The influence of innovation-adoption characteristics on consumers' trust and purchase intentions of innovative alternative proteins: A comparison between plant-based food, cultured food, and insect-based food

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Abstract

Innovation-adoption characteristics encompass the perceived attributes that are associated with the pace at which consumers adopt innovations. This study investigates the impact of innovation-adoption characteristics on consumers' trust and purchase intentions of three categories of innovative alternative protein: cultured food, plant-based food, and insect-based food. Data was collected through web-based surveys conducted in New Zealand (n= 1019) and the United Kingdom (n= 1020). Data analysis involved factor analysis and structural equation modeling. Consumers' trust and purchase intentions of the three categories of innovative alternative protein were found to be significantly influenced by several or all of the following innovation-adoption characteristics: perceived subjective incentive, perceived complexity, perceived relative advantage, perceived risk, and trialability. When examining specific food products, consumers exhibited significantly higher levels of trust and intention to purchase plant-based food products, such as plant-based meat and plant-based milk, in comparison to cultured food products, including cultured fresh meat, cultured processed meat, cultured seafood, and cell-based milk, as well as insect-based food. The study offers novel insights to the existing gap in understanding the impact of innovation-adoption characteristics on consumer adoption of innovative alternative proteins. These findings have the potential to assist stakeholders in the food industry in formulating effective promotional strategies for such products.

Keywords

Consumers; alternative protein; plant-based food; insect-based food; cultured food; cell-based food; innovation-adoption characteristics; United Kingdom; New Zealand

1. Introduction

Food innovation is transforming our food system. This claim can be supported by the rapid development of innovative alternative protein (IAP) products. Plant-based food products have become complements or substitutes for beef, pork, chicken meat, and dairy milk in consumers' daily lives (Huang, 2022; Slade, 2023). The global retail sales of plant-based meat and dairy alternatives are steadily increasing and expected to reach a value of $162 billion US dollars by 2030, up from $29.4 billion US dollars in 2020 (FAO, 2022). Furthermore, the increasingly innovative IAP product - cultured meat - has made its way into the actual market (e.g., Singapore), and its production costs have seen a remarkable reduction, plummeting from over 10,000 US dollars per pound in 2013 to approximately 10 US dollars per pound in 2021 (Brennan, Katz, Quint, & Spencer, 2021; FAO, 2022). Additional research and development efforts are underway in global academic and industry labs for more cultured food categories such as cultured seafood and cell-based milk (Ong, Johnston, Datar, Sewalt, Holmes, & Shatkin, 2021; Wageningen University & Research, 2022). Insect-based food is also emerging as an innovative alternative to farm raised animal protein, especially in regions with a long history of incorporating local insects into dishes (e.g., Asia) (Anusha Siddiqui, Bahmid, Mahmud, Boukid, Lamri, & Gagaoua, 2022). Overall, the consumption and production of these IAPs will drive the transformation of our food system to be more environmentally friendly, sustainable, food secure and humane.

Consumers play a vital role in the food system as they drive demand for the entire industry (Béné, 2020). Therefore, it is crucial for stakeholders in the IAP chain to fully understand consumer behaviour concerning these products. This understanding will enable them to develop and implement effective promotion strategies and policies to accelerate consumer adoption of these environmentally and animal-friendly food products. To achieve this goal, numerous empirical studies have been conducted and published in the past decade, exploring the influence of various factors on consumer adoption of plant-based food, cultured food, and insect-based food. These factors include perceptions, food choice motives, attitudes, sensory attributes, segmentation, socio-demographics, information, knowledge, branding, food labels, meat attachment factors, and planned behaviour (e.g. Anusha Siddiqui et al., 2022; Baum, Verbeke, & De Steur, 2022; Bryant & Sanctorum, 2021; Faber, Castellanos-Feijoó, Van de Sompel, Davydova, & Perez-Cueto, 2020; Graça, Calheiros, & Oliveira, 2015; Michel, Hartmann, & Siegrist, 2021; Van Loo, Caputo, & Lusk, 2020; Wang & Scrimgeour, 2021; Wang & Scrimgeour, 2023a; Waehrens, Faber, Gunn, Buldo, Frøst, & Perez-Cueto, 2023).

However, most previous studies treated plant-based food, cultured food, and insect-based food as sustainable food options. As a result, they primarily applied theories related to sustainable eating and general food (meat) choice, such as food choice motives, planned behaviour, and meat attachment factors. Only a few studies have explored consumer behaviour specifically related to the innovation aspect of these food categories, often using food neophobia as the main theory for innovation (e.g. Siegrist & Hartmann, 2020; Siddiqui, Khan, Farooqi, Singh, Fernando, & Nagdalian, 2022). To the best of our knowledge, there are no empirical studies that investigate the influence of consumers' innovation-adoption characteristics (IACs) on their trust and adoption of plant-based food and cultured food. Additionally, only one empirical study has been found regarding the influence of IACs on consumer adoption of insect-based food products (Shelomi, 2023). IACs refer to seven influential factors determining consumer acceptance of innovation, including subjective norm, perceived complexity, perceived compatibility, perceived relative advantage, perceived risk, trialability, and observability (Hansen, 2005; Rogers, 2003). This theory has been utilised in recent studies on consumer behaviour of various innovative food and non-food products and services, including e-commerce food shopping, blockchain food traceability, insect-based food, innovative food product as a general concept, restaurant QR code menu, mobile payment, and autonomous vehicles (Basarir & Dayan, 2022; Iskender, Sirakaya-Turk, Cardenas, & Hikmet, 2022; Sallehudin, Taraf, Mat, Yahya, Baker, Fadzil, & Nuh, 2022; Shelomi, 2015; Shelomi, 2023; Wang & Somogyi, 2018; Wang & Scrimgeour, 2022; Wang & Scrimgeour, 2023b; Wang, 2022; Yuen, Wong, Ma, & Wang, 2020).

While some studies have explored similar or relevant factors (e.g., social norm, perceived advantages, information communication, compatibility with local culture, and perceived barriers) and their influence on consumer adoption of plant-based, cultured, and/or insect-based food products, there is a lack of studies systematically examining the influence of IACs on consumer behaviour of IAP products using the seven-factor IAC construct (Aschemann-Witzel, Gantriis, Fraga, & Perez-Cueto, 2021; Bryant & Barnett, 2018; Giacalone, Clausen, & Jaeger, 2022; Menozzi, Sogari, Veneziani, Simoni, & Mora, 2017; Mancini & Antonioli, 2022; Mishyna, Chen, & Benjamin, 2020; Onwezen, Bouwman, Reinders, & Dagevos, 2021; Perez-Cueto, Rini, Faber, Rasmussen, Bechtold, Schouteten, & De Steur, 2022; Siddiqui et al., 2022; Wang & Scrimgeour, 2021). Furthermore, there is a lack of empirical studies that compare consumer behaviour between two or all the three IAP categories (plant-based food, cultured food, and insect-based food) (Giacalone & Jaeger, 2023; Gómez-Luciano, de Aguiar, Vriesekoop, & Urbano, 2019; Van Loo et al., 2020). Moreover, there is a dearth of published empirical studies that compare consumer behaviour of more specific products within these three IAP categories, such as plant-based meat, plant-based milk, cultured meat, cell-based milk, and insect-based food products.

To address the aforementioned knowledge gaps, this study explores and compares the influence of consumers' IACs on their trust and purchase intentions of plant-based food, cultured food, and insect-based food. It also compares consumers' trust and purchase intentions of seven specific IAP products, including plant-based meat, plant-based milk, cultured fresh meat, cultured processed meat, cultured seafood, cell-based milk, and insect-based food.

Consumer data was collected from two countries - New Zealand (NZ) and the United Kingdom (UK), in order to obtain more generalisable findings based on a pancultural approach, as well as to compare the specific findings for the two countries based on a cross-cultural approach (Malhotra, Hall, Shaw, & Oppenheim, 2006; Pieniak, Verbeke, Vanhonacker, Guerrero, & Hersleth, 2009). Although located in Oceania, NZ has more than 70% of the population of European ethnicity, with ancestors mostly from England, Scotland, and Ireland (Wilson, 2005). NZ and the UK are both Western developed countries with similar dietary consumption patterns and cultures that have been deeply and historically influenced by 'French Grand Cuisine,' differing from the other two of the 'Three Grand Cuisines' - 'Chinese Cuisine' and 'Turkish Cuisine' (Wang, Gellynck, & Verbeke, 2016; Wang & Scrimgeour, 2021). However, European countries such as the UK lead in both academic research and industry marketing of IAPs (e.g., academic publication volume and the sales of plant-based meat) compared to non-European regions like NZ (Onwezen et al., 2021; Wang & Scrimgeour, 2021; Wang & Scrimgeour, 2023a). From this perspective, our sampling strategy allows us to identify more generalisable findings regarding the influence of IACs on consumer trust and purchase intention of IAPs in a Western context and to compare their similarities and differences between regions with different levels of development in the IAC market (e.g., UK versus NZ).

>>>>>>>>>>>>>>>> Insert Figure 1 <<<<<<<<<<<<<<<<<

2. Theoretical background and hypotheses

2.1. Innovation-adoption characteristics

Rogers (2003) identified the five IACs that exhibited a noteworthy link with the relative pace of innovation adoption among consumers: relative advantage, compatibility, complexity, trialability, and observability. Regarding the theory of IACs used in the food sector, Shelomi

(2015) discussed the potential influence of these five IACs on consumer adoption of insect-based food in a review article. Hansen (2005) replaced trialability and observability with subjective norm and perceived risk to develop a five IAC factorial construct concerning consumer adoption of online grocery buying. This theoretical IAC factorial construct by Hansen (2005) was seen as unsuitable for real consumer samples concerning their adoption of business-to-consumer food shopping, online-to-online food delivery service, and blockchain food traceability, and an adjusted three-factor IAC construct was subsequently developed based on it (perceived incentives, perceived complexity, and perceived risk) in recent empirical studies (Wang & Somogyi, 2018; Wang & Scrimgeour, 2022; Wang & Scrimgeour, 2023b). Six and seven of the IACs, based on the original IAC factorial constructs by Rogers (2003) and Hansen (2005), were involved in two empirical studies to explore their influence on the adoption of insect-based food and innovative food as a general concept (Basarir & Dayan, 2022; Shelomi, 2023). However, to our knowledge, there is a lack of studies examining whether the original seven-factor IAC construct aligns with real consumer samples, especially regarding the adoption of IAPs: subjective norm and perceived risk, relative advantage, compatibility, complexity, trialability, and observability.

Subjective norm refers to the perceived degree of peer pressure to use an innovative product or service (Hansen, 2005). This factor has been frequently explored in consumer adoption of IAPs within the factorial construct of planned behaviour and has been recognised as having a significant influence on consumer adoption of IAPs and more sustainable eating patterns (e.g., plant-based diets) (Onwezen et al., 2021; Wang & Scrimgeour, 2021).

Perceived compatibility represents the perceived alignment of an innovative product or service with an individual's lifestyle and values (Hansen, 2005; Rogers, 2003). The consumption of IAPs is obviously incompatible with mainstream lifestyle and values regarding the consumption of animal-raising products, especially in developing countries that are experiencing a quick increase in animal product demand due to the Westernization of dietary consumption patterns (Graça et al., 2015; Wang & Scrimgeour, 2021). For example, meat attachment factors still have a significantly negative influence on consumer adoption of a more plant-based diet in both developed and developing countries (Graça et al., 2015; Wang & Scrimgeour, 2021). Take another example, Van Loo et al. (2020) indicate that even with a substantial price reduction, plant-based and cultured alternatives could scarcely capture a significant market share from the animal-raising beef. Therefore, compatibility plays a key role in promoting IAPs within societies that adhere to mainstream lifestyles and values, which represent a much larger market for animal-raising products.

Perceived relative advantage refers to the perceived superiority of an innovative product or service compared to the relevant conventional product or service (Hansen, 2005; Rogers, 2003). Several studies have indicated the benefits of promoting the consumption of IAPs concerning food security, the environment, and animal welfare, and have found empirical evidence supporting the significant influence of these factors on consumer adoption of IAPs (Aschemann-Witzel et al., 2021; Bryant & Barnett, 2018; Giacalone et al., 2022; Menozzi et al., 2017; Mishyna et al., 2020; Onwezen et al., 2021; Perez-Cueto et al., 2022; Wang & Scrimgeour, 2021).

Perceived risk is the perceived potential loss or harm associated with the use of an innovative product or service (Hansen, 2005). IAPs are in the introduction or growth stage of the product life cycle, which has barriers to mass consumer adoption when compared to its alternatives of traditional animal-raised products, which are in the maturity stage of the product life cycle (Levitt, 1965). Some significant barriers are recognised in previous studies that have a significantly negative influence on consumer adoption of IAPs, such as the unacceptable sensory attributes and nutritional values of plant-based meat, and the high price and unavailability of cultured meat (Bryant & Barnett, 2018; Mancini & Antonioli, 2022;

Giacalone et al., 2022; Menozzi et al., 2017; Mishyna et al., 2020; Onwezen et al., 2021). All these barriers may be addressed in the near future as the market size grows larger and new production technologies emerge, but currently, they do influence consumer adoption of IAPs.

Trialability refers to the perceived ease or availability of trying or testing an innovative product or service before actual adoption (Rogers, 2003). For any product in the introduction or growth stage of the product life cycle, consumers' trial experience will have a significant influence on their acceptance of it (Levitt, 1965; Rogers, 2003; Shelomi, 2015). This can be evidenced by practical successful examples in IAP promotion. Participants, after taking part in entomophagy trial events, predominantly provide positive feedback on consuming insect-based food in the United States (Shelomi, 2015). Consumers also give positive feedback about their actual eating experience of cultured chicken meat in Singapore (Marsh, 2023).

Perceived complexity is the perceived difficulty in using or understanding an innovative product or service (Hansen, 2005; Rogers, 2003). IAPs, especially cultured food and insect-based food, involve significantly different production processes and technologies compared to traditional animal-raising food products. This may lead to issues in consumers' understanding of these innovative meat and dairy products and the technologies associated with them, especially among older and less-educated individuals who are less inclined to adopt IAPs compared to their younger and more highly educated counterparts (Bryant & Barnett, 2018; Onwezen et al., 2021; Vainio, 2019; Wang & Scrimgeour, 2023a). Regarding cultured meat, scholars suggest highlighting the similarities between cultured meat and animal-raised meat, rather than the production technologies and processes, to increase consumers' willingness to adopt cultured meat products (Siegrist, Sütterlin, & Hartmann, 2018; Siegrist & Hartmann, 2020). Scholars also raise concerns about the use of insect-based ingredients in cooking due to the limited availability of insect recipes (Shelomi, 2015).

Observability represents the perceived confidence in communicating with or observing others regarding the use, benefits, and outcomes of an innovative product or service (Basarir & Dayan, 2022; Rogers, 2003; Yuen et al., 2020). Learning and familiarising consumers themselves with the adoption of an innovative product and service through observation or communication with others can enhance their trust in it, given that the public is interconnected through a social network (Basarir & Dayan, 2022; Yuen et al., 2020). Similarly, scholars emphasise that receiving relevant information from others (e.g., through training, education, or a familiar environment) is a vitally important approach for consumers to acquaint themselves with and accept IAPs (Shelomi, 2015; Vainio, 2019).

2.2. Trust and purchase intention

Trust refers to consumers' willingness to believe that a trustee, product, or service will not cause harm or have negative consequences (Hong & Cha, 2013; Yuen et al., 2020). Consumers' trust can significantly influence their adoption of food, especially for new food (Begho, Odeniyi, & Fadare, 2023). In the case of IAPs, consumer trust has a significantly positive influence on the adoption in general (Onwezen et al., 2021).

Purchase intention refers to consumers' inclination or willingness to actually purchase a product or service (Prentice, Han, Hua, & Hu, 2019). It represents the conative stage in the consumer decision-making process for choice of a food product, following the cognitive and affective stages which involve recognising, comparing, and building preferences among different alternatives (Verbeke, 2000). The consumer decision-making process for food choice is influenced by several macro, personal, and product-related factors such as marketing stimuli, the economic environment, socio-cultural background, socio-demographics, psychological factors, and food properties (e.g., price, credence attributes, and sensory attributes) (Verbeke, 2000). Numerous studies have identified significantly positive or negative influences of various psychological factors (e.g., food choice motives, planned behaviour, and meat attachment factors) on consumers' purchase intentions for IAPs (e.g. Graça et al., 2015; Onwezen et al., 2021; Van Loo et al., 2020; Wang & Scrimgeour, 2021; Wang & Scrimgeour, 2023a). IACs play a significant role as psychological factors in consumer adoption of innovative products and services (Hansen, 2005; Rogers, 2003). A handful of studies have highlighted the significant influences of IACs on purchase intentions for innovative food service and product (e.g., e-commerce food shopping, blockchain food traceability and insect-based food) (Shelomi, 2023; Wang & Somogyi, 2018; Wang & Scrimgeour, 2022; Wang & Scrimgeour, 2023b).

2.3. Hypotheses

As shown in Figure 1, consumers' IACs are expected to have significant influence on their trust and purchase intentions of plant-based food, cultured food, and insect-based food. These hypotheses are based on relevant empirical findings. Previous studies have indicated the significant influence of several IACs on consumers' trust and/or purchase intention of innovative food and non-food products and services, including e-commerce food shopping, blockchain food traceability, insect-based food, innovative food product as a general concept, restaurant QR code menu, mobile payment, and autonomous vehicles (Basarir & Dayan, 2022; Iskender et al., 2022; Sallehudin et al., 2022; Shelomi, 2023; Wang & Somogyi, 2018; Wang & Scrimgeour, 2022; Wang & Scrimgeour, 2023b; Wang, 2022; Yuen et al., 2020). Furthermore, previous studies have also revealed the positive or negative impacts of IACs such as social norms, perceived relative advantages (e.g., enhancing food security, being environmentally and animal-friendly), and perceived risks (e.g., unavailability, high cost, and unacceptable sensory attributes and nutritional values) on consumer adoption of plant-based food, cultured food, and/or insect-based food (Giacalone et al., 2022; Menozzi et al., 2017; Mishyna et al., 2020; Perez-Cueto et al., 2022; Wang & Scrimgeour, 2021). Additionally, trust plays a significant mediating role in predicting purchase intention of a product or service, as highlighted by previous studies (Hong & Cha, 2013; Yuen et al., 2020). Therefore, the following hypotheses have been formulated in this study:

H1a. Consumers' IACs have significant influence on their purchase intentions of cultured food.

H1b. Consumers' IACs have significant influence on their purchase intentions of plant-based food.

H1c. Consumers' IACs have significant influence on their purchase intentions of insect-based food.

H2a. Consumers' IACs have significant influence on their trust of cultured food.

H2b. Consumers' IACs have significant influence on their trust of plant-based food.

H2c. Consumers' IACs have significant influence on their trust of insect-based food.

H3a. Consumers' trust of cultured food has a significant influence on their purchase intention of cultured food.

H3b. Consumers' trust of plant-based food has a significant influence on their purchase intention of plant-based food.

H3c. Consumers' trust of insect-based food has a significant influence on their purchase intention of insect-based food.

H4a. Consumers' trust of cultured food mediates the relationship between consumers' IACs and their purchase intention of cultured food.

H4b. Consumers' trust of plant-based food mediates the relationship between consumers' IACs and their purchase intention of plant-based food.

H4c. Consumers' trust of insect-based food mediates the relationship between consumers' IACs and their purchase intention of insect-based food.

3. Methods and materials

3.1. Participants and procedures

Quantitative data were collected from November to December 2022 through web-based surveys in NZ and the UK. A questionnaire was developed in English and distributed through a reputable international research agency using its consumer sample panels in both countries, with a quota sampling method using gender, age, and residential area as dimensions for quota stratification. A soft launch was conducted in NZ (n=60) and the UK (n=40), utilizing the same sample panels. The questionnaire was not further modified, and the soft launch datasets were combined with the final datasets due to the acceptable scale reliabilities observed in the soft launch data analysis. A total of 2,039 valid samples were obtained, with 1,019 from NZ and 1,020 from the UK. Table 1 shows the socio-demographic distribution of the sample.

Before answering the survey questions, participants were asked to read descriptions about IAP pertaining to sustainable eating, including information about seven specific IAP products: "*Sustainable eating has become more important due to its anticipated positive influence on the environment (e.g. reducing GHG emissions and resource consumption), food security（e.g. providing alternative resources of food supply), and animal welfare（e.g. reducing slaughtering and livestock harm). In recent times, some innovative sustainable food products have been developed to promote sustainable eating, these include*:

- *Plant-based meat: Simulated meat made of soy, flour or other plant-based protein.*
- *Cultured fresh meat: Fresh meat grown from animal cells, without the need to raise animals in production. These include cultured pork, cultured beef, cultured lamb and cultured chicken meat.*
- *Cultured processed meat products: Processed meat products made of cultured meat ingredients without the need to raise animals in production such as cultured burger meat and cultured meat balls.*

- *Cultured seafood: Seafood grown from seafood cells without the need to raise seafood such as cultured salmon and cultured scallop.*
- *Insect-based food: Food products partly or fully made of edible insects.*
- *Plant-based milk: Milk alternatives made from almonds, oats, soybeans or other plant-based ingredients.*
- *Cell-based milk: Milk made from milk-cell-based protein without the need to raise cows for milk production.*"

>>>>>>>>>>>>>>> Insert Table 1 <<<<<<<<<<<<<<<<

>>>>>>>>>>>>>>> Insert Table 2 <<<<<<<<<<<<<<<<

3.2. Measures

Table 2 indicates the measurement items used in this study. Consumers' IACs were measured by 22 items respectively for cultured food (C), plant-based food (P), and insect-based food (I) (66 items in total). The items of subjective norm, compatibility, complexity, trialability, and observability were developed from the IAC items in previous studies and adjusted into the text expressions for the consumption of cultured food, plant-based food, and insect-based food (Hansen, 2005; Wang & Somogyi, 2018; Wang & Scrimgeour, 2022; Wang & Scrimgeour, 2023b; Yuen et al., 2020). The names of the products or services in the original measurement items were replaced by the three IAP category names respectively. Furthermore, those items of perceived relative advantages and perceived risks were developed based on the previous studies regarding the benefits (e.g., environment-friendly, enhance food security, reduce climate chage, and animal-friendly) and risks (e.g., high price, unavailable, and issues in nutrients and sensory attributes) for the consumption of plant-based food, cultured food, and/or insect-based food (Giacalone et al., 2022; Menozzi et al., 2017; Mishyna et al., 2020; Perez-

Cueto et al., 2022). The final version of the measurement item texts was reviewed and agreed upon by four scholars who are renowned experts and have conducted numerous empirical consumer studies in agribusiness, agricultural economics, and food science. Finally, each of the 66 items was measured by a seven-point Likert agreement scale, ranging from 1 = totally disagree to 7 = totally agree (Wang & Scrimgeour, 2023b).

The measurement items of trust and purchase intentions were derived from previous studies that examined consumers' trust and purchase intentions of innovative products or services, using the same seven-point Likert agreement scale with the IAC items as the response categories (Wang & Somogyi, 2018; Wang & Scrimgeour, 2022; Wang & Scrimgeour, 2023b; Yuen et al., 2020). Seven items each were developed to explore consumers' trust and purchase intentions of seven specific IAP products which were recognised in recent publications, including plant-based meat, plant-based milk, cultured fresh meat, cultured processed meat, cultured seafood, cell-based milk, and insect-based food (Anusha Siddiqui et al., 2022; Giacalone & Jaeger, 2023; Gómez-Luciano et al., 2019; Van Loo et al., 2020; Wageningen University & Research, 2022).

3.3. Data analysis

The survey data were analysed using the statistical software package IBM SPSS and AMOS 29. Descriptive analysis (mean values) was conducted to identify consumers' trust and purchase intentions of the seven specific IAP products in the pooled sample and the samples from NZ and the UK. Independent sample t-tests were then performed to determine significant differences between the two countries. Previous empirical studies have indicated that the original IAC factorial construct did not fit well with real consumer samples regarding their adoption of various innovative products and services (Wang & Somogyi, 2018; Wang & Scrimgeour, 2022; Wang & Scrimgeour, 2023b). Therefore, an exploratory factor analysis (EFA) was conducted to identify an adjusted IAC factorial construct that was suitable for the real consumer sample in relation to the adoption of an innovative product or service. In this study, separate EFAs were performed for cultured food, plant-based food, and insect-based food based on both the pooled sample and the samples from the two countries. The EFA utilised the maximum likelihood estimation method and varimax rotation. Additionally, structural equation models (SEMs) were developed to examine the association between consumers' IACs, trust, and purchase intentions of cultured, plant-based, and insect-based food products. Path analysis and multi-group path analysis were employed within the SEMs to identify significant IACs that influenced consumers' trust and purchase intentions of the three IAP categories in the pooled sample and the samples from the two countries (Collier, 2020). To examine the mediation effect of trust on the relationships between the IACs and purchase intentions of the three IAP categories, a bootstrap sample of 5,000 was used for analysis in the pooled sample and the samples from the two countries (Collier, 2020).

>>>>>>>>>>>>>>> Insert Table 3 <<<<<<<<<<<<<<<<

4. Results

4.1. Descriptive analysis

As shown in Table 3, concerning participants' trust of the three IAP categories, the mean values for plant-based food (TRU-P, all above or around 5) were much higher than those for cultured food (TRU-C, all around 4.2) and insect-based food (TRU-I/TRU5 scored on the negative anchor of answer categories below 4) in the pooled sample and the samples from NZ and the UK. In terms of their trust of the seven specific IAP products, the highest mean values were found for plant-based milk (TRU6, all above 5), followed by plant-based meat (TRU1, all above 4.7), in both the pooled sample and the samples from the two countries. The mean values of trust of the two specific plant-based food products (TRU6 and TRU1) were much higher than those of the insect-based food product (TRU5, below 4) and the four specific cultured food products, cultured fresh meat (TRU2), cultured seafood (TRU4), cell-based milk (TRU7), and cultured processed meat (TRU3), which ranged from 4.13 to 4.39 in the pooled sample or the samples from the two countries. Among the four specific cultured food products, the highest mean values of trust were found for cultured fresh meat (TRU2) in both the pooled sample and the samples from the two countries. Furthermore, independent sample t-tests indicated significant differences in participants' trust of plant-based food category (TRU-P), insect-based food (TRU-I/ TRU5), and plant-based meat (TRU1) between the samples from the two countries, with the mean values in the UK sample being higher than those in the NZ sample.

In terms of participants' purchase intentions of the three IAP categories, plant-based food (PI-P) had the highest mean values and was the only IAP category where the mean values fell on the positive anchor of the answer categories in both the pooled sample and the samples from NZ and the UK. The mean values of purchase intentions of insect-based food (PI-I/ PI5) were much lower than those of the other two food categories (below 3) in both the pooled sample and the samples from the two countries. Regarding their purchase intentions of the seven specific IAP products, plant-based milk (PI6) had the highest mean values, followed by plant-based meat (PI1), in both the pooled sample and the samples from the two countries. Cultured fresh meat (PI2) had mean scores slightly higher than or close to 4 in the pooled and sub-samples. The mean values of all other specific IAP products (PI4, PI7 and PI3) fell on the negative anchor of the answer categories. Additionally, independent sample t-tests indicated significant differences in participants' purchase intentions of plant-based food category (PI-P), plant-based milk (PI6), plant-based meat (PI1), and cell-based milk (PI7) between the samples from the two countries, with the mean values in the UK sample being higher than those in the NZ sample.

The Cronbach's α values of the items for the two specific plant-based food products and the four specific cultured food products were high (above or close to 0.8) in both the pooled sample and the samples from NZ and the UK (Pieniak et al., 2009). Therefore, these items were considered as observed variables for the latent variables of the two IAP categories - plant-based food (two observed items) and cultured food (four observed items) in the further data analysis of this study. As for the IAP category - insect-based food, it was represented by a single observed item of insect-based food products in the subsequent analyses.

4.2. Exploratory factor analysis

Table 4 to 6 indicate the results of the EFAs that were conducted to explore the adjusted factorial constructs of the 22 IAC measurement items, respectively for cultured food, plant-based food, and insect-based food based on the pooled sample and the samples from the two countries. An adjusted five-factorial construct was identified from the EFAs for all three food categories in either the pooled sample or the samples of two countries: perceived subjective incentive, perceived relative advantage, perceived complexity, trialability and perceived risk.

The items of the three IAC factors in the old factorial construct (subjective norm, perceived compatibility, and observability) loaded on a new factor in the adjusted factorial constructs for all three IAP categories. This was partly in line with the findings from previous studies regarding consumers' adjusted IAC factorial constructs for innovative products/services, such as online food shopping and blockchain food traceability (Wang & Somogyi, 2018; Wang & Scrimgeour, 2022; Wang & Scrimgeour, 2023b). These studies all included five original IAC factors (subjective norm, perceived complexity, perceived compatibility, perceived relative advantage, and perceived risk) and recognised a new IAC factor (perceived incentive) which combined the old IAC factors (subjective norm, perceived compatibility, and perceived relative advantage) (Wang & Somogyi, 2018; Wang & Scrimgeour, 2022; Wang & Scrimgeour, 2023b). Perceived incentive reflected the incentives that drove consumers' adoption of an innovative product (Wang & Somogyi, 2018).

The new IAC factor in our study combined the three original IAC factors (subjective norm, perceived compatibility, and observability), which also reflected the incentives driving consumer adoption of the three IAP categories. Meanwhile, the three IAC factors were related to consumers' subjective incentives (e.g., peer pressure, the perceived compatibility with their lifestyles, and the confidence to communicate with others), rather than the objective incentives based more on the product/service (e.g., perceived relative advantages, and trialability). From that perspective, the new IAC factor was named perceived subjective incentive (PSI).

Due to low factor loadings (< 0.5 on any factor) or high cross-loadings (> 0.35 on two or more factors), five IAC items for cultured food (OB-C1, PRA-C2, PCL-C3, PR-C3, and PR-C4), six IAC items for plant-based food (OB-P1, OB-P3, PCP-P3, PRA-P2, PR-P3, and PR-P4), and five IAC items for insect-based food (OB-I1, OB-I3, PCP-I3, PR-I3, and PR-I4) were excluded for further analysis in the study (Pieniak et al., 2009). The decision was based on the results of the EFA conducted with the pooled sample. This pancultural approach allows us to provide more generalisable IAC factorial constructs and SEMs for the subsequent path analyses (see Section 4.3), which are normally founded on a pancultural data structure, than that from the specific country samples (Malhotra et al., 2006; Pieniak et al., 2009). Simultaneously, using the same IAC items in the subsequent multi-group path analyses (see Section 4.3) for both country samples enables the comparison of significant paths between the two country groups.

Tables 7 to 9 indicate the values of Cronbach's α and the correlation matrix, respectively, for the new IAC factors concerning the three IAP categories. These factors have excluded the aforementioned IAC items. Internal reliabilities of these new IAC factors were acceptable, with all Cronbach's α values higher than 0.6, and the correlation coefficients lower than 0.7 between the new IAC factors for all three IAP categories, both in the pooled sample and the samples from the two countries (Pieniak et al., 2009).

>>>>>>>>>>>>>>> Insert Table 4 <<<<<<<<<<<<<<<<<

>>>>>>>>>>>>>>> Insert Table 5 <<<<<<<<<<<<<<<<<

>>>>>>>>>>>>>>> Insert Table 6 <<<<<<<<<<<<<<<<<

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4.3. Structural equation modelling

As indicated in Figure 2, three SEMs were built to associate consumers' IACs with their trust and purchase intention of cultured food, plant-based food, and insect-based food. As shown in Tables 10 to 12, all three SEMs performed well for the path analysis with the pooled sample, and the multi-group path analysis with the samples of NZ and the UK, as the values for the goodness-of-fit indices were all within acceptable limits for the SEMs and restricted models: the CFI values higher than 0.9 and the RMSEA values lower than 0.08 (Pieniak et al., 2009). The acceptable fit for all restricted models in the multi-group path analyses is a sufficient indicator for justifying the decision to pool the data from the two countries, in order to detect significant paths between the IAC factors and the trust and purchase intentions of the three IAP categories (Pieniak et al., 2009; Wang, De Steur, Gellynck, & Verbeke, 2015).

As shown in Table 10, consumers' trust of cultured food was significantly and positively linked to perceived subjective incentive and trialability, while being significantly and negatively linked to perceived complexity in either the pooled sample or the samples of NZ and the UK. Furthermore, their purchase intention of cultured food was significantly and positively associated with perceived subjective incentive and trust, while being significantly and negatively associated with perceived relative advantage and perceived complexity in both the pooled sample and the samples of the two countries. The purchase intention was also significantly and positively linked to trialability in the samples of the two countries. Additionally, perceived subjective incentive and trialability had a significant and positive indirect influence on the purchase intention through the trust of cultured food in both the pooled sample and the samples of the two countries. Therefore, H1a, H2a, and H4a are partially supported. H3a is supported.

As indicated in Table 11, consumers' trust of plant-based food was significantly and positively linked to perceived subjective incentive, perceived relative advantage, and trialability, while being significantly and negatively linked to perceived complexity in either the pooled sample or the samples of NZ and the UK. The trust was also significantly and positively linked to perceived risk in the pooled sample. Furthermore, their purchase intention of plant-based food was significantly and positively associated with perceived subjective incentive and trust in both the pooled sample and the samples of the two countries. The purchase intention was also significantly and negatively linked to perceived relative advantage in the pooled sample and the NZ sample, and was significantly and positively linked to perceived complexity in the NZ sample. Additionally, perceived subjective incentive, perceived relative advantage, and trialability had a significantly and positively indirect influence, while perceived complexity had a significantly and negatively indirect influence on the purchase intention through the trust of plant-based food in both the pooled sample and the samples of the two countries. Perceived risk had a significantly and positively indirect influence on the purchase intention through the trust of plant-based food in the pooled sample. Therefore, H1b, H2b, and H4b are partially supported. H3b is supported.

As shown in Table 12, consumers' trust of insect-based food was significantly and positively linked to perceived subjective incentive, perceived relative advantage, and trialability, while being significantly and negatively linked to perceived complexity in either the pooled sample or the samples of NZ and the UK. Furthermore, their purchase intention of insect-based food was significantly and positively associated with perceived subjective incentive, trialability, and trust, while being significantly and negatively associated with perceived complexity in both the pooled sample and the samples of the two countries. Additionally, perceived subjective incentive, perceived relative advantage, and trialability had a significantly and positively indirect influence, while perceived complexity had a significantly and negatively indirect influence on the purchase intention through the trust of insect-based food in both the pooled sample and the samples of the two countries. Therefore, H1c, H2c, and H4c are partially supported. H3c is supported.

>>>>>>>>>>>>>>> Insert Figure 2 <<<<<<<<<<<<<<<<<

>>>>>>>>>>>>>>> Insert Table 10 <<<<<<<<<<<<<<<<<

>>>>>>>>>>>>>>> Insert Table 11 <<<<<<<<<<<<<<<<<

>>>>>>>>>>>>>>> Insert Table 12 <<<<<<<<<<<<<<<<<

5. Discussion

5.1. Consumers' trust and purchase intention of different IAP products

In general, consumers in the pooled sample, as well as in the samples from NZ and the UK, exhibit a much stronger purchase intention and trust of plant-based food compared to cultured food and insect-based food. This finding aligns with previous research indicating that consumers have a higher acceptance of plant-based IAP than other IAP categories such as cultured and insect-based proteins (Onwezen et al., 2021). One possible explanation for this is that plant-based food enjoys a larger market size than insect-based and cultured food in the current market (Gómez-Luciano et al., 2019; FAO, 2022). Consequently, consumers more easily encounter and become familiar with plant-based food products in their daily lives. This familiarity serves as a foundation for building trust and enhancing purchase intention, which is not the case for cultured and insect-based food.

Among the three IAP categories, consumers display the weakest purchase intention and trust of insect-based food, as evidenced by both the pooled samples and samples from the two countries. This finding is consistent with previous research highlighting the lowest acceptance level of edible insects among IAP categories. Insect-based food products are often perceived as disgusting by consumers, particularly those in Western countries (Ardoin & Prinyawiwatkul, 2021; Onwezen et al., 2021).

Regarding cultured food products, consumers in both the pooled sample and the samples from the two countries exhibit a stronger purchase intention and trust of cultured fresh meat compared to other cultured food products, such as cultured processed meat, cultured seafood, and cell-based milk. Previous studies have identified perceived unnaturalness as a significant barrier to consumer adoption of cultured meat (Bryant & Barnett, 2018; Siegrist & Hartmann, 2020). Our findings are in line with this, as consumers are more inclined to trust and purchase cultured fresh meat, which possesses a clear attribute of naturalness - 'fresh' - when compared to the other three cultured food products examined in this study.

When considering the differences between the two countries, UK consumers demonstrate significantly stronger trust and/or purchase intention of plant-based food, insect-based food, and cell-based milk, as well as slightly stronger trust and purchase intention of most other specific IAP products, in comparison to NZ consumers. This discrepancy may be attributed to the fact that European consumers have more exposure to and opportunities to be informed about or consume the latest IAP products than consumers in other regions, such as

NZ. Europe stands as the leading region in both academic research and industry marketing of IAPs (Onwezen et al., 2021; Wang & Scrimgeour, 2021; Wang & Scrimgeour, 2023a).

5.2. The influence of IACs on the trust and purchase intention of IAP

This study represents the first exploration of the influence of IACs on consumer behaviour of cultured food, plant-based food, and insect-based food, employing the original seven-factorial IAC construct: subjective norm, perceived complexity, perceived compatibility, perceived relative advantage, perceived risk, trialability, and observability. Previous studies have only examined a subset of these seven IACs when predicting consumer behaviour of innovative products or services (Hansen, 2005; Sallehudin et al., 2022; Wang & Somogyi, 2018; Wang & Scrimgeour, 2022; Wang & Scrimgeour, 2023b; Yuen et al., 2020). Additionally, this study identified a new IAC factor, perceived subjective incentive, which combines three of the original IAC factors: social norm, perceived compatibility, and observability. This finding partially aligns with previous studies that identified a new IAC factor, perceived incentive, which combines the original IAC factors of subjective and objective incentives: subjective norm, perceived compatibility, and perceived relative advantage (Wang & Somogyi, 2018; Wang & Scrimgeour, 2022; Wang & Scrimgeour, 2023b).

Perceived subjective incentive demonstrates a significantly positive and direct influence on consumers' trust and purchase intention, as well as a significantly positive and indirect influence (via trust) on the purchase intention for all three IAP categories: cultured food, plant-based food, and insect-based food. These findings hold true for both the pooled sample and the samples from NZ and the UK. They correspond to previous research on the significant and positive influence of the original or adjusted IACs, such as perceived incentive, social norm, perceived compatibility, and/or observability, on consumer behaviour of various innovative products or services, including e-commerce food shopping, blockchain food traceability, mobile payment, and autonomous vehicles (Wang & Somogyi, 2018; Wang &

Scrimgeour, 2022; Wang & Scrimgeour, 2023b; Wang, 2022; Yuen et al., 2020). The findings also align with studies that identified influential factors on consumer adoption of IAPs, including social norms, compatibility with local culture, and information communication (Wang & Scrimgeour, 2021; Onwezen et al., 2021). However, the findings contradict a recent study by Shelomi (2023), which suggests that observability does not significantly influence consumer adoption of edible insects.

Trialability exhibits a significantly positive and direct influence on consumers' trust, as well as a significantly positive and direct or indirect influence (via trust) on their purchase intention for all three food categories, in both the pooled sample and the samples from the two countries. This finding aligns with previous research demonstrating the significantly positive influence of trialability on consumer adoption of innovative products or services (Iskender et al., 2022; Sallehudin et al., 2022; Wang, 2022; Yuen et al., 2020). However, Shelomi (2023) indicates a non-significant influence of trialability on consumer adoption of edible insects, contrasting with the findings of this study that suggest trialability as a significant driver of consumers' trust and purchase intention of cultured food, plant-based food, and insect-based food.

Perceived complexity demonstrates a significantly negative and direct influence on consumers' trust, as well as a significantly negative and direct or indirect influence (via trust) on their purchase intention of cultured food and insect-based food, in both the pooled sample and the samples from the two countries. While perceived complexity has a significantly negative direct influence on consumers' trust and an indirect influence (via trust) on their purchase intention of plant-based food, it has a significantly positive direct influence on consumers' purchase intention of plant-based food in the NZ sample and no significant direct influence on the purchase intention of plant-based food in the pooled sample and the UK sample. However, perceived complexity has an overall (both directly and indirectly) negative and significant influence on the purchase intention of plant-based food in the pooled sample and the samples from the two countries. The significant and negative influence of perceived complexity on trust and purchase intention of the three IAP categories aligns with previous findings on the negative influence of this IAC factor on consumer adoption of innovative products or services (Basarir & Dayan, 2022; Iskender et al., 2022; Sallehudin et al., 2022; Wang & Somogyi, 2018; Wang & Scrimgeour, 2022; Wang & Scrimgeour, 2023b; Wang, 2022; Yuen et al., 2020). Additionally, unlike cultured food and insect-based food, perceived complexity has a weak direct influence on consumers' purchase intention of plant-based food. This may be due to the fact that plant-based food currently has a larger market size and sales, and consumers are more familiar with its consumption, as well as its purchase and processing convenience, compared to cultured food and insect-based food (FAO, 2022). Therefore, perceived complexity no longer significantly influence their purchase intention of plant-based food, which is a familiar and commonly available food in their surroundings.

Perceived relative advantage demonstrates a significantly positive and direct influence on consumers' trust, as well as a significantly positive and indirect (via trust) or total (combined direct and indirect) influence on their purchase intentions of plant-based food and insect-based food. These findings align with previous research highlighting the significantly positive impacts of this IAC factor on consumer adoption of innovative products or services (Basarir & Dayan, 2022; Iskender et al., 2022; Sallehudin et al., 2022; Wang & Somogyi, 2018; Wang & Scrimgeour, 2022; Wang & Scrimgeour, 2023b; Wang, 2022; Yuen et al., 2020). The results also support the significant role of sustainability-related issues, such as food security, the environment, and animal welfare, in driving consumer adoption of IAPs, including cultured food, plant-based food, and insect-based food (Aschemann-Witzel et al., 2021; Bryant & Barnett, 2018; Giacalone et al., 2022; Menozzi et al., 2017; Mishyna et al., 2020; Onwezen et al., 2021; Perez-Cueto et al., 2022; Wang & Scrimgeour, 2021). However, in this study, perceived relative advantage is found to have only a significantly negative direct influence on consumers' purchase intention of cultured food. This observation may reflect the unfamiliarity of consumers with the relative advantages of this conceptual product, which is not commonly available in their daily lives. As a result, perceived relative advantage acts as a barrier to its adoption, rather than playing a significantly positive role in driving the adoption of the other two IAP categories—plant-based food and insect-based food—which are currently accessible in the real world.

Perceived risk does not significantly influence consumers' trust and purchase intention of cultured food and insect-based food, either in the pooled sample or the samples from the two countries. However, it does have a significantly positive direct influence on consumers' trust and a significantly positive indirect influence (via trust) on their purchase intention of plant-based food, but with a much weaker standardised regression weight compared to other significant IAC factors for trust and purchase intention (see Table 8). Many studies have identified several risks and barriers, such as sensory attributes, nutritional values, price, and availability, that negatively influence consumer adoption of IAPs (Bryant & Barnett, 2018; Mancini & Antonioli, 2022; Giacalone et al., 2022; Menozzi et al., 2017; Mishyna et al., 2020; Onwezen et al., 2021). However, recent IAC-related studies indicate that perceived risk does not significantly influence consumer adoption of innovative products or services, due to consumers' unfamiliarity with specific risks related to the use of such innovative products or services (Wang & Somogyi, 2018; Wang & Scrimgeour, 2022; Wang & Scrimgeour, 2023b). The findings of this study, in general, align with this viewpoint. Furthermore, the perceived risk factor included two observed items related to the issue of short supply in the structural equation models (see Figure 2 and Table 2). Hence, the significantly positive influence of perceived risk on trust and purchase intention may indicate the significant role of scarcity in driving consumer adoption of plant-based food.

Trust demonstrates a significantly positive influence on the purchase intention of all three IAP categories, in both the pooled sample and the samples from the two countries. This is in line with previous findings highlighting the significant role of consumer trust in predicting their purchase intention of products or services (Hong & Cha, 2013; Yuen et al., 2020). Furthermore, the influence is much stronger for cultured food and plant-based food compared to insect-based food. Previous studies indicate that while cultured food, plant-based food, and insect-based food are all considered sustainable and innovative food resources with a positive influence on the environment, insect-based food has the lowest acceptance level among consumers, especially in Western countries, due to their unfamiliarity with and aversion to entomophagy (Ardoin & Prinyawiwatkul, 2021; Anusha Siddiqui et al., 2022; Onwezen et al., 2021). The findings of this study may reflect the disparity between consumers' attitudes towards insect-based food and their actual adoption, where trust struggles to translate into a willingness to purchase insect-based food.

5.3. Limitations and recommendations

Nevertheless, this study has identified limitations. Firstly, several original IAC items were excluded from further analysis based on the outcomes of the EFA carried out with the pooled sample, rather than the EFA relying on the samples from both countries, which displayed minor disparities in the excluded IAC items. This approach aligns with our pancultural strategy for generating more generalisable and comparable IAC factorial constructs and SEMs in the path and multi-group path analyses. While a future study with pertinent cross-cultural objectives could independently conduct path analyses using IAC factorial constructs and SEMs developed from the outcomes of the EFA in specific countries.

Secondly, the adjusted IAC factorial constructs were obtained by using EFA with all our data. The same dataset should not be used for Confirmatory Factor Analysis (CFA) (Breckler, 1990). The high reliability of the new five-factor IAC construct regarding IAPs was indirectly confirmed by consistent outputs from multiple rounds of EFA conducted based on both the pooled sample and the samples from the two countries concerning the three IAP categories: cultured food, plant-based food, and insect-based food. However, it is recommended that future relevant studies conduct CFA to further affirm the new IAC factorial constructs concerning IAP categories or products.

Thirdly, the data for this study were collected from two Western countries. It is recommended that future studies with a non-Western setting be conducted to compare the differences and similarities regarding the influence of IACs on consumer behaviours towards IAPs between Western and non-Western regions (e.g., Asia - the largest region in total amount of meat consumption) (Wang & Scrimgeour, 2021).

Fourthly, this study was designed and conducted based on the IAC theory, which had been mainly applied in previous consumer studies with food services or non-food products. This is one of the few studies trying to introduce this important theory into the field of consumer choice of IAP food products. It is necessary for future relevant research to design studies that integrate the IAP theory with other important theories and empirical findings, specifically for IAP food products. This includes several important factors for the IAP choice, such as price, sensory attributes, ethical and health-related factors, naturalness, and disgust sensitivity (Siegrist et al., 2018).

Fifthly, this study utilised self-reported measurement items to investigate consumers' IACs, trust, and purchase intention of IAP. It should be noted that self-reported survey questions may introduce potential bias concerning participants' susceptibility to socially desirable responding, where they tend to provide answers that make them appear in a more positive light (e.g. portraying themselves as more like innovation adopters or environmentally conscious individuals) (Martin & Nagao, 1989).

Sixthly, the online questionnaire was distributed using a quota sampling method, with gender, age, and residential area as dimensions for quota stratification, including: 1) Gender (UK: male 49.48% and female 50.52%; NZ: male 49.35%, female 50.65%); 2) Age (UK: 18-24 years 11%, 25-34 years 19%, 35-44 years 18%, 45-54 years 19%, 55+ years 32%; NZ: 18-24 years 12.19%, 25-34 years 18.40%, 35-44 years 16.32%, 45-54 years 17.52%, 55-64 years 15.68%, 65+ 19.90%); 3) Residential area (UK: Northern England 23%, Mid England 25%, Southern England 22%, Greater London 13%, Wales 5%, Scotland 8%, Northern Ireland 3%; NZ: Auckland 33.44%, Waikato 9.75%, Canterbury 12.76%, Wellington 10.78%, Others 33.27%). This quota stratification and the final samples (see Table 1) may not fully represent the populations in the two countries.

6. Conclusion

To the best of our knowledge, this study represents the first attempt to examine and compare the impacts of IACs on consumer adoption of three IAP food categories- cultured food, plant-based food and insect-based food, using the original seven-factorial IAC construct. Furthermore, this study is the first to introduce an adjusted five-factorial IAC construct specifically tailored to consumer adoption of IAP products, including perceived subjective incentive, perceived complexity, perceived relative advantage, perceived risk, and trialability. All five of these IACs were found to exert significant influence on consumers' trust and purchase intentions of cultured food, plant-based food, and/or insect-based food. In contrast to the widely-used theory of planned behaviour, the IAC framework has been relatively underutilised in empirical studies, with only a handful of published research papers based on IACs in recent years. Our study serves as an additional endeavour to apply this theory in an empirical consumer study and provides fundamental methods and insights that should guide future IAC-based research.

In addition to the significant academic implications outlined above, this study bears noteworthy managerial and policy implications. The findings can assist stakeholders in the food industry in crafting effective promotional strategies for IAPs. The apparent preference for plant-based foods over other IAP categories (cultured food and insect-based food) suggests a requirement for distinct market differentiation. Brands might consider emphasising the unique benefits of each IAP while potentially marketing insect-based and cultured foods alongside the well-accepted plant-based category. Furthermore, the observed consumer inclination towards 'fresh' variants of cultured foods implies that research and development efforts in this direction could yield positive results in promoting cultured food products. In addition, to address the critical aspect of trialability, organising tasting sessions might prove advantageous. Moreover, streamlining product information and cooking methods can mitigate the adverse impact of perceived complexity on trust and purchasing intentions.

On the policy front, governments can champion public education about IAPs, emphasising their relevance to subjective incentives (e.g., adopting a better dietary pattern together with their peers) and relative advantages (e.g., food security, improved nutrient values, sensory attributes, the environment, and animal welfare). Funds and policies could be allocated to support relevant research and promotion, particularly in those countries that are less developed in terms of IAP adoption, research and development (e.g., New Zealand). All these efforts will gradually assist IAPs in aligning more closely with people's lifestyles and values, in order to counterbalance the still prevailing mainstream lifestyle and values that rely on the consumption of animal-raising products.

Declaration of Generative AI and AI-assisted technologies in the writing process

During the preparation of this work, the first author employed ChatGPT-3.5 and 4.0 (OpenAI) in order to proofread the original draft written by him, using the prompt: "*Proofread* *with British English: [the original draft written by the author]*". This process involved making grammatical corrections, enhancing vocabulary, and suggesting alternative phrasings to ensure linguistic accuracy and text flow, similar to an English language editing service by a professional English editor. After using this tool/service, the first author reviewed and edited the content as needed and takes full responsibility for the content of the publication. Other authors reviewed and edited subsequent versions of the manuscript. No portion of this article was solely extracted from ChatGPT, and the authors did not rely on it for any original thoughts or primary content generation.

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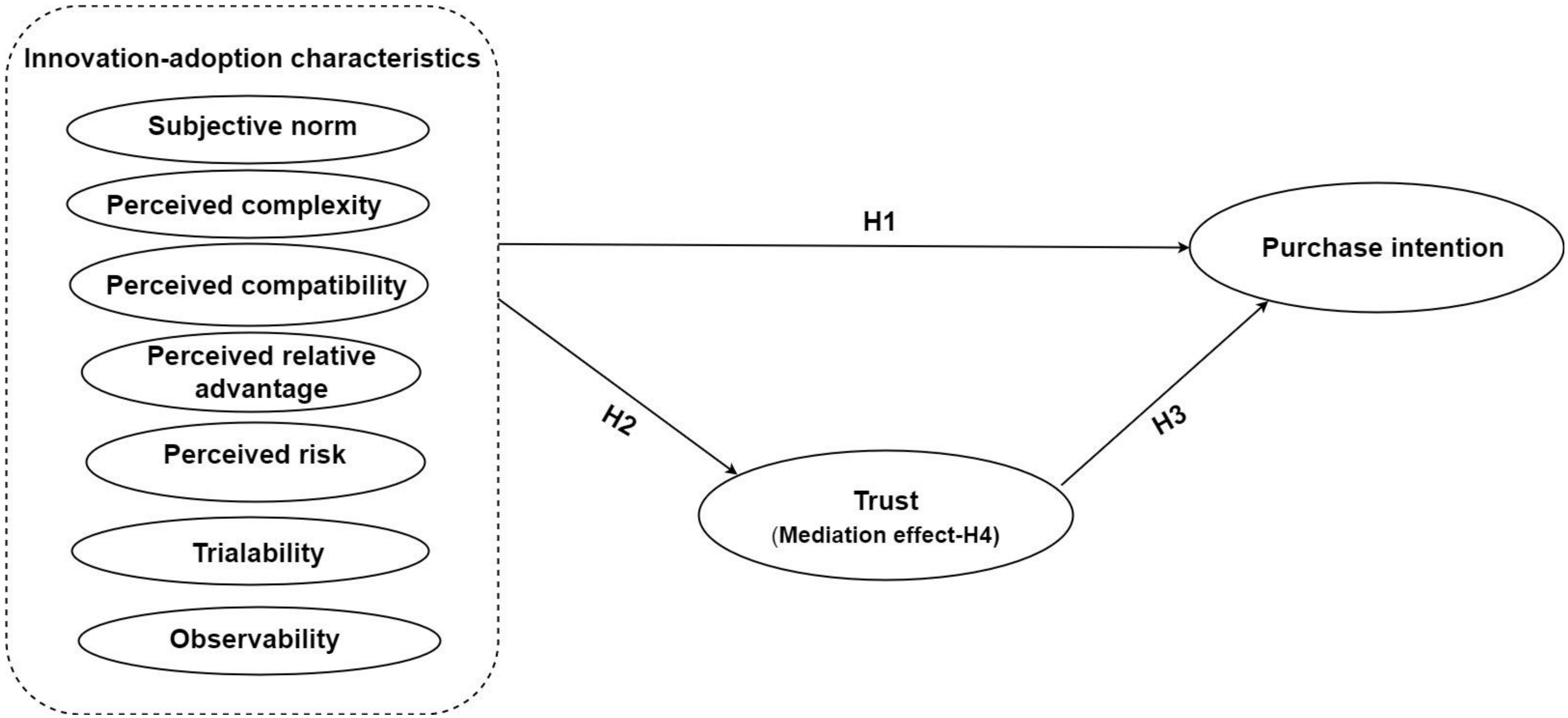

Figure 1 Hypothetical framework

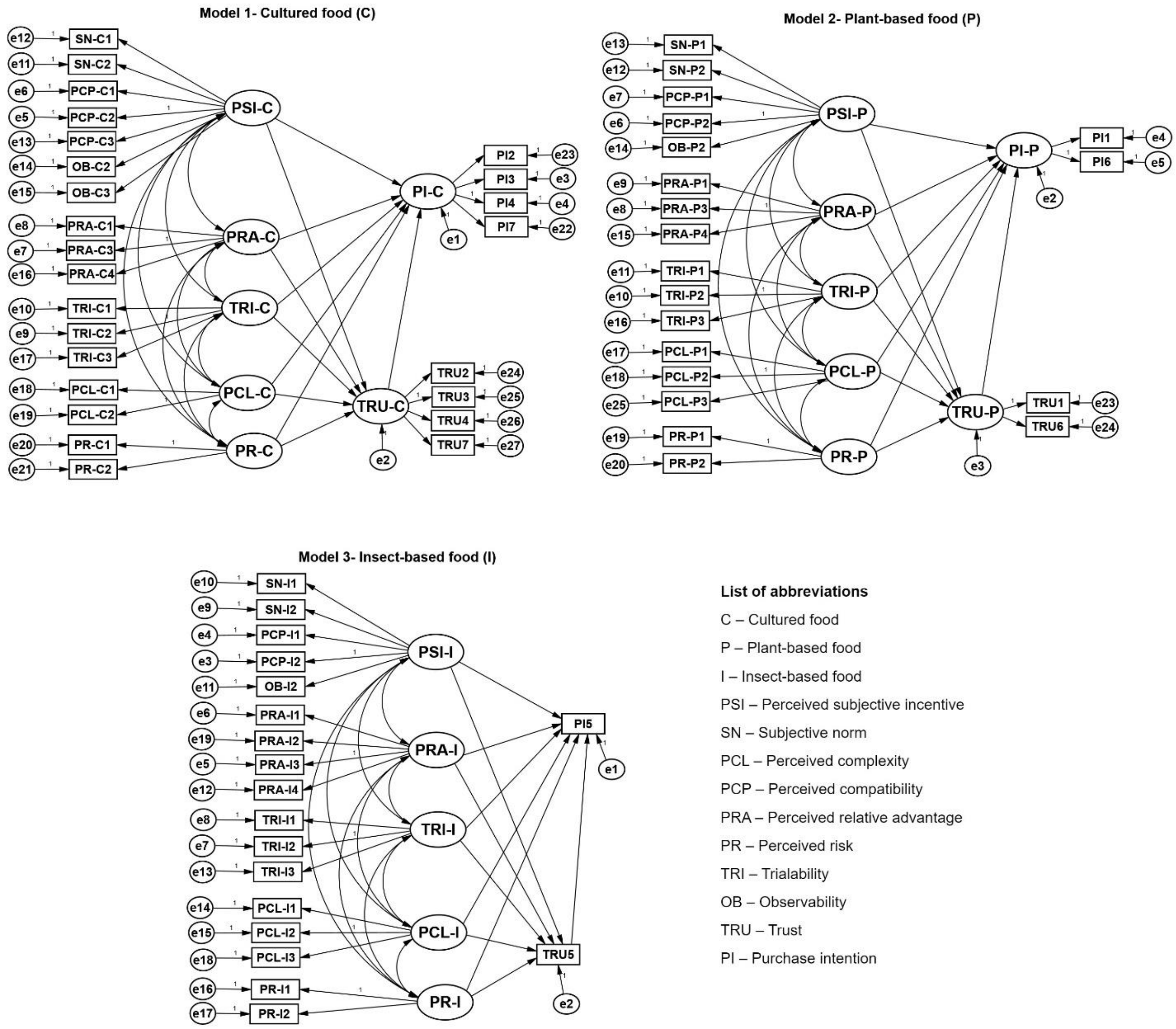

Figure 2 Structural equation models to associate consumers' innovation-adoption characteristics with their trust and purchase intention of cultured, plant-based and insect-based foods

Note: For more information about latent and observed variables, please refer to Table 2 to 6; e1-e27: error variables.

Table 1 Socio-demographics of the sample

		United Kingdom	New Zealand	Pooled sample
Sample size (n=)		1020	1019	2039
Gender				
	Male	49.4%	49.4%	49.4%
	Female	50.6%	50.6%	50.6%
Age				
	Range	18 - 84	18 - 91	18-91
	Mean	44.9	46.5	45.7
	18-34	30.7%	31.8%	31.2%
	35-54	37.7%	32.6%	35.2%
	≥55	31.6%	35.6%	33.6%
Residential area				
	Northern England	23.4%	NA	
	Mid England	25.4%	NA	
United Kingdom	Southern England	22.4%	NA	
	Greater London	13.0%	NA	
	Wales	5.1%	NA	
	Scotland	8.1%	NA	
	Northern Ireland	2.5%	NA	
	Auckland	NA	34.2%	
	Canterbury	NA	13.2%	
	Wellington	NA	11.3%	
	Waikato	NA	10.2%	
New Zealand	Bay of Plenty	NA	6.4%	
	Otago	NA	4.9%	
	Manawatu-Wanganui	NA	4.3%	
	Hawke's Bay	NA	3.8%	
	Northland	NA	3.4%	
	Other New Zealand's regions	NA	9.2%	

Note: NA= Not applicable.

Table 2 Measurement items of the study

Code	Factor and measurement items
SN-C/P/I	**Subjective norm-C/P/I**
SN-C/P/I1	Members of my family think that it is a good idea to eat cultured/cell-based food products (C)/plant-based food products (P)/insect-based food products (I).
SN-C/P/I2	Most of my friends and acquaintances think eating C/P/I are a good idea.
PCL-C/P/I	**Perceived complexity-C/P/I**
PCL-C/P/I 1	C/P/I are difficult to understand.
PCL-C/P/I 2	It is hard to understand the production of C/P/I.
PCL-C/P/I 3	Eating or cooking C/P/I are in general very complex.
PCP-C/P/I	**Perceived compatibility-C/P/I**
PCP-C/P/I 1	C/P/I are attractive to me in my daily life.
PCP-C/P/I 2	Eating C/P/I is well suited to my daily eating habits.
PCP-C/P/I 3	In general, eating C/P/I is problem free.
PRA-C/P/I	**Perceived relative advantage-C/P/I**
PRA-C/P/I 1	C/P/I are environment-friendly.
PRA-C/P/I 2	C/P/I contribute to the reduction of food insecurity.
PRA-C/P/I 3	Eating C/P/I helps reduce climate change.
PRA-C/P/I 4	C/P/I are animal-friendly.
PR-C/P/I	**Perceived risk-C/P/I**
PR-C/P/I 1	C/P/I might be expensive due to short supply.
PR-C/P/I 2	C/P/I might be unavailable due to short supply.
PR-C/P/I 3	C/P/I might not contain all the nutrients I need.
PR-C/P/I 4	C/P/I might not have desirable sensory attributes (e.g. taste, texture, shape and appearance).
TRI-C/P/I	**Trialability-C/P/I**
TRI-C/P/I 1	Before I decide to buy a C/P/I, I would like to try it first.
TRI-C/P/I 2	Before I decide to buy a C/P/I, I would like first to eat some free samples.
TRI-C/P/I 3	Before I decide to buy a C/P/I, I would like to receive information or guidance on how best to cook and eat it.
OB-C/P/I	**Observability-C/P/I**
OB-C/P/I 1	I believe I can learn how to cook and eat C/P/I.
OB-C/P/I 2	I believe I can explain to others how to cook and eat C/P/I.
OB-C/P/I 3	I believe I can benefit from eating C/P/I.

Table 2 continued

Code	Factor and measurement items
TRU	**Trust**
TRU1 (plant-based meat)	I trust plant-based meat to be safe and reliable in eating.
TRU2 (cultured fresh meat)	I trust cultured fresh meat to be safe and reliable in eating.
TRU3 (cultured processed meat)	I trust the cultured processed meat products to be safe and reliable in eating.
TRU4 (cultured seafood)	I trust cultured seafood to be safe and reliable in eating.
TRU5 (insect-based food)	I trust insect-based food to be safe and reliable in eating.
TRU6 (plant-based milk)	I trust plant-based milk to be safe and reliable in eating.
TRU7 (cell-based milk)	I trust cell-based milk to be safe and reliable in eating.
PI	**Purchase intention**
PI1 (plant-based meat)	I am willing to buy plant-based meat.
PI2 (cultured fresh meat)	I am willing to buy cultured fresh meat.
PI3 (cultured processed meat)	I am willing to buy the cultured processed meat products.
PI4 (cultured seafood)	I am willing to buy cultured seafood.
PI5 (insect-based food)	I am willing to buy insect-based food.
PI6 (plant-based milk)	I am willing to buy plant-based milk.
PI7 (cell-based milk)	I am willing to buy cell-based milk.

Note: Please refer to Section 3.2 regarding the references used to design the measurement items on this table.

Table 3 Descriptive analysis and scale reliability results for factors and items of consumers' trust and purchase intentions regarding plant-based food, cultured food and insect-based food

Code of factor and item	Mean value			Cronbach's α		
	Pooled sample	UK	NZ	Pooled sample	UK	NZ
TRU-P (Trust of plant-based food category) **	**5.00**	**5.09**	**4.91**	0.800	0.826	0.773
TRU6 (Trust of plant-based milk)	5.14	5.20	5.08			
TRU1 (Trust of plant-based meat) ***	4.86	4.98	4.74			
TRU-C (Trust of cultured food category)	**4.22**	**4.25**	**4.19**	0.891	0.891	0.892
TRU2 (Trust of cultured fresh meat)	4.34	4.39	4.28			
TRU4 (Trust of cultured seafood)	4.20	4.18	4.22			
TRU7 (Trust of cell-based milk)	4.17	4.22	4.12			
TRU3 (Trust of cultured processed meat)	4.16	4.19	4.13			
TRU-I (Trust of insect-based food category)	**3.60**	**3.69**	**3.52**	NA	NA	NA
TRU5 (Trust of insect-based food) *	3.60	3.69	3.52			
PI-P (Purchase intention of plant-based food category) ***	**4.64**	**4.81**	**4.48**	0.786	0.792	0.779
PI6 (Purchase intention of plant-based milk) *	4.83	4.93	4.73			
PI1 (Purchase intention of plant-based meat) ***	4.45	4.68	4.22			
PI-C (Purchase intention of cultured food category)	**3.81**	**3.84**	**3.77**	0.901	0.891	0.911
PI2 (Purchase intention of cultured fresh meat)	4.01	4.05	3.96			
PI4 (Purchase intention of cultured seafood)	3.70	3.61	3.76			
PI7 (Purchase intention of cell-based milk) **	3.70	3.81	3.59			
PI3 (Purchase intention of cultured processed meat)	3.82	3.89	3.75			
PI-I (Purchase intention of insect-based food category)	**2.86**	**2.93**	**2.78**	NA	NA	NA
PI5 (Purchase intention of insect-based food)	2.86	2.93	2.78			

*Note: NA= Not applicable; the values of factors were obtained based on the mean values of their observed items; the significant levels of differences regarding the mean values between NZ and UK (independent sample t-tests): ***= p<0.001, **= p<0.01, *= p<0.05.*

Table 4 Results from the exploratory factor analysis regarding the innovation-adoption characteristics for cultured food (C)

	Pooled sample		New Zealand		United Kingdom	
Factor and item	Standardized factor loading	Percent explained variance	Standardized factor loading	Percent explained variance	Standardized factor loading	Percent explained variance
Perceived subjective incentive (PSI)-C		18.810		19.184		18.442
SN-C1	0.740		0.721		0.758	
SN-C2	0.722		0.704		0.739	
PCP-C1	0.790		0.802		0.772	
PCP-C2	0.744		0.753		0.736	
PCP-C3	0.554		0.554		0.553	
OB-C2	0.647		0.649		0.653	
OB-C3	0.683		0.685 [b]		0.676	
OB-C1	0.467 [a, b]		0.523 [b]		0.412 [a, b]	
PRA-C		9.643		9.533		9.597
PRA-C1	0.673		0.651		0.686	
PRA-C3	0.687		0.702		0.650	
PRA-C4	0.606		0.569		0.627	
PRA-C2	0.493 [a]		0.517		0.458 [a]	
TRI-C		9.086		8.948		9.371
TRI-C1	0.781		0.784		0.768	
TRI-C2	0.770		0.773		0.758	
TRI-C3	0.582		0.557		0.613	
PCL-C		6.777		6.094		7.240
PCL-C1	0.745		0.725		0.762	
PCL-C2	0.682		0.698		0.661	
PCL-C3	0.421 [a]		0.346[a]		0.471 [a]	
PR-C		5.647		6.068		5.617
PR-C1	0.550		0.540		0.522	
PR-C2	0.583		0.654		0.480 [a]	
PR-C4	0.467 [a]		0.462 [a]		0.523	
PR-C3	0.375 [a]		0.404 [a]		0.388 [a, b]	

Note: SN= Subjective norm, PCP= Perceived compatibility, OB= Observability, PRA= Perceived relative advantage, TRI= Trialability, PCL= Perceived complexity, PR= Perceived risk, C= Cultured food; please refer to Table 2 for more details regarding the codes of variables; [a]= the variable with a low factor loading (<0.50) on all factors, [b]= the variable with a high cross-loading (>0.35) on another factor.

Table 5 Results from the exploratory factor analysis regarding the innovation-adoption characteristics for plant-based food (P)

	Pooled sample		New Zealand		United Kingdom	
Factor and item	Standardized factor loading	Percent explained variance	Standardized factor loading	Percent explained variance	Standardized factor loading	Percent explained variance
Perceived subjective incentive (PSI)-P		19.325		20.432		18.555
SN-P1	0.735		0.737		0.730	
SN-P2	0.721		0.719		0.720	
PCP-P1	0.826		0.825		0.830	
PCP-P2	0.796		0.791		0.806	
OB-P2	0.616		0.631		0.606	
OB-P1	0.468 [a]		0.512		0.435 [a, b]	
OB-P3	0.688 [b]		0.701 [b]		0.683 [b]	
PCP-P3	0.488 [a, b]		0.526 [b]		0.457 [a, b]	
PRA-P		11.661		10.585		11.855
PRA-P1	0.752		0.734 [b]		0.757	
PRA-P3	0.697		0.670 [b]		0.703	
PRA-P4	0.631		0.570		0.662	
PRA-P2	0.538 [b]		0.527 [b]		0.514	
TRI-P		9.412		10.049		8.838
TRI-P1	0.830		0.826		0.825	
TRI-P2	0.823		0.831		0.809	
TRI-P3	0.649		0.701		0.580	
PCL-P		8.578		8.609		7.975
PCL-P1	0.779		0.782		0.740	
PCL-P2	0.694		0.760		0.598 [b]	
PCL-P3	0.624		0.571		0.664	
PR-P		7.019		6.044		8.664
PR-P1	0.700		0.734		0.637	
PR-P2	0.603		0.583		0.591	
PR-P3	0.424 [a]		0.312 [a]		0.563	
PR-P4	0.447 [a]		0.389 [a]		0.545	

Note: SN= Subjective norm, PCP= Perceived compatibility, OB= Observability, PRA= Perceived relative advantage, TRI= Trialability, PCL= Perceived complexity, PR= Perceived risk, P= Plant-based food; please refer to Table 2 for more details regarding the codes of variables; [a]= the variable with a low factor loading (<0.50) on all factors, [b]= the variable with a high cross-loading (>0.35) on another factor.

Table 6 Results from the exploratory factor analysis regarding the innovation-adoption characteristics for insect-based food (I)

	Pooled sample		New Zealand		United Kingdom	
Factor and item	Standardized factor loading	Percent explained variance	Standardized factor loading	Percent explained variance	Standardized factor loading	Percent explained variance
Perceived subjective incentive (PSI)-I		20.427		19.157		21.601
SN-I1	0.779		0.752		0.798	
SN-I2	0.778		0.730		0.811	
PCP-I1	0.838		0.824		0.846	
PCP-I2	0.812		0.806		0.818	
OB-I2	0.649		0.645		0.655	
OB-I3	0.648 [b]		0.668[b]		0.631 [b]	
PCP-I3	0.503 [b]		0.450 [a, b]		0.546 [b]	
OB-I1	0.471 [a, b]		0.465 [a, b]		0.476 [a, b]	
PRA-I		11.700		11.805		11.650
PRA-I1	0.713		0.763		0.676	
PRA-I2	0.630		0.606		0.634	
PRA-I3	0.719		0.673		0.758	
PRA-I4	0.509		0.516		0.518 [b]	
TRI-I		11.741		11.670		11. 955
TRI-I1	0.847		0.845		0.847	
TRI-I2	0.834		0.861		0.803	
TRI-I3	0.683		0.703		0.660	
PCL-I		8.969		8.395		9.508
PCL-I1	0.768		0.752		0.778	
PCL-I2	0.759		0.769		0.746	
PCL-I3	0.567		0.498 [a]		0.630	
PR-I3	0.429 [a]		0.360 [a]		0.479 [a, b]	
PR-I4	0.345 [a]		0.329 [a]		0.350 [a, b]	
PR-I		5.466		5.414		5.817
PR-I1	0.731		0.703		0.809	
PR-I2	0.675		0.691		0.622	

Note: SN= Subjective norm, PCP= Perceived compatibility, OB= Observability, PRA= Perceived relative advantage, TRI= Trialability, PCL= Perceived complexity, PR= Perceived risk, I= Insect-based food; please refer to Table 2 for more details regarding the codes of variables; ; [a]= the variable with a low factor loading (<0.50) on all factors, [b]= the variable with a high cross-loading (>0.35) on another factor.

Table 7 Correlation matrix and Cronbach's α values of the innovation-adoption characteristic factors for cultured food (C)

Factor	Correlation matrix					Cronbach's α
Pooled sample	**1**	**2**	**3**	**4**	**5**	
1. PSI-C	1					0.888
2. PRA-C	0.634	1				0.783
3. TRI-C	0.294	0.524	1			0.807
4. PCL-C	-0.207	0.025	0.210	1		0.715
5. PR-C	0.139	0.356	0.461	0.334	1	0.609
New Zealand	**1**	**2**	**3**	**4**	**5**	
1. PSI-C	1					0.888
2. PRA-C	0.669	1				0.776
3. TRI-C	0.263	0.516	1			0.795
4. PCL-C	-0.238	-0.033	0.157	1		0.713
5. PR-C	0.088	0.290	0.456	0.301	1	0.614
United Kingdom	**1**	**2**	**3**	**4**	**5**	
1. PSI-C	1					0.887
2. PRA-C	0.592	1				0.777
3. TRI-C	0.331	0.565	1			0.818
4. PCL-C	-0.183	0.077	0.262	1		0.717
5. PR-C	0.189	0.417	0.466	0.360	1	0.605

Note: PSI= Perceived subjective incentive, PRA= Perceived relative advantage, TRI= Trialability, PCL= Perceived complexity, PR= Perceived risk, C= Cultured food; please refer to Table 2 and 4 for more details regarding the codes of variables; the values of Cronbach's α and correlation matrix were calculated without including the items which had low factor loadings on all factors or high cross-loadings among the factors in the exploratory factor analysis, based on the pooled sample (see Table 4); the correlation matrix values for the two countries are provided based on the unconstrained model in the multi-group path analysis (see Section 4.3).

Table 8 Correlation matrix and Cronbach's α values of the innovation-adoption characteristic factors for plant-based food (P)

Factor	Correlation matrix					Cronbach's α
Pooled sample	**1**	**2**	**3**	**4**	**5**	
1. PSI-P	1					0.883
2. PRA-P	0.643	1				0.813
3. TRI-P	0.099	0.353	1			0.847
4. PCL-P	-0.281	-0.153	0.265	1		0.793
5. PR-P	-0.012	0.119	0.409	0.484	1	0.677
New Zealand	**1**	**2**	**3**	**4**	**5**	
1. PSI-P	1					0.886
2. PRA-P	0.686	1				0.803
3. TRI-P	0.154	0.406	1			0.856
4. PCL-P	-0.342	-0.142	0.152	1		0.781
5. PR-P	0.001	0.118	0.313	0.378	1	0.647
United Kingdom	**1**	**2**	**3**	**4**	**5**	
1. PSI-P	1					0.878
2. PRA-P	0.580	1				0.813
3. TRI-P	0.068	0.354	1			0.835
4. PCL-P	-0.208	-0.149	0.360	1		0.802
5. PR-P	0.002	0.176	0.481	0.556	1	0.696

Note: PSI= Perceived subjective incentive, PRA= Perceived relative advantage, TRI= Trialability, PCL= Perceived complexity, PR= Perceived risk, P= Plant-based food; please refer to Table 2 and 5 for more details regarding the codes of variables; ; the values of Cronbach's α and correlation matrix were calculated without including the items which had low factor loadings on all factors or high cross-loadings among the factors in the exploratory factor analysis, based on the pooled sample (see Table 5); the correlation matrix values for the two countries are provided based on the unconstrained model in the multi-group path analysis (see Section 4.3).

Table 9 Correlation matrix and Cronbach's α values of the innovation-adoption characteristic factors for insect-based food (I)

Factor			**Correlation matrix**			**Cronbach's α**
Pooled sample	**1**	**2**	**3**	**4**	**5**	
1. PSI-I	1					0.909
2. PRA-I	0.613	1				0.812
3. TRI-I	0.505	0.586	1			0.896
4. PCL-I	-0.124	-0.032	0.006	1		0.738
5. PR-I	0.231	0.236	0.307	0.378	1	0.741
New Zealand	**1**	**2**	**3**	**4**	**5**	
1. PSI-I	1					0.899
2. PRA-I	0.596	1				0.798
3. TRI-I	0.466	0.560	1			0.900
4. PCL-I	-0.243	-0.138	-0.058	1		0.716
5. PR-I	0.154	0.151	0.239	0.355	1	0.719
United Kingdom	**1**	**2**	**3**	**4**	**5**	
1. PSI-I	1					0.917
2. PRA-I	0.623	1				0.825
3. TRI-I	0.550	0.621	1			0.892
4. PCL-I	-0.021	0.062	0.073	1		0.759
5. PR-I	0.301	0.313	0.367	0.397	1	0.760

Note: PSI= Perceived subjective incentive, PRA= Perceived relative advantage, TRI= Trialability, PCL= Perceived complexity, PR= Perceived risk, I= Insect-based food; please refer to Table 2 and 6 for more details regarding the codes of variables; ; the values of Cronbach's α and correlation matrix were calculated without including the items which had low factor loadings on all factors or high cross-loadings among the factors in the exploratory factor analysis, based on the pooled sample (see Table 6); the correlation matrix values for the two countries are provided based on the unconstrained model in the multi-group path analysis (see Section 4.3).

Table 10 Standardized regression weights of the (multi-group) path analysis and the Bootstrap test for indirect effects based on the structural equation model regarding the influences of innovation-adoption characteristics on consumer adoption of cultured food (Model 1 in Figure 2)

Factor	Path	Factor	Pooled sample	New Zealand	United Kingdom
Perceived subjective incentive	→	Trust	0.581***	0.589***	0.567***
Perceived relative advantage	→	Trust	ns	ns	ns
Trialability	→	Trust	0.093**	0.088**	0.092**
Perceived complexity	→	Trust	-0.059*	-0.054*	-0.061*
Perceived risk	→	Trust	ns	ns	ns
Perceived subjective incentive	→	Purchase intention	0.441***	0.445***	0.436***
Perceived relative advantage	→	Purchase intention	-0.164***	-0.168***	-0.161***
Trialability	→	Purchase intention	ns	0.048*	0.051*
Perceived complexity	→	Purchase intention	-0.059**	-0.053**	-0.061**
Perceived risk	→	Purchase intention	ns	ns	ns
Trust	→	Purchase intention	0.545***	0.540***	0.550***

Bootstrap test for indirect effects	Pooled sample	New Zealand	United Kingdom
Perceived subjective incentive → Trust → Purchase intention	0.317***	0.318***	0.312***
Perceived relative advantage → Trust→ Purchase intention	ns	ns	ns
Trialability → Trust→ Purchase intention	0.051**	0.048*	0.051*
Perceived complexity → Trust→ Purchase intention	ns	ns	ns
Perceived risk → Trust→ Purchase intention	ns	ns	ns

Goodness-of-fit indices	Chi-square	Degrees of freedom	RMSEA	CFI	*P*
Path analysis	1659.424	254	0.052	0.948	0.000
Multi-group path analysis (restricted models)	2027.997-2110.201	519-579	0.036-0.038	0.944-0.945	0.000-0.000

*Note: ***= p<0.001, **= p<0.01, *= p<0.05, ns = no significant; the values of the multi-group path analysis on the table are reported based on the unconstrained model.*

Table 11 Standardized regression weights of the (multi-group) path analysis and the Bootstrap test for indirect effects based on the structural equation model regarding the influences of innovation-adoption characteristics on consumer adoption of plant-based food (Model 2 in Figure 2)

Factor	Path	Factor		Pooled sample	New Zealand	United Kingdom
Perceived subjective incentive	→	Trust		0.287***	0.283***	0.289***
Perceived relative advantage	→	Trust		0.377***	0.376***	0.389***
Trialability	→	Trust		0.121***	0.133***	0.097*
Perceived complexity	→	Trust		-0.262***	-0.237***	-0.272***
Perceived risk	→	Trust		0.083**	ns	ns
Perceived subjective incentive	→	Purchase intention		0.496***	0.504***	0.501***
Perceived relative advantage	→	Purchase intention		-0.068*	-0.114*	ns
Trialability	→	Purchase intention		ns	ns	ns
Perceived complexity	→	Purchase intention		ns	0.072*	ns
Perceived risk	→	Purchase intention		ns	ns	ns
Trust	→	Purchase intention		0.565***	0.625***	0.516***
Bootstrap test for indirect effects				Pooled sample	New Zealand	United Kingdom
Perceived subjective incentive → Trust → Purchase intention				0.162***	0.177***	0.149***
Perceived relative advantage → Trust→ Purchase intention				0.213***	0.235***	0.201***
Trialability → Trust→ Purchase intention				0.068**	0.083**	0.050*
Perceived complexity → Trust→ Purchase intention				-0.148***	-0.148***	-0.141***
Perceived risk → Trust→ Purchase intention				0.047*	ns	ns
Goodness-of-fit indices		Chi-square	Degrees of freedom	RMSEA	CFI	*P*
Path analysis		1109.348	149	0.056	0.953	0.000
Multi-group path analysis (restricted models)		1291.573-1476.888	298-359	0.039-0.040	0.945-0.951	0.000-0.000

*Note: ***= p<0.001, **= p<0.01, *= p<0.05, ns = no significant; the values of the multi-group path analysis on the table are reported based on the unconstrained model.*

Table 12 Standardized regression weights of the (multi-group) path analysis and the Bootstrap test for indirect effects based on the structural equation model regarding the influences of innovation-adoption characteristics on consumer adoption of insect-based food (Model 3 in Figure 2)

Factor	Path	Factor		Pooled sample	New Zealand	United Kingdom
Perceived subjective incentive	→	Trust		0.388***	0.390***	0.387***
Perceived relative advantage	→	Trust		0.254***	0.248***	0.251***
Trialability	→	Trust		0.163***	0.160***	0.175***
Perceived complexity	→	Trust		-0.131***	-0.119***	-0.141***
Perceived risk	→	Trust		ns	ns	ns
Perceived subjective incentive	→	Purchase intention		0.639***	0.582***	0.691***
Perceived relative advantage	→	Purchase intention		ns	ns	ns
Trialability	→	Purchase intention		0.154***	0.153***	0.160***
Perceived complexity	→	Purchase intention		-0.070***	-0.076**	-0.068**
Perceived risk	→	Purchase intention		ns	ns	ns
Trust	→	Purchase intention		0.114***	0.154***	0.077**
Bootstrap test for indirect effects				Pooled sample	New Zealand	United Kingdom
Perceived subjective incentive → Trust → Purchase intention				0.044***	0.060***	0.030*
Perceived relative advantage → Trust→ Purchase intention				0.029***	0.038***	0.019*
Trialability → Trust→ Purchase intention				0.019***	0.025***	0.014**
Perceived complexity → Trust→ Purchase intention				-0.015***	-0.018**	-0.011**
Perceived risk → Trust→ Purchase intention				ns	ns	ns
Goodness-of-fit indices		Chi-square	Degrees of freedom	RMSEA	CFI	*P*
Path analysis		688.120	133	0.045	0.974	0.000
Multi-group path analysis (restricted models)		890.051-998.704	266-323	0.032-0.034	0.968-0.971	0.000-0.000

*Note: ***= p<0.001, **= p<0.01, *= p<0.05, ns = no significant; the values of the multi-group path analysis on the table are reported based on the unconstrained model.*

Declaration of Competing Interest

None

Dr. Ou Wang: Principal Investigator of the study project; conceived the research idea; literature review; study design; conducted the study; analysed the data and wrote the original draft; revised the manuscript.

Prof. Federico J. A. Perez-Cueto: Associate Investigator of the study project; study design; reviewed and edited the original and revised manuscripts.

Prof. Riccardo Scarpa: Associate Investigator of the study project; study design; reviewed and edited the original and revised manuscripts.

Prof. Frank Scrimgeour: Associate Investigator of the study project; study design; reviewed and edited the original and revised manuscripts.

Ethical Statement

This study was approved by the Waikato Management School Research Ethical Committee.