research studies (e.g., Botti and McGill, 2011; Whitley *et al.*, 2018). A sample of UK participants was recruited by Prolific. After excluding the respondents who failed the attention and manipulation checks, altogether 306 valid responses were obtained with a successful

response rate of 80% (68% were female). The mean age of respondents was 35 (SD=10.7).

*Procedure.* Each participant was randomly assigned to one of four cells. Having a minimum of 65 participants per cell was justified by G-power analysis through an ANOVA statistical test, with input parameters of effect size  $f = 0.25$ ,  $\alpha = 0.05$  and power of 0.80 ( $\beta = 0.20$ ) used as rules of thumb (Raudenbush and Liu, 2000). In cells 1 and 3, participants were exposed to the Hillside restaurant menu without ingredient branding. As in study 1, the restaurant brand name was fictitious. The participants in cells 2 and 4 were exposed to the Hillside restaurant menu with exactly the same food items, but where the mozzarella on the Hillside pizza was branded as Galbani. The participants were also randomly allocated a motivation for eating out. After viewing the menu, participants were asked to respond to the dependent measures, manipulation check items, and demographic questions that followed the questionnaire.

*Measures.* Consumers' perception of the branded ingredient item's quality (Bodur *et al.*, 2016) and their willingness to pay (Homburg *et al.*, 2005) were assessed using measures drawn or adapted from established scales (Table 4). Cronbach's alpha reliability coefficients are above the accepted threshold of 0.700 for both perceived quality ( $\alpha = 0.960$ ) and willingness to pay ( $\alpha = 0.847$ ) (Santos, 1999).

Table 4. Multi-item scale

Construct items	$\alpha$
<b>Perceived quality scale (adapted by Bodur <i>et al.</i>, 2016; Johnson and Folkes, 2007)*</b>	0.960
I would expect the main course, 'Hillside pizza with Galbani mozzarella cheese and toppings of your choice' is	
Poor / excellent quality	
Low / high quality	
<b>Willingness to pay (Homburg <i>et al.</i>, 2005)***</b>	0.847
Please think of yourself as a restaurant manager and decide how much you would charge for the main course	
Please think of yourself as a customer and decide how much you would be willing to pay for the main course	

*Note.*  $\alpha$  = Cronbach's alpha. \* Items are on a 7-point bipolar scale. \*\*\* Open-ended question.

### 3.2.2 Analysis and Results

*Manipulation Checks.* First, they were asked if they had noticed any branded ingredients on the menu, and participants who failed to notice any brands on the menu were excluded from the study. Second, participants' understanding of the motivation manipulation was checked after they were exposed to the scenario with the following question: 'Which set of words best describes the situation described?' with three answer options, 'practical, fast, convenient', 'pleasure, fun, enjoy' and 'none of the above'. The participants who failed the manipulation checks were excluded from the study (7% of the total recruited participants). The realism of the scenarios was checked by using a three-item scale with bipolar endpoints (Helm and Ozergin, 2015): 'very unrealistic/realistic', 'very difficult to understand/easy to understand', 'very difficult to imagine/easy to imagine' ( $\alpha = 0.71$ ). The results revealed that the restaurant menu scenario was found to be realistic ( $M = 5.94$ ,  $SD = 0.94$ ).

*Main effect.* The results of the independent-samples t-test revealed that the participants rated the perceived quality of the food item more when primed with 'ingredient branding: present' ( $M = 5.80$ ,  $SD = 0.90$ ) vs. 'ingredient branding: absent' condition ( $M = 5.57$ ,  $SD = 1.01$ ,  $t(304) = 2.06$ ,  $p < 0.04$ ). Furthermore, participants exposed to menu with ingredient branding were willing to pay more ( $M = 8.62$ ,  $SD = 1.82$ ) than those exposed to menu without ingredient branding ( $M = 8.19$ ,  $SD = 1.48$ ;  $t(304) = 2.24$ ,  $p = 0.026$ ).

*Moderated mediation.* To test the proposed hypotheses, Hayes's (2018) moderated mediation model was employed with 'perceived quality' as a mediator and 'motivation for eating out' as a moderator. The results in Fig. 2 show that there is a significant positive relationship between ingredient branding and willingness to pay ( $\beta = 0.43$ ;  $SE = 0.19$ ;  $t(302) = 2.26$ ;  $p = 0.02$ ), thus supporting H1.

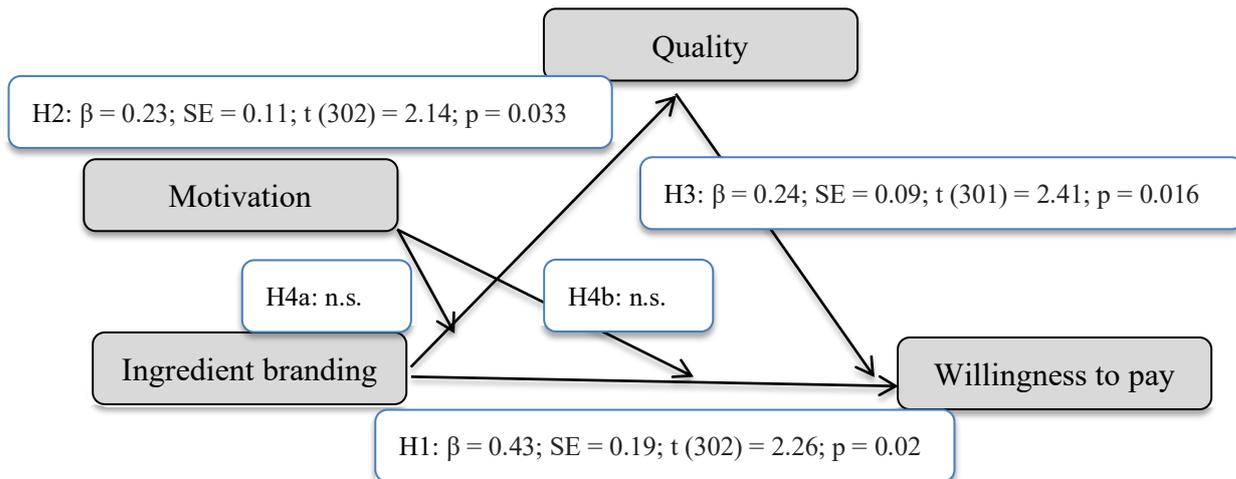


Fig. 2. Moderated mediation effect of the interaction between ingredient branding and motivation on willingness to pay through quality perception

There is also a significant positive relationship between ingredient branding and perceived quality ( $\beta = 0.23$ ; SE = 0.11;  $t(302) = 2.14$ ;  $p = 0.033$ ), which supports H2. The results also support H3, suggesting that perceived quality mediates the relationship between ingredient branding and willingness to pay ( $\beta = 0.24$ ; SE = 0.09;  $t(301) = 2.41$ ;  $p = 0.016$ ). When the mediator is introduced to the model, the relationship between the ingredient branding and willingness to pay is no longer significant ( $\beta = 0.37$ ; SE = 0.19;  $t(301) = 1.97$ ;  $p = 0.052$ ), which implies that perceived quality fully mediates this relationship. However, H4a and H4b, predicting a moderation effect of motivation, are not supported, since there is no significant interaction between ingredient branding and motivation on perceived quality ( $p = 0.790$ ), and no significant interaction between ingredient branding and motivation on willingness to pay ( $p = 0.39$ ).

### 3.2.3 Discussion of Study 2

The results suggest that an ingredient-branding strategy will enable restaurant managers to charge more for the same food item, thereby increasing overall revenue. The increase in the willingness to pay for the same food item is explained by the increase in the

quality perception signalled by presence of ingredient branding. Therefore, both hypotheses 1 and 2 find support. These findings are explained by the value aspect of information integration theory (Anderson, 1981), where the presence of ingredient branding acts as a signalling cue in the consumer thought process and mediates willingness to pay for the branded item. However, contrary to the predictions, the weight of the value was not significantly different under hedonic vs. utilitarian motivations for consumption. Given that the moderating effect of consumer motivations on the effectiveness of ingredient branding was not significant, consideration was given to ways of improving the experimental design and the manipulations of consumer motivation.

### 3.3 Study 3

Before conducting Study 3, two pre-tests were run: one that tested the validity of the motivation manipulations and the second to choose the appropriate ingredient for the study.

*Pre-test 1.* Scenarios that established the consumer's motivation for consumption were designed to examine the utilitarian and hedonic end goals. The scenarios emphasised the task-driven and pragmatic aspect of eating out in the utilitarian motivation condition while the pleasure-seeking and experience aspects of eating out were highlighted in the hedonic motivation manipulation (Whitley *et al.*, 2018). Fifty Prolific participants were recruited and randomly assigned to either the utilitarian or the hedonic motivation conditions. The participants were asked to read the relevant scenarios and indicate the extent to which the objective of their dining out in a restaurant related to the four dimensions of Voss *et al.*'s (2003) hedonic/utilitarian scale as applied in Whitley *et al.* (2018). A seven-point scale (1 = strongly disagree; 7 = strongly agree) was used to rate the four items: fun, pleasure, function, and practicality.

Function and practicality were reverse-coded. The index score was significantly higher for hedonic motivations ( $M = 20.32$ ,  $SD = 3.79$ ) than for utilitarian motivations ( $M = 10.76$ ,  $SD = 3.63$ ;  $t(48) = -9.101$ ,  $p < 0.001$ ) for eating out, as predicted. The results of the pre-test confirmed the validity of the manipulations.

*Pre-test 2.* The author designed a menu with more food options in each food category (starters, main courses, and desserts) to further increase the realism of the third study's scenario. In order to choose a focal product to manipulate as 'branded' or 'not branded' in the treatment conditions and observe the quality perceptions, forty Prolific participants were asked to choose from two dessert options: chocolate cheesecake and chocolate brownie. The one-sample Chi-square test revealed that the choices of desserts occurred with equal probabilities ( $\alpha < 0.05$ ). Therefore, there was no evidence that the participants had a statistically significant preference for one of the desserts. Hence, for Study 3, brownie was chosen as the 'focal item' for the manipulation of ingredient branding, with cheesecake being referred to as the 'other item'. In order to choose a well-known chocolate brand, the participants were asked to indicate, off the top of their heads, some high-quality chocolate brands. Of the brands suggested, Lindt was the one mentioned the most (63% of participants). Lindt brand, which scored the highest for brand familiarity ( $M = 6.36$ ,  $SD = 1.10$ ) and positive brand attitude ( $M = 6.14$ ,  $SD = 0.97$ ), was therefore selected as the ingredient brand for Study 3. Finally, the realism of the scenarios was checked using a three-item scale with bipolar endpoints (Helm and Ozergin, 2015): 'very unrealistic/realistic', 'very difficult to understand/easy to understand', 'very difficult to imagine/easy to imagine' ( $\alpha = 0.71$ ). The restaurant menu was perceived as a realistic scenario ( $M = 6.25$ ,  $SD = 0.68$ ). The pre-tests therefore ensured the validity of the motivation manipulations and increased the realism of the restaurant menu scenario used in Study 3.

### 3.3.1 Method

*Design and participants.* Study 3 employed a 2x2 between-subjects design as in the second study. The presence of ingredient branding (absent versus present) was manipulated on the menu, while consumer motivations (hedonic versus utilitarian) were manipulated by a priming text, as in prior research (e.g., Whitley *et al.*, 2018). The respondents who failed the attention and manipulation checks were excluded, leaving a total of 239 valid responses (72% female) were obtained. The mean age of respondents was 37 (SD = 11.8). The response success rate was 96%.

*Procedure.* The participants were randomly assigned to four cells. The minimum number of participants per cell was 58, which was supported by G-power analysis (Viglia and Dolnicar, 2020). The scenarios and stimuli are presented in Appendix 3. In cells 1 and 3, the participants were exposed to Luigi's restaurant menu, which had no ingredient branding. The restaurant brand name was fictitious. The participants in cells 2 and 4 were exposed to Luigi's restaurant menu with exactly the same food items but with the presence of ingredient branding in one of the food items. The focal item, chocolate brownie, was branded as 'Lindt chocolate brownie' in the ingredient branding: present condition in cells 2 and 4. The order of presentation of the focal item and the other item was counterbalanced in every condition. The participants were also randomly allocated to cells, where half were manipulated to have hedonic motivation for dining out and the other half were manipulated to have utilitarian motivation. Participants were asked to view the menu and order a starter, a main dish, and a dessert. This reflected a realistic restaurant scenario and engaged participants in the cognitive process of reviewing the stimuli.

*Measures.* Consumers' perception of the focal item's quality (White *et al.*, 2016) and willingness to pay (Homburg *et al.*, 2005) for it were assessed using

measures drawn or adapted from established scales in prior research. Cronbach's alpha reliability coefficients are both above the accepted threshold of 0.700:  $\alpha = 0.943$  for 'perceived quality' and  $\alpha = 0.845$  for 'willingness to pay' (Santos, 1999).

### 3.3.2 Analysis and Results

*Manipulation checks.* Manipulation checks for noticing ingredient branding and understanding the motivation for eating out scenarios were conducted. Participants who failed either of the manipulation checks were excluded from the study (6% of the total recruited participants). The scale used in study 2 checked the realism of the scenarios, and the result revealed that the restaurant menu scenario was found to be realistic ( $M = 6.19$ ,  $SD = 0.82$ ).

*Main effect.* The results of an independent-samples t-test revealed that the consumers in the treatment group with ingredient branding rated the perceived quality of the focal item ( $M = 6.13$ ,  $SD = 1.00$ ) to be significantly higher than the control group with no ingredient branding ( $M = 5.62$ ,  $SD = 1.06$ ;  $t(237) = -3.69$ ,  $p < 0.001$ ). Participants offered a restaurant menu with ingredient branding were willing to pay more for the focal item ( $M = 4.61$ ,  $SD = 0.86$ ) than participants who had a menu with no ingredient branding ( $M = 4.28$ ,  $SD = 0.85$ ;  $t(237) = -3.02$ ,  $p = 0.03$ ).

*Moderated Mediation.* To test the proposed hypotheses for the dependent variable willingness to pay, Hayes's (2018) moderated mediation model (model 8, pp. 588) was employed with perceived quality as a mediator, and motivation for eating out as a moderator. The results in Fig. 3 show that there is a significant positive relationship between ingredient branding and willingness to pay ( $\beta = 0.33$ ;  $SE = 0.11$ ;  $t(238) = 3.02$ ;  $p = 0.003$ ), thus supporting H1. There is also a significant positive relationship between ingredient branding and perceived quality ( $\beta = 0.50$ ;  $SE = 0.14$ ;  $t(234) = 3.69$ ;  $p < 0.001$ ), which supports H2.

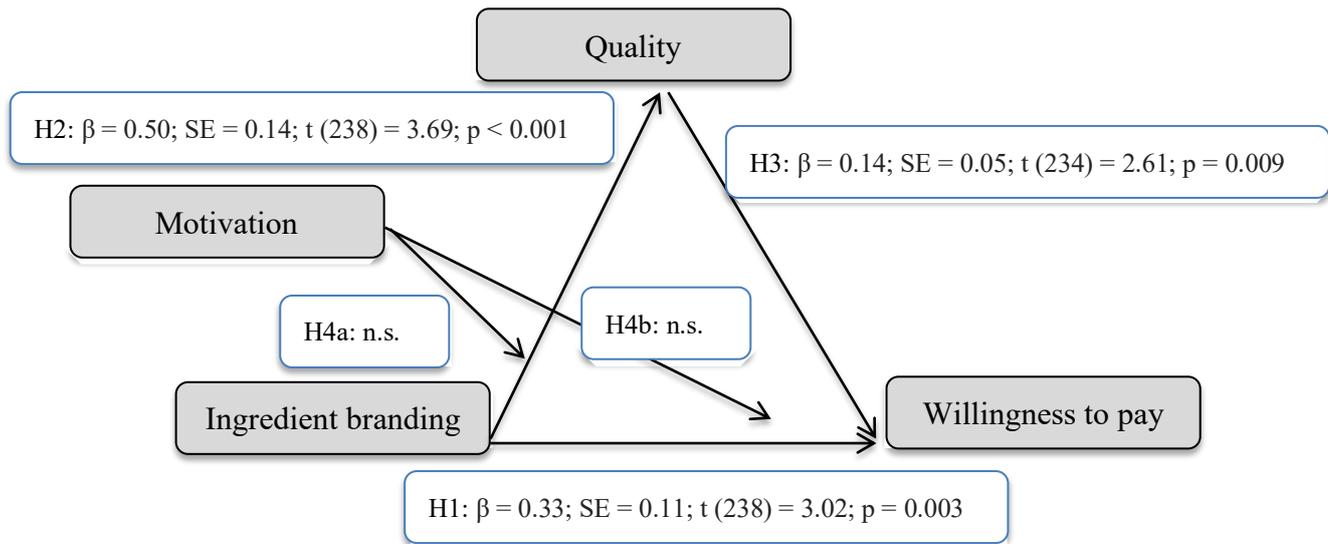


Fig. 3. Moderated mediation effect of the interaction between ‘ingredient branding’ and motivation on ‘willingness to pay’ through ‘quality perception’

Furthermore, the results support H3, suggesting that perceived quality mediates the relationship between ingredient branding and willingness to pay ( $\beta = 0.14$ ; SE = 0.05;  $t(234) = 2.61$ ;  $p = 0.009$ ). When the mediator is introduced to the model, the significance of the relationship between ingredient branding and willingness to pay is reduced ( $\beta = 0.27$ ; SE = 0.11;  $t(234) = 2.38$ ;  $p = 0.02$ ), which implies that perceived quality mediates this relationship. However, H4a and H4b are not supported, since there is no significant interaction between ingredient branding and motivation on perceived quality ( $p = 0.22$ ), and no significant interaction between ingredient branding and motivation on willingness to pay ( $p = 0.25$ ). Though, Fig. 4 shows that in both conditions, ingredient branding increases the perceived quality of the food item. In addition to the analysis of the hypotheses, the design of Study 3 enables us to observe the change in the willingness to pay for the cheesecake (the ‘other item’), which remained untreated in both treatment and control conditions.

The participants indicate that they are willing to pay 12% less for the ‘other item’ ( $M = 4.16$ ,  $SD = 0.97$ ) when it is next to the ingredient-branded focal item. This

contrasts with their willingness to pay when the 'other item' is next to an unbranded focal item ( $M = 4.71$ ,  $SD = 1.15$ ,  $t(237) = -4.01$ ,  $p < 0.001$ ).

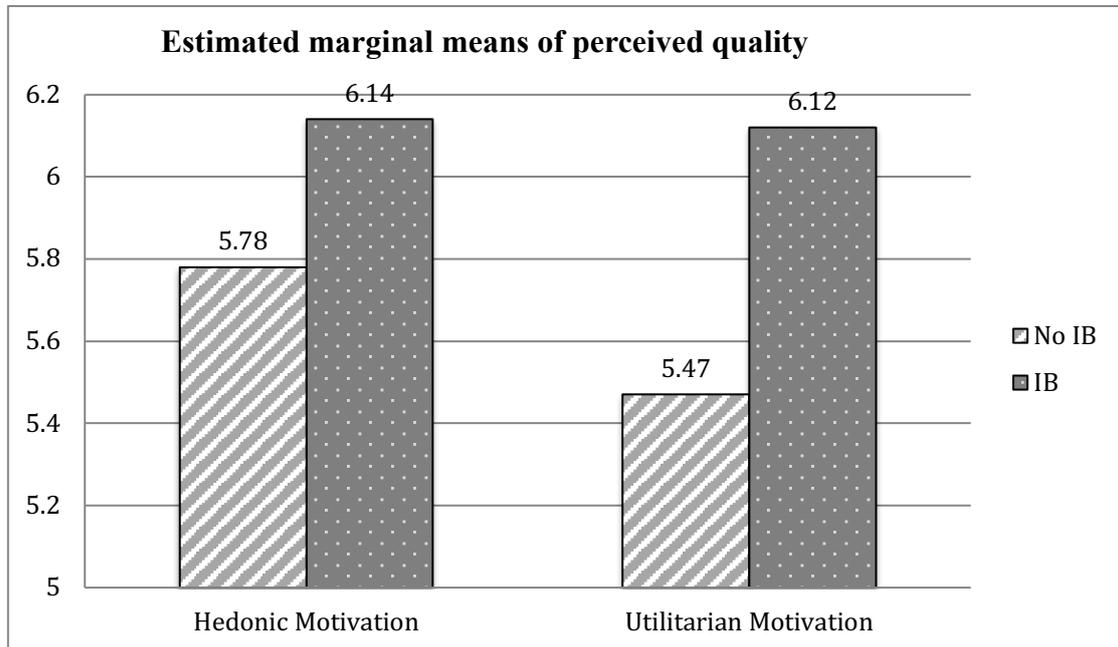


Fig. 4. Interaction effect of ingredient branding and motivation on perceived quality

### 3.3.3 Discussion of Study 3

Study 3 tests the hypotheses using a different product category (desserts), which increases the external validity of the previous studies. The findings indicate that the presence of ingredient branding on a food item has a positive effect on consumers' perception of quality and purchasing behaviour. It increases the amount of willingness to pay by 8% and the effect is mediated by perceived quality. The main differences in Study 3 and Study 2 were the food category chosen, the manipulations of consumer motivation, and the presence of additional choice items on the menu to make the choice setting more realistic. Although the findings reveal that the increase of quality perception in the utilitarian motivation condition is higher than the increase of quality perception in the hedonic condition, there is no support for the moderating effect of consumer motivation on the impact of ingredient branding. Another important finding

addresses the change in the willingness to pay for the 'other item', which remained untreated in both the treatment and control conditions. The participants indicate that their willingness to pay for the 'other item' is 12% less when it is next to the ingredient-branded focal item than when it is next to an unbranded focal item. The findings offer implications for managers about the wider use of the ingredient branding strategy, such as applying it to the whole dessert category rather than just one focal item on the menu.

Given that all three studies were online experiments that used fictitious restaurant menus, Study 4 aims to analyse the main effect of ingredient branding on purchasing behaviour, operationalised as the actual sales of the focal item in a real-life setting.

### **3.4 Study 4**

A quasi-experimental field study was conducted to test if changing the focal item from 'ingredient branding: absent' to 'ingredient branding: present' condition induces a change in the actual purchasing behaviour. By conducting a field experiment, the author aims to examine if the effect observed in the online experiments generalises to a real-life context (Berry *et al.*, 2018; Morales *et al.*, 2017), thereby increasing the external validity of the research.

#### **3.4.1 Method**

*Design and participants.* Study 4 employed a between-subjects single factor design with two conditions (ingredient branding: absent vs. present) to test whether the presence of ingredient branding induces more sales of the focal item. The field experiment was conducted for six days over two consecutive weeks in a coffee house in Surrey, UK. The coffee house serves a mix of food items, including salads, sandwiches, various dessert options, snacks and beverages. As with all quasi-experimental field studies, the aim was to avoid large-scale manipulations to keep the study as natural as possible, and measure pre- and post-intervention outcome (e.g.,

Dolnicar *et al.*, 2019; Pabel and Pearce, 2016). The key dependent variable was the number of smoothie drinks sold. The experimental conditions (ingredient branding: absent and ingredient branding: present) serve as the independent variables. In the control week of the experiment period (week commencing Sep'23th), customers were presented with unbranded fruit smoothies. In the treatment week (week commencing Sep'30th), the menu board exposed customers to the 'Love Smoothies' branded smoothies (see Appendix 4). 'Love Smoothies' is a brand of ready-to-use ingredients for smoothie drinks. It is sold online and in various retail shops as 120g sachets of selected fruits. Only the smoothie offering was manipulated; the rest of the natural setting was kept the same and the effect of the presence of ingredient branding on the consumers' actual purchasing behaviour was observed.

*Procedure and measures.* Throughout the duration of the experiment, its context was kept as stable as possible and only the absence or presence of the 'Love Smoothies' branding was manipulated. The focal item chosen for the experiment was smoothies (Pash-N-Shoot), which was a blend of passion fruit, pineapple and mango. In both weeks, the same three consecutive days upon which the coffee house had regular footfall and offered the same variant of smoothies (Pash-N-Shoot) were chosen for the experimentation. The prices of beverage items (focal item and the other items) were kept the same in both the control and the treatment conditions. The average daily temperature on the treatment days was reported. The daily absolute sales of smoothies in units were measured as the dependent variable.

### **3.4.2 Results**

The results of the independent-samples t-test revealed that the sales of fruit smoothies provided with the ingredient branding 'Love Smoothies' were significantly more ( $M = 55.67$ ,  $SD = 9.61$ ) than the sales of unbranded smoothies in the control group ( $M =$

39.67, SD = 3.79, ( $t(4) = 2.68$ ,  $p < 0.05$ , one-sided tail) (Furr and Rosenthal, 2003).

Table 5 presents the descriptive statistics for this study.

Table 5. Descriptive statistics

Ingredient branding	Absent		Present	
	Mean	SD	Mean	SD
<b>Price – Other beverage items (£)</b>				
Price - Belvior	1.50	0	1.50	0
Price – Radnor Fruits	1.00	0	1.00	0
Price – Radnor Water	1.00	0	1.00	0
<b>Price – Focal item (£)</b>				
Price – Pash-N-Shoot smoothies	2.50	0	2.50	0
<b>Temperature (°C)</b>	20.66	1.15	17.67	3.51
<b>Sales (unit)</b>	39.67	3.79	55.67	9.61

*Note. SD = standard deviation*

The results of this study find support for Hypothesis 1, predicting that the presence of ingredient branding has a positive effect on consumers' purchasing behaviour (operationalised as the actual sales) of the focal item. The difference in the average daily temperature was not significant in the control and the treatment conditions ( $t(4) = 1.41$ ,  $p = 0.274$ ). The prices for the focal item, Pash-N-Shoot smoothies, and all the other beverage items on the menu were the same in both control and treatment conditions as shown in Table 5.

### 3.4.3 Discussion of Study 4

Study 4 was a quasi-experimental field study conducted in the cold drinks category at a coffee house. The findings show that the presence of ingredient branding has a positive impact on the actual sales of smoothies, such that sales increased by 40% when the smoothies had an ingredient branding. The results suggest promising implications for managers who are interested in using the ingredient-branding strategy in their café/restaurant. By running this field experiment with unobtrusive measures, a real-life response to the strategy of ingredient branding was reported that complemented the data collected from scenario-based online experiments. Using an actual behavioural

dependent variable, this research is more informative of real consumer behaviour in the marketplace compared to studies that examine behavioural intentions (Morales *et al.*, 2017). The managers of casual coffee houses or restaurants are advised to explore the opportunities offered by the ingredient branding strategy to increase their revenues. While conducting a field study and examining the actual consumer choice rather than the stated intentions increase the external validity of this research, quasi-experimental design studies have their own limitations in terms of internal validity. The researchers conducting quasi-experimental field studies aim to keep the experiment environment as natural as possible without major interventions, and this leads to less control than a laboratory experiment (Viglia and Dolnicar, 2020). Therefore, the author in this research aimed to identify a comparison group that was as similar as possible to the treatment group in terms of controlling baseline characteristics (e.g., confirming with the manager that there is regular footfall during experiment period without any public holidays or known special occasions around, recording the weather temperature, keeping the price and fruit variant same during the experiment). Consistent with the prior unrandomized quasi-experimental design research (e.g., Dolnicar *et al.*, 2019), this study tests the causal effect of the presence of a branded ingredient on the actual sales pre- and post-intervention in the specified time periods that is as similar and comparable as possible. In future studies, it would be interesting to extend the duration of the experiment to examine if the strength of the effect remains the same after a longer period of time. Researchers can also replicate the online scenario-based experiments in this paper with the same product categories (e.g., pizza, dessert) in future field studies for further validation. Moreover, in order to further increase the generalisability of the findings, testing the applicability of the ingredient branding strategy in other food/drink categories is encouraged in future studies.

## **4 Discussion and Conclusion**

Ingredient branding strategy has been used increasingly over the last twenty years by firms seeking to gain competitive advantage in a variety of industries ranging from durables to non-durables product categories (Dalman and Puranam, 2017; Singh *et al.*, 2016). Despite this, the academic study of ingredient branding has been limited in scope (Helmig *et al.*, 2008). This research paper studies the impact of ingredient branding on purchasing behaviour, which is operationalised as willingness to pay and actual sales in a service context where the service brand offering incorporates a consumer goods brand as an ingredient. The scenario-based online experiments and unobtrusive field experiment conducted for this research offer both theoretical and managerial insights, particularly for restaurants considering adopting an ingredient-branding strategy.

### **4.1 Theoretical Contribution**

This paper contributes to the existing literature in two ways (1) it addresses the opportunity of using a brand alliance strategy in a service business, which has different dynamics than the fast-moving consumer goods or durables sectors that have thus far been the centres of interest in the brand alliance literature; and (2) it extends prior studies into behavioural intention by examining the impact of the strategy on actual behaviour in a field experiment.

The first contribution is to the understanding of how an ingredient branding strategy can convey unobservable and intangible attributes in a service context. Because of the different characteristics of the services and consumer goods, there was a call to study consumer insights into ingredient branding strategy in the context of services to extend the knowledge attained in product-related categories (Helmig *et al.*, 2008). Prior research on ingredient branding focused predominantly on product-related categories in fast-moving consumer goods and durables and therefore offers little guidance for

services (Helmig *et al.*, 2008). By incorporating a consumer goods brand into the performance of a service offering, this research investigates how consumers' purchasing behaviour towards a service offering changes in the presence of ingredient branding. The findings show that perceived quality mediates the impact of ingredient branding on willingness to pay. As predicted, the ingredient brand acts as an extrinsic cue, signalling quality. Hence, building on information integration theory (Anderson, 1981), this research highlights the impact of this strategy on consumers' willingness to pay in the context of restaurants. There is a significant and positive relationship between ingredient branding and willingness to pay. This research therefore widens the applicability of the ingredient branding strategy and identifies how a service context characterised by intangibility can benefit from incorporating a tangible consumer goods brand as an ingredient.

Secondly, this research provides empirical evidence for the impact of ingredient branding on creating value and actual consumer demand. Unlike prior studies on attitudes and behavioural intentions, this research contributes to the literature by examining the impact of ingredient branding strategy on actual behaviour. Prior studies in the literature on ingredient branding have confirmed that an ingredient brand can make invisible attributes of the host brand visible, and hence, simplify the decision-making process (Giakoumaki *et al.*, 2016). By conducting a field experiment and examining actual sales of an ingredient-branded offering as a behavioural measure, the main effect findings of the online experiments were validated. The actual consumer choice provides convincing empirical evidence for the positive impact of ingredient branding on consumer demand in a restaurant context. Using the actual behaviour of real consumers as a dependent variable increases the external validity of the findings (Viglia and Dolnicar, 2020).

## 4.2 Managerial Contribution

In today's fiercely competitive environment, where consumers have many options for eating out, restaurant managers strive to grow their revenues and profits through differentiation. By examining the impact of ingredient branding on consumers' willingness to pay and actual purchasing choices, this research informs restaurant managers about the opportunities to be gained from implementing ingredient branding strategy and offers some managerial guidance for services that might consider adopting ingredient-branding strategy. Hence, the managerial contribution of this paper is twofold: (1) overcoming the challenges of intangibility, ingredient branding strategy can help enhance quality perception for the branded menu items, and generate revenue via premium pricing; (2) ingredient branding can increase the amount of sales per unit.

The first contribution addresses the adoption of an ingredient branding strategy in a service context and highlights the opportunity of enhancing perceived quality of selected items. For services, it is challenging to communicate the performance of a service offering at the moment of choice due to the intangibility of the service offering. However, consumers in a restaurant can utilise some signalling cues in evaluating attributes prior to experience (Washburn *et al.*, 2004). The incorporation of a branded ingredient to a menu can be a beneficial branding strategy for restaurants that are willing to enhance quality perception and develop a competitive advantage in the marketplace. The online experimental studies show that the presence of ingredient branding on the restaurant menu has a positive effect on both the perceived quality of the food item and the willingness to pay for that item. Consumers who are exposed to ingredient branding indicate that they are willing to pay up to 9% more than they would pay for a food item with no ingredient branding. Hence, this research recommends that restaurant managers should consider incorporating a consumer goods brand as an

ingredient on their menus. This will enable them to tangibilise the attributes of the food item, signal quality, and grow their revenues through increased prices. An additional recommendation to restaurant managers would be to consider using ingredient branding for not just one item on the menu but for every item that incorporates the ingredient. For example, restaurant managers might brand the chocolate in all the chocolate desserts, the mozzarella on all the pizzas, or the dough in all the pastas. By adopting this strategy, managers can increase the quality perception of the whole category and hence, increase prices across the entire category rather than for just one focal item.

Second, quasi-experimental field research, that aimed to complement the online experiment research, provided empirical evidence for the positive impact of an ingredient branding strategy on actual sales. Hence, by examining the actual choice of the consumer, this research extends prior research on behavioural intentions and provides practical recommendations for a particular service context. Stated purchase likelihoods, which have been the focus of prior research in mainly product-related categories, may not represent consumers' actual behaviour in the real marketplace. By conducting a field experiment, this paper provides convincing empirical evidence for the positive impact of ingredient branding in a coffee house context, finding that the presence of ingredient branding increases the actual sales of smoothies by 40%. Hence, café/restaurant managers are advised to consider ingredient branding as a strategy for increasing consumer demand for particular items on their menus.

To sum up, the findings of this research reveal that when a restaurant incorporates a branded ingredient into its service offering, consumers perceive the quality of the food item as higher and they are willing to pay more for that ingredient-branded item. Hence, this research highlights the opportunity for a service industry, which has been overlooked, to convey its desired messages by adopting an ingredient

branding strategy. It provides empirical evidence for consumers' purchasing behaviour, willingness to pay, and actual demand.

### **4.3 Limitations and Future Research**

Although this paper offers some theoretical and managerial implications, it is not without limitations. Building on the limitations, the author offers some avenues for further research. First, this research paper should be considered with caution in terms of generalisability. The experiments are all conducted in one particular type of service: casual café/restaurants. Therefore, the findings of this research may not be generalisable to other services. Furthermore, even in the restaurant business, there are various restaurant categories with different dynamics and positioning strategies, such as fine dining restaurants and casual dining restaurants based on various classifications (Parsa et al., 2020). The positioning of the restaurant business can alter the impact of ingredient branding and hence, it may not be possible to generalise the results of this research to all types of restaurants without the support of further empirical research. This does however indicate an avenue for further research; the type of restaurants and their position on the utilitarian-hedonic continuum, a recently tested classification system for restaurant industry, could be used as moderators in future studies (Parsa et al., 2020). The author also acknowledges that the female representation in the Prolific participants weighs more vs. male participants (i.e., on average 72% vs. 28%). Future studies could accept participants with an even quota if they are interested in the effect of gender on the results.

Second, despite promising results from this paper, which highlights the benefits of ingredient branding strategy in the restaurant business, the choice of ingredient brand needs careful attention. In the scenario-based online experiments, a high positive attitude towards the chosen ingredient brand (e.g., Galbani, Lindt) is controlled in the

online experiments, and the service brand is kept as a fictitious brand, albeit being presented to participants as one that is well known. The field study, on the other hand, was conducted with a real service brand and a real consumer goods brand (i.e., Love Smoothies), and the findings (positive impact of ingredient branding) did not differ from the previous online studies. Future research might study empirically the interaction of different characteristics of both partner brands (e.g., symmetry or asymmetry in their brand equities) on consumers' purchasing behaviours in a service.

Third, the author did not find support for the predicted moderating effect of consumers' motivation for consumption. There is evidence that ingredient branding acts as a quality-signalling cue and positively impacts consumers' perception of quality and purchasing behaviour. However, the weight assigned to ingredient branding does not show any significant difference under varying conditions of consumer motivations. It might be interpreted that consumers, independent of their hedonic or utilitarian motivations for dining out, evaluate and value the food items more highly when they are ingredient branded. On the other hand, these results might be driven by the limitations of manipulating the consumer mind-set in online experiments. The author aimed, in this study, to manipulate the motivation of dining out as hedonic and utilitarian, assuming that the two mind-sets reflect states of mood. However, there is uncertainty on the nature of shopping motivations (e.g., state vs. trait) (Dennis *et al.*, 2010). Motivations for eating out might as well be chronic traits for some individuals rather than reflections of their current state. Therefore, future studies are encouraged to use motivation for eating out as a measured moderator rather than as a variable to be manipulated (e.g., Ryu *et al.*, 2010). Moreover, the author recommends implementing ingredient branding on other food items than chocolate or cheese, since these items could have the limitations of being perceived as more hedonic than utilitarian by nature.

Overcoming these limitations would enable researchers to further explain the thought mechanism of consumers in the context of ingredient branding.

Finally, studying consumer-related individual difference variables as the potential moderators of ingredient branding effectiveness is much needed since prior branding strategies consider these (e.g., consumers' risk aversion) to be important explanatory variables (Völckner and Sattler, 2006). Examining these moderators would advance understanding of consumers' judgment processes when exposed to ingredient branding strategy.

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## 6 Appendices

### 6.1 Appendix 1 - Experimental stimuli for study 1

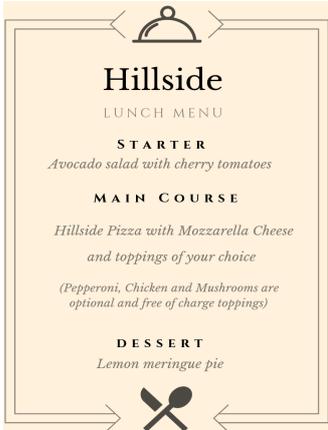
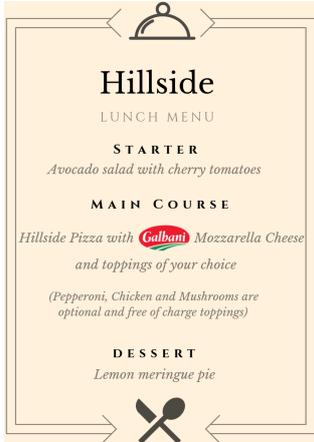
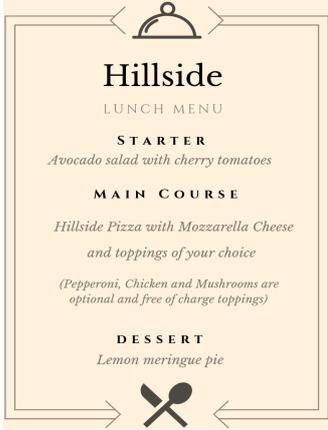
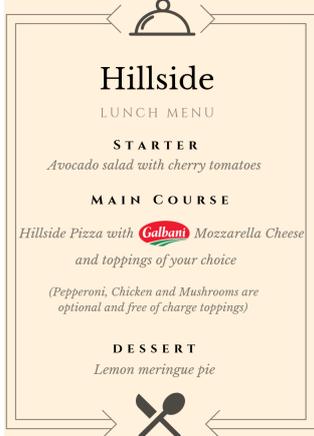


### 6.2 Appendix 4 - Experimental stimuli for study 4

The visuals below represent the posters placed on the Hub branded menu board, announcing the smoothie drink of the week. In the control week, customers were exposed to the 'Hub Pash-N-Shoot smoothie', while in the treatment week, they were exposed to the 'Hub Love Smoothies Pash-N-Shoot smoothie'.



6.3 Appendix 2 - Experimental stimuli for study 2

<p><b>Cell 1- (Ingredient branding: absent) and</b></p>  <p><b>(Motivation: hedonic)</b></p> <p>‘It is lunchtime. You are about to head to a restaurant, which you enjoy greatly. You really like food and for you eating out need to be a pleasant experience and fun. You eat out to lift your spirits. And here you are in Hillside, a well-known local restaurant.’</p>	<p><b>Cell 2 - (Ingredient branding: present) and</b></p>  <p><b>(Motivation: hedonic)</b></p> <p>‘It is lunchtime. You are about to head to a restaurant, which you enjoy greatly. You really like food and for you eating out need to be a pleasant experience and fun. You eat out to lift your spirits. And here you are in Hillside, a well-known local restaurant.’</p>
<p><b>Cell 3 - (Ingredient branding: absent) and</b></p>  <p><b>(Motivation: utilitarian)</b></p> <p>‘It is lunchtime. You are about to head to a nearby restaurant, which is convenient for you. You are really hungry and for you eating out need to be practical and fast. You eat out to satiate your hunger. And here you are in Hillside, a well-known local restaurant.’</p>	<p><b>Cell 4 - (Ingredient branding: present) and</b></p>  <p><b>(Motivation: utilitarian)</b></p> <p>‘It is lunchtime. You are about to head to a nearby restaurant, which is convenient for you. You are really hungry and for you eating out need to be practical and fast. You eat out to satiate your hunger. And here you are in Hillside, a well-known local restaurant.’</p>

### 6.4 Appendix 3 - Experimental stimuli for study 3

The order of 'focal item' (brownie) and 'other item' (cheesecake) on menu is counterbalanced in the experiment cells by changing display order of the two items.

<p><b>Cell 1- (Ingredient branding: absent) and</b></p>  <p><b>LUIGI'S</b></p> <p><b>(Motivation: hedonic)</b></p> <p>'Imagine that it is 7 pm after work. It is your birthday, and you want to eat out somewhere pleasant to have fun. You go to a well-known restaurant, Luigi's. You expect to order and eat good quality food in pleasure.'</p>	<p><b>Cell 2 - (Ingredient branding: present) and</b></p>  <p><b>LUIGI'S</b></p> <p><b>(Motivation: hedonic)</b></p> <p>'Imagine that it is 7 pm after work. It is your birthday, and you want to eat out somewhere pleasant to have fun. You go to a well-known restaurant, Luigi's. You expect to order and eat good quality food in pleasure.'</p>
<p><b>Cell 3 - (Ingredient branding: absent) and</b></p>  <p><b>LUIGI'S</b></p> <p><b>(Motivation: utilitarian)</b></p> <p>'Imagine that it is 7 pm after work. You are very hungry, and you need to eat somewhere convenient to satiate your hunger quickly. You go to a well-known restaurant, Luigi's. You expect to order and eat good quality food in a practical way.'</p>	<p><b>Cell 4 - (Ingredient branding: present) and</b></p>  <p><b>LUIGI'S</b></p> <p><b>(Motivation: utilitarian)</b></p> <p>'Imagine that it is 7 pm after work. You are very hungry, and you need to eat somewhere convenient to satiate your hunger quickly. You go to a well-known restaurant, Luigi's. You expect to order and eat good quality food in a practical way.'</p>