

## Extended Abstract

Please do not add your name or affiliation

<b>Paper/Poster Title</b>	<b>Consumer acceptance of peanut-based meat in China.</b>
---------------------------	---

**Abstract prepared for presentation at the 98th Annual Conference of The Agricultural Economics Society will be held at The University of Edinburgh, UK, 18th - 20th March 2024.**

<b>Abstract</b>	<b>200 words max</b>
<p>The consumption of animal-based protein has been reported as harmful to human and environmental health. Extensive research has been done on the development of plant-based meat alternatives, focusing on the use of soya and legumes as the main ingredients. An alternative source for plant-based meat products is the use of peanuts. Peanuts are a common plant protein source in China and have great nutritional value. This paper aims to investigate the factors influencing Chinese consumer acceptance of peanut-based meat (PBM). Structural equation modelling, based on a sample of 773 Chinese consumers surveyed online was employed. Findings showed people's intention to buy PBM were closely related with their intention to try PBM and perceived behaviour control. Positive attitudes toward PBM, food innovation and social norms encouraged people's intention to try PBM. In contrast, attachment to meat and emphasis on sensory enjoyment prohibited their intention to try PBM. As for the factors influencing PBM attitude, preference towards healthy and ethical foods and perceived barriers towards consumption had positive impacts, while meat attachment showed the opposite effect.</p>	
<b>Keywords</b>	Structural Equation Models, China, Plant based meat, peanuts.
<b>JEL Code</b>	D120 Consumer Economics: Empirical Analysis see: <a href="http://www.aeaweb.org/jel/guide/jel.php?class=Q">www.aeaweb.org/jel/guide/jel.php?class=Q</a>
<b>Introduction</b>	<b>100 – 250 words</b>
<p>Meat has long been associated with a high-quality source of protein and essential nutrients, such as iron, vitamin B12 and zinc (McAfee et al., 2010). However, current global meat consumption is greater than what's considered optimal for both human and environmental health (Afshin et al., 2019, Tilman and Clark, 2014, Gakidou et al., 2017). Plant-based meat alternatives have been developed to reduce the externalities generated by meat production and consumption. Plant-sourced proteins in the market generally come from legumes (soybeans, lentils), grains (wheat, rice, millet, corn) and leaves (alfalfa, sugar cane). However, the most commonly used are soybeans, mainly due to their balanced protein composition, wide availability, affordable price, and favourable physical properties (Boukid, 2020). However, other plant-based proteins also have the potential to diversify the market and offer more choices for consumers, such as peanuts.</p> <p>China is one of the largest meat markets in the Asia Pacific region, with a per capita meat intake exceeding the world average and is the largest peanut production in the world with 17 million</p>	

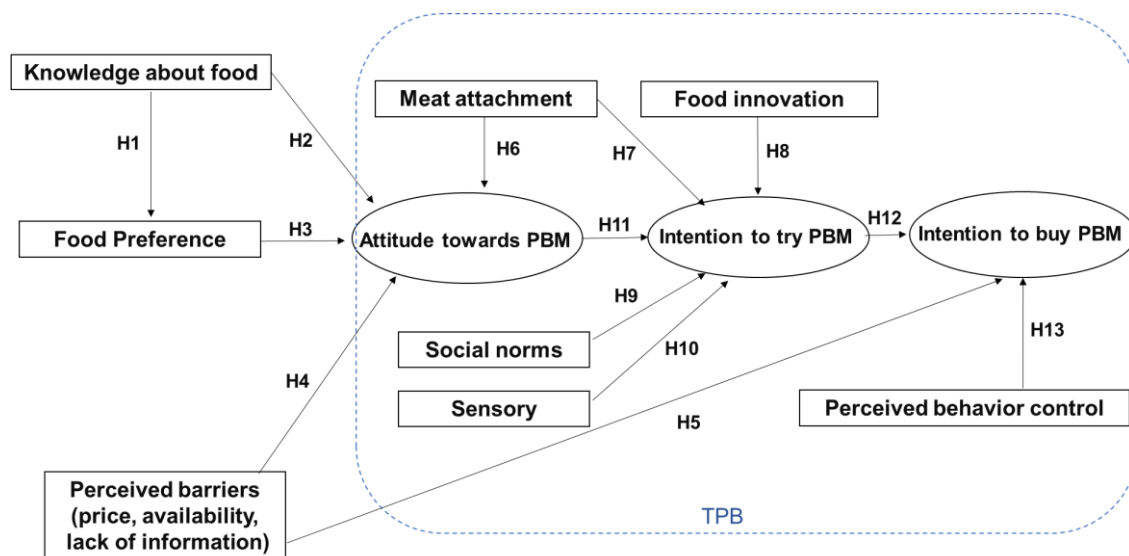
tons per year (Country, 2021). This study aims to understand the key factors influencing consumers' willingness to consume (try and buy) peanut-based meat (PBM) in China. As a by-product of cold-pressed oil, peanut cake (high in protein) is not widely used, so studying consumer preference towards PBM can provide a platform for high-value utilization of peanut protein and to better understand consumers' decision-making towards vegetarian food choices in the Chinese market.

## Methodology

100 – 250 words

A survey was developed, and a total of 791 respondents of Chinese consumers were collected. Incomplete responses with missing values were removed and the data was analysed using Structural Equation Models. The survey included various sets of questions derived from previous studies on consumer acceptance and was tailored to avoid repetition in categories. The respondents were also encouraged to make indications of their choices and offer opinions at the end of the survey. All rating questions were presented on a 5-point Likert agreement scale (1=strongly disagree, 5=strongly agree). Demographic information was also collected in the survey. Multiple randomization technique, such as shuffling of questions, was used during the conduction of the survey to reduce bias associated with survey methods. The data collected from the online survey were stored and managed in Excel and further processed by R using Lavaan and SemPlot package for data analysis (Rosseel,2012; Jacobucci, 2017). All reverse-scaled questions were stored in the same direction and considered when interpreted in the analysis.

The figure below shows the hypothesis tested through the SEM model:

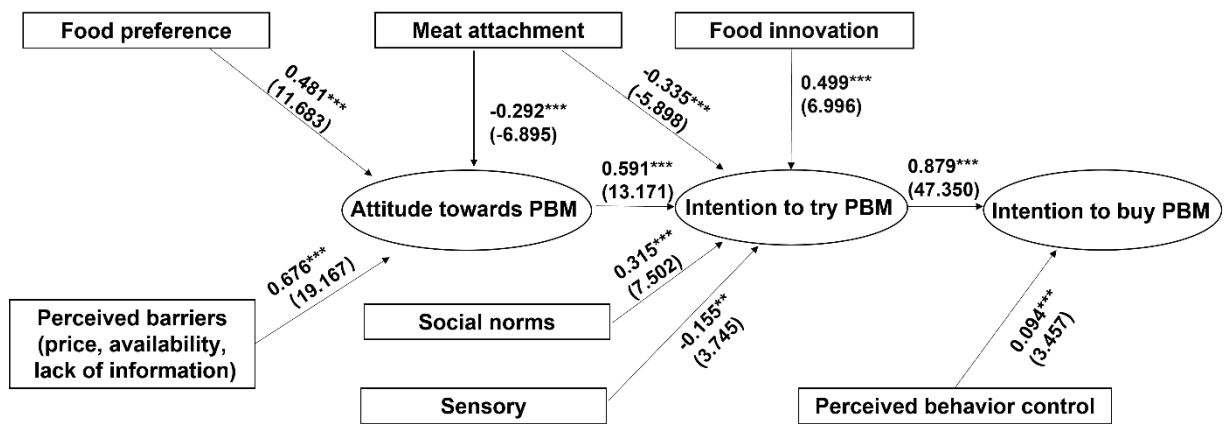


After conducting the survey, four additional informal online interviews were held to better understand the survey results. The interviewees were volunteers from distinct backgrounds and age groups, including a middle-aged plant-based meat start-up company CEO, a 22-year-old art master's student, a 44-year-old primary school teacher, and a 52-year-old housewife.

## Results

100 – 250 words

The goodness-of-fit of the model indicates that the model fits the data well with CFI=0.995, TLI=0.995, RMSEA= 0.083 and SRMR= 0.05, all within desired limits. The structural model tested with the survey data is shown on the figure below:



Path diagram results. (\* Statistically significant at 0.05 level; \*\* statistically significant at 0.01 level; \*\*\* statistically significant at 0.001 level)

The results indicated that the respondents who were more attached to meat held a more negative view towards PBM. On the contrary, those who cared more about health and ethical issues associated with food and those who experienced barriers when consuming PBM held a more positive attitude towards it. Furthermore, attachment to meat and sensory enjoyment had a significant and negative influence on consumers’ intention to try PBM, while those with a positive attitude towards PBM or food innovativeness all had a significant positive influence on consumers’ intention to try PBM. Social influence also has a positive and significant impact on the intention to try PBM.

Finally, results revealed that consumers intention to try PBM and Perceived behavioural control are significant and positive contributory factors to their PBM purchase intension.

## Discussion and Conclusion

100 – 250 words

The results showed that those respondents who were concerned about ethical values in food, such as animal welfare and environmentally friendly production, were more likely to have a positive attitude towards PBM. This finding is consistent with Malek et al. (2019) and Clark et al. (2017). Similarly, people who reported being interested in health-related issues, such as weight control and nutritional values of food, also held more favourable views towards PBM. Studies around the world had similar findings on healthy foods, including Australia (Curtain and Grafenauer, 2019), France and the UK (Pettinger et al., 2004), the Netherlands (Elzerman et al., 2013), the US, India and China (Bryant et al., 2019), indicating this is a global phenomenon.

The results showed that meat attachment had a significant throwback on PBM attitude and trying intention. Similar rejection towards meat analogues based on meat attachment was confirmed for a group of American, Chinese and Indian consumers by Bryant et al. (2019) and also in samples of Chinese and New Zealand consumers by Wang and Scrimgeour (2021).

Sensory also was identified as an important obstacle towards PBM acceptance. It was found that people who were more particular about the flavour, texture, appearance, and smell of food were to have a worse impression of PBM. This is in line with the study conducted by Hoek et al. (2011) and Aggarwal et al. (2016).

One unanticipated finding of this work was that perceived barriers, including lack of information, low availability and higher price of PBM, seemed to draw Chinese consumer's interest closer to it.