

## The Food Label, Knowledge, Trust and Experience on Adoption of Functional Food

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### ABSTRACT

The phenomenon of the complex background of this research is to increase the quality requirements of consumers in the field of food and health due to changes in food nutrition concept of satisfying their hunger to be the achievement of healthy living. This study deepened on functional food innovation adoption typical of Indonesia made of spices. Functional food typical of Indonesia is meant here is "Jamu". Jamu is the name for traditional medicine from Indonesia. Later popularly known as herbs. Herbs are made from natural ingredients, in the form of parts of plants such as rhizomes (roots), foliage, bark, and fruit. In contrast, to other functional foods, processed beverage products from herbal and spice flavors generally have less preferred by consumers and cause an uncomfortable feeling when drunk. This study examines the adoption model for functional food. This study focused on the variables that explain the influence of a number of variables in the adoption of a functional food. Variables proposed are the food label, knowledge, trust, experience and adoption of functional food. Respondents in this study is that consumers of traditional herbal medicine. Sampling is done by purposive sampling, with the following criteria: the consumer has made a purchase herbal functional beverage with a frequency of more than five times, the decision-makers and consumers in the purchase of food for themselves and their families or relatives. Total sample of 200 respondents. The results of this study indicate that the adoption of a model of functional food made from spices unacceptable.

Keywords: Food Label, Knowledge, Trust, Experience, and functional food.

### 1. INTRODUCTION

According to Food Law of the Republic of Indonesia Number 18 Year 2012, food is everything that comes from biological sources, whether treated or untreated designated as a food or beverage for human consumption. The concept of "food as medicine" has been around since the time of Hippocrates and has been developed in several Asian countries, namely Japan, Korea and China (DeBusk, 2002). DeBusk (2002) says, in various countries, functional foods are also often referred to by other terms eg, nutraceutical, vitafood, phytofood, pharmafood, designer food and food for specified health use.

Kencur rice is a typical refreshing drink from Indonesia (Java). This drink is also classified as herbal medicine because it has the effect of increasing appetite. Kencur rice is very popular because it has a sweet and fresh taste. The main ingredients of rice kencur, of course, are rice (mashed) and kencur rhizome. Another herbal product is turmeric acid. Herbal turmeric acid can be interpreted as herbal medicine to refresh the body or can make

the body become cold. There is also a useful saying to avoid the heat or canker sores, and make the stomach to cool.

The tradition of taking drugs or herbs in the form of traditional herbal remedies have been known and widely recognized by society, but not all of the people like the traditional herbs for herbal flavor that is synonymous with a pungent smell and a bitter taste so that the lower value of the drink. As a result, not all people eat and get the health benefits of traditional herbs. The phenomenon of this study is to increase the quality requirements of consumers in the field of food and health to the achievement of a healthy life. Increased needs are formed because of the belief that a modified diet can reduce the risk of the prevalence of various diseases (Kotz and Story, 1994). This raises the demand and consumption of products associated with the maintenance of a healthy body (Moorman and Matulich, 1993). This has encouraged the emergence of functional food consumption in the hopes elements that exist in functional food to meet the nutritional needs and as antibodies.

Research on the innovation adoption selected with consideration of the adoption of innovation is an important issue in marketing. Adoption was instrumental in the successful development of new products for the continuation of innovation is mainly determined on consumer acceptance of the new product. Functional food well received that has a growing market segment of 10% per year and this growth is higher than the growth in the global market segment conventional food that is 2-3% per year.

## **OBJECTIVES**

This study examines and describes some of the factors that cause consumers to adopt a functional food product. These aspects are discussed in detail described by (1) the marketing communication in this case is shown by the food label, (2) knowledge of the consumer (3) consumer confidence in functional food product (4) past experience using a functional food product. Research on the adoption of functional food innovation typical of Indonesia made of spices need to be done. Functional food typical of Indonesia is meant here is Jamu (herbs). Jamu is the name for traditional medicine from Indonesia. Later popularly known as herbs. Herbs are made from natural ingredients, in the form of parts of plants such as rhizomes (roots), foliage, bark, and fruit. In contrast, to other functional foods, processed beverage products from herbal and spice flavors generally have less preferred by consumers and cause an uncomfortable feeling when drunk. In contrast to other functional foods, processed beverage products from herbal and spice flavors generally have less preferred by consumers and cause an uncomfortable feeling when drunk. It is very different to the nature of consumers who want a product that has health effects and has a good flavor.

## **2. LITERATURE REVIEWS AND HYPOTHESIS**

### **Concept of Functional Food.**

Functional food is a food group that provide health benefits beyond the function of substances basic, and consisted only of food commonly consumed in normal amounts and do not include products intended for specific consumer groups, namely materials or food supplements for specific dietary requirements. Functional food has an important role in consumers with a variety of health status, because of its function of maintaining healthy start to reduce the risk of disease (Verschuren, 2002).

### **Adoption of Innovation.**

Adoption involves the interaction between affection and cognition, behaviors and events around (Sugandini, et al., 2017). To understand the customer and develop marketing

strategies, to understand what he was thinking (cognition), and what is perceived (affection), as well as what they do, in addition to events about which affect and are affected by what is thought, felt, and do consumers (Schiffman and Kanuk, 2012). Assael (1998), provide an understanding of consumer behavior as activities undertaken in order to acquire, consume and organize the goods or services including the decision-making process is done before and after such activities.

### **Food label**

Food label is a communication tool that is used to meet the information needs and health (Kim et al., 2001). Food labels more useful on the condition of consumers do not have access in evaluating the nutritional value of food products. In this condition, the food label is a useful way to help consumers make choices in accordance with the purpose of health products (Worsley, 2002). In general, the information provided includes: brand, content, ingredients, logos to indicate the specific claims, health claims, has advocated the use and educational information about healthy eating (Higginson et al., 2002).

H1: Food label positive effect on knowledge

### **Knowledge of innovation**

Knowledge of innovation influenced the perceived situation is important for individuals (Lai, 1991), and the tendency for individuals to have an awareness of an innovation related to their interests, needs and attitudes of individuals (Rogers, 1995). In this stage of knowledge, someone does not have information about new innovations. Therefore, information regarding the innovation should be delivered through a variety of existing communication channels, either through electronic media, print media, as well as interpersonal communication among communities.

H2: Knowledge positive effect on the adoption of functional food

### **Trust**

Trust is a natural feeling or belief in which a person is willing to act (Dasgupta, 1988), or an option (Alpern, 1997). Trust is described as a cognitive measures (for example, form an opinion or prediction that something will happen or people will behave in a certain way), affective (eg feeling problems) or conative (eg a matter of choice or desire). Zhao et al. (2010) said, trust is at risk and uncertainty of a transaction. An important reason why the belief in the adoption of new products need to be investigated extensively? Because, trust as a key element of success of new product adoption. Chen and Dhillon (2003), states that trust is an important dimension in the adoption of new product. Trust also can affect intentions and adoption of new products (Limayem, Khalifa, and Frini 2000).

H3: Trust in the functional food influence on the adoption of functional food.

### **Experience.**

The concept of this experience shows that the level of use of the product will be higher if the consumer would experience the product is no confidence in the product (Gahtani, 2003). When consumers know a lack of compatibility between the values that are owned, consumers will have a negative attitude to a product, namely distaste for the product. If consumers feel the product does not create confidence in the minds of consumers, so consumers will not like the new product. Venkatesh et al (2003) put the experience as moderating variables, which will strengthen or weaken the influence of attitude to the intention of using. In this study, the consumer experience on the performance of the products will be tested direct influence on consumer persuasion on functional food product. The experience of using the product is

added as a factor that influences consumers to adopt new products, due to the persuasion of consumers on a product, is the result of a previous consumer experience or past experiences.

H4: Experience a positive effect on the adoption of functional food.

### Research Model

Based on the hypothesis that is described above, the research model proposed in this study are as follows:

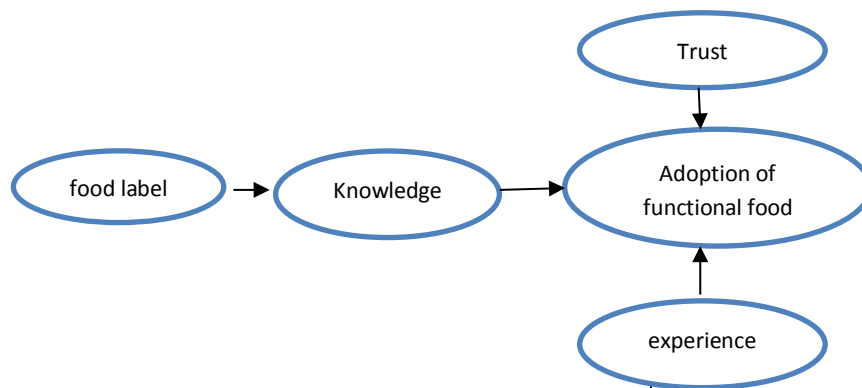


Figure 1. Research Model

## 3. METHOD

### Research Design

This study uses quantitative designs in the form of surveys, using research approaches explanation of the research that explains the relationship between variables through hypothesis testing (Cooper and Schindler, 2003).

### Instruments and data collection

A self-report questionnaire was used in this study. In addition to providing Reviews their demographic information, of participants were required to respond to 17 items, specifically, the adoption of (3), the food label (3), experience (3), knowledge (5), trust (3). Respondents were asked to indicate the items on a five Likert scale. Whether they strongly disagree (1), slightly disagree (2), neutral (3), slightly agree, (4) and strongly agree (5) with the statements.

### Sample and procedure

Population in this study are all consumers who adopt beverages that have the function of curing and preventing diseases that come from herb. This research area is in Central Java, Indonesia. Unit sample in this research is the individual. The sampling method used in this research is purposive sampling, which collects information from members of the population with specific criteria. Criteria respondents sampled are the same in a qualitative study, namely (1) consumers who have made a purchase beverages that have the function of curing and preventing diseases that come from herbs with 2-5 times the frequency of purchases and more than 5 times; (2) the consumer is in the purchase decision makers food for themselves and their families or relatives. The total sample of 200 respondents, the number of these samples follow the guidelines Hair et al (1998) which states that a sample size of at least five

or ten times the observed variables. The number of observed variables are as many as 5, so the minimum required sample is 50 respondents.

### Operational definitions and measurement of research instruments

This study describes the connectivity between variables in a model, variables-variables used in this study are: the adoption of functional food, food label, knowledge, trust, and experience. Operational definitions and indicators of each variable can be described in table 1.

Table 1. Operational definitions and indicators

variables	Conceptual definition	Indicators	Source
<b>Adoption functional food</b>	Mental processes, in taking the decision to accept new products and assert more about acceptance of the new product.	<ul style="list-style-type: none"> <li>• a desire to buy herbs.</li> <li>• consider of buying herbal medicine in the future.</li> <li>• decided to buy herbs now</li> </ul>	Rogers, 2003. Cheon et al, 2012.
<b>food label</b>	Communication tools used to meet the information needs and increase consumer knowledge on functional food product	<ul style="list-style-type: none"> <li>• The accuracy of product information</li> <li>• The contents of the message in a food label can explain the content of the product</li> <li>• Suggested uses of the product acceptable to consumers well.</li> </ul>	Kim et al., 2001
<b>Knowledge</b>	The structure and content of information stored in memory	<ul style="list-style-type: none"> <li>• Familiar use products</li> <li>• Ability to ensure the quality of their products.</li> <li>• Understanding the technical aspects related to the product.</li> <li>• Understanding the attributes and display attached to the product.</li> <li>• Understanding the benefits of the product.</li> </ul>	Alba and Hutchinson, 1987 Rao and Monroe, 1988.
<b>Trust</b>	Referring to the positive belief about a trustworthy, reliable and are believed, both the process and goals	<ul style="list-style-type: none"> <li>• The product can be trusted.</li> <li>• The quality of a given functional product can be trusted.</li> <li>• The materials used to make a functional product can be trusted.</li> </ul>	Fogg, 1999. Lee and Song, 2013.
<b>Experience</b>	Merger of consumers' assessment of the use of functional food.	<ul style="list-style-type: none"> <li>• Never have a satisfying experience with consuming functional products ..</li> <li>• Never benefit by consuming a functional product.</li> <li>• Ever feel the health effects after consuming functional products</li> </ul>	Bettman and Park, 1980

This study used a technique structural equation modeling (SEM). The study used a two-stage approach to SEM, the measurement and structural models. The model is intended to confirm a factor based on the empirical indicators.

### 4. RESULTS

Table 2 shows a summary of the overall model fit measures. All absolute measures were significant and considered acceptable. In addition to absolute values which are the root mean

squared residual (RMR), the root mean squared error of approximation (RMSEA), the goodness-of-fit index (GFI), and the adjusted goodness-of-fit index (AGFI), and NFI as comparative fit measures were examined. Assessing all measures, the full general structural model was accepted and believed to be good enough to analyze the parameter estimates. Hypotheses testing was conducted within the context of the structural model.

**Table 2. Goodness-of-fit measures for SEM**

Fit measures	Indeks goodness of fit	Recommended value	Value	Keterangan
<i>Absolute fit measures</i>	Chi-Square	Small	2,376	Good
	$\chi^2$	$\geq 0.05$	0,025	Good
	GFI	$\geq 0.90$	0,916	Good
	RMSEA	$\leq 0.08$	0,079	Good
<i>Incremental fit measures</i>	AGFI	$\geq 0.90$	0,945	Good
	CFI	$\geq 0.90$	0,961	Good
<i>Parsimonious fit measures</i>	Normed $\chi^2$ (CMIN/DF)	$1 \leq \text{Normed } \chi^2 \leq 5$	2,344	Good

Hypotheses were examined by confirming the presence of a statistically significant relationship in the predicted direction. Food label significant positive effect on knowledge, knowledge of a significant effect on the adoption of functional food. Experience and trust significant positive effect on the adoption of functional food. The parameter estimates for the hypothesized paths, their t-values, and result of hypotheses are summarized in Table 3.

**Table 3. Parameter estimates, t-value, and results of hypotheses**

	Hypothesized path	Standardized estimate	CR	Result of hypotheses
H1	Adoption <----- trust	0,180	2,876	Supported
H2	Adoption <----- experience	0,411	3,234	Supported
H3	Adoption <----- knowledge	0,318	3,426	Supported
H4	Knowledge <----- label	0,255	3,292	Supported

In the context of adoption of innovation, key endogenous constructs of the study, all the relationships among the constructs were significant. The strongest magnitude was found in a relationship between experience and adoption = .411, followed by knowledge = .318. trust had effect on adoption = .180, food label had effect on attitude toward adoption = .255.

## 5. CONCLUSION AND DISCUSSION

This study confirmed Adoption of innovation (Rogers, 1995), with the addition of variables trust, experience, label and knowledge. Results of the present research led to the conclusion that the model well represented the collected data according to the result of goodness-of-fit test. This theory explains that, people will more easily adopt innovations if she has had no previous experience of the products to be adopted. Product knowledge and trust can also influence adoption of innovation. The results also showed that the food label has a positive influence on knowledge. This study shows that food labeling can influence the adoption of functional food innovation through the mediation of knowledge. The explanation is, if the food label can provide the right information will be content of the products, will

improve consumer knowledge of the efficacy of the functional food product. With increasing knowledge of functional food products, the adoption rate of individuals likewise will increase.

## 6. SUGGESTIONS FOR FURTHER RESEARCH

This study only describes the adoption of innovation by setting the functional food (herbal beverage products). The results of the study can be generalized only to products that have the same criteria as herbal drinks and products with consumers the same criteria to the criteria of the respondents sampled in this study. Subsequent research associated with this herbal product functional drinks, can add some variables that have not been analyzed in this study, which is considered to be able to explain in more strongly about this herbal drink adoption model. Another variable that needs to be added in future studies is reference (Kotler, 2006) and persuasion (Rogers, 2003). Observation of researchers towards the adoption of a functional food innovation herbs that have been conducted by researchers, found that the reference or advice can be used as a variable that affects the adoption of functional foods, herbal medicine needs to be followed up. This is because Indonesia has a culture and customs that promote their ancestral advice is highly valued by most people and need to be considered in mengkonsmsi product. Persuasion is an important aspect that influence adoption of innovation, because it can describe the beliefs and evaluations consumers about a product.

## REFERENCES

- [1] Alba, J. W. and J. W. Hutchinson (1987), "Dimensions of Consumer Expertise," *Journal of Consumer Research*, 13 (March), 411-454.
- [2] Assael, H (1998), *Consumer Behavior and Marketing Action*. 6<sup>th</sup> Edition. Ohio: South-Western College Publishing.
- [3] Bettman, J. R and Park, C.W (1980), Effects of Prior Knowledge and Experience and Phase of the Choice Process on consumer decision processes: A protocol analysis. *Journal of Consumer Research* (pre-1986); Dec 1980; 7, 3; pp. 234-359
- [4] Chen, S. C. and Dhillon, G.S. 2003. 'Interpreting Dimensions of Consumer Trust in E-Commerce', *Information Technology and Management*, 4: 303-313.
- [5] Cheon, J., Lee, S., Crooks, S. M., & Song, J. (2012). An investigation of mobile learning readiness in higher education based on the theory of planned behavior. *Computers & Education*, 59(3), 1054-1064.
- [6] Cooper, D.R and Schindler, P.S (2003), "*Business Research Methods*," 8<sup>th</sup> ed. Boston: McGraw-Hill. Companies
- [7] Dasgupta, Partha (2000) 'Trust as a Commodity', in Gambetta, Diego (ed.) *Trust: Making and Breaking Cooperative Relations*, electronic edition, Department of Sociology, University of Oxford, chapter 4, pp. 49-72, .
- [8] DeBusk, R., 2002. Functional Foods. [http:// www.andrews.edu / N U F S /functionalfoods.html](http://www.andrews.edu/NUFSS/functionalfoods.html).
- [9] Fogg, B. J. and Tseng, H. (1999). The Elements of Computer Credibility. In: *Proceedings of The CHI '99*, *ACM Press*, New York, pp. 80–87.
- [10] Gahtani A.S (2003), "Computer Technology Adoption in Saudi Arabia: Correlates of Perceived Innovation Attributes," *Information Technology for Development*. 10 (2003) 57–69 57

- [11] Gatignon H and Robertson T.S (1985), "A Proportional Inventory for New Diffusion Research," *Journal of Consumer Research*, 11: 849-867.
- [12] Hair, Jr., Anderson, R.E., Tatham, R.L and Black, W.C (1998), *Multivariate Data Analysis*, New Jersey: Prentice-Hall International, Inc
- [13] Higginson, C. S., M. J. Rayner, S. Draper and T. R. Kirk (2002), "The Nutrition Label – Which Information is Looked At?," *Nutrition and Food Science*, Vol.32 (3), 92-99.
- [14] Kim, S. Y., R. M. Nayga, JR., O. Capps, JR., (2001), "Food Label Use, Self-Selectivity, and Diet Quality," *The Journal of Consumer Affairs*, Vol 35, No.2, 346-363.
- [15] Kotler, P (2004), "*Marketing Management*," 11<sup>th</sup> edition, New Jersey: Prentice Hall.
- [16] Kotz, K., & Story, M. (1994). Food advertisements during children's Saturday morning television programming: Are they consistent with dietary recommendations? *Journal of the American Dietetic Association*, 94, 1296-1300
- [17] Lai, A. W. (1991), "Consumption Situation and Product Knowledge in the Adoption of a New Product," *European Journal of Marketing*, Vol. 25, No 10.
- [18] Lee, J. H and Song, C-H. (2013). Effects of Trust and Perceived Risk on User Acceptance of A New Technology Service. *Social Behavior and Personality*, 41(4), 587-598.
- [19] Limayem, M., Khalifa, M., and Frini, A. (2000). What Makes Consumers Buy from Internet? A Longitudinal Study of Online Shopping. *IEEE Transactions on Systems, Man, and Cybernetics- Part A*, 30(4): 421-432.
- [20] Moorman, C. and E. Matulich (1993), "A Model of Consumers' Preventive Health Behaviors: The Role of Health Motivation and Health Ability," *Journal of Consumer Research*, Vol 20, September, 208-228.
- [21] Rao, Akshay R. and Monroe, Kent B. (1988). The Moderating Effect of Prior Knowledge on Cue Utilization in Product Evaluations, *Journal of Consumer Research* 15 (2), 253-264.
- [22] Rogers E.M (1995), "*Diffusion of Innovations*," 4<sup>th</sup> ed. Free Press, New York.
- [23] Rogers E.M (2003), "*Diffusion of Innovations*," 5<sup>th</sup> ed. Free Press, New York.
- [24] Schiffman, L. G., and Kanuk, L. L. (2004). *Consumer behavior*, 10<sup>th</sup>, Prentice Hall, Inc. New Jersey
- [25] Sugandini, D. Istiana, R & Istanto, Y (2017). Adoption of natural dyes for batik artisans in Yogyakarta, Indonesia, *Review of Integrated Business and Economics Research*, volume 6 (issue 1), pp349-359 (forthcoming)
- [26] Venkatesh V and Davis F.D (1996), "A Model of The Antecedents of Perceived Ease of Use: Development and Test," *Decision Sciences*, 27:3. pp. 451-478
- [27] Venkatesh V., Morris M.G., Davis G.B and Davis F.D (2003), "User Acceptance of Information Technology: Toward A Unified View," *MIS Quarterly*, 27:3. pp.425-478
- [28] Verschuren, P. M. (2002), "Functional Foods: Scientific and Global Perspectives," *British Journal of Nutrition*, Vol. 88, Suppl. 2, S125-S130.
- [29] Zhao, A. L., Lewis, N. K., Lloyd, S. H., and Ward, P. (2010). Adoption of Internet Banking Services in China: Is It All About Experiences?. *International Journal of Bank Marketing*, 28(1): 7-26.