

Regulatory Focus and Consumers' Attitudes toward Artificial Meat

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While production and consumption of meat cast a shadow over the prospects for sustainable development, artificial meat may be the solution. However, consumer acceptability of artificial meat is a major impediment to its use as a suitable alternative. Here analyzed the relationship between regulatory focus and consumer acceptance of artificial meat using randomized controlled trial data. Results showed that promotion focus results in a higher acceptance of artificial meat products due to a higher perceived benefit and lower perceived risk, whereas prevention focus results in a lower acceptance of artificial meat products due to perceived benefit being lower and perceived risk being higher. The moderating effect of the message framing was investigated employing structural equation modeling (SEM). It was discovered that a gain-oriented message framing could greatly strengthen the association between promotion focus and perceived benefit, whereas an avoidance oriented message framing could significantly diminish the relationship between prevention focus and perceived risk.

artificial meat

consumer attitude

regulatory focus

structural equation modeling

1. Message Framing and Regulatory Focus Theory

Attitudes can be thought of as affective associations that predispose consumers to evaluate a particular concept as positive or negative ^{[1][2]}, and measuring attitudes is critical for comprehending consumer behavior ^[1]. The most frequently used method of measuring attitudes toward specific issues is to rely on explicit measures of participants' responses to Likert-type scales ^[2], which may include asking participants to rate their level of agreement with a series of statements. Due to consumers' limited knowledge of the artificial meat production process and nutrition in relation to novel food products, it is impractical to study consumer attitudes toward artificial meat without providing any message about it. However, the message framing used to describe artificial meat may have a significant impact on consumer attitudes toward novel food products ^{[3][4]}, and it is critical for industry and policymakers to gain a comprehensive understanding of the message framing effects on artificial meat products.

The term "message framing" refers to a linguistic presentation strategy used to increase the persuasiveness of a particular message. The effect of message framing is theoretically based on Kahneman and Tversky's prospect theory, which asserts that consumers' value functions in decision-making are classified as gain or loss ^[5]. Consumers confronted with risky outcomes may, according to prospect theory, evaluate gains and losses differently, and their preferences may vary in terms of negative or positive framing. Previous research indicated that the way information or a message is presented has a significant impact on consumers' purchasing decisions ^{[3][6][7]} ^[8]. However, few studies have examined the effect of message framing on consumer perceptions of artificial meat.

Additionally, the impact of message framing on consumers may be highly varied, since individuals tend to concentrate only on the message that interests them. It has been hypothesized that the regulatory focus acts as a filter for information, causing people to react differently to the same message ^[9]. As a result, it is equally critical to grasp the regulatory focus. Higgins advances the regulatory focus hypothesis ^[10], which establishes a distinction between two systems that govern people's judgments and actions. A promotion focus (Pro) stresses the pursuit of gains and ambitions toward an ideal, which develops an enthusiastic approach mentality. By contrast, a prevention focus (Pre) places a premium on avoiding loss and meeting responsibilities, which promotes a watchful attitude of avoidance ^[10]. Existing research indicates that when messages are framed in a way that corresponds to the consumer's regulatory priorities, they are more compelling ^{[11][12]}. It has been proposed that when an individual's regulatory focus and message framing align, his or her value judgment on information is enhanced, hence boosting the individual's subjective appraisal of a product ^[13]. However, there is a dearth of studies examining consumer attitudes toward artificial meat using the regulatory focus theory, particularly in Asia.

2. Perceived Benefits

The term "perceived benefits" refers to "the perceived net advantages connected with the purchased items or services" ^[14]. Consumers assess the advantages they believe they will achieve from obtaining and utilizing the product/service against the dangers associated with doing so ^[14]. Frequently, this "benefit" component is derived from the product/quality of service or the purchasers' perception of the product/quality of service ^[14]. The idea of perceived advantage is commonly used to explain why a person engages in a certain activity or action ^[15]. Both functional and non-functional motives impact the human determinants of consumption behavior ^[16]. Functional motivations are those that are associated with utilitarian functions such as convenience, performance, physical, and financial rewards, while non-functional reasons are those that are associated with social and emotional requirements ^{[15][17]}. Utilitarian advantages are essentially instrumental, functional, and cognitive in nature; they give clients value by serving as a means to an aim. Hedonic advantages are non-instrumental, experiential, emotional, and emotive; they are appreciated independently of their practical utility ^{[17][18]}.

Similarly, customers' benefits from artificial meat might be classified as utilitarian or hedonic. Consumers benefit from utilitarian features that increase the usefulness, efficiency, and economy of their purchases. For instance, consider the safety and nutritional value of artificial meat. In addition, the social and psychological benefits of artificial meat can be classified as hedonic, because they provide intrinsic pleasure, fun, and self-esteem. For instance, the environmental and animal welfare benefits of fake meat are a social acquisition with positive externalities, and this emotion is critical to achieving the goal of artificial meat promotion. Additionally, because regulatory focus is connected to perceived benefits and perceived benefits are related to consumer behavior ^[19], this study explores the function of perceived benefits as a significant intermediary variable in the relationship between regulatory focus and consumer attitudes.

3. Perceived Risks

The term “perceived risks” refers to a consumer’s subjective assessment of the inherent hazards associated with achieving a desired objective [20]. Consumers’ behaviors create an atmosphere of risk, as the probable adverse repercussions of their actions cannot be predicted with confidence [21]. The term “perceived risk” refers to the sum of the negative repercussions of a loss and the probability of bad outcomes [21][22][23]. In other words, perceived risk is defined as the difference between a customer’s pre-buy uncertainty about the kind and extent of anticipated loss associated with the purchase and use of a product and the actual risk associated with the purchase and use of the product [24]. In comparison to conventional meat, the function of perceived risk is more significant when it comes to artificial meat, owing to the increased uncertainty and unpredictability. Artificial meat provides very novel items and services. There is a scarcity of high-quality information on artificial meat, which increases perceived risk. As a result, artificial meat includes more variable components that cannot be checked thoroughly before purchase, making it harder to adequately assess risks.

Prior research has identified numerous characteristics of perceived risk that are significant in the context of consumption, including performance risk, financial risk, psychological risk, social risk, and physical danger [25][26]. Physical risk is concerned with the safety of commodities and the possible dangers or damages connected with their acquisition or usage [27]. Safety concerns pertain to consumers’ perceived sense of safety and security as a result of service providers emphasizing the emotional relief of customers who may be concerned about issues such as danger, injury, or loss [16]. Psychological risk is associated with the possibility of developing a negative self-image or self-concept as a result of the purchase or usage of goods [16]. Increased unpredictability in artificial meat products leads to an increased level of risk for the consumer. The relationship between perceived risk and moderated focus is often emphasized [19], and as perceived risk is closely related to consumer behavioral attitudes, this study will examine the important role of perceived risk as an intermediate variable.

4. Variables for Balance Check

Consumption of food is a behavior that is influenced by a variety of factors, including beliefs and habits. The primary objective of this study was to determine the effect of message framing on consumer perceptions of artificial meat. Thus, prior to conducting the study, it was necessary to ascertain that there were no significant differences in the sample’s food consumption beliefs and practices and to eliminate potential confounding variables, i.e., to conduct a balance test.

Food technologies generate a significant level of perceived risk since they impact important consumer concerns such as food safety, animal welfare, and the environment [28][29]. Thus, the amount of food innovation is crucial to customer approval, and consumer acceptance of new foods is influenced by both the kind of innovation and the product that incorporates it [30]. The majority of prior research on food innovation and consumption has concentrated on food neophobia [31].

Specifically, four questions are used to assess respondents’ level of food neophobia, which refers to an individual’s aversion to unfamiliar foods. A higher score on each of the food neophobia questions indicates that the responder is more hesitant to try unusual foods [32]. Five questions are aimed at ascertaining respondents’ level of food

involvement, which relates to an individual's efforts associated with the food they consume. A higher degree of food involvement (as measured by a score on related items) indicates that people care about the food they consume and make an effort to prepare it [\[33\]](#). Three questions assess respondents' support for food technology, while five others assess respondents' meat eating habits [\[34\]](#). Finally, eleven questions are used to assess respondents' meat attitudes in the second part of the survey, including topics such as meat pleasure, health, the environment, and animal welfare. For instance, the term "enjoyment associated with meat belief" relates to respondents' satisfaction with meat products, with higher scores on related questions indicating that respondents experienced greater enjoyment from eating meat.

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