

**The interaction
between Italian
Generation X and
Amazon Alexa: a
netnography
research**

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ALEXA - Which type of community engagement and online interaction exist between Alexa and the Italian Generation X?

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1. Introduction

In this work we try to understand how the level of engagement and interaction that the Italian Generation X creates with Alexa, an artificial intelligence system based on a cloud that comes in the form of voice assistant.

Alexa is a software that can be integrated into Amazon's speakers and other smart devices that, interpreting the natural language, can interact with humans. The concept of voice assistant began its diffusion in 2014 thanks to Google's "Hey Google" and Apple's "Siri", aimed to make the management of individuals' commitments easier. These voice assistants were made exclusively for the use of smartphones and other mobile devices. The innovation that Amazon brought with Alexa stands in its possibility to connect more devices controlled by Virtual Personal Assistants, instead of just smartphones and tablets.

Echo – the device that was created to support Alexa – was not successful at the beginning. By the time, taking advantage of some feedback and especially the needs of buyers, Amazon has started managing different improvements to make it a smarter voice assistant. Amazon also decided to work with great care on the connection of Alexa to the web: the voice assistant was then upgraded, in order to then quickly find the answer that had to be given to the user, avoiding time-consuming and, above all, ineffective search results.

Over time, Alexa has been greatly improved, with several additions that prevent the voice assistant from becoming obsolete or being replaced by others made with new functions and with greater attention to detail. Today, this tool is mainly used by young people (Generation Z). The Generation X, instead, is divided into two segments: some are in favour of the purchase of this instrument according to its benefits, and others are reluctant to purchase it because they consider it as a violation of their privacy and intimacy.

Our research, therefore, aims to investigate the type of relationship and engagement that Alexa creates in the target audience, Italian Generation X, considering the different opinions about its use. To investigate this topic, the netnographic methodology developed by Kozinets has been used in order to carry out quality marketing research. To support our research, we will start presenting a framework analysis based on general theories and academic papers, useful to develop a general idea about the phenomena we will analyse. Then, after having create a theoretical framework, we will start our analysis, in order to understand specifically, how the Italian generation X responds to this device.

2. Theoretical Framework

2.1 Why Alexa and why Generation X

Amazon Alexa, also known simply as Alexa, is a virtual assistant AI technology developed by Amazon that is able to interpret natural language and interact with people. All its functions (skills) are activated by vocal commands and the most common are, for example, play music, set alarms, providing real-time information about different topics like the weather, traffic, sport, news, but the device has many more capabilities thanks to the opportunity given to the owner of the device to install their own "skills". It can also be used to control other owned "smart" devices, like kitchen robots, smart television, lamps and so on. The device is activated by using a wake-up word, that usually is "Alexa", and after the activation is possible to proceed with the request.

This technology fits perfectly into what is the panorama of the Fourth Industrial Revolution since it is centred on the interpenetration between the physical and digital world. In fact, among the technologies that determine it as such, we can notice precisely artificial intelligence (AI), the blockchain – a technology based on the decentralization of data and transparency in the registration phase –, the IoT (Internet of Things), that is a neologism referring to the extension of the Internet to the world of concrete objects and place, and many other

technologies. In fact, we can see how Alexa's technology is actually part of more technologies of the Fourth Industrial Revolution, making it a very interesting research element.

For our research, we decided to analyse some general interactions between this device and different target audience in different place of the world and study their perception of Alexa and which are the common aspects that we could notice from the analysis of these academic papers and research. Then the aim of our research is to verify whether these aspects and this perception of the device are common even in a very specific target and geographical area of our choice: The Generation X in Italy.

Generation X means those born between the second half of the 1960s and the early 1980s, i.e., those who in 2020 are between 40 and 55 years old. Still mostly protagonists of the world of work, they have a strong purchasing power, and, for this reason, they appear to be an interesting target. As anticipated in the introduction, we often tend to think that young people are the only ones interested in technology and its implementation in everyday life.

With our analysis, and subsequently with our research, we want to verify if this statement is correct and what the perception of our target really is towards Alexa.

2.2 The user's interaction with Alexa

As we said before, Alexa has been enhanced with the intent of quickly providing the information requested by the user and providing potentially useful search results. Between the different aspects we decided to analyse, there is the way people communicate with the device in order to receive those results. However, our research has shown how often this does not happen due to communication breakdowns during the interaction with the device.

A research has been made in America, in which 10 diverse families, that never owned a digital home assistant, have been recruited to use an Amazon Echo Dot in their homes for four weeks. These families had at least one child between 4 and 17 years old and different cultural backgrounds. The analysis of their conversations with the VPA (Virtual Personal Assistant) or IPA (Intelligent Personal Assistant) and the interviews that followed the experiment, showed as sometimes there have been understanding problem from the VPA, for example: performing an action or providing a response based on misheard or misunderstood input, providing an indication that the communication partner's interaction was unclear, or providing specific information to request clarification.

In this experiment it was also analysed how the user's modified its behaviour during the communication in order to facilitate the understanding of the request by the device, even asking for the assistance of other family members, and how often even this technique does not has brought the desired result, underlining how requests that are too accurate or a language that is too colloquial and typical the spoken language, with intersperses, filler words and pauses, are incomprehensible in a human-to-technology communication.

Often, the cause of these misunderstandings with Alexa are due to the personification that we tend to make of the device, as can be seen in the next paragraph.

Alexa is described as a "Intelligent Virtual Assistant", with human-like characteristics, such as its voice. During the daily life of individuals, this device can help for simple activities but also can represent a friend, companion, or colleague. This aspect could be recognized also for the attachment of people to it. Therefore, they act and interact personifying it, calling it with the name "Alexa", saying "thank you" and "goodbye", as it would be a human being.

In this regard, a research demonstrates about the relation between users and the device, also with a field research and a qualitative study. One of the reasons of the personification of objects or animals is the loneliness of the subject, because it helps them to decrease this feeling. In particular, the case of Alexa's personification is related to the increased level of satisfaction.

Based on the research conducted in the paper, only seven out of nineteen participants personified Alexa during their interactions. Two adult people of them, characterized a higher level of personification than others. They

also found out that this behavior is not due to a more frequent and longer period of use or to new users. The remaining interviewed referred to the VPA in a superficial and distant way.

In addition, a recent study shows that people living in company and with more people tend to personify this object more than people living alone. Exactly this theory is also confirmed in another study, which consists in the analysis the reviews of Amazon Alexa, and investigate the relationship between personification and satisfaction. These two are related and the less satisfaction the less the user will be kind and loving, as if it was his best friend.

To better analyse the interaction between people and Alexa, we took into consideration mainly two researches.

The first one affirmed that sometimes people tend to interact with technologies like they interact with people, even if they are aware of the fact that they are talking to an inanimate device, also applying politeness norms after the interaction.

Also, sometimes because of the personification we have been talking so far, people integrate Alexa in their social life and interact with it accordingly, also because it owns a name, a gender and some elements that can be identify as part of its personality. For these reasons, the interactions vary also based on the context they happen to occur, for example people who are more engaged in the personification of the device usually have more sociable interactions with it, especially families with children in them. It remains to be seen whether personification affects user interactions and satisfaction with use or whether these two factors affect the personification and anthropomorphism of the device.

The second study talks about para-social interactions (PSI) with Alexa play a big and positive role, once again, in term of users' satisfaction. The results of this survey happened to agree with Han and Yang's (2018) ones. "In their research, para-social relationships increased satisfaction with consumers' IPA use. It can be assumed that when users perceive the VPA as a social being more strongly, they receive stronger satisfaction from the interaction experience. Audio modality can fully generate a sense of humanness" (Jung, 2020, p.132).

As we could notice from these papers, communication with the device, its personification, and the human-to-technology interactions are all important aspects for the positive perception of Alexa and users' satisfaction after its use, but they are all factors that can change easily based on context and personal experiences.

But there is an aspect that should be more objective and less subjective, which it is the one related to the privacy and security of the device and could be also a weakness for these devices. In the last few years, people interest in the preservation of their privacy online and offline has increased exponentially and this aspect cannot be ignored when we talk of devices that are always connected to internet and are positioned primarily in our homes.

These VPAs (Virtual Personal Assistant), being inserted as in domestic family contexts and being endowed with Artificial Intelligence, arouse fear and suspicion among individuals. Another important point is how easily these devices can be hacked and a threatening source of home security attacks, since they need Wi-Fi/Internet connections to work. The authors report that even if most of the networks are encrypted, not all the information that passes through them are sent to secure protocol. Also, devices like Alexa don't always record voice, but they listen 24/7. And it is for this reason that a malicious attacker or hacker can enter the device through the network and assist as a virtual spy.

Until now, we have been able to explore the use of Alexa and many aspects related to it, but the target was very large, taking into consideration families with children but also young adults in their thirties. We also notice how, in the end, the larger use of technologies seems actually to be usually made by the latest and how the interaction change based on the target, but we could not find any academic papers about the use of VPAs by our generation of interest: Generation X. Even if there are not official research on this specific target, we have found many articles about this interaction that can be useful as our starting point. A research made by eMarketer shows how in US the number of Gen Xers that use smart voice speaker is increasing and it states

that while Millennials are more prone in using on the go smart assistant also in public, Generation X prefer using it on specific smart-home device like Amazon Echo, Google Home etc.

For what concern demographics, a lot of Gen Xers that use these devices are parents and most of them are women. With the number of Gen Xers who use smart devices, also the number of industries that are implementing this technology in their strategy is increasing (i.e., food companies, financial services, healthcare and medical services, etc.). Furthermore, this generation is in fact the ideal target for Artificial Intelligence devices and voice-based technologies, since it is easier to use and, again, a good companion. We can say that Alexa is perceived as a trusted friend whom people can ask question, get advice from, and get help with everyday tasks, with minimal effort but still maintaining their independence. Also, “according to Edison Research and NPR, 46% of smart speaker users are 45 or older” (White, 2019) and even if the cases of use are different, the interest versus this technology exist and it is real.

In the end, the use of voice-command is the future, as we could see in the report made by PwC, a global network of firms delivering world-class assurance, tax, and consulting services for businesses. In a report published and downloadable from their American website, we could also notice how the results of the survey indicate that even if the young generation are the driven force in the adoption of this technology, its heavier users are their older counterpart, confirming what have been said so far. That been said, we are now ready to conduct a more qualitative analysis on this particular target and to localize it in the geographic area of our interest, Italy.

3. Description of the methodology

As anticipated in the introduction, this research will make use of the netnographic methodology developed by Kozinets. Netnography generally utilizes an *inductive approach* using qualitative data collection and analysis, therefore we decided to use this method that allows us to identify abstract concepts, to investigate a small amount of people and thus collecting a large number of behavioural details on a small sample of users.

We would not have achieved this with quantitative research which collects numerical data by investigating many people submitting questionnaires mainly based on multiple answers. Since people can discuss online about their tastes, needs, preferences, the meanings they attribute to products and the uses they make of them, netnography can analyse these communications and derive important insights from them.

In our research we will initially analyse posts (through a *non-participant observation*) among three different Italian Facebook groups dedicated to Alexa to study the conversations, the most recurring themes, and the type of opinions (*sentiment analysis*) of those who already own the product in question. The choice of using Facebook as a research field is linked to the fact that on this platform it is possible to obtain public data relating to some people, and then determine if they are part of the target of interest (Gen X). Since netnography is a method that also makes use of different tools such as images and texts, some screenshots of the analysed comments and tables containing the most important comments will also be presented.

Subsequently, we will carry out the same analysis also on the Facebook community outside groups through keywords to also study the perception and considerations of those who have not yet purchased Alexa, and who use the platform to express their opinion about it.

In this case we will limit ourselves to the analysis of the content since, when it comes to analysis using keywords or hashtags, there is the risk of carrying out a quantitative analysis by mentioning the frequency of use of that keyword / hashtag (Caliandro and Gandini, 2017).

Finally, a semi-structured interview will be carried out aimed at sentiment analysis. The interview is aimed at analysing how people of the Italian Generation X perceive and see Artificial Intelligence and, in particular, Amazon's Alexa.

We selected a small sample of 8 people (aged 40-55, of whom 4 women and 4 men, 4 parents and 4 non-parents) and interviewed them throughout phone and video calls, following the same scheme. The choice of the single small community is due to the fact that it is a short qualitative research. The methods used in this study are explored in more depth in the following paragraph.

4. Data collection and analysis

4.1 Analysis of Facebook groups

It is important to underline the existence of a Facebook page, called Amazon Alexa which is only dedicated to the product. In this page, there are posts published by Alexa herself.

We decided not to analyse this page for different reasons. The main reason was the fact that the page is only in English and our target is not willing to use English pages because of the language barrier.

We also noticed that there is not an official Alexa source for the Italian Market.

In order to better understand the relationship between Alexa and our target we decided to make a non-participant observation among three different Italian Facebook groups:

- *Amazon Alexa Italia* → a group of 6.000 members in which it is possible to find a place where you can learn how to use the voice assistant by staying updated on the latest news.
- *Amazon Alexa / Echo Italia* → a group of 15.000 members in which it is possible to talk about everything members want regarding technology and Amazon Alexa's world.
- *Domotica Amazon Italia (Alexa Echo)* → a group of 6.000 members in which it is possible to discuss about Alexa and all of the products related to demotics.

Post analysis: The majority of posts we can find in this group are made by people who have doubts and want suggestions regarding Alexa's skills and how to set them but also regarding what product should they buy to make their houses "smarter" and more connected to their Echo. By making a deeper analysis we can divide the posts in several major topics:

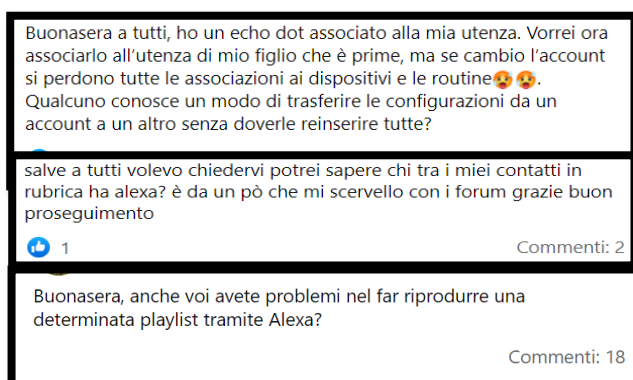
- Basic questions such as how to activate a music playlist via Alexa.
- Advanced questions related to Alexa and the application of smart homes products.
- Photos of the new item purchased by a group member.
- Complaints about technical problems.
- Articles about Alexa's latest news.

As we can see by the following examples, there is also the users' willingness of sharing their new purchases in order to convince others and show how they use it inside their houses.

Sentiment analysis: By making a deeper analysis, by using a *manual approach*, rather than dictionary or corpus based one (Amy Van Looy, 2015), we can see how all these groups are managed by an administrator that defines rules related to users' behavior, that must be respected in order to remain inside the group. The language used by members is very basic, simple, and easy to understand with the main aim of helping each other and exchanging information about Alexa.

Some users, belonged to Generation X, are beginners for what concern the usage of this kind of technology but thanks to the fact that this group is also made younger generations, they can get help in solving their doubts and feel part of the Alexa's community.

Despite some casual complaints about technical problems, it is clear to see how nobody had regrets about buying Alexa and they all have a positive view about it.





We can see that in none of these groups there is the presence of an official representative of Amazon. Indeed, the people created on their own communities where they can share thoughts, opinions and problem to one another.

In this case, the object itself created a community around it, without the help of the company, creating interactions between Alexa owners.

The main aim is to learn more about the virtual assistant and to share knowledge.

We can see that it is a very useful source for the Generation X because they can find answer easily by people that know more about Alexa.

The sense of community around Alexa is very strong.

4.2 Analysis of the Facebook community outside groups

After analyzing the Facebook groups and the behavior of the target concerning this topic, we decided to analyze the Facebook community outside these groups.

We chose to analyze it because we wanted to have a look on the behavior of Generation X, who do not have Alexa, and how people talk about it, in order to understand what they think about this technological device.

The analysis started by inserting in the search bar the keywords Alexa, Alexa Amazon, Echo Alexa, and Echo Amazon. Even if the keywords used may seem as large in number, they all refer to the same product.

The product, in clients' mind, is always linked and well positioned to the company that produce it, such as Amazon and Echo which is the name related to the physical object that contains the most famous virtual assistant.

We started by inserting the keywords on the search bar, then we limited geographically our research to better identify Italian users.

Within the first results, we can see different posts and comments published by Italian users.

After doing it, we saw different posts and comments about Alexa, on personal profile pages (that are of course public), comments on the Amazon advertisement of Echo, and comments under different articles about Alexa and its features.

We after analyzed profile by profile, to better extrapolate information about the person who published a specific comment, in order to affirm if this one was part of the target took into consideration.

Differently from the groups, where there was a continuous learning and support from each other to know better the usage of Alexa, outside of this little clusters, the comments are very different and various.

However, many of the comments have a negative, neutral, and positive tone and sometimes they are very polemical toward this technology.

In the following table, is possible to find a synthesis of the most important comments related to a specific topic:

General information about the product	"Buongiorno vorrei sapere il prezzo dei vari modelli di alexia" "Buongiorno io la volevo comprare mi potete dire in quali negozi si può trovare grazie"
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Interest on the features of the product	“Molto interessante” “Alexa è una donna o un uomo? Collegato all'intelligenza artificiale?”
Unsatisfied customers	“Dove butto Alexa???” “Ms non dovevano durare una vita è la solita fregatura” “Non serve a niente. Non compratelo” “Devi anche avere i dispositivi da connettere”
Alexa and personal relations	“Menomale che c'è Alexa a tenermi compagnia” “Alexa, musica! [...] ... eh già... finalmente qualcuno che ti ascolta” “Quando nemmeno Alexa ti ascolta” “Natale con Alexa” “Menomale che c'è Alexa”
Privacy and security	“Quando chiedete (un comando) ad Alexa [...] della privacy ve ne sbattete altamente.” “Alexa ci ascolta” “Chissa perché ogni volta che parlo di un prodotto vicino ad Alexa [...] dopo mi esce la pubblicità sul cellulare”
Usage of Alexa and satisfaction	Mostly videos on how to use it “Alexa, metti la musica”

After analyzing more than 300 comments and posts on the Facebook community we decided to quantify build a visual chart to understand which was most discussed macro – areas for the target.

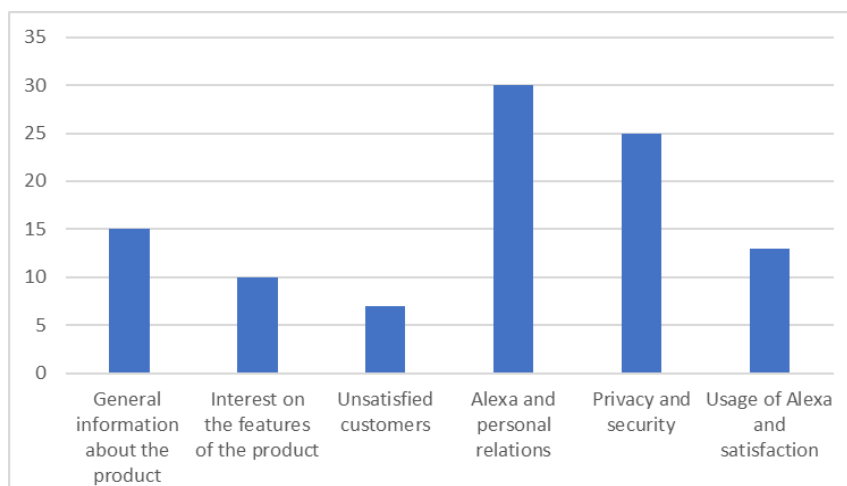


Figure 1. The following chart has been made by us and the values are in percentage, based on the results obtained from the research phase.

❖ *Alexa as an unknown/not well-known product*

As we could notice from our research, Alexa is still not well known from the public.

Indeed, some people from Generation X still do not know everything about this product. They still need to know where to buy it, even if the product is famous worldwide.

Moreover, some of them are not sure on how the product works, in terms of technologies used and features, even if they show a positive attitude.

From this, we can assume that many of the people of the target that buy the product are not fully aware of the potentiality of the usage of the tool which is Alexa.

The larger part of these comment was found on the official Amazon Facebook Page and many of them receive a direct answer from the company that led them to the Amazon shop or the website that explains the features of Alexa

Finally, we can say that for this macro are, the sentiment towards Alexa is neutral.

❖ *Satisfaction and unsatisfaction*

We saw also how people use the social media to express their personal opinion on the product.

As we saw on the previous chart, the number of users satisfied or that uses Alexa is higher than the unsatisfied one. We think that this is due to the fact that the unsatisfied customer does not know the product. In addition, unsatisfied customers that wrote negative comments were supported by other clients that had the same bad experience.

Moreover, we saw that the people of the Gen X that use Alexa, use the device for basic actions: such as “Alexa, play the music” or for fun actions.

An important aspect is that, also in this case, people are not supported by the company and they create their own interactions depending on the sentiment they feel towards Alexa.

❖ *Personal relations and privacy*

One important aspect was that the Generation X consider Alexa as a *person*.

Indeed, the way they talk to her or about her, (As we saw in some video made and published in Gen X profiles), make us understand the creation of a personal attachment and the creation of relation between the AI and the person. They are now considering Alexa as a part of their personal life and not as a tool to make your life easier. On the other hand, many people from the Gen X are concerned about the privacy. By reading comments on articles and different posts, we can see how people feel *violated* in their privacy. Some of them feels like Alexa is basically listening to their conversation and use the data they collect to start aggressive customized – marketing actions.

In addition, we can also find some conspiracy theories, mostly on how they want to control our life since we connect all our devices in one. The main question they ask is “where my data will go”.

Finally, we can say that talking about Alexa, sometimes is more about a personal status perspective, to show the people that you have Alexa and once again, the company is not assuring the people about the data they collect, leading to a negative sentiment too because people try to find the answer

4.3 Interviews’ analysis

We chose to conduct semi-structured interviews to investigate how the Italian Generation X perceive and see the Artificial Intelligence and, in particular, Amazon’s Alexa.

We selected 8 people from different backgrounds and interviewed them throughout phone and video calls, following the same scheme. The draft has been articulated in five sections:

- I. Personal details (age, profession, family composition) and Internet’s usage habits.
- II. Knowledge and familiarity to the concept of AI.
- III. Knowledge and familiarity with Alexa.
- IV. Necessity perception of Alexa.
- V. Sentiments towards Alexa (pros and cons).

Knowing the limits of this method, the collected data cannot be considered as representative of the entire population. However, they can be useful to understand recurrent opinions and attitudes towards this technology. The following paragraphs describe what emerged from the research.

I. Personal details and Internet’s usage habits

The examined sample is composed by 8 Italian people aged 40-55, of whom 4 women and 4 men, 4 parents and 4 non-parents.

The totality of the respondents uses Internet daily, the majority for both working and leisure reasons and the remaining part for just professional aims. The most diffused device is the smartphone, followed by the personal computer.

II. Knowledge and familiarity with AI

The idea of Artificial Intelligence is not familiar to most of the sample, even though each of the interviewed affirmed to have heard about it at least once (from word-to-mouth or information media). Most of the people were not able to define the functionality of Artificial Intelligence and neither to recognize its impact on their daily life but expressed their interest in knowing more about this topic.

III. Knowledge and familiarity with Alexa

All the respondents know Alexa and has an idea of its functions; the most mentioned sources of information about it are TV commercials, social media advertisements and word-to-mouth. Almost the half of the sample owns an Echo device, and, from the analysis of the answers, it has been detected that respondents with children are more inclined to develop an interest toward Alexa.

IV. Perception of necessity about Alexa

People who own Alexa explained their purchase by saying that solicited by the trend, they were curious to try this innovative technology that “makes things easier” and “works in their place”. However, when it came to discuss which Alexa’s features do, they exploit, almost all of them affirmed that they only know and use a few functionality (such as to play music, to switch on and off the lights and some other small tasks).

On the other side, the interviewed who do not own Alexa didn’t show the feeling of necessity or curiosity towards it. Two are the main reasons highlighted by these people: the lack of detailed knowledge about the functionalities and the perception of the tool as “useless”.

V. Sentiment analysis about Alexa

The general sentiment towards Alexa expressed by the sample is positive: clearly, some people are more enthusiast and interested about this technology than others, but no one has a bad perception of it. The most mentioned pros about Alexa are the ability to speed up small activities in the house and to create entertainment throughout its voice-command system. On the contrary, the most recurrent cons are the fact that it doesn’t play a significant change in everyday life, and so it is not considered “very useful”, and the fact that, as an innovative tool, it is not clear with which extent does it violate users’ privacy.

5. Conclusion

The topic of this work was to study the level of involvement and interaction between a specific target (Generation X) and the artificial intelligence system known as "Alexa".

Being a device that records and interacts with people, it can easily be a sort of solution for some aspects but also a problem (in particular ethical) for others.

For this reason, several cases have been analysed to study the different relationships with the instrument.

It turned out that some have modified their way of communicating to facilitate Alexa and avoid misunderstandings, which, in turn, are the result of the excessive personification of the instrument. In particular, those who live in company tend to make Alexa part of their lives, mainly influenced by the fact that, unlike many other devices, it has a voice, a name and an associated gender.

As already mentioned, such devices also have negative aspects including the problem of privacy and how easily these devices can be hacked and therefore result in security related issues.

Taking these aspects into consideration, we have chosen a target (Gen X) which tendentially is more critical towards similar technologies. Research has shown us that the general number of Alexa users among Gen X is growing, and in this research, we wanted to study the phenomenon in a specific geographic area, namely Italy. We have noticed that even in Italy, among users who own Alexa, there is a high interest in knowing the various functions of the device and in sharing information with others. The experience among those who use Alexa was positive and the various problems that exist are also solved thanks to the community they created. On the other hand, analysing the target outside the community, we found that there are many doubts about the functions of the device, the problems related to its use and where to buy it, both from those who do not have a positive vision and those who are interested.

The sentiment analysis was therefore neutral, and this neutrality and lack of knowledge leads many people to buy the device without knowing exactly how it works. The latter are precisely those who are among the few dissatisfied users.

For these reasons, it would be better for the company to enhance the communication for what concern Alexa, creating a reference point for everything that concerns it.

This could be essential for the company to attract more customers and to control, in a way, the information about Alexa. Moreover, by creating a unique community for the Italian Gen X, they could also better

understand which are the needs and the sentiments the target feels about it, in order to practice better marketing actions.

The last phase of the analysis (interview) allowed us to further confirm these results such as the fact that the low interest level of curiosity towards the device is linked to the scarce knowledge on the functionality of Alexa. In addition, it emerged that those who use Alexa the most are people with children, but without exploiting all of its functions and themselves to using just the basic ones.

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