



# Analysis of the adoption process of instant noodle giving behavior to toddlers: A phenomenological study of learn, feel, and do in mothers

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## ABSTRACT

**Background:** Instant noodles given by mother to toddler can be bad for the toddler's health, especially if presented without additional material containing protein, minerals or vitamins. The purpose of this study is to determine the stage of learning, feel and experience by informants in adopting the behavior of giving instant noodles to toddlers. **Method:** Researchers use qualitative approach methods with phenomenology design. The research data was collected through interviews and observation of 23 informants consisting of mother of toddler, family of toddler and Nutritional Implementer of health center/*Pusat Kesehatan Masyarakat* (Puskesmas) Turikale. The data is then processed using content analysis. **Findings:** Sources of informant information are personal experiences, friends, television and internet. Informants know the side effects of instant noodles such as allergies, digestive disorders, and addictions. Informants also looked at instant noodles as a practical food, affordable, easy to find, and to increase the appetite of toddlers. **Conclusion:** Based on the result of the research, it can be concluded that at the stage of learning is found the reason for giving instant noodles due to the child's desire factor and belief to the excess of instant noodles, while at the feel of informant stage confident of the danger of instant noodle but not bigger than the child's desire factor, to stage do with the pattern of adoption trial-do is to try some practices such as giving instant noodles that are not berkuah with additional ingredients that informants provide eggs and green mustard greens. **Novelty/Originality of this article:** The novelty of this study lies in the use of the learn, feel, and do approach to analyze the process of adopting instant noodle-giving behavior in toddlers, focusing on the mother's internal conflict and the trial-do adoption pattern. This study is also unique because it uses a phenomenological method to explore various factors influencing mothers' decisions, including social, economic, and psychological aspects, and identifies diverse sources of information shaping their knowledge and perceptions.

**KEYWORDS:** behavior; instant noodles; toddler mother.

## 1. Introduction

Instant noodles are made from wheat flour and come with various flavored powder seasonings (Eteng et al., 2023; Gulia et al., 2014; Bayomi & Alamri, 2022; Niu & Hou, 2018). This type of instant food contains a large amount of carbohydrates and high levels of salt, while being poor in protein, vitamins, and minerals (Park et al., 2011). This is consistent with research showing a significant increase in the weight of the kidneys and liver in albino rats that were fed instant noodles for 28 days. The increase was also followed by direct bilirubin, total bilirubin, total cholesterol, triacylglycerol, and Low-Density Lipoproteins (LDL). On the other hand, levels of albumin, total protein (TP), High-Density Lipoproteins

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(HDL), hematocrit, and hemoglobin decreased as the percentage ratio of instant noodles to pellets increased. Therefore, in terms of nutrition, instant noodles cannot be considered a complete food as they do not meet the balanced nutritional needs of the body, especially for toddlers who are the most vulnerable group (Shin, et al., 2014).

Instant noodle consumption in Indonesia reached 13.7 billion packs in 2008 and increased to 14.5 billion packs in 2010. This high level of instant noodle consumption places Indonesia second in the world for instant noodle consumption after China (World Instant Noodle Association, 2017). Besides being favored by adults, instant noodles are also liked by children, including toddlers. Research conducted on children aged 3-12 years showed that 998 children across 33 provinces in Indonesia consumed instant noodles as their breakfast menu (Perdana and Hardinsyah, 2013). Another study also stated that children are among family members who consume instant noodles, with a consumption percentage of 32.1% in poor families and 32.6% in non-poor families (Wandasari, 2014).

Generally, in Indonesia, mothers play a crucial role in child-rearing and meal preparation for the family (Nirmala et al., 2024). A mother must possess knowledge and attitudes that are responsive and caring towards her child's growth and development. A mother with a good attitude towards nutrition will also foster good behavior in improving the family's nutritional status. However, in reality, this often does not align with actions due to external factors such as economic and socio-cultural aspects (Ma et al, 2023; Adejuwon, 2019; Gulia et al., 2014). According to the developmental stage of toddlers, children begin to desire independence and act as active consumers in terms of food. This causes toddler food intake to tend to be lacking because toddlers can refuse disliked food and only consume their favorite foods (Scaglione et al., 2018). To address this issue, mothers provide instant noodles as a rice substitute for their children because of their taste preference without considering the balanced nutritional content.

One in ten Indonesians consumes instant noodles at least once. The third province with the highest consumption percentage above the national average is South Sulawesi Province at 16.9%. The prevalence of underweight and malnourished toddlers in this province is 25.6% (Ministry of Health of the Republic of Indonesia, 2013). More specifically, Maros Regency is the fifth-highest district in South Sulawesi with 29 cases of malnourished toddlers (Maros Health Service, 2013).

Monitoring conducted by the Directorate of Community Nutrition in 2015 also found the prevalence of underweight and malnourished toddlers in South Sulawesi Province to be 22.1%, with Maros Regency having the highest percentage of underweight and malnourished toddlers in the province, at 30.5% (Ministry of Health of the Republic of Indonesia, 2015). This shows that the problem of malnutrition is still a public health problem that must be considered, especially for Maros Regency.

Based on the aforementioned explanations, the researcher is interested in studying "Maternal Behavior in Providing Instant Noodles to Toddlers." This research will be conducted at the Posyandu in Turikale, which falls under the working area of the Turikale Public Health Center. In 2013, this health center's working area had the highest discovery rate of malnourished toddlers, at 13.7% (Ministry of Health of the Republic of Indonesia, 2013). The Posyandu in Turikale has the highest percentage of toddlers with malnutrition status in the working area of the Turikale Public Health Center, at 25%. This location is considered accessible by the researcher and can represent Maros Regency as a whole.

### *1.1 Multipath Adoption Process*

The phenomenon of mothers' behavior in giving instant noodles to be consumed by their toddlers is the result of behavioral adoption (Broilo et al., 2017). This behavioral adoption process occurs when individuals receive information from their surroundings that becomes the reason for adopting specific behavior. According to Kotler and Roberto (1989), there are three stages in this theory, namely the learning stage, the feeling stage, and the action stage (do), which are further divided into trials (trial-do) and decisions to continue (committed-do).

At the learning stage, a person gains knowledge in the form of information about something (Kotler and Roberto, 1989). For example, a toddler's mother sees an advertisement on television about giving instant noodles to toddlers. This stage can continue if the knowledge creates high confidence about it. However, if the information is not convincing, the process that is gone through is the trial or trial-do stage.

The feeling stage is related to the adopter's beliefs about the impact of the behavior that will be adopted (Kotler and Roberto, 1989). The doing stage is divided into trial-do and committed-do (Pollack et al., 2015). The trial-do stage is when the adopter tries and confirms his beliefs about what will be adopted. If the adapter has a good impression at this stage, the process will continue to the feel stage. Meanwhile, the committed-do stage is when the adopter decides to adopt a behavior that has been proven and gives the adopter high confidence (Kotler and Roberto, 1989).

## 2. Methods

### 2.1 Type of research

This research is a qualitative research with a phenomenological approach. This approach is used to explore the subjective experiences of informants in interpreting and responding to the phenomena studied. These subjective experiences include individual perceptions, experiences, and beliefs related to an issue. In this context, this method allows researchers to capture the meaning of the informant's daily experiences.

This research was conducted at the Turikale Village Health Post which is part of the Turikale Health Center working area, Maros Regency, South Sulawesi Province. This location was chosen because it was considered relevant to the research objectives, considering that the Health Post plays a role as one of the health facilities that serves the local community, especially in terms of maternal and child health. By taking the location at the Health Post, this research can link the local context with the socio-cultural dynamics that influence health practices in the village.

### 2.2 Determination of informants and data collection mechanisms

The method of determining the informants used is purposive sampling. This method is the selection of respondents based on criteria that are relevant to the objectives of the study. The informants in this study numbered 21 people consisting of 10 mothers of toddlers, 10 family members of toddlers and 1 Nutritional implementer Puskesmas Turikale. The selection of informants was carried out to obtain varied perspectives but still focused on groups that have a close relationship with the issue being studied.

Primary data was obtained from in-depth interviews using mobile phones, stationery, and interview guidelines. This method allows researchers to dig up information in more depth and personally. Meanwhile, the use of aids such as mobile phones was used to record interviews, so that no information was missed during the data collection process. In addition, this recording also provides an opportunity for researchers to focus on interactions and communications during interviews, without being distracted by manual notes. The recording process was carried out after obtaining approval from the informants.

### 2.3 Data management and analysis

The data obtained from the interviews were written in the form of transcripts to facilitate the analysis process. The data were analyzed using the content analysis method, which involves creating a research matrix to organize the information. The results of the analysis were then interpreted and presented in narrative form, which aims to provide a deeper understanding of the themes that emerged from the data.

This study uses source triangulation techniques to ensure the level of validity of the data collected. Source triangulation techniques are carried out by using information from

various informants and related parties to verify the truth of the information obtained. This approach helps increase the validity and reliability of research findings.

### 3. Results and Discussion

The number of informants in this study was 23, consisting of 11 mothers of toddlers, 11 family members of toddlers, and 1 TPG from the Turikale Health Center. Based on their occupation, the informants who were also mothers of toddlers were predominantly housewives. This study focuses on the learn, feel, and do stages of Kotler and Roberto's Multipath Adoption Theory (Kotler & Roberto, 1989).

#### 3.1 Learning stage

The "learn" stage in this study refers to the phase when informants acquire various knowledge about instant noodles from personal, non-personal sources, and personal experiences. The informants understand instant noodles as a tasty additional food that contains harmful substances for the body. The following are excerpts from the informants' interviews:

*"It's a kind of additional food, meaning it's given as a snack. But those noodles contain preservatives, which are dangerous if consumed continuously, and they also have wax"*  
(ER, 36 years old, housewife).

In addition to being considered unhealthy, an informant named KA stated that instant noodles taste good and can stimulate appetite. This view is in line with the opinion of another informant, SM, who also felt the same way. Both said that although instant noodles are not always recommended in terms of health, the appeal of the taste is still hard to ignore.

*"My child also loves eating instant noodles. There was a time when I was eating noodles with his father, and he saw me, so he wanted it too. I tried it on him, and because he was still one year old, I chewed it first and then gave him the broth, and it turned out he liked it. Noodles are delicious, tasty, and can stimulate appetite. Even we, as adults, sometimes crave something sour, so we eat Soto Ind\*\*\*\* with lime and chili seeds. It's so delicious that it makes you forget you're full."*

(SM, 32 years old, housewife)

In terms of price, MD informants categorize this instant food as affordable food. Instant noodles are an economical choice for many families. This food is often used as an alternative when the shopping budget is limited because the price is relatively cheap. This opinion is supported by AB, MU's husband who said:

*"If there's no food at home, it's better to just buy noodles at the shop. Noodles are tasty, kids like them, they're cheap, and easy to get."*

(AB, 34 years old, farmer)

Informant FI acknowledged the disadvantages of instant noodles. Instant noodles can trigger a decrease in appetite if consumed frequently. This informant also claimed that instant noodles have no nutrition and can actually cause children to experience rashes if they consume instant noodles.

*"Noodles can kill your appetite if eaten too often. They have no nutrients. I've seen children get rashes from eating noodles."*

(FI, 27 years old, grocery seller)

On the other hand, the results of the researcher's interviews with several informants also revealed that instant noodles can be traded. This shows that instant noodles have economic benefits. In addition, informants also mentioned that instant noodles can be filling. In other words, instant noodles can be an alternative for daily consumption, as conveyed by FI who is also a grocery trader.

*"In addition to being eaten and filling, they can also be sold."*

(FI, 27 years old, grocery seller)

Unlike other informants, ER stated that instant noodles have no benefits at all. Instant noodles can actually trigger malnutrition in children. Children are also thought to be able to experience leukemia if they consume instant noodles too often, because of the content of the ingredients in instant noodles

*"Just a snack, it seems like there's no benefit to instant noodles because kids usually lack nutrition. If they always eat instant noodles, they could also get leukemia. We don't even know where the ingredients come from."*

(ER, 36 years old, grocery seller)

In addition to being considered useless, as ER admitted, instant noodles also have side effects such as causing rashes, making children less intelligent, malnourished, and constipated, and are not suitable for pregnant women. The informant's knowledge was obtained from social media. Information from midwives and the informant's personal experience were also sources of knowledge.

*"I saw on Facebook that eating Ind\*\*\*\* can make children less intelligent. When I was pregnant, the midwife told me not to eat Ind\*\*\*\* because it could harm the fetus. For pregnant women, Ind\*\*\*\* contains high carbohydrates. Sometimes noodles also make me itchy. I've heard that eating noodles can make children fat, but it's a soft kind of fat. They say it also causes bowel problems"*

(SM, 32 years old, housewife)

The informants are aware of the various side effects of giving instant noodles to toddlers, but they still give them because the children like them. Instant noodles are also given as an effort to get children who have difficulty eating to eat. In addition, the low price is another motivating factor for informants to give instant noodles to toddlers. Support also comes from toddlers' families, such as AR.

*"Noodles are tasty, and kids like them, so we cook them. Rather than having the kids cry and not want to eat, it's better. They're also cheap."*

(AR, 26 years old, entrepreneur)

Various brands of instant noodles are advertised in various media. This is one of the reasons why informants recognize various brands of instant noodles. These brands also offer various flavors that are very familiar to informants, such as fried flavors and soto flavors. The majority of informants stated that their practice of giving instant noodles to toddlers was not based on a desire to follow trends or imitate other people's habits. Instead, they made this decision based on personal experience in processing and serving instant noodles. Informants believe that with the right processing method, such as minimizing the content of ingredients that are considered unhealthy, instant noodles can still be given to toddlers. This view is reinforced by the experience of each informant in preparing food for their children, reflecting an awareness and effort to maintain a balance between convenience and health. The testimony of ER, one of the informants, supports this statement, showing that the process of serving instant noodles is carried out with certain steps to reduce health risks.

*"I cook as I usually do. I usually also advise buyers to discard the first boiling water, then wash it one or two times and add fresh hot water. Only then do I give it to the child."*  
(ER, 36 years old, housewife)

Unlike several other informants, MA admitted to getting information and following the recommended practices from a friend who is also a midwife. MA informed that the first boiled water before serving should be discarded and replaced with new hot water, especially for instant noodles with soup. This step is believed to be able to reduce the content of substances that are considered unhealthy in instant noodles, making them safer to consume, especially for toddlers. This practice became a guide for MA in preparing instant noodles for her children, unlike other informants who relied more on personal experience.

*"My friend, who is a midwife, once told me to discard the first boiling water when cooking noodles and replace it with fresh hot water. That's for soupy noodles"*  
(MA, 21 years old, housewife).

### 3.2 Feel stage

The "feel" stage relates to the informants' beliefs about the results and consequences of giving instant noodles to toddlers. The majority of informants do not feel or believe that there are benefits from giving instant noodles to toddlers. However, one informant has a different view.

*"Noodles can increase my child's appetite, and most other children also like them."*  
(KA, 28 years old, housewife)

The side effects experienced by toddlers or informants when consuming instant noodles include allergies, noodle addiction and loss of appetite for rice. Allergy problems can arise due to the content of certain ingredients in instant noodles that are not suitable for some children, while noodle addiction can cause them to prefer instant noodles over other nutritious foods. In addition, loss of appetite for rice shows a significant impact on children's diet, which should be balanced and varied. This is in line with SA's statement, which also noted changes in children's eating behavior after consuming instant noodles regularly.

*"It can cause itching if eaten too often."*  
(SA, 28 years old, housewife)

*"My child's stomach sometimes gets bloated, and they don't want to eat rice. If they eat noodles, they won't eat rice. So, if they eat noodles in the afternoon, they won't want to eat dinner."*  
(SI, 33 years old, housewife)

Almost all informants were of the opinion that instant noodles are not suitable for toddlers for various reasons. Several informants stated that there is wax content in instant noodles which can cause health problems in children. Instant noodles are also stated to not have sufficient nutrition for children's development and are difficult to digest.

*"It's not good. Even we adults shouldn't eat noodles, let alone small children. Those noodles contain preservatives and MSG. It's probably not good for the stomach either."*  
(SA, 28 years old, housewife)

From the information obtained in this study, it can also be seen that knowledge about the side effects of instant noodles is quite diverse but is not a sufficient reason to stop giving instant noodles to their toddlers by informants. This is also supported by the confession of one of the TPG Puskesmas Turikale that there has never been an activity that specifically discusses the dangers of giving instant noodles to toddlers.

*"Instant noodles are not good if consumed excessively by toddlers because there are preservatives that can be harmful to health and the nutritional content is also not sufficient to meet the needs of toddlers, especially if they are not given vegetables or eggs. But at Puskesmas Turikale there is indeed no program that specifically discusses instant noodles. Usually information about the dangers of instant noodles is conveyed during counseling at the integrated health post. Usually accompanied by balanced nutrition counseling. But usually not all mothers attend the counseling, so many do not get the information directly from the officers, that's why they said there are still some who give instant noodles to their toddlers"*

(ML, 41 years old, TPG Turikale Health Center)

### 3.3 Do stage

The do stage is the stage that is identical to the practice of giving instant noodle consumption to toddlers. This stage is divided into two, namely trial-do and committed-do. Trial-do is a stage when the informant tries to give instant noodle consumption to toddlers to ensure their belief in the behavior of giving instant noodles for consumption by toddlers. This stage can be done repeatedly. This stage can also be part of the learn stage where the informant obtains information about giving instant noodle consumption to toddlers from the consumption trial that they have done. Furthermore, the stage will continue to the feel stage. While the committed-do stage is a stage when the informant gives instant noodle consumption to toddlers continuously after being sure and satisfied with the activity of giving instant noodle consumption to toddlers. The satisfaction in question is when the informant feels the effects that are in accordance with the informant's expectations. The processing of instant noodles carried out by the informant is divided into three ways. One of them is by throwing away the first instant noodle water like what Mrs. SM did.

*"I cook it first then I throw away the first water, I drain it first, then I boil the water again then I mix it"*

(SM, 32 years old, housewife)

The practice of processing instant noodles with soup carried out by informant SM is also carried out by most other informants. However, there is also an informant with the initials KA who processes instant noodles according to the instructions on the back of the instant noodle package. Other informants also have other ways of processing instant noodles, such as making omelets.

*"I usually cook it the same way as explained on the back of the noodle package"*

(KA, 28 years old, housewife)

*"For fried noodles, you can throw away the water then add eggs mixed with the spices and then make an omelet. Can be a substitute for fish"*

(HM, 34 years old, housewife)

The informant gave instant noodles to toddlers for the first time when the toddlers were one year old. When the toddlers already had teeth and were considered able to eat rice, then at that time the informant assumed that toddlers could be given instant noodles. Especially if the toddlers were experiencing a lack of appetite. This is in line with the statement from Mrs. MD.

*"I gave it for the first time when my child was approximately one year old"*

(MD, 26 years old, housewife)

Other informants such as MD said that she gave instant noodles to her toddler when the toddler was two years old. On the other hand, SU admitted to giving instant noodles for the first time to her child when she was three years old and HM when her child was four years old. The informants obtained instant noodle products from stalls and one of the minimarkets closest to the research location. Fried noodles are a favorite variant. The delicious taste and the absence of the first boiling sauce which is considered dangerous are the reasons why fried noodles are chosen by mothers of toddlers. Toddlers also like this product based on information from several informants including Mrs. M.A.

*"I usually cook fried Ind\*\*\*\*. He prefers it to other noodles"*

(MA, 21 years old, housewife)

Unlike several other informants, Mrs. ER said that she often gave the wrong type of instant noodles because the noodles were oil-free. ER believes that this type of instant noodle is healthier than other brands of instant noodles that contain oil. By giving the instant noodle brand, Mrs. ER feels calmer because it can reduce the risk of negative impacts that may be caused by instant noodle consumption in toddlers.

*"I usually give M\*\*\*\* Mie because it doesn't have oil. I also usually give Ind\*\*\*\* broth, which doesn't have oil. Basically anything that doesn't have oil"*

(ER, 36 years old, grocery seller)

The informant gives instant noodles to her toddler twice a week with one pack of instant noodles to the toddler. The informant also minimizes giving instant noodles if possible because she believes that giving instant noodles should not be too often. This was stated by several informants including Mrs. SM.

*"I usually cook it twice a week, if possible not at all. But if he (the toddler) asks, then just cook it. The important thing is to limit it because it shouldn't be done too often"*

(SM, 32 years old, housewife)

Several other informants admitted to giving their toddler one pack of instant noodles per week. There were also some who gave it four times a week. Information from another informant provided information that noodles were served every day for the toddler to consume. This is in accordance with Mrs. SI's statement.

*"He eats noodles every day. often eat at noon, sometimes at night, but more often at noon. Usually he eats a pack of Ind\*\*\*\* with his older sibling, but usually he eats cup noodles alone."*

(SI, 33 years old, housewife)

Eggs are the most common food ingredient added by informants to instant noodle dishes for toddlers. Rice, which is a staple food for Indonesians, is also something that is always provided by informants along with instant noodles. In addition, vegetables such as green mustard greens are also a complement to this instant food dish, especially green mustard greens, but are not always provided.

*"Usually given green mustard greens, meatballs if there are any, and eggs. I also give a little rice so that it lasts longer. If it's just noodles, they get hungry again very quickly"*

(ER, 36 years old, grocery seller)

There was also an informant who stated that their child did not like vegetables, so the only additional ingredient usually provided was eggs. This statement describes the challenges faced by parents in meeting their children's nutritional needs when children show limited preferences for food.

*"Usually mixed with eggs. But when it comes to vegetables, the children don't like them. The children say 'it's not noodles, it's mom's'. I usually eat it with rice"*

(SA, 28 years old, housewife)

In addition to eggs, other informants also mentioned other additional ingredients such as sausages and meatballs that are often used to enhance the taste of instant noodles. The use of these ingredients shows the parents' efforts to create more attractive and appetizing dishes for children, although they still have to pay attention to the nutritional value of each addition used.

### 3.4 Discussion

Based on the results of the study, it was found that most informants obtained information about giving instant noodles to toddlers from personal experiences, friends, neighbors, family members of informants, and information from television and the internet. This is in accordance with the views of Kotler and Roberto that informants have access to information obtained from information sources, both from personal sources, non-personal sources, or the experiences of the informants themselves (Kotler and Roberto, 1989). First, personal sources are sources of information involved in interpersonal communication where the information provider can provide information directly and the recipient of the information can receive and respond to information directly as well. This communication can be carried out by two or more people. Second, non-personal sources are sources of information that can be found in mass communication involving a wide audience. The mass media involved include newspapers, magazines, radio, television, and the internet. The third source of information is a source of information related to the informant's personal experience when consuming instant noodles.

The results of the study found that the majority of informants admitted to processing instant noodles based on their own experiences. Some of them admitted to differentiating the way instant noodles are processed for the informant's personal consumption and for toddler consumption. For personal consumption, some informants use the first boiled water as a broth for noodle variants with broth. Meanwhile, for consumption by their toddlers, they throw away the first boiled water of the noodles and replace it with new hot water. The status of toddlers as children who are in the growth period is the reason for the informants to have this different attitude.

The presence of oil and the first boiled water from instant noodles that looks cloudy is not caused by the presence of wax that has dissolved, but rather the oil is the remainder of deep frying. Deep frying is a method of preserving fried ingredients in hot oil (Nutrifood Research Center, 2014). However, the frying process still makes instant noodles rich in saturated fat which can increase cholesterol levels in the blood. Information related to the dangers of instant noodles for toddlers is also information received by the informant. All sources of information, both personal and from the informant's own experience agree that instant noodles have a bad impact on toddlers' health. Information about the health impacts that the informant obtained from the social environment or media is allergies, diarrhea, vomiting, stomach problems and obesity (Huh et al., 2017; Charles et al., 2018; Ahmed et al., 2024).

Based on other studies, it was also found that instant noodles can make someone feel hungry faster and make consumers obese. The use of vegetable oil packaged with noodles can also trigger weight gain. In addition, the informant also stated that instant noodles are difficult to digest by the digestive system and contain MSG. This guideline states that an individual's daily intake of MSG should not surpass the safe threshold of 120 mg/kg/day. In

Indonesia, the average consumption of MSG is approximately 0.6 g per day (Scaglioni et al., 2018). In some cases, MSG consumption above the normal threshold can trigger allergic reactions such as itching, red spots on the skin, and nausea (Food Standards Australia New Zealand, 2003). Meanwhile, consumption of more than 2 grams per serving can cause symptoms of Chinese Restaurant Syndrome (CRS) (van den Berg et al., 2017). These symptoms are characterized by a burning sensation in the chest, back of the neck and lower arms, headache, nausea, heart palpitations, shortness of breath and frequent drowsiness.

One informant also said that instant noodles can make children unintelligent because of the spices and preservatives contained in instant noodles. The information was obtained from the informant's neighbor. In addition, children can become dependent on instant noodles and reduce their appetite for rice, fish and vegetables which the informant considered to have better nutritional value than instant noodles. Another informant also received different information from his family, that children who consume instant noodles excessively can get blood cancer. Instant noodles containing MSG if consumed excessively can cause brain dysfunction and damage to various organs (Kamal et al., 2023). This substance makes it difficult for children to learn, and can even cause Alzheimer's and Parkinson's disease (Ministry of Health of the Republic of Indonesia, 2017).

Other information obtained from this study is information about instant noodle brands known by informants. Changes in current community consumption patterns, for example instant noodles that are increasingly popular as a substitute for rice, have created competition in the instant noodle product category. In addition to the taste, price, and portion factors of each brand, the informant's self-factor who has an interest in new things makes them often try new brands or new variants of each brand they know. Television media plays an important role in this. Continuous promotions and also often updated to be more attractive by the related company have succeeded in attracting the interest of informants. Various practices of giving instant noodles to toddlers known by informants are based on personal experience or recommendations from friends and other people they see.

The majority of informants know to throw away the first boiled water from instant noodles. However, some other informants choose to ignore the information they know. The reasons for cooking too long and the taste of the noodles being less delicious compared to using the first boiled broth are considerations for informants. Most informants also know the importance of giving instant noodles with additional ingredients as a complement to the source of vitamins, minerals, and protein needed by toddlers' bodies. This is in accordance with the results of other studies that instant noodles cannot be said to be a complete food because they do not meet the body's balanced nutritional needs. Noodles made from wheat flour contain large amounts of carbohydrates, but only a little protein, vitamin, and mineral content. Therefore, the fulfillment of instant noodle nutrition can be obtained by adding vegetables and protein sources (Haridyanti et al., 2023). Vegetables contain antioxidants that function to prevent the development of free radicals in the body while repairing damaged body cells (Lobo et al., 2010).

The information obtained by the informant then becomes the informant's reason for carrying out the practice of giving instant noodle consumption to their toddlers. This information will be processed at the next stage, namely the feel stage. Feel is a stage in the informant that is related to their beliefs about the results and consequences of the behavior of giving instant noodle consumption to toddlers. This belief will have an impact on their attitude towards the behavior of giving consumption to toddlers. With high confidence, the process will continue to the committed-do stage. Suhardjo stated that the model of consumption behavior is greatly influenced by food production, distribution systems, social systems, economy, politics, and household conditions that give birth to lifestyles and are seen in the form of consumption behavior (Suwandi, 2014). This view is also in accordance with the results of this study which show that knowledge of the dangers of giving instant noodle consumption to toddlers obtained from the learn stage does not immediately make informants refuse to give instant noodles to their toddlers. This is because there are other factors that inhibit the informant's refusal to give instant noodle consumption to their toddlers, both the excess factors of instant noodles and factors from the consumer.

The most dominant factor is the toddler's desire factor which is formed by the social environment, especially in the family environment. There are three storylines from informants regarding the formation of this toddler's behavior. The first story explains that giving instant noodles to toddlers is for the reason of stimulating the child's appetite, while the second story explains the reason for giving instant noodles to toddlers because the toddler has found and been given by the informant, family members or neighbors who are consuming instant noodles. From the results of interviews with the informant's family members, it also shows that there is no prohibition against the mother's behavior in giving instant noodles to toddlers in her family environment. One informant also gave a different storyline. The reason for giving instant noodles which ultimately made her toddler addicted was due to the busyness of the informant who is a toddler's mother and a stall owner. Instant noodles which are easy and quick to serve are an alternative answer that the toddler's mother gives when her toddler asks for food. In addition to the toddler's desire factor, economic factors are one of the reasons for providing instant noodle consumption to toddlers. Several informants admitted to providing instant noodles because the price is cheap and in accordance with the conditions when there are no side dishes or vegetables at home.

Belief in the benefits and advantages of instant noodles and the toddler's unstoppable desire factor by the informant made the informant motivated to practice giving instant noodles to toddlers. However, several other informants did not find any benefits from giving instant noodles to toddlers. They are more convinced that instant noodles have side effects such as causing allergies, malnutrition in toddlers, addiction, and difficulty defecating, as the experience and information they obtained in the learning stage.

The do stage is the stage that explains the practice of giving instant noodles to toddlers. This stage is divided into two, namely trial-do and committed-do. Trial-do is a stage when the informant conducts an experiment giving instant noodles to toddlers to ensure their beliefs about the behavior of giving instant noodles to their toddlers. This stage can be done repeatedly until a difference is found when trying to give instant noodles to toddlers which then affects attitudes. This stage is also part of the learning stage where the informant obtains information about instant noodles from the consumption trial that he/she conducted. The next stage will continue to the feel stage. While committed-do is a stage when the informant gives instant noodles to be consumed by his/her toddler continuously after being sure and satisfied with the activity.

The satisfaction in question is when the informant feels the effect of giving instant noodles to toddlers according to his/her expectations. According to information from several informants, giving instant noodles to toddlers has been done since the toddler is one year old. According to one informant, at this age, children have started to be able to chew hard foods so that noodles can also be given. In addition, several other informants gave instant noodles when their children were two, three or four years old. Various reasons were given by informants, such as one of them because toddlers are starting to get bored with fish and vegetables so they are given instant noodles as an appetite stimulant.

In terms of flavor variants, fried instant noodles are the most popular variant. Its striking color and soy sauce flavor make it taste more delicious and are preferred by toddlers. Soy sauce, which is a complementary seasoning for fried instant noodles, contains nipagin as a preservative. The nipagin content in soy sauce in Indonesian instant noodles is 250 mg/kg (Ministry of Health of the Republic of Indonesia, 2017). In addition, information about the dangers of instant noodles that can also be found in the first instant noodle boiling water can be avoided by informants because this variant is served without noodle soup. Several informants also said that the taste of the Ind\*\*\*\* brand is not too strong when compared to other brands. Other informants have different views regarding the selection of favorite products. Both informants prefer the flavor variant of noodle soup that does not have oil in its presentation. This noodle variant is a local product in South Sulawesi. Oil is considered to have a bad impact on health. In addition, this local product from South Sulawesi is also relatively cheaper when compared to other brands.

Advertisements on television that highlight children also provide an image for the mother that the brand is suitable for children. Television advertisements influence consumer changes in terms of cognitive, affective and psychomotor. Advertisements contain representations of realities that live in society through certain symbols that can create an impression in the minds of consumers that the image of the product displayed is part of its culture (Bögenhold, 2018). Companies must have a creative way of delivering advertisements in order to attract consumer attention and create preferences for the brand (Becker et al., 2023). One creative way to promote a product in the form of advertising is to use models that have the same characteristics as the target consumers (Rabindranath & Singh, 2024). Advertisements for instant noodle products usually feature figures representing various groups such as children, career women, construction workers, students, and farmers. This image is intended to instill the view that the product is a food that does not recognize social class. In other words, this instant food is not embarrassing if consumed by the upper class and is also affordable for the lower class.

The frequency of giving instant noodle consumption to toddlers by informants is quite varied. Some informants give it only once a week. This is influenced by the fear of side effects known by the informant. However, this fear does not make the informant refuse to give instant noodles to be consumed by her toddler because the toddler often cries if the informant does not give the instant noodles. Other informants serve it twice to 4 times a week. In addition, generally, informants admit to giving a pack of instant noodles to be consumed by two with siblings or family members of the toddler. The presentation which for the informant is considered not too often with a limited portion is intended to withstand the addictive effect based on the information obtained at the learn and feel stage. Instant noodles that are not in soup or that do not have oil are more often chosen by informants to be given to their toddlers. Eggs and green mustard greens are often used as additional ingredients for serving. In addition, the provision of instant noodles is often accompanied by rice which is the staple food of the majority of Indonesian people. Informants admit to giving rice in larger portions than instant noodles so that toddlers feel full and get used to not consuming too much instant noodles. Other additional ingredients such as meatballs and sausages were also mentioned by several informants. However, one informant admitted that her toddler did not like noodles served with vegetables.

#### **4. Conclusions**

This study concluded that at the learn stage, information was obtained about the reasons for giving instant noodle consumption to toddlers by informants (toddler mothers) due to the toddler's wishes and the informant's belief in the benefits of instant noodles, considerations of taste and price, and the influence of family members, friends, and neighbors. Meanwhile, at the feel stage, the informant had a belief in the dangers of instant noodles for toddlers to consume, but his belief was not greater than the child's wishes, benefits and advantages of instant noodles. This is what drives the informant to advance to the do stage with a trial-do adoption pattern, namely by trying several practices that he obtained at the learn and feel stage. The practice of giving instant noodle consumption to toddlers that is generally carried out by informants is to provide instant noodles that are not in soup. Several other informants choose noodles with soup by processing the practice of throwing away the first boiled water and replacing it with new hot water as the instant noodle soup. Additional ingredients given by informants are eggs and green mustard greens. This study shows that although there is awareness of the potential dangers of instant noodles, factors such as children's wishes, taste, and social influence lead to sustainable consumption practices. Therefore, it is important for related parties to provide more in-depth education to parents about the health impacts of instant noodle consumption, as well as healthier alternatives for children. With the right approach, it is hoped that it can reduce dependence on instant noodles and promote a more nutritious and balanced diet for toddlers.

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## Author Contribution

The author conceived and designed the study, performed the experiments, analyzed and interpreted the data, contributed reagents/materials/analysis tools, wrote the paper, prepared figures and/or tables, reviewed drafts of the paper and approved the final draft.

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## Conflicts of Interest

The authors declare no conflict of interest.

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## References

- Adejuwon, O. H., Jideani, A. I. O., & Falade, K. O. (2019). Quality and Public Health Concerns of Instant Noodles as Influenced by Raw Materials and Processing Technology. *Food Reviews International*, 36(3), 276–317. <https://doi.org/10.1080/87559129.2019.1642348>
- Ahmed, Z., Chen, J., Tufail, T., Latif, A., Arif, M., Ullah, R., Alqahtani, A. S., & Xu, B. (2024). Fundamental opportunities and challenges of nutraceutical noodles enriched with agri-food by-products. *Trends in Food Science & Technology*, 143, Article 104299. <https://doi.org/10.1016/j.tifs.2023.104299>
- Bayomy, H., & Alamri, E. (2022). Technological and nutritional properties of instant noodles enriched with chickpea or lentil flour. *Journal of King Saud University - Science*, 34(3), Article 101833. <https://doi.org/10.1016/j.jksus.2022.101833>
- Becker, M., & Gijsenberg, M. J. (2023). Consistency and commonality in advertising content: Helping or hurting? *International Journal of Research in Marketing*, 40(1), 128–145. <https://doi.org/10.1016/j.ijresmar.2022.05.004>
- Bögenhold, D., & Naz, F. (2018). Culture, advertising and consumption. In *Consumption and life-styles* (pp. 95-114). Palgrave Pivot. [https://doi.org/10.1007/978-3-030-06203-3\\_6](https://doi.org/10.1007/978-3-030-06203-3_6)

- Charles, I. A., Ogbolosingha, A. J., & Afia, I. U. (2018). Health risk assessment of instant noodles commonly consumed in Port Harcourt, Nigeria. *Environmental science and pollution research international*, 25(3), 2580–2587. <https://doi.org/10.1007/s11356-017-0583-0>
- Eteng, O. E., Bassey, N. O., Nelson, V. A., & Udosen, E. O. (2023). The Effect of Instant Noodles Formulated with Natural Spice and Noodle Seasoning on Hemato-Biochemical Parameters and Body Weight Changes in Albino Rats Model. : The impact of instant noodles formulated. *UMYU Scientifica*, 2(2), 120–127. <https://doi.org/10.56919/usci.2322.013>
- Food Standards Australia New Zealand. (2003). *Monosodium glutamate: A safety assessment* (Technical report series No. 20). <https://www.foodstandards.gov.au/sites/default/files/consumer/additives/msg/Documents/MSG%20Technical%20Report.pdf>
- Gulia, N., Dhaka, V., & Khatkar, B. S. (2014). Instant Noodles: Processing, Quality, and Nutritional Aspects. *Critical Reviews in Food Science and Nutrition*, 54(10), 1386–1399. <https://doi.org/10.1080/10408398.2011.638227>
- Huh, I. S., Kim, H., Jo, H. K., Lim, C. S., Kim, J. S., Kim, S. J., Kwon, O., Oh, B., & Chang, N. (2017). Instant noodle consumption is associated with cardiometabolic risk factors among college students in Seoul. *Nutrition research and practice*, 11(3), 232–239. <https://doi.org/10.4162/nrp.2017.11.3.232>
- Kamal, A. H., El-Malla, S. F., Elattar, R. H., & Mansour, F. R. (2023). Determination of Monosodium Glutamate in Noodles Using a Simple Spectrofluorometric Method based on an Emission Turn-on Approach. *Journal of fluorescence*, 33(4), 1337–1346. <https://doi.org/10.1007/s10895-023-03143-0>
- Kotler, P., & Roberto, E. L. (1989). *Social marketing: Strategies for changing public behaviour* (pp. 10-36). Free Press.
- Ma, L., Xu, H., Zhang, Z., Li, L., Lin, Z., & Qin, H. (2023). Nutrition knowledge, attitudes, and dietary practices among parents of children and adolescents in Weifang, China: A cross-sectional study. *Preventive medicine reports*, 35, 102396. <https://doi.org/10.1016/j.pmedr.2023.102396>
- Maros Health Service. (2013). *Profil kesehatan Kabupaten Maros tahun 2013* [Health profile of Maros Regency 2013]. Maros: Dinkes Kab. Maros.
- Ministry of Health of the Republic of Indonesia. (2013). *Riset kesehatan dasar 2013* [Basic health research 2013]. Jakarta: Badan Penelitian dan Pengembangan Kesehatan. <https://repository.badankebijakan.kemkes.go.id/id/eprint/4428/>
- Ministry of Health of the Republic of Indonesia. (2015). *Buku saku pemantauan gizi dan indikator kinerja gizi tahun 2015* [Nutrition monitoring handbook and nutritional performance indicators 2015]. Jakarta: Direktorat Gizi Masyarakat. [https://lib.poltekkespalembang.ac.id/index.php?p=show\\_detail&id=2320&keywords=](https://lib.poltekkespalembang.ac.id/index.php?p=show_detail&id=2320&keywords=)
- Ministry of Health of the Republic of Indonesia. (2017). *Bahaya mie instant bagi kesehatan* [The dangers of instant noodles for health]. [Accessed July 15, 2017]. <https://gizi.depkes.go.id/bahaya-mie-instant-bagi-kesehatan>
- Ministry of Health of the Republic of Indonesia. (2017). *Produk mie instan di Indonesia aman dikonsumsi* [Instant noodle products in Indonesia are safe for consumption]. [Accessed August 5, 2017]. <https://www.depkes.go.id>
- Nirmala, I. R., Februhartanty, J., Agustina, R., & Sekartini, R. (2024). Cooking behavior among mothers of children aged 2-5 years old in Kendari, Southeast Sulawesi, Indonesia. *BMC public health*, 24(1), 391. <https://doi.org/10.1186/s12889-024-17826-1>
- Niu, M., & Hou, G. G. (2018). Whole wheat noodle: Processing, quality improvement, and nutritional and health benefits. *Cereal Chemistry*. <https://doi.org/10.1002/cche.10095>

- Park, J., Lee, J. S., Jang, Y. A., Chung, H. R., & Kim, J. (2011). A comparison of food and nutrient intake between instant noodle consumers and non-instant noodle consumers in Korean adults. *Nutrition research and practice*, 5(5), 443–449. <https://doi.org/10.4162/nrp.2011.5.5.443>
- Perdana, F., & Hardinsyah, H. (2013). Analisis jenis, jumlah, dan mutu gizi konsumsi sarapan anak Indonesia. *Jurnal gizi dan Pangan*, 8(1), 39-46. <https://doi.org/10.25182/jgp.2013.8.1.39-46>
- Pollack, J., & Pollack, R. (2015). Using Kotter's eight stage process to manage an organisational change program: Presentation and practice. *Systemic Practice and Action Research*, 28(1), 51–66. <https://doi.org/10.1007/s11213-014-9317-0>
- Rabindranath, M., & Singh, A. K. (2024). Understanding advertising process: Models and theories. In *Advertising management*. Palgrave Macmillan. [https://doi.org/10.1007/978-981-99-8657-6\\_6](https://doi.org/10.1007/978-981-99-8657-6_6)
- Rachma, F. A., & Saptawati, T. (2021). Analysis tolerance of monosodium glutamate (MSG) in instant noodles with UV-Vis spectrophotometry. *Journal of Science and Technology Research in Pharmacy*, 1(1), 20-24. <https://journal.unnes.ac.id/sju/JSTRP/article/download/43568/18568/#:~:text=This%20rule%20stipulates%20that%20the,0.6%20g%20%2F%20day%20of%20MSG4.>
- Scaglioni, S., De Cosmi, V., Ciappolino, V., Parazzini, F., Brambilla, P., & Agostoni, C. (2018). Factors Influencing Children's Eating Behaviours. *Nutrients*, 10(6), 706. <https://doi.org/10.3390/nu10060706>
- Shin, H. J., Cho, E., Lee, H.-J., Manson, J. E., Wheelan, K., & Hu, F. B. (2014). Instant noodle intake and dietary patterns are associated with distinct cardiometabolic risk factors in Korea. *The Journal of Nutrition*, 144(8), 1247-1255. [https://jn.nutrition.org/article/S0022-3166\(22\)13162-7/fulltext](https://jn.nutrition.org/article/S0022-3166(22)13162-7/fulltext)
- Suwandi, E. P. (2014). *Perilaku konsumsi makanan instan pada siswa kelas XI Jasa Boga Sekolah Menengah Kejuruan Negeri 3 Klaten*. (Undergraduate Thesis, Universitas Negeri Yogyakarta). <https://eprints.uny.ac.id/26795/>
- van den Berg, N. W. E., Neefs, J., Berger, W. R., Baalman, S. W. E., Meulendijks, E., Kawasaki, M., Kemper, E. M., Piersma, F. R., Veldkamp, M. W., Wesselink, R., Krul, S. P. J., & de Groot, J. R. (2017). Can we spice up our Christmas dinner? : Busting the myth of the 'Chinese restaurant syndrome'. *Netherlands heart journal : monthly journal of the Netherlands Society of Cardiology and the Netherlands Heart Foundation*, 25(12), 664–668. <https://doi.org/10.1007/s12471-017-1053-5>
- Wandasari, N. (2014). Hubungan pengetahuan ibu tentang mi instan dan perilaku konsumsi mi instan pada balita di RW. 04 Perumahan Villa Balaraja Kabupaten Tangerang. *Forum Ilmiah*, 11(3), 386-401. <https://ejournal.esaunggul.ac.id/index.php/Formil/article/view/1087>

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