

# Assessing the Potential Global Market for Organic Instant Noodles

Chulalongkorn University & Worcester Polytechnic Institute

Sponsored by Urmatt



**BSAC**



**WPI**

  
**urmatt**

  
**PERFECT  
EARTH**



Chulalongkorn University  
จุฬาลงกรณ์มหาวิทยาลัย  
Pillar of the Kingdom



**WPI**

# Assessing the Potential Global Market for Organic Instant Noodles

An Interactive Qualifying Project Report

Submitted to the Faculty of

WORCESTER POLYTECHNIC INSTITUTE and  
CHULALONGKORN UNIVERSITY

In partial fulfillment of the requirements for the  
Degree of Bachelor of Science

In cooperation with

Urmatt Ltd. Co.

Submitted on February 28th, 2019

## Submitted by:

Katherine Handy, WPI  
Jun Hayashi, BSAC  
Satiepong Pannawatwisut, BSAC  
Kamonporn Piamchao, WPI  
Prakorn Saetung, BSAC  
Emily Stadnicki, WPI  
Christopher Whimpenny, WPI  
Madeline Zomb, WPI

## Submitted to

Arvind Narula, Urmatt Ltd. Co.  
Richard Blossom, Perfect Earth  
  
Prof. Numpon Insin, Chulalongkorn University  
Prof. Brajendra Mishra, Worcester Polytechnic Institute  
Prof. Gary Pollice, Worcester Polytechnic Institute  
Prof Supawan Tantayanon, Chulalongkorn University

## GLOBALLY MARKETING ORGANIC INSTANT NOODLES

### Abstract

Instant noodles are universally consumed because they are convenient, inexpensive, and tasty. However, the majority of instant noodles contain MSG and potentially harmful chemicals. The goal of Urmatt, our sponsor, is to produce an organic instant noodle product with biodegradable packaging. We conducted research to help Urmatt with strategic marketing to enter this saturated market. Through surveys, interviews, and research, we presented Urmatt with the most effective labeling claims and maximum price points for the US and Thailand.

## Acknowledgements

First, we would like to thank Urmatt Ltd and Perfect Earth for sponsoring our project and providing us with this opportunity, as well as tools to be successful. Without their constant feedback and availability of resources this project would be impossible.

We also thank our advisors Professor Numpon Insin, Professor Siripatr Jayanta, Professor Brajendra Mishra, Professor Gary Pollice, and Professor Supawan Tantayanon for guiding, supporting, and providing us with feedback during the project process.

Finally, we thank Chulalongkorn University and Worcester Polytechnic Institute for giving us the opportunity to work collaboratively across different cultures and gain valuable knowledge, skills and new friends.

## GLOBALLY MARKETING ORGANIC INSTANT NOODLES

### Contributions



#### **Katherine Handy**

Secondary Editor, Background: Urmatt, Challenges, Methodology: Introduction, Objective 1, Meeting Perfect Earth, Labeling Claims, Claims Survey, Findings and Analysis: Environment and Social Claims. Other work: Presentations



#### **Jun Hayashi**

Global market research, Surveying Thai markets, background on instant noodles, survey format designs, poster.



#### **Satiengpong Pannawatwisut**

Global market research, surveying Thai market managers, surveying Thai people, background content, survey design, poster design, claims survey data analysis, cover page



#### **Kamonporn Piamchao**

Surveying People; Making the Thai version of the Survey; Methodology; Choosing Locations for Supermarket Visits; Preparing Questions for the Supermarket Visits; Poster Format; Report Cover Design; Price comparison for the Final Presentation



#### **Prakorn Saetung**

Surveying Thai people, Asia market research, claims survey data analysis, Introduction content, translating survey to Thai



#### **Emily Stadnicki**

Primary Editor, Introduction, Background: Health and Environmental Problems, Establishing the scope, Expanding the global instant noodle market, Methodology: Concept map Production, Claims Data Analysis, Pricing Survey, Findings and Analysis: Introduction, Findings about Marketing Claims, Grouping Claims, Dietary Claims, and Organic Claims. Conclusion and Recommendations. Other Work: Claims data analysis, Final report formatting



#### **Christopher Whimpenny**

Background: Perfect Earth, Methodology: Pricing Survey, Objective 3, Findings and Analysis: Findings about price points, Conjoint analysis research and data analysis



#### **Madeline Zomb**

Introduction: research; Background: Environmental Impact, Organic Food Marketing, Packaging Claims, Methodology: Claims Survey, Other work: Poster

## Table of Contents

|  |      |
|--|------|
| <b>Abstract</b>                                | i    |
| <b>Acknowledgements</b>                        | ii   |
| <b>Contributions</b>                           | iii  |
| <b>Table of Contents</b>                       | iv   |
| <b>Table of Figures</b>                        | v    |
| <b>Table of Tables</b>                         | vii  |
| <b>Executive Summary</b>                       | viii |
| <b>Chapter 1: Introduction</b>                 | 1    |
| <b>Chapter 2: Background</b>                   | 2    |
| 2.1 Expanding the Global Instant Noodle Market | 2    |
| 2.2 Health and Environmental Problems          | 3    |
| 2.2.1 Harmful additives                        | 3    |
| 2.2.2 Lack of nutrition                        | 3    |
| 2.2.3 Non-eco-friendly packaging               | 4    |
| 2.2.4 Environmental impact                     | 4    |
| 2.3 Urmatt and Perfect Earth                   | 5    |
| 2.3.1 Perfect Earth                            | 6    |
| 2.4 Challenges                                 | 6    |
| 2.5 Establishing the Scope                     | 7    |
| 2.5.1 Packaging claims                         | 8    |
| 2.5.2 Organic food marketing                   | 8    |
| 2.6 Summary                                    | 9    |
| <b>Chapter 3: Methodology</b>                  | 10   |
| 3.1 Objective 1                                | 11   |
| 3.1.1 Meeting Perfect Earth                    | 11   |
| 3.1.2 Identifying labeling claims              | 11   |
| 3.1.3 Claims survey                            | 12   |
| 3.2 Objective 2                                | 13   |

## GLOBALLY MARKETING ORGANIC INSTANT NOODLES

|  |    |
|--|----|
| 3.2.1 Claims data analysis                       | 13 |
| 3.2.2 Concept map production                     | 14 |
| 3.2.3 Pricing survey                             | 14 |
| 3.3 Objective 3                                  | 15 |
| <b>Chapter 4: Findings and Analysis</b>          | 16 |
| 4.1 Findings about Marketing Claims              | 16 |
| 4.1.1 Grouping claims                            | 17 |
| 4.1.2 Dietary claims                             | 17 |
| 4.1.3 Organic claims                             | 18 |
| 4.1.4 Environmental and social claims            | 19 |
| 4.2 Findings about Price Points                  | 20 |
| 4.2.1 Additional United States data analysis     | 21 |
| <b>Chapter 5: Conclusion and Recommendations</b> | 21 |
| <b>References</b>                                | 23 |
| <b>Appendix A: Claims Survey</b>                 | 26 |
| <b>Appendix B: Table of Survey Recipients</b>    | 28 |
| <b>Appendix C: Complete List of Claims</b>       | 29 |
| <b>Appendix D: Concept Boards</b>                | 30 |
| <b>Appendix E: Pricing Survey</b>                | 33 |
| <b>Appendix F: Pricing Graphs</b>                | 39 |

## GLOBALLY MARKETING ORGANIC INSTANT NOODLES

### List of Figures

|  |    |
|--|----|
| Figure 1. Predicted instant noodle global market.  | 2  |
| Figure 2. Graphical representation of decomposition times for commonly used materials in instant noodle packaging. | 5  |
| Figure 3. The means-end chain model  | 9  |
| Figure 4. Methodology Flowchart  | 10 |
| Figure 5. Instant noodle isle in a general supermarket   | 11 |
| Figure 6. The team surveying students at Chulalongkorn University  | 12 |
| Figure 7. Optimal price combinations for the United States   | 15 |
| Figure 8. Comparative graph of United States and Thailand opinions on dietary claims                               | 18 |
| Figure 9. Comparative graph of United States and Thailand opinions on organic claims                               | 19 |
| Figure 10. Comparative graphs of United States and Thailand opinions on environmental & social claims              | 20 |



## GLOBALLY MARKETING ORGANIC INSTANT NOODLES

### List of Tables

|   |    |
|---|----|
| Table 1. Grocery stores and their perspective locations visited for market research | 12 |
| Table 2. Claims survey quantitative weighting method                                | 14 |
| Table 3. Dietary claims rankings for Thailand and the United States                 | 17 |
| Table 4. Organic claims rankings for Thailand and the Unites States                 | 18 |
| Table 5. Environmental & social claims rankings for Thailand and the Unites States  | 19 |

## Executive Summary

### Introduction

The Instant noodle market is one of the largest food markets in the world. Millions of people around the world consume instant noodles every year. These noodles are inexpensive, convenient, tasty, and found in just about every grocery and convenience store. With this large market also comes a lot of competition. The price of instant noodles has stayed low because of the inexpensive chemicals and preservatives used for taste and extended shelf life. The preservatives and chemicals put into many noodles have a negative impact on health, yet they still sell extremely well. This is because one of the main factors in the instant noodle industry is product perception. If a new instant noodle product enters the market, it must win over consumers through just its attributes and price.

### The Problem

In the instant noodle market, there is currently no healthy and 100% organic product. There are products that are partially organic however they often have artificial flavors and preservatives. Urmatt and Perfect Earth set out to change the market. Their new instant noodle product will be 100% organic, with every ingredient grown on their farms. It will also be gluten and allergen free, as well as vegan. While this product will be a healthier option in the market, it will be more expensive than most of its competition and will appeal to a niche category of consumers. Due to this, Urmatt and Perfect Earth need to ensure that this product will sell to these consumers when it gets to market. The perception of this product is extremely important, especially in the instant noodle market. The customer will often decide which product to buy just based on the label and price. This new instant noodle product must have a label that appeals to the customer at a price point where they will be willing to buy it.

### Goals and Objectives

In consultation with Urmatt and Perfect Earth, we developed 3 objectives for our project to help them overcome this challenge. They were:

- Identify the food labeling claims that are applicable to Urmatts organic instant noodles and study consumer's attitudes towards them
- Determine the price that consumers are willing to pay for each set of favorable claims
- Provide recommendations on a set of claims that will maximize the sales of the product

Since the label of the product is very important to the sales of the instant noodles, it is important to understand what claims resonate the best with consumers. Often claims can mean almost the same thing, such as *Organic* vs. *Certified Organic*. We analyzed consumer attitudes towards each variation to determine which was most influential. This would help determine the

## GLOBALLY MARKETING ORGANIC INSTANT NOODLES

best claims to go on the product in order to maximize sales. Along with this, it is important to evaluate how much a consumer would pay for this new product. Finally, we gave recommendations based on data we found on both popular claims and price points for Urmatt and Perfect Earth's potential product.

### Methods

In order to complete these objectives, we created two surveys that would encompass our objectives and provide data we could analyze. They were:

1. Claims Survey
2. Pricing Survey

The claims survey, found in Appendix A, was the first method we completed. We began by going to local supermarkets that carried organic and instant noodle products and recorded the claims utilized on product packaging. Through this, we gained knowledge of popular claims already in use by other products. In theory, these were some of the best claims, since the competition used them with success. We also brainstormed some additional ideas which we did not see on any other packaging, however were claims found on other types of products. We grouped these claims into 3 categories:

- Organic
- Dietary
- Environmental and Social

The first group, organic, contained all claims explaining the product as organic. This include general claims such as the basic *Organic*, as well as other types of certificates and ratings from organizations such as *USDA Organic*.

The second group, dietary, contained all claims that dealt with the ingredients and contents of the instant noodles. This included claims such as *Gluten Free* and *Chemical and Preservative Free*.

The final group, environmental and social, contained claims that dealt with how the product affected the environment or society in general. Examples of claims in this group included *Biodegradable Container* and *Supports Family Farms*.

With all of the claims grouped, we sent out a survey asking how likely consumers were to buy an instant noodle product with each claim on a scale of 0 (not likely) to 6 (most likely). We sent this survey out via social media and student organization email aliases. To analyze the data we assigned each answer (0-6) a weight and then calculated the average weight across all respondents per claim. This gave us data on the most favorable claims in each category in both the United States and Thailand, showing trends between the different categories.

Using the top claims in each category we created our pricing survey found in Appendix E. We drafted concept boards with the help of Urmatts in-house graphic designer containing

## GLOBALLY MARKETING ORGANIC INSTANT NOODLES

combinations of these claims. We then sent out a survey of 4 of these combinations as well as one control product, asking respondents the maximum price they would pay for a product with those claims. This followed a  $L_4(2^3)$  / Placket-Burman design. With the data from this survey retrieved, we conducted a conjoint analysis. This allowed us to take the answers from the 4 combinations asked in the survey and accurately model the respondent's prices for the other 4 combinations. We then created a sheet of consumer surpluses which we used to create an estimated profit for an inputted product price. Using a solver, we optimized the price of each combination of claims in order to maximize the profit. This gave us data on both the best combination of claims, as well as the best price point to sell each combination at.

### Claims Survey Results Summary

After looking at the data recovered from the claims survey we were able to learn a lot. First, we identified claims ranked amongst each other as well as how they differed between the United States and Thailand.

The top organic claims were:

United States:

1. All Natural
2. Organic

Thailand:

1. All Natural
2. Certified Organic

The top dietary claims were:

United States:

1. Chemical and Preservative Free
2. No MSG

Thailand:

1. Chemical and Preservative Free
2. No MSG

The top environmental and social claims were:

United States:

1. Supports Family Farms
2. 100% Sustainable

Thailand:

1. Biodegradable Container
2. Environmentally Friendly

As seen above, we observed numerous similarities and differences between the United States and Thailand. From our data we also discovered that the environmental and social claims were unanimously positive. This means that putting any of those claims on the packaging will only help the product sell. In contrast, the dietary claims were mostly negative. Claims such as *Gluten*

## GLOBALLY MARKETING ORGANIC INSTANT NOODLES

*Free* and *Vegan* fell into this group due to the large population that are not in these restrictive food groups. These claims could negatively impact the product sales. Similar to the environmental and social claims, the organic claims were generally positive. The only outlier was *USDA Organic*, which had a positive reaction in the United States and a negative reaction in Thailand. This shows that it is important to use claims from organizations familiar to the consumers in the region the product is being sold in.

### Price Survey Results Summary

We took the top 2 claims in each category for use in the pricing survey, as listed below:

- Certified Organic
- All Natural
- MSG Free
- Chemical and Preservative Free
- Biodegradable Container
- Supports Family Farms

We used 1 claim from each group to create concept boards for a pricing survey. This created 8 combinations of 3 claims. After sending out the survey on social media and analyzing the responses, we determined the best combinations along with their optimal price points. These are as follows:

United States:

Certified Organic, Chemical and Preservative Free, Supports Family Farms at \$3.00

Thailand:

All Natural, Chemical and Preservative Free, Biodegradable Container at \$0.64

The United States had very high base price with even the least popular combination having an optimal price at \$2.00. In Thailand however, a price ceiling was present at THB 20 or approximately \$0.64. Increasing the price to \$1.00 resulted in a 40% decrease in predicted profit.

### Recommendations

Based on the results from the claims and pricing surveys, our team has come up with these 3 recommendations for Urmatt and Perfect Earth in regard to their future instant noodle product:

- We recommend Urmatt markets the product in global markets rather than in Thai markets. The importance on low price in Thailand is not sustainable for the sale of an organic product. Meanwhile, in the United States and similar markets, the product could be for a much more reasonable price, especially if put into the niche stores.

## GLOBALLY MARKETING ORGANIC INSTANT NOODLES

- We recommend Urmatt creates packaging that feature environmental and social as well as general organic claims. These claims all have positive impacts on the product and their presence will not deter consumers from purchasing it. However, it is important to keep in mind the organizations known to the consuming region and ensure consumers will be familiar with them.
- We recommend Urmatt limit the use of claims that address specific dietary preferences. While these claims are important to gain the business of consumers with these dietary constraints, they also have a strong potential to deter consumers from the general population. The presence of the claims on the back or side of the packaging may be ideal since it will not deter the average consumer, but will still appeal to the consumers with dietary concerns looking at the ingredients list or contents

## Chapter 1: Introduction

Since the late 1900s, global consumption of instant noodles has skyrocketed. First spreading through Asia and eventually across the globe, the demand increased exponentially from 15 billion servings sold in 1990 to over 100 billion servings sold in 2012 (History, n.d.). Instant noodles are inexpensive and convenient, making them popular worldwide and across many social classes. Traditional instant noodles on the market have a significant amount of Monosodium Glutamate (MSG), artificial flavor enhancers, sodium, preservatives, and other chemicals. Although they are convenient, instant noodles lack nutrients, such as fiber and protein, needed to provide adequate daily nutrition. Chemicals and artificial flavors, consumed in large amounts, can also have adverse health effects on individuals, especially children (Bloom, 2017). The current instant noodle market lacks a product that is organic, flavorful, as well as inexpensive.

Asia is the world's largest consumer of instant noodles. Other regions around the world, such as the United States, have also created significant markets for instant noodles that continue to grow (Park et al., 2011). Although vegan and partially organic instant noodles do exist in the market through brands like Mr. Lee's and Mike's Mighty Good, they are not completely organic, and the packaging is not eco-friendly. These brands appeal to consumers that are actively searching for healthy alternatives, as they are normally located in the natural food sections in grocery stores (Gulia et al, 2014). This lack of competitors in manufacturing and marketing creates an opportunity for Urmatt to enter the market.

While organic food consumption has increased globally by 20% each year since the 1990s, the instant noodle market remains predominantly inorganic (Organic Trade Association, 2018). Studies have shown that the high levels of MSG and preservatives like Butylated hydroxy anisole (BHA) and Butylated hydroxytoluene (BHT) in instant noodles can have a negative health impact such as weight gain, migraines, nerve cell damage, and cancer (Martini, 2006). There is a need to determine whether a healthy instant noodle alternative can satisfy the consumer and successfully compete in the market.

In this project, we collaborated with Urmatt to develop a new organic instant noodle that can compete in the existing global market. While Urmatt has been successfully integrating organic products into the food market worldwide, they have yet to venture into a market that presents few organic alternatives. More specifically, our goal was to determine food labeling trends that would allow Urmatt to make the most profit in each of their target countries, ensuring the success of their product.

The instant noodle market is highly competitive, and in addition to this, Urmatt will be introducing an extremely niche product which is not currently popular in the market. This presents a large challenge. In order to successfully integrate this product into the global market, Urmatt must understand the varying needs of its consumers. We established three objectives to address Urmatt's road to success. First, we identified influential food labeling claims that are present on existing organic products and determined which were most favorable for each target country. Second, we identified the price ceiling for each set of claims that were most favorable among consumers. Lastly, we created recommendations for highlighted claims on the product's packaging as well as price points for each target country. After accomplishing these objectives, we provided

## GLOBALLY MARKETING ORGANIC INSTANT NOODLES

Urmatt with a detailed report of our global market research and analysis, as well as recommendations on main focus areas and future steps for the further development of the product. As this project was in its initial stages when we conducted our research, we hope that with our recommendations, Urmatt will continue testing and developing their product in the future stages to develop a healthy instant noodle alternative that will satisfy consumers around the world.

The results of this project will help Urmatt strategically enter the large instant noodle market and ultimately create a successful organic instant noodle product that will increase the company's total revenue. In addition, Urmatt will eventually need to expand their network of family farmers in order to keep up with the demand, positively impacting the farming community in Thailand.



## Chapter 2: Background

### 2.1 Expanding the Global Instant Noodle Market

Instant noodles are a growing staple in the lives of people around the world. Through initial growth in Asia and spreading to the rest of the world, instant noodles are an affordable and reliable meal choice for the lower and working social classes (Zhang & Ma, 2016). Young adults that have little to no income also constitute a large part of the market. Even though the instant noodle demand around the world continues to increase, the reasons for consumption remain relatively constant. Convenience and price are the most important factors for consumers when purchasing an instant noodle product (Brunner et al., 2010). In the past two decades, the world consumption of instant noodles has grown exponentially, with predictions to grow 22% from 2016 to 2021 as seen in Figure 1 (Technavio, 2017).

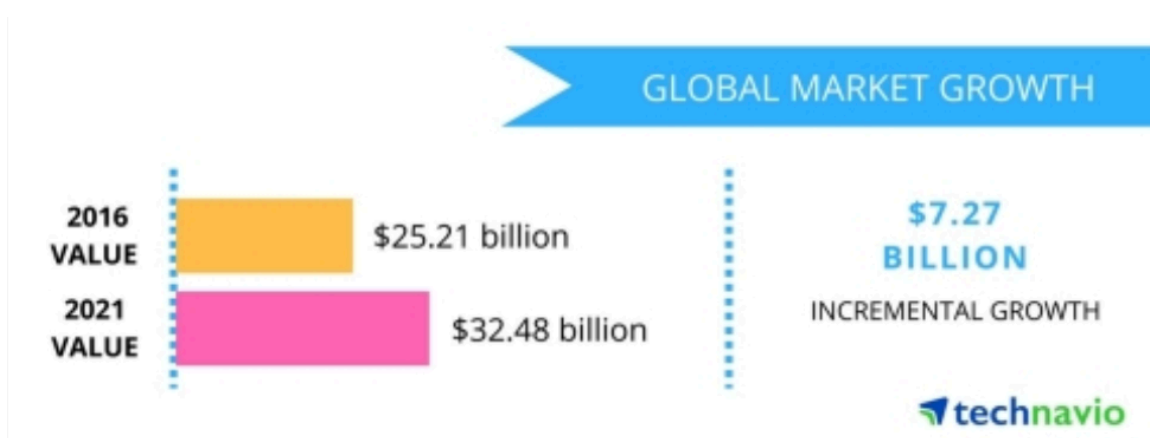


Figure 1. Predicted instant noodle global market. Adapted from *Top 6 Vendors in the Global Noodles Market from 2017-2021* by Technavio, 2017.

### 2.2 Health and Environmental Problems

Instant noodles are notorious for being convenient, inexpensive and widely consumed across many demographics. Although they may have a pleasant taste and are a filling meal, most consumers tend to overlook the chemicals, true nutritional content, and environmental impact of the packaging. These factors are significant to consider when creating a new product to compete in this market.

#### 2.2.1 Harmful additives.

The most common additive in instant noodles is monosodium glutamate or MSG. This is the most abundant, naturally occurring nonessential amino acid. It is mainly utilized as a flavor enhancer in the food industry. MSG promotes a flavor greater than basic taste called Umami (Jinap and Hajeb, 2010). Although the body does need MSG in small amounts as an energy source for certain tissues and bodily processes, consumption in large amounts can be harmful, especially in

children, pregnant women, and people with preexisting health conditions such as asthma. Studies show that MSG can increase both appetite and the frequency of migraines when consumed in significant quantities. Children need to consume a much lower amount to see these effects (Martini, 2006).

Other additives present in instant noodles include Butylated hydroxy anisole (BHA), Butylated hydroxytoluene (BHT), and tert-Butylhydroquinone (TBHQ). These additives act as preservatives in the product, but they also exhibit similar reactions in the human body. They have been linked to neurological behavioral changes like slower learning, decreased orientational reflex, and increased social isolation and aggression (Martini, 2006). TBHQ has a high potential to strongly induce oxidative DNA damage as well. An additional safety concern regarding instant noodles is the large amounts of fat and sodium which can contain up to 40% and 30% respectively of the recommended daily intake (RDI) (Sikander et al., 2017).

### **2.2.2 Lack of nutrition.**

The nutritional content of instant noodles is very low and does not compensate for the harmful chemicals previously mentioned. A single serving is high in carbohydrates and fat, while very low in protein, fiber, vitamins, and minerals. Even the addition of dehydrated vegetables does not significantly affect the nutritional value of the meal (Gulia et al., 2014). Recently, instant noodle companies have been adding fortifications to increase the nutritional significance. Flour fortification allows for the incorporation of additional micro and macronutrients to the noodles during production. An example of this is the integration of powdered fiber to increase the nutritional value. Flavoring fortification is similar, the only difference being the flavoring constituents that are sprinkled into the soup contain the additional nutrients (Sikander et al., 2017). The practice of fortifying instant noodles, although only recently implemented, has become popular among large brands currently in the market (Park et al., 2011).

### **2.2.3 Non-eco-friendly packaging.**

Beside the contents of the noodles, the packaging of many products raises concerns as well. Excessive levels of fluorescent agents, such as polystyrene terephthalate, have damaging effects on the human body and are carcinogens, proven to be harmful through long term use. The most common form of this plastic, Styrofoam, is a popular material for packaging since it insulates the heat of its contents, keeping them warm for longer (Hocking, 1991). Fluorescent whitening agents (FWAs) enhance the whiteness and brightness of packaging giving it a more appealing look on the shelves (Wu et al., 2016). Other compounds found in the inner packaging create their own risks. Bisphenol A is a transparent and unbreakable material used in many disposable containers that has the tendency to dissolve into fluids held in these containers. This is most prevalent when exposed to hot liquids. Consuming Bisphenol A can induce allergies and asthma in children, as well as have a profound effect on cell DNA and genetic mutations (Sikander et al., 2017). These harmful materials are found in most instant noodle packaging.

### 2.2.4 Environmental impact.

The materials found in product packaging can affect the environment just as much as they affect people. The two major groups of waste created from instant noodle packaging are plastic and Styrofoam. The plastic packaging is usually disposed into landfills rather than recycling plants which contributes to the world's plastic waste problem. There are many types of plastics that the industry use as packaging, for example, HDPE, LDPE, PET, and polystyrene which is commonly found in the food industry (Resins and Types of Packaging, 2011). Most noodle cups are made of polystyrene (also known as Styrofoam), paper with coated polyethylene, and pure polypropylene (The Food Safety of Instant Cup Noodle Containers, 2009). The plastic also has a low rate of decomposition compared to organic material, which means it has long term effects on the wildlife in and around the disposal area (Buckhorn et al, 1999). In a single unit of instant noodles, there is plastic in the container, flavor pack, and its sealants. Given the volume of instant noodles produced each year, the industry is a large contributor to plastic pollution. These plastic pollutants have an extremely low rate of decomposition as seen in Figure 2. The Styrofoam cups also prove to be hazardous to the environment. Styrofoam can take up to 1 million years to decompose. This means that all instant noodle cups made of Styrofoam will be present in landfills through many generations without sufficient decomposition (Krueger et al., 2015).

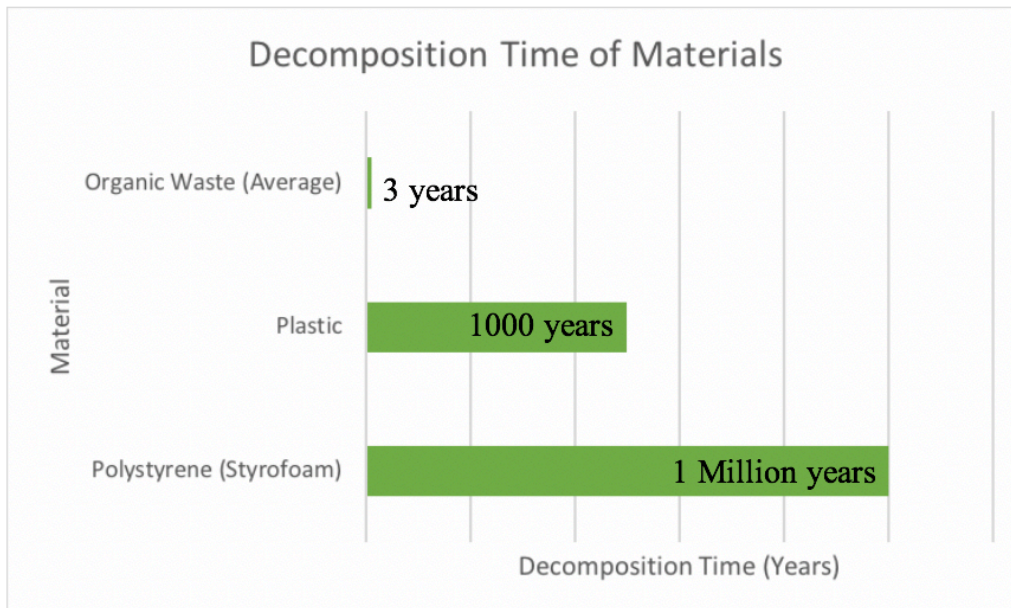


Figure 2. Graphical representation of decomposition times for commonly used materials in instant noodle packaging.

Even the contents of the noodles affect the environment. The vegetable oil of choice for many foods including instant noodles is palm oil. Due to its nutritional content (no cholesterol and no trans-fat), the food industry has created a large demand for the oil, which production can no longer keep up with. This has resulted in the deforestation of palm trees and the subsequent disruption of those ecosystems. (Ong and Goh, 2002). Two of the leading companies in instant noodles “Nissin Foods Holdings and Toyo Suisan Kaisha (Maruchan) have failed to adopt a truly responsible palm oil policy” and continue to use massive quantities in their products (Nissin, Maruchan, n.d.). This has led many other companies and a large portion of the industry to do the same.

### **2.3 Urmatt and Perfect Earth**

Urmatt is a major organic food producer in Thailand. Arvind Narula founded the company in 1983 with a vision and one product, rice. Since then, they have added more products such as beans, chia seeds, eggs, pasta and coconut-based products. Urmatt is a fully integrated company, meaning that they produce, process, and ship all of their products on their own. This allows them to ensure they produce the highest quality products. They do, however, rely on small farms for participation in their contract farming system. The goals of this system are poverty alleviation as well as high-quality organic food production. In this structure, Urmatt obtains a predetermined quantity of produce at a particular price from smaller farmers. In order to ensure that the quality of produce meets their standards, Urmatt trains these farmers, provides machinery, and performs crop trials. As a result of contract farming, Urmatt has provided over one thousand families with incomes three or four times what they would normally make, while still obtaining high-quality produce (Narula, 1998).

For over thirty years Urmatt has been concerned with the social impact of their business. The company has focused on organic agriculture, environmental sustainability, and poverty alleviation while also giving back through scholarships, temple works, women's programs, and village work sponsorships (Narula, 1998).

Urmatt firmly believes that “waste is value” and their mission to generate zero waste has contributed to the development of multiple new innovative and profitable projects (Liechtenstein Dialogue for Development, 2018, 31:28). One example of Urmatt's value-adding strategy is their rice pasta. Urmatt uses broken rice, the remaining rice fragments that break during processing, to produce gluten-free rice pasta. Urmatt is currently working on numerous projects along this same vein, including organic instant noodles. By utilizing all of the byproducts of their production methods, Urmatt not only reduces their waste but also increases the value of their products, thus generating more revenue. The new instant noodle product that Urmatt will be producing is no exception to this goal.

#### **2.3.1 Perfect Earth.**

Urmatt is a parent company, represented by many different brands. Perfect Earth is the brand that will produce organic instant noodles. As a brand, their core beliefs include, “that

everyone on this planet we call home should respect both what it gives and what it needs. As all living things require nourishment, this is one very essential link mankind has with nature” (Perfect Earth, 2019). Currently, Perfect Earth offers free-range eggs, organic chia seeds, and gluten-free pasta, all provided by the resources and farms of Urmatt. When Urmatt releases the organic instant noodle product, it will be branded as Perfect Earth and will join these other organic, ethical, and healthy options.

Before they can begin to manufacture the instant noodles from the leftover broken rice, Urmatt and Perfect Earth must first ensure they can sell the product. With this in mind, there are several challenges that lie ahead.

### 2.4 Challenges

The creation of new organic instant noodles presents Urmatt with multiple challenges from the development of the product, to its introduction into the global market. The different challenges to overcome in order to achieve the success of a new product can be grouped in the three following categories: consumer-based challenges, developer-based challenges, and market-based challenges. This section presents some of the challenges our sponsors will encounter in each of these categories (Fredric, 2014).

Consumer based challenges are based on the willingness and ability of a consumer to purchase a particular product based on previous experiences and present conditions. For this set of categories our sponsor's main challenges are the following:

1. Discredit the idea that all instant noodles are unhealthy.
2. Provide a healthy instant noodle product that is credible to consumers.
3. Convince consumers to abandon their existing preferences and purchase this new product.

Developer-based challenges encompass the selection of distribution channels, marketing and sales tactics, and product offering characteristics. Some of the challenges our sponsor might encounter include:

1. Develop a product that considers and satisfies the varying preferences for instant noodle products within different cultures.
2. Develop a product design that highlights all of the products attributes while still attracting consumers attention.
3. Develop an instant noodle product with no chemical additives and only ingredients obtained from their contract farming system.

Market based challenges involve the availability of substitutes, market pricing and dynamic, and the existing market structure. The challenges for this category include:

1. Compete in a market that is predominantly inorganic.
2. Find the right customers that are willing to pay a higher price.

Overall, Urmatt will face many challenges and barriers of entries when introducing a new product into the market. In order to facilitate Urmatt’s development of their new organic instant

noodle product, we have chosen to focus on two of these challenges. We focused on developer-based challenges that assessed differences in preferences among various cultures as well as creating a design that highlights product attributes that will draw consumers to the product.

### **2.5 Establishing the Scope**

We recognize that introducing a new product into the market is a large undertaking. To begin this process for Urmatt and Perfect Earth, we focused on marketing an organic instant noodle product through select labeling claims and determining the price range that a product with these attributes can sell for. With this information, Urmatt and Perfect Earth can determine their next steps in production and development.

#### **2.5.1 Packaging claims.**

Regardless of the quality of a product, it won't sell nearly as well without eye-catching packaging. Packaging claims convey to the consumer that the product has certain advantages over the competitors. Therefore, products with convincing packaging claims, often regarding health and the environment, sell more effectively. The key to attaining consumers' attention through these claims is connecting with them through their interests and the things they care about. When people debate purchasing a product, the consumer's thought process is actually very personal. They are most interested in how the product will affect their well-being and overall quality of life. In the past decade, there has been a rise in demand for transparency and "73% of [consumers said] they would be willing to pay more for a product that offers complete transparency" (The Most Powerful Packaging Claims, 2017). Packaging claims are the key factor in transparency, as they directly speak to the consumer for the company and product. When considering purchasing a product, if there are powerful words, pictures, or icons that stick out to them, the consumer is much more likely to choose that product over a competitor. In fact, "more than half of shoppers (51%) say package label claims are either extremely or very important to their product purchases" (The Most Powerful Packaging Claims, 2017). Because of this, "food manufacturers use every possible word they can to magnify the desirability of a product", in order to draw in consumer and in turn increase their sales (W. Willett, 2017).

#### **2.5.2 Organic food marketing.**

Over the past 24 years, a small section of the food industry has set out to reduce the problems associated with products such as the standard instant noodles by creating products that are environmentally friendly and have less added preservatives than their counterparts. The organic market has increased by over 3400% since it first began to take hold, making it the fastest growing food and lifestyle trend in modern history (Food Safety News, 2014). As information is now widely available to the public, people understand and care about what they are consuming. Trader Joe's, Whole Foods, and other health-focused, organic grocery stores are prospering in today's market thanks to this immense trend.

## GLOBALLY MARKETING ORGANIC INSTANT NOODLES

Due to this, companies have taken advantage of the consumer's eye through strategic packaging and marketing that commonly includes natural colors, such as greens and blues, and images that portray local, ethical farming. While these products may seem healthier and more ethical to consume than inorganic foods, many companies intentionally deceive consumers through these marketing tactics. In fact, "the FDA does not regulate the use of the term 'organic' on food labels" (FDA, 2017). A Stanford University study conducted over four years found that organic foods "have no significant advantage over conventional foods, even though consumers pay more for them" (Weise, 2012). When purchasing food at the store, people are easily persuaded into paying more through packaging that conveys a healthier lifestyle. It was found that 53% of consumers will spend more on organic food in order to avoid pesticides and toxins (Krasny, 2012). The means-end chain, or MEC illustrated in Figure 3, visualizes how people's knowledge regarding a product relates to their knowledge of consequences and values (Zanoli & Naspetti, 2002).

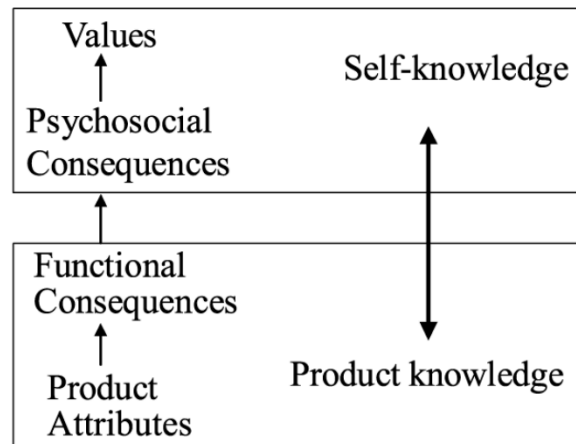


Figure 3. The means-end chain model. Adapted from *Consumer motivations in the purchase of organic food: A means-end approach*, by Zanoli and Naspetti, 2002.

According to the MEC, when one considers purchasing a food product, the decision becomes an opportunity cost of benefits and risks, as well as considering personal consequences (Zanoli & Naspetti, 2002). From this, it is clear why people are so inclined to spend more on what might look like a healthier or safer option.

While scientifically organic food may not be as remarkable as packaging portrays, the industry is booming. Today's market is the prime opportunity for companies to introduce and market organic products. Frito-Lay, a conventionally inorganic company, "recognized the growing intersection among its consumers' concerns for their health and the health of the planet" and started 'green' marketing their Sun Chips and the "One Small Step at a Time" initiative (Howell, 2017). Frito-Lay was very transparent with this organic initiative and improved the entire brand's reputation (Howell, 2017). When it comes down to it, selling organic food is about connecting with the consumer, whether that is through utilizing earthy colors and images, or telling a story.

## GLOBALLY MARKETING ORGANIC INSTANT NOODLES

The consumer will spend the extra dollar if they feel they are making the right decision and positively contributing to their health and well-being.

Urmatt has already paved its path into the organic market and hopes to do the same with the instant noodles market. Infiltrating the instant noodle market might present a difficult task, however, Urmatt's main challenge lies in successfully selling this product within both of these markets. It will be important to understand the impact of marketing this product in order to provide the sponsors with helpful recommendations.

### **2.6 Summary**

Introducing a new product into an existing saturated market presents many challenges. Urmatt has a depth of experience marketing organic products to consumers that are interested in that niche market, however, entering the instant noodle market is different. In order to market a healthier and more expensive version of a product in an overwhelmingly unhealthy and cheap market, Urmatt will have to thoroughly understand their consumer base. The following chapter will explain how we conducted research to understand the potential purchasing intent of consumers based on marketing claims across different cultures for organic instant noodles.



## Chapter 3: Methodology

The aim of this project was to help Urmatt develop organic instant noodles under the Perfect Earth brand that could successfully compete in the existing instant noodle markets in the United States, India, Australia, China and Thailand. In order to achieve this goal, Urmatt and our team agreed to focus on two main aspects of the new product. First, we aimed to understand how food labeling claims influence consumer behaviors when purchasing instant noodles. We also determined a price point for the most influential set of claims. In order to accomplish the goals stated earlier, we established the following objectives:

*Objective 1: Identify the food labeling claims that are applicable to Urmatt’s organic instant noodles and study consumer’s attitudes towards them.*

*Objective 2: Determine the price that consumers are willing to pay for each set of favorable claims.*

*Objective 3: Provide recommendations on a set of claims that will maximize the sales of the product.*

For this project, we conducted market research to determine labeling claims for Perfect Earth's organic instant noodles. We also surveyed consumers to assess the impact of these claims and potential price points for a product with those qualities. A detailed description of the methods utilized in this project are in the following sections. Figure 4 illustrates the sequence of steps performed to achieve our objectives.

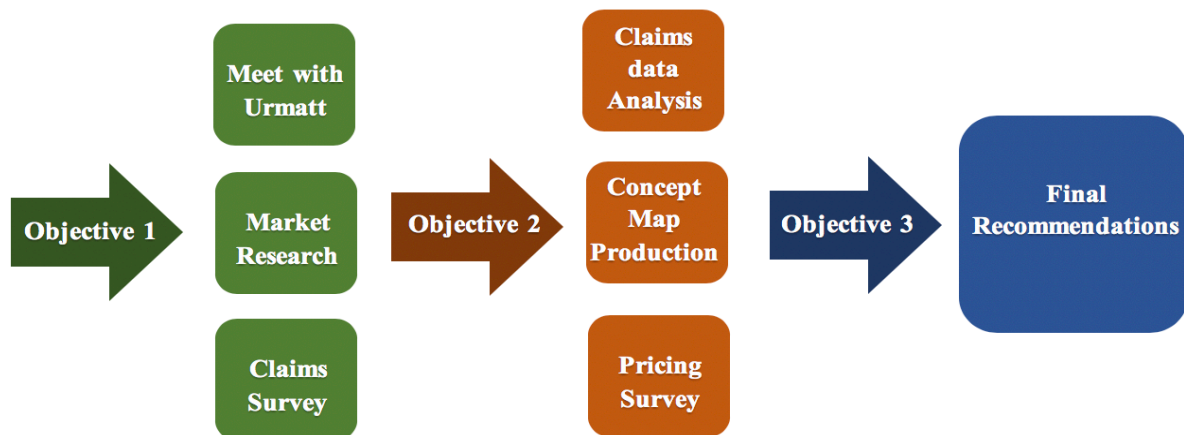


Figure 4. Methodology Flowchart

### 3.1 Objective 1

The first objective was to identify the claims that are applicable to Perfect Earth’s organic instant noodles and study consumer’s attitudes towards them. In order to ensure that the product appealed to consumers, we studied what claims would prove most successful for Urmatt when

advertising their organic instant noodle product. Understanding the impact of food labeling claims utilized by other instant noodle products, potential competitors, and organic products on consumers was one of the first steps taken in this project. We used this information to obtain a price point for the product.

### 3.1.1 Meeting Perfect Earth.

In order to clearly understand what claims were relevant to this product, we met with Urmatt's partners from Perfect Earth. In this meeting, we sought to understand which claims they were most interested in studying and specific details about the manufacturing and production of the new product in order to determine other applicable claims. During the meeting there were opportunities to ask questions, but this was not a structured interview. The questions investigated were the following:

1. Are you interested in producing non-vegan flavors with vegan ingredients?
2. Are you interested in selling this product in Thailand?
3. Are you interested in the instant noodle market or the organic market?
4. What qualities of the product are you most interested in promoting?

From the information gathered in the meeting we developed a set of criteria that we used to filter out claims that were not applicable to Perfect Earth's instant noodles.

### 3.1.2 Identifying labeling claims.

In order to gather a wide variety of claims, we researched products found in supermarkets located in Bangkok and online websites. We found an extensive instant noodle aisle as seen in Figure 5. Our goal was to gather labeling claims used by current instant noodles and other organic products. Since Perfect Earth's instant noodle product must appeal to customers in four different countries, we chose frequently visited supermarkets that sold a larger variety of international products as well as local products. The supermarkets that we visited are in Table 1. In our online research, we focused on Perfect Earth's potential competitors. Perfect Earth provided us with a significant number of these competitor brands.

During the supermarket visit we attempted to interview managers in order to investigate what brands of noodles were selling the most, however, we were unable to obtain any responses. In addition, our research was limited to the supermarkets found in Bangkok, so there is a possibility that we failed to identify some competitors.



Figure 5. Instant noodle aisle in a general supermarket

# GLOBALLY MARKETING ORGANIC INSTANT NOODLES

Table 1. Grocery stores and their respective locations visited for market research.

| Grocery Store  | Location        |
|----------------|-----------------|
| Tops Market    | CentralWorld    |
| Tops Market    | Silom Complex   |
| MaxValue       | Gateway Ekamai  |
| Foodland       | Taniya Building |
| Gourmet Market | Siam Paragon    |
| Gourmet Market | Emquartier      |
| Gourmet Market | Emporium        |

### 3.1.3 Claims survey.

The claims survey showed us consumer attitudes towards the selected labeling claims. It assessed consumer's reactions to claims by asking them to choose from a scale of 0-6 how likely they were to buy a product with a particular claim. In this scale, 0 stood for not likely, 6 stood for very likely, and 3 was indifferent. The survey was both confidential and anonymous and it grouped people based on their native country and age. This categorization was important in order to determine if we obtained a statistically significant sample from the countries of interest. The each of the group members shared the survey on social media, student organizations, Facebook groups, and numerous Reddit threads relating to instant noodles and organic products. In Appendix B the complete list of survey recipients are found. We also surveyed students from Chulalongkorn University in person as well as people around Bangkok. Figure 6 shows our team surveying students around Chulalongkorn University. The full survey is shown in Appendix A.



Figure 6. The team surveying students at Chulalongkorn University

One of the limitations for the survey was the sample populations. We were not able to obtain a statistically significant sample for each country of interest and therefore we focused on the two countries we had the best access to: The United States and Thailand. We were limited with the responses obtained for both of these countries since they focused on people at Worcester

Polytechnic Institute and in Bangkok. In addition, every online survey is susceptible to response bias, therefore, we had to acknowledge the inflation of the consumer's' willingness to purchase instant noodles with healthier claims.

### 3.2 Objective 2

The second objective was to determine the price customers are willing to pay for each set of favorable claims gathered in the first objective. From this information we intended to answer the following questions:

1. Which claims were most appealing to consumers?
2. How much money are consumers willing to pay for a product exhibiting certain claims?
3. Do consumer preferences differ among countries?

To gather this data, we first analyzed and weighted the responses from the claims survey. We ranked each claim within their perspective groups. We utilized this analysis to determine claims for the pricing survey.

#### 3.2.1 Claims data analysis.

We analyzed the data from the claims survey. First, we sorted the responses based on native country. We identified statistically significant survey populations as the countries with a volume of surveys greater than 200. These groups were the United States and Thailand. We received similar volumes of responses from the United States and Thailand. Due to the large population size of each country, our results presented with a 7% error at a 95% confidence interval (Graglia, n.d). Other groups of interest including India, China, Australia, and China (Hong Kong SAR) were evaluated for trends but were not regarded separately due to the limited number of survey responses.

The first survey asked participants to rate their likeliness to purchase a product based on claims present on labels as seen in Appendix A. After we grouped the results into their respective countries, we assigned values to each rating as seen in Table 2.

Table 2. Claims survey quantitative weighting method.

|                     |            |    |    |             |   |   |             |
|---------------------|------------|----|----|-------------|---|---|-------------|
| Qualitative Rating  | Not Likely |    |    | Indifferent |   |   | Very Likely |
| Quantitative Rating | 0          | 1  | 2  | 3           | 4 | 5 | 6           |
| Weight              | -3         | -2 | -1 | 0           | 1 | 2 | 3           |

Once we assigned the new weighted values, we calculated the average score for each claim. We graphed the new weighted scores to visually compare the perceptions of claims between the US and Thailand. These are shown in Figures 8, 9, and 10.

We created three categories for ranking the claims: organic claims, dietary claims, and environmental & social claims. We chose claims based on researching existing products that claim to have the same attributes as Perfect Earth's new product. We also conducted a meeting with the leaders of Urmatt and Perfect Earth discussing what claims are possible to achieve in their new product. Based on this information, we grouped similar claims together to narrow the scope of our results. Each one of these groups contained multiple claims that described similar product attributes in order to determine which claims were most important and influential to the consumer. We ranked the claims in each group in ascending order based on their value. We used the top 2 claims in each category to conduct the pricing survey.

### **3.2.2 Concept map production.**

Using the information gathered from the claims survey analysis, Urmatt's graphic designer created 9 concept maps. The initial concept map did not include any claims. We used the claimless board as a control to determine how much consumers would pay for a generic serving of instant noodles. The remaining 8 concept maps included all the combinations of 3 claims, one from each category as seen in Appendix D. We used the concept maps to gauge consumer interest through visualization rather than words descriptions. The only variable was the claims used in order to minimize explicit bias.

### **3.2.3 Pricing survey.**

In order to determine the optimal price point for each set of claims, we used a conjoint analysis to analyze our pricing survey. The pricing survey consists of 5 of the 9 concepts, 1 control with no claim and 4 different sets of claims that encompassed all the top claims at least once. We asked the consumer the maximum price they were willing to spend on each product, which allowed for measurable consumer surplus to be recorded. The survey is found in Appendix E. The same limitations experienced in the claims survey are also applicable to the pricing survey. We used the information gathered from this survey in the conjoint analysis.

With the price/product combinations from the participant, we determined the importance of specific claims were to consumers and how much they would be willing to pay per claim. We used conjoint analysis, resulting in part worth utilities for the individual. Then, using these utilities, we created a model that accurately calculated the price that respondent would be willing to pay for an instant noodle product depending on the claims it possessed. This is very similar to mathematical psychology, where we can accurately model a person's subconscious and decision making (Townsend, 2008). This allowed us to accurately calculate the price for any number of given combinations without having to manually test for each one.

## **3.3 Objective 3**

The third objective was to develop recommendations for a set of claims that would maximize the sales of the product by determining each combination's optimal price point. In order

## GLOBALLY MARKETING ORGANIC INSTANT NOODLES

to accomplish this goal, we analyzed the data gathered from the claims and pricing surveys and identified the combinations of claims that consumers said they would pay the most for.

We began by using the analysis from our claims survey in order to create our pricing survey. We created this survey using a  $L_4(2^3)$  / Plackett-Burman design which was the best option due to the number of variables used and the small scope of the project. This meant that while 8 combinations existed, we only needed to ask the respondents about their maximum price for 4 specific combinations. From these 4 combinations we are able to determine the part worth utilities of the consumer from which we can create a model of their price generating behavior based on the present claims. We then ran each combination through these models in order to determine the consumer surplus based on an inputted price for that specific combination and respondent. We added the number of consumers with a non-negative consumer surplus and multiplied by the price to determine the amount of potential profit that would be made from that product at that price.

Using this consumer surplus data, we ran an evolutionary solver to first determine the best price point and combination out of all options. Once we knew the best answer we went back and used the solver on each combination in order to both double check our calculations, which could be incorrect due to local optima issues, as well as get data on the price points for all combinations. We mitigated the possibility of a local optima issue which is an inherent flaw of evolutionary solver both by running the solver twice on the best result as well as calculating all other optimal prices. While this means that our answers may not be 100% correct, the evolutionary solver was a better choice than the GRG Non-Linear or Simplex LP solvers. This is due to the non-smooth nature of our profit curve.

|          |                   | PRICE (USD)     |        |        |        |        |        |        |        |
|----------|-------------------|-----------------|--------|--------|--------|--------|--------|--------|--------|
|          |                   | \$2.00          | \$2.00 | \$2.00 | \$3.00 | \$2.00 | \$3.00 | \$3.00 | \$2.00 |
|          |                   | Product Combo # |        |        |        |        |        |        |        |
| Attr #'s |                   | 1               | 2      | 3      | 4      | 5      | 6      | 7      | 8      |
| 1        | Certified Organic | 1               | 0      | 1      | 0      | 1      | 0      | 1      | 0      |
| 2        | All Natural       | 0               | 1      | 0      | 1      | 0      | 1      | 0      | 1      |
| 3        | MSG FREE          | 1               | 1      | 0      | 0      | 1      | 1      | 0      | 0      |
| 4        | Chemical and Pre  | 0               | 0      | 1      | 1      | 0      | 0      | 1      | 1      |
| 5        | Biodegradable Co  | 1               | 1      | 1      | 1      | 0      | 0      | 0      | 0      |
| 6        | Supports Family F | 0               | 0      | 0      | 0      | 1      | 1      | 1      | 1      |

Figure 7. Optimal price combinations for the United States

The image shown in Figure 7 above presents the excel sheet showing the optimal prices for claim combinations. The part worth utilities for each respondent which were multiplied against the combinations listed below price. This created a consumer surplus for each combination for every respondent. When a price was inputted, we recalculated the consumer surpluses and determined a profit by multiplying price by those who have a non-negative value in their surplus.

The final step in the process was to compare these optimal price points of each set of claims and identify which set of claims will maximize profit. We went through each region noting the best combination and price and looking for any similarities or differences between them. We used this analysis to provide Perfect Earth with a comparative analysis of the claims.

## Chapter 4: Findings and Analysis

Through surveying target groups of potential consumers in the United States and Thailand, we analyzed trends regarding influence of claims on purchasing as well as the price range consumers were willing to pay for each individual claim. Our main findings were:

1. The most influential marketing claims in the dietary category were *chemical and preservative free* and *no MSG* for both the United States and Thailand.
2. The most influential marketing claims for the organic category were different in the United States and Thailand. Both countries ranked *all natural* as first. Thailand ranked *certified organic* second and the United States ranked *organic* second.
3. The most influential marketing claim for the environment and society claims were different for Thailand and the United States. For Thailand, *biodegradable container* and *environmentally friendly* were ranked first and second respectively. For the United States *supports family farms* and *100% sustainable* were ranked first and second respectively.
4. The set of claims that will sell for the best price in the United States was *Chemical and Preservative Free*, *Certified Organic*, and *Supports Family Farms*. This product will sell at an optimum price range of \$2.50 to \$3.00

The set of claims that will sell for the best price in Thailand was *Chemical and Preservative Free*, *Biodegradable Container*, and *All Natural*. This product will sell at an optimum price range of \$0.64 to \$0.80.

### 4.1 Findings about Marketing Claims

Product success is largely dependent on marketing strategies. Through discussions with Urmatt and Perfect Earth about their current product and ideas for their new organic instant noodle, we determined potential claims for package labeling. We grouped the claims and tested them against each other to determine which claims should be emphasized on the packaging in order to promote success. We gathered the information through a series of surveys among large groups of people in Thailand and the United States.

Limitations, as discussed in the methodology, do exist within this data. By targeting college students, about 67% of the overall data collected was from participants between the ages of 18 and 22. Students of this age tend to lack financial stability and value convenience and price more than health. It is important to acknowledge that the population surveyed may not be the ideal target population for a final product.

#### 4.1.1 Grouping claims.

Through market research online and in local grocery stores, we determined claims that were most prominent on the packaging of general organic products as well as instant noodle brands that aimed to be healthier alternatives and would be our largest competitors. We grouped the claims and tested them against each other to avoid repetitive marketing on the package. We combined top claims and emphasized them on the packaging for further testing. The complete list of claims is

shown in Appendix C. We grouped claims into three categories: Dietary, Organic, and Environment and Society claims. Claims were ranked within each group. Each claim grouping was weighted and evaluated.

#### 4.1.2 Dietary claims.

The claims regarding dietary preferences showed the strongest preferences among people in the United States and Thailand. Table 3 shows the top 4 claims for Thailand and the United States. This group of claims shows the highest similarities among the two countries.

Table 3: Dietary claims rankings for Thailand and the United States

| Rank | Thailand                       | United States                       |
|------|--------------------------------|-------------------------------------|
| 1    | Chemical and Preservative Free | Chemical and Preservative Free      |
| 2    | No MSG                         | No MSG                              |
| 3    | Allergen Free                  | Artificial Flavor and Coloring Free |
| 4    | Non-Fried                      | Non-Fried                           |

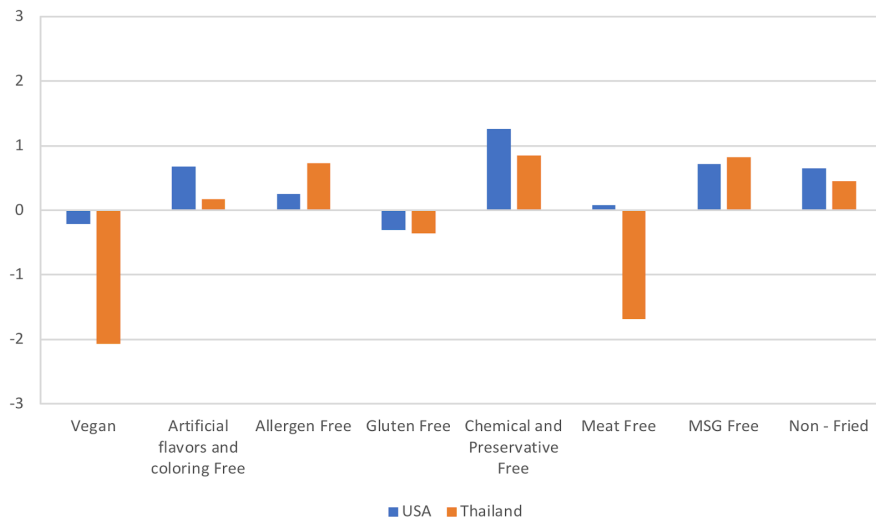


Figure 8. Comparative graph of United States and Thailand opinions on dietary claims

In addition to ranking the top claims, consumers in both countries felt strongly against vegan, meat free, and gluten free claims. These three claims were almost unanimously negative when weighted. Although there is a strong difference in culture between the United States and Thailand, both nations agree on the top and bottom claims. This can give some insight on what to test in other areas of the world. Figure 8 shows the comparison of opinion between the United States and Thailand regarding dietary claims.



### 4.1.3 Organic claims.

There are many ways to market a product that is organic. Some examples include certified organic, USDA organic, and organic. We suggest the product is not advertised with multiple claims that mean the same thing in order to not overwhelm the consumer, so the conducted market research isolated the claims that were most favorable to consumers when purchasing an instant noodle. We weighted the claims based on how favorably they were ranked in the first survey. We rated the claims 1 to 4 as seen in Table 4.

Table 4: Organic claims rankings for Thailand and the United States

| Rank | Thailand          | United States     |
|------|-------------------|-------------------|
| 1    | All Natural       | All Natural       |
| 2    | Certified Organic | Organic           |
| 3    | Organic           | Certified Organic |
| 4    | USDA Organic      | USDA Organic      |

The data, as shown in Table 4 and Figure 9, indicate significant differences in preference between the United States and Thai populations. Although both groups claimed that all natural is the most important organic claim, the results were much closer and positive in the United States compared to Thai. From this information, we concluded that the lack of an organic instant noodle is not significant in Thailand as the survey respondents had very little interest in purchasing a product with these claims. On the other hand, consumers in the United States showed high interest in an instant noodle product with organic claims. Unlike in the Thai responses, all 4 organic claims resulted in an overwhelmingly positive weighted value in the United States responses.

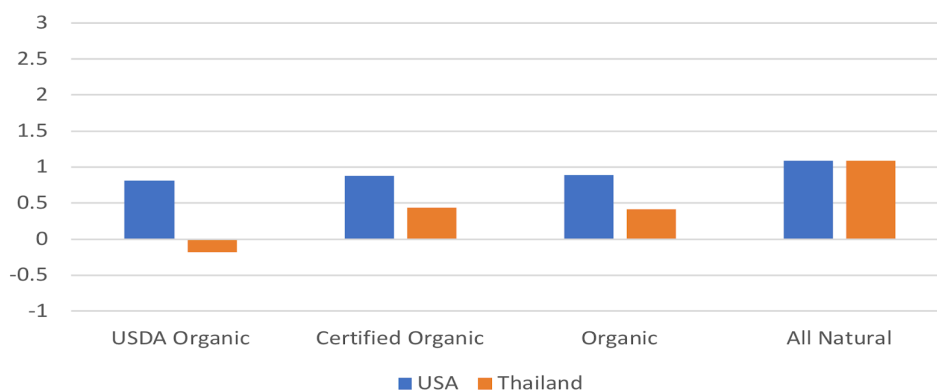


Figure 9. Comparative graph of United States and Thailand opinions on organic claims

### 4.1.4 Environmental and societal claims.

The ranking for the environmental and social claims varied between the United States and Thai population. As seen in Table 5, the United States group valued the claim *Support Family*

## GLOBALLY MARKETING ORGANIC INSTANT NOODLES

*Farms* more than the other environmental claims. This information shows that people in the United States are interested in products that not only help the environment but society as well. Unlike the United States, the Thai population was more interested in the environment. The United States valued *Biodegradable Container* and *Compostable Container* equally, however *Biodegradable Container* was ranked first due to its high value in the Thai group.

Table 5: Environmental and social claims rankings for Thailand and the United States

| Rank | Thailand                           | United States           |
|------|------------------------------------|-------------------------|
| 1    | Biodegradable Container            | Supports Family Farms   |
| 2    | Environmentally Friendly           | 100% Sustainable        |
| 3    | 100% Sustainable                   | Biodegradable Container |
| 4    | Made with care for the environment | Compostable Container   |

After we collected the data and weighted it accordingly, both populations exhibited larger values for this set of claims compared to the organic and dietary claims. We calculated the average value for each group of claims and used the Grubbs test to eliminate any outliers. The only outlier identified was compostable packaging. From this information we can conclude that both populations are willing invest more in a product that values the environment and society compared to a product with other organic or dietary claims.

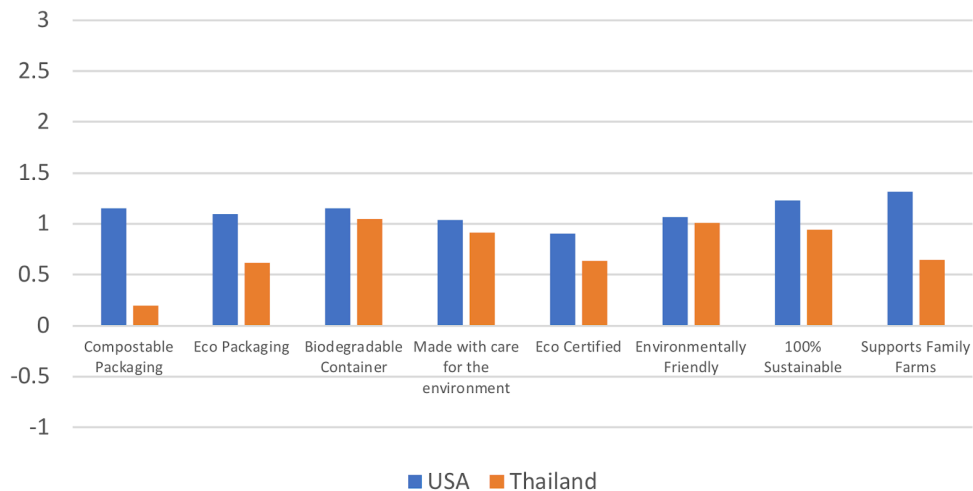


Figure 10. Comparative graph of United States and Thailand opinions on environmental & social claims

During the survey we observed that the Thai population was not familiar with the term compostable and often asked questions about it. This behavior explains the low value for the claim *Compostable Packaging* that identified it as an outlier. Despite the cultural differences that causing variations between the claims, we determined that both populations greatly value the environment

when purchasing products. Figure 10 shows the comparison of opinion between the United States and Thailand regarding environmental & social claims.

### 4.2 Findings about Price Points

Since we only recovered 11 usable respondents outside of the United States and Thailand, we were not able to create statistically significant data on their optimal price point. This has limited the scope of our findings to just the United States and Thailand.

As for the United States, we found that the best combination was *Certified Organic, Chemical and Preservative Free, and Supports Family Farms*. If our 215 respondents saw this product, it would make a net profit of approximately \$321 with 107 of the respondents buying it. Its optimal price point is \$3.00. While the other combinations did not do as well, all of their profit optimized prices were \$2.00 or over, showing that across the board United States residents would be willing to spend at least that much for a Perfect Earth product. The findings in Thailand contrasted greatly.

In Thailand, the most popular combination was different than that of the United States. It was *All Natural, Chemical and Preservative Free, and Biodegradable Container*. Even this most popular product did not bring in significant net profit. If shown to our 228 Thai participants, it would make only \$118 from 186 respondents. While the number of purchases is high, the amount that Thai people were willing to pay for it was not. The optimal price point for this product was THB 20 or approximately \$0.64. With the potential manufacturing costs of Perfect Earth's organic noodles, this could be unprofitable.

The data differed greatly between the United States and Thailand both on popular claims as well as optimal price point. In the United States, there was a much larger disparity in profit made as well as units bought across the combinations. In Thailand however, all profits were within half of the profit range of the United States, and all combinations shared the same optimum price of THB 20. This indicated an added importance of price over claims in Thailand when compared with the United States.

#### 4.2.1 Additional United States data analysis.

After sharing our initial results with our sponsors, we decided it was important to do some added analysis on our data especially the data from the United States. Due to this we decided to determine the number of consumers that would buy the product at each price point. This would allow Urmatt and Perfect Earth to better determine a price point to use. For example, while they may make the most money at \$3.00, they might be able to reach more people at a lower price point and make a similar profit. We began by creating a frequency histogram for the maximum consumer surpluses calculated during the price optimization process. We then were able to create a cumulative percentage which represents the percentage of the consumer base willing to buy the product at a price point.

As expected, the largest frequency of answers across all combinations of claims were in the \$2.00 to \$3.00 price range. This aligns very well with the price points for the closest

## GLOBALLY MARKETING ORGANIC INSTANT NOODLES

competitors the new product will potentially have. This price range is also where people are the most sensitive to price. Over 25% of consumers are lost between \$2.00 and \$3.00. This data shows the relationship between price and purchasing intent. Before choosing a final price point, this key data should be examined. The pricing graphs for each combination are located in Appendix F.

## Chapter 5: Conclusion and Recommendations

Urmatt will face challenges when entering the existing saturated instant noodle market. Through targeted market research, we have determined recommendations for marketing this product.

**We recommend Urmatt markets the product in global markets rather than in Thai markets.** Organic products cost much more to produce compared to heavily artificial products. This means that in order to succeed, organic products will need to have a much higher price point, yet still be able to sell. Our research showed that consumers in the United States would spend up to \$3.00 for a product that claims to be *Chemical and Preservative Free*, *Certified Organic*, and *Supports Family Farms*. This combination of claims resonated the most positively with the largest group of consumers in the United States. On the other hand, consumers in Thailand would only spend up to \$0.64 for the most popular product which claims to be *Chemical and Preservative Free*, *All Natural*, and *Biodegradable Packaging*. It would be challenging to make a profit on a product that has a maximum selling price that low.

One of the major limitations that we encounter when making this recommendation is the lack of knowledge of unit price of production. Without this knowledge, we are unable to make an accurate prediction of sales and profit in the United States and Thailand, however we expect it to be quite high.

The information about the vast difference in markets between the United States and Thailand are important to consider. This will give Urmatt insight about the differences between developed and developing nations around the world and their affinity for a high-end instant noodle product. We have identified that consumers reliant on instant noodles choose a product that is convenient and inexpensive. For Urmatt to target the largest population already consuming instant noodles, the product must be inexpensive and comparable to the preexisting products in the market. The largest challenge that will be creating an organic product that will be inexpensive enough for the average consumer.

**We recommend Urmatt creates packaging that feature environmental & social and general organic claims.** Our results showed us an overwhelmingly positive attitude toward environmental & social claims. Consumers in the United States and Thailand agreed that these claims would make them more likely to buy the product for a higher price.

We also found that almost all organic claims were positive across the United States and Thailand as well. Thai consumers did not favor the *USDA Organic* claim and, in general, favored organic claims slightly less than consumers in the United States. Regardless, if an organic claim was present on the packaging, most consumers surveyed would find that positive.

**We recommend Urmatt limits the use of claims that address specific dietary preferences.** Through our research, we found that dietary claims that focus on specific lifestyles were largely polar with the majority of responses being negative. Consumers, both in the United States and in Thailand, claimed that it was very unlikely for them to purchase instant noodles

## GLOBALLY MARKETING ORGANIC INSTANT NOODLES

claiming to be *vegan*, *meat free*, or *gluten free*. These claims were very positive to a small group of consumers who live their daily lives on a specific diet. We recommend that these claims should not be highlighted on the packaging. While it is still important to advertise these claims, especially to greatly appeal to those with dietary concerns, we believe that putting these on the side or back of the container would help minimize the negative effect towards the general population.

With these recommendations, Urmatt has the ability to move forward in additional product testing with a narrower scope of what potential consumers view as positive and negative attributes to a product.

## References

- Bloom, J. (2017). *Natural and Artificial Flavors: What's the Difference?* Retrieved January 21, 2019, from <https://www.acsh.org/sites/default/files/Natural-and-Artificial-Flavors-What-s-the-Difference.pdf>
- Brunner, T. A., Horst, K. V., & Siegrist, M. (2010). Convenience food products. Drivers for consumption. *Appetite*, 55(3), 498-506. doi:10.1016/j.appet.2010.08.017
- Buckhorn, H., Hentschel, J., Hornung, A., & Hornung, U. (1999). Environmental engineering: Stepwise pyrolysis of plastic waste. *Chemical Engineering Science*, 54(15-16), 3043-3051. doi:10.1016/s0009-2509(98)00385-6
- FDA. (2017). Organic on Food Labels. Retrieved from <https://www.fda.gov/food/labelingnutrition/ucm473870.htm>
- Fredric, O., Wanza, S. & Mumbua, Donatta. (2014). Challenges of Marketing of New Products by Rift Valley Bottlers in Kenya. *International Journal of Business and Social Science*, 5(8). Retrieved from: [https://ijbssnet.com/journals/Vol\\_5\\_No\\_8\\_July\\_2014/18.pdf](https://ijbssnet.com/journals/Vol_5_No_8_July_2014/18.pdf)
- Graglia, Diego. (n.d). How many survey responses do I need to be statistically valid? Retrieved February 18, 2019, from <https://www.surveymonkey.com/curiosity/how-many-people-do-i-need-to-take-my-survey/>
- Gulia, Neelam & Dhaka, Vandana & Khatkar, Bhupendar. (2014). Instant Noodles: Processing, Quality, and Nutritional Aspects. *Critical reviews in food science and nutrition*. 54. 1386-99. 10.1080/10408398.2011.638227.
- History. (n.d.). Retrieved February 20, 2019, from <https://instantnoodles.org/en/noodles/index.html>
- Hocking, M. B. (1991). Relative merits of polystyrene foam and paper in hot drink cups: Implications for packaging. *Environmental Management*, 15(6), 731-747. doi:10.1007/bf02394812
- Howell, P. (2019, January 07). Green marketing: Is your sustainable message doable like Frito-Lay's SunChips. Retrieved from <https://businessofstory.com/frito-lays-sunchips-is-a-brilliant-example-of-doable-green-marketing-and-sustainability/>
- Jinap, S., & Hajeb, P. (2010). Glutamate. Its applications in food and contribution to health. *Appetite*, 55(1), 1-10. doi:10.1016/j.appet.2010.05.002

## GLOBALLY MARKETING ORGANIC INSTANT NOODLES

- Krasny, J. (2012, September 19). Economist Tyler Cowen Says Organic Foods Are Just A 'Marketing Label'. Retrieved from <https://www.businessinsider.com/economist-organic-foods-just-marketing-2012-9>
- Krueger, M. C., Harms, H., & Schlosser, D. (2015). Prospects for microbiological solutions to environmental pollution with plastics. *Applied Microbiology and Biotechnology*, 99(21), 8857-8874. doi:10.1007/s00253-015-6879-4
- Martini, B. (2006). Report for Schools OB-GYN and Pediatricians on Children and Aspartame/MSG. Mission Impossible. Retrieved January 15, 2019, from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.619.419&rep=rep1&type=pdf>
- Narula, A. (1998). Urmatt [PowerPoint slides]. Retrieved from <http://www.alfi.lu/sites/alfi.lu/files/files/Events/Conferences/2017/IIC17/A-Narula-Urmatt.pdf>
- Nissin, Maruchan, cut conflict palm oil from your instant noodles. (n.d.). Retrieved from <https://actions.sumofus.org/a/noodles-palm-oil>
- Liechtenstein Dialogue for Development. (2018, April 5). LDD 2018 - Arvind Narula - Through Business to Impact [Video file]. Retrieved from <https://youtu.be/eSEf55zwe9Q> ].
- Ong, A. S., & Goh, S. H. (2002). Palm Oil: A Healthful and Cost-Effective Dietary Component. *Food and Nutrition Bulletin*, 23(1), 11-22. doi:10.1177/156482650202300102
- Organic Trade Association. (2018, December 20). Retrieved from <https://www.ota.com/>
- Park, J., Lee, J., 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. doi:10.4162/nrp.2011.5.5.443
- Resins and Types of Packaging (2011). Retrieved from <https://www.plasticpackagingfacts.org/plastic-packaging/resins-types-of-packaging/>
- Sikander, Madiha & Malik, Dr & Khan, Muhammad & , Qurratul-ain & Ghayas khan, Rabia. (2017). Instant Noodles: Are they Really Good for Health? A Review.. *Electronic Journal of Biology*. 13. 222-227.
- Technavio. (2017, June 30). Top 6 Vendors in the Global Noodles Market from 2017-2021:



## GLOBALLY MARKETING ORGANIC INSTANT NOODLES

- Technavio. Retrieved February 22, 2019, from <https://www.businesswire.com/news/home/20170630005478/en/Top-6-Vendors-Global-Noodles-Market-2017-2021>
- The Food Safety of Instant Cup Noodle Containers (2009). Retrieved from [https://www.cfs.gov.hk/english/programme/programme\\_rafs/files/ras36\\_Report\\_Cup\\_Noodle\\_Container\\_ENG.pdf](https://www.cfs.gov.hk/english/programme/programme_rafs/files/ras36_Report_Cup_Noodle_Container_ENG.pdf)
- The Most Powerful Packaging Claims in 8 Product Categories. (2017, July 12). Retrieved from <https://blog.fieldagent.net.au/2017/07/12/the-most-powerful-packaging-claims-in-8-product-categories/>
- Townsend J. T. (2008). Mathematical Psychology: Prospects For The 21 Century: A Guest Editorial. *Journal of mathematical psychology*, 52(5), 269-280.
- Weise, E. (2012, September 04). Here's Proof That Organic Foods Aren't Much More Nutritious Than Regular Foods. Retrieved from <https://www.businessinsider.com/youre-wasting-money-if-you-think-organic-foods-have-more-nutrients-2012-9>
- Wu, Z., Xu, Y., Li, M., Guo, X., Xian, Y., & Dong, H. (2016). Determination of three fluorescent whitening agents (FWAs) and their migration research in food contact plastic packaging
- Zanoli, R., & Naspetti, S. (2002). Consumer motivations in the purchase of organic food. *British Food Journal*, 104(8). doi:10.1108/00070700210425930
- Zhang, N., & Ma, G. (2016). Noodles, traditionally and today. *Journal of Ethnic Foods*, 3(3), 209-212. doi:10.1016/j.jef.2016.08.003

## Appendix A: Claims Survey

### Organic Instant Noodle Survey

The goal of this survey is to determine what aspects of instant noodles are important to consumers. All survey answers will remain confidential. Individual survey answers will not be shared. You are free to stop filling out the survey at any time. Thank you for your participation, your responses are appreciated!

\* Required

What is your native country? (ex: USA, Thailand, Italy) \*

Your answer

What is your age? \*

Your answer

Do you have any dietary restrictions/preferences? \*

Gluten Free

Vegan

Vegetarian

None

Other: \_\_\_\_\_

What are the most important factors for you when purchasing instant noodle? (Can pick more than one) \*

Price

Ingredients/dietary concerns

Environmental impact

If it is organic

# Organic Instant Noodle Survey

\* Required

Please rate how likely you are to buy a product with the following words on the labels (on the scale of 0 to 6) \*

|                                      | 0 (Not Likely)        | 1                     | 2                     | 3 (Indifferent)       | 4                     | 5                     | 6 (Very Likely)       |
|--------------------------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Vegan                                | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Artificial Flavors and coloring free | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Allergen Free                        | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Gluten Free                          | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Chemical Preservative Free           | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Organic                              | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Compostable Packaging                | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Meat Free                            | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| MSG Free                             | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| USDA Organic                         | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

## Appendix B: Table of Survey Recipients

| <b>Platform</b>                                      | <b>Group/Email Alias</b>                   |
|--|--|
| <i>Facebook</i>                                      | Personal Accounts                          |
|  | Bristol, CT Talks                          |
|  | WPI Class of 2021                          |
|  | WPI Class of 2020                          |
|  | Chula International Exchange Students      |
| <i>Worcester Polytechnic Institute Email Aliases</i> | Society of Hispanic Professional Engineers |
|  | Hispanic and Caribbean Student Association |
|  | Promotion of Animal Welfare Society        |
|  | Omicron Delta Kappa                        |
|  | Alpha Xi Delta                             |
|  | Women's Club Rugby                         |
|  | International Student Council              |
|  | Alpha Phi                                  |
|  | ASBMB                                      |
| <i>Chulalongkorn University Line Groups</i>          | STA Group                                  |
|  | Basketball Team                            |
|  | SG   |
|  | Baan                                       |
|  | ybep                                       |
|  | ISA Team members                           |
|  | International                              |
|  | ASEAN Group                                |
|  | Tris                                       |

## Appendix C: Complete List of Claims

| Category                      | Claim                                |
|-------------------------------|--------------------------------------|
| <b>Dietary</b>                | Vegan                                |
|                               | Artificial flavors and coloring Free |
|                               | Allergen Free                        |
|                               | Gluten Free                          |
|                               | Chemical and Preservative Free       |
|                               | Meat Free                            |
|                               | MSG Free                             |
|                               | Non-Fried                            |
| <b>Organic</b>                | USDA Organic                         |
|                               | Certified Organic                    |
|                               | Organic                              |
|                               | All Natural                          |
| <b>Environment and Social</b> | Compostable Packaging                |
|                               | Eco Packaging                        |
|                               | Environmentally Friendly             |
|                               | 100% Sustainable                     |
|                               | Made with care for the environment   |
|                               | Eco Certified                        |
|                               | Supports Family Farm                 |
|                               | Biodegradable Container              |

**Appendix D: Concept Boards**

**This image  
was removed  
for copyright  
purposes**

**This image  
was removed  
for copyright  
purposes**

**This image  
was removed  
for copyright  
purposes**

**This image  
was removed  
for copyright  
purposes**

**This image  
was removed  
for copyright  
purposes**

**This image  
was removed  
for copyright  
purposes**

**This image  
was removed  
for copyright  
purposes**

**This image  
was removed  
for copyright  
purposes**

**This image  
was removed  
for copyright  
purposes**



## Appendix E: Pricing Survey

# Organic Instant Noodles Pricing Survey

The goal of this survey is to determine a price range for a new instant noodle product. All survey answers will remain confidential. Individual survey answers will not be shared. You are free to stop filling out the survey at any time. Thank you for your participation, your responses are appreciated!

\* Required

What is your native country? (ex: USA, Thailand, Italy) \*

- Thailand
- United States (USA)
- Other: \_\_\_\_\_

What is your age? \*

Your answer \_\_\_\_\_

What currency do you prefer? \*

- US dollars (\$)
- Thai BAHT (฿)

## Organic Instant Noodles Pricing Survey

Please look at the following labels for DIFFERENT instant noodle products. Please list the maximum price you would be willing to pay for it.

### Organic Instant Noodles 1 of 5

Based on this particular description and label, what is the maximum amount, in US dollars (\$) or Thai BAHT (฿) you'd be willing to pay for these noodles? \*

**This image  
was  
removed for  
copyright  
purposes**

Your answer

**Organic Instant Noodles 2 of 5**

Based on this particular description and label, what is the maximum amount, in US dollars (\$) or Thai BAHT (฿) you'd be willing to pay for these noodles? \*

**This image  
was  
removed for  
copyright  
purposes**

Your answer

---

**Organic Instant Noodles 3 of 5**

Based on this particular description and label, what is the maximum amount, in US dollars (\$) or Thai BAHT (฿) you'd be willing to pay for these noodles? \*

**This image  
was  
removed for  
copyright  
purposes**

Your answer

**Organic Instant Noodles 4 of 5**

Based on this particular description and label, what is the maximum amount, in US dollars (\$) or Thai BAHT (฿) you'd be willing to pay for these noodles? \*

**This image  
was  
removed for  
copyright  
purposes**

Your answer

---

**Organic Instant Noodles 5 of 5**

Based on this particular description and label, what is the maximum amount, in US dollars (\$) or Thai BAHT (฿) you'd be willing to pay for these noodles? \*

**This image  
was  
removed for  
copyright  
purposes**

Your answer

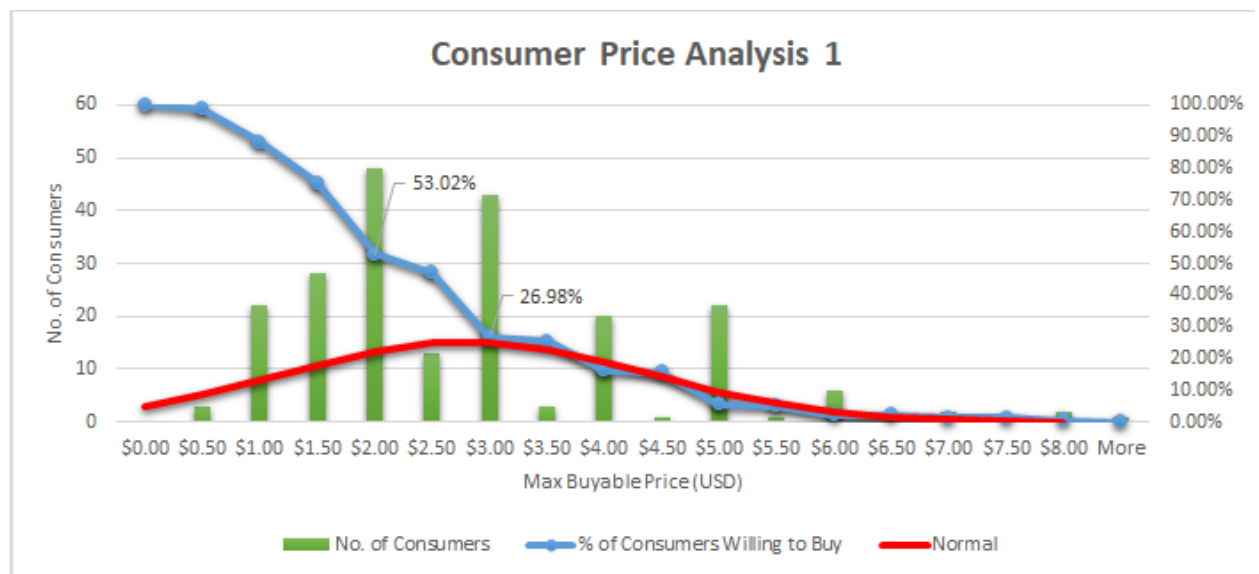
BACK

SUBMIT

## Appendix F: Pricing Graphs

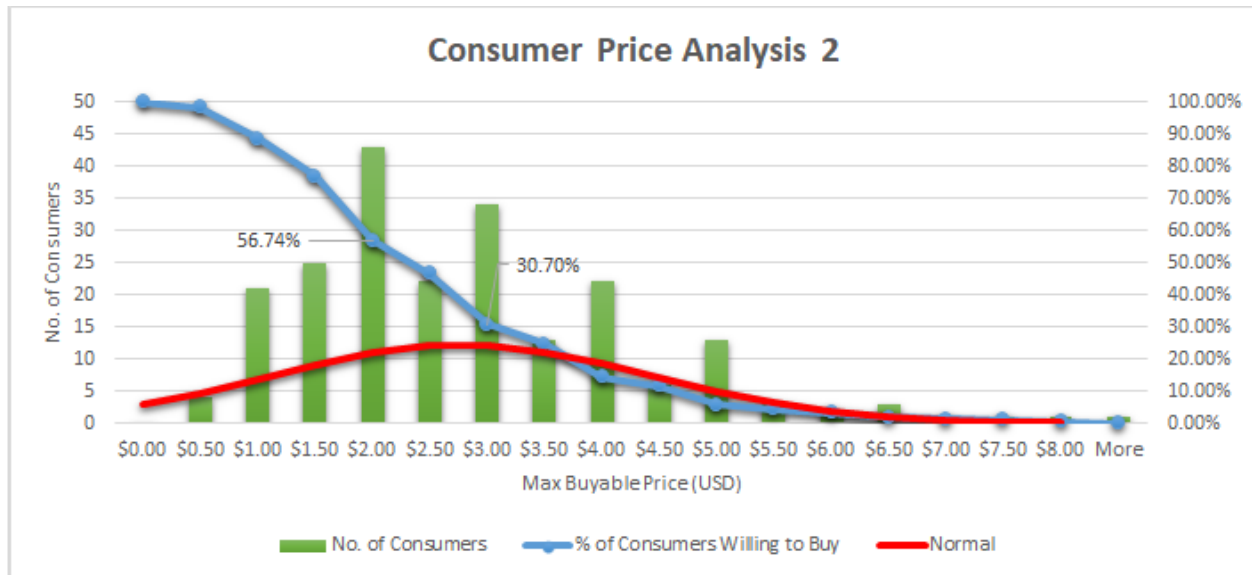
|                    | Product Combo # |   |   |   |   |   |   |   |
|--------------------|-----------------|---|---|---|---|---|---|---|
|                    | 1               | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Certified Organic  | 1               | 0 | 1 | 0 | 1 | 0 | 1 | 0 |
| All Natural        | 0               | 1 | 0 | 1 | 0 | 1 | 0 | 1 |
| MSG FREE           | 1               | 1 | 0 | 0 | 1 | 1 | 0 | 0 |
| Chemical and Pres  | 0               | 0 | 1 | 1 | 0 | 0 | 1 | 1 |
| Biodegradable Con  | 1               | 1 | 1 | 1 | 0 | 0 | 0 | 0 |
| Supports Family Fa | 0               | 0 | 0 | 0 | 1 | 1 | 1 | 1 |

\*Most profitable set of claims is product combination #7

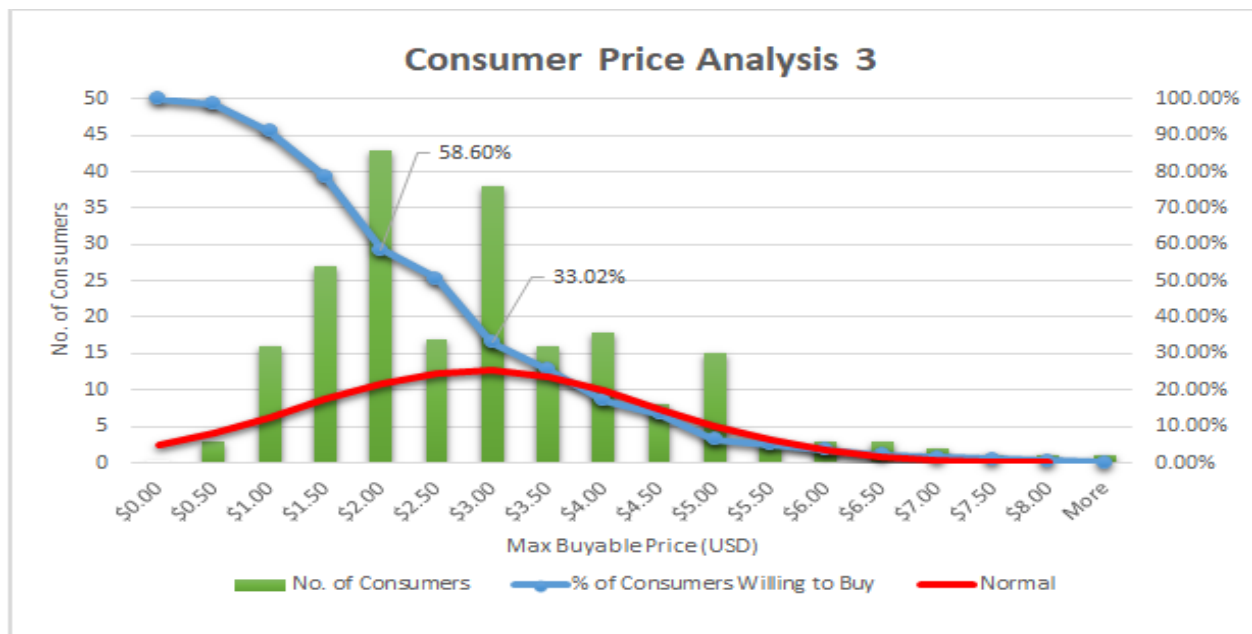


Certified Organic, MSG Free, Biodegradable container

# GLOBALLY MARKETING ORGANIC INSTANT NOODLES



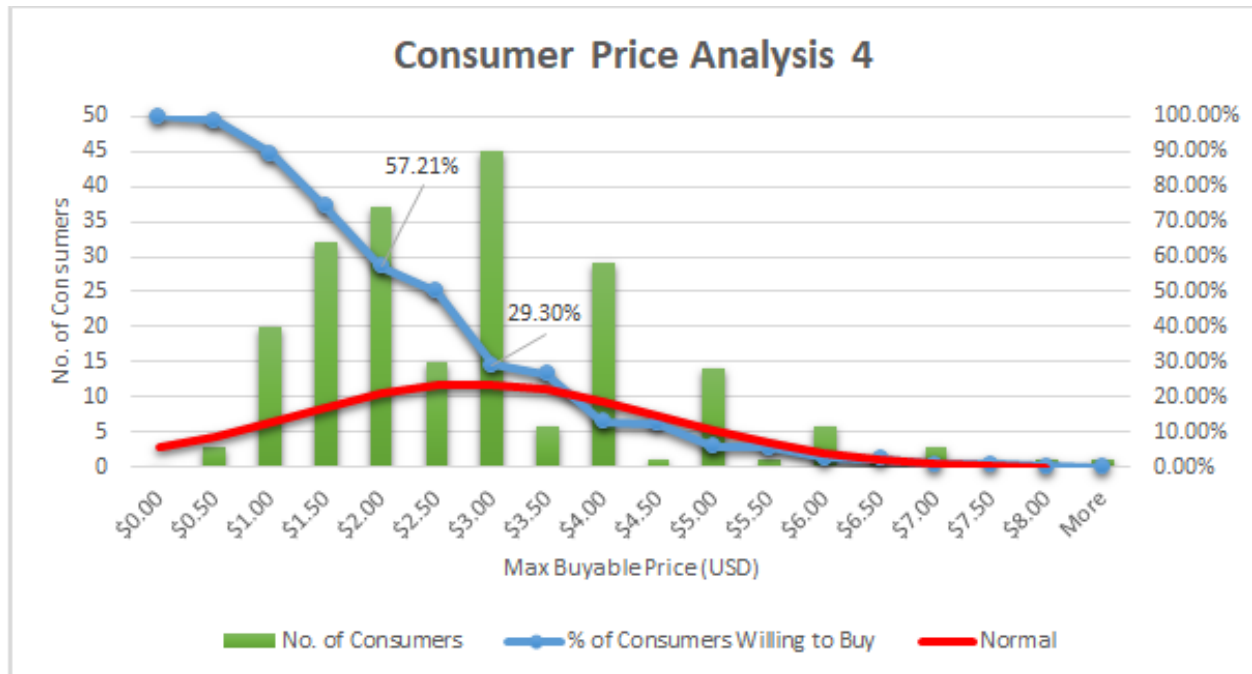
All Natural, MSG Free, Biodegradable Container



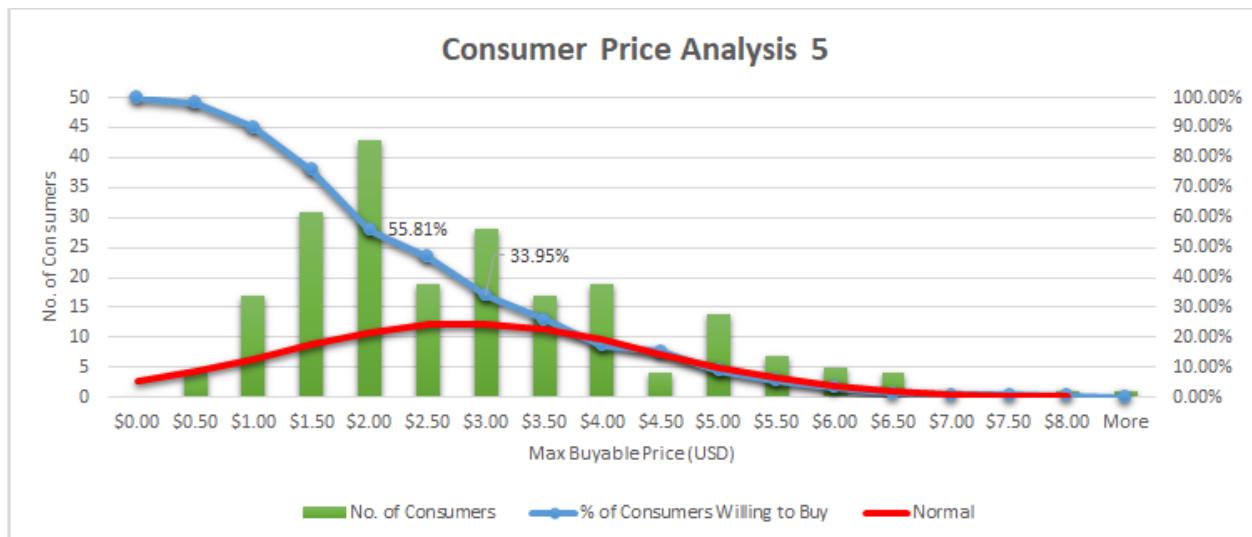
Certified Organic, Chemical and Preservative Free, Biodegradable Container



# GLOBALLY MARKETING ORGANIC INSTANT NOODLES

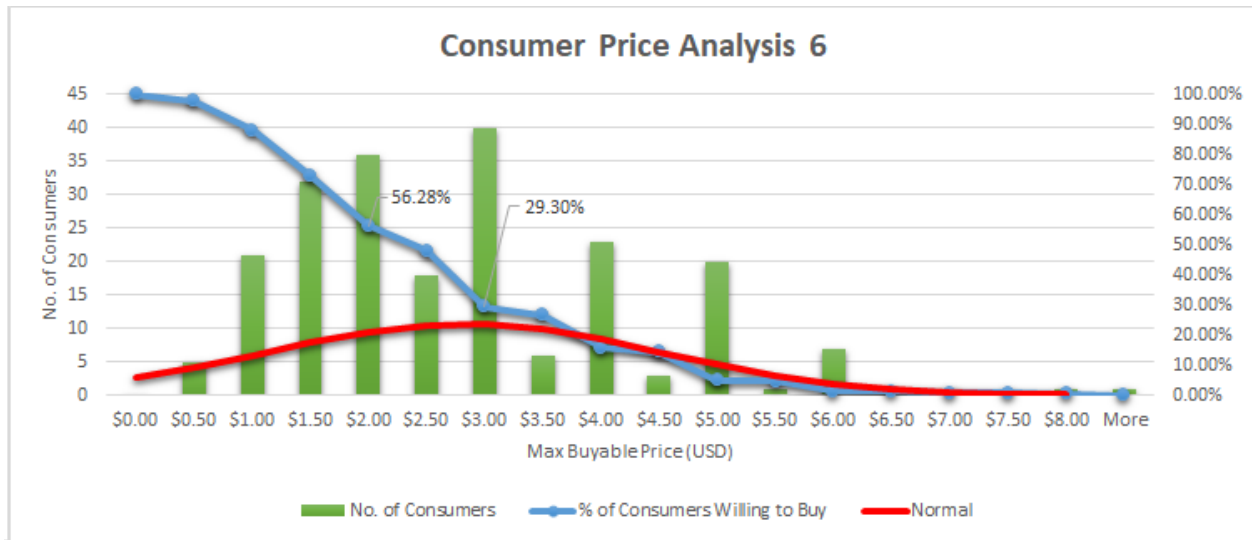


All Natural, Chemical and Preservative Free, Biodegradable Container

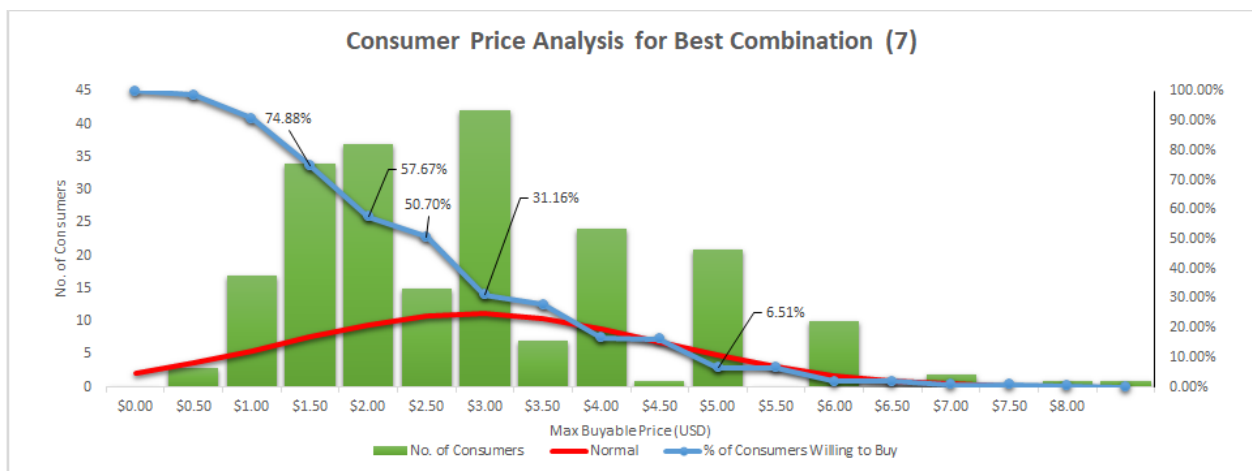


Certified Organic, MSG Free, Supports Family Farms

# GLOBALLY MARKETING ORGANIC INSTANT NOODLES

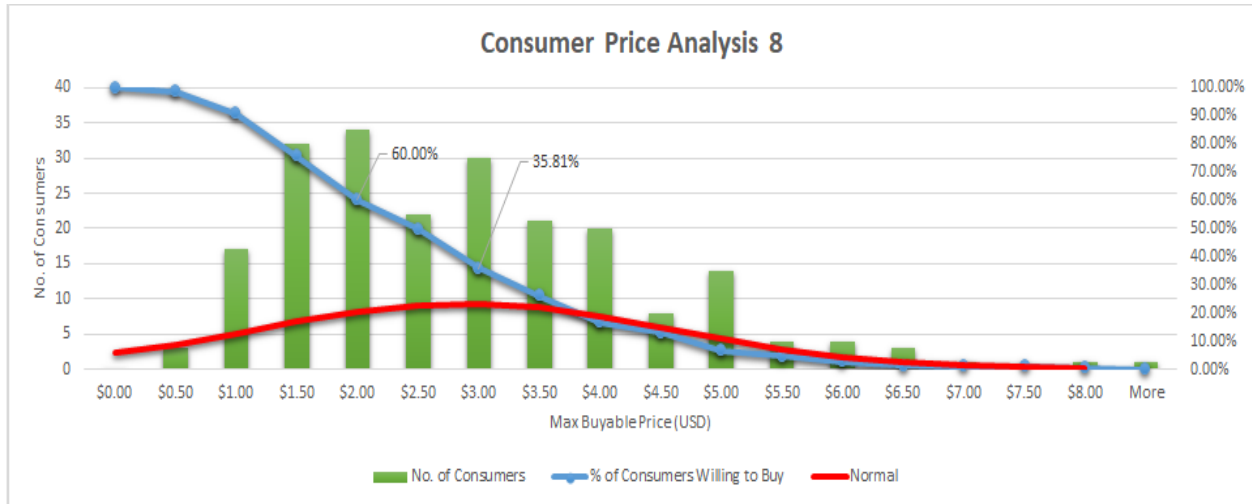


All Natural, MSG Free, Supports Family Farms



Certified Organic, Chemical and Preservative Free, Supports Family Farms

# GLOBALLY MARKETING ORGANIC INSTANT NOODLES



All Natural, Chemical and Preservative Free, Supports Family Farms