ONLINE BUYING BEHAVIOR OF PACKAGING BUYERS, 2014-2017

A Longitudinal Study

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Preface

I would like to express my gratitude to the supervisor of this Bachelor thesis – Mr. George Szanto. He has provided me with his continuous support and expert opinion through the entire process, which has most certainly increased the quality of this research. Without the presence of his previous work on the topic, this research would not have been possible. In addition, I would like to thank Ms. Lisa Pierce – Chief Editor at the Packaging Digest, for her help in providing me with information that would have otherwise been impossible to obtain.

This study has most certainly brought me closer to the achievement of my academic goals by gaining the necessary knowledge to manipulate several types of data which could later be analyzed and presented in a detailed and insightful way. In addition, it has contributed to my knowledge of business research which fill help me in my desire for further pursuing my educational career.

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Executive Summary

This study provides an exploratory analysis on the topic of online buying behavior of buyers in the packaging industry. To add, this research longitudinally analyzes the existing information on the topic, which has been gathered in the years 2014 to 2017. In addition, this information is then compared with insights, gathered from interviews with packaging suppliers, in order to obtain better understanding of the trends in online buying behavior.

Following, this research analyzes survey data on the common questions, which have been asked repeatedly in previous research in the period 2014 to 2017. In addition, based on a primary analysis of the available information, a semi-structured interview questionnaire has been designed. With this interview, packaging professionals from the supply part of the value chain had the opportunity to share their views on the findings.

Furthermore, three main aspects of the online buying behavior are used to better understand the trends in the packaging buyers' purchasing activities. Namely, these are the demographics and characteristics of the buyer and his purchase, the details of the buying journey itself, and the online tools and sources used in the process.

Finally, the results show that overall, the online buying behavior of packaging buyers remains unchanged in the period 2014 to 2017. In addition, no significant changes have been noticed in the buyers and their purchases, as well as the buying process. However, the data analysis shows that packaging buyers have strengthened their preferences in terms of the online channels and types of information which they use to aid their purchasing process. Meaning, the preferred online channels and tools of information has become even more utilized at the expense of the least used ones, which have further lost relevance to the online buying process.

Introduction

The overall increase of Internet usage has drastically changed the way in which industries operate worldwide. These changes influence all internal and external processes in a company. The packaging industry, in particular, has changed drastically through the adoption of technological advancements; however, there is not enough information on the way in which packaging Business-to-Business buyers have dealt with the implementation of the Internet in their purchasing processes. More specifically, this research will focus on changes in the online buying behavior of packaging buyers.

Over the years 2014 to 2017, Mr. George Szanto, in collaboration with the Packaging Digest, has conducted a series of investigations on the topic of online buying behavior of packaging buyers. His research left behind an opportunity to collect and regroup the gathered data for the purpose of creating a longitudinal research, which main purpose is to examine the data for possible trends. In doing so, this study will explore the data and compare the findings with insights from the other side of the packaging value chain – the suppliers.

1.1. Purpose of the Study

The purpose of this research is to explore trends in the online buying behavior of packaging buyers. In doing so, a longitudinal analysis will be conducted in order to identify tendencies in the data regarding the way in which packaging buyers use the Internet to aid their purchases. In addition, it will explore the gap between the sellers' and buyers' view on what do packaging buyers need and use in terms of online information. For the purpose mentioned above, the following research objectives were formulated:

- To explore trends in the online behavior of packaging buyers
- To compare the packaging buyers' and sellers' views on the online buying behavior
- To gain valuable information about the packaging industry professionals
- To provide the readers of Packaging Digest with insightful and interactive information about the buyers in the packaging industry

1.2. Context of the Study

In the years 2014-2017, Mr. George Szanto – a Senior Lecturer at Fontys University of Applied Sciences, has investigated the topic of online buying behavior of buyers in the packaging industry. In his research, he has conducted three consecutive surveys, with which he aimed at gaining knowledge and understanding of the way in which packaging buyers use the Interned to aid their purchasing decisions. These surveys were then analyzed, and the results were published on an annual basis in the Packaging Digest, an online magazine for packaging professionals. This precedent study on the topic leaves the opportunity to now look back on the data collected and analyze any potential patterns that could have form in the data in the period 2014 and 2017. By comparing the results from the three previous years, further insights with regard to the online buying behavior of buyers in the packaging industry will be gained.

1.3. Research Problem

As previously mentioned, the vast technological advancements influence almost every aspect of companies' processes, including those in the packaging industry. However, the speed with which B2B suppliers' companies can adapt to these advancements does not always reflect their customers' demand. In detail, B2B customers may often find themselves in a situation where they would initially judge a company based on the information they are able to provide prior to the actual assessment of the product. Even though there are numerous studies on the topic of the changing buying behavior of B2B customers, there has not been identified any longitudinal data that would help understand the specific behavior of this part of the value chain in the packaging industry. Therefore, an opportunity has been identified, which allows for the research and analysis of the existing data, initially collected by Mr. Szanto during the years 2014 and 2017.

The main research problem of this study is the need for investigation whether the online buying behavior of buyers in the packaging industry has changed in the years 2014 to 2017.

Based on the research problem, the main research question is:

- Has the online buying behavior of buyers in the packaging industry changed in the years 2014 to 2017?

In the data, three different dimensions of an online buying behavior have been identified. Namely, these categories are demographics and characteristics of the packaging buyer and his purchase, the buying process, and the online tools and channels that have been used. Based on these topics, three sub-questions have been formulated to help better address the main research question. Therefore, this research's sub-questions are:

- Have the demographics and characteristics of the packaging buyer changed in the years 2014-2017
- Has the packaging buying process changed in the years 2014-2017?
- Have the online tools and channels, used by packaging buyers, change in the years 2014-2017?

1.4. Significance of the Study

This research fills in the gap in knowledge on the topic of trends in the online buying behavior of packaging buyers. Besides the annual research, conducted by Mr. George Szanto, no previous research on the topic has been identified. This study will be the first longitudinal study to describe trends in the online behavior of packaging buyers.

This study will provide guidance to the buyers in the packaging industry by giving various packaging companies a chance to compare their buying practices with the trends generated by this study. In addition, it will also aid sellers in giving them an overview of the way in which their customer base uses the Internet to aid their purchases. In addition, third-party participants in the packaging industry, such as different trade associations and media outlets could benefit from the results.

1.5. Unit of Analysis

The unit of analysis of this research is the business-to-business packaging buyer, who uses the internet to help make his/her purchase decision. Furthermore, in order to gain a better understanding about the packaging buyer's behavior, a separate unit of analysis has been identified. These are the suppliers of packaging materials and machinery, which will be interviewed in order to better understand the buyers' online buying behavior.

1.6. Definition of Terms

Business-to-Business (B2B)	Type of commerce in which the products and services of a business are marketed to other businesses.
Business-to-Consumer (B2C)	Involves a service or product exchange from a business to a consumer
Packaging Buyers	In this study, buyers or packaging buyers are the professionals who work in packaging companies which are involved in the purchase of any type of B2B packaging purchase
Online Buying Behavior	The collection of attitudes, preferences, intentions, and decisions regarding the consumer's behavior in the marketplace when purchasing a product or service
Buyer Journey	The buyer's journey is the active research process that a buyer goes through, leading up to a purchase
Fast-Moving Perishable Goods	Generally low-cost commodities that are sold very quickly. It has a shorter shelf life which results in higher consumer demand

2. Literature Review

2.1. The Business-to-Business Buying Process

The current use of the Internet is vastly changing the business-to-business purchasing environment. Currently, 94% of B2B buyers use the internet when making a purchase (Accenture, 2014). These technological developments steadily change the traditional buyer's journey, as well as the role of the salesperson in it. In addition, only 12% of B2B buyers want to meet with a sales representative during the whole course of their journey (Accenture, 2014). The reason is that online tools are much more efficient in terms of providing large amount of information regarding the buyers' specific need in a fraction of the time (Gold, 2017).

However, this ease of access to numerous information sources may easily backlash. For example, in the area of marketing technology, for the last six years the amount of technological marketing solutions has grown from 150 to more than 4 000 different vendors (Gold, 2017). This access to limitless number of solutions for the buyers' needs may cause information overload which could damage the ability to make sound purchasing decisions.

In addition, in a recent study by Salesforce Research in 2016, the research company has identified key changes in customers' purchasing needs. According to the data, gathered from over 7000 B2B and B2C customers, 83% of business buyers agree that technology keeps their company more informed than ever before. Among others, key changes in the purchasing behavior include that 80% of business buyers expect real-time interaction. In addition, more than half of the respondents are likely to switch their sellers if the company does not provide easy-to-use mobile online information. Furthermore, the importance of unique customer experience is growing not only for B2C customers, but for business buyers as well. 89% of business buyers expect companies to understand and provide unique value and relationship for their specific business needs and 65% say that they are willing to switch brands if a supplier fails to do so. (Salesforce Research, 2016)

Furthermore, the complexity of the buying journey is another aspect of the B2B buyers' behavior which has changed. Due to the complexity of the decision-making process, which often involves multiple decision makers, business buyers have identified the need for a simplified buying journey, where their supplier counterparty aids in the task of easing this process as much as possible. 76% of buyers recognize this need for simplified process and stress on the importance of a simplified customer journey and 79% sees the role of a sales representative as a trusted advisor instead of someone that aims at achieving sales targets (Salesforce Research, 2016).

Next, the most used online information channels by B2B professionals will be reviewed. When compared with B2C consumers, the Business-to-Business ones generally use a larger number of information channels to engage with their vendors (Marketo, 2017). The main channels used to connect with vendors and suppliers are email and website, followed by industry forums. These online sources of information also correspond to the level of integration which is applied by the suppliers (Marketo, 2017).

2.2. The Packaging Industry

Figure 1 illustrates the packaging industry's ecosystem. The main parties included in the packaging trade are the suppliers, end-users, external contractors, and third-party stakeholders, such as the government. In detail, the B2B suppliers include, but are not limited to, providers of raw materials, machinery, packaging and production engineering, and experts. In addition, the end-users process includes all internal parties of a company, which are included in the purchasing decisions, such as the packaging and production departments, the purchasing team, various packaging experts and engineers, and the marketing and communications teams. This process varies per company, depending on the product and structure of the organization.

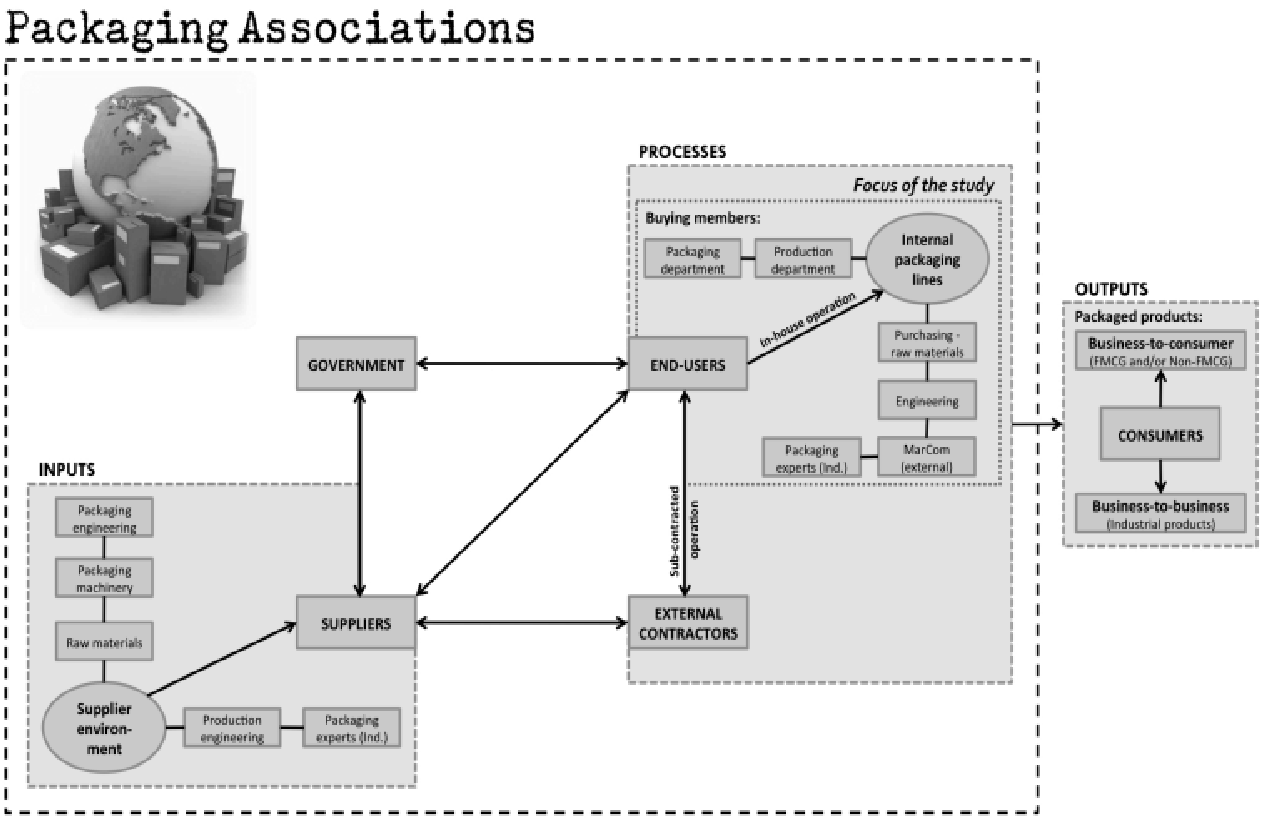

Figure 1: The Packaging Ecosystem Source: Ishak, 2015

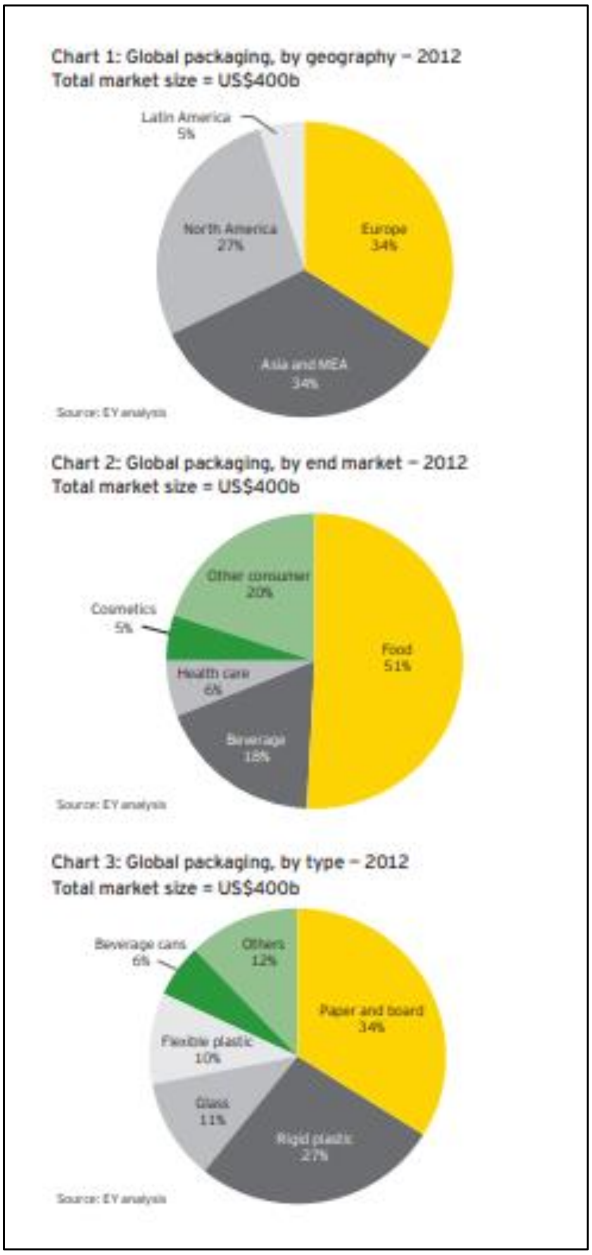

Figure 2: Size of the Packaging Industry. Source: Unwrapping the packaging industry: Seven factors for success, 2017

Next, the size and value of the industry will be discussed. As per 2013, the global packaging market is valued at 400 billion US dollars (Neil-Boss & Brooks, 2013). Having in mind the numerous other industries, such as metal, chemical, glass, and paper, which are linked as suppliers in the packaging industry (Simms & Trott, 2014), an extended total estimate of the value of the market exceeds 500 billion US dollars (Neil-Boss & Brooks, 2013). When investigated by geographical region, Asia, Middle East, and Africa is the largest packaging market (Figure 2). In addition, the main end-use markets for which packaging is being produced are food and beverage, which together account for 69% of the total market value, followed by healthcare and cosmetics. Furthermore, the most used types of packaging are paper and board, which hold 34% of the total market value, and rigid plastic, which accounts for 27%.

Following, the key issues that concern packaging companies will be presented. The main problems, which packaging buyers are concerned with, are their weak supply chain position between suppliers and brand owners, and the fast changes in the packaging production processes (Simms & Trott, 2014). As mentioned earlier, a substantial proportion of the suppliers in the packaging industry come from various industries and have higher bargaining power. Therefore, packaging buyers are unable to control the increase in prices of raw materials. In addition, the fierce competition of packaging companies allows brand owners to choose from a large variety of production companies, which leaves the packaging producers without the option to increase their prices based on the raw materials (Simms & Trott, 2014). For these reasons, one of the main concerns of the packaging companies is their weak position in the supply chain, which may result in the need to decrease their profit margin based on the power that the suppliers and brand owners have.

Another concern of the packaging companies is the fast changes in the packaging production. In detail, the packaging production process is subject to a constant change due to the various regulations that are being introduced in relation to environmental protection as well as technological advancements (Simms & Trott, 2014). For example, in connection with the changes in demand of food and beverage, which are one of the main end markets that the packaging industry serves, changes have to be made in the technologies used to print and produce different packaging elements. In addition, based on the end-consumer changing demand for fast-moving perishable goods, the products are expected to sustain their qualities for longer, which should also be reflected in the quality and durability of the packaging. For this reason, companies have to quickly adapt to their customers' changing products which results in a change of the packaging production processes (Simms & Trott, 2014). Another factor that influences the changes in the packaging production is the increasing concern for the environment. Therefore, companies need to not only adapt to current regulations but to sustain an eco-friendly image by choosing a reduced amount of recyclable raw materials in their production processes (Simms & Trott, 2014).

3. Research Methodology

3.1. Research Methodology and Paradigm

The research paradigm that is adopted by this study is Interpretivism. It is related to the belief that there is no one true meaning behind social sciences and the relationship between people and the world is based on the individual's unique actions (Gray, 2014).

3.2. Research Design

The research design of this study is an exploratory one. This type of design is employed mainly when there is little or no previous research to rely on in terms of predicting an outcome (Labaree, 2018). Having in mind the main research problem, which is the insufficient information on the topic of online buying behavior of the buyers in the packaging industry, this design will facilitate the realization of the research objectives.

Furthermore, this study adopts a longitudinal time frame. In detail, it will analyze results from previous research on this topic, which has been conducted in three consecutive years. In addition, it will observe the same units of data analysis – the results of the surveys, over the course of the years 2014-2017, with the purpose of identifying trends in the respondents' answers over time.

3.3. Population and Sample

3.3.1. Population

The theoretical population of this research includes all companies and organizations, which can be defined as business-to-business buyers in the packaging industry. In addition, the study population is represented by all business-to business packaging buyers, which made a purchase of more than 25,000 USD in the last 12 months, prior to the respective survey, and have used the Internet in order to aid their purchase.

3.3.2. Sample and Sampling Method

In this section, the samples and sampling methods will be described. Since the samples have been collected in advance, the details and methods of the different samples will be explained below. The procedure for obtaining the sample will be discussed in detail in Section 3.5. Procedure for Data Collection.

In all the surveys, the sample was defined with a non-probability, voluntary sampling technique. In addition, there were two questions, which defined whether a respondent is qualified for taking the survey, namely:

1) Were you involved in the purchase of a business-to-business (B2B) packaging solution, product, or service, which value was 25,000 USD or more the past 12 months?

2) During the purchase process in the past 12 months, did you use any online internet information sources or online services (such as LinkedIn, social media) to help you with the purchase?

2015

In the research from 2015, the survey was open to answer from November, 2014 up to the beginning of February, 2015. In this period, a total of 420 people started the survey, out of which 10 respondents did not answer the qualifying questions, 144 people were disqualified after the first question and additional 116 sample units were disqualified after the second one. Therefore, a total of 153 qualified respondents is the final sample size from the 2015 survey

2016

In the second year of the research, a total of 500 people started the survey. Moreover, 454 of them answered the first question, where 188 were disqualified with additional 39 being rejected from the second question. Therefore, the final sample size is 277 respondents, where 157 people completed the whole survey and 70 people completed it partially.

2017

In the third year, there were 309 respondents who started the survey, out of which 56 did not answer the qualifying questions. Next, 79 were not involved in a B2B purchase in the last 12 months and 29 more were disqualified for not using the internet to help with their purchase. The final sample size in 2017 has been 145 respondents.

In addition to the three samples of the packaging buyers that have been collected, another sample was gathered from the supply side of the value chain. In detail, suppliers of packaging raw materials and/or machinery were contacted in order to compare and contrast the findings from the buyers with the opinion of their suppliers. For this reason, a subset of contact information has been obtained by the Chief Editor of Packaging Digest and the Survey Director of the preceding research, which contained email and/or phone details of various opinion leaders on the supply side of the packaging supply chain. The total sample size accounted for 23 contacts, which were contacted initially via mail, followed by a series of phone calls, where the participants were invited to participate in a semi-structured phone interview.

3.4. The Research Instrument

This research utilized two distinct types of research instruments – an online questionnaire and a semi-structured phone interview.

The Survey

First the online questionnaire will be described. In 2015, the research consisted of 22 questions. This amount of questions has been changed in 2016 and 2017, when 20 and 24, respectively, questions were asked. All of the surveys consisted of mixed types of questions, varying from open-ended answers, multiple-choice and multiple-answer close questions, rankings, and ratings.

The Interview

Aside from the trend analysis of the already existing data, a semi-structured interview was conducted in order to be able to compare and contrast the viewpoints of the buyers and suppliers in terms of online buying behavior. In order to do so, a primary analysis of the survey data was conducted. Once the main insights from the survey data have been gathered, they were used to create a semi-structured questionnaire. (See Appendix 1)

3.5. Procedure for Data Collection

Having in mind the longitudinal nature of this research and the time frame of the project, the survey results that are being analyzed were not collected in the context of this research. Instead, this research is based on the data collection conducted by Mr. Szanto and his publishing team. Over the three years of his research, the data has been collected through four main collection channels. First, invitational emails were send to a database of subscribes of the research's sponsors – the Packaging Digest magazine. In addition, promotional posts on the magazine's website, and a second publisher's newsletter were used as another way to gather respondents. Also, social media was used in order to aid the data collection process. Finally, data collection was conducted during various packaging trade shows, where promotional materials were given out in order to further stimulate the data collection.

3.6. Procedure for Data Transformation

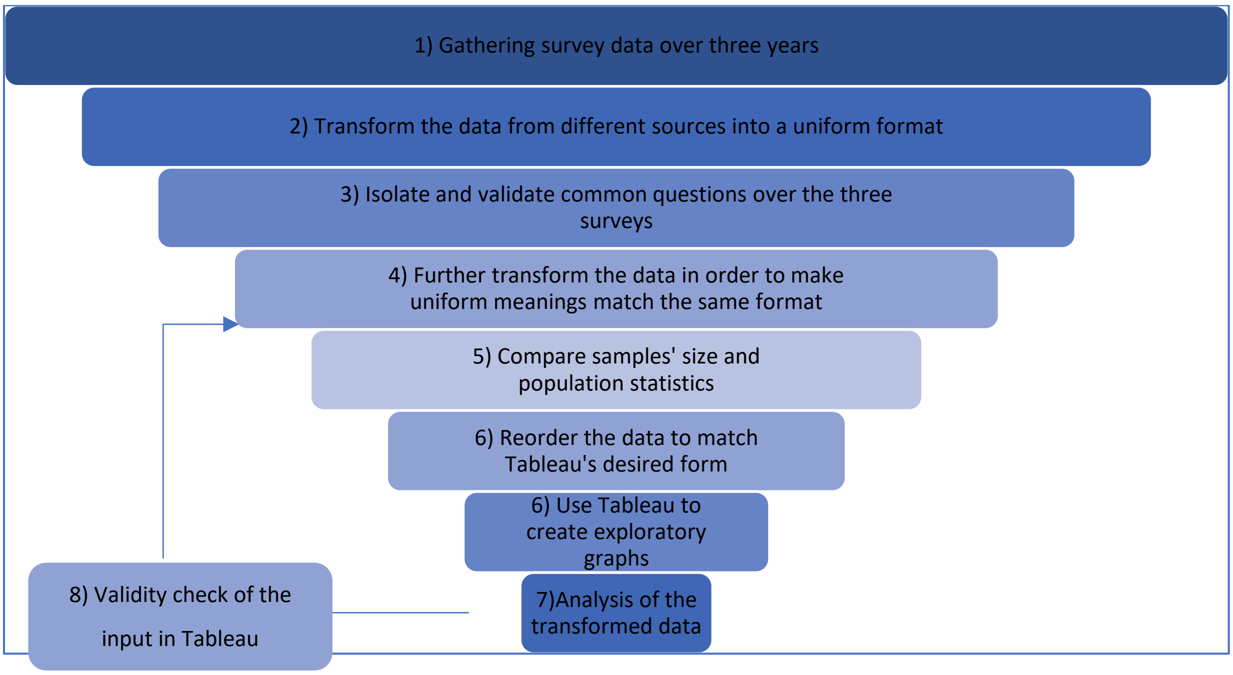

Figure 3:The Data Transformation Process

The initial research conducted by Mr. George Szanto has taken the form of a series of similar yet varying annual analyses. Therefore, a future longitudinal analysis was not indicated to be part of the research objectives. For this reason, the number, wording, and order of the questions, the amount of possible answers as well as some other components of the surveys were not uniform throughout the three years. Therefore, a large share of this research's timeframe was spent in transformation of the data prior to the analysis. Figure 3 represents the process of data transformation, which took place in order to transform the three separate surveys into a cohesive data set, which was suitable for a longitudinal analysis. The specific steps that were taken are described below.

First, the surveys in the three years have been conducted with the use of two different survey softwares – SurveyGizmo and Survey Monkey. For this reason, the raw data that was extracted from those surveys was different. Therefore, a choice was made for Microsoft Office's Excel to be used as the initial data transformation tool. The reasons for this choice are mainly related with the ease of use and the researchers' familiarity with the software. In this sense, the raw data had to be transferred to Excel, which required for the 2016 results to be decoded from the variables in their original SPSS format to one which was taken by the other two years' files.

Once the raw data was all in the same program and decoded, a selection was made, which filtered all of the questions that were repeated in the three years. The identified questions that repeated throughout all three years were 13 in total (See Appendix 2). However, some of the questions had differences in the wording of the answers, which would have later hurdled the analysis of the results. For this reason, modifications were made in order for these questions to take the same format consistently. After the 13 questions had the same wording and answer format, they had to be reordered and reorganized once again for the purpose of consistency.

Finally, when the three surveys had obtained a consistent format, the data sets were merged together and coded in order to reflect the specific year.

3.7. Data Analysis and Interpretation

Once the data set was prepared, a new analysis tool has been introduced to the research – Tableau Desktop. This program is a data analysis and visualization software, which allows for substantial amounts of data to be easily analyzed by providing various interactive ways to present it. The decision to analyze the data by employing a new program in place of Excel was taken, because Tableau is thought to have better abilities in terms of exploring data without having a specific hypothesis to prove. In addition, Tableau is a powerful tool specifically when conducting a trend analysis (Mazenko, 2017). With its interactive and flexile visualization tools, Tableau was deemed as the proper program to be exploited as an analysis instrument for this research's survey data

In order for the Tableau software to be applied properly and for it to be a valuable tool for this study, a certain proportion of this research's time span was dedicated to the researcher's learning of the program. In detail, with the help of the online tutoring sessions on the Tableau website, as well as practicing with different data sets, the necessary knowledge was obtained in order to be able to understand the software and learn how to gain the most insightful information.

In addition, in order for the data set to be utilized the most by Tableau, the data had to undertake another transformation. In detail, the program's preferred shape of the data that is being analyzed is to have as few columns as possible and to be elongated. In contrast, the data in Excel has the opposite direction. For example, when analyzing the data in Excel, each respondent has a single row and numerous columns, which are dedicated for the different questions. However, in Tableau, the data set is preferred to be with two main columns – one with the question and one with the answers, and a few other columns which contained demographic information. In that way, each respondent had one row per question instead of a column.

To sum up, even though this research does not focus on the data collection of the analyzed items, there were many steps taken in order to transform the data that was already gathered into a flexible and insightful information which would derive longitudinal trends.

3.8. Validity and Reliability

3.8.1. Validity

There are few different techniques that have been applied in order to ensure the validity of this research. In terms of sampling validity of the survey, two factors were used to assess whether the sample is representative of the population, namely, the title of the respondents and the size of the companies that they work for. Then, the information that the respondents shared in the survey was compared with the Packaging Digest's readers database. In this database, there are more than 60 000 recorded qualified packaging buyers with demographic data that links them with the representative's title and company size. In this way, the proportions in the sample were measured in order to be examined whether they match the proportions in the available database. With slight mismatch, the results on the sample did match the demographics of the population and the survey was deemed as valid.

In addition, the validity of the analysis and the data transformation has been tested. For the purpose of ensuring an error-free transition of the raw data when being transformed, after each step of the process, a set of 15 different sample units were traced through the raw data set and compared with the final results in Tableau. They were randomly selected among all the respondents' data by the usage of online random number generator, plotted with the total number of respondents. In addition, once the data was uploaded in Tableau, it was cross-checked on a few occasions back in the Excel data set in order to once again ensure that the answers were intact.

3.8.2. Reliability

Regarding this research's reliability, there were no specific actions taken to test reliability prior to the study. However, after gaining three years' worth of data, the results were compared against each other. As will be further discussed in Chapter 4, there is significant consistency in the way in which the packaging buyers have responded through the three surveys. Based on these results, it can be concluded that the research instrument is reliable.

3.9. Limitations

The main limitation of this research is the period which has been assigned. In detail, even though the length of the research allowed for smooth transformation and analysis of the existing data, the recruitment of packaging suppliers which would be able to comment of the findings has been troublesome. As previously mentioned, in order to gain valuable insights from the suppliers, the buyers' data had to be analyzed prior to the construction of the interview questionnaire. For this reason, the time to contact and schedule interviews with suppliers was insufficient. Out of the more than 20 contacted suppliers, only three were able to participate in the research on time. Another reason for the low participation rate of the packaging suppliers is that the research targeted marketing and communication professionals which participate in various trade shows on a constant basis. When looking into the trade shows schedule for 2018, more than 10 various trade shows per month have been administered in the US only (EventsEye, 2018).

In addition, this research acknowledges the existence of other factors that influence the online buying behavior; however, it would focus only on the packaging buyer, the purchasing process, and the online tools and channels that are used.

4. Data Analysis

4.1. Results

In this section, the results of the trend analysis conducted in Tableau will be discussed. In order to make the information easier to comprehend, the findings have been grouped in four main categories, based on the topic. First, the results from the qualifying questions will be discussed. Following, the questions that describe the profile packaging buyer in terms of demographics and characteristics of their particular purchase will be presented. Next, the data from the buyer process will be explored, followed by a review of the online types and channels of information that have been used by the buyers.

In order to be able to analyze the results for possible trends, the findings were illustrated with the use of graphical visuals, exported from the Tableau software. In addition, having in mind that the final number of qualified respondents per year is quite similar, the results were looked at in terms of percentages per respective year for the purpose of excluding variations that arise from the difference in sample sizes per question. In some of the charts, besides the respective percentage, the total count of answers has been added for reference.

4.1.1. Qualifying Questions

The first two questions that have been asked in all three years were the qualifying questions, which determined whether the respondent is suitable for taking the survey. In terms of a change in the results throughout the years, there have not been identified any drastic changes in the proportion of the samples which have made a purchase in the last 12 months (Figure 4). When comparing the results from 2015 with the ones from 2017, less than one per cent change in the proportions can be observed. Even though the answers to this question do not bring insightful information towards the topic of this research, the consistency of the results can be interpreted as reliability of the sample and sampling method throughout the three years.

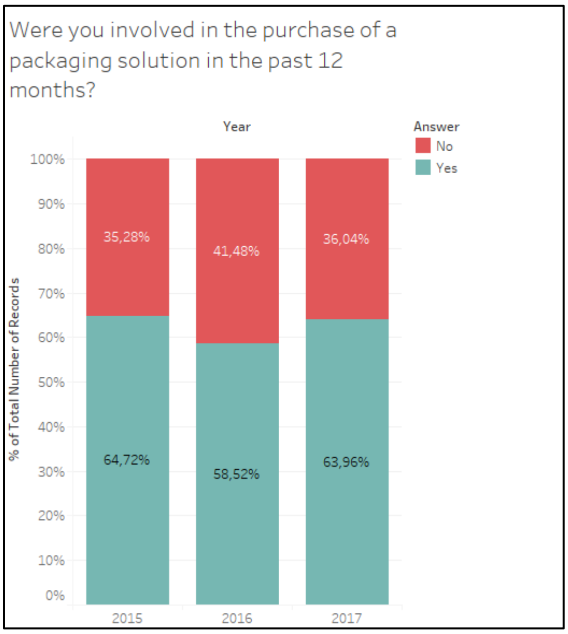

Figure 4: Involvement in a Purchasing Decision

Furthermore, the second question of the survey shows that there has been a vast increase in the amount of surveyed packaging buyers that have used the internet in order to make a purchase (Figure 5). The people which have used the Internet in any way during their buying process has almost doubled from 2015 to 2016, and this percentage has stayed constant during 2017. These results correspond with the information that has been gathered during the interviews with suppliers, which have consistently mentioned that more than 80%, if not all, of their customers use the online information sources and services to aid their purchasing decisions.

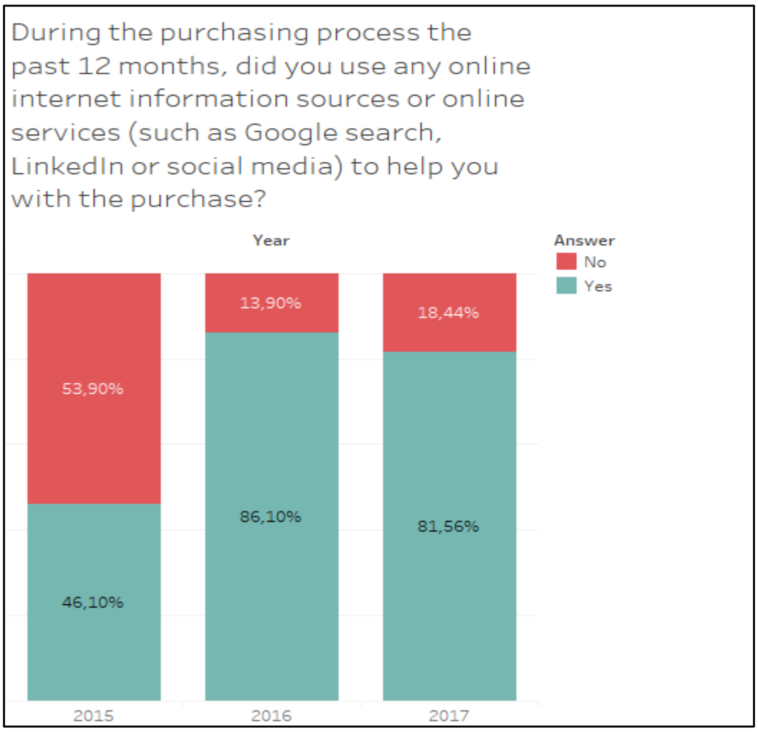

Figure 5: Internet Usage

In addition, in the surveys conducted in 2016 and 2017, an additional question has been given to those that have been identified as not qualified for the survey after the second question. To explain, they have been asked for the reasons why they have not used the Internet to aid their past purchase. The main reason for the buyers not using the Internet in 2017 has been that they have used their personal network to find the needed information, whereas at 2016 the main reason has been that the purchase was a rebuy and they have contacted the supplier directly. Moreover, significantly less people have reported in 2017 that they did not use the Internet because they have gathered their information from offline sources, such as printed resources, trade shows, and visits. Also, less people have reported that they did not use the interned because they used an internal company database.

4.1.2. The Packaging Buyer

As seen in Figure 6, most of the respondents are located in North America. In detail, more than 84% of all surveyed buyers are based in the United States, eight per cent are participants from Europe where the most represented countries are the Netherlands, Great Britain, and Spain. Following, three per cent of the respondents are located in Asia and the rest five per cent represent countries, located in South America, South Africa, the Middle East, and Australia. When the geographical locations were analyzed per the respective year, no significant differences have been found. Again, these results show consistency in the collected data and exclude the possibility of explaining any variation in the data with to differences in the geographical location of the samples over the years.

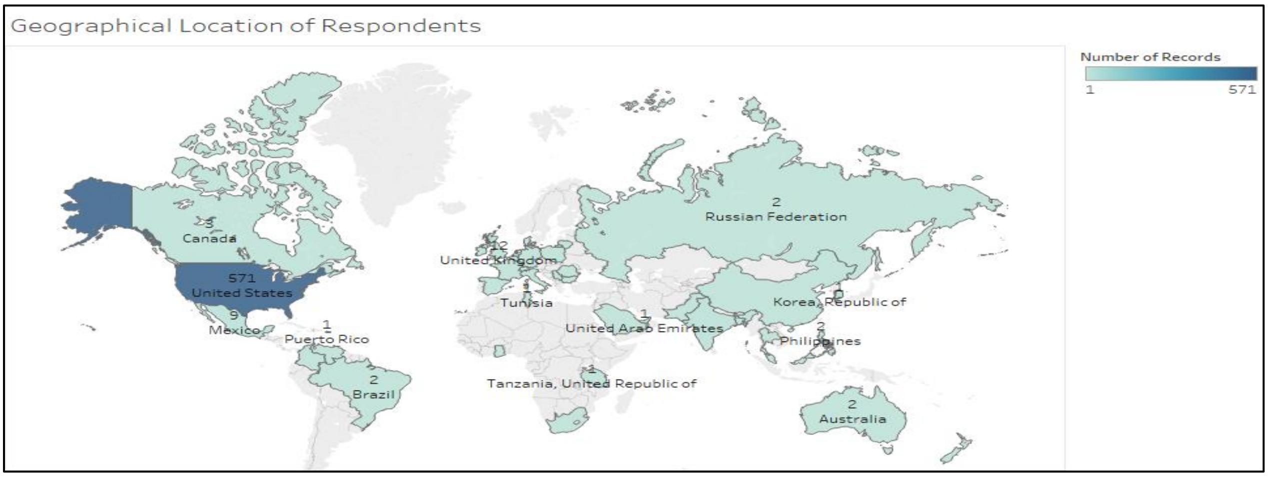

Figure 6: Geographical Location of Respondents

Moreover, Figure 7 represents the division of respondents per the type of packaging product, service, or solution sought. The majority of the buyers have looked for packaging materials, containers or supplies - in 2017, 42.63% of the respondents have reported to have looked for this type of products. In addition, the second most sought type of packaging product has been packaging equipment or machinery. Moreover, a slight growth can be observed in these two categories throughout the years; however, the overall sample division per type of product stays relatively the same in all three years. Having in mind the consistency in the results, these two categories have been used as a sample pool for the interviewed suppliers.

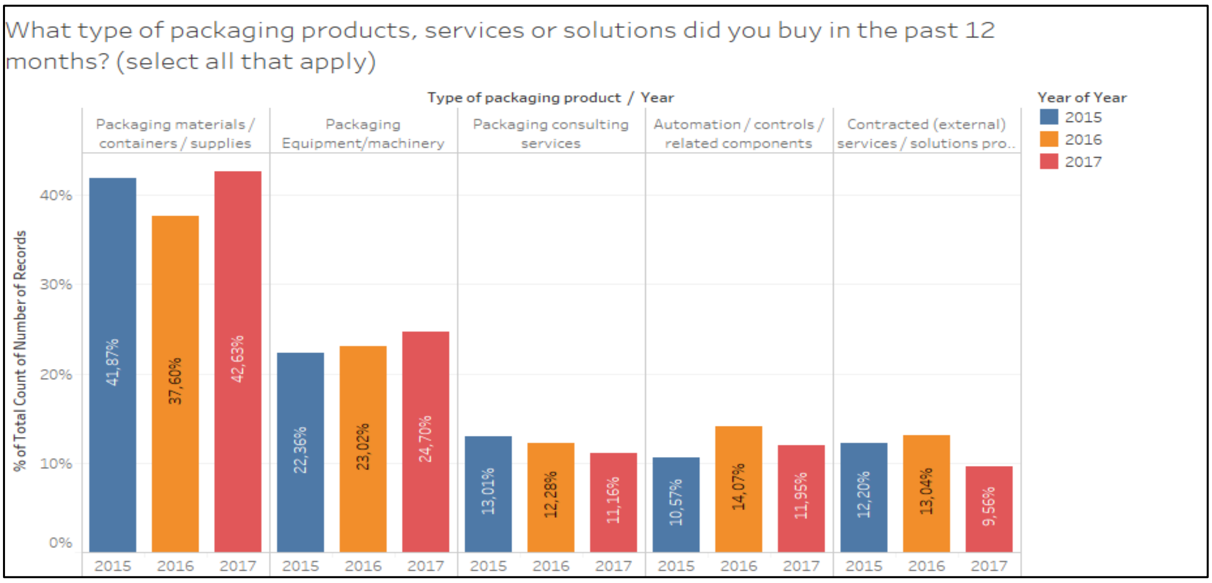

Figure 7: Type of Packaging Solution Sought

Next, the packaging buying team will be discussed. As mentioned in Chapter 2, B2B buying decisions are perceived as more complex than B2C ones in the sense that the process often includes a team rather than one person, where each individual has a specific role in the purchasing process. In order to investigate the extend of this complexity and to be able to further gain knowledge of the sampled buyers, the respondents have been asked questions about the size of the buying team as well as the respondent's personal role in it.

When asked about the size of the buying team that they participate in, 56% of the respondents in 2017 reported participating in a purchasing team together with two to five other people (Figure 8). This amount has slightly decreased since 2015; however, it still describes the team size of more than half of the respondents. In addition, the share of the smaller teams, which are comprised of either one or two members has slightly increased with 4.5% and around 2%, respectively. In addition, in the larger purchasing teams, which include six or more people, no significant changes have been reported.

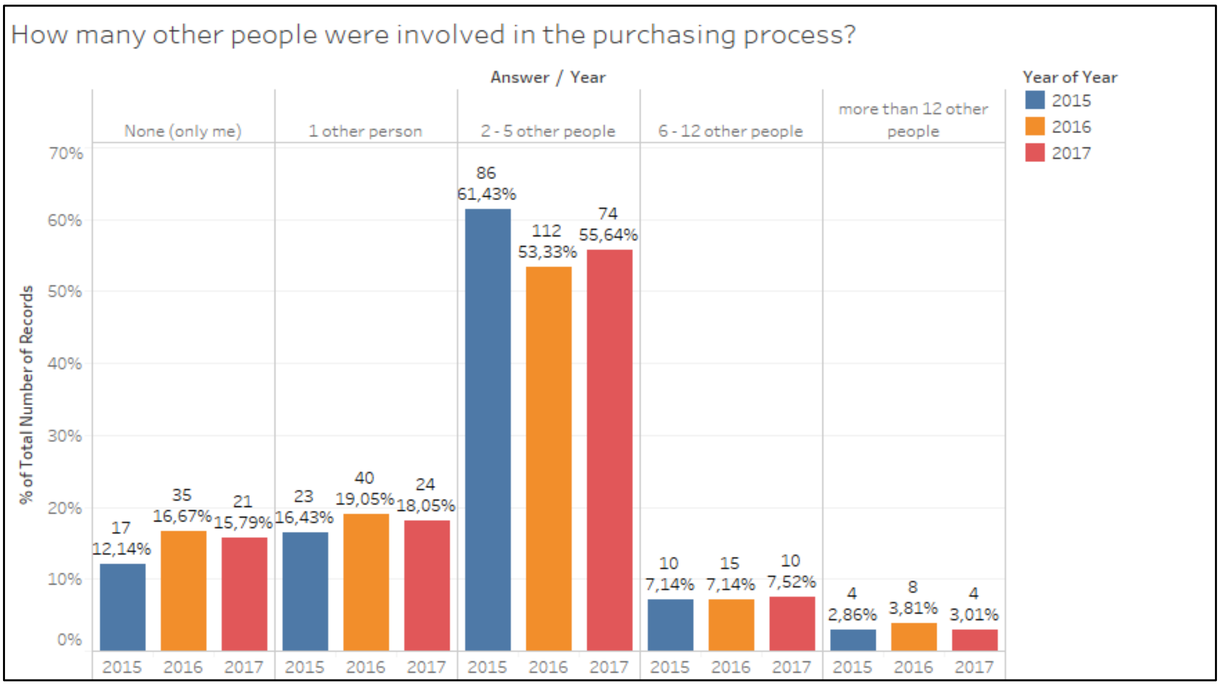

Figure 8: Size of Buying Team

Following, the respondents have been asked about their specific buyer role which they have executed within their team (Figure 9). In the survey, the buyer roles were defined in the following way:

- Buyer – the formal authority to arrange the purchase, purchasing agent
- Decider – budget owner, having final decision authority to approve purchase
- Gatekeeper – the person that controls the information
- Influencer – internal or external expert, stakeholder
- Initiator –the person requesting the purchase for the first time
- User - using the purchased product or service

In all the years, the main role of more than 35% of the respondents has been the one of an Influencer. This role entails that the person's view and advice affect the purchasing decision. Furthermore, the number of people that describe their role as a Decider has decreased from 22% in 2015 to less than 17% in 2017. Also, the number of Initiators – the people who initiate the purchase - has decreased by almost a half, reaching 9% in the last year. In contrast, the number of Buyers, Gatekeepers, and Users has increased.

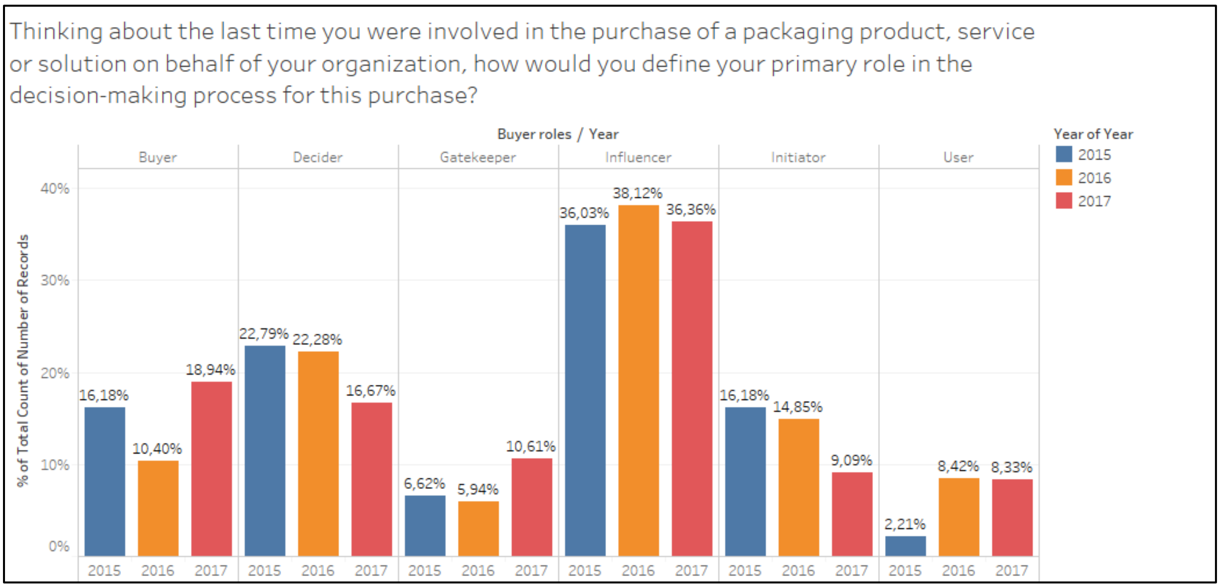

Figure 9: Buyer Roles

Following, the respondents have been asked about the geographical distance from which they have looked for their purchase. Once again, Figure 10 shows consistency in results between the three years, which points out that packaging buyers are mostly prone to look for their purchases regionally and/or locally. However, a third of the respondents are willing to look for possible suppliers and vendors, situated in other countries. In detail, a constant of more than 20% of the respondents look for suppliers internationally and more than 10% do so globally.

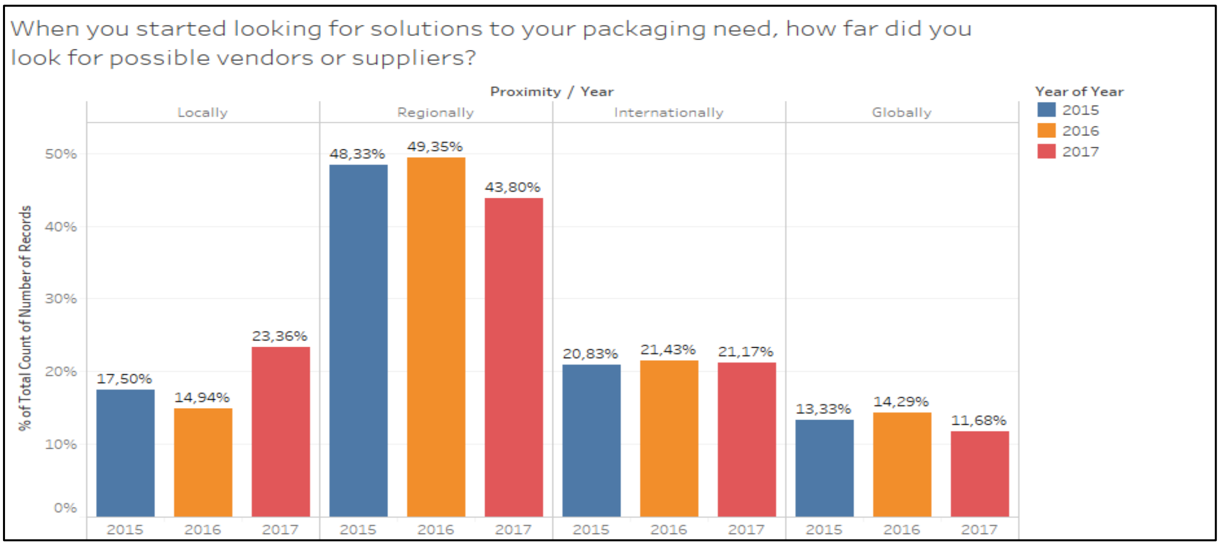

Figure 10: Proximity of Purchase

In addition, when asked about the frequency of their purchase, 46% of the respondents in 2017 have bought this type of packaging product repeatedly over the year (Figure 11). This share is similar to the results from 2015; however, in 2016 the amount of these more frequent purchases has dropped significantly to 20%. In addition, the amount of infrequent purchases – those made less than once a year - has increased from 2015 with 23%. Moreover, the number of respondents for which this has been their first purchase of this type of packaging has decreased by half.

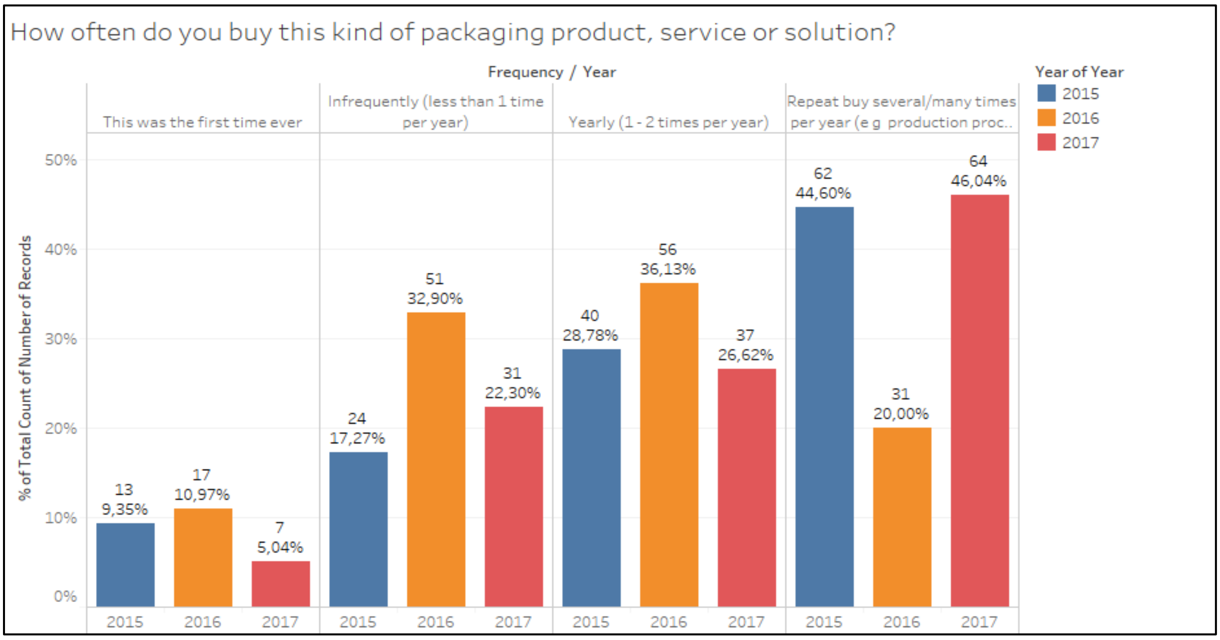

Figure 11: Frequency of Purchase

Moreover, the budget for the packaging purchase will be investigated. Figure 12 shows the total monetary resources which packaging buyers have reported to have assigned for the purchase. The majority of respondents in all three years have recorded that their purchase was estimated to be between 12 000 and 124 999 US dollars. Similar to the frequency of the purchase, the results from 2016 show higher purchase funding, with a decrease in the lowest budget category and an increase of 5% in the category between 125 000 and 1.24 million US dollars.

Furthermore, this question shows inconsistent information with the qualifying criteria. As previously mentioned, one of the qualifying questions asked whether a purchase has been placed of a value which exceeds 25 000 US dollars. However, the results from the three surveys show that, consistently, around 20% of the buyers have reported a purchase of less than 12 000 US dollars. There are few possible explanations to this discrepancy in the data. One suggestion is that the respondents have not paid attention to the criteria that the purchase has to be more than 25 000 US dollars. Another explanation may be that they have seen the criteria and pretended to be eligible for participation, since the input in the survey was related to a chance to win a prize.

Finally, a third proposal is that the purchase has indeed exceeded a total amount of 25 000 US dollars; however, it involved a contract for a number of payments, with each one being less than 12 000 US dollars. Still, there is no factual information as to which possible explanation justifies the inconsistency in the results and for this reason this question would not be further analyzed.

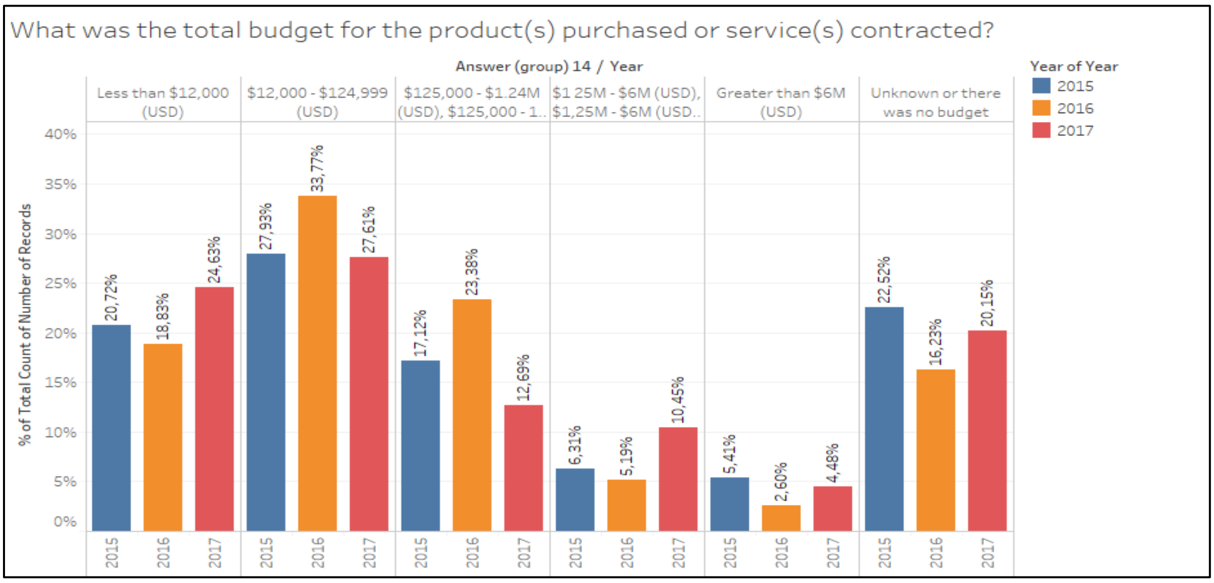

Figure 12: Purchasing Budget

4.1.3. The Process

In this section, the results from the survey on the questions related to the buying process will be presented.

First, the results with regard to the length of the process will be reviewed. When asked about the total number of months that has taken the packaging buyers to finish their purchasing process, around 60% of them have reported a duration between one and five months (Figure 13). There is a slight variance of this share throughout the years of less than 3%. In addition, more than 20% reported length of the process being less than a month. Overall, there has not been observed any significant change in terms of the length of the process, except for the time period of 6 months to a year. In this category, the number of respondents has almost doubled from 2015 to 2017, reaching 17%. Even though the number of purchases with such length has doubled, their share is still not significant enough in order to be concluded that the length of the buying process has changed.

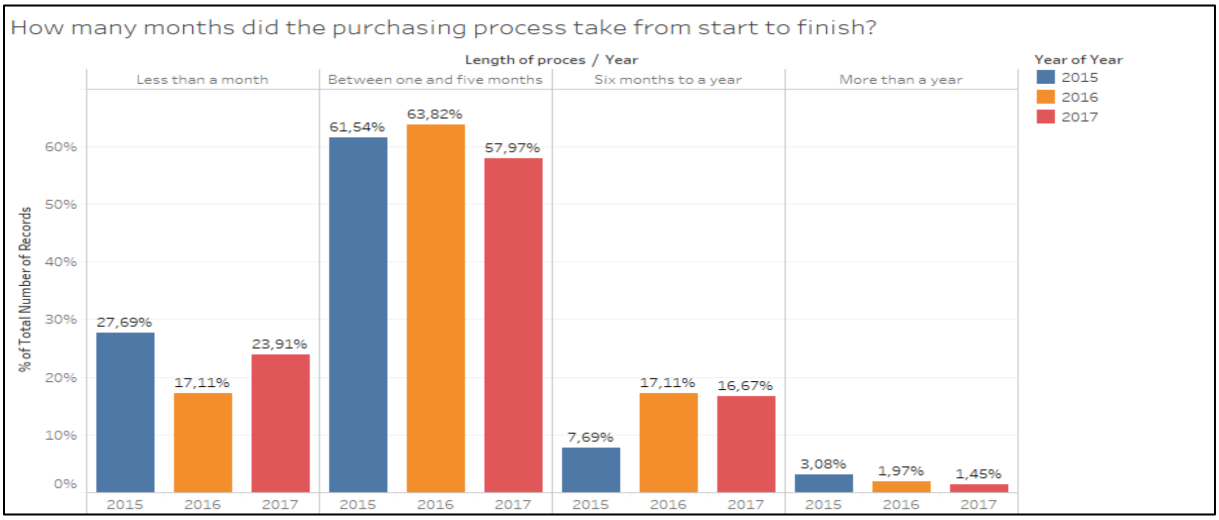

Figure 13: Length of the Process

Next, packaging buyers were asked about the stages of the buying journey at which they used the Internet (Figure 14). The majority (38.6%) of the respondents in 2017 have used the Internet in order to identify possible suppliers and 29.4% have used it to identify and define their packaging need. In addition, two thirds of all people that used the Internet to aid their purchase have utilized it in the first half of the buying journey. Moreover, 20% used it to validate suppliers and vendors and 11% have used online tools to select their final vendor. These results are consistent in the years of this research with insignificant changes over the course of the years.

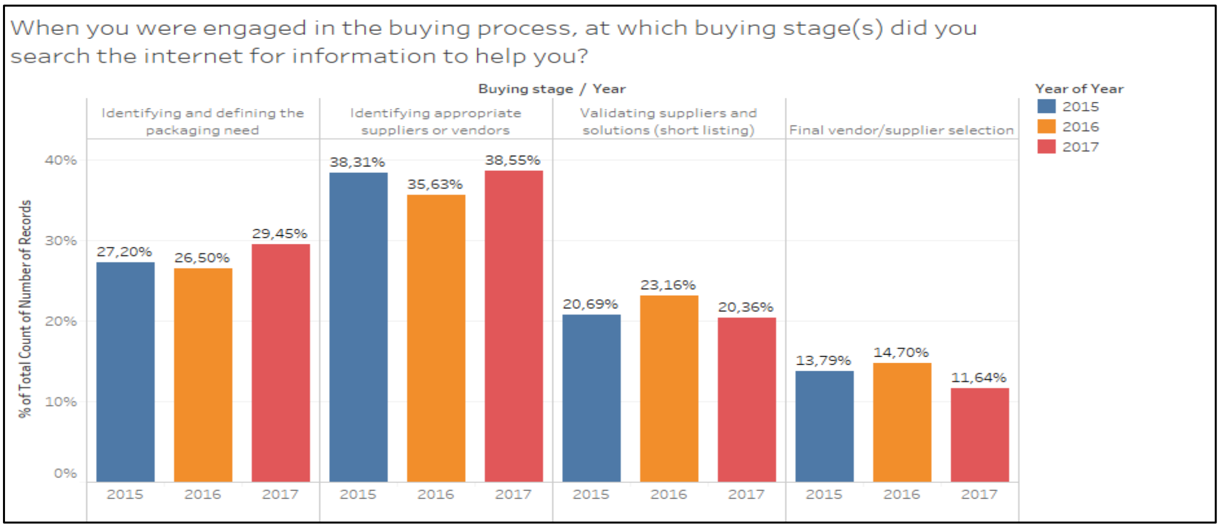

Figure 14: Stage of the Buying Process

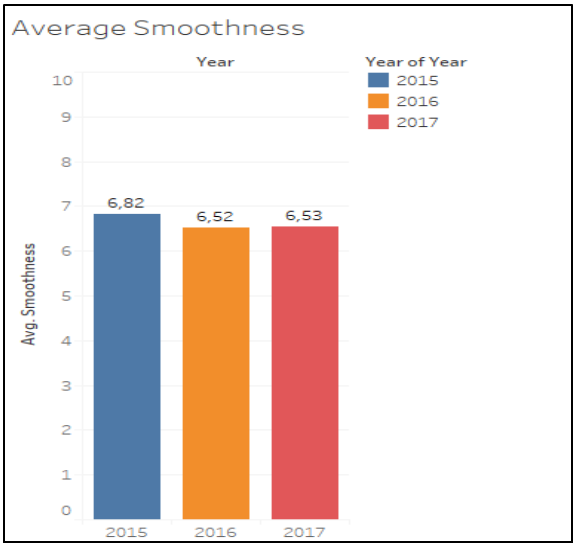

Figure 15: Average Smoothness

Moreover, packaging buyers have been asked about the overall smoothness of the buying process (Figure 15). On a scale from one to 10, where 10 being the smoothest, the average smoothness in 2017 is 6.53. In the years before, there has no significant difference with averages of 6.82 and 6.52 in 2015 and 2016, respectively.

4.1.4. The Online Information

In this section, the online information that has been used by the packaging suppliers will be further looked into in terms of the type and source of online information sought.

In question 12, packaging buyers were asked about 11 different sources of online information and the stage of the buyer journey at which they used it. Figure 16 represents the various sources of information versus the amount that they have been used per stage of the process. During the first stage of the buying process, the most utilized sources of information have been whitepapers/case studies, twitted, and blogs. In addition, in order to identify the possible suppliers, the most used channels of information have been the suppliers' website, internet searches, and press advertising, Moreover, suppliers' email and recommendations from the buyers' personal network are the most used channels when it comes to validating and short-listing the suppliers and vendors. Also, they have been the most used information sources during the final selection of vendors.

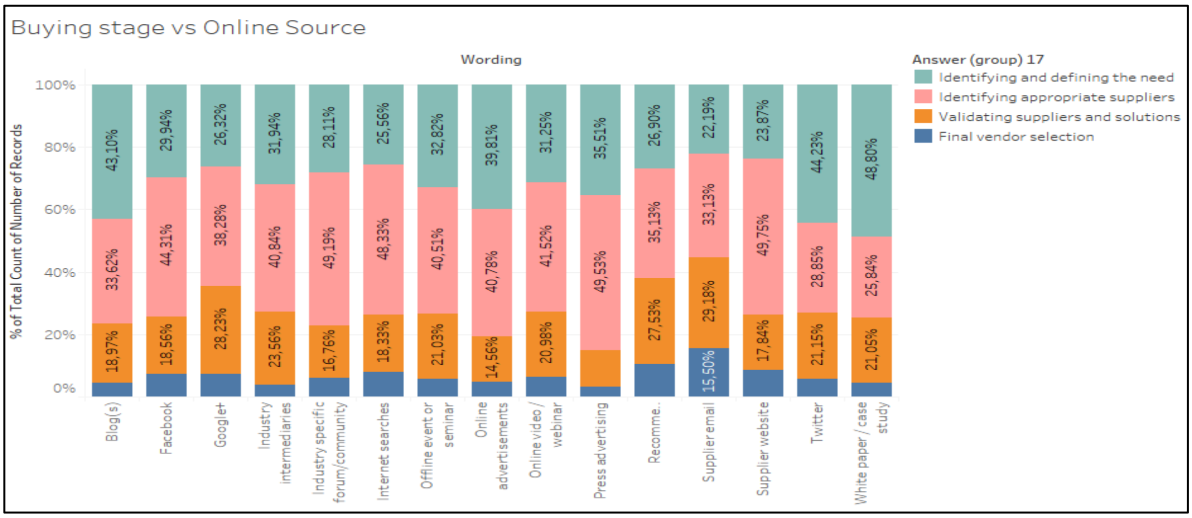

Figure 16: Most Used Sources per Buying Stage

Furthermore, the changes in the use of these sources of information between 2014 and 2017 will be discussed. Suppliers' website, email, and Internet searches are the main online channels that buyers use to aid their purchasing decisions. In addition, their use has further increased through the observed years (Figure 17). In contrast, the least used online tools have been blogs and Twitter, which have further decreased in utility over the course of the three years. In addition, other channels of information, which have further lost relevance throughout the years include Google+, Facebook, and Offline Events (Figure 18). Even though industry intermediaries and industry specific forums and online communities have a small share in terms of the amount of people that use them, their share has grown significantly over the three years.

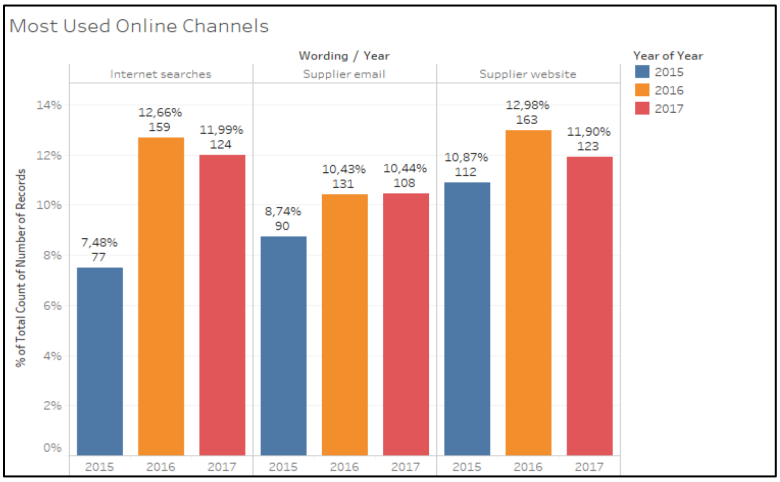

Figure 17: Most Used Online Channels

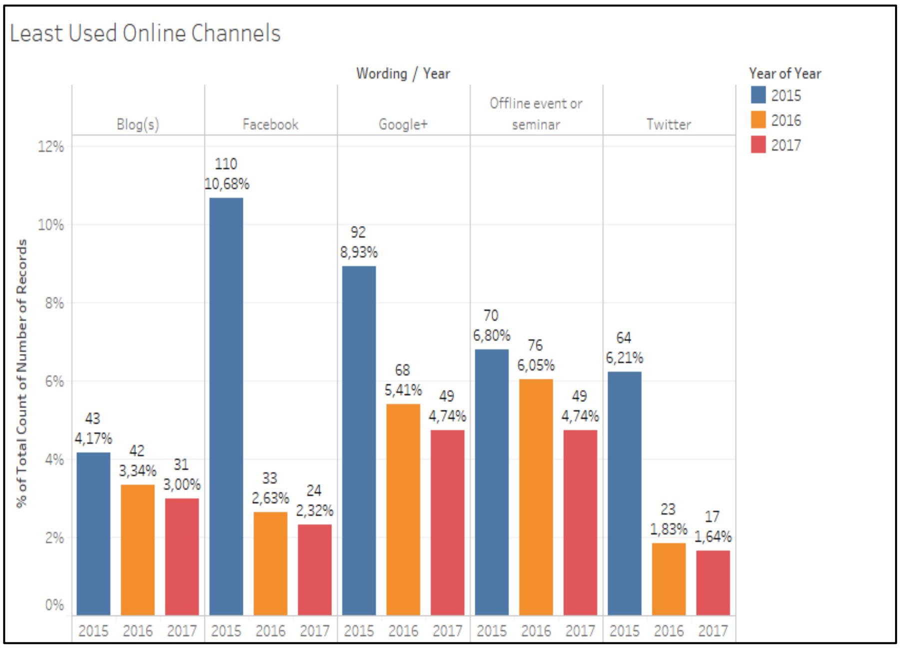

Figure 18: Least Used Online Channels

Next, the types of information sought will be analyzed. Figure 19 depicts that the information that buyers look for the most is information about the product and its price. Also, the share of these two types of information has grown since 2015, reaching 24% about product and 20% about pricing information in 2017. Moreover, the share of buyers who look for technology "how-to" has increased from 5% in 2015 to more than 10% in 2017. In contrast, the share of other types of information, such as peer reviews and best practice articles or videos has decreased.

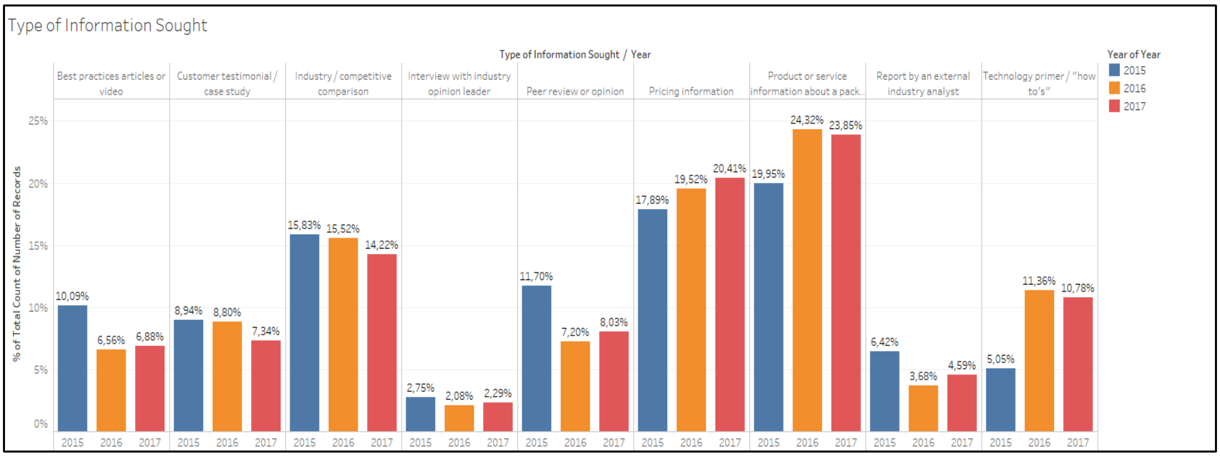

Figure 19: Type of Information Sought

4.2. Analysis

Even though the amount of packaging buyers, which use the Internet to aid their purchasing decision has increased, no significant differences can be observed in the buyers' profiles. To explain, they still look for the same type of products, the length of the process has remained unchanged, as well as the geographical proximity which buyers explore for possible packaging solutions. In addition, the size of the team and the roles that the respondents take in these teams are also not subject to change over the course of the last three years.

A probable reason for the high similarity in the buyer profile can be an overlap between the samples in the different years. In order to analyze whether the same participants took the survey in the consecutive years, a test of the IP addresses of the respondents was conducted. To explain, the IP addresses of all respondents who started the survey were investigated for overlap between the three years. The result was that only 7% - 86 respondents - of the people who started the survey (n=1229) in one of the years have participated more than once. This results in 93% unique responses in all three years, which means that the consistency in information is not caused by repeatability in the sample but rather depicts a clear picture of the state of the packaging industry.

Even though the data regarding the demographics and characteristics of the packaging buyers shows no changes, the frequency of the purchase varies though the surveys. To explain, the results from 2016 on the questions regarding the frequency of the purchase vary drastically from the 2015 and 2017 ones. A possible explanation for that can be the type of purchase that the buyers have made. Even though the percentage of respondents in 2016, who have purchased packaging machinery is in line with the 2015 and 2017 results, the number of respondents this year is almost double. In order to further analyze the inconsistency in the data, the frequency responses of the people that have purchased packaging equipment machinery has been looked into. The results show the share of machinery buyers who have recorded an infrequent and/or yearly rate of purchase is higher in 2016 – 66% when compared with around 53% in 2015 and 2017. Having in mind that the purchase of equipment and machinery is often connected with level of frequency, as well as higher capital, the variation in rate of purchasing and budget in 2016 can be explained by the larger number of people who have bought machinery. To add, even though detailed analysis of the budget is not included due to inconsistency in the data, the results are consistent with the explanation that more expensive purchases have been made in 2016.

In addition, slight changes can be observed in terms of where and how packaging buyers spend their time when looking for information online. In order to gain a better understanding of the trends in the buyers' online behavior, the findings from the surveys will be analyzed alongside the answers from the suppliers' interviews. Transcripts of these interviews can be found in Appendix 3.

When asked about the usage of the Internet, all suppliers that took part in this research agree to the statement that the number of customers, who use the Internet when purchasing a packaging solution has increased. They explain this with the vast technological advancements that make the Internet part of every person's daily life and its high level of utility when being applied to their business decisions.

In addition, suppliers were asked to comment on the observed trend that packaging buyers consistently use online tools mainly in the first stages of the buying process. Most suppliers argued that their customers use the Internet throughout the whole journey but with varying purposes. They agree that the accumulation of the data, which points at increased usage in the first stages can be caused due to the larger amount of time that is being spent online in the first stages; however, they disagree that is is being used less in the final stages. When asked about the online techniques that they use in order to support their customers in the final stages of the process, the common answers include different tools which aim at the prove of trust and reputation of their brand, as well as various call-to-action options, which inevitably would lead to a meeting with a sales representative. The information obtained from the suppliers corresponds with the research findings, which show that in the final stages of the buyer journey, packaging buyers use mainly supplier emails, which refer to the call-to-action options provided, and recommendations from their personal network, which can be interpreted as evaluating the supplier's trustworthiness.

Next, suppliers were asked about the amount of effort that they put in different types of online information in order to compare it with the most used tools by the customers. This question aimed at ensuring whether the effort that is invested by suppliers in a given online tool is indeed what customers are looking for when making a purchasing decision. As mentioned in 4.1., the type of information that customers seek the most is product and pricing information.

The interviewed suppliers do indeed understand the importance of product information and put effort in making it as clear and comprehensive as possible. In addition, depending on the type of product that is being offered, suppliers spend a lot of time not only in providing as much product information as needed but also stress on the importance of adapting it to their customers. To explain, companies that are involved in the supply of more technological packaging solutions stress on the importance of translating complex technological insights about their products into easy to understand and assess product information. This can also be interpreted as tailoring to the information towards buyer roles, such as Decider and Buyer rather than User and Influencer, which have more technical knowledge about the products.

With regard to the pricing information, most suppliers indicate that they do not offer such information online due to highly customizable nature of their products. In this way, there is a mismatch between the buyers' most sought information and the reluctance of suppliers to provide it. Still, the reason why suppliers do not provide such information online can be interpreted as another effort to sustain trustworthiness, where they refuse to share pricing information which can later vary and be taken by customers as misleading.

Furthermore, suppliers indicate an increasing amount of effort that is being put in other interactive online types of information, such as technological primers and "how-to" videos. In addition, packaging suppliers stress on the importance of gaining trust and credibility and discuss the increasing importance customer reviews which they receive after the end of their buyer journey. For this reason, they put a lot of effort into sustaining high levels of customer satisfaction and support their customers' ability to leave their opinions through various online platforms.

Following, suppliers were asked to comment on 15 different online information channels and assess them in terms of which ones do they use the most to connect with their buyers and which are the ones that are not being used. Here, the information gathered from suppliers corresponds with the survey results.

All of the suppliers point that the main channel they use is their website and Internet searches. Also, they have reported an increase in the information that they post on social media, which is mainly represented by LinkedIn. This information is also consistent with the literature review, which shows that these information channels are the most used ones for B2B engagement.

Furthermore, mixed feedback has been given on the use of offline events in order to connect with customers. According to one supplier, offline events such as trade shows are their main point of contact with their customers, whereas others indicate the decreasing importance of such events in their strategy. The reason for this decrease is pointed to be that suppliers aim at winning their customers in an earlier stage so that they do not feel the need to use such events in order to connect with suppliers. Also, these suppliers use trade shows and conferences only for visibility and gaining information about competitors, not necessarily to connect with their customers. Moreover, the least used information sources pointed by suppliers also correspond with the buyers' answers. In detail, Twitter is referred to as a channel which connects suppliers with the press more than the customers and Facebook is deemed as a not suitable platform for B2B connections.

Finally, suppliers were asked to comment on the overall smoothness of their buyers' process. Here, they have identified that the process is becoming smoother on their part and that they put a lot of effort in constant improvement. In detail, companies have mentioned various points of improvement, mainly connected with the adoption of various technologies in their processes, which ensure quick and easy contact with their customers. However, suppliers agree that the smoothness of the buyer's journey lies mainly in the internal processes that they have. Despite the efforts that they put into making sure that the customers have an easy and pleasant experience, it has been observed that the complexity of the internal processes increase, specifically in terms of decision making. Here, the results from the buyers do not match those of the suppliers. Even though suppliers have put a lot of effort into making sure the process is as smooth as possible, buyers consistently rate the process as somewhat average in smoothness with no indication of improvement throughout the observed time period.

To sum up, the results obtained from the buyers' survey mostly match the information given by the suppliers. In detail, packaging buyers' profiles remain unchanged in terms of the nature of the products sought. Also, the process' length and frequency show constant results through the observed time period. However, slight shifts are seen in the type and channel of online information that is being used to aid their purchasing process. In addition, suppliers are generally able to identify the main traits of the buyers' online behavior and put a lot of effort into making sure that they receive the right information on the right platforms. Still, the overall smoothness of the process remains unchanged, which is thought to be caused by the buyers' internal processes.

5. Conclusions and Recommendations

This research aimed at identifying trends in the online buying behavior of packaging buyers. In doing so, longitudinal trend analysis has been conducted. Furthermore, in order to explore the data, a visualization and analysis software, named Tableau, has been adopted. Then, the findings have been presented in three main groups for the purpose of gaining more insightful information about the packaging buyers' online behavior. Finally, the information was explored for tendencies and compared with results from a semi-structured interview with packaging suppliers.

5.1. Conclusions

First, conclusions regarding the demographics and characteristics of the packaging buyer and his purchase will be presented. Overall, the data shows that the packaging buyer has not changed in the period 2014-2017. In detail, the results are consistent in terms of the geographical location of the buyers, the size of their purchasing team, and the specific role that the respondents have in it. In addition, they look for the same type of product with the proportionally same frequency rate and a rather consistent budget size.

Next, the results of the examination of the buying process will be presented. In general, trends in the purchasing process show that, like the buyer's characteristics, their journey has not changed in the last three years. To explain, packaging buyers still use the same amount of online information in each stage of the process and the total duration is consistently the same. In addition, the overall smoothness of the process has remained unchanged as well, steadily pointing at an average level of smoothness.

Finally, areas in which changes in the online buying behavior can be observed are the online tools and channels that packaging buyers use to aid their purchasing process. These trends do not show shift in the main tools and channels that are being used but rather show increase in the intensity with which they are being employed. In detail, the most favored channels and types of information increase even further in relevance and the least used ones diminish even further in significance for the buyers' online buying process.

Overall, the findings point that no major changes have occurred in the online buying behavior of packaging buyers in the last three years. The reason for that may be due to the low level of flexibility which is generally associated with B2B purchasing decisions at large, multinational companies. In addition, the complexity of the process alongside the size of the buying team may be linked to the reason why the purchasing process has not improved in terms of smoothness in the last three years. In addition, the efforts of suppliers to improve the quality and efficiency of the buying process for their customers has not achieved its goal or at least has not been noted by the buyers.

5.2. Recommendations for Further Research

This study has provided the first longitudinal information on the topic of online buying behavior of buyers in the packaging industry. In doing so, it has presented an opportunity for additional research which can further add to the time frame by collecting the same type of data in the following years.

In addition, this research has identified that despite the efforts of packaging suppliers to improve their customers' buying process, no such improvement has been registered. For this reason, future research could look into the specific steps that suppliers have taken, and the reasons why have they not improved the buyers' purchasing experience.

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