Chapter 3

RESEARCH METHODOLOGY
3. Research Methodology

Research is to see what everybody else has seen, and to think what nobody else has thought.

Albert Szent-Gyorgyi, Nobel Prize winning physiologist

3.1 Introduction

In the previous chapter we have discussed the theoretical background of this study. The entire concept of gaming and advergaming, the impact of advertising on emotional customer engagement and loyalty and further the basis of simple techniques which help predict and hence calculate the marketing returns on investment.

History has showed us that gaming for the purpose of advertisement is not a new concept. It has been used in the past, but the use has been focused as well as restricted to children and for few children related products. As evaluated in the previous chapter, the changing lifestyles and the advent of internet and e-commerce has completely changed this landscape. Adults are also spending their leisure time on the internet in browsing and online gaming. Keeping in mind that the purchasing power and the decision making power in the hands of adults is much higher, this was the right time for the birth of Advergames and the concept of online game engagement for the purpose of advertising. Literature points out that Advergames have been tested to create brand recall and hence were commonly used for children.

In this chapter we would take the historical perspectives in mind and align them with the current day study of Advergames. Our research doesn’t stop at the study of the game. It explores the impact of the game in building emotional customer loyalty. This connect with emotional loyalty is a true test of the fact that gaming connects all of us emotionally somewhere. Once a customer is emotionally intrigued and connected it would be important to see if the marketer can convert this emotion into finances and drive an increased loyalty into increased purchase intention and hence higher MROI.

This chapter explains the techniques that have been employed to close the research gaps identified in the previous chapter. It elaborates on the steps and the sequence of events which took place while completing this study. The chapter also develops on the concepts which help build the questionnaire and also how each question leads to
the variables which are required to test the hypothesis and meet the research objectives.

3.2 Research Objectives

Every research has to start with the purpose and objective in mind. A sound objective is likely to lead to a sound result and a useful insight. Keeping in mind, the research gaps identified in the previous chapter it was found necessary to first understand what are the parameters of the game and which of these parameters are essential to study and explore. Then try to understand who are the gamers, their attributes, a perfect demographic profile of the potential customer for Advergames. Once these are identified, we would connect the Advergames to the gamers to see if they are able to create emotional customer loyalty and an increase in purchase intention and hence an increase in MROI. These thoughts were converted into four robust research objectives mentioned below:

i. To identify and understand the various analytics/parameters of Advergames

(Paek, Quilliam, Kim, Weatherspoon, & Rifon, 2014), (Hofmeister-To’th & Nagy, 2011) have worked on understanding of the Advergames from the game point of view. They analyzed the content of the game as well as the game techniques for a specific food based Advergames. While these analysis are integral, it is also important to build a holistic view and for the same we picked up this research objective where all the parameters of the game would be analyzed.

ii. To develop an Advergaming consumers’ profile

Our study of the Advergame would be incomplete without the complete understanding of the profile of the gamer. Several studies in the past have picked up specific age groups of customers or have chosen them completely randomly. In our study we have specifically picked up gamers and amongst them, studied the profile of those gamers which are most engaged in the Advergame thus forming the target customer group for the marketer. This result would be important and beneficial for the marketers to select the right customer before the launch of a game
iii. To analyze the impact of Advergames in building emotional connectivity/customer loyalty.

Advergames are known to create emotional connect amongst children (Hoy, Young, & Mowen, 1986), (Terlutter & Capella, 2013) (Waiguny, Nelson, & Terlutter, Persuading playfully? The effects of persuasion knowledge and positive affect on children's attitudes, brand beliefs and behaviors, 2012). But this was also identified as an opportunity. We studied the same emotional engagement and loyalty but without restricting ourselves to a specific age group. It is the prime criteria to identify the usefulness of Advergame amongst potential customers beyond the children’s age group.

iv. To identify the parameters which are affecting the Marketing ROI in an online interactive advertising environment and propose a framework for calculating the same viz-a-viz Advergaming

While we worked through various pieces of literature we had compiled there was a serious gap which was felt in terms of a framework which could predict the outcome of using an Advergame. From the perspective of a marketer the major what if analysis comes into picture when they need to decide whether to use a particular technique or not. In case some one uses a good Advergame, would it increase purchase intention and hence MROI? If yes, then what is the relationship between the attributes such as game engagement, loyalty, brand attitude and purchase intention. All these thoughts were compiled under this objective and the outcome of the entire thesis culminates in the form of the framework which has been proposed through this thesis.

Broadly, these objectives had been designed to ensure that a complete perspective of Advergames is studied and all aspects of the game be it emotional or financial are well analyzed through this study. It is necessary to find out and identify, which are the best fit consumers that would be most attracted to Advergames. Hence we develop a profile of the Advergame consumers. It is also important to identify the effectiveness of Advergame as a tool. The effectiveness of the tool can be estimated by judging if the tool has any connect with its audience. It is necessary to evaluate if this tool is able to build any connectivity, engagement and since it’s a tool which
brings in the childlike emotions, can it build emotional loyalty? A through literature review only leads to the need to study further. To meet these objectives various types of methodologies were utilized as discussed in the next section.

3.3 Hypotheses

The previous chapter highlights the various variables as iterated in the literature which one would need to study in this thesis. To test the relationship between these variables which keeping in mind the above mentioned objectives, following hypotheses were framed in the previous chapter:

**H1: A customer’s previous exposure to technology has a positive association with the engagement towards the Advergame**

A previous exposure to technology in terms of education as well as work habits may make it easier for a person to adopt to an Advergame or like an Advergame or even feel engaged while playing the Advergame.

**H2: Customers that found high congruity between the game and the product were positively engaged towards the Advergame.**

(Peters & Leshner, 2008) have worked in a controlled experiment environment to find that it is important to have a congruity between the theme of the game and the product. This hypothesis would test if the same can be made applicable in bringing about engagement to the mind of the uncontrolled customer.

**H3: Central placement of brand logo had a positive association towards the engagement through Advergame**

(Peters & Leshner, 2008) have worked in a controlled experiment environment to find that it is important to have a central and prominent of the brand logo during the game for the success of the objective of the Advergame. The uncontrolled customer here would select if they are able to identify and engage with the centrally placed logo.

**H4: Intrusiveness of a game has a negative relationship with engagement towards the Advergame**
Some (Li, Edwards, & Lee, Measuring the Intrusiveness of Advertisements: Scale Development and Validation, 2002) has shown in their work that it games can sometimes feel like an intrusion to the privacy of the gamer. In such a scenario it would be impossible to use an Advergame for the purpose of creating engagement. Thus this hypothesis would test if the intrusiveness of the game affects the gamers.

**H5: Females display a higher engagement towards the Advergame.**

Since time immemorial, the two genders have responded differently to various phenomenon, primarily due to the differences in their genetic, physical and emotional make up. Hence it is important to test and find out if this difference lies towards the gaming phenomenon too.

**H6: Females display a higher emotional customer loyalty towards brands displayed during Advergame**

Since time immemorial, the two genders have responded differently to various phenomenon, primarily due to the differences in their genetic, physical and emotional make up. Hence it is important to test and find out if this difference lies towards the gaming phenomenon too.

**H7: Respondents with high frequency gaming experience showed higher engagement towards the Advergame**

A past exposure to gaming can help a respondent get comfortable while playing the game. At the same time it may seem boring or monotonous to someone who has seen many games. Hence it is important to test if prior gaming experience works to our favor as marketers.

**H8: Respondents which are susceptible to advertising are also susceptible to engagement towards the Advergame**

Many people have a mindset which is positive towards advertising while others’ mind set makes them skeptical about it. A susceptible attitude may create engagement while a skeptical attitude may bring higher curiosity. It would be important to note and gauge this attitude against Advergames.

**H9: Higher game engagement leads to higher brand recall**
While it is important that a gamer feels connected to the game it is also important that he/she is able to notice and recall the brand else there would be no major difference between an Advergame and any other online game. Thus we try to test the relationship between engagement and brand recall.

**H10: High game engagement leads to positive attitude towards the brand**

An Advergame works not only to convert into a purchase but also to build awareness and positive attitude towards a brand. It would be an important parameter to test in an engaged customer also things positively about the brand.

**H11: A strong positive relationship exists between game engagement and purchase intentions of the respondents.**

This hypothesis tests if the customer who enjoyed and engaged in playing the game would also like to buy the product and convert the marketers’ investment on the game into financial returns.

**H12: A positive correlation exists between the engagement created by the game and the positive emotional customer loyalty towards the brand**

Customers’ emotions have been divided into four different clusters Attention, Recommendation, Advocacy and destroying cluster. It is important to understand the customers’ behavior to each of these clusters and also to the overall emotional loyalty. Thus we test this hypothesis along with the four sub-hypothesis.

- **H12a: A strong positive relationship exists between the engagement created by the game and the advocacy emotions towards the brand**
- **H12b: A strong positive relationship exists between the engagement created by the game and the attention emotions towards the brand**
- **H12c: A strong positive relationship exists between the engagement created by the game and the recommendation emotions towards the brand**
- **H12d: A strong negative relationship exists between the engagement created by the game and the destroying cluster emotions towards the brand**

**H13: High emotional customer loyalty has a strong positive relationship with respondents’ purchase intentions**
It is essential to check if an emotionally happy and loyal customer also buys the product or at least intends to buy in the near future. This hypothesis would check the relationship between ECL and the respondents’ intent to pay for the product.

**H14: Respondents showing favorable attitude towards brand also showed high purchase intention towards the product**

A positive attitude towards the product created by the game may lead to an increase in purchase intention. This relationship is tested through the given hypothesis.

3.4 Research Design

**Exploratory Research:** An exploratory research methodology which identifies and explains the various attributes and variables was employed to achieve the first and second research objective. Here we have described the attributes and parameters of an Advergame which impact the gamer positively as well as negatively. To achieve the second research objective we would be analyzing the demographic profiles of the customers that are most susceptible to Advergaming and are going to be the target audience of organizations which intend to use Advergaming as an online advertising tool. While the first objective is going to be easily achieved by an in-depth study of secondary data sources, such as books, journals, white papers etc., for the second research objective a survey was run which collected first-hand data. To achieve the first objective around 110 different journals, 12 books and 8 different thesis in the field of Advergaming were referred. A large number of online websites and reports also provided essential data points for the completion of this objective.

**Descriptive Research:** A part of research was conducted to collect first-hand information from subjects about their past exposure to games and their overall susceptibility to advertising. To do so an online survey had to be created, but before doing so a small representative sample of 50 respondents were tested with a Pilot study. This sample was selected based on convenience and fixed quotas of various demographics were represented in the sample so as to observe the behavior of each demographic group individually and in detail.

**Pilot Study:** For the pilot study, a small representative group of 50 respondents were selected. This group of respondents had people from all the various demographic profiles and thus gave a broad guideline about choosing the correct respondents. These selected respondents were exposed to a simple Advergame for 15 – 20
minutes and then filled out an online survey in the presence of the researcher. The Advergame that was used was by the Kellog’s brand of cornflakes called Chocos. The objective of the game was to collect as many chocos as possible into a bowl and then pour cold milk from the tap into the bowl and then proceed to the next level. The game was simple, the objectives were clearly defined, and most of all the game was extremely illustrative in nature where it was continuously describing how to achieve the goals and also it was illustrating how to use the product, chocos. Snapshots from the game have been added in Appendix C.

The questionnaire for the pilot study had mostly open ended questions so as to get a feel of the respondents mind set. The questionnaire was prepared using one of the freely available online survey tools (See APPENDIX A). The entire process was monitored to observe the reactions of the respondents towards the game as well as towards the questions. This also gave us a lot of subtle cues regarding the feelings of the respondents which came out in the form of slangs and remarks. Further, a long and subjective feedback was collected from the respondents regarding their emotions at the end of the game and also as a feedback to the entire concept of Advergaming. The entire process of data collection for the pilot study spanned 8 days. This data that was collected was analyzed statistically and more importantly, it helped in identifying some of the gaps of the previously existing studies. It also helped in identifying the scope and viability of the entire project. At the end of the pilot study, following observations were made, which were later incorporated in finalizing objectives and hypothesis:

- Large number of un-tapped game playing audience exists in the age bracket of 21-35 years (64percent).
- Only 28percent of the audience had previous exposure to online gaming for the purpose of advertising
- 45percent of the users unanimously preferred mobile based games over PC based games.

While these seemed like simple data points these were the stepping stones in the entire process of preparation of the questionnaire.
Game and Questionnaire Design for Main Study

The game which was selected for the purpose of main study was again an illustrative game of the brand Lipton IceTea. Here the player has to barbeque some food products on the barbeque stove. These food products included some vegetarian some non-vegetarian food items that would drop from the top of the screen. The player has to quickly flip these items before the get burnt. The heat of the game begins when the pace of the dishes dropping on the barbeque increases and the gamer has to be quick in flipping the same. At the same time they also have to keep an eye on the bottle of Lipton IceTea, which starts blinking as soon as the heat increases. One needs to virtually drink that Lipton IceTea to cool off and then focus back on the game. There are liberal indicators about how and when to use the product. Also the logo of the brand is in continuous display with relevant messages popping off time and again. In the main study we had purposefully picked up this game as it was targeting a product that was not positioned for children. This gave us the ability to test it relevantly on a different age group of people most of which have had some brand of an ice tea at some point of time or the other. Further snapshots from the game have been attached in Appendix D. A detailed genesis of all the constructs of the study along with the underlying variables and literature corresponding to the questions has been enlisted in the Table 3.1

<table>
<thead>
<tr>
<th>S. No</th>
<th>Variables</th>
<th>Literature Review</th>
<th>Author</th>
<th>Objective</th>
<th>Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Susceptibility to Advertising</td>
<td>The extent to which individuals attend to and value commercial messages as sources of information guiding their consumptive behaviors</td>
<td>(Bearden Netemeyer &amp; Teel, 1989) (Bearden &amp; Rose, 1990) (Barr &amp; Kellaris, 2000) (LaTour &amp; LaTaur, 2009)</td>
<td>To analyze the respondents that are highly susceptible to advertising are also highly susceptible to engagement through the game</td>
<td>19.1 19.2 19.3 19.4 19.5</td>
</tr>
<tr>
<td>2</td>
<td>Game Difficulty Level</td>
<td>The difficulty level of the game may have a positive or negative impact on the engagement that it builds</td>
<td>(Chen &amp; Ringel, 2001) (Calin 2010) (Yang &amp; Ho 2008)</td>
<td>To analyze if the difficulty level of the game impacts the engagement through the game</td>
<td>21.1 21.2 21.3</td>
</tr>
<tr>
<td>3</td>
<td>Entertainment</td>
<td>A video game is popular because of its features like interactivity, temporality, spatiality and collectively put together, for its wholesome entertainment</td>
<td>(Rouse, 2004) (Eskelinen, 2001) (Aarseth, 2000)</td>
<td>To analyze if the entertainment of the game helps in building the entertainment</td>
<td>22.1 22.2 22.3 22.4</td>
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<tr>
<td>4</td>
<td>Product Placement Proximity</td>
<td>The positioning of the logo in a game and its impact</td>
<td>(Brennan, Dubas, &amp; Babin, 1999) (D'Astous &amp; Chartier, 2000) (Law &amp; Braun, 2000) (Russel, 2008) (Yang, Roskos-Ewoldsen, Dinu, &amp; Arpan, 2006)</td>
<td>To find the optimal positioning of the logo which would lead to highest level of engagement</td>
<td>23.1 23.2 23.3 23.4</td>
</tr>
<tr>
<td>5</td>
<td>Intrusion</td>
<td>Advertisements can be intrusive in nature and the same may or may not follow for advergames</td>
<td>(Vespe, 1997) (Krugman H., 1983) (Varki &amp; Rust, 1996) (Li, Edwards, &amp; Lee, 2002)</td>
<td>To check if advergames are considered to be intrusive hence leading to a decline in the game engagement</td>
<td>24.1 24.2 24.3</td>
</tr>
<tr>
<td>6</td>
<td>Game Product Congruity</td>
<td>A sync needs to be created between the game and the product, yet too much of harmony may lead to negativity</td>
<td>(Peters &amp; Leshner, 2008) (Hernandez, Minor, &amp; Maldonado, 2004) (Lee &amp; Faber, 2007) (Lewis &amp; Porter, 2010)</td>
<td>To validate if the congruity between the game and the product leads to positive engagement towards the game</td>
<td>26.1 26.2 26.3</td>
</tr>
<tr>
<td>7</td>
<td>Brand Attitude</td>
<td>Exposure to an advertising tool may lead to positive or negative attitude towards the brand</td>
<td>(Cauberghe &amp; De Pelsmacker, 2010) (Steffen, Mau, &amp; Schraman-Kle, 2013), (Wise, Bolis, Kim, Venkataraman, &amp; Meyer, 2008) (van Reijmersdal, 2009) (Redondo, 2012)</td>
<td>To validate if a respondent engaged in a game also has positive attitude towards the brand</td>
<td>27.1 27.2 27.3 27.4</td>
</tr>
<tr>
<td>8</td>
<td>Attitude towards advertising through games</td>
<td>Most users are comfortable with online advertising owing to its large number of benefits</td>
<td>(Nelson, Keum, &amp; Yaros, 2004) (Gould, Gupta, &amp; Grabner-Krauter, 2000) (Koznets, 2002) (Hirschman &amp; Thompson, 1997)</td>
<td>To check if consumers are comfortable with the idea of advertising through games</td>
<td>28.1 28.2 28.3 28.4</td>
</tr>
<tr>
<td>9</td>
<td>Attention cluster of emotions</td>
<td>These emotions show that a respondent has noticed an advertisement</td>
<td>(Kahn, 1990) (Shaw, C) (Fleming, Coffman, &amp; Harter, 2005)</td>
<td>To analyze if a respondent engaged in games is able to build attention cluster emotions</td>
<td>33.1 33.2 33.3 33.4 33.5 33.6</td>
</tr>
<tr>
<td>10</td>
<td>Recommendation Cluster Emotions</td>
<td>These emotions show that a respondent would recommend the product</td>
<td>(Kahn, 1990) (Shaw, C) (Fleming, Coffman, &amp; Harter, 2005)</td>
<td>To analyze if a respondent engaged in games is able to build recommendation cluster emotions</td>
<td>34.1 34.2 34.3 34.4 34.5</td>
</tr>
<tr>
<td>11</td>
<td>Advocacy Cluster Emotions</td>
<td>These emotions show that a respondent would advocate the product</td>
<td>(Kahn, 1990) (Shaw, C) (Fleming, Coffman, &amp; Harter, 2005)</td>
<td>To analyze if a respondent engaged in games is able to build advocacy cluster emotions</td>
<td>35.1 35.2 35.3 35.4 35.5</td>
</tr>
<tr>
<td>12</td>
<td>Destroying Cluster Emotions</td>
<td>These emotions show that a respondent would feel negatively about the product</td>
<td>(Kahn, 1990) (Shaw, C) (Fleming, Coffman, &amp; Harter, 2005)</td>
<td>To analyze if a respondent engaged in games is able to eliminate destroying cluster emotions</td>
<td>36.1 36.2 36.3 36.4 36.5</td>
</tr>
<tr>
<td>13</td>
<td>Curiosity for next release</td>
<td>The anticipation and curiosity which a respondent might have towards the release of next version of the product</td>
<td>(Sheth &amp; Parvatiyar, 1995) (Rindflesch &amp; Heide, 1997) (Venkateshan &amp; Kumar, 2004)</td>
<td>To check if the respondednt engaged in the game is able to build the curiosity for the next release</td>
<td>40.1 40.2 40.3</td>
</tr>
</tbody>
</table>
Taking a cue from the pilot study, it was felt that it would be safe and appropriate, though not exhaustive, to share the survey online through emails. This technique helped in bringing about the required amount of heterogeneity to the sample. Attempt was made to meet large and diversified audience. Thus, an online survey was designed and data was filled in the questionnaire through three different techniques. Firstly, the respondents were emailed a link to an Advergame, which they would click, play the Advergame and then fill their opinion about the game in an online form. This technique gave the flexibility to the respondents, to play the game irrespective of time, place or even technology (phone, laptop or tab). This also helped in creating a real life like scenario where potential customers are constantly distracted by multiple stimuli from the neighboring environment. The presence of these stimuli in our study only acted as a boon as it authenticated the results further since these were the true emotions/responses which are felt by a potential customer who is exposed to a game for the purpose of advertising. The questions were constantly and randomly jumbled with the help of the settings in the online tool and presented to the respondents to maintain the authenticity of the survey. While some demographic questions regarding the respondents were direct, most other questions
tested the required factors indirectly and by concealing the questions amidst large number of similar yet different options. A hard copy of the questionnaire is available in the APPENDIX B. To minimize biasness in selection of sample, attempts were made to purposefully select people with heterogeneous backgrounds and to see the representation of each demographic category. This reduced the biasness but there was still some scope of error that one could foresee from the fact that the game and questionnaire was emailed and some people may and in fact did attempt the questionnaire without playing the game. Such responses were controlled from the fact that users not only had to fill up their scores through three attempt of the games but also had to identify 3 questions which were specifically related to the game. In case someone has not played the game, they would not be able to answer them at all. Further restrictions on the login and IP address of the system used for filling out the questionnaire was created with the help of the online tool. These restrictions ensured that there is a 1:1 relationship in the responses and respondents.

The questionnaire was designed online and had a total of 44 questions. It was divided into the following basic segments:

Segment 1: Respondents Demographics Details

Segment 2: Respondents’ response to Advergaming parameters

Segment 3: Respondents’ Emotional Engagement and Loyalty

Segment 4: Respondents’ Purchase Intention (to measure expected MROI)

After collecting the overall demographic details from a respondent, a filter question was added which would filter out all the respondents who have exposure to internet but have not played any online games before.

This questionnaire was then sent to 5 different experts for standardization. Two of these experts belonged to academics, two of them belonged to gaming industry and 1 expert worked in the field of marketing research. Several comments were received from the experts due to which various repetitive questions were removed and two more questions were added in the third Section which eventually helped in measuring the emotional customer loyalty.

Out of a total of 335 respondents, it was found that 40 responses got filtered out as these respondents did not have any previous exposure to gaming. A demographic
analysis of these 40 respondents clearly showed a strong relationship with age. Nearly 40 percent of the respondents that had filtered out were of the above 60 age group.

**Sample Size**

For the purpose of exploratory research a sample of data was collected and that sample was selected keeping in mind that it is a true representation of the population in question. Firstly, it was identified that the entire sampling universe consists of nearly 120 million internet users in India as on 2013. (PTI, 2012) A sampling frame of mobile and computer gamers was drawn which consists of around 12 million gamers (Gyan Research and Analytics Pvt. Ltd, 2012). Keeping in mind that the respondents would have to be people who have exposure to the internet and also to ensure representation from different age groups, income groups as well as geographic locations, judgmental sampling was considered to be most apt. The formula used for calculating the sample was

\[
\text{Sample Size} = \frac{z^2 \cdot p(1-p)}{1 + \left(\frac{z^2 \cdot p(1-p)}{e^2 N}\right)}
\]

Where \(N\) = Size of the population

\(e\) = Margin of Error/Confidence Interval

\(z\) = Z-Score of Confidence Level

\(p\) = standard error (0.5)

To have a sample with 95 percent confidence level and 5 percent confidence interval it was calculated that the sample size should be 384 respondents (American Marketing Association, 2012).

It had been decided to send out the questionnaires and collect responses from two different methodologies:

i) **Online data collection**: Sending out survey via email with the link to the game as well as questionnaire which collects the response online. This was further of two types: Data collection through mobile and Data collection
through laptop. It had been observed that since there is a high amount on invasion of smart phones in day to day users, a 72 percent of respondents filled out their survey through phone. It is a known fact that questionnaires which are emailed are often ignored or responses get extremely delayed. To account for the same the questionnaires were emailed to over 850 different email IDs.

After sending out first round of emails, reminders were sent twice in a gap of 7 days each. Some of the contact were connected through social media (LinkedIn, FaceBook) and reminders were sent through social media messengers more frequently (2 days apart). At the end of nearly 3 weeks exercise we were able to collect 324 responses.

ii) **Offline data collection:** To get a feel of the responses and reactions of the respondents, 30 questionnaires were filled out in person. Here the respondent played the Advergame right there and then the questionnaire was filled out in interview mode. The total of 3 days’ time was taken to collect offline data. Out of a total of 30 respondents, 3 respondents were not able to understand the interview at all and hence chose to not response at all. Thus a total of 27 response which had been collected were used.

<table>
<thead>
<tr>
<th>Data Collection Method</th>
<th>Target Respondents</th>
<th>Responses received</th>
<th>Not Responded</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offline</td>
<td>30</td>
<td>27</td>
<td>3</td>
</tr>
<tr>
<td>Online Data</td>
<td>850</td>
<td>324</td>
<td>542</td>
</tr>
</tbody>
</table>

Thus a total of 351 data points were collected for the purpose of research.

**3.5 Data Preparation**

The data which was collected in the form of a simple Excel sheet was then imported into IBM SPSS Ver. 21 and the data points were then encoded to be used numerically in the tool. Data points with null values were removed while those with incorrect entry were cleaned up and a final data sheet was prepared to be used in SPSS 21.0 for further analysis and calculations.
3.6 Statistical tools used

There were various types of questions that were used to compile data from all the aspects of the study. These included Dichotomous questions (gender), Nominal (Age groups), Ordinal (Frequency of game play), 9-point Likert Scale (Attitude towards advertising). To analyze the data collected through these questions we have used

- Chi-square test
- Independent sample t-test
- ANOVA
- Pearson Correlation
- OLS Regression
- Confirmatory Factor Analysis
- Hierarchal Cluster Analysis
- K-means Cluster Analysis
- Structural Equation Modelling.
3.7 Conclusion

The previous chapter had highlighted the existing literature along with the research gaps. It was the primary objective now to fill those gaps with our own research. At the outset what seemed like a simple fill in the blanks was actually a well-planned, tested and rigorous scientific and statistical activity. Every minute detail was given utmost attention. An activity as small as selecting a game for the research itself took us a lot of time and had us browse through at least 30 odd Advergames. All the questions of the questionnaires were created by keeping the broad focus on the research objectives and a strong connect with the hypothesis. After a tedious exercise of selecting the right game, creating the right questionnaire, standardizing the same and then collecting responses which took nearly 100 days, it was felt that all aspects which were reflected in research gaps in the previous chapter are well covered. The questionnaire designed was meeting all the research objectives as well as was helping to prove all the hypotheses. Thus the data collection procedure was scientifically designed on a wide and comprehensive sample base. Data collection was given utmost importance for its purity, objectivity, and responsiveness with an approach to cover wider areas dispersed geographically all over the country. The data mining and processing has been done using the most advanced statistical tools which are explained in the next chapter.