

A Project Report on
MARKET STUDY OF A SMART HOME APPLIANCE

Submitted in the partial fulfillment of the requirement for the award of the Degree of

Integrated Dual Degree Programme

In

Master of Business Administration

By

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DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

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MAY- 2019.

DEPARTMENT OF HUMANITIES AND SOCIAL SCIENCES

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CERTIFICATE BY THE HEAD OF THE DEPARTMENT

This is to certify that project work entitled "**MARKET STUDY OF A SMART HOME APPLIANCE**" is a record of bonafide work carried out by **SYED ABDUL KHADER** bearing Roll No. **14011U0301** in partial fulfillment for the award of the degree of Master of Business Administration as a part of the Integrated Dual Degree Programme (IDP) in the department of Humanities and Social Sciences, Jawaharlal Nehru Technological University, Hyderabad.

The results embodied in this project report have not been submitted to any other University or Institute for the award of any degree or diploma.

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CERTIFICATE BY THE SUPERVISOR

This is to certify that the project work entitled "**MARKET STUDY OF A SMART HOME APPLIANCE**" is a record of bonafide work carried out by **SYED ABDUL KHADER** bearing Roll No. **14011U0301**, carried out in the Department of Humanities and Social Sciences under my supervision in partial fulfillment of academic requirements for the award of degree of Masters in Business Administration as a part of the Integrated Dual Degree Programme (IDP) in Jawaharlal Nehru Technological University Hyderabad. The results of investigations enclosed in this report have been verified and found satisfactory.

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DECLARATION BY THE CANDIDATE

I, **SYED ABDUL KHADER** bearing Roll No. **14011U0102**, hereby declare that the project report entitled "**MARKET STUDY OF A SMART HOME APPLIANCE**" carried out by me under the guidance of **Dr. E. MURALI DARSHAN**, Adjunct Faculty, Department of Humanities and Social Sciences, is submitted in partial fulfillment of the requirement for the award of the Degree of Master of Business Administration in Integrated Dual Degree Programme in Jawaharlal Nehru Technological University, Hyderabad.

The results embodied in this project report are original and have not been submitted to any other University or Institute for the award of any other degree or diploma.

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ACKNOWLEDGEMENT

I would like to express my gratitude to Dr. PARVATHI VUDUMULA, Professor (English) and Head of the Department of Humanities and Social Sciences, JNTUH College of Engineering, Hyderabad for giving me an opportunity to do survey on Impact of online advertising on consumer behavior, JNTU Hyderabad.

This work has been done under the guidance of Dr. E. MURALI DARSHAN, Adjunct Faculty, Department of Humanities and Social Sciences, JNTUH College of Engineering, Hyderabad. I consider it as a great pleasure and privilege to work under his guidance and I thank him for his constant encouragement, involvement and valuable interaction.

I convey my sincere thanks to all the respondents for providing genuine and valuable data without which, the project would have not been completed.

I thank my family members and friends for their immense support which made me successfully complete the project.

SYED ABDUL KHADER

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ABSTRACT

Cooking is a divine mixture of Art and Science where the individual ingredients are beautifully and skillfully transformed into a delighted cuisine. But in this fast-moving world, not many have the time to master the skill of cooking which requires patience, lots of iterations, wide knowledge of recipes. One has to understand the three key elements of cooking:

- Recipe.
- Right Proportion of Ingredients.
- Time and Temperature.

Searching for good recipes, altering to our taste, calculating right proportions for total number of people, adjusting temperatures etc. is always nagging for the user. Hence, in this world of Artificial Intelligence, a new home appliance is being developed. It's a dream come true for all the persons who want to try new recipes, who are reluctant to cook feeling something may go wrong like youngsters, working parents and for all food lovers out there. This smart appliance assists you intelligently to cook perfect dish every single time as per your taste and learns with time.

The Supporting Phone Application has support for over 1000 recipes from all around the world, and to bring uniqueness, you can add your mom's or grandma's secret recipe, so you can cook with same taste every single time when away from home. The smart appliance helps you add accurate quantity of ingredients with the aid of built-in smart weigh scale. Its intelligent system alerts the user through the in-built LED and also through the App to change the temperature settings, to get perfect cooked meal.

This study is performed to determine the target market for the product along with the eating and cooking habits of the population. The data is collected through questionnaire and personal interviews.

LIST OF TABLES

S.NO	Page. No:
4.1 <i>Gender of Respondents</i>	22
4.2 <i>Age of Respondents</i>	23
4.3 <i>Occupation of Respondents</i>	24
4.4 <i>Occupation w.r.t to Gender of Respondents</i>	25
4.5 <i>Annual Income of Respondents</i>	26
4.6 <i>Marital Status of Respondents</i>	27
4.7 <i>Regular Place of Breakfast of Respondents</i>	28
4.8 <i>Average Cost for Breakfast of Respondents</i>	29
4.9 <i>Regular Place of Lunch of Respondents</i>	30
4.10 <i>Regular Place of Lunch of Respondents</i>	31
4.11 <i>Average Cost for Dinner of Respondents</i>	32
4.12 <i>Regular Place of Dinner of Respondents</i>	33
4.13 <i>Respondents Staying With</i>	34
4.14 <i>Love for Cooking.</i>	35
4.15 <i>Wish for Experiencing New Dishes.</i>	36
4.16 <i>Importance for Fresh Home-Made Food.</i>	37
4.17 <i>Time Spent in Cooking each Day</i>	38
4.18 <i>Gender w.r.t Time Spent in Cooking each Day</i>	39
4.19 <i>Price of the Product conceived by the User</i>	40
4.20 <i>Effect of Gender on Price of the Product conceived by the User</i>	41

4.21 <i>Effect of Annual Income on Price of the Product conceived by the User</i>	42
4.22 <i>Effect of Annual Income on Price of the Product conceived by the User</i>	42
4.23 <i>Independent Sample T Test 1</i>	44
4.24 <i>One Way ANOVA Test 1</i>	47
4.25 <i>One Way ANOVA Test 2</i>	49
4.26 <i>Two Way ANOVA Test 1</i>	52
4.27 <i>Two Way ANOVA Test 2</i>	54
4.28 <i>Two Way ANOVA Test 3</i>	56

LIST OF FIGURES

S. No.	Page. No
4.1 <i>Gender of Respondents</i>	22
4.2 <i>Age of Respondents</i>	23
4.3 <i>Occupation of Respondents</i>	24
4.4 <i>Occupation w.r.t to Gender of Respondents</i>	25
4.5 <i>Annual Income of Respondents</i>	26
4.6 <i>Marital Status of Respondents</i>	27
4.7 <i>Regular Place of Breakfast of Respondents</i>	28
4.8 <i>Average Cost for Breakfast of Respondents</i>	29
4.9 <i>Regular Place of Lunch of Respondents</i>	30
4.10 <i>Regular Place of Lunch of Respondents</i>	31
4.11 <i>Average Cost for Dinner of Respondents</i>	32
4.12 <i>Regular Place of Dinner of Respondents</i>	33
4.13 <i>Respondents Staying With</i>	34
4.14 <i>Love for Cooking.</i>	35
4.15 <i>Wish for Experiencing New Dishes.</i>	36
4.16 <i>Importance for Fresh Home-Made Food.</i>	37
4.17 <i>Time Spent in Cooking each Day</i>	38
4.18 <i>Gender w.r.t Time Spent in Cooking each Day</i>	39
4.19 <i>Price of the Product conceived by the User</i>	40
4.20 <i>Effect of Gender on Price of the Product conceived by the User</i>	41

4.21 <i>Effect of Annual Income on Price of the Product conceived by the User</i>	42
4.22 <i>Effect of Annual Income on Price of the Product conceived by the User</i>	42

TABLE OF CONTENTS

S. No:	Page. No
Cover Page	i
Certificate by the Head of the Department	ii
Certificate by the Supervisor	iii
Declaration by the Candidate	iv
Acknowledgement	v
Abstract	vi
List of tables	vii
List of figures	ix
Table of contents	xi

CHAPTER I

INTRODUCTION

1.1 What Is Smart Cooking?	1
1.2 India Kitchen Appliances Market to Grow at Over 25% Till 2019	2
1.3 Some of The Smart Kitchen Appliance	3
1.4 Problem Statement	9
1.5 Need for The Study	10
1.6 Scope of The Study	11
1.7 Objective of The Study	11
1.8 Theoretical Framework	12
1.9 Limitations of The Study	12

CHAPTER II
LITERATURE REVIEW

13

CHAPTER III
RESEARCH METHODOLOGY

3.1 Introduction	17
3.1.1 Research	17
3.2 Process of Research Work	18
3.3 Data Collection Sources	18
3.4 Tools for Data Analysis	19

CHAPTER IV
DATA ANALYSIS AND INTERPRETATION

4.1 Percentage Analysis	22
4.2 Independent T Test	43
4.3 One Way ANOVA	45
4.4 Two Way ANOVA	51

CHAPTER VI

CONCLUSION

5.1 Findings of the study	57
5.2 Conclusion	58
5.3 Future Research	58
Appendices	
Research Questionnaire	59

CHAPTER I INTRODUCTION

Cooking or cookery is the art, technology, science and craft of preparing food for consumption. Cooking techniques and ingredients vary widely across the world, from grilling food over an open fire to using electric stoves, to baking in various types of ovens, reflecting unique environmental, economic, and cultural traditions and trends. The ways or types of cooking also depend on the skill and type of training an individual cook has. Cooking is done both by people in their own dwellings and by professional cooks and chefs in restaurants and other food establishments. Cooking can also occur through chemical reactions without the presence of heat, such as in ceviche, a traditional South American dish where fish is cooked with the acids in lemon or lime juice. Preparing food with heat or fire is an activity unique to humans. It may have started around 2 million years ago, though archaeological evidence for it reaches no more than 1 million years ago. The expansion of agriculture, commerce, trade, and transportation between civilizations in different regions offered cooks many new ingredients. New inventions and technologies, such as the invention of pottery for holding and boiling water, expanded cooking techniques. Some modern cooks apply advanced scientific techniques to food preparation to further enhance the flavour of the dish served.

1.1 What is Smart Cooking?

Put simply, smart cooking means bringing Bluetooth connected technology into the kitchen so that appliances can communicate with each other, and with an app you control, to deliver the best tasting and most consistent results. In an age where this kind of connectivity is cheaper than ever, companies like Hestan Cue seek to improve the culinary experience and educate the home cook, rather than merely add tech for tech's sake. The last thing people need is a toaster that requires an app to operate: the push-down lever is still a great user interface for making toast. They want to add innovative technology to the kitchen arsenal of gadgets to give people confidence to cook recipes they wouldn't have dared try before. They help make the perfect filet of fish, with crisp skin and a tender interior, or a simple chicken breast that is properly seared but not the least bit dry, or carrots that are cooked through and yet toothsome. The truly smart kitchen harnesses all the techniques that top chefs spend their lives learning, and factors in all variables to set

you up for success. It accumulates hours of experience over the stove and puts the power of culinary expertise in the home cook's hands.

1.2 India Kitchen Appliances Market to Grow at Over 25% till 2019

Expanding middle class, growing working population and improving consumer lifestyle continue to boost kitchen appliances market in India

According to a recently published report by TechSci Research "**India Kitchen Appliances Market Forecast and Opportunities, 2019**", the kitchen appliances market in India is projected to grow at a CAGR of more than 25% during 2014-19. The demand for kitchen appliances in the country is expected to continue growing on account of expanding base of middle class and affluent consumers, increasing working population and improving consumer lifestyle. India has a large base of young consumers who form majority of the workforce and hardly find time for traditional cooking due to their busy schedules, thereby creating huge demand for western kitchen appliances that facilitate easy and quick cooking.

Rising per capita disposable income of consumers, especially upper and lower middle-income groups, continues to drive India's kitchen appliances market. However, majority of Indian consumers are price conscious, which poses a challenge for the manufacturers and suppliers as even a small price variation hugely affects the consumer preference for a specific brand or product.

"Retail chains such as Big Bazar, Easyday, Croma, Reliance Digital, etc. are significantly contributing towards increasing the product awareness among consumers, thereby boosting the demand for kitchen appliances in India. However, such chains are not currently present in semi-urban and rural pockets of the country. To overcome this issue, various retail majors are focusing on expanding their reach in rural areas over the coming years, which is expected to drive the kitchen appliances market until 2019." said Ms. Varsha Singh, Research Consultant with TechSci Research, a research based global management consulting firm.

"**India Kitchen Appliances Market Forecast and Opportunities, 2019**" has evaluated the future growth potential of India's kitchen appliances market and provides statistics and information on market structure, consumer behaviour trends, market projections and demand forecasting. The report is intended to provide cutting-edge market intelligence and help decision makers to take sound investment evaluation.

Besides, the report also identifies and analyses the emerging trends along with essential drivers, challenges and opportunities in kitchen appliances market in India.

1.3 Some of the Smart Kitchen Appliance:

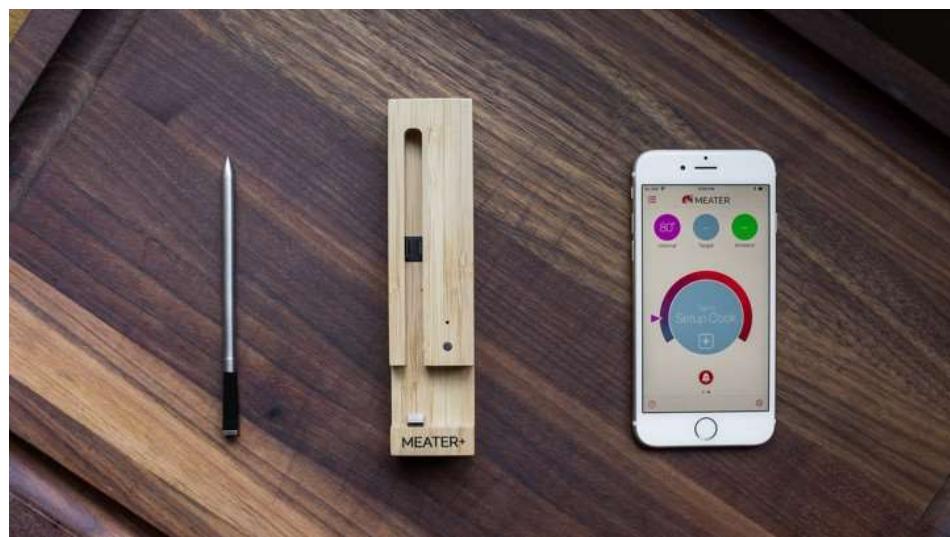
1. Meater + Smart Thermometer

Price: £99

If you keep poisoning your dinner party guests with undercooked meat, you need Meater in your life. Touted as the first wireless smart meat thermometer, the start-up is now back with its second generation Meater+ - much more than just a digital reader with Bluetooth.

Its big strength lies in the app that accompanies it. Simply insert the Meater+ probe into whatever you're cooking (pork, poultry, fish or really any meat), leaving the ambient sensor an inch or so of room, and then select the meat type, cut and desired finish in the app. The app will then tell you the target temperature, the current temperature and the ambient temperature, giving you alerts on cooking times along the way (you leave Meater in while you cook).

Suitable for oven cooking, the BBQ and more, the Meater probe actually charges within its own box through an AA battery. Its newer model also has a range of 50m from the phone (up from 10m in the first generation), using its case as a signal repeater.



2. Crock-Pot Smart Slow Cooker with WeMo:

Price: £79.98

This smart Crock-Pot is WeMo-enabled, so you can adjust cooking settings from wherever you are. Using the free WeMo app (the same app that your WeMo smart bulbs and switches live in), you can check on the temperature, cook-time, change settings to warm or even turn off the device right from your smartphone.

It makes cooking with a crockpot more convenient than ever, especially if you're sitting in traffic on the way home.



3. Anova Culinary Sous Vide precision cooker

Price: £139.99

Maybe you only have your kitchen to cook in. Or maybe you're very particular about how your meat is cooked. The best solution for you is not grilling, but an alternative cooking method: sous vide.



You're going to essentially be boiling your meat (protected by a plastic bag) and the Anova Culinary will keep you alerted to how your meat is cooking via its companion app. You can not only monitor what's going on, but control it as well. You'll get your meat perfectly done each time, and then you'll get to finish it off on a grill to get that BBQ look and flavour. You can't lose.

4. Smarter Coffee 2.0

Price: £179.99

Now in its second-generation, Smarter gives you your coffee on demand, using your smartphone or tablet to get things started. You tee-up (coffee-up?) as many as 12 cups at once and you even have the option to select the strength of your brew.



'Welcome home' and 'wake up' modes can be set to kick start the machine into action based on set geo-locations and timings and, with IFTTT applets, you can cook up a whole host of set recipes to match your mood. Bad night's sleep recorded by your Fitbit? Strong coffee in the morning, for the win. Throw Alexa into the mix and it's a pretty strong setup.

5. T-fal Actifry Smart XL

Price: \$399.99

T-fal (or Tefal if you're outside the US) isn't sticking around in the dumb kitchen era. The T-fal Actifry Smart XL is Bluetooth powered fryer that lets you fire over recipes directly from your smartphone or tablet – more than 200 of them in fact.

The idea is that the Actifry Smart does the hard work for you, so you don't need to worry about what temperatures to use, or when to stir it up. The app is also on hand to give you step-by-step video instructions for the bits the fryer can't do. Good news for healthy eaters too: it's one of those fryers where a little bit of oil goes a long way – making chips healthier than broccoli. Probably.



6. SmartPlate TopView

Price: \$129.95

If you're used to manually inputting all your caloric intake through various food tracking apps, then SmartPlate wants to make your life easier. The 10-inch plate is Wi-Fi and Bluetooth-enabled and, get this, it comes equipped with three mini

cameras and weight sensors. Basically, your dish will be watching you – or in other words, figuring out what you're eating and doling out proper portions.



If you serve yourself too much, the plate will alert you. There's also an app that syncs up with the plate to automatically analyse and keep track of every meal, and connects to MyFitnessPal and Fitbit.

7. HAPIfork

Price: \$49

Somehow, despite the world's most cutting-edge consumer tech being on display, HAPIfork managed to be the star of the show at CES a couple of years back. If you missed the coverage then, allow us to get you up to speed – it's a smart fork that helps you monitor and track your eating habits. Exactly what your life needed, right?

Using Slow Control technology, the connected cutlery measures how many mouthfuls you take and buzzes and flashes if you're scoffing your grub too quickly. There's also a dashboard for you to analyse your meal-time performance. Of course, there is.



8. Drop

Price: \$79.95

Drop scales will have you baking like Mary Berry in no time. You simply select your chosen dish from a companion app's recipe book and these connected scales will help you put together the exact ingredients to make your bake a great success.



9. Moley

Apparently, having a home cooked meal from the kitchens of Thomas Keller, Alain Ducasse and Gordon Ramsay could become a reality. In 2019, Moley will launch the world's first fully-automated and integrated intelligent cooking robot—a robotic kitchen that has unlimited access to chefs and their recipes worldwide. So not only can this robotic chef cook over 100 different meals for you, it will clean up after itself too!

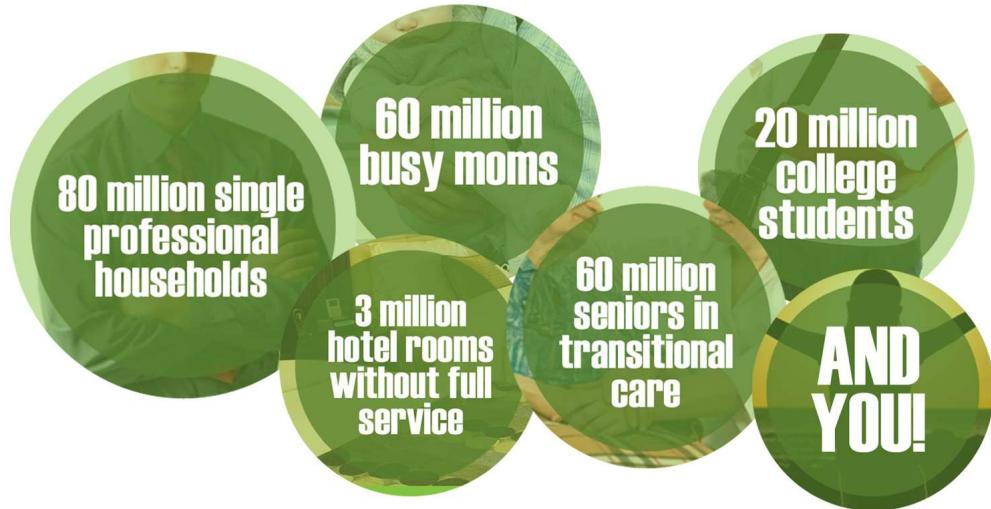


1.4 PROBLEM STATEMENT

In today's rapid moving world and with the never seen exponential growth of technology and software, the society is moving towards total automation. In this fast-paced era, we don't have time to cook our own food and have a healthy diet, so we are very much dependent on the online food delivery and outside food, which may have a long-term health effect. And the current generations are unaware and lack the skill and art of cooking. Hence, to overcome this issue automated cooking machines are being introduced which can provide healthy and fresh food from thousands of varieties to select from, at a very reasonable pricing.

But, since the technology is still naïve and there is no proper study conducted yet on the market demand and perception of the consumer on such products, it becomes very difficult to come up with a better solution.

Therefore, this study tries to forecast the market demand and collect data on the eating habits of the people especially the young professionals, busy moms, hotel rooms without full service, college students, health conscious people etc. to better serve the people.



1.5 NEED FOR THE STUDY

As people are becoming more and more health conscious and with the huge increase in the food delivery market, there is a clear indication of lack of fresh and healthy home cooked food at disposal to many of us. Also, a huge healthy food market is growing which will boost the acceptance of an automated cooking appliance which can provide fresh and healthy food to the consumers at reasonable price and with very minimal guidance and efforts.

For this kind of products, there is no market survey being done and it opens up a huge opportunity to tap in the market by understanding the needs of consumer be learning their cooking and eating habits along with their perception towards the product.

1.6 SCOPE OF THE STUDY

The study is intended to understand the target market and gather data from the young working professionals, busy working parents, health conscious population, college students to better understand their need, as it is expected that they are the target market for such products. Since, the product is capable of working flawlessly in all the regions of India, but due to lack of time and resources, the study is being conducted only in Hyderabad, where the expected target population is around 30 Lakh people.

1.7 OBJECTIVE OF THE STUDY

The study is about determining the market demand for a new smart kitchen appliance which can automate most of the cooking process with very minimal guidance and perfection. Also, this study examines about the cooking and eating habits of the population.

This research will attempt to identify the target market for the smart appliance and also understand the food habits of the population in order to understand the needs and demands of the user.

The study helps in understanding the significant differences between the following factors:

1. Gender and Food Habits
2. Age and Food Habits
3. Annual Income and Food Habits

Also, the study helps in understanding the perception of the user towards the price of the smart appliance, time spent in cooking each day and relate it to Gender and Age of the population.

And finally, the study tries to understand the spending behaviour of the population on their meals and understand it with the Age and Occupation of the user.

1.8 THEORITICAL FRAMEWORK

In this project,

Descriptive research is used which means:

Descriptive research is aimed at casting light on current issues or problems through a process of data collection that enables them to describe the situation more completely than was possible without employing this method. Descriptive research designs are most effectively applied to studies aimed at gathering additional information, learning more about an area of interest, or becoming more familiar with a topic.

Relational or Associational Research is used, which means:

Associational research is aimed at comparing two or more parameters/organisations to get the most optimum and desired result.

1.9 LIMITATION OF THE STUDY

The study is a sample-based study and the inferences derived from the analysis and interpretation is expected to be representative of the total population However the study is subject to following limitations:

- The area of the study is limited to city of Hyderabad. Hence the sample may have the limitations pertaining to the area, tradition, custom and culture of the people in that place.
- The respondents being taken in consideration is from educated section and from middle to higher income level status, hence the study doesn't infer the general eating/cooking habits of overall population.
- The sample size of this study and area is also limited hence the result may bias when it is implemented in huge population.

CHAPTER II LITERATURE REVIEW

Smart Kitchen Appliances Market: Global Industry Analysis (2012 - 2016) and Opportunity Assessment (2017 - 2026)

Smart kitchen appliances are fine quality products/ kitchen accessories that are typically designed in a way with a view to provide efficiency and comfort in almost every operation taking place in a kitchen. Compared to traditional kitchen appliances, smart kitchen appliances are costly yet more efficient and time saving. There are several benefits associated with smart kitchen appliances, such as waste reduction, efficient cooking operations, enhanced safety, and the user can receive timely alerts as well as gain remote access and achieve cost and energy savings. There are various smart kitchen appliances such as smart refrigerators, smart dishwashers, smart coffee maker, smart cookware and cooktop, smart oven and smart scales and thermometers. The market for smart kitchen appliances is influenced by various factors such as increasing disposable income coupled with rising per capita expenditure on technology and appliances and increasing technological research and development.

Future Market Insights has captured the pulse of the global market for smart kitchen appliances in its recent research report. The fact-based research report on global smart kitchen appliances market covers various aspects such as trends, drivers, challenges and opportunities that have an influence on the growth and expansion of the global market. All these factors are analysed across key regions of Latin America, North America, Europe, Japan, Middle and Africa (MEA) and Asia Pacific excluding Japan (APEJ). The research report includes historic data and statistics as well as future value projections of various segments of the global smart kitchen appliances market for a period of nine years, starting from 2017 and ending in 2026. According to the analysis done by Future Market Insights, the global smart kitchen appliances market is projected to grow at a high CAGR to reach a valuation higher than US\$ 2 Bn by the end of the period of assessment from a value of around US\$ 703 in 2017.

Revenue from Smart Dishwashers to Skyrocket in the Coming Years.

The global market for smart kitchen appliances includes appliances category which has further segmented into smart refrigerators, smart dishwashers, smart oven, smart coffee maker, smart cookware and cooktop and other appliances. Of these, the smart dishwasher segment is the largest from the market share perspective. In 2017, the smart dishwasher segment reflected a value of more than US\$ 140 Mn and is the second largest in terms of revenue generation. But with the increasing use of smart dishwashers, the sales revenue is anticipated to grow higher in the coming years and this segment is expected to lead the global market with a valuation of more than US\$ 580 Mn by the end of the assessment year.

Wi-Fi Technology is Widely Used in Smart Kitchen Appliances.

In the connectivity technology category, the Wi-Fi segment is expected to grow at a high rate during the forecast period. In 2017, the Bluetooth segment dominated the global market with a high market valuation. However, the Wi-Fi technology is expected to catch steam and is projected to grow at a stellar 16.8% value CAGR throughout the period of forecast and reach a higher valuation thus dominating the global market by the end of 2026.

Competition Analysis

The research report on global smart kitchen appliances has profiled some of the major players operating in the market. Key companies such as Whirlpool Corporation, LG Electronics, AB Electrolux, Panasonic Corporation, Haier Group, Samsung Electronics Co. Ltd., Koninklijke Philips N.V., General Electric Co., Onida, SectorQube and Dacor have been profiled in this research study.

India Kitchen Appliances Market Forecast and Opportunities, 2019

The kitchen appliances market in India is projected to grow at a CAGR of more than 25% during 2014-19. The demand for kitchen appliances in the country is expected to continue growing on account of expanding base of middle class and affluent consumers, increasing working population and improving consumer lifestyle. India has a large base of young consumers who form majority of the workforce and hardly find time for traditional cooking due to their busy schedules, thereby creating huge demand for western kitchen appliances that facilitate easy and quick cooking.

Start-ups are making home cooking more automated, customized, and health-conscious than ever.

From the invention of the microwave to the emergence of frozen foods, CPG and consumer product companies are always innovating in the kitchen. But in many ways, the fundamentals of cooking haven't changed in decades. Humans primarily use "regular" ingredients (largely harvested from livestock and plants), ovens, and stovetops to make their meals. That may soon change, however, as tech begins to infiltrate the kitchen in more disruptive ways than ever before. Next-generation ingredients, robotic appliances, novel cooking methods, and other technology have the potential to fundamentally change what we eat and how we cook it.

Digital Recipe at The Centre Of Action

With apologies to Tyler Florence, the recipe is not dead. In fact, if anything the recipe is becoming increasingly important in the digital kitchen. It's becoming our automated shopping list, the instruction set for our appliances, and the content is becoming dynamic, atomized and personalized depending on our personal preferences and the context of our current day, meal plan, and food inventory.

Meal Services and Connected Hardware

One of the trends we've been watching for a while is the pairing of meal kits with connected hardware. That trend accelerated in 2017 as Tovala shipped product, Nomiku

created their sous vide ready meals and Innit hinted at new products powered by Chef'd as we ended the year.

It makes sense. Recurring revenue has long been the mantra of venture capitalists (just ask Tovala, which just got a \$9.2 million series A), and in the connected cooking space, the way to get recurring revenue is offer food. I also expect meal kit companies to also increasingly look for ways to partner with kitchen tech innovators (much like Chef'd has with Innit) as they look for ways to raise adoption and retention for consumers.

Automated, Smart Grocery Delivery

With the acquisition of Whole Foods in 2017, Amazon stopped dabbling around the edges with lab experiments like Amazon Go, Amazon Dash and Amazon Fresh made its intentions clear: it wants to take a big bite out of the \$700 billion grocery business in the US. And while the company has had mixed success with efforts like its Fresh delivery business, these long-gestating experiments have given them a potentially huge advantage as they start to set up central hubs and physical points of presence for the grocery business post-Whole Foods.

And now, Amazon and others see the opportunity to fuse home delivery with smart home access control and automatically deliver groceries all the way to the fridge. Combine that with the ability of fridges to actually tell us when food needs a refresh, and you can unlock some interesting scenarios.

Cooking Robots

We cover cooking robots here at The Spoon a bunch, and while many are fun and likely never to see wide adoption over the next decade, there are a variety of interesting cooking bots we've seen that might have real applications for specific use cases. Some are simple food automation devices. Others are more social robots. And, in some cases, companies are working on human-like robots that could be intriguing additions to the kitchen of the future.

CHAPTER III RESEARCH METHODOLOGY

3.1 Introduction:

Research methodology is a framework, a blue print for the research, which guide the collection and analysis of data. Research methodology is being framed in order to achieve the research objectives. It is an expression of what is expected of the research exercise in terms of result and the analytical input need to convert data in to research findings. Research methodology minimizes the degree of uncertainty involved in the management decisions. Research lays the structure for decision-making.

3.1.1 Research

The term research has been used in so many contexts and with such a variety of meanings. It is default for the students to sort it all out. Much of what we have been taught about is based on misconceptions advertisements on televisions proudly boast that research has revolutionized a product when in reality a marketing department has simply made a small change in the product design to increase its appeal to consumers. Paul Leedey in his book “Practical Research Planning and design” lists seven characteristics of research, which serve us well defining research for the student. Here are those seven characteristics:

1. Research originates with a question or problem.
2. Research requires a clear articulation of a goal.
3. Research follows a specific procedure.
4. Research usually divides the principal problem.
5. Research is guided by specific research problem, question or hypothesis.
6. Research accepts certain critical assumptions. These assumptions are underlying theories or ideas about how the world works.
7. Research requires the collection and interpretation of data in attempting to resolve the problem that initiated the research.

A research design is the basic plan that guides the collection measurement and analysis of data. Decisions regarding what, when, where, how and by what means concerning a research study constitute the research design. In other words, research design is the framework that specifies the type of information to be collected, the source of data and the procedure of data collection. The research is of quantitative type. The study is concerned with specific predictions; with narration of facts and characteristics concerning individual, groups or situation are all examples of descriptive research studies. It is a type of comparative study. The design involves the following steps:

- a) Formatting the objective of the study.
- b) Design the method of data collection.
- c) Selecting the population to study.
- d) Processing the data.
- e) Reporting the finding.
- f) Data collection

3.2 Process of Research work:

In the present study the objectives of the study have been discussed in the earlier chapters. The researcher had selected the objectives carefully and then had proceeded with the research work therefore to see that the objectives would be fulfilled using the necessary statistical tools for the study.

3.3 Data Collection Sources:

3.3.1. Sample Size: A sample size of 108 respondents from the city of Hyderabad are being Considered for the study.

3.3.2. Data Collection Sources: This study is entirely based upon the survey conducted by using questionnaire and through emails with the students.

- **Primary data:** The well-structured questionnaire is used to collect the primary data from the students of final year.
- **Secondary Data:** Secondary data is collected from the internet, journals, books, and websites.

3.3.3 Questionnaire Design:

Questionnaire contains questions regarding demographic details, work profile, questions based on training and motivation. Demographic details contain questions about the basic information of student such as name, age and gender, department, parent occupation. The remaining questions mainly concentrate on details related to quality and standards of education

3.3.4 Statistical tools: The analysis of the data is carried out in Microsoft Excel and SPSS software. Microsoft Excel is used for the percentage analysis and SPSS is used to test hypothesis.

3.4 Tools for Data Analysis:

a) **Simple Percentage Analysis:** Simple percentage can also be used to compare the relationship distribution of two or more items. For calculations the simple percentage the following formula used.

$$\text{Percentage of the respondents} = \frac{\text{Number of respondents}}{\text{Total respondents}} * 100.$$

b) **Independent T-Test:** The independent t-test, also called the two-sample t-test, independent-samples t-test or student's t-test, is an inferential statistical test that determines whether there is a statistically significant difference between the means in two unrelated groups.

Null and alternative hypotheses for the independent t-test

The null hypothesis for the independent t-test is that the population means from the two unrelated groups are equal:

$$H_0: \mu_1 = \mu_2$$

In most cases, we are looking to see if we can show that we can reject the null hypothesis and accept the alternative hypothesis, which is that the population means are not equal:

$$H_1: \mu_1 \neq \mu_2$$

To do this, we need to set a significance level (also called alpha) that allows us to either reject or accept the alternative hypothesis. Most commonly, this value is set at 0.05.

In order to provide enough information for readers to fully understand the results when you have run an independent t-test, you should include the result of normality tests, Levene's Equality of Variances test, the two group means and standard deviations, the actual t-test result and the direction of the difference (if any). In addition, you might also wish to include the difference between the groups along with a 95% confidence interval.

c) One-Way ANOVA:

The one-way analysis of variance (ANOVA) is used to determine whether there are any statistically significant differences between the means of three or more independent (unrelated) groups.

The one-way ANOVA compares the means between the groups you are interested in and determines whether any of those means are statistically significantly different from each other. Specifically, it tests the null hypothesis:

$$H_0: \mu_1 = \mu_2 = \mu_3 = \dots = \mu_k$$

where μ = group mean and k = number of groups. If, however, the one-way ANOVA returns a statistically significant result, we accept the alternative hypothesis (H_A), which is that there are at least two group means that are statistically significantly different from each other.

At this point, it is important to realize that the one-way ANOVA is an **omnibus** test statistic and cannot tell you which specific groups were statistically significantly different from each other, only that at least two groups were. To determine which specific groups differed from each other, you need to use a **post hoc test**.

Why not compare groups with multiple t-tests?

Every time you conduct a t-test there is a chance that you will make a Type I error. This error is usually 5%. By running two t-tests on the same data you will have increased your chance of "making a mistake" to 10%. The formula for determining the new error rate for multiple t-tests is not as simple as multiplying 5% by the number of tests. However, if you are only making a few multiple comparisons, the results are very similar if you do. As such, three t-tests would be 15% (actually, 14.3%) and so on. These are unacceptable errors. An ANOVA controls for these errors so that the Type I error remains at 5% and you can be more confident that any statistically significant result you find is not just running lots of tests. See our guide on hypothesis testing for more information on Type I errors.

d) Two-Way ANOVA:

The two-way ANOVA compares the mean differences between groups that have been split on two independent variables (called factors). The primary purpose of a two-way ANOVA is to understand if there is an interaction between the two independent variables on the dependent variable. For example, you could use a two-way ANOVA to understand whether there is an interaction between gender and educational level on test anxiety amongst university students, where gender (males/females) and education level (undergraduate/postgraduate) are your independent variables, and test anxiety is your dependent variable. Alternately, you may want to determine whether there is an interaction between physical activity level and gender on blood cholesterol concentration in children, where physical activity (low/moderate/high) and gender (male/female) are your independent variables, and cholesterol concentration is your dependent variable.

The interaction term in a two-way ANOVA informs you whether the effect of one of your independent variables on the dependent variable is the same for all values of your other independent variable (and vice versa). For example, is the effect of gender (male/female) on test anxiety influenced by educational level (undergraduate/postgraduate)?

CHAPTER IV DATA ANALYSIS AND INTERPRETATION

4.1 Percentage Analysis:

Gender of Respondent		
	Frequency	Percent
Female	51	47.2
Male	57	52.8
Total	108	100.0

Table 4.1 Gender of Respondents

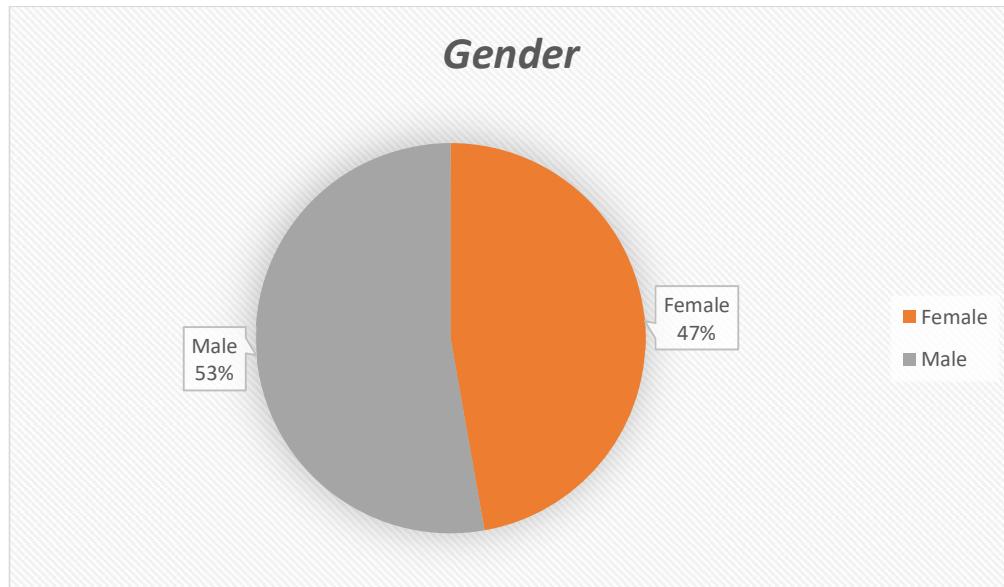


Figure 4.1 Gender of Respondents

Inference:

The data shows that there are **57 Male** out of **108** respondents which constitutes to about **53%** of the data, whereas there are **51 Female** out of **108** which constitutes to the other **47%** of the data.

Age of the Respondent		
	Frequency	Percent
21-25	25	23.1
26-30	34	31.5
31-35	24	22.2
36-40	6	5.6
41-50	8	7.4
51 and Above	11	10.2
Total	108	100.0

Table 4.2 Age of Respondents

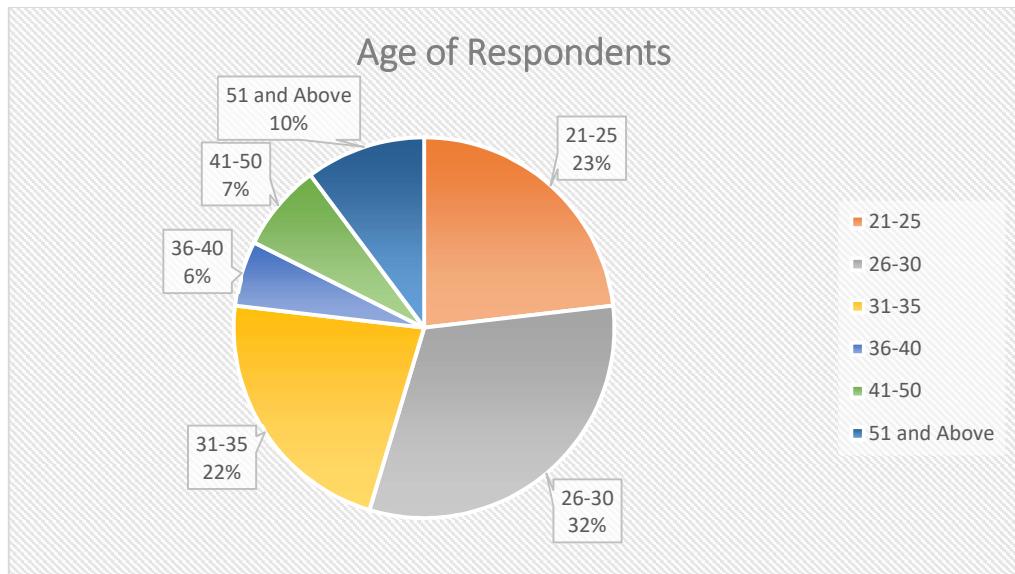


Figure 4.2 Age of Respondents

Inference

The highest number of respondents are from the age group **26-30 years** with **34** members and constituting to about **32%** to overall data and the least number of respondents are from the age group **36-40 years** making about **6%** of the data. The age groups **21-25 years** and **31-35 years** each constitutes to **23%** and **22%** of the data. The eldest group of age **51 and above** consisted of **11** members making nearly **10%** of the respondents.

Occupation of Respondents		
	Frequency	Percent
Daily Wager	9	8.3
Executive	12	11.1
Junior Officer (Experience 0-5 Years)	28	25.9
Senior Officer (Experience 5-15 Years)	19	17.6
Student	9	8.3
UnEmployed	31	28.7
Total	108	100.0

Table 4.3 Occupation of Respondents

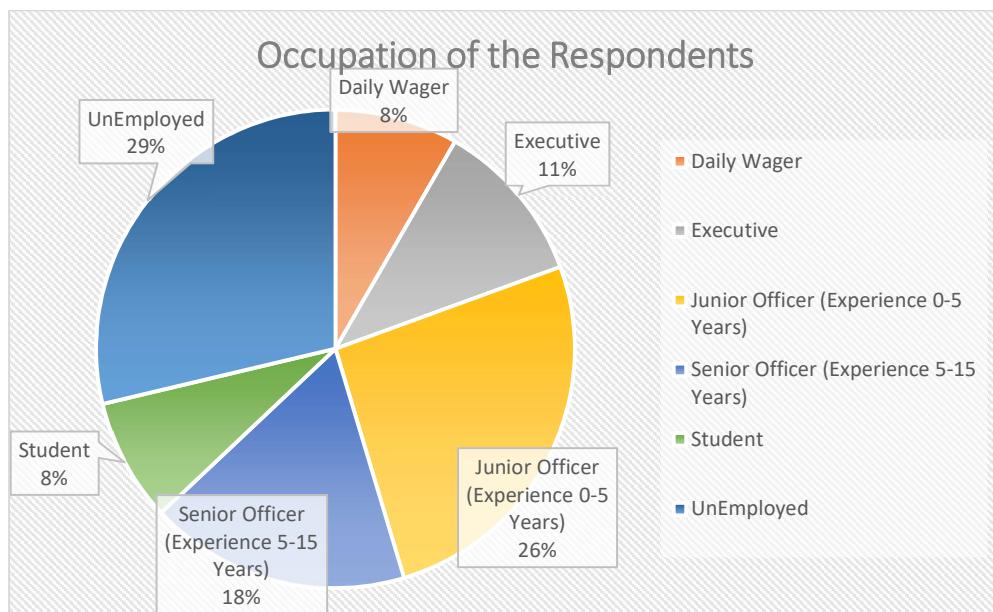
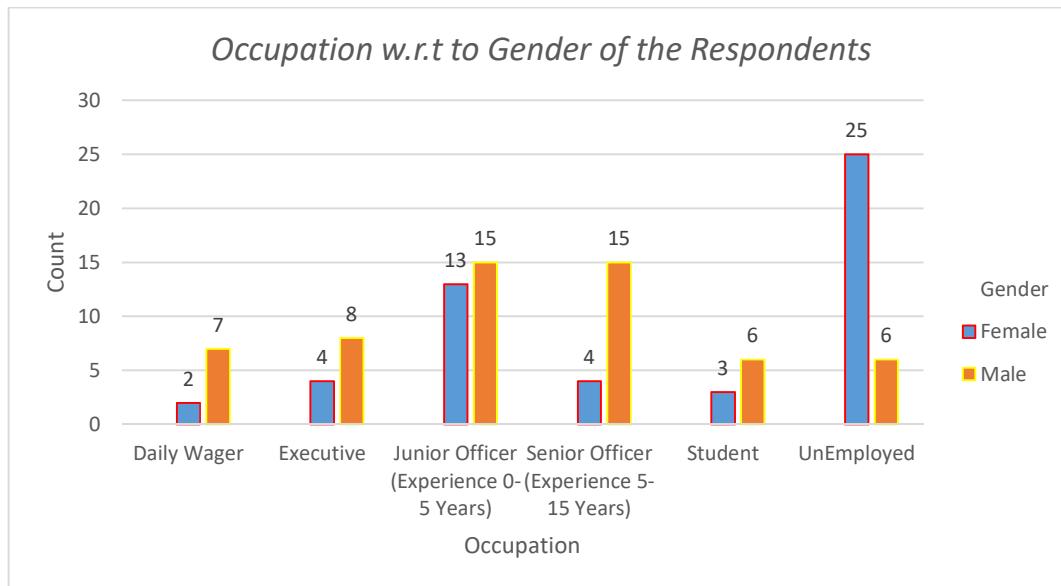


Figure 4.3 Occupation of Respondents

Inference:

The **29%** of the respondents measuring 31 of them are unemployed, with the least respondents are the daily wager's and the students constituting **8%** each with 9 respondents respectively. The employed respondents constitute to **57%** of the data with **28** Junior Officers, **19** Senior Officers and **12** Executives.



Graph 4.4 Occupation w.r.t to Gender of Respondents

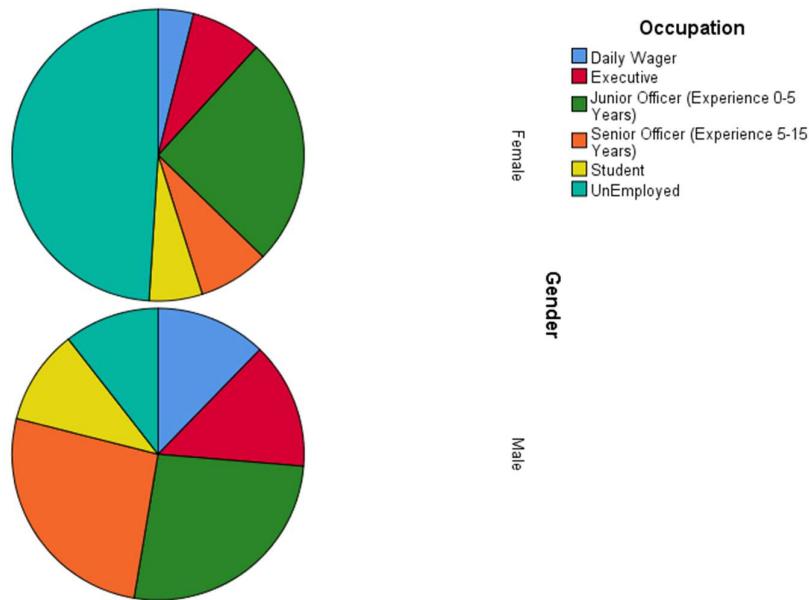


Figure 4.4 Occupation w.r.t to Gender of Respondents

Inference:

From the data it's clear that among the unemployed **80%** of them are Female making **25** of them **out of 31** unemployed respondents. With Junior Officer being the one with nearly equal male and female respondents having **15** and **13** respondents respectively.

Annual Income of Respondents		
	Frequency	Percent
0L - 1L	40	37.0
10L - 20L	16	14.8
1L - 5L	20	18.5
20L - 50L	9	8.3
50L+	2	1.9
5L - 10L	21	19.4
Total	108	100.0

Table 4.5 Annual Income of Respondents

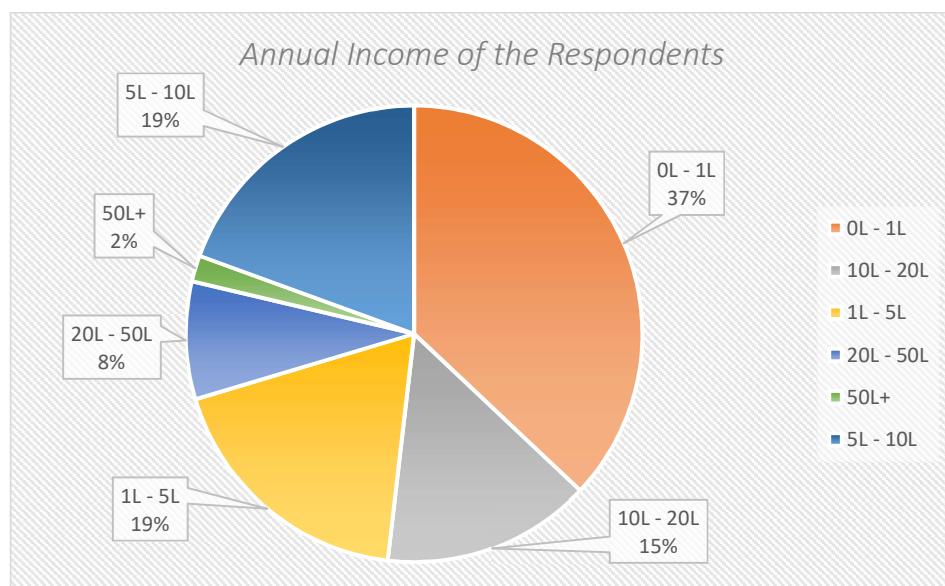


Figure 4.5 Annual Income of Respondents

Inference:

Since **37%** are either unemployed or are students, the annual income of same **37%** is between **0L – 1L** which is 40 of the respondents. Only **2%** of the respondents earn **more than 50L** per annum. The people with **1L-5L** and **5L-10L** are almost equal with **20** and **21** respondents to each section. The remaining **27** respondents earn somewhere between **10L-50L**.

Marital Status of Respondents		
	Frequency	Percent
Married	72	66.7
UnMarried	34	31.5
Widow	2	1.9
Total	108	100.0

Table 4.6 Marital Status of Respondents

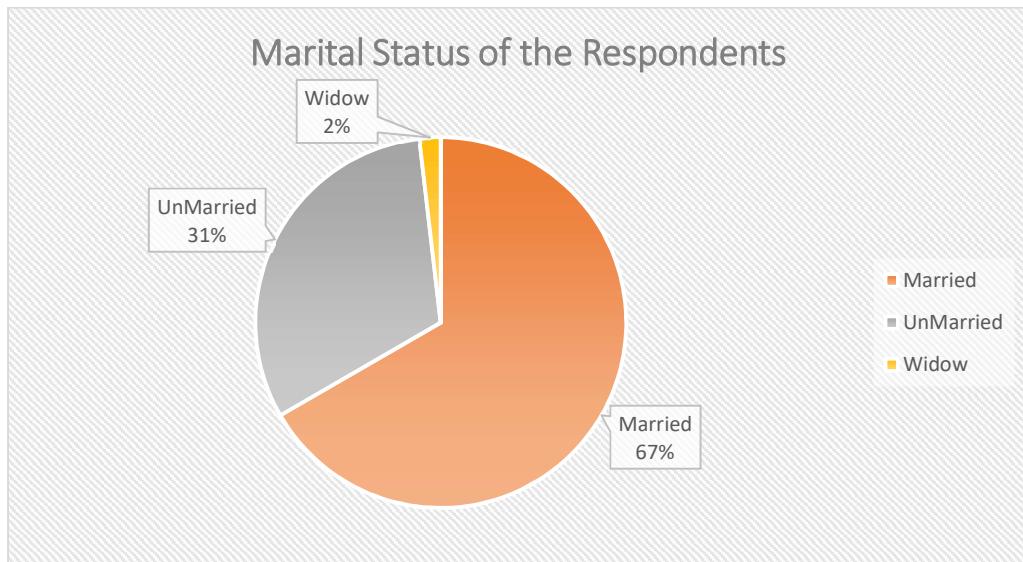


Figure 4.6 Marital Status of Respondents

Inference

More than 60% of the respondents are married which are **72** of the **out of the 108** respondents and **34 out of 108** are unmarried and only **2** respondents are widowed.

Regular Place of Breakfast of Respondents		
	Frequency	Percent
Home/Hostel	82	75.9
Office/College Canteen	11	10.2
Restaurant	15	13.9
Total	108	100.0

Table 4.7 Regular Place of Breakfast of Respondents

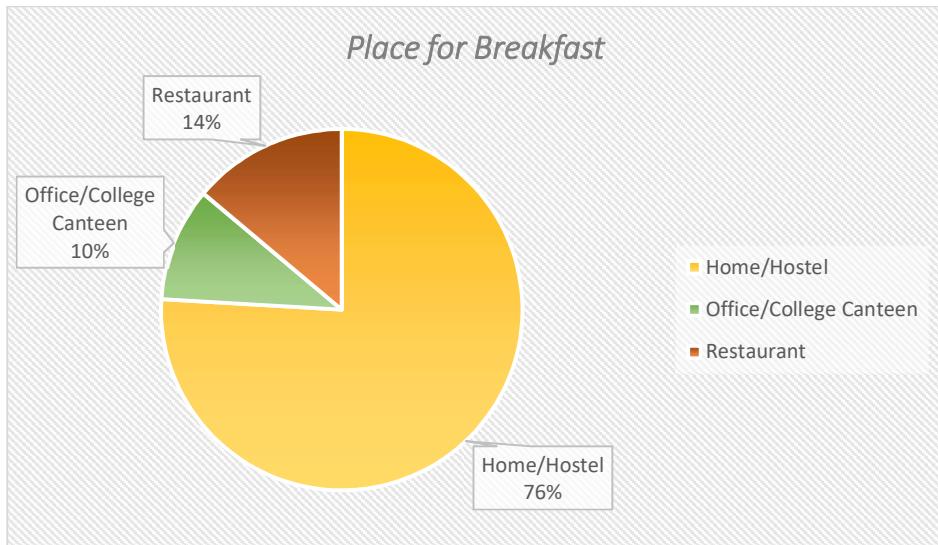


Figure 4.7 Regular Place of Breakfast of Respondents

Inference

The three quarters of the respondents prefer to have their breakfast at their Home/Hostel, the remaining **11** and **15** respondents have their breakfast at Office/College Canteens and at a Restaurant respectively.

Average Cost for Breakfast of Respondents		
	Frequency	Percent
I have my meal at home!	70	64.8
Rs 0-50	23	21.3
Rs 50-100	15	13.9
Total	108	100.0

Table 4.8 Average Cost for Breakfast of Respondents

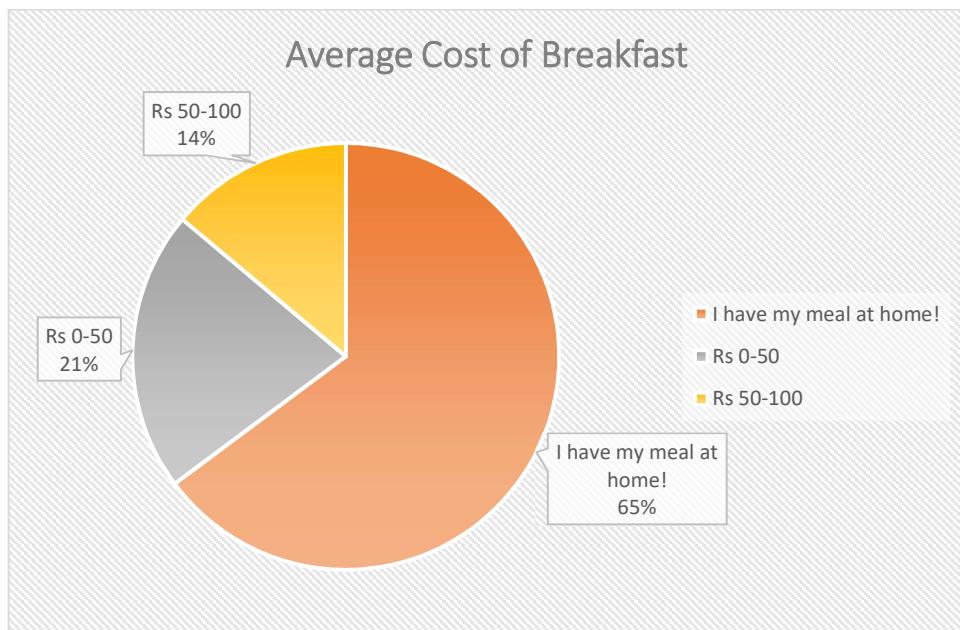


Figure 4.8 Average Cost for Breakfast of Respondents

Inference

Among 108 respondents, 70 people have their meal at home/hostel with no particular costing, and out of the remaining, 23 of them spends in between **Rs.0-50** for their morning meal and 15 of them spends **Rs.50-100** for the same.

Regular Place of Lunch of Respondents		
	Frequency	Percent
Home/Hostel	55	50.9
Office/College Canteen	32	29.6
Restaurant	21	19.4
Total	108	100.0

Table 4.9 Regular Place of Lunch of Respondents

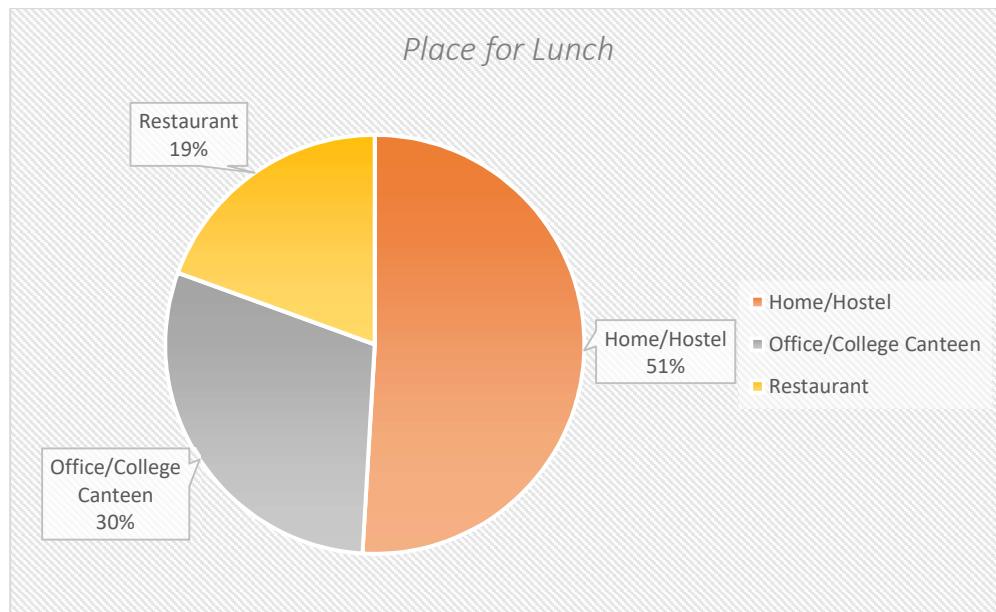


Figure 4.9 Regular Place of Lunch of Respondents

Inference

Almost half of the respondents prefer to have their lunch at their Home/Hostel, the remaining **19%** and **30%** respondents have their lunch at Office/College Canteens and at a Restaurant respectively.

Average Cost for Lunch of Respondents		
	Frequency	Percent
I have my meal at home!	60	55.6
Rs 0-50	9	8.3
Rs 100-200	14	13.0
Rs 200+	2	1.9
Rs 50-100	23	21.3
Total	108	100.0

Table 4.10 Regular Place of Lunch of Respondents

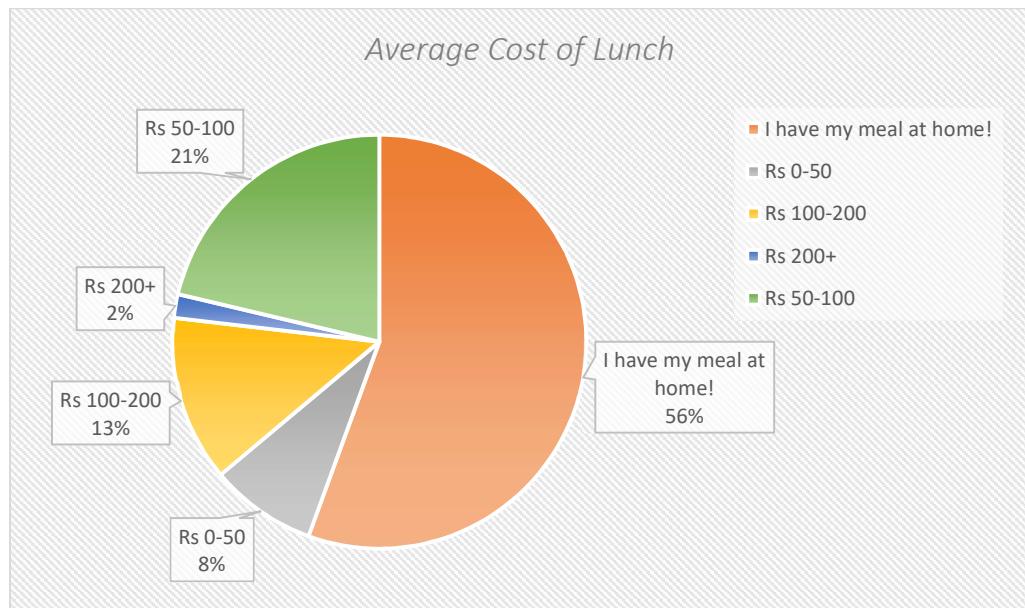


Figure 4.10 Average Cost for Lunch of Respondents

Inference

Among 108 respondents, **60** people have their meal at home/hostel with no particular costing, and out of the remaining, **9** of them spends in between **Rs.0-50** for their lunch, **24** of them spends **Rs.50-100** for the same, **14** of them spends **Rs.100-200** and only **2** of them spends **more than Rs.200**.

Average Cost for Dinner of Respondents		
	Frequency	Percent
I have my meal at home!	92	85.2
Rs 0-50	1	.9
Rs 100-200	8	7.4
Rs 200+	2	1.9
Rs 50-100	5	4.6
Total	108	100.0

Table 4.11 Average Cost for Dinner of Respondents

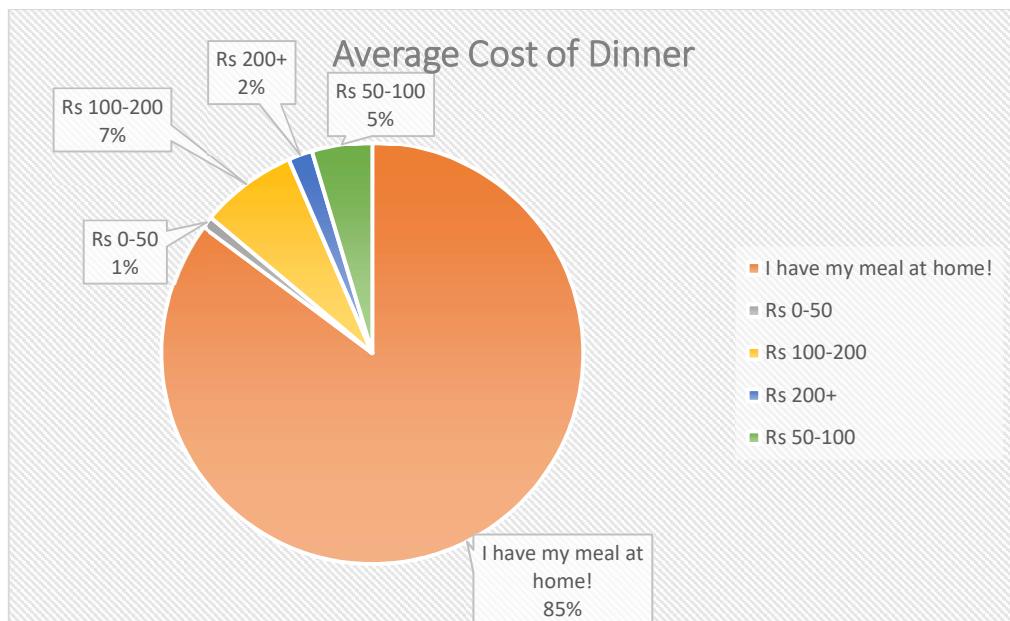


Figure 4.11 Average Cost for Dinner of Respondents

Inference

Among 108 respondents, **92** people have their meal at home/hostel with no particular costing, and out of the remaining, **1** of them spends in between **Rs.0-50** for their lunch, **5** of them spends **Rs.50-100** for the same, **8** of them spends **Rs.100-200** and only **2** of them spends **more than Rs.200**.

Regular Place of Dinner of Respondents		
	Frequency	Percent
Home/Hostel	93	86.1
Office/College Canteen	3	2.8
Restaurant	12	11.1
Total	108	100.0

Table 4.12 Regular Place of Dinner of Respondents

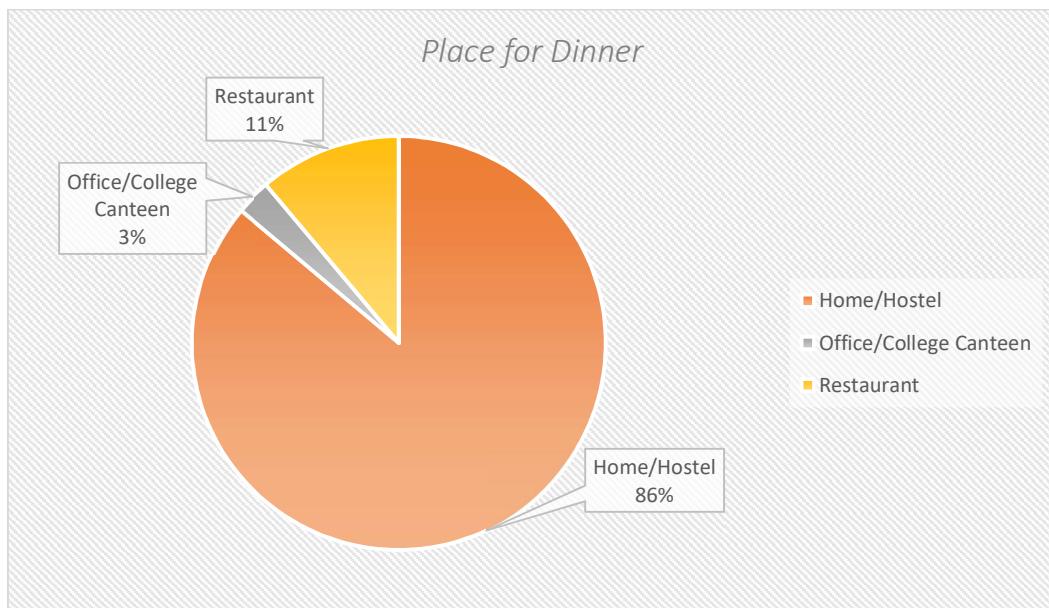


Figure 4.12 Regular Place of Dinner of Respondents

Inference

86% of the respondents prefer to have their dinner at their Home/Hostel, the remaining **3%** and **11%** respondents have their dinner at Office/College Canteens and at a Restaurant respectively.

Staying With		
	Frequency	Percent
Joint Family	16	14.8
Parents	17	15.7
Shared Apts/PG	18	16.7
Spouse and Kids	41	38.0
Spouse and Parents	16	14.8
Total	108	100.0

Table 4.13 Respondents Staying With.

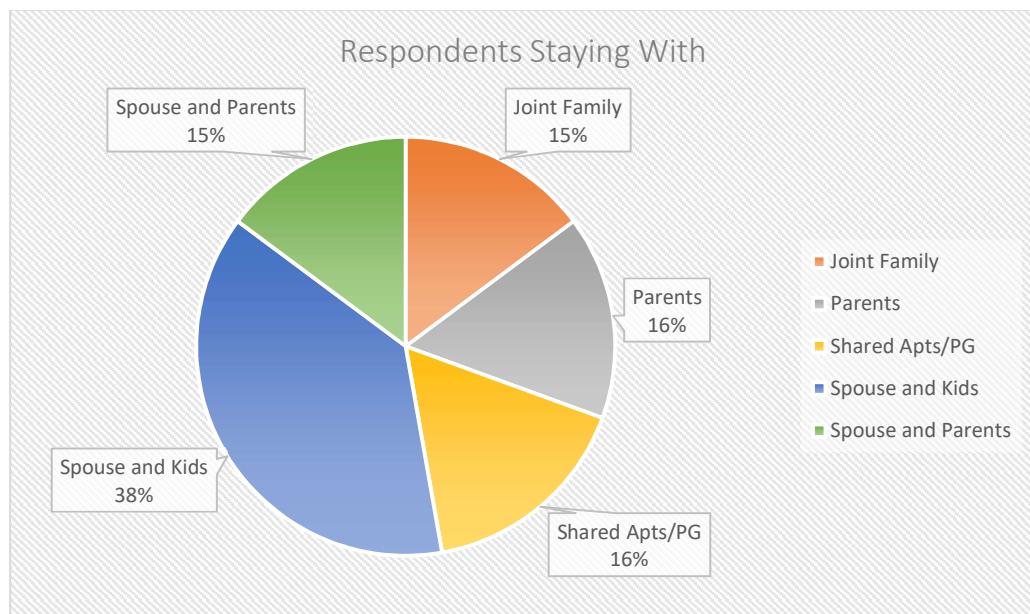


Figure 4.13 Respondents Staying With

Inference:

Among the 108 respondents, **53%** of the respondents stay with their spouse, with **38%** with their spouse and kids and remaining **15%** with their spouse and parents. Another **16%** are staying with just their parents and **15%** of them are living their lives in Joint Families and the final **16%** are managing in either shared apartments or paying guests.

Love for Cooking		
	Frequency	Percent
1 – I don't Cook!	24	22.2
2	29	26.9
3	15	13.9
4	26	24.1
5 – I love Cooking!	14	13.0
Total	108	100.0

Table 4.14 Love for Cooking.

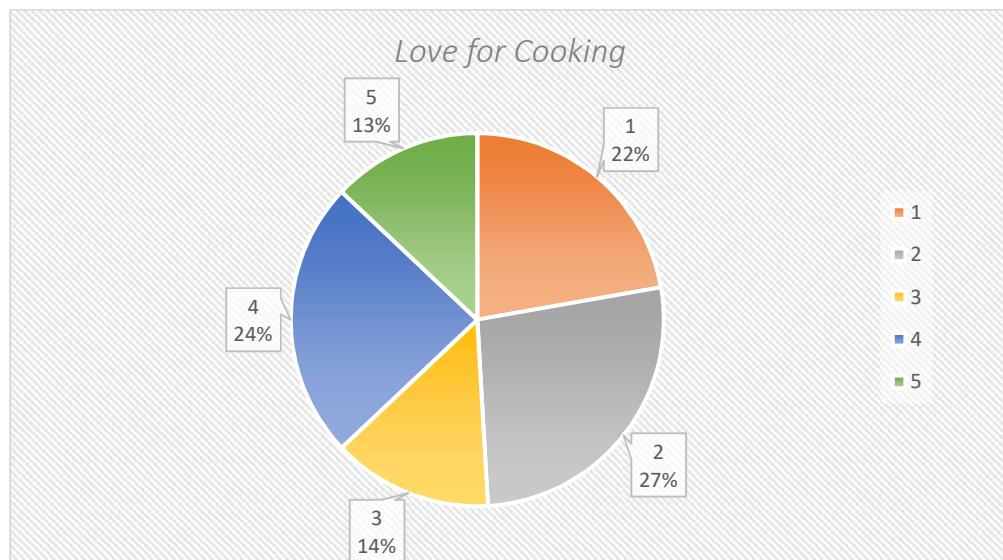


Figure 4.14 Love for Cooking.

Inference

22% of the respondents don't cook or doesn't like to cook at any time, whereas **13%** of the respondents have immense love towards cooking, and **15** of the respondents constituting **14%** have neutral liking for cooking.

Wish for Experiencing New Dishes		
	Frequency	Percent
1 – No Interest in Trying New Dishes	8	7.4
2	22	20.4
3	27	25.0
4	32	29.6
5 – Love to try New Dishes	19	17.6
Total	108	100.0

Table 4.15 Wish for Experiencing New Dishes.

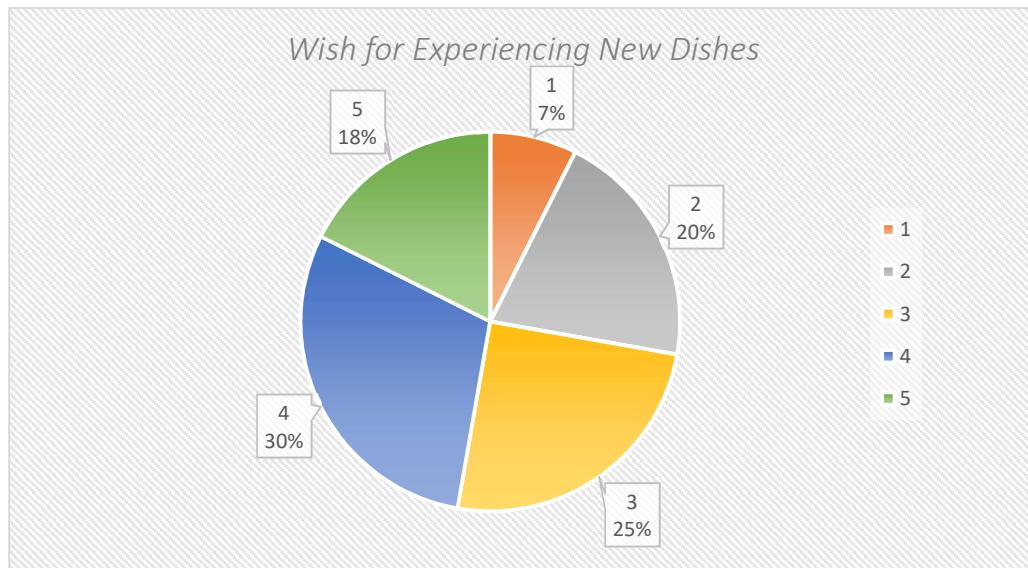


Figure 4.15 Wish for Experiencing New Dishes.

Inference

The wish for experiencing new dishes is very highly found in **19** of the respondents and no will for any new dishes constitutes to **7%** of the respondents. **One-Fourth** of the people feel neutral towards trying new-dishes, and **48%** of the respondents are willing to try new dishes.

Importance for Fresh Home-Made Food		
	Frequency	Percent
1 – Least Important	15	13.9
2	21	19.4
3	25	23.1
4	32	29.6
5 – Highly Important	15	13.9
Total	108	100.0

Table 4.16 Importance for Fresh Home-Made Food.

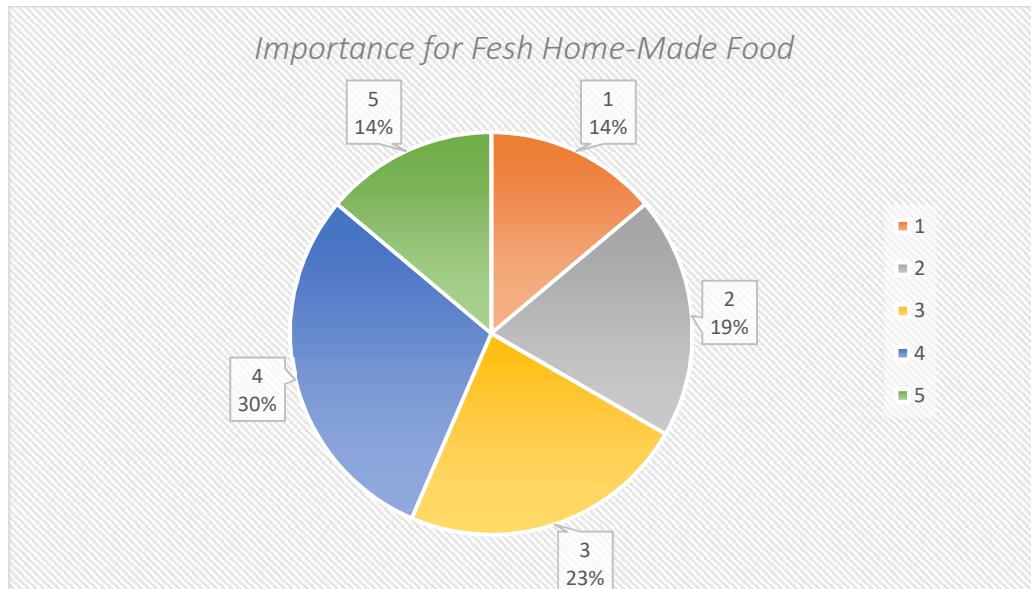


Figure 4.16 Importance for Fresh Home-Made Food.

Inference

Among 108 respondents **44%** of them prefer fresh home-made food, in which **14%** gives utmost priority to fresh home-made food. Whereas on the other hand another **14%** of the respondents doesn't care about fresh home-made meal.

Time Spent in Cooking each Day		
	Frequency	Percent
1 - 2 Hour	14	13.0
10 - 30 min	15	13.9
2 Hours+	22	20.4
30 min - 1 hour	24	22.2
I don't cook!	32	29.6
Less than 10 min	1	.9
Total	108	100.0

Table 4.17 Time Spent in Cooking each Day

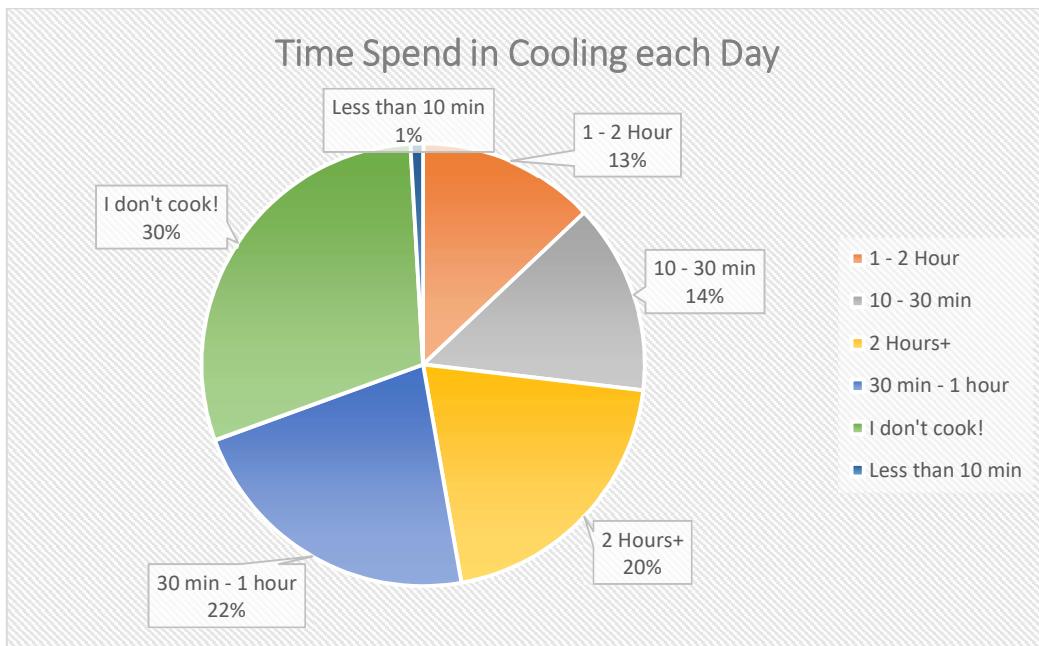
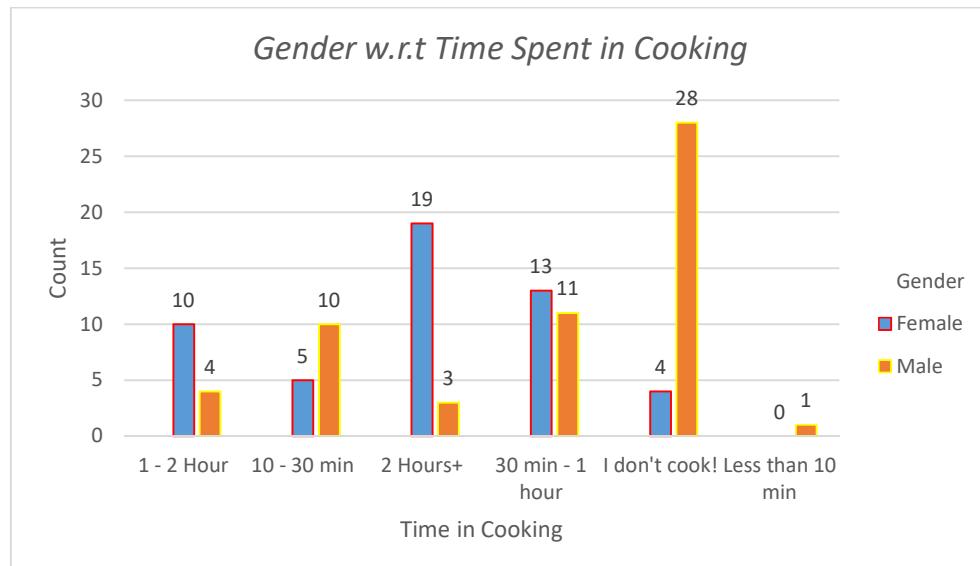


Figure 4.17 Time Spent in Cooking each Day

Inference

There are **30%** of people in the sample, who does not cook at all and another **1%** who spends less than **10 minutes** in cooking each day. The highest time spent for cooking is **more than 2 hours** which constitutes to **20%** of the sample population.



Graph 4.18 Gender w.r.t Time Spent in Cooking each Day

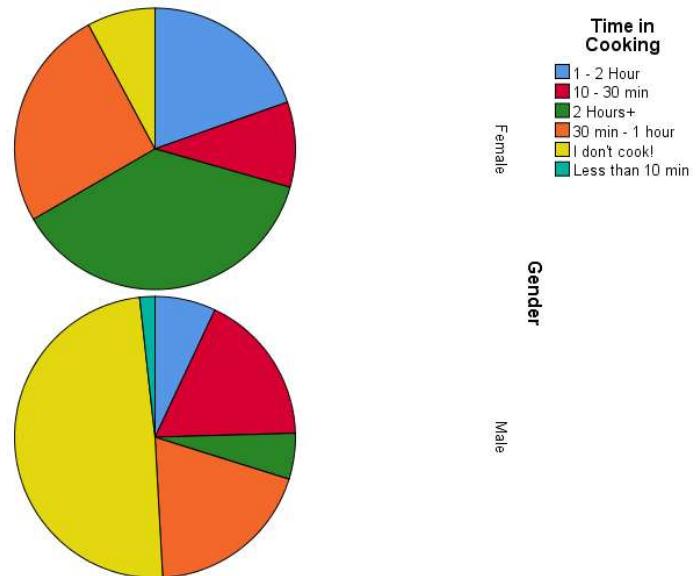


Figure 4.18 Gender w.r.t Time Spent in Cooking each Day

Inference

Almost half of the male sample population don't cook, and only **7** of the males spends more than an hour cooking each day on an average. Whereas, **56%** of female spends more than an hour in cooking. And **19** of them spends **more than 2 hours** each day just for cooking.

Price of the Product conceived by the User		
	Frequency	Percent
Below Rs.15000	26	24.1
Rs. 18,000 - Rs.20,000	17	15.7
Rs.15,000 - Rs. 18,000	20	18.5
Rs.20,000 - Rs. 25,000	15	13.9
Rs.25,000 - Rs.30,000	13	12.0
Rs.30,000 - Rs.35,000	9	8.3
Rs.35,000 - Rs.40,000	3	2.8
Rs.40,000+	5	4.6
Total	108	100.0

Table 4.19 Price of the Product conceived by the User

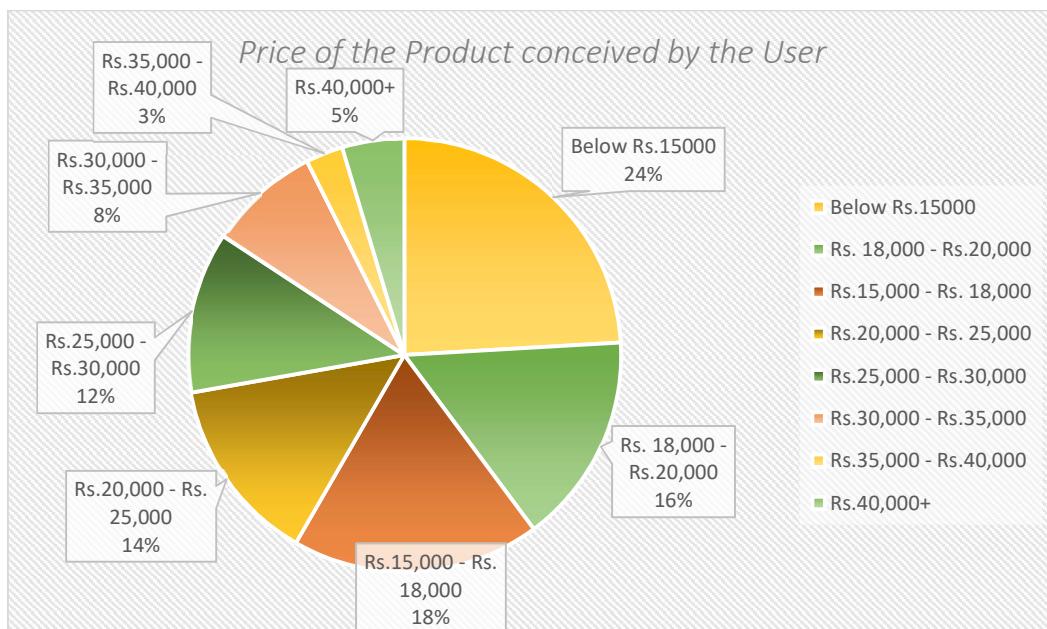
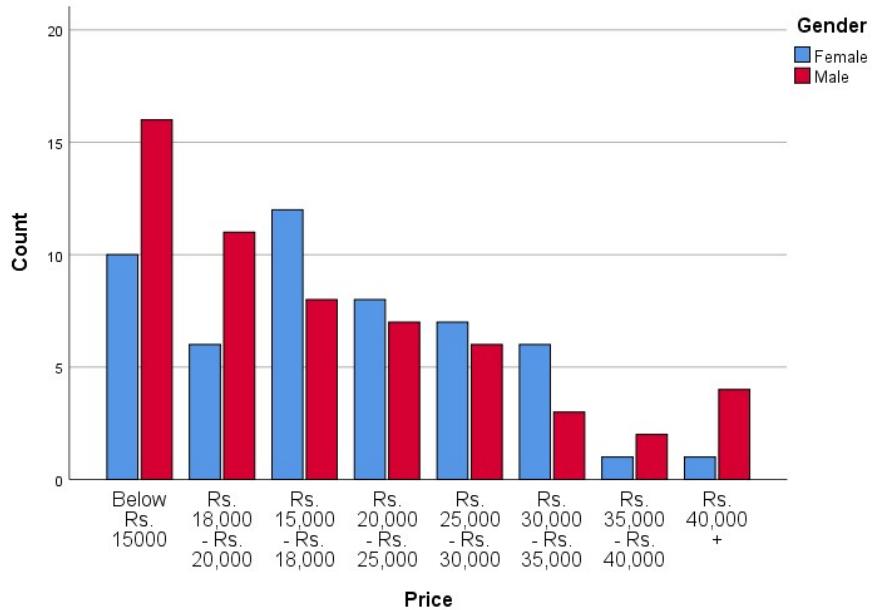


Figure 4.19 Price of the Product conceived by the User

Inference

One-fourth people perceive the price of the product to be **below Rs.15000**, whereas **another quarter** of them feels the value somewhere in between **Rs.20,000 to Rs.30,000**. Only **5%** of them feel value to be **more than Rs.40,000**.



Graph 4.20 Effect of Gender on Price of the Product conceived by the User

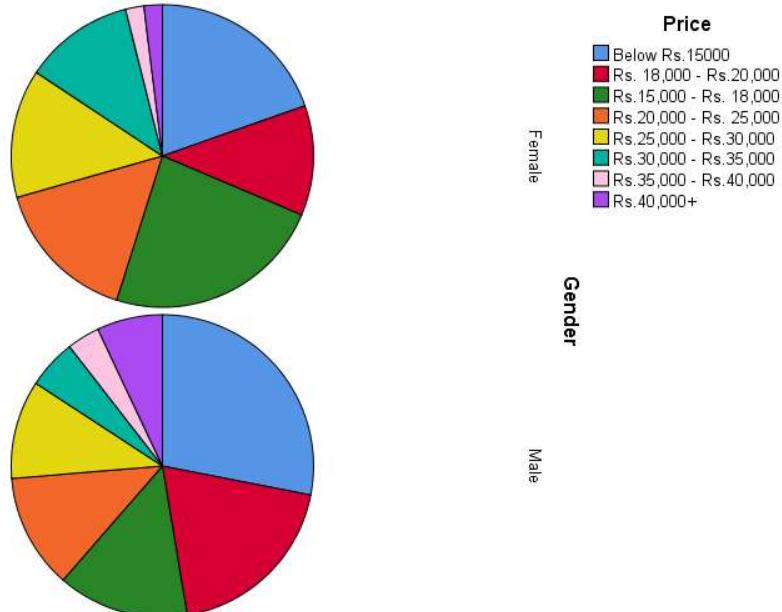
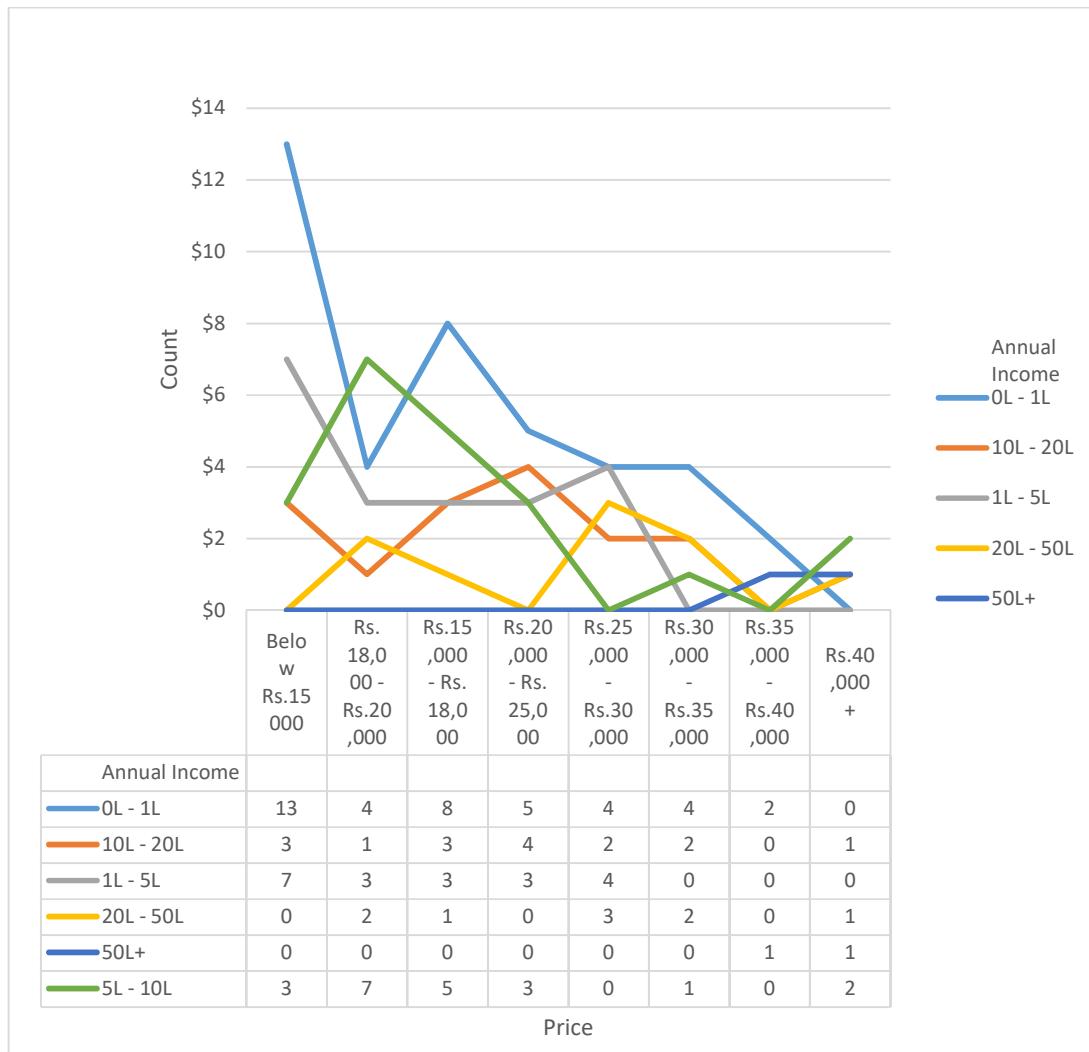


Figure 4.20 Effect of Gender on Price of the Product conceived by the User

Inference

The value conceived at Rs.15,000-18,000 is more by females than by males, and same with Rs.20,000-25,000 and Rs.25,000-30,000. But where as in higher ends like Rs.35,000-40,000 and Rs.40,000+ there are more males conceiving such values.



Graph 4.21 Effect of Annual Income on Price of the Product conceived by the User

Table 4.22 Effect of Annual Income on Price of the Product conceived by the User

Inference

From this graph it is clear that the people with **less than 1L** annual income prefers the price to be **below Rs.15,000** accounting to **13** of them. The more common price range selected are **Rs.15,000-18,000** and **Rs18,000-20,000**. Also, as the income of the person increase, they tend to price the product consistently higher.

4.2 Independent T Test:

Hypothesis 1

Null Hypothesis (H₀): There is No Significant Differences between the *Gender* and the *Love for Cooking*.

Alternate Hypothesis (H₁): There is Significant Differences between the *Gender* and the *Love for Cooking*.

Hypothesis 2

Null Hypothesis (H₀): There is No Significant Differences between the *Gender* and the *Exploring New Dishes*.

Alternate Hypothesis (H₁): There is Significant Differences between the *Gender* and the *Exploring New Dishes*.

Hypothesis 3

Null Hypothesis (H₀): There is No Significant Differences between the *Gender* and the *Importance of Fresh Home-Made Food*.

Alternate Hypothesis (H₁): There is Significant Differences between the *Gender* and the *Importance of Fresh Home-Made Food*.

Hypothesis 4

Null Hypothesis (H₀): There is No Significant Differences between the *Gender* and the *Time for Cooking*.

Alternate Hypothesis (H₁): There is Significant Differences between the *Gender* and the *Time for Cooking*.

INFERENCES:

For Hypothesis **1,2** and **3**, the p-value is **0.338**, **0.192** and **0.182** which are greater than **0.05**, which means that there is insufficient data to prove the rejection of Null Hypothesis, hence **Null Hypothesis (H_0) of Hypothesis 1,2 and 3 are accepted**. Which means there is no significance difference between *Gender* and *Love for Cooking, Experiencing for New Dishes and Importance of Fresh Home-Made Food*.

And for Hypothesis **4**, the p-value is **less than 0.001**, which is less than **0.05**. Hence the Null Hypothesis can be rejected and Alternate Hypothesis is accepted proving that there is highly significant difference between *Gender* and *Time Taken for Cooking per day*.

Independent Samples Test						
Gender	Levene's Test for Equality of Variances		t-test for Equality of Means			
	F	Sig.	t	df	Sig. (2-tailed)	
Cooking	Equal variances assumed	3.024	.085	-.962	106	.338
New Dishes	Equal variances assumed	1.047	.309	1.314	106	.192
Fresh Home-Made	Equal variances assumed	1.099	.297	-1.344	106	.182
Time for Cooking	Equal variances assumed	3.853	.052	7.006	106	.000

Table 4.23 Independent Sample T Test I

4.3 One Way ANOVA:

Hypothesis 1

Null Hypothesis (H₀): There is No Significant Difference between *Annual Income* and the *Place where one has their Meal Regularly*.

Alternate Hypothesis (H₁): There is Significant Difference between *Annual Income* and the *Place where one has their Meal Regularly*.

Hypothesis 2

Null Hypothesis (H₀): There is No Significant Difference between *Annual Income* and the *Cost per Meal*.

Alternate Hypothesis (H₁): There is Significant Difference between *Annual Income* and the *Cost per Meal*.

Hypothesis 3

Null Hypothesis (H₀): There is No Significant Difference between *Annual Income* and the *Love for Cooking*.

Alternate Hypothesis (H₁): There is Significant Difference between *Annual Income* and the *Love for Cooking*.

Hypothesis 4

Null Hypothesis (H₀): There is No Significant Difference between *Annual Income* and the *Experiencing/Wish for New Dishes*.

Alternate Hypothesis (H₁): There is Significant Difference between *Annual Income* and the *Experiencing/Wish for New Dishes*.

Hypothesis 5

Null Hypothesis (H₀): There is No Significant Difference between *Annual Income* and the *Importance for Fresh Home-Made Food*.

Alternate Hypothesis (H₁): There is Significant Difference between *Annual Income* and the *Importance for Fresh Home-Made Food*.

Hypothesis 6

Null Hypothesis (H₀): There is No Significant Difference between *Annual Income* and the *Time Spent in Cooking each Day*.

Alternate Hypothesis (H₁): There is Significant Difference between *Annual Income* and the *Time Spent in Cooking each Day*.

Hypothesis 7

Null Hypothesis (H₀): There is No Significant Difference between *Annual Income* and the *Price for the Product*.

Alternate Hypothesis (H₁): There is Significant Difference between *Annual Income* and the *Price for the Product*.

INFERENCES:

One-Way ANOVA was performed to prove significant difference between the Annual Income of the population and other various attributes.

From Hypothesis 1, the **p-value is 0.001** which is less than 0.005, hence rejecting the Null Hypothesis and concluding that there is a significant difference between the *Annual Income* of a person and the *place where they have their meal regularly*.

From Hypothesis 2, the value of p is **0.003** which is well under 0.005, depicting a highly significance difference between the *Annual Income* of the person and the *Cost per Meal* spent on an average, by rejecting the Null Hypothesis and hence accepting the Alternate Hypothesis.

For Hypothesis 3 and 5, the p-values are **0.061** and **0.079** respectively, which are greater than our desired level of significance i.e. 0.05. Hence, we have insufficient data to reject the Null Hypothesis and hence we accept the Null Hypothesis and are unable to show any significant difference between *Annual Income* and *Love for Cooking* and *Annual Income* and *Importance for Fresh Home-Made Food*. Which means that the love for cooking and the need for fresh food is desired by all the persons irrespective of the annual income of the person.

From Hypothesis testing for difference between *Annual Income* and *Wish to Try New Dishes*, the p-value came out to be **0.001** which is much lesser than 0.05 showing high significance difference between both the parameters, thus rejecting the Null Hypothesis.

From testing significance difference between *Annual Income* and the *Time spent in Cooking*, the p-value which came from One-way ANOVA is **0.001** which is lesser than desired 95% significance value of 0.05, hence we can reject the Null Hypothesis and conclude that there is a significant difference between the *Annual Income* and the *Time spent in Cooking*.

At last, the most important factor which is the *Price of the product* conceived by the consumer was tested against the *Annual Income*. The p-value came out to be **0.003** which is well less than 0.05, giving enough evidence to reject the Null Hypothesis and it can be concluded that there is a significant difference between the *Annual Income* of the user and the *Price of the Product* conceived by the user.

One-Way ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Place of Meal	Between Groups	14.730	5	2.946	4.460	.001
	Within Groups	67.371	102	.661		
	Total	82.102	107			
Cost per Meal	Between Groups	8.971	5	1.794	3.811	.003
	Within Groups	48.019	102	.471		
	Total	56.991	107			
Love for Cooking	Between Groups	19.595	5	3.919	2.190	.061
	Within Groups	182.507	102	1.789		
	Total	202.102	107			
Wish for New Dishes	Between Groups	26.994	5	5.399	4.387	.001
	Within Groups	125.525	102	1.231		
	Total	152.519	107			
Importance of Fresh Home-Made	Between Groups	15.627	5	3.125	2.040	.079
	Within Groups	156.253	102	1.532		
	Total	171.880	107			
Time Spent in Cooking	Between Groups	67.472	5	13.494	4.390	.001
	Within Groups	313.519	102	3.074		
	Total	380.991	107			
Price for the Product	Between Groups	68.127	5	13.625	3.789	.003
	Within Groups	366.790	102	3.596		
	Total	434.917	107			

Table 4.24 One Way ANOVA Test I

Hypothesis 8

Null Hypothesis (H_0): There is No Significant Difference between *Age* and the *Place where one has their Meal Regularly*.

Alternate Hypothesis (H_1): There is Significant Difference between *Age* and the *Place where one has their Meal Regularly*.

Hypothesis 9

Null Hypothesis (H_0): There is No Significant Difference between *Age* and the *Cost per Meal*.

Alternate Hypothesis (H_1): There is Significant Difference between *Age* and the *Cost per Meal*.

Hypothesis 10

Null Hypothesis (H_0): There is No Significant Difference between *Age* and the *Love for Cooking*.

Alternate Hypothesis (H_1): There is Significant Difference between *Age* and the *Love for Cooking*.

Hypothesis 11

Null Hypothesis (H_0): There is No Significant Difference between *Age* and the *Experiencing/Wish for New Dishes*.

Alternate Hypothesis (H_1): There is Significant Difference between *Age* and the *Experiencing/Wish for New Dishes*.

Hypothesis 12

Null Hypothesis (H_0): There is No Significant Difference between *Age* and the *Importance for Fresh Home-Made Food*.

Alternate Hypothesis (H_1): There is Significant Difference between *Age* and the *Importance for Fresh Home-Made Food*.

Hypothesis 13

Null Hypothesis (H_0): There is No Significant Difference between *Age* and the *Price for the Product*.

Alternate Hypothesis (H_1): There is Significant Difference between *Age* and the *Price for the Product*.

INFERENCES:

One-Way ANOVA was performed to prove significant relationship/Difference between the *Age* of the population and other various attributes.

From Hypothesis 1, the **p-value is 0.004** which is less than 0.005, hence rejecting the Null Hypothesis and concluding that there is a significant difference between the *Age* of a person and the *place where they have their meal regularly*.

From Hypothesis 2, the value of p is **0.024** which is well under 0.005, depicting a significance difference between the *Age* of the person and the *Cost per Meal* spent on an average, by rejecting the Null Hypothesis and hence accepting the Alternate Hypothesis.

ANOVA						
Age		Sum of Squares	df	Mean Square	F	Sig.
Place of Meal	Between Groups	12.634	5	2.527	3.710	.004
	Within Groups	69.468	102	.681		
	Total	82.102	107			
Cost Per Meal	Between Groups	18.457	5	3.691	2.719	.024
	Within Groups	138.460	102	1.357		
	Total	156.917	107			
Love for Cooking	Between Groups	27.842	5	5.568	3.259	.009
	Within Groups	174.259	102	1.708		
	Total	202.102	107			
Wish for New Dishes	Between Groups	8.120	5	1.624	1.147	.341
	Within Groups	144.399	102	1.416		
	Total	152.519	107			
Importance for Fresh Home-Made	Between Groups	40.350	5	8.070	6.258	.000
	Within Groups	131.529	102	1.290		
	Total	171.880	107			
Price for the Product	Between Groups	65.727	5	13.145	3.632	.005
	Within Groups	369.190	102	3.620		
	Total	434.917	107			

Table 4.25 One Way ANOVA Test 2

From Hypothesis testing for difference between *Annual Income* and *Love for Cooking*, the p-value came out to be **0.009** which is lesser than 0.05 showing significance difference between both the parameters, thus rejecting the Null Hypothesis.

For Hypothesis 4, the p-value is **0.341**, which is greater than our desired level of significance i.e. 0.05. Hence, we have insufficient data to reject the Null Hypothesis and hence we accept the Null Hypothesis and are unable to show any significant difference between *Age* and *Wish for New-Dishes*. Which means that the wish to experience new dishes is desired by all the persons irrespective of the Age of the person.

From testing significance difference between *Age* and the *Importance for Fresh Home-Made*, the p-value which came from One-way ANOVA is <**0.001** which is lesser than desired 95% significance value of 0.05, hence we can reject the Null Hypothesis and conclude that there is a high significant difference between the *Age* and the *Importance for Fresh Home-Made*.

At last, the most important factor which is the *Price of the product* conceived by the consumer was tested against their *Age*. The p-value came out to be **0.005** which is well under 0.05, giving enough evidence to reject the Null Hypothesis and it can be concluded that there is a significant difference between the *Age* of the user and the *Price of the Product* conceived by the user.

4.4 Two-Way ANOVA:

Hypothesis 1.1

Null Hypothesis (H_0): There is No Significant Difference between *Gender* and the *Price of the Product* conceived by the user.

Alternate Hypothesis (H_1): There is Significant Difference between *Gender* and the *Price of the Product* conceived by the user.

Hypothesis 1.2

Null Hypothesis (H_0): There is No Significant Difference between *Age* and the *Price of the Product* conceived by the user.

Alternate Hypothesis (H_1): There is Significant Difference between *Age* and the *Price of the Product* conceived by the user.

Hypothesis 1.3

Null Hypothesis (H_0): There is No Significant Difference between *Interaction of Gender and Age* and the *Price of the Product* conceived by the user.

Alternate Hypothesis (H_1): There is Significant Difference between *Interaction of Gender and Age* and the *Price of the Product* conceived by the user.

INFERENCES

Two-Way ANOVA was performed to understand the effect of *Gender* and *Age* on the *Price of the Product* conceived by the user.

Hypothesis 1.1, the p-value is **0.762**, which is much greater than 0.05 and hence the null hypothesis is accepted and no strong evidence is present to proof any significant difference between the *Gender* and the *Price of the Product*.

Hypothesis 1.2, the p-value is **0.008** which is well below our significance confidence level of 95%, i.e. 0.05 hence we can reject the null hypothesis and can conclude that there is a significant difference between the *Age* and the *Price of the Product*.

Hypothesis 1.3, tries to find the difference between the Interaction of Gender and Age and the Price of the Product conceived, the p-value came out to be **.391** which is well above 0.05 and hence we accept the null hypothesis and conclude that there is no significant difference or effect of interaction between *Gender* and *Age* on the *Price of the product*.

Tests of Between-Subjects Effects						
Dependent Variable: Price of the Product						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	84.946 ^a	11	7.722	2.118	.026	.195
Intercept	796.844	1	796.844	218.582	.000	.695
Gender	.336	1	.336	.092	.762	.001
Age	61.361	5	12.272	3.366	.008	.149
Gender * Age	19.210	5	3.842	1.054	.391	.052
Error	349.970	96	3.646			
Total	1615.000	108				
Corrected Total	434.917	107				

Table 4.26 Two Way ANOVA Test I

Hypothesis 2.1

Null Hypothesis (H₀): There is No Significant Difference between *Gender* and the *Time Spent in Cooking* each day.

Alternate Hypothesis (H₁): There is Significant Difference between *Gender* and the *Time Spent in Cooking* each day.

Hypothesis 2.2

Null Hypothesis (H₀): There is No Significant Difference between *Age* and the *Time Spent in Cooking* each day.

Alternate Hypothesis (H₁): There is Significant Difference between *Age* and the *Time Spent in Cooking* each day.

Hypothesis 2.3

Null Hypothesis (H₀): There is No Significant Difference between *Interaction of Gender and Age* and the *Time Spent in Cooking* each day.

Alternate Hypothesis (H₁): There is Significant Difference between *Interaction of Gender and Age* and the *Time Spent in Cooking* each day.

INFERENCES

Two-Way ANOVA was performed to understand the effect of *Gender* and *Age* on the *Time spent on Cooking* each day.

Hypothesis 2.1, the p-value is **<0.001**, which is lesser than 0.05 and hence the null hypothesis is rejected and it is a strong evidence that there is a very high significant difference between the *Gender* and the *Time Spent for Cooking*.

Hypothesis 2.2, the p-value is **0.582** which is well above our significance confidence level of 95%, i.e. 0.05 hence we accept the null hypothesis and can conclude that there is no significant difference between the *Age* and the *Time Spent for Cooking*.

Hypothesis 2.3, tries to find the difference between the Interaction of Gender and Age and the Time Spent for cooking, the p-value came out to be **.029** which is lesser than 0.05 and hence we reject the null hypothesis and conclude that there is a significant difference or effect of interaction between *Gender* and *Age* on the *Time spent on Cooking*.

Tests of Between-Subjects Effects						
Dependent Variable: Time Spent in Cooking						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	157.957 ^a	11	14.360	6.181	.000	.415
Intercept	792.255	1	792.255	341.008	.000	.780
Gender	112.601	1	112.601	48.466	.000	.335
Age	8.816	5	1.763	.759	.582	.038
Gender * Age	30.327	5	6.065	2.611	.029	.120
Error	223.034	96	2.323			
Total	1711.000	108				
Corrected Total	380.991	107				

Table 4.27 Two Way ANOVA Test 2

Hypothesis 3.1

Null Hypothesis (H₀): There is No Significant Difference between *Age* and the *Cost per Meal*.

Alternate Hypothesis (H₁): There is Significant Difference between *Age* and the *Cost per Meal*.

Hypothesis 3.2

Null Hypothesis (H₀): There is No Significant Difference between *Occupation* and the *Cost per Meal*.

Alternate Hypothesis (H₁): There is Significant Difference between *Occupation* and *Cost per Meal*.

Hypothesis 3.3

Null Hypothesis (H₀): There is No Significant Difference between *Interaction of Age* and *Occupation* and the *Cost per Meal*.

Alternate Hypothesis (H₁): There is Significant Difference between *Interaction of Age* and *Occupation* and the *Cost per Meal*.

INFERENCES

Two-Way ANOVA was performed to understand the effect of *Age* and *Occupation* on the *Cost per Meal*.

Hypothesis 3.1, the p-value is **<0.001**, which is lesser than 0.05 and hence the null hypothesis is rejected and it is a strong evidence that there is a very high significant difference between the *Age* and the *Cost per Meal*.

Hypothesis 3.2, the p-value is **0.022** which is well below our significance confidence level of 95%, i.e. 0.05 hence we reject the null hypothesis and can conclude that there is significant difference between the *Gender* and the *Cost per Meal*.

Hypothesis 3.3, tries to find the difference between the Interaction of *Age and Gender* and the *Cost per Meal*, the p-value came out to be **0.001** which is lower than 0.05 and hence we reject the null hypothesis and conclude that there is a significant difference or effect of interaction between *Age and Occupation* on the *Cost per Meal*.

Tests of Between-Subjects Effects					
Dependent Variable: Cost per Meal					
Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	44.684 ^a	22	2.031	2.732	.001
Intercept	142.901	1	142.901	192.207	.000
Occupation	23.992	5	4.798	6.454	.000
Age	10.386	5	2.077	2.794	.022
Occupation * Age	28.404	12	2.367	3.184	.001
Error	63.195	85	.743		
Total	319.000	108			
Corrected Total	107.880	107			

Table 4.28 Two Way ANOVA Test 3

CHAPTER V CONCLUSIONS

5.1 FINDINGS

- The Gender of the population has no effect on the importance of fresh-food required, affection towards cooking and willingness to experience new dishes, as from the study it's clear that all the three factors have no relation with the Gender.
- Whereas, the Gender is still in date a major factor when it comes to time spent in cooking each day.
- From the study it was found that, the means of Annual Income of the population and that of Cost per Meal and Regular place of having meal is different, resulting in significant difference.
- Also, the Annual Income of the population has significant difference with the Price of the Product conceived by the user, hence relating to the relation between the Annual Income and Price of Product.
- Again, when tested for Age and Price of the Product perceived, it was again found that there is significant difference between both the factors.
- With the Two-Way ANOVA, we try to find out the effect of interaction of Gender and Age on the Price of product, to know does particular gender belonging to particular age group have significant difference with Price of the Product. Hence, it was found out that there is no significant difference or effect of interaction between Gender and Age on the Price of the product.
- Also, from the study it is found out that there is a significant difference between Cost per Meal and interaction between Age and Occupation.

5.2 CONCLUSION

The objective of the study was to understand the market demand of the product and alongside also understand the food habits of the target market consisting the young working professionals, busy working parents, health conscious population, college students, from the city of Hyderabad with population around 30 Lakh people. After the analysis of study findings, the study concludes that neither male or female has any particular preference towards fresh food obsession, willing to experience new dishes etc., so demand for fresh food and people willing to try our new dishes are not related to the gender. Also, the love for cooking is independent of the gender, but whereas even today in the middle-class and above-middle class families too, the most time spent in cooking on day to day basis is gender dependent, where female users spent more time in cooking when compare to their men counterpart.

From this study, it was determined that people belonging to different sections of Annual Income have different preferences towards place of their regular meal and also the spending per meal is different. And the Price of the Smart Home Appliance perceived by the consumer is also very much dependent on the Annual Income of the person. The general trend which is followed is people with mid-high to high annual incomes are ready to pay from 20-50% extra when compared to low to mid annual income users.

Also, one of the important findings was that there is a coherent relation between Cost per Meal and interaction between Age and Occupation, the people who are young and have Junior Officer and Above Job level tends to have higher spending on meals.

5.3 FUTURE RESEARCH

The post Ad-Hoc tests can be done, to understand exactly what levels and parameters in certain factors are having effect on the certain variables like Price of Product, Cost per Meal etc.

Research Questionnaire:

Gender

- Female*
- Male*

Age

- 21-25*
- 26-30*
- 31-35*
- 36-50*
- 41-50*
- 41-50*

Occupation

- Student*
- Unemployed*
- Daily Wager*
- Junior Officer (Experience 0-5 Years)*
- Senior Officer (Experience 5-15 Years)*
- Executive*

Annual Income (P.A.)

- 0 - 1L*
- 1L - 5L*
- 5L - 10L*
- 10L - 20L*
- 20L - 50L*
- 50L+*

Marital Status

- Married*
- UnMarried*
- Widow*

Where do you have your Meal regularly?

Home/Hostel

Restaurant

Office/College Canteen

Breakfast

Lunch

Dinner

On an Average, what's your spending for each meal?

Meal at home Rs. 0-50 Rs. 50-100 Rs. 100-200 Rs. 200+

Breakfast

Lunch

Dinner

With whom do you stay?

- Shared Apts./PGs*
- Spouse & Kids*
- Parents*
- Parents and Spouse*
- Joint Family*

On a Scale of 1 to 5, How much do you love to cook?

1 2 3 4 5

On a scale of 1 to 5, How often do you try new dishes? (or wishes to try new dish)

1 2 3 4 5

On a scale of 1 to 5, How important is it for you to have fresh home-made healthy food.

1 2 3 4 5

How much time do you spend each day in Cooking?

- 2 Hours+*
- 1 - 2 Hour*
- 30 min - 1 hour*
- 10 - 30 min*
- Less than 10 min*
- I don't cook!*

How much would you love to pay for your own personal Cook (A Pan + Recipe Dairy + Weighing Scale + Auto Temp Control + Auto Stirring + Community + Love <3)

- Below Rs. 15000*
- Rs. 15,000 - Rs. 18,000*
- Rs. 18,000 - Rs. 20,000*
- Rs. 20,000 - Rs. 25,000*
- Rs. 25,000 - Rs. 30,000*
- Rs. 30,000 - Rs. 35,000*
- Rs. 35,000 - Rs. 40,000*
- Rs. 40,000+*