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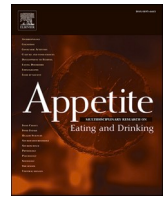**64** PUBLICATIONS   **1,562** CITATIONS

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# Only the best for my kids: An extended TPB model to understand mothers' use of food labels

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## ARTICLE INFO

## ABSTRACT

Despite the evidence that mothers' food purchasing behavior impacts the quality of children's diet, few studies have explored psycho-social factors influencing *how* mothers choose the food to buy for their children. To fill this gap, this study tested an extended Theory of Planned Behavior (TPB) model to predict mothers' tendency to seek information on food labels before purchasing food for children. Participants included 311 Italian mothers who completed a *self-report* questionnaire measuring their information-seeking behavior, TPB variables, anticipated regret and healthy-eater identity. Results from a Multiple Correspondence Analysis showed that mothers' information-seeking behavior involved a continuum of choices ranging from selecting conventional or pre-packaged foods to choosing to read the food label before making a purchase. Besides, a Partial Least Squares–Structural Equation Modeling analysis showed that information-seeking behavior was positively predicted by intention ($\beta = 0.309$, $p < 0.001$) and healthy-eater identity ($\beta = 0.195$, $p < 0.001$). In turn, intention was positively affected by attitude ($\beta = 0.208$, $p < 0.001$), subjective norms ($\beta = 0.155$, $p < 0.01$), perceived behavioral control ($\beta = 0.124$, $p < 0.05$), anticipated regret ($\beta = 0.193$, $p < 0.001$), and healthy-eater identity ($\beta = 0.191$, $p < 0.001$). These findings emphasize that future initiatives could usefully target attitude, anticipated regret and self-identity to encourage mothers' informed food choices for their children.

## 1. Introduction

Children's eating behavior is a complex issue that has implications from various perspectives. It is believed that the food habits formed in early and later childhood can influence an individual's dietary patterns during adolescence (Madruga et al., 2012) and even adulthood (Saavedra et al., 2013). Therefore, the consequences of adopting healthier or safer eating practices during childhood extend beyond the immediate term and also have implications in the medium and long term (Must & Strauss, 1999).

Parental choices play a crucial role in determining the quality of their children's food intake (Caso & Vecchio, 2023; Røed et al., 2020). Parents are responsible for deciding the types of food to purchase (DeCosta et al., 2017) and make available to their children (Rasmussen et al., 2006), thereby creating the food environment within the family (Lacy et al., 2019). Additionally, parents' eating behaviors (van der Horst et al., 2007) and child-rearing practices (Vaughn et al., 2016), including factors like breastfeeding duration (Perrine et al., 2014), contribute to shaping the food environment.

Mothers, in particular, often assume primary responsibility for childcare and feeding, playing a significant role in deciding what and how much their children eat (Johnson et al., 2015). They also serve as role models, consciously or unconsciously influencing their children's mealtime behavior (Mosli, Miller, Peterson, & Lumeng, 2016). It is important to note that maternal choices are influenced not only by the child's characteristics, such as their tastes and preferences, but also by the mother's beliefs and attitudes, for example, their perceptions of the importance of selecting healthier and/or safer foods (Scaglioni et al., 2018).

Thus, considerable attention in the literature has been devoted to examining parents, particularly mothers, and their purchasing behavior, specifically regarding their control over the quality characteristics of the foods they buy (Hughner & Maher, 2006; Pettigrew & Pescud, 2013; Riesenberg et al., 2022; Russell et al., 2017). Notably, in Mediterranean countries, and Italy in particular, there remains an unequal distribution of caregiving responsibilities within heterosexual couples (Cannito, 2020; García-Mainar et al., 2011), and due to limited resources, particularly time, mothers may not always have the opportunity to

gather information while shopping (Hansen, Boye, & Thomsen, 2010). In this regard, a significant focus has been placed on the association between healthier and safer food choices and the practice of reading and comprehending food labels. Food labels serve as a primary source of information for consumers, facilitating informed decision-making (Lim et al., 2015). Research has demonstrated that mothers who actively read food labels when selecting food for their children are more inclined to choose healthier options in virtual restaurant (Prowse et al., 2020) and supermarket (Blitstein et al., 2020) experiments.

However, it is important to acknowledge that food labels can only influence parents' choices if they are willing to seek such information on the product. Therefore, our study specifically focuses on mothers' information-seeking behavior, i.e., their active *inclination* to seek detailed information on food labels when purchasing food for their children, regardless of the specific type of information they are seeking (e.g., ingredients, production methods, nutritional content, origin, etc.). We consider their engagement in this information-seeking behavior as an initial step toward making informed food choices.

While significant research has been conducted to examine barriers and facilitators of parents' utilization and comprehension of food labels, many studies have primarily focused on isolated factors such as gender, education, general health literacy, and specific knowledge of label content (Maubach et al., 2009; Nørgaard & Brunsø, 2009). However, it is crucial to recognize that food choices are influenced by a complex interplay of physiological, psychological, and social factors, extending beyond socio-demographic characteristics or knowledge alone (Caso et al., 2020). Despite this evidence, only a limited number of studies in the literature have applied psycho-social theoretical models to comprehensively examine the behavior of parents and caregivers in relation to food choices (e.g., Andrews et al., 2010; Combs & Ickes, 2021; Devitiis et al., 2021; ÅstrØm & Kiwanuka, 2006). It is noteworthy that utilizing psycho-social theories not only enhances our understanding of the processes leading to the adoption of the behavior under investigation but also provides practical insights for designing evidence-based interventions to promote informed food choices (Tsorbatzoudis, 2005). Among the psycho-social theories of behavior change, the Theory of Planned Behavior (TPB; Ajzen, 1991) has widely demonstrated its robustness in predicting behaviors in the food domain (Nardi et al., 2019). Thus, to address this research gap, the present study aims to test an extended TPB model incorporating two additional variables: self-identity, specifically *healthy-eater identity*, and anticipated regret. By including these additional variables, we aim to better predict mothers' information-seeking behavior when purchasing food for their children. The study focuses on a sample of Italian mothers with at least one child under the age of 12 years. Indeed, unlike teenagers, pre-teens tend to have less autonomy and rely heavily on their mothers' choices when it comes to food selection (Bogl et al., 2017).

## 2. Theoretical background

The Theory of Planned Behavior is widely recognized as one of the prominent theories applied in the psycho-social literature to understand food consumption and purchasing decisions (Ajzen, 2015; Nardi et al., 2019). According to the TPB, an individual's behavior can be primarily explained by their intention to engage in that behavior. This intention, in turn, is predicted by three key cognitions: attitude, subjective norms, and perceived behavioral control (PBC). Attitude refers to an individual's overall evaluation, whether favorable or unfavorable, of a specific behavior. Subjective norms encompass a person's beliefs regarding whether significant others, such as salient groups or individuals, think they should or should not engage in a particular action, as well as the personal motivation to comply with these expectations. On the other hand, perceived behavioral control reflects an individual's subjective perception of their ability and control to perform the behavior. It is noteworthy that perceived behavioral control can serve as both a direct and indirect predictor of behavior through its influence on

intention.

Several reviews of empirical studies have demonstrated the strong predictive power of the TPB in the context of food choices (McDermott et al., 2015; Nardi et al., 2019; Riebl et al., 2015). Indeed, the TPB has been extensively used to explain a wide range of eating behaviors, such as the adoption of a low-fat diet (Armitage & Conner, 1999), fruit and vegetable consumption (Blanchard et al., 2009; Canova et al., 2020; Canova & Manganelli, 2016; Caso et al., 2016), and reduction in red meat consumption (Carfora et al., 2017).

In addition to food consumption, the TPB has also been widely applied to understand the psycho-social factors influencing food purchasing choices. Some studies have utilized the TPB to examine the use of food labels as well (Lim et al., 2015; Stran et al., 2016; Tian et al., 2022). For instance, Lim et al. (2015) found that individuals who used nutrition labels had more favorable beliefs about their benefits and advantages, perceived more pressure from significant others (e.g., parents and siblings) to read labels, and felt more confident in their ability to use and understand nutrition labels compared to non-users. These findings are consistent with a recent study by Tian et al. (2022), where food label users reported higher scores on all TPB variables compared to non-users, with attitude and perceived behavioral control being the strongest predictors of the intention to continue using food labels.

It is worth noting that the TPB has been extensively applied to explore not only personal choices but also choices regarding one's children, including parental food and purchasing choices (Andrews et al., 2010; Caso et al., 2022; Combs & Ickes, 2021; Devitiis et al., 2021; ÅstrØm & Kiwanuka, 2006). However, to the best of our knowledge, no previous study has utilized the TPB framework to investigate mothers' information-seeking behavior in the context of making food choices for their children. While the TPB has been widely used to predict general food choices and purchase decisions, its application to understanding the factors influencing mothers' motivation to seek information before making purchase choices for their children is novel. By focusing on this unique aspect of decision-making process, we aimed to shed light on mothers' information-seeking behavior, which could be an impending factor in promoting better-informed food choices.

Furthermore, in the field of food choices, several studies have demonstrated that the TPB model can be enhanced by incorporating two additional constructs: self-identity (Bissonnette & Contento, 2001; Brouwer & Mosack, 2015; Carfora et al., 2016; Caso et al., 2016) and anticipated regret (Carfora et al., 2017; Caso et al., 2016; Lash et al., 2016; Yarimoglu et al., 2019). Therefore, the current study will apply an extended version of the TPB that incorporates self-identity and anticipated regret as additional factors. This approach can provide a comprehensive understanding of the factors influencing mothers' engagement in using food labels when choosing food for their children, allowing for the development of targeted interventions to promote informed decision-making in this context.

### 2.1. Self-identity

Food choices are not just influenced by individual preferences, but they are also shaped by societal, cultural, and economic factors and play a significant role in self-representation and identity. Individuals use food choices as a means of self-expression within a social context (Goffman, 1959) and consider them as an important dimension of their self-representation (Somers, 1994) and identity (Fischler, 1988).

Self-identity, a construct derived from Identity Theory (Stryker, 1968), can be defined as a set of stable characteristics that define one's identity and self-perception regarding a specific behavior (Conner & Armitage, 1998). When individuals perceive that adopting a specific behavior aligns with their self-identity, it becomes a powerful motivational factor, driving them to engage in that behavior to maintain consistency with their identity (Stets & Burke, 2000). According to Identity Theory (Stryker, 1968), self-structure encompasses various role identities, some of which hold more salience than others. The more salient a

particular role identity is (e.g., "I see myself as a healthy eater"), the stronger it predicts the intention to engage in behaviors consistent with that identity (e.g., purchasing and consuming healthy foods) (Charng et al., 1988).

Self-identity is frequently incorporated as an additional variable in studies based on the TPB (Granberg & Holmberg, 1990; Mannetti et al., 2004) because it considers both the self and social dimensions of engaging in a behavior simultaneously (Charng et al., 1988). It holds particular significance in the context of eating behavior (Bissonnette & Contento, 2001; Brouwer & Mosack, 2015; Carfora et al., 2016; Caso et al., 2016), as food choices are integral to self-representation (Somers, 1994) and identity (Fischler, 1988).

According to Loebnitz et al. (2015), self-identity is expected to influence purchase intention and behavior through two mechanisms. Firstly, individuals strive for coherence between their self-identity and behavior, as any inconsistency leads to cognitive dissonance. Secondly, engaging in specific purchasing behaviors not only reinforces one's self-identity but also serves as a means to communicate and express that identity to others, enabling individuals to shape their social image. In this perspective, making safer and healthier food purchasing choices allows individuals to maintain or reinforce a particular self-image while also communicating this identity to others. Previous research has demonstrated this argument, showing that individuals who perceive themselves as healthy eaters tend to make healthier food purchasing choices (e.g., Strachan & Brawley, 2009). Given these considerations, this study aims to investigate whether mothers' self-identity as healthy eaters influences their information-seeking behavior when purchasing food, an aspect that has not been previously explored in the literature. It is conceivable that devoting time and effort to seeking information on food labels during grocery shopping may be a common way of expressing a healthy-eater identity for mothers.

Coherently, self-identity has been recognized as an additional predictor of both intention and behavior within the framework of the TPB. A meta-analysis conducted by Rise et al. (2010) examining various health behaviors, including eating healthy food, exercising, and recycling, found that self-identity significantly predicted both intention and behavior. This indicates that individuals' perceptions of themselves in relation to a specific behavior can directly impact their actual behavior. Additionally, Sparks and Guthrie (2006) demonstrated the independent predictive effect of self-identity on behavior (specifically, adopting a low animal fats diet) within the TPB framework. This finding suggests that self-identity can have a unique influence on behavior beyond the impact of other TPB variables.

In the context of TPB studies focusing on food choices and consumption, self-identity has been associated with personal dietary choices (e.g., Brouwer & Mosack, 2015; Carfora et al., 2016). Moreover, in the context of parental behavior, self-identity has been linked to the purchasing of healthy foods for children (e.g., Soares Júnior et al., 2019). These studies highlight the importance of self-identity in shaping individuals' food-related decisions, including choices made on behalf of their children.

### 2.2. Anticipated regret

If making food choices can be associated with positive aspects such as self-expression, it can also be influenced by the desire to avoid negative emotions, specifically the experience of regret. Regret is a negative emotion that arises when individuals perceive that a different decision or behavior could have led to a better outcome (Zeelenberg & Pieters, 2007). Anticipated regret, in particular, refers to the cognitive and affective expectation of feeling remorseful about the outcomes resulting from one's decisions and behaviors (Baumeister et al., 2007; Coricelli et al., 2005, 2007).

Anticipated regret stands out from other anticipated emotions, such as fear or guilt, because it focuses on the possibility of choosing a different behavior (Brewer et al., 2016). In most cases, it is associated with the choice of *not* engaging in a particular behavior (Abraham & Sheeran, 2003). While *action* anticipated regret can discourage individuals from performing a behavior, *inaction* anticipated regret can motivate individuals to engage in the behavior (Brewer et al., 2016). In the context of health-promoting behaviors, inaction regret tends to be a stronger predictor of intention compared to action regret (Sandberg et al., 2016).

By considering the role of anticipated regret, we can understand how the potential negative outcomes associated with food choices may influence individuals' intention to make "better" food choices (e.g., cheaper, healthier, safer, more environmentally or socially sustainable). The anticipation of regret from not selecting better options can enhance the motivation to seek information and make informed decisions, thereby promoting, for instance, the use of food labels.

Anticipated regret has been effectively integrated into the TPB as an additional predictor of intention in various studies focusing on different behaviors (Sandberg & Conner, 2008). It has been examined in the context of sexual behavior (Conner & Flesch, 2001), binge-drinking (Cooke et al., 2007), and physical exercise (Abraham & Sheeran, 2004), among others.

In the context of eating behaviors within the TPB framework, anticipated regret has been shown to significantly enhance the predictive power of the model. For instance, Lash et al. (2016) demonstrated that anticipated regret played a crucial role in predicting overweight and obese individuals' intention to engage in a diet. Similarly, studies on specific dietary choices have shown that anticipated regret predicts intention to eat fruits and vegetables (Caso et al., 2016) and reduce red and processed meat intake (Carfora et al., 2017) beyond the effects of other TPB variables.

The extended TPB model with anticipated regret has also been successfully applied to predict parental choices for their children. Caregivers, particularly mothers, often make decisions on behalf of their children (Johnson et al., 2015). Hamilton et al. (2017) demonstrated that an extended TPB model, incorporating anticipated regret, significantly predicted parents' intentions to adopt sun-protective behaviors for their children aged between 2 and 5 years. Similarly, Yarimoglu et al. (2019) found that anticipated regret associated with purchasing junk food for their children negatively influenced parents' intentions to make such purchases, highlighting the pivotal role of this variable in influencing parents' purchasing choices in the context of nutrition.

Although no studies have specifically examined the association between anticipated regret and mothers' information-seeking behavior in the context of food choices, the following relationship is proposed: when making a purchasing decision, consumers frequently consider the potential for regret (Sheeran & Orbell, 1999) from the concern of making the wrong choice (Simonson, 1992). Applying this line of reasoning to the study context, the extent to which a mother anticipates regret from making an uninformed choice may intensify mothers' information-seeking behavior: the anticipation of regret from not examining products or processing label information may drive mothers to take proactive steps to gather information and avoid regret associated with potential uninformed choices.

### 2.3. Research hypotheses

The aim of the present research is to test the efficacy of the TPB model extended with two additional factors, i.e., self-identity (specifically healthy-eater identity) and anticipated regret, in explaining mothers' information-seeking behavior, i.e., their active inclination to check in detail how the food they buy for their children is made.

In view of the above, we hypothesized (Fig. 1) that mothers' information-seeking behavior would be positively predicted by the intention to check in detail how the food they choose for their children is made (H1), perceived behavioral control (H2), and healthy-eater identity (H3). In turn, we expected that intention would be positively predicted by attitude (H4), subjective norms (H5), perceived behavioral
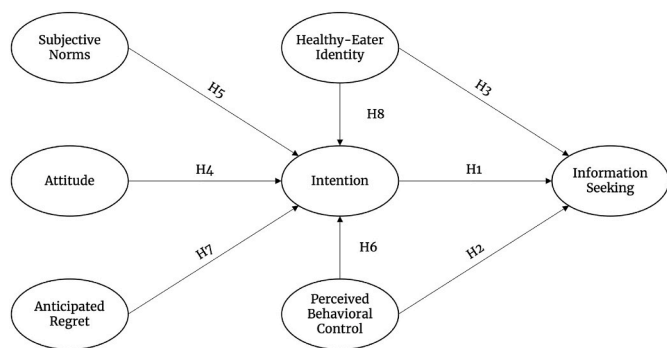
**Fig. 1.** Research hypotheses.

control (H6), anticipated regret (H7), and healthy-eater identity (H8).

## 3. Methods

### 3.1. Data collection and survey

The present cross-sectional study used a *self-report* questionnaire created through the Google Form online survey platform. Participants were recruited by advertising the questionnaire link on some of the main Italian social networking sites (e.g., Facebook groups and Instagram pages), thus through a non-probability sampling procedure (i.e., convenience sampling). In order to be eligible to take part in this study, mothers were required (1) to be of legal age (age ≥ 18), (2) to be resident in Italy, and (3) to have at least one child between 1 and 11 years old.

Before recruiting participants, we carried out an *a priori* power analysis to estimate the required sample size for detecting an effect size (in terms of correlation between constructs) equal to 0.15, with an alpha = 0.05 and a power of 0.85 (Faul et al., 2009). The estimated sample size required for the study was N = 310. Thus, to account for a potential 20% dropout rate due to ineligibility, we planned to recruit at least N = 400 participants to ensure we met the minimum sample size requirement. Of the 400 invited participants, N = 311 mothers, aged 18–57 (38.7 ± 6 years), met the inclusion criteria and completed the survey. They were informed about the anonymity of the data collection and gave informed consent. Participation was voluntary, and no incentive for participation was offered.

The respondents reported living in southern Italy or the islands (54%), northern Italy (27%), and central Italy (19%). Most mothers were married or cohabiting (85.5%), had a university or postgraduate degree (62%), and nearly half of the sample worked as a teacher (49%). In addition, 46.6% of participants had two children, 42.1% had one child, and the remaining 11.3% had more than two children. As regards the eating style followed by parents, 82.6% reported being omnivores, 10.9% omnivores with limitations due to health issues, 2.9% vegetarians, 1.6% vegans, and 1.9% reported having another eating style. Moreover, 10.6% followed an eating style prescribed by a specialist in order to limit health issues such as hypertension, diabetes, celiac disease, and overweight. Finally, 40.5% of participants reported buying food for their children almost every day, 30.6% once or twice a week, 23.8% three or four days a week, 3.5% once or twice a month, and 1.6% rarely, while the majority (90.4%) reported to personally preparing food for their children almost every day.

Data were collected between February and May 2022.

### 3.2. Measures

In the first section of the questionnaire, participants filled out the informed consent form. After that, they completed information-seeking behavior task, extended TPB variables, and socio-demographic questions. All measures were administered in the same order to all the participants.

#### 3.2.1. Information-seeking behavior

To measure mothers' information-seeking behavior for food, we implemented a "completion task", which is a specific type of projective technique (Steinman, 2009). Specifically, we presented mothers with three real-life supermarket scenarios, each concerning a different food choice for their children: i) choosing turkey, ii) selecting biscuits, and iii) picking bananas (Table 1). Respondents were then asked to complete these scenarios by choosing from various alternatives for each type of food. These alternatives were defined by different levels of product information, ranging from those presenting minimal information (i.e., conventional and prepackaged alternatives) to the alternative "I need to read the label to decide". A "no buy" option was also included. Thus, we hypothesized an opposition in the response structure between the alternatives with less information and those in which the participant requires to read the food label in detail (i.e., information-seeking).

#### 3.2.2. Extended TPB variables

Extended TPB constructs (Table A1, Appendix) were assessed following Fishbein and Ajzen's (2010) guidelines, adapting items previously used in the Italian context (Caso et al., 2016). Specifically, mothers' intention (3 items), subjective norms (5 items), perceived behavioral control (4 items), anticipated regret (6 items), and healthy-eating identity (4 items) were measured on 5-point Likert scales ranging from (1) *completely disagree* to (5) *completely agree*. Attitude was measured with 9 items using a semantic differential scale (Osgood et al., 1957) ranging from 1 (negative pole) to 5 (positive pole). All the items focused on "checking in detail how the food chosen for their children is made". The only exception was for items related to healthy-eater identity, which more generally captured the extent to which the person identifies with the role of being a healthy eater.

#### 3.2.3. Socio-demographic questions

Finally, participants answered a set of questions on how often they take care of food purchases, meals, and snacks preparation, plus some socio-demographic questions, such as their occupation, marital status, degree, and geographical region of residence, along with the number of their children. Participants were further asked about their eating style

**Table 1**
Mothers' stated behavior through projective technique.

| Scenario descriptions | Alternatives | Stated choices | |
|---|---|---|---|
| | | n | Percent |
| **Scenario 1 "Turkey"** Imagine being in the supermarket and having to choose a turkey to prepare a meal for your children. If you don't usually shop on your own, still try to imagine how you might behave in this situation. Which alternative would you choose? | 1. Prepackaged butchered turkey | 73 | 23.47% |
| | 2. Organic turkey | 72 | 23.15% |
| | 3. Turkey raised without antibiotics | 31 | 9.97% |
| | 4. I need to read the label to decide | 69 | 22.19% |
| | 5. None of the above | 66 | 21.22% |
| **Scenario 2 "Biscuits"** Imagine yourself in the supermarket buying a packet of biscuits for your children. Which alternative would you choose? | 1. Conventional biscuits | 67 | 21.54% |
| | 2. Organic biscuits | 58 | 18.65% |
| | 3. Biscuits without preservatives | 66 | 21.22% |
| | 4. I need to read the label to decide | 85 | 27.33% |
| | 5. None of the above | 35 | 11.25% |
| **Scenario 3 "Bananas"** Now imagine yourself in the supermarket buying a bunch of bananas for your children. Which alternative would you choose? | 1. Conventional bananas | 32 | 10.29% |
| | 2. Organic bananas | 85 | 27.33% |
| | 3. Bananas without pesticides | 157 | 50.48% |
| | 4. I need to read the label to decide | 28 | 9.00% |
| | 5. None of the above | 9 | 2.89% |

(e.g., omnivore, omnivore with limitations due to health issues, vegetarian, vegan, etc.) and if they were following a particular type of eating style prescribed by a professional for health issues. In case of an affirmative response, they were invited to indicate what type of health issue they had.

All main questions and items required a mandatory answer to prevent missing values.

### 3.3. Empirical analysis

The empirical analysis involved two main statistical techniques. The first technique used was Multiple Correspondence Analysis (MCA), which is an extension of correspondence analysis suitable for analyzing relationships between categorical variables (Abdi & Valentin, 2007). MCA provides a graphical representation of the underlying structure of dependency between response frequencies. In this study, MCA was used to explore the structure of mothers' responses regarding their stated behavior for the three different food shopping scenarios.

The second technique employed was Partial Least Squares-Structural Equation Modeling (PLS-SEM). PLS-SEM was used to investigate the relationships between the constructs of the extended TPB model and the information-seeking variable (i.e., the stated behavior as informed by MCA). Similar to traditional Structural Equation Modeling (SEM), PLS-SEM consists of a measurement (outer) model and a structural (inner) model. The outer model examines the relationships between latent variables and their indicators, while the inner model explores the relationships among latent constructs (Venturini & Mehmetoglu, 2019). In PLS-SEM, latent variables are considered components rather than common factors. The PLS-SEM algorithm has been shown to provide robust estimates, even with small sample sizes and non-normally distributed data (Hair et al., 2019).

After specifying the measurement model, several criteria were used to confirm its adequacy. These criteria included factor loadings > 0.5, Cronbach's alpha > 0.7, and Rho A > 0.7 (indicator reliability). Convergent and discriminant validity of the constructs were also assessed. Convergent validity was evaluated by examining the Average Variance Extracted (AVE) of the construct, which should be equal to or greater than 0.5. Discriminant validity was assessed using the Fornell-Larcker criterion, comparing the square root of the AVE with the correlation between latent constructs (Venturini & Mehmetoglu, 2019). The evaluation of the structural model was based on the path coefficient values and their statistical significance (Venturini & Mehmetoglu, 2019). All statistical analyses were conducted using Stata 18.

## 4. Results

### 4.1. Descriptive statistics

Regarding the projective technique, Table 1 illustrates the scenarios with participants' stated behavior frequencies.

Table A1 (Appendix) presents the descriptive statistics (mean, standard deviation, minimum, and maximum) for each item included in the extended TPB model. Mean scores of the items were generally high, ranging from 3.32 (SN.3, SN.5, and PBC.2) to 4.79 (ATT.8). The mean values were particularly high for items related to mothers' attitudes toward checking how the food chosen for their children is made.

### 4.2. MCA results

The results of the MCA identify the relationships between the stated choices and the varying alternatives presented in the three food purchase scenarios (turkey, biscuits, and bananas). As depicted in Fig. 2, the MCA plot displays a data matrix where the alternatives of the three categorical variables (one for each scenario) are plotted on the horizontal-axis and vertical-axis. The distances between these alternatives reflect the similarity of their respective response patterns.
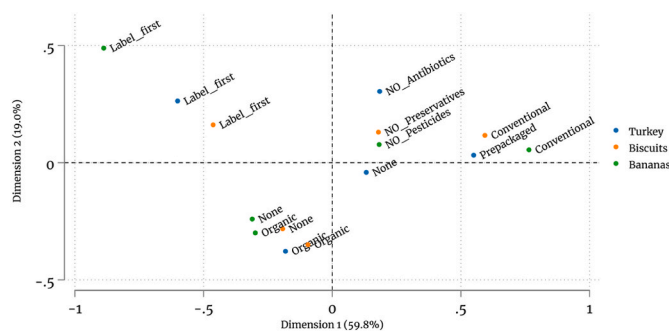


**Fig. 2.** MCA coordinate plot. **Notes.** Coordinates in principal normalization.

The plot reveals two orthogonal latent dimensions: the first dimension accounts for 59.8% of the total inertia (i.e., variance), and the second dimension accounts for 19.0% of the total inertia. Categories that are clustered together on the plot indicate associations, while categories that are farther apart are dissociated. For example, the "Prepackaged" option in the first scenario is close to the "Conventional" options in the second and third scenarios, suggesting similarities in response patterns. Conversely, the "Label first" options are distant from the three "Prepackaged/Conventional" options but are associated with each other.

Therefore, the first dimension, represented by the horizontal-axis, could reflect mothers' information-seeking behavior: choices pertaining to conventional and prepackaged alternatives (i.e., those presenting less information) lie on one end of the spectrum, while choices associated with the necessity of reading the label first are at the opposite end. The remaining alternatives (e.g., organic, pesticide-free, etc.) fall somewhere in the middle of this continuum.

Hence, to reflect the structure that emerged from MCA, the responses for each of the three food scenarios were coded for each individual as −1, 1, and 0 for prepackaged/conventional, "label first", and the remaining alternatives, respectively. Finally, these three variables were used as indicators of the information-seeking variable in PLS-SEM.

We also explored two additional approaches to capture information-seeking behavior. The first approach reproduces just one end of the horizontal spectrum shown by MCA: the responses for the three scenarios were coded as dummy variables, assigning a value of 1 if the individual chose to read the label first and 0 otherwise. The other approach follows the methodology described by Raimondo et al. (2022): the predicted continuous scores of the first dimension identified by MCA were directly used to represent the information-seeking variable. Although the results obtained from the three approaches were statistically similar, those measuring information-seeking behavior by using the three items coded as −1, 1, and 0 (for prepackaged/conventional, "label first", and the remaining alternatives, respectively) yielded a higher $R^2$. Results of the other two mentioned approaches are reported in the Appendix (Figure A1 and A2).

### 4.3. PLS-SEM output

#### 4.3.1. The measurement model

Table 2 illustrates the results of the measurement model, showing strong relationships between the latent constructs and items with factor loadings > 0.5, ranging from 0.6 to 0.9. The results of the final assessment of the model for internal consistency (Cronbach's α), indicator reliability (Rho A), and convergent validity (AVE) are presented at the bottom of the table. The results of the Fornell-Larcker criterion indicated that discriminant validity of the constructs is established (Table A2, Appendix). Furthermore, variance inflation factors indicated the absence of pathological collinearity among the constructs (Table A3, Appendix), and the Harmon one-factor test showed that one factor explained about 34% of the covariance, below the 50% threshold.

**Table 2**
Factor loadings, Cronbach's α, Rho A, and AVE of the measurement model.

| Item | INT | ATT | SN | PBC | REG | SELF-ID | INFO-SEEK |
|---|---|---|---|---|---|---|---|
| INT.1 | 0.960 | | | | | | |
| INT.2 | 0.946 | | | | | | |
| INT.3 | 0.952 | | | | | | |
| ATT.1 | | 0.786 | | | | | |
| ATT.2 | | 0.640 | | | | | |
| ATT.3 | | 0.607 | | | | | |
| ATT.4 | | 0.812 | | | | | |
| ATT.5 | | 0.701 | | | | | |
| ATT.6 | | 0.821 | | | | | |
| ATT.7 | | 0.831 | | | | | |
| ATT.8 | | 0.766 | | | | | |
| ATT.9 | | 0.845 | | | | | |
| SN.1 | | | 0.884 | | | | |
| SN.2 | | | 0.881 | | | | |
| SN.3 | | | 0.905 | | | | |
| SN.4 | | | 0.784 | | | | |
| SN.5 | | | 0.725 | | | | |
| PBC.1 | | | | 0.897 | | | |
| PBC.2 | | | | 0.822 | | | |
| PBC.3 | | | | 0.743 | | | |
| PBC.4 | | | | 0.803 | | | |
| REG.1 | | | | | 0.802 | | |
| REG.2 | | | | | 0.850 | | |
| REG.3 | | | | | 0.800 | | |
| REG.4 | | | | | 0.803 | | |
| REG.5 | | | | | 0.825 | | |
| REG.6 | | | | | 0.775 | | |
| SELF-ID.1 | | | | | | 0.822 | |
| SELF-ID.2 | | | | | | 0.899 | |
| SELF-ID.3 | | | | | | 0.804 | |
| SELF-ID.4 | | | | | | 0.851 | |
| INFO-SEEK.1 | | | | | | | 0.786 |
| INFO-SEEK.2 | | | | | | | 0.778 |
| INFO-SEEK.3 | | | | | | | 0.701 |
| *Cronbach's α* | 0.949 | 0.907 | 0.892 | 0.851 | 0.895 | 0.865 | 0.633 |
| *Rho A* | 0.949 | 0.915 | 0.898 | 1.013 | 0.902 | 0.867 | 0.645 |
| *AVE* | 0.907 | 0.579 | 0.703 | 0.669 | 0.655 | 0.713 | 0.572 |

**Notes.** INT = intention; ATT = attitude; SN = subjective norms; PBC = perceived behavioral control; REG = anticipated regret; SELF-ID = self-identity; INFO-SEEK = information-seeking.

*4.3.2. The structural model*

Once a suitable measurement model was obtained, the research hypotheses of the study were formally tested with the structural model of PLS-SEM. Fig. 3 presents the direct effects among the considered constructs, showing that all path coefficients were significant and had the
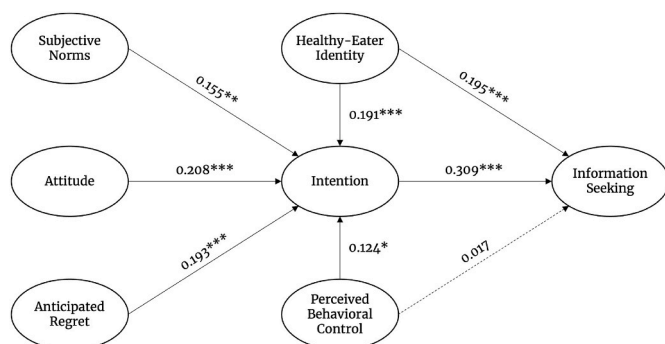


**Fig. 3.** Extended TPB for mothers' information-seeking behavior: structural model estimate. **Notes.** Significant relationships are marked by bold arrows, and non-significant relationships by dotted line arrows (*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$). $R^2$ of Intention = 0.37; $R^2$ of Information Seeking = 0.18.

expected sign/direction, except for the relationship between the PBC and the information-seeking behavior, characterized by a non-statistically significant coefficient ($p > 0.05$). Thus, all hypotheses related to the relationships among the constructs were accepted, except for H2. Our findings confirmed that all classical TPB predictors (attitude, subjective norms, and perceived behavioral control) influenced mothers' intention to check how the food chosen for their children was made, with attitude being the strongest predictor. Moreover, the additional constructs (i.e., healthy-eater identity and anticipated regret) positively and significantly affected intention. Finally, mothers' information-seeking behavior for food was positively predicted by intention and healthy-eater identity.

## 5. Discussion

The present study aimed to test the efficacy of an extended TPB model in predicting mothers' motivation to seek information before making purchase choices for their children. The inclusion of self-identity and anticipated regret in the TPB model, along with the emphasis on information-seeking behavior, represents one of the innovations of this study.

Results from the MCA revealed a continuum of choices reflecting mothers' stated behavior when making food purchasing decisions for their children. This continuum ranged from selecting prepackaged or conventional food (i.e., the alternatives presenting less information) to choosing to read the label *before* making a purchase decision. It is important to note that the examined choices are not strictly distinct or mutually exclusive in real-life contexts (e.g., a conventional product may also be without pesticides) or inherently informed or uninformed per se. However, the continuum identified by the MCA may capture varying levels of mothers' inclination to seek information before making their choices. We interpreted the option of selecting prepackaged or conventional food without reading the label as indicative of lower levels of information-seeking behavior, and the will to read the label prior to making the purchase as indicative of a higher need for information. Consequently, the information-seeking behavior variable measured in this study could reflect the mothers' *need* for information before making purchase decisions.

Regarding label use, it is interesting to note that only a small percentage of mothers chose to read the label before purchasing in each of the three scenarios. These findings are consistent with previous studies (e.g., Maubach et al., 2009; Nørgaard & Brunsø, 2009; Pettigrew & Pescud, 2013) demonstrating that the use of food labels is not widespread among parents of young children, even among those who have a strong intention to do so or recognize their utility. This may be due to practical factors influencing parents' decisions, such as food taste and price (Pettigrew & Pescud, 2013), the need for quick purchases, and the tendency to choose familiar or routine foods that children are accustomed to Maubach et al. (2009). Another barrier could be related to the characteristics of food labels or parents' expectations regarding their content. In this regard, a study by Nørgaard and Brunsø (2009) revealed that parents might choose not to use label information due to uncertainty about understanding the technical details often presented on labels. Therefore, it is plausible to speculate that some of the interviewed mothers may have excluded the possibility of reading labels, anticipating that they might be unclear and difficult to comprehend, which is consistent with results from studies conducted in the Italian context (e.g., Annunziata & Vecchio, 2012; Cavaliere et al., 2017).

Regarding the PLS-SEM results, consistent with our expectations, mothers' information-seeking behavior was positively predicted by intention (H1) and healthy-eater identity (H3) but not by perceived behavioral control (H2). The significant and positive intention-behavior relationship aligns with TPB principles (Ajzen, 1991), which posit that intention is the strongest antecedent of behavior. Specifically, our findings suggest that when mothers are highly motivated to check in detail how the food they choose for their children is made, they tend to

have a greater need for information before making purchase choices. Furthermore, the influence of healthy-eater identity on information-seeking behavior suggests that such choice behavior can also be largely value-based. Indeed, mothers who identified themselves as healthy eaters were more likely to engage in the use of label information. This finding indicates that a self-identity as a healthy eater may not only predict the choice to consume some specific categories of foods, as demonstrated in previous studies (e.g., Brouwer & Mosack, 2015; Carfora et al., 2016), but also plays a significant role in motivating mothers to seek information through food label use.

On the other hand, perceived behavioral control did not predict behavior, thus failing to support H2, but it had a positive and significant impact only on intention, supporting H6. As argued by Armitage and Conner (2001), perceived behavioral control may not directly affect behavior when it does not accurately reflect *actual* behavioral control, which is common because people often overestimate their control over situations (Langer, 1975).

Regarding the antecedents of intention, all of our hypotheses were supported (H4–H8), confirming that both traditional (attitude, subjective norms, and perceived behavioral control) and additional (anticipated regret and self-identity) TPB variables significantly contributed to shaping mothers' intention to examine in detail how the food purchased for their children is made. Specifically, attitude emerged as the strongest predictor, consistent with studies applying the TPB to understand generic parental food choices. For example, Andrews et al. (2010) demonstrated that attitude was the best predictor of intention to monitor their children's eating behavior among mothers of children aged 2 to 5. Similarly, Åstrøm and Kiwanuka (2006) indicated that attitude (along with subjective norms) was a significant factor influencing parental intention to control their children's intake of sugary snacks. More relevantly, Soares Júnior et al. (2019) found that parents' attitudes toward purchasing healthy foods strongly influenced their intention to buy them. Therefore, our results contribute to the existing literature by highlighting that the more positively mothers evaluate the behavior of examining the foods they purchase for their children and recognize it as a responsible, advantageous, and safer/healthier choice, the more likely they are to develop an intention to engage in that behavior. Consequently, interventions should primarily aim to reinforce mothers' attitudes since developing favorable attitudes appears to be the initial step toward changing purchasing intentions and subsequent behavior. Moreover, given that subjective norms also significantly influenced intention, such interventions could leverage the power of social influence, particularly from individuals who have the most impact on parenting choices, such as partners, grandparents, and peers (Chen et al., 2020; Lagerkvist et al., 2020).

Another key finding pertains to the significant impact of anticipated regret and self-identity on intention. In particular, the relationship between anticipated regret and intention appears noteworthy, as our results suggest that even parents' food purchasing choices, which are expected to be rational or planned (Soares Júnior et al., 2019), are also rooted in affective processes, as observed in previous research on parenting decisions in other health domains (e.g., Hamilton et al., 2017). Our findings align somewhat with those obtained in a study by Yarimoglu et al. (2019), which demonstrated that parents' anticipated regret about buying junk food for their children acted as a protective factor against this unhealthy habit. However, we showed that anticipated regret for *not* examining the food purchased for their children could motivate them to make informed purchases. This suggests that, alongside promoting a favorable attitude toward using food labels, interventions aiming to encourage informed choices should not overlook the influence of affective processes on purchasing decision-making.

Furthermore, the effect of healthy-eater identity on intention (in addition to the direct path from identity to behavior) is consistent with literature indicating that self-identity can serve as both a predictor of intention and behavior in the context of food choices (Brouwer & Mosack, 2015; Carfora et al., 2016) and purchasing decisions (Carfora

et al., 2019; Smith et al., 2008). This finding supports and extends the results of a study conducted by Soares Júnior et al. (2019), which, to the best of our knowledge, is the only one in the literature that tested an extension of the TPB model incorporating the self-identity construct to predict parental food purchasing choices. Specifically, the researchers demonstrated that self-identity, operationalized as the tendency to perceive oneself as a person who buys healthy foods for their children, significantly predicted purchasing intention. Going beyond this evidence, our findings indicate that identifying with the group of people who "eat healthily", which represents a more general dimension than the one investigated by Soares Júnior et al. (2019), can still have a significant impact on a specific purchasing behavior, namely engagement in using food labels. This finding is relevant as it suggests that interventions promoting self-identity as a healthy eater can influence not only personal food choices but also purchasing choices for children. However, it is important to conduct further research to confirm and disentangle this finding. While it has been demonstrated that individuals tend to adopt behaviors consistent with their self-image when they have a certain self-identity (Sirgy, 1986) – in line with the Self-Congruity Theory – it is crucial to recognize that self-identity is a complex and multi-faceted concept that can overlap with similar constructs, including moral values and eating styles such as restraint eating. For instance, different forms of self-identity may encompass a moral dimension (Sparks & Guthrie, 2006), suggesting that individuals may perceive themselves as making healthy food choices due to endorsing a particular ideology, such as vegetarianism, rather than solely based on healthful characteristics of the foods. Similarly, individuals who adhere to a restrictive eating style (i.e., consciously limiting food consumption to regulate weight; Van Strien et al., 1986) may perceive themselves as healthy eaters due to their efforts to eat less or better for weight management purposes. Conceptually distinguishing these different motivational drivers is crucial, as weight loss or weight maintenance goals are not exclusively health-related, and individuals may pursue them for appearance or other motivations (de Ridder et al., 2017). Therefore, an interesting avenue for future research is to explore how these variables influence the perception of being a healthy eater and whether they also impact the food purchasing choices that mothers make for their children. Additionally, investigating whether their inclusion in the extended TPB model enhances or diminishes the predictive power of self-identity would provide valuable insights into the interplay between these constructs.

## 6. Conclusion

This study aimed to evaluate the efficacy of an extended TPB model, which includes self-identity as a "healthy eater" and anticipated regret, in predicting mothers' information-seeking behavior in the context of food choices. Specifically, we focused on whether mothers are motivated to check the detailed information about the food they buy for their children. Similar to Raimondo et al. (2022), we employed a completion task to assess mothers' stated behavior and conducted an MCA to explore the structure of their responses with the aim of deriving indicators for the construction of the information-seeking behavior (latent) variable. We then used PLS-SEM to examine the factors predicting it based on the extended TPB. The findings seem to demonstrate that mothers' stated behavior is placed on a continuum of choices ranging from selecting conventional or prepackaged foods to choosing to read the food label before making a purchase. The study supported the predictive validity of the proposed TPB model in the context of this specific purchasing behavior.

Therefore, our findings have theoretical, methodological, and practical implications. Theoretically, they confirm the efficacy of the TPB framework in evaluating mothers' information-seeking behavior and emphasize the importance of integrating self-identity and anticipated regret to enhance the understanding of the decision-making process behind mothers' use of food labels, as indicator of a need for (more)

information. From a methodological perspective, the results support the utility of combining the TPB with a projective technique to capture stated behavior. This extends the work of Raimondo et al. (2022), who focused on plastic-free consumption, broadening the applicability of this approach in the food choice domain. Practically, these findings can guide future food labeling policies by identifying factors that enhance the use and, consequently, the effectiveness of food labels among mothers. Future theory-based behavior change interventions (Michie et al., 2013) aiming to promote (more) informed food choices could include enhancing mothers' attitudes toward responsible purchasing behaviors, leveraging anticipated emotions, and cultivating or emphasizing a self-identity as a "healthy eater". To achieve these goals, educational campaigns could stress the significance of reading food labels, understanding the information provided, and highlighting the health, social, and environmental consequences of informed food purchases. Furthermore, interventions could address anticipated regret through affect-based interventions (Conner et al., 2020), creating awareness of potential future regret to motivate mothers to seek information on food labels. Finally, promoting a valued self-identity as a healthy eater can strengthen the persuasive impact of messages promoting informed food choices, encouraging individuals to align their behaviors with this self-image and respond positively to persuasive messages in that direction.

However, it is important to note several limitations of this study. First, the use of a convenience sample may limit the generalizability of the results to the broader population of Italian mothers. Second, the cross-sectional design of the research restricts the ability to establish causal relationships between the variables under investigation. Third, we did not establish any inclusion criteria for children, such as dietary restrictions, characteristics, and preferences, which could potentially influence mothers' purchasing behavior for their children. Therefore, future studies should incorporate these variables within the extended TPB model to capture factors that are related not only to mothers but also to their children. Additionally, it is crucial to acknowledge that the completion task measure employed in this study is far from capturing the complexity of mothers' information-seeking behaviors related to food choices for children but only represents the initial step of the process – more specifically, the *need* for more information. Indeed, the response options provided in the task were designed to assess mothers' general inclination to read labels in detail before making a purchase. However, they do not clarify the specific information sought or the

extent to which checking such information actually leads to better-informed food choices for children. Nonetheless, although we acknowledge that information-seeking behavior and reading labels alone may not guarantee better food choices for children, we believe that examining mothers' motivations and attitudes toward using food labels as a source of information is a relevant aspect in informing food labeling policies. Furthermore, future studies could explore the purchasing behavior of fathers, as the literature has shown that they can significantly influence their partners' decisions (Fielding-Singh, 2017). Therefore, future research should delve deeper into investigating these processes, incorporating direct observation of parents' purchasing behavior in real-life contexts, to obtain a comprehensive understanding of how psycho-social factors and practical constraints shape their decision-making.

### Ethical statement

This study was performed in accordance with the Declaration of Helsinki and was approved by the Ethical Committee of the University of Naples Federico II. The data were analyzed anonymously. Before starting the questionnaire, participants were informed about the anonymity of data collection and signed the informed consent form, declaring that they were at least 18 years old.

### Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

### Data availability

Data will be made available on request.

### Acknowledgements

### Appendix

**Table A1**
Items' description and main statistics.

| Item | Item Description | Mean | Std. dev | Min | Max |
| --- | --- | --- | --- | --- | --- |
| INT.1 | I intend to check in detail how the food I choose for my children is made | 4.00 | 1.01 | 1 | 5 |
| INT.2 | I will check in detail how the food I choose for my children is made | 3.94 | 1.02 | 1 | 5 |
| INT.3 | I want to check in detail how the food I choose for my children is made | 4.02 | 1.05 | 1 | 5 |
| ATT.1 | Checking in detail how the food I choose for my children is made is … harmful/beneficial | 4.59 | 0.66 | 2 | 5 |
| ATT.2 | Checking in detail how the food I choose for my children is made is … disadvantageous/advantageous | 4.43 | 0.80 | 1 | 5 |
| ATT.3 | Checking in detail how the food I choose for my children is made is … unpleasant/pleasant | 4.01 | 1.03 | 1 | 5 |
| ATT.4 | Checking in detail how the food I choose for my children is made is … useless/useful | 4.64 | 0.62 | 1 | 5 |
| ATT.5 | Checking in detail how the food I choose for my children is made is … dangerous/safe | 4.55 | 0.69 | 2 | 5 |
| ATT.6 | Checking in detail how the food I choose for my children is made is … bad/good | 4.67 | 0.62 | 1 | 5 |
| ATT.7 | Checking in detail how the food I choose for my children is made is … unhealthy/healthy | 4.70 | 0.58 | 1 | 5 |
| ATT.8 | Checking in detail how the food I choose for my children is made is … irresponsible/responsible | 4.79 | 0.49 | 3 | 5 |
| ATT.9 | Checking in detail how the food I choose for my children is made is … unimportant/important | 4.70 | 0.58 | 3 | 5 |
| SN.1 | People important to me think I should check in detail how the food I choose for my children is made | 3.46 | 1.11 | 1 | 5 |
| SN.2 | People important to me expect me to check in detail how the food I choose for my children is made | 3.50 | 1.09 | 1 | 5 |
| SN.3 | People important to me would like me to check in detail how the food I choose for my children is made | 3.32 | 1.14 | 1 | 5 |
| SN.4 | People important to me would approve if I checked how the food I choose for my children is made | 3.87 | 0.99 | 1 | 5 |
| SN.5 | People important to me check in detail how the food they choose for their children is made | 3.32 | 1.11 | 1 | 5 |
| PBC.1 | For me, it is possible to check in detail how the food I choose for my children is made | 3.76 | 0.93 | 1 | 5 |
| PBC.2 | If I wanted to check in detail how the food I choose for my children is made, it would be simple | 3.32 | 1.09 | 1 | 5 |
| PBC.3 | Checking in detail how the food I choose for my children is made is entirely up to me | 3.51 | 1.20 | 1 | 5 |

**Table A1** (*continued*)

| Item | Item Description | Mean | Std. dev | Min | Max |
|---|---|---|---|---|---|
| PBC.4 | Checking in detail how the food I choose for my children is made is under my control | 3.50 | 1.17 | 1 | 5 |
| REG.1 | If I did not check in detail how the food I choose for my children is made, I would regret it | 3.65 | 1.04 | 1 | 5 |
| REG.2 | If I did not check in detail how the food I choose for my children is made, I would be worried | 3.59 | 1.03 | 1 | 5 |
| REG.3 | If I did not check in detail how the food I choose for my children is made, I would feel guilty | 3.52 | 1.12 | 1 | 5 |
| REG.4 | If I checked in detail how the food I choose for my children is made, I would be proud of myself | 3.87 | 0.96 | 1 | 5 |
| REG.5 | If I checked in detail how the food I choose for my children is made, I would be satisfied | 4.04 | 0.92 | 1 | 5 |
| REG.6 | If I checked in detail how the food I choose for my children is made, I would feel calm | 4.00 | 0.90 | 1 | 5 |
| SELF-ID.1 | I think of myself as someone who has a healthy eating style | 3.69 | 0.85 | 1 | 5 |
| SELF-ID.2 | I think of myself as someone who is interested in healthy eating | 3.95 | 0.83 | 1 | 5 |
| SELF-ID.3 | I think of myself as someone who is concerned about the health consequences of what I eat | 3.92 | 0.83 | 1 | 5 |
| SELF-ID.4 | I think of myself as someone who enjoys the pleasures of healthy eating | 3.90 | 0.84 | 1 | 5 |

**Notes.** INT = intention; ATT = attitude; SN = subjective norms; PBC = perceived behavioral control; REG = anticipated regret; SELF-ID = self-identity. Items adapted from Caso et al., 2016.

**Table A2**
Discriminant validity with the Fornell-Larcker criterion.

| | INT | ATT | SN | PBC | REG | SELF-ID | INFO-SEEK |
|---|---|---|---|---|---|---|---|
| INT | 1.000 | | | | | | |
| ATT | 0.214 | 1.000 | | | | | |
| SN | 0.170 | 0.143 | 1.000 | | | | |
| PBC | 0.136 | 0.072 | 0.123 | 1.000 | | | |
| REG | 0.231 | 0.235 | 0.217 | 0.163 | 1.000 | | |
| SELF-ID | 0.163 | 0.129 | 0.055 | 0.087 | 0.111 | 1.000 | |
| INFO-SEEK | 0.155 | 0.118 | 0.021 | 0.035 | 0.096 | 0.106 | 1.000 |
| *AVE* | 0.907 | 0.579 | 0.703 | 0.669 | 0.655 | 0.713 | 0.572 |

**Notes.** INT = intention; ATT = attitude; SN = subjective norms; PBC = perceived behavioral control; REG = anticipated regret; SELF-ID = self-identity; INFO-SEEK = information-seeking; AVE = average variance extracted. The square root of AVE (last row) for each latent construct should be higher than the other correlation values among the latent variables.

**Table A3**
Structural model - Multicollinearity check (Variance Inflated Factors -VIFs)

| | INT | INFO-SEEK |
|---|---|---|
| INT | | 1.301 |
| ATT | 1.434 | |
| SN | 1.377 | |
| PBC | 1.283 | 1.193 |
| REG | 1.614 | |
| SELF-ID | 1.229 | 1.230 |

**Notes.** INT = intention; ATT = attitude; SN = subjective norms; PBC = perceived behavioral control; REG = anticipated regret; SELF-ID = self-identity; INFO-SEEK = information-seeking. Values below 3.3 indicate an acceptable level of correlation among constructs.
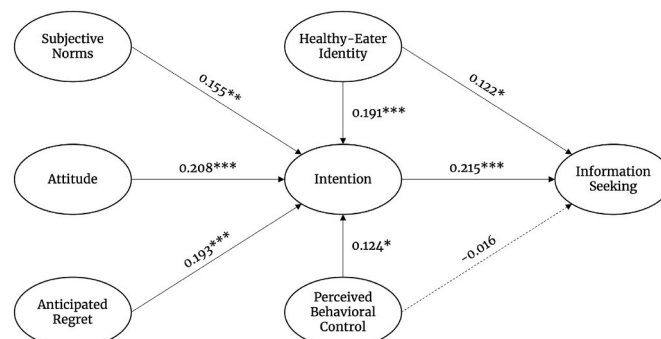


**Fig. A1.** Structural model estimate (Information Seeking represented by three dummy-coded indicators). **Notes.** Significant relationships are marked by bold arrows, and non-significant relationships by dotted line arrows (*$p$ < 0.05; **$p$ < 0.01; ***$p$ < 0.001). $R^2$ of Intention = 0.37; $R^2$ of Information Seeking = 0.07.
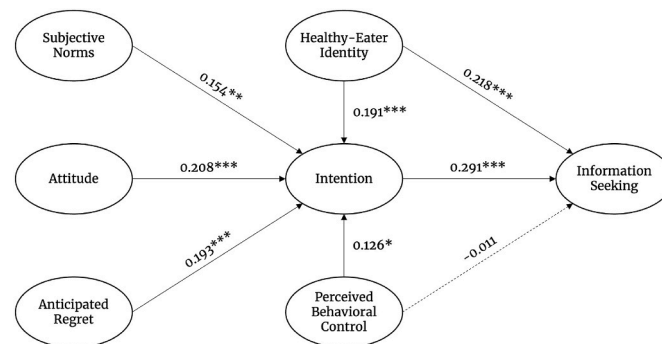
**Fig. A2.** Structural model estimate (Information Seeking represented by MCA first dimension). **Notes.** Significant relationships are marked by bold arrows, and non-significant relationships by dotted line arrows (*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$). $R^2$ of Intention = 0.37; $R^2$ of Information Seeking = 0.17.

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