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The effectiveness of AI-powered voice feedback system on customer satisfaction in the hospitality sector
Case: SAYT Tech

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ABSTRACT

The hospitality sector is well aware of the critical issue of effectively collecting and using customer feedback to improve overall customer satisfaction. This study addresses the problem of ineffective feedback methods in the hospitality sector by examining the effectiveness of an artificial intelligence-based voice feedback system on customer satisfaction.

The main aim of this study is to evaluate the impact of artificial intelligence powered voice feedback in the hospitality sector. The commission company SAYT Tech specializes in providing artificial intelligence powered voice feedback system to the hospitality sector, offering more efficient feedback collection.

Using a mixed-methods approach combining both qualitative and quantitative methods, this study aims to provide a comprehensive understanding of how AI-powered voice feedback systems can revolutionize the concept of hospitality feedback collection and use. Online interviews were collected from representatives of businesses where a voice feedback system has been implemented. An online questionnaire was collected from end users of this voice feedback system. The initial data were analyzed by content analysis. Books, blogs, articles, etc. were the secondary data for this thesis.

Overall, the results showed a predominantly positive direction, supporting the purpose of this research work. Interviewees were overwhelmingly satisfied with the AI-based voice feedback, and interviewees who have some experience in the hospitality sector responded positively to the implemented system.

Keywords: AI-powered voice feedback, hospitality sector, customer satisfaction, traditional feedback

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1 INTRODUCTION

1.1 Background

The hospitality industry is a vast and competitive environment where it is important to be able to stand out and survive in the sector. In this context, customer satisfaction plays an extremely important role in order to be able to survive in the industry in the long term. Satisfied customers are, first of all, the key to long-term relationships, a good reputation and brand image (Buttle & Maklan 2015, 3-5). Therefore, the hospitality industry invests in understanding and meeting customer expectations, as well as understanding the points in the business process that can/should be improved for better results.

However, there are a variety of problems that the hospitality industry faces day in and day out. These problems may be different preferences and requirements of clients with their expectations, which change during their stay in the chosen place. (Nain 2018, 1-2.) Traditional methods of collecting customer feedback to understand how their expectations and experiences compare with reality are not always effective. Surveys and comment cards can be a time-consuming process for clients. Therefore, the problem in this research is the ineffectiveness of "traditional" feedback methods, which slows down and stops to some extent the business development processes for customer satisfaction in the hospitality industry.

Technological breakthroughs/development have enabled innovative ways to collect customer feedback. Simplification and ease are a definite priority in everyday life. With these thoughts, the commission company SAYT burst into the market with technology to simplify some processes, and specifically, collecting reviews and sending them to business managers in the hospitality industry. The commission company SAYT (Sayt.live 2023) was founded in 2021 in London and has several companies that they work with at this time. The commission company currently operates only in the regions closest to London, having a client base of 15 different companies that represent the hospitality industry. 15 companies include various hotels, restaurants, cafes, bars, and conference venues. The

company is targeting the hospitality industry for this period of time, developing, and marketing its product to this industry, trying to integrate and establish itself. Confidence in the effectiveness of the artificial intelligence-based voice feedback system encourages expansion, but the company, which was formed quite recently, has goals to establish a reputation for effectiveness in those companies with which they already work. The main team consists mainly of developers who have education in 3D design, data engineer, natural language processing, hardware design. Of course, there are also hospitality consultant, marketing and management department, IT advisor, etc.

If we talk about the algorithm of operation of this voice feedback system, then the functionality of this technology has its own sequence. First, the end user scans a QR code, after which a tab opens with the ability to record a voice review. Second, after the voice feedback is recorded, the artificial intelligence on which the entire system is based translates the text into English (if necessary), translates speech into text, sentiment analysis, and recognizes the emotion of speech. Third and final, written feedback is automatically sent to the hospitality business manager or several workers, depending on how the company operates. The company views its service as a convenience platform to facilitate the work of hospitality industry employees in order to support businesses.

VOICE FEEDBACK

Customers press the button and give voice feedback. Easy, fast, no registration, no app installation
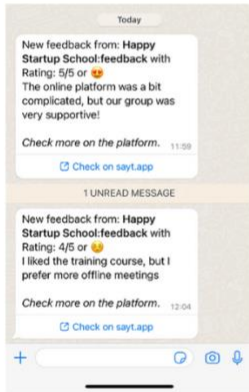
INSIGHTS

You get insights immediately

ANALYSIS

You get reports with analysis and insights.

Figure 1. The workflow of voice feedback system (Sayt.live)

1.2   Development settings

This thesis work examined a new method for collecting feedback, comparing "traditional" feedback methods and artificial intelligence-based voice feedback systems. This study focused on the effectiveness of AI-based voice feedback on customer satisfaction rather than its application in the hospitality industry. Therefore, the research question is "How effective is AI-powered voice feedback for customer satisfaction in the hospitality industry?"

The main aim of the research is to evaluate the effectiveness of artificial intelligence powered voice feedback on customer satisfaction in the hospitality industry. To achieve the aim of the research, the objectives will be as follows: (1) identify key components of artificial intelligence-based voice feedback, (2) collect performance data in hotels where voice feedback based on artificial intelligence has already been implemented, (3) analyze data to determine effectiveness, (4) find out the preferences of people, that is, end users of the system, in the feedback process.

The need for this research was born during an acquaintance with the company in order to undergo an internship, which did not work out for other reasons, but motivated and inspired the desire to work with the commission company in the form of a research work that is interesting both to the founder of the company and to the authors of the diploma.

1.3   Research methods

Mixed method was chosen for this research work. Quoting the words of Tashakkori and Creswell (2007, 4), Mixed Methods uses qualitative and quantitative methods in the same research work, collecting and analyzing the information collected. Considering Figure 2, which is mentioned in Doyle, Brady and Byrne (2014, 179–180), the mixed method type has 3 main issues where time perspective, priority and place are determined. The time perspective chosen for this study was concurrent, where quantitative and qualitative data occur simultaneously. The priority, or rather the weight of significance, is the same for

the study, because the collected data from two methods, quantitative and qualitative, have equal significance. Since this is concurrent, the data is combined and combined into a single meaning.
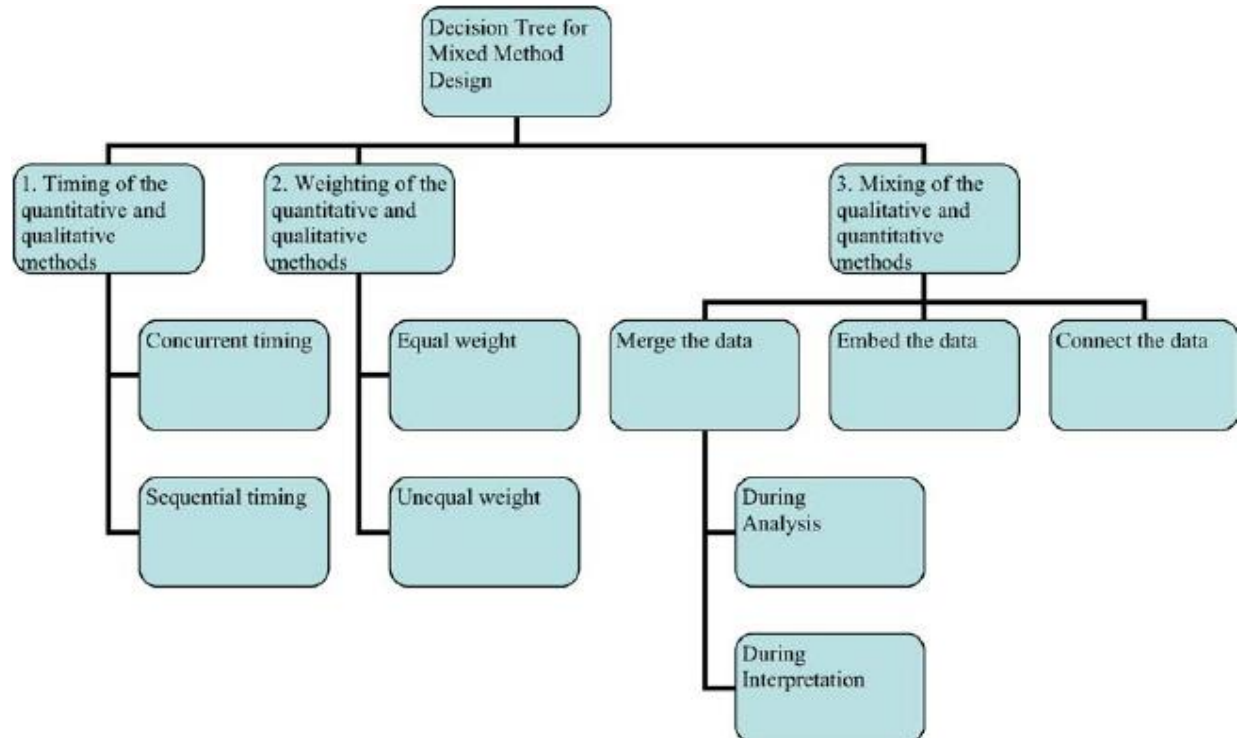
Figure 2. Decision Tree for Mixed Method (Doyle, Brady and Byrne 2014, 179–180)

For the qualitative method, we chose to conduct interviews with companies that had already implemented an artificial intelligence-based voice feedback system in order to answer the main question of this study. Eight interviews were collected with representatives of companies in which the voice feedback system was implemented. Interviews were conducted from mid-September to mid-October. Interviews are an ideal method in qualitative research, where the emphasis is on experiences and ideas rather than numbers. The interview reveals the attitudes and opinions of the interviewees, as well as their behavior patterns. (Ugwu & Eze Val 2023, 26.)

The quantitative method was carried out by compiling a questionnaire for end users who have used or are familiar with voice feedback in those companies in which this system has been implemented. There were questionnaires with 43

responses from end users, that is, clients of the companies with whom the interviews were conducted. The questionnaire was administered while the authors of this work were conducting interviews. A questionnaire is a collection of information that is carried out systematically to understand and predict aspects of the behavior of the respondents (Haradhan 2020, 15).

To analyze quantitative and qualitative methods, content analysis was chosen, which can be carried out for two methods at once. Qualitative content analysis focuses on the content of the method being carried out, while quantitative content analysis comes from numerical data (Hall, n.d., 8). In terms of content analysis itself, based on the work of Showkat and Parveen (2017, 5), it is a frequently used method for analysis and consists of translating discrete information into a more organized format that allows conclusions to be drawn at the end for research work.

The interviews and questionnaire were conducted online before the start of writing this thesis, since communication with the commission company and the emergence of the goal of writing a study on this topic appeared in the spring of 2023. In September 2023, the authors of this work began conducting interviews and questionnaires. The interviewees represent various businesses in the hospitality industry that have implemented a voice feedback system and can provide their experiences, assessments, and comparisons. At the time of agreeing on the timing of interviews with different companies, it was also agreed that the companies would ask their customers, who are the end users of voice feedback, to complete a questionnaire.

1.4   Theoretical framework and limitations

This work consists of 5 parts, where the theoretical part is divided into two parts. The first part consists of the background and the commission of the company, as well as an introduction to the entire thesis and limitations. The second part is a theoretical underpinning, which was divided into two broad topics: customer satisfaction in the hospitality industry (1), which covers traditional feedback methods and artificial intelligence in the hospitality industry (2), which also

contains information on voice feedback systems and similar systems, which are not direct competitors, but have similarities. The third and fourth parts talk about the practical part of the research work, which includes the methods used for the research, the results and conclusions based on the answers received. The last part is conclusive, focusing on the recommendations for the commission company and the value of the work.
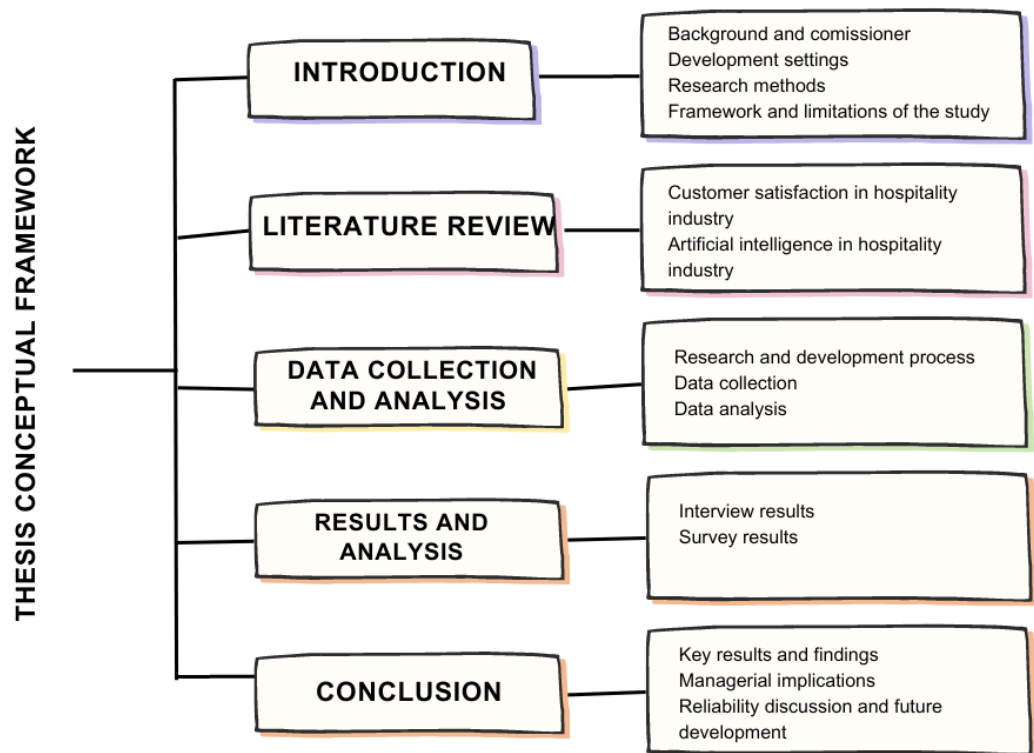

Figure 3. Thesis conceptual framework

Pursuing the goal of evaluating the effectiveness of artificial intelligence-based voice feedback for customer satisfaction in the hospitality industry, the theoretical part has a variety of sources, but the exact information about this technology of the commission company was not found since it is a new system that was created by SAYT Tech. This study has its own logical sequence, which begins with the designation of the hospitality industry and the importance of customer satisfaction. According to previous studies, the hospitality industry has a broad meaning (Strigam & Partlow 2015), includes a variety of activities within the

industry (Chibili 2017), and distinguishes itself from other industries by being half service and half product. However, any organization in the hospitality industry, and indeed in any industry in general, exists thanks to their customers, which emphasizes their importance of satisfaction with the service or product (Kotler 2001 cited in Aboye 2021.) Hartini and Mahmoud (2014) identified the concept of customer satisfaction in their book, while Hill, N, Brierley, J, & MacDougall, R. (2003) identified the problem that the way feedback is received and measured is ineffective. To understand the effectiveness of artificial intelligence-based voice feedback technology, it was decided to academically strengthen "traditional" feedback methods. In this case, the sources had their own chronological sequence, and following this, the addition or change in types of feedback over time can be seen.

A separate part was devoted to artificial intelligence, and specifically the use of this technology in business (Akerkar 2018) and the hospitality industry (Hollander 2023). It has been determined that artificial intelligence now plays a key role in the feedback process, simplifying and making more efficient not only the analysis of reviews, but also the collection processes and functionality of feedback systems (Williams 2023).

The context of the study from an academic, i.e., theory, perspective focuses on the problems of "traditional" feedback methods for determining customer satisfaction levels, the effectiveness of using artificial intelligence to evaluate customer satisfaction and determining the level of customer satisfaction. The definition of the hospitality industry as well as the importance of customer satisfaction is also discussed to get closer to the relevant research topic but is not explored further. The definition of artificial intelligence and implementation in businesses is introduced as an introductory part in order to get closer to the research topic but is not studied deeper.

2 CUSTOMER SATISFACTION IN HOSPITALITY SECTOR

When discussing the meaning of hospitality sector, it has been explained that is based on businesses that provide accommodation and food services. The entire sector consists of several small businesses including food, travel, and lodging services. However, the hospitality sector is about more than just accommodation and food, it is also about providing a community of people. People spend time in restaurants and hotels talking, making acquaintances, and learning about culture. (Strigam & Partlow 2015, 1.)

It is important to understand that, in Chibili's words (2017, 22), the hospitality sector is one of the economically rapidly developing sectors, which is so diverse that it invites people to find their place in different areas of business, ranging from restaurant business to tourism. Citing the research, the author Wood (2015, 4) leads to the fact that despite the diversity of businesses, the hospitality sector exists to satisfy the daily needs of the local population or tourists. The variety of businesses can be divided into several sectors such as food and beverage, accommodation, travel and tourism, entertainment and leisure (The different hospitality… 2023). The hospitality sector, according to Strigam & Partlow, has an exceptional feature that distinguishes it from other business industries, calling it part service and part product. The authors used the example of a hotel, when all the contents of the room are a product, and the customer's service is a service. (Strigam & Partlow 2015, 65.)

The existence of any business, and in the case of this study the hospitality sector, is due to customer satisfaction, which plays a key role in the success of the company (Kotler 2001 cited in Aboye 2021, 8). Hartini and Mahmoud (2014, 17) in their work entitled "Customer satisfaction" have already defined such a phenomenon as a customer satisfaction. According to their work, the term has multiple meanings for different people. Moreover, customer satisfaction is a complex mechanism that consists of pre-purchase and post-purchase experience. Another meaning of this term is that customer satisfaction is the main criterion for the quality of products and services supplied by the company to customers. If we combine all of the above, then according to the book, customer

satisfaction arises only when the product turns out to be of better quality than expected. (Hartini & Mahmoud 2014, 17.)

The question of why to measure customer satisfaction is answered by the work of Biesok and Wyrod-Wrobel (2011, 30), saying that a company, based on assessing the level of satisfaction, can solve problems with a service or product, or make sure it is in the right direction in order to further increase satisfaction their clients. The authors argue that valuable information usually comes from feedback from dissatisfied customers, directing importance towards correcting mistakes that the company has made. Also, measuring customer satisfaction helps companies understand customer expectations in order to be able to increase customer satisfaction with the product or service offered. (Biesok & Wyrod-Wrobel 2011, 31.)

The importance of customer satisfaction is explained by the fact that it is the key to ensuring loyalty and long-term financial performance of a business. Any decrease in customer satisfaction leads to the decline of the business. (Jones & Sasser 1995). However, with all the understanding of the importance of focusing on customers, the question arises of how to determine customer satisfaction or dissatisfaction. By analyzing work of Hill, Brierley & MacDougall (2003, 2-3), organizations have a modest understanding of whether customers' experiences match their expectations. The method of customer feedback to employees is ineffective, and monitoring of complaints is not fully representative. The explanation for this leads to the fact that the employee may not be objective in the process of assimilating information. Also, complaints are not always expressed by customers, and in the case of several negative statements, this does not indicate the level of satisfaction or dissatisfaction. (Hill, Brierley & MacDougall 2003, 2–3.)

2.1 "Traditional" feedback methods

Revealing the methods for obtaining results of customer satisfaction or dissatisfaction, there have been quite different ones for many years. First it can be started from the time-rooted ones, that is, survey variations such as (a)

personal interviews, (b) telephone interviews, (c) electronic surveys and (e) mail surveys. Each option has both its advantages and disadvantages. Summarizing personal interviews, the advantages are the speed and broad explanation of the answers, and the disadvantages are the fact that the client may not want to face the bad aspects of the organization out of personal discomfort, as well as the employee's lack of interviewing skills. Telephone interviews have the same advantages; however, the disadvantage is that the conversation time is limited, and this will result in short questions and answers that cannot be extensively explained and analyzed. The main advantage of electronic surveys is the speed of sending letters and the absence of paperwork, but the disadvantages of this are the likelihood of getting into spam, or the client will not see the need to respond to the next letter without even reading the content. Mail surveys face more disadvantages than other types of feedback because they consume a lot of company time and financial resources, and greatly reduce the likelihood of receiving responses. (Hill, Brierley & MacDougall 2003, 36-42.)

Based on another source, which is slightly newer than the previous one, the author relies on another option for receiving feedback from clients, that is, using a questionnaire in a certain format. This paper speaks to the importance of the visual design of the questionnaire, as well as the usability of the agreement-disagreement continuum format. (Hayes 2008, 125.) Using a fairly new resource of information, with the advent of the digitalized space in business, the most reliable methods at this point in time are interviews and questionnaires, which again have their drawbacks, again talking about the complexity of time. Another proposed option that leads to digital opportunities at this time is online feedback and reviews on social networks. (Measuring Customer Satisfaction… 2023)

Feedback is an integral part of communication, and if feedback is ineffective, then communication is not closed, which in turn does not provide any answers to companies (Zahid, Qinghe & Sohail 2021, 3.) Looking at the work of Bergin (2023, 1), who developed theories of media richness, drawing on the authors Daft and Lengel, who discovered the concepts of effective communication in organizations. The theory is that the most effective method of communication is

face to face, which helps receive feedback immediately. Next come video conferences, telephone conversations, and that is, oral communication, which suggests that feedback will be quick, but less effective than face to face communication. The most ineffective method was in written documents that have a low rate of feedback. Written documents are often mail, e-mail, letters, etc. Figure 4 representing a diagram of media richness theory.
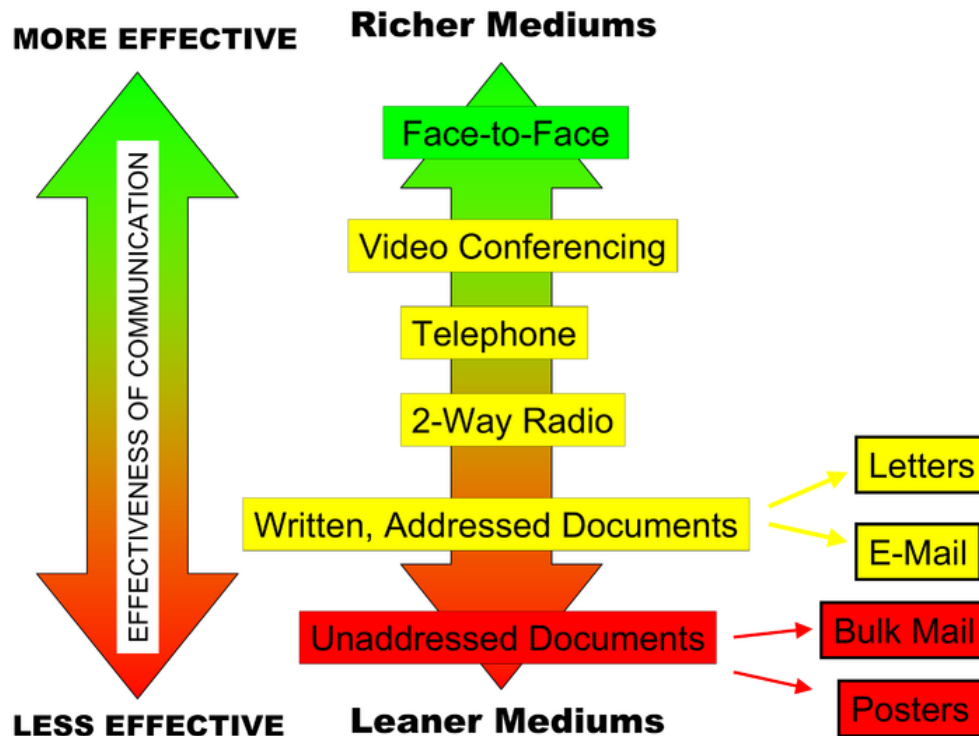

Figure 4. Media richness theory (Wikipedia 2023)

However, the ineffectiveness of "traditional" feedback methods for determining customer satisfaction has been an ongoing problem for some time. One problem is the inability to hide an honest response of dissatisfaction or lack of recognition of emotions. (Zaki, McColl-Kennedy & Neely 2021.) Also, it is important to remember that not all methods are effective or suitable for every business (Daffy 2019 cited in Puranen & Reismaa 2019, 14–15).

3   USE OF ARTIFICIAL INTELLIGENCE IN THE HOSPITALITY SECTOR

A simple meaning for artificial intelligence is a large section consisting of reliable datasets for solving various human problems, the algorithms of which create predictions and classifications based on the input data. Artificial intelligence at this point of time can study a large amount of data, for example, program codes, molecules, images, etc. (What is artificial intelligence? 2023.) If we talk about the components of artificial intelligence, then in Figure 5 it can be seen important elements of the technology (Taulli 2023, 52).
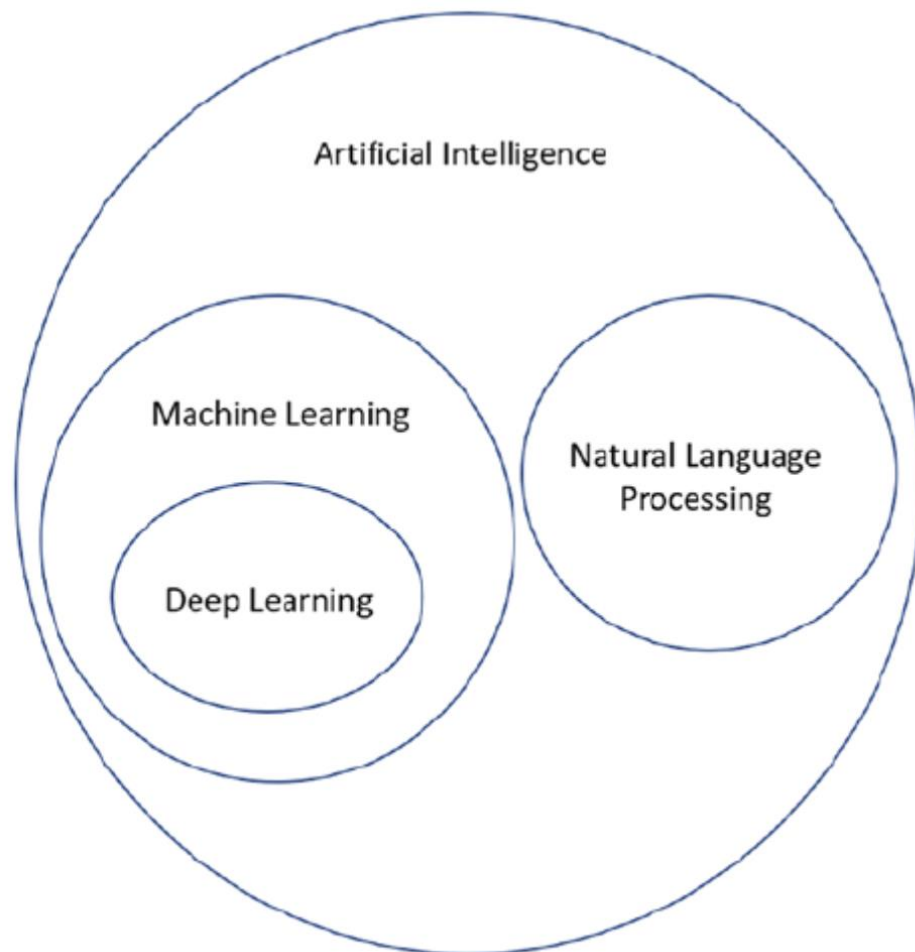

Figure 5. Various categories that AI represents (Taulli 2023, 52)

Akerkar (2018, vi) in his book asserts that artificial intelligence is an integral part of business processes, which facilitates administrative work and improves the conduct of business as well as the type of work. Now, the introduction of artificial

intelligence is at a progressive stage, and is enveloping more and more areas of business, even moving into everyday use. Moreover, artificial intelligence can not only facilitate the task of administrative work, but also introduce innovations into business. (Akerkar 2018, vi.) A similar idea is reinforced by other authors, Ivanov and Webster (2019, 1) saying that while robots have been able to penetrate productivity for many years, artificial intelligence is only now expanding in different business sectors (Ivanov & Webster 2019, 1).

Based on Hollander, J (2023), artificial intelligence is widely developing in the hospitality sector, saying that companies that are not in a hurry to implement a system to facilitate tasks can lose both financial income and the business itself as a whole. It is mentioned that artificial intelligence has replaced many processes, citing the example of the work of hotels. Smart rooms based on artificial intelligence, optimization of change prices, guest booking and contactless check-in and/or check-out of guests have already been introduced into the industry and are of enormous importance, increasing competitiveness in the market and offering the best service to customers. (Hollander 2023.) Moreover, now artificial intelligence is already a common practice for assessing customer satisfaction, integrating into this part of the hospitality sector, since, as previously defined, it is an integral part of business success (Guanzon 2023). A more effective solution for determining customer satisfaction levels has proven to be the assistance of artificial intelligence, assisting in several processes. The effectiveness of the implementation of this technology is explained by several reasons. Firstly, it is the ability to analyze a fairly large amount of work, which in this example is the amount of customer feedback. Secondly, this is the accuracy of the definition, which ensures error-free analysis. Third, it is an adaptation to the expandability of the volume of information. Fourth is the ability to analyze in real time and the speed of the process. (Williams 2023.)

Feedback processing is driven by artificial intelligence, using program of natural language processing (NLP), which can understand human language by analyzing text and audio data (Guanzon 2023). The goal of natural language processing (NLP) is for humans and the computer itself to communicate in the same

language with complete understanding and accuracy in grammar (Gupta & Mangla 2020). Companies often use chatbots for websites or applications to maintain communication with customers in any language or to receive quick feedback that will be analyzed by natural language processing. In this case, artificial intelligence imitates a human conversation and analyzes the emotions expressed in the text. (Guanzon 2023.) Artificial intelligence-based surveys are common so that companies can collect customer feedback, which is also based on natural language processing (Williams 2023). Figure 6 represents how the natural language process (NLP) works with audio format, but the source clarifies that the same process flow works with text information (Shaip 2022).
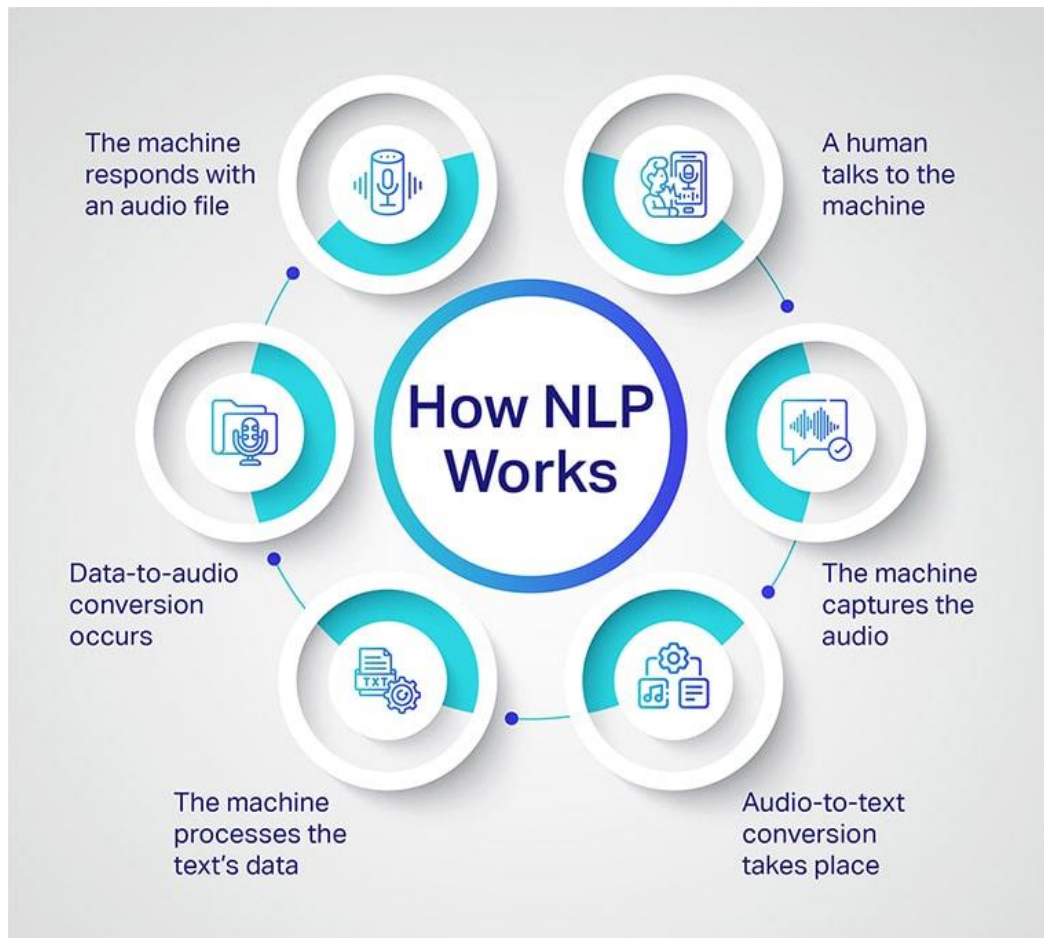

Figure 6. How NLP Works (Shaip 2022)

In addition to the effectiveness of implementing artificial intelligence and its capabilities from various sources, discussed earlier in writing, it is important to note voice feedback, which has also been introduced very recently. Today,

artificial intelligence allows to convert voice into text. (What is Voice Feedback and … 2023.) First, artificial intelligence recognizes speech by hearing and understanding human language. The speech recognition system processes accents, slang words, any intentional or unintentional voice changes, and even background noise. (Gupta & Mangla 2020, 9.) After determining the voice, there is an algorithm for translating the voice into text, which has its positive aspects. For example, this is the conversion speed, because now this technology almost immediately identifies text based on audio. Also, speech to text can be integrated into an organization's website or software, saying that it is very adaptive. (AI Transcription Service..., 2023.)

Artificial intelligence has also reached Voice of the Customer (VoC), allowing us to extract useful information from customer feedback (Williams 2023). Voice of the customer (VoC) feedback management aims to analyze customer feedback to understand and improve customer satisfaction. Artificial intelligence is introduced into the work process for work efficiency. In this case, interpretive artificial intelligence is used to interpret complex and voluminous data. Interpretive artificial intelligence quickly analyzes any volume of feedback, be it responses to surveys, social networks, audio recordings of telephone conversations with support service, etc. That is, artificial intelligence is effective for any application, even in audio format, because it has a voice recognition system. (Roundy 2023.)

3.1   AI-powered voice feedback

The commission company, SAYT Tech, has introduced an artificial intelligence-based voice feedback system to businesses, specifically the hospitality sector. The functionality of the system has similarities to how artificial intelligence could be integrated into feedback collection or other feedback systems. The company explains that in literally three seconds, the recorded voice feedback using a QR code is generated into speech into text, recognizes emotions and the speech itself, use of sentiment analysis and translates it into English if necessary. The company systematized the available technologies by introducing a new

technology in the form of voice feedback based on artificial intelligence. (SAYT Tech 2023.)

It is also important to note that the generated text is sent directly to the phone of the company's employees so that they can see every recorded feedback. Feedback is sent immediately in text form immediately after generating audio into text, recognizing emotions, and translating into English if necessary. (SAYT Tech 2023.)
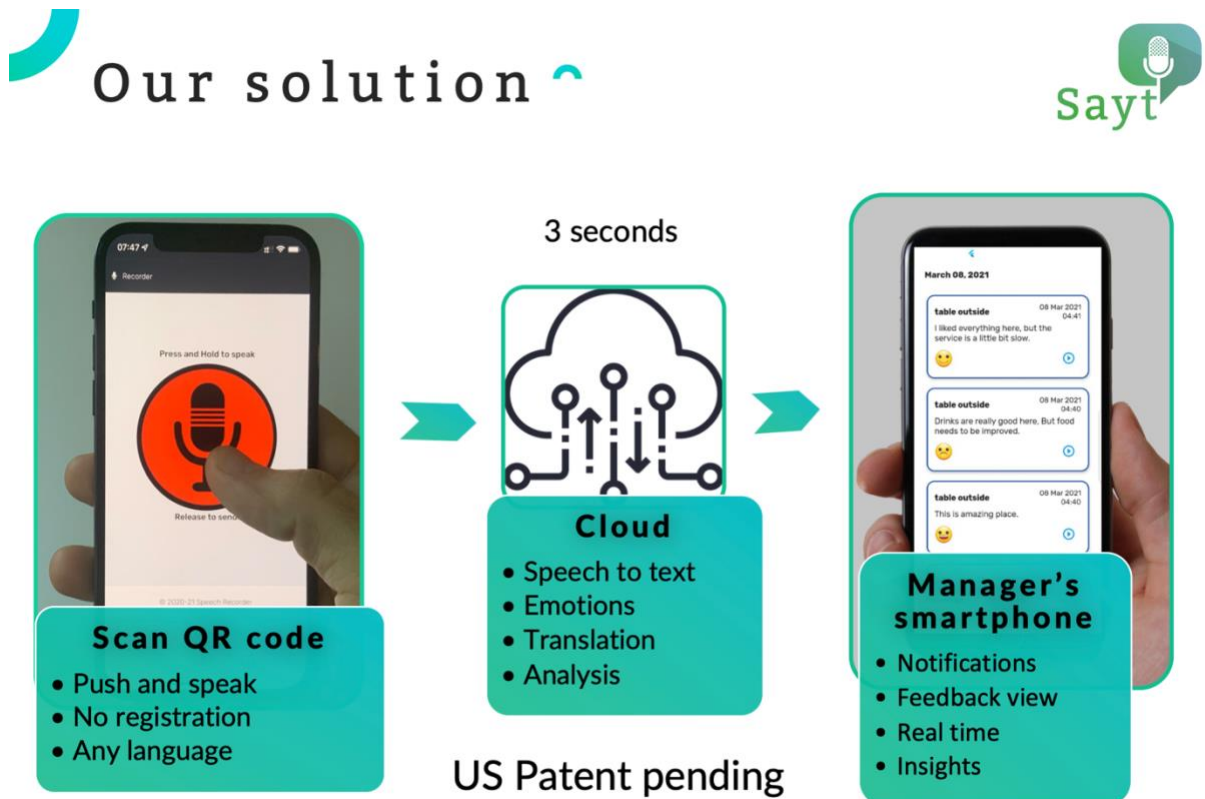

Figure 7. AI-powered voice feedback system (Sayt Tech 2023)

3.2 Voice systems based on artificial intelligence

Google Speech to Text introduces the ability to convert speech to text for organizations to systematize certain business processes. Currently this technology is used in the customer service system. Google speech to text analyzes the dialogue between the client and the employee in real time, reads each response from the client, and provides the employee with the necessary materials and recommendations for continuing the dialogue with the client. Also,

with the help of this system, the organization has the opportunity to systematize customer calls in the form of an automated call center, which has algorithms for answering simple and frequently asked customer questions. (Ozarowska 2022.) Also, Google speech to text has other use cases such as voice commands or speech transcription on video (Speech-to-text 2023).

Finally, customer satisfaction in the hospitality sector is key to maintaining business, and receiving feedback is important to determine the level of satisfaction. "Traditional" methods may not be as effective as artificial intelligence is now bringing benefits to business processes. Artificial intelligence has been integrated into various aspects of business, and voice feedback based on artificial intelligence is being considered as a new method of feedback, which is supposed to be a more effective method. To evaluate the effectiveness and find the answer to the question of this work, the following chapters will be devoted to the practical part with analysis, results and conclusion.

4   DATA COLLECTION AND ANALYSIS
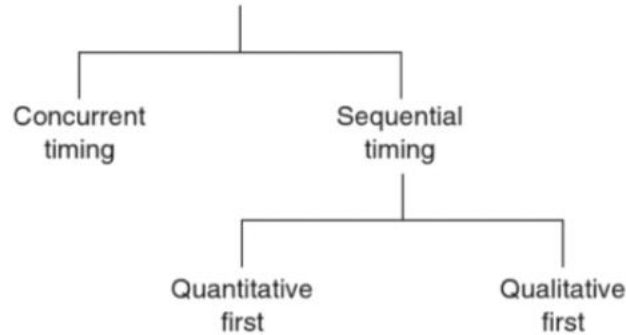
4.1   Research and development process

The purpose of this study is to evaluate the effectiveness of AI-based voice feedback on customer satisfaction in the hospitality sector. The research was carried out in close collaboration with the commission company SAYT Tech, with whom the authors of the thesis shared the same goal. Also, cooperation helped in collecting data for the study so that the collection process was expedited and had accurate information.

The development process consists of theoretical research, data collection carried out using two methods that will be revealed later, analysis of the collected data, the summary of these data and their future developments. For this research work, strategically it was chosen to use a mixed method, concurrent triangulation design. Creswell (2003, 81) divided all mixed method categories into two main categories sequential and concurrent. The concurrent type is distinguished by the fact that in terms of time, two types of methods, qualitative and quantitative, are

carried out almost simultaneously without being inferior to each other. As both qualitative and quantitative types of data are equal in weight, and both are going to answer research question more accurate, then this is concurrent triangulation.

(a) What will the timing of the quantitative and qualitative methods be?

```
                    │
         ┌──────────┴──────────┐
    Concurrent            Sequential
      timing                timing
                              │
                   ┌──────────┴──────────┐
              Quantitative          Qualitative
                 first                 first
```

(b) What will the weighting of the quantitative and qualitative methods be?

```
                    │
         ┌──────────┴──────────┐
      Equal                Unequal
      weight                weight
                              │
                   ┌──────────┴──────────┐
              Quantitative          Qualitative
               emphasis              emphasis
```
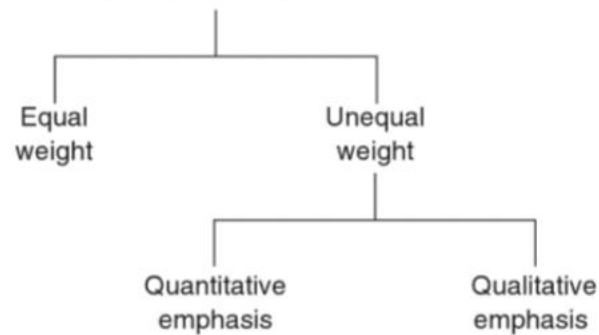
Figure 8. Decision Tree for Mixed Method (Creswell & Piano Clark 2003, 80)

Qualitative information was chosen to be collected through interviews with managers of the companies who already implemented AI voice feedback into their business processes and in close cooperation with the commissioner company. Lincoln in his work highlights that interview is one of the most important and strongest data collection method throw-outs all of the qualitative methods (2021, 109). While quantitative information is collected through a survey with end users who has experience with AI-powered voice feedback.

4.2 Data collection

Online interviews were conducted from September 15, 2023. Online interviews were conducted via Google Meet, since representatives of the companies with whom online interviews took place use Google software on a wide scale.

A letter (Appendix 1) for conducting interviews was sent to 12 companies that had implemented a voice feedback system based on artificial intelligence. However, due to their busy nature, only 8 companies were able to participate in the interview. The type of activity of each company is the hospitality sector, representing 3 hotels, 2 restaurants, 1 bar, 1 cafe, 1 conference place. The company representatives interviewed were managers by profession.

The interviews consisted of 11 questions (Appendix 2). Each interview was conducted for 30–40 minutes on weekdays when the company had free time. The interview questions were to determine the effectiveness of previous feedback methods in the company, comparison with the new feedback system, specifically voice feedback based on artificial intelligence, frequency of use of the system, etc.

To compile the interviews, it was chosen to use a structured interview. Structured interviews are the most rigorous interview format, as they are conducted in one order and do not have the opportunity to ask additional questions. For this research work, 11 interview questions were constructed as noted earlier. The questions were drawn up at the beginning of September, where the authors of the thesis decided that this would be a structured interview. This type of interview helps to provide a clearer and more distinct difference between the responses of different companies. (Stuckey 2013, 57.)

On the other hand, quantitative information was collected through the authors' survey. Nancy Tague in her book "Quality toolbox" mentioned that using a survey as a way to collect information is an effective method when you need to evaluate certain changes, compare something, and also find out the preferences of

customers. In the case of this report, survey was used to evaluate the effectiveness of AI voice feedback. (Tague 2005, 487.)

The purpose of this survey was to determine people's familiarity with the AI-powered voice feedback system and to identify the degree of convenience of the AI-powered voice feedback system for hospital industry customers compared to traditional methods of collecting feedback.

The representatives of the 8 companies mentioned above were asked (Appendix 3) to conduct a short survey among their customers, as many as possible. 6 representatives agreed to contribute to the research, two of them even offered a discount on their services to those customers who agreed to complete the survey. Respondents were required to complete the survey via a link that authors had previously provided to representatives of the interviewed companies. Completing the survey takes from 5 to 10 minutes. The questions were presented in English. The survey was conducted from 15.09.2023 to 31.10.2023.

The questionnaire consisted of 12 questions (Appendix 4) created in Google Forms to evaluate the effectiveness of the new artificial intelligence-based voice feedback system. 11 questions are multiple choice questions, while 1, the very last one, is an open question, that is, requiring an open answer. The last question, open for additional comments about artificial intelligence-based voice feedback, which participants may not have answered, since all the basic information that helped compile the performance evaluation analysis is included in the first 11 questions.

All data collection was carried out anonymously, observing research ethics, without disclosing any personal information during the interview, questionnaire, period of communication with interviewees and analysis. Anonymity was chosen to take advantage of the requests of the company representatives interviewed, explaining the desire to maintain confidentiality due to the fact that during the interview business issues that are not desirable to be disclosed may be disclosed. At the time of the agreement to conduct the interview, the future

interviewees did not know about the interview questions, so they preferred to immediately choose anonymity, which was respected and accepted by all parties. Appendix 1 provides the cover note for the interview. The whole process was in English, because the commission company, like the companies they work with, are located in the UK.

4.3   Data analysis

Content analysis was chosen to analyze the results obtained through quantitative and qualitative methods. According to Krippendorff (2004, 18), content analysis is one of the methods for analyzing results for research that allows to justify conclusions and provide new understanding in any context of use. Using analytical constructs and deducing the essence of the research results, the authors move from content analysis to answering the question (or plural) of the work (Marsh & White 2006, 23–27). To understand the content of content analysis, you can rely on the communication process within the content analysis (Thomas & Elias 2018, 51). An ideal visual example of communications within content analysis is presented in Figure 8:
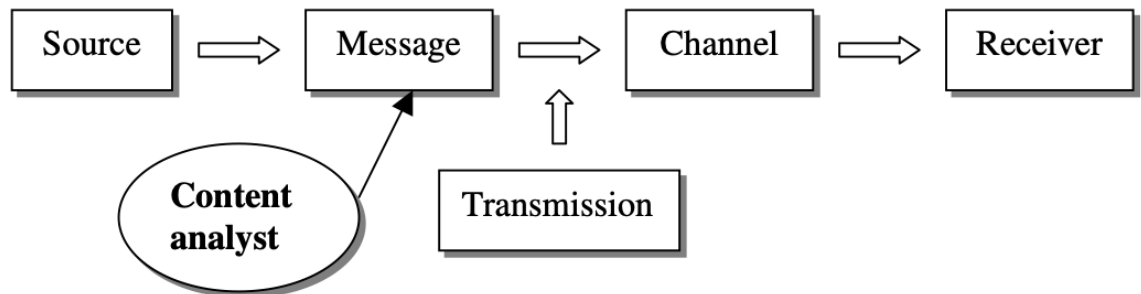

Figure 9. Communication process of content analysis method (Thomas & Elias 2018, 51)

Marsh and White (2006, 34), who also cites the work of Krippendorff (2004, 87), summarized four elements that are common to qualitative and quantitative methods, suggesting that content analysis can be carried out for both research methods. First, it is a choice from all the results that is relevant to the issue of work. Second, bring the text into uniformity. Third, highlight context as an

advantage to knowing the circumstances. Fourth, but no less important, is to structure the sequence in a way that keeps the research question (or plural) in mind. (Marsh & White 2006, 34.)

Since interviews were chosen for the qualitative method, all responses were recorded manually by the study authors, as were observations during the interviews. The quantitative method was carried out in the form of a questionnaire, and summarizing the results, pie charts were done to visualize the responses, and the best analysis tool was the content analysis method.

The process of analyzing and drawing results using content analysis was carried out through the authors' manual notes from the interviews, and the formation of Google tables to summarize the questionnaire. Then the text was formed into different categories, where the general important points from the results were analyzed and deduced. This analysis has the same goal of the thesis with the motivation to also answer the main research question.

5   RESULTS AND ANALYSIS

5.1   Interview results

The table below is used to assist in categorizing the interview data for the study. Interviewed representatives of each organization who have been using a voice feedback system based on artificial intelligence for a long time are presented in the form of cases. Each representative interviewed is listed anonymously in the Table, however, for identification and differentiation, areas of the hospitality sector, gender and age were indicated. The total number of interviewees was 8, representing each organization with which the SAYT Tech the commission company currently cooperates. Therefore, the classification of this study had to be limited in the form of anonymity of the interviewees.

Table 1. Respondents of interview

Number	Area of work	Gender of respondent	Age of respondent
Company 1	Hotel	Male	47
Company 2	Hotel	Male	38
Company 3	Hotel	Male	40
Company 4	Restaurant	Female	32
Company 5	Bar	Male	51
Company 6	Restaurant	Male	35
Company 7	Café	Female	27
Company 8	Conference place	Female	36

These interviews were structured, meaning questions were prepared prior to the interview, to ensure accurate analysis following the purpose of this research work. Prepared interview questions were divided into broad categories such as: (1) evaluation of the effectiveness of previous feedback methods and possible shortcomings, (2) differences between previous feedback methods and the new system, (3) experience with the new feedback system, (4) evaluation of effectiveness new feedback system, (5) problems after implementing the new feedback system.

Evaluating the effectiveness of previous feedback methods and possible shortcomings. By asking interviewees about their assessment of feedback methods used before the advent of AI-based voice feedback, an overall assessment was revealed. Often the answers were monosyllabic with the context that organizations had not experienced any bright spots that any feedback other than a complaint actually helped in identifying customer satisfaction levels. R2: "Previously, we received complaints that were corrected instantly, but there was no general feedback personally. What was new at first was Google Maps, where we could see reviews from some of our clients, but they were short and without any useful information for us or for other clients. We couldn't analyze what was written in any way, since it didn't have any specifics."
R5: "I can't add anything about efficiency because it was always raw material. We could collect some customer feedback that they told the administration, some

dissatisfaction, but this did not help to derive, for example, statistics. In my memory, there is nothing that stands out during the time that I have been working in this company, if we talk about reviews."

Differences between previous feedback methods and the new system. To gain a broader understanding of the differences and be convinced of the effectiveness or ineffectiveness of an artificial intelligence-based voice feedback system, it was useful to hear the experience and opinions of experts in the hospitality sector, when each company representative has his own main area of activity. The findings highlight the differences between the organization's previous feedback methods and the new AI-powered voice feedback system for customer satisfaction in the hospitality sector.

According to the interviewees' responses, the main practice was to receive feedback directly from clients to the manager or administrator of the organization. If we talk about differences, it was not very effective due to the embarrassment of clients to say something bad. The main difference was the anonymity of each feedback, because the voice feedback system sends feedback to the manager in the form of text without identifying the person sending it. The second point that respondents mentioned was that there was no tracking of this feedback method in order to see the whole picture. A voice feedback system based on artificial intelligence made it possible, unlike the previous method, to monitor reviews in order to be able to make an illustration of the collected reviews at the end of the quarter and display some statistics.

R4: "The first thing is not knowing who exactly sent the feedback, which improved the context of each feedback, because now there is no embarrassment or embarrassment for people to make any comments about the service or the space itself. The second thing that made the business process easier was the analysis of all feedback, because the previous method had absolutely no effectiveness in this regard. No one remembered what the client could say, and naturally no one entered it into the database, so that at the end it would be possible to analyze the problems, good aspects of the business, etc."

Another method of receiving feedback for customer satisfaction was the Google maps application. The difference was that not all customers will go to apps to leave a review because they don't want to spend time on it or don't think about it. Therefore, the new system turned out to be convenient, because QR codes are indicated everywhere, and a person can scan and speak instantly. It turned out to be more convenient, easier and more interesting for clients.

R6: "Google Maps has been our main resource for receiving feedback for a long time, but there were very few of them, literally 1-2. The practice of informing clients was introduced to try to leave feedback, but there were no significant improvements. However, clients were interested in voice feedback because they saw the new technology and wanted to check it out. Watching clients, in addition to interest, it was noticed how easy it was for clients and convenient to use. No one had any misunderstanding of how this system works."

Experience with the new feedback system. To evaluate the effectiveness of a voice feedback system based on artificial intelligence, an equally important factor to study was the work experience after implementing the feedback system. Respondents noted the positive aspects of the experience, which became the advantages of the new feedback system based on the period of work after integration into their business processes. Ease and speed topped the responses of respondents, explaining that clients had no difficulties using it, and that employees of the organization had problems with functionality.

R2: "During the entire time that voice feedback was integrated, it was noticed how easy it is to use this system, and that most importantly, the process is fast both for clients and the moment the conversation is generated into text and sent to managers by phone"

It was highlighted that routine work processes were not changed, but rather adjusted with a focus on improving old tasks, paying attention to workers, and correcting details to improve customer satisfaction.

R3: "With voice feedback there were no significant changes in the managerial work process. This did not radically change the tasks and routine, but of course there were changes, and for the better. Previous work tasks were slightly improved and modified so that there were no errors in the work and clients left with complete satisfaction."

Experience with the implementation of voice feedback implemented in the organization also influenced the reaction and emotional component on the part of employees.

R7: "The response to a review message is immediate and is something that is hard to miss or somehow forget. The stuff is always on the mind, and therefore it is taken into account, and significantly. Increases motivation to work, improve something, serve customers better, regardless of the nature of the review.

Evaluating the effectiveness of the new feedback system. Interviewees were asked questions to evaluate the effectiveness of artificial intelligence-based voice feedback for customer satisfaction in the hospitality sector. This category leads well to the main goal of this research work because experienced people with experience in the hospitality sector were able to give an objective assessment from the perspective of business development. Based on the opinions of the interviewees, voice feedback managed to get used to their organization and outlined an understanding of customer satisfaction. Understanding the level of customer satisfaction allowed us to improve service, approach to customers, and data analysis. Comments were also highlighted about the quality of feedback, which now has a more informative design and emotional overtones. The interest and ease of use of the new feedback system allowed end users to open up when giving feedback. The overall rating based on the comments was quite satisfactory, highlighting in a positive manner key points that support the effectiveness of AI-powered voice feedback.

R8: "I am satisfied with the work after launching the voice feedback. Now there are, firstly, more reviews, and secondly, they seem more real, as if they wrote

you a direct message, without embarrassment and the whole truth. This was not enough before, in fact."

P3: "It has become more efficient, that's for sure. In general, it has always been difficult to get feedback about the service from customers, and usually these are always complaints at the moment, which do not greatly affect the overall customer satisfaction rating. There were a couple of reviews on Google Maps, but they were very dry and short; one might even say that they don't really evaluate anything. It was difficult to draw any conclusions or judgments from this. It's much easier now. We see improvements in this regard because we receive feedback every day, and this is good news."

Problems after implementing a new feedback system. From the companies' perspective, based on the responses, there were no clear observations or problems identified. The only point that was made by one of the interviewees was whether this would also work, more effectively, in the long term and whether such a method would be established. Since the system is new and not widely used, the comment noted is appropriate and understandable.

R1: "It's hard to say, because all the time we saw only an increase in interest. If I'm being picky, then of course I personally have a question about the duration of the effectiveness of voice feedback, because every breakthrough tends to become outdated. However, this is an issue that will be relevant later, and for now we are happy with the results that voice feedback is bringing."

5.2   Survey results

1. Age

The question 1 was asked about the age of the research participants for this thesis in order to have an understanding of the age groups of consumers and whether the new system has widespread use among different generations. The total number of participants who completed the survey was forty-three from six different companies who were willing to share the survey to assist with the research work. The largest age group by number of people is from eighteen to twenty-four years old. The smallest number was minors, of whom there were only

two people who completed the survey. The age category representing people sixty-five and above did not take part in the survey. A small surprise was that one person in the fifty-five to sixty-four-year-old category completed the survey in its entirety.

Table 2. Age and amount of respondents

Under 18	18-24y.o.	25-34y.o.	35-44y.o.	45-54y.o.	55-64y.o.	65 or over
2	19	11	4	6	1	0

2. Gender

The question 2 of the survey was intended to show the gender distribution among the respondents. The results represented in the diagram below. The female gender predominates with a result of twenty-five people, which is equivalent to 58% of the total number of respondents. At the same time, there were eighteen men represented, which is equal to 42%. People who are non-binary or unwilling to answer the gender identification question did not participate in the survey, so both items score 0%.
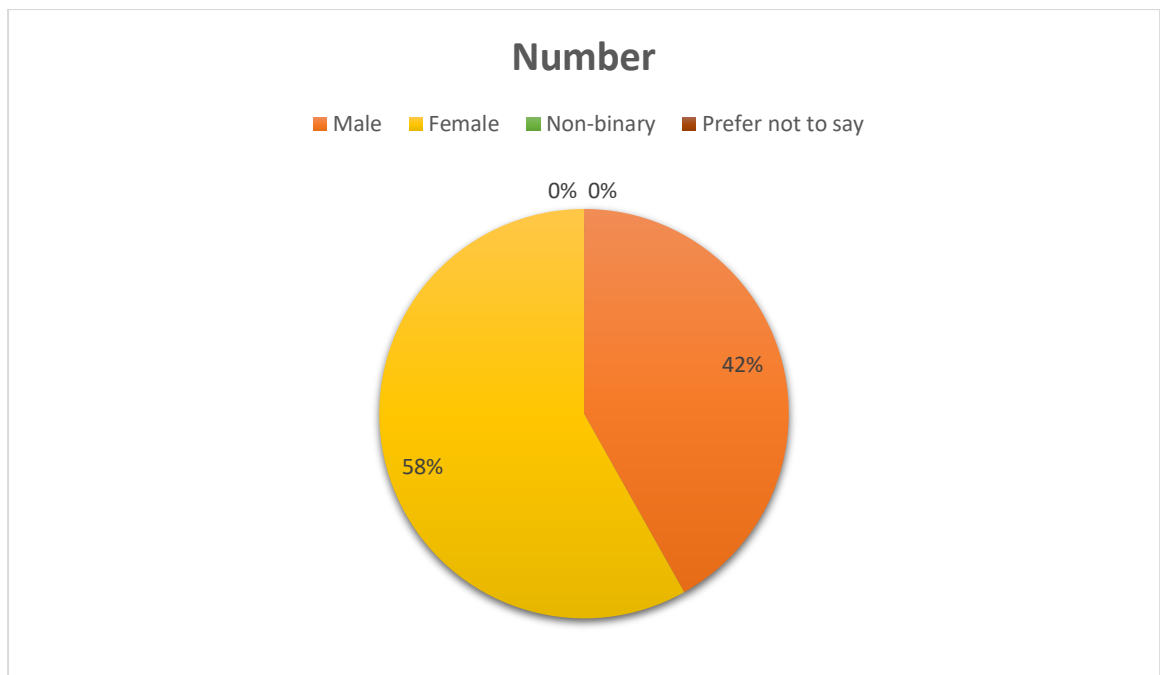
Figure 10. Gender of respondents

3. How often do you use hospitality services (hotels, restaurants, bars and etc)

Question 3 was aimed at finding out how often the respondents encounter in their lives establishments and places that belong to the field of hospitality services, including restaurants, hotels, bars, cafes, etc. The question 3 was asked in order to assess the frequency of use of the service provided by the hospitality sector, or rather those companies whose end users they were.

The highest result was the option of weekly use of hospitality services, which amounted to 63% of the total number of respondents. Interestingly, 14% were people who visit companies in the hospitality sector on a daily basis. Luck was the one person who answered "rarely", which meant a long period of time between visits to one of the companies representing the hospitality sector. Four people, or rather 9% were people who visit monthly. Five people turned out to be visiting out of necessity.

This item may show a gap between end-user visits to companies that have implemented a voice feedback system and those that were interviewed. A period of absence or non-use of a service in a particular company, whether it is a day or several months, helps to gain a variety of answers, following the goals of this research work. The type of experience in transmitting and using services, the time gap, helps to evaluate the effectiveness of voice feedback based on artificial intelligence.
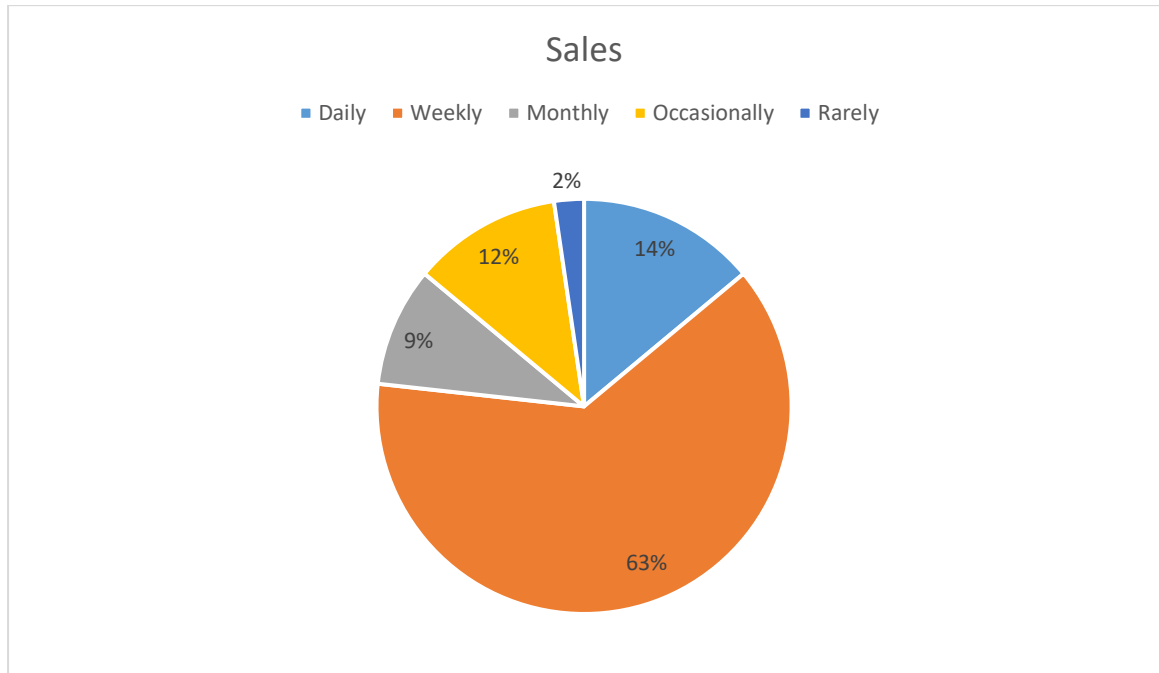
Figure 11. Users of hospitality service

4. Have you ever provided feedback to a hospitality service (through surveys, comment cards, online reviews) using «traditional» methods?

Question 4 was aimed at identifying which of the forty-three respondents had ever left feedback in the hospitality sector using other methods, excluding artificial intelligence-based feedback. Question 4 was asked to determine the number of people who tried different methods from the new system, in order to understand which of the forty-three respondents presented had experience with other methods.

There were two answer options for question four, and the results were distributed in such a way that thirty-four people, which amounted to 79%, left feedback in other ways, the so-called traditional methods. Further, this will help determine the accuracy of the effectiveness of the new system, that is, voice feedback based on artificial intelligence, because respondents have something to compare with.
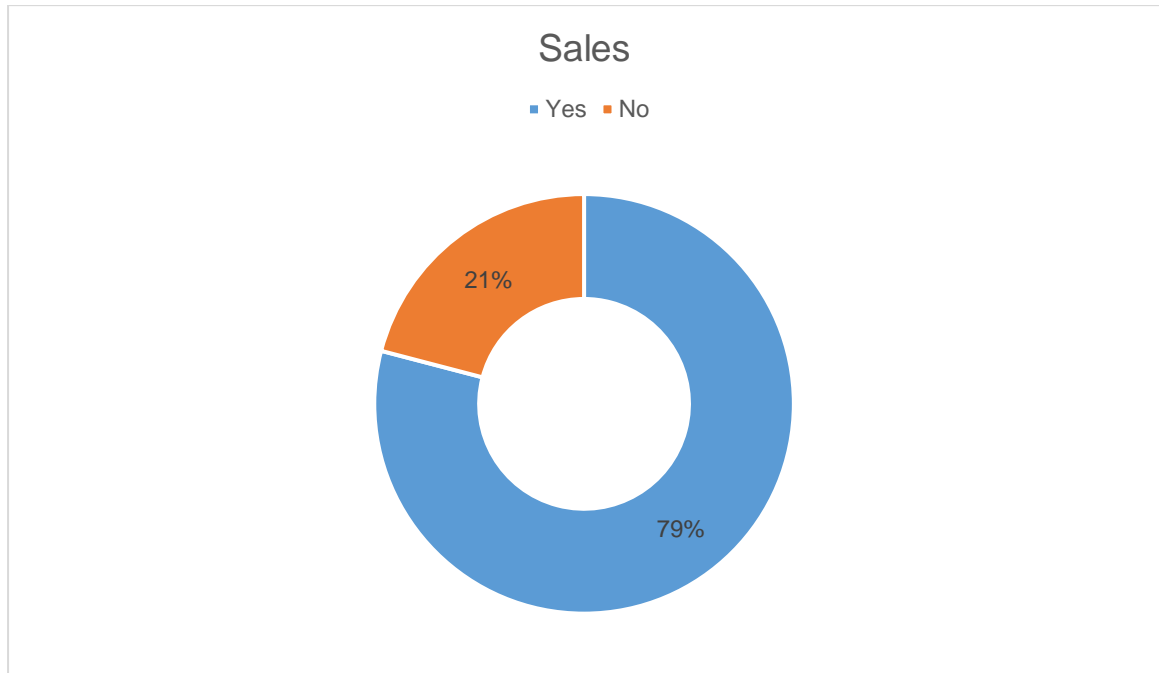
Figure 12. Traditional feedback methods users

5. If yes, how satisfied are you with the effectiveness of traditional feedback methods in addressing your concerns or improving your experience?

The thirty-four respondents who answered "yes" to the previous question were able to answer the current one, assessing the effectiveness of "traditional" feedback methods, from the perspective of whether the service could improve based on their feedback. Respondents who answered "no" to the question 4 were able to immediately move on to question 6. The non-participation of these respondents to question 5 does not greatly affect the assessment of the effectiveness of voice feedback based on artificial intelligence, because they somehow have their own experience using the new system, and they can evaluate even without having a comparison with "traditional" methods.

More people were on the neutral side, amounting to 70% of all respondents, or more precisely twenty-four people. There were two people who were the most satisfied, but there were no more dissatisfied people. However, three people were dissatisfied, which amounted to 9%.
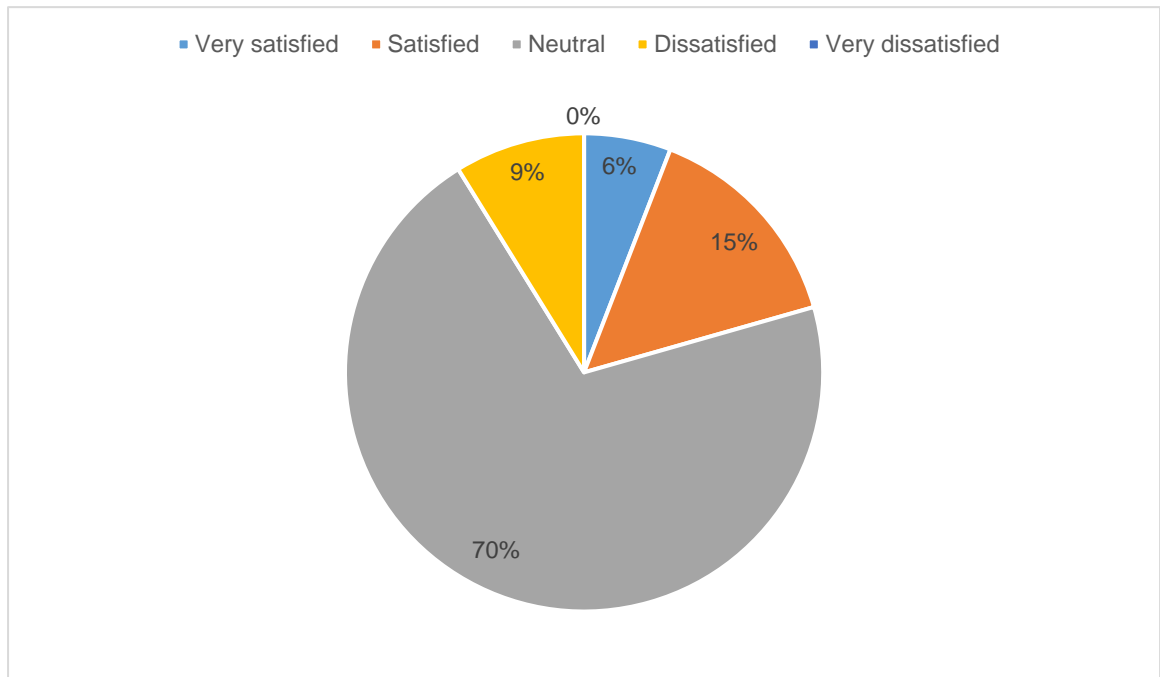
Figure 13. Satisfaction amount of traditional feedback methods

A neutral rating according to DeMars and Erwin (2005, 2) shows an average level of approval when the respondent has no desire to form an accurate opinion. It can be assumed that the average assessment of the effectiveness of "traditional" feedback methods does not indicate the effectiveness of the methods when the client was satisfied with the service in a particular company in the hospitality sector. However, then this cannot be regarded as a critical point of ineffectiveness of "traditional" methods.

6. Are you familiar with AI-powered voice feedback systems used by hospitality services?

Question 6 was created with the purpose of some kind of introduction to the part about the new system, that is, voice feedback based on artificial intelligence. Also, to clarify the point that all respondents have already tried voice feedback and are familiar with this technology.

Question 6 was answered by all forty-three respondents who completed the questionnaire from the first question. Everyone's answer was positive, that is, all forty-three respondents are familiar with voice feedback.

Yes   No

0%

100%
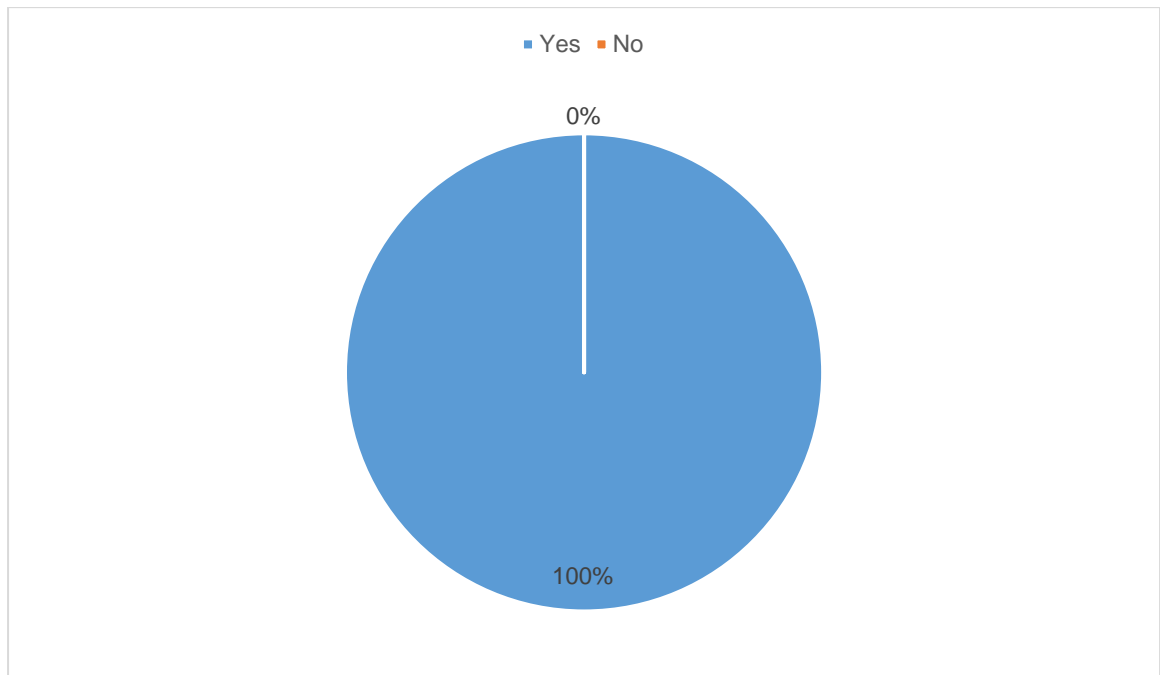
Figure 14. Familiarity of voice feedback system

7. If yes, have you ever used an AI-powered voice feedback system to provide feedback on your experience?

All forty-three respondents, in addition to being familiar with the artificial intelligence-based voice feedback system, had experience in giving feedback using this technology.
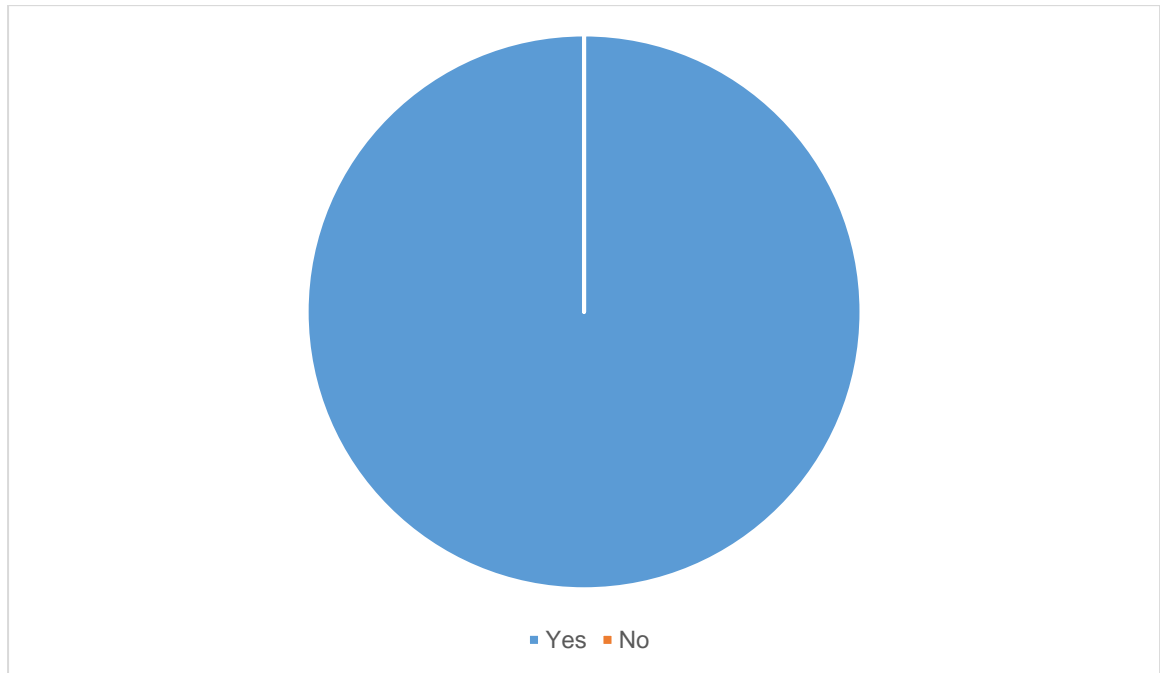
Figure 15. Users of voice feedback

8. If you have used an AI-powered voice feedback system, please rate the effectiveness of this technology in addressing your concerns or improving your experience.

Since forty-three respondents are familiar and have had experience with voice feedback based on artificial intelligence, all forty-three answered question 8. This question directly evaluates the effectiveness of voice feedback from the perspective of customers, the end users, who can truly provide insight into whether customers are satisfied or not.

It is important to note that there was not a single answer in favor of the ineffectiveness or strong ineffectiveness of voice feedback. Mostly more than half of the respondents are satisfied with the effectiveness of voice feedback, which suggests that they are satisfied with the service and the improvements that follow thanks to their feedback. However, 28% were neutral about voice feedback, again citing DeMars and Erwin (2005, 2) that this is an average assessment.

Again, based on the fact that some chose to select the average rating for voice feedback, and all respondents also had the choice to answer in favor of ineffectiveness, it can be assumed that this feedback method is more effective than ineffective.
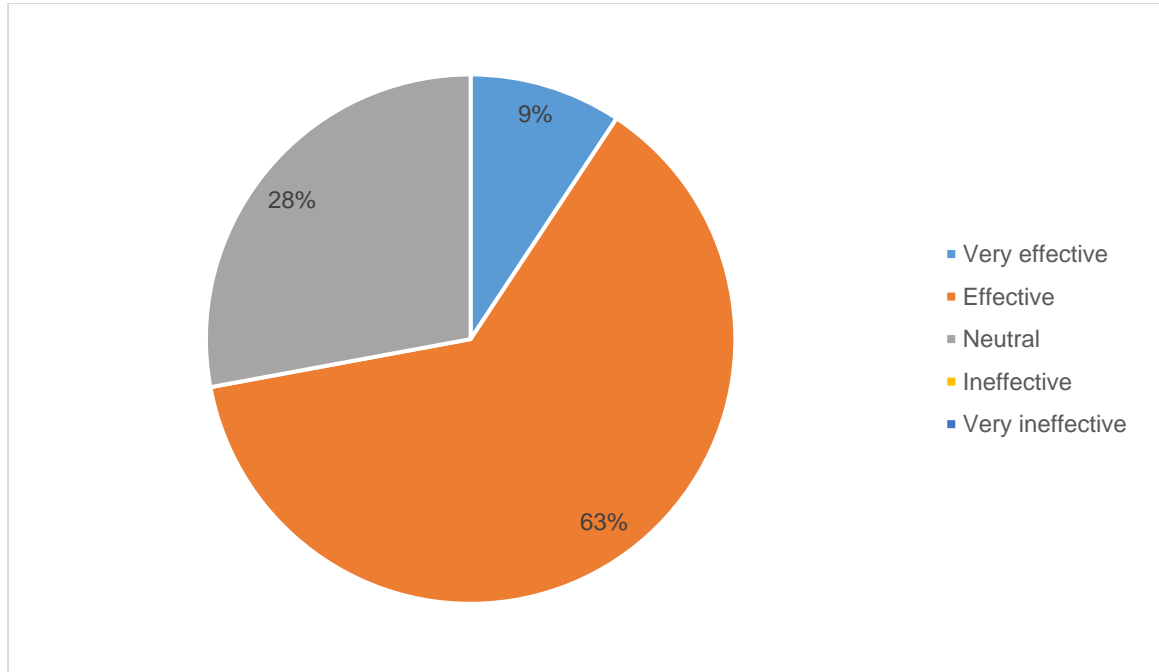
Figure 16. Effectiveness of voice feedback

9. In your opinion, how do traditional feedback methods compare to AI-powered voice feedback in terms of ease of use?

The question about the comparison of "traditional" methods and voice feedback based on artificial intelligence was originally planned to be asked to those who would answer positively to the question about experience with "traditional" methods. After compiling the questions in the questionnaire and double-checking, it was decided to add this question for everyone, taking into account the answer option as: "I do not want/can compare." The reason for this decision is that respondents can rely not only on their own personal experience, but also find themselves in various situations based on the experiences of other people. The added answer option is suitable for those who do not want or cannot rely on

something other than their personal experience and find it difficult to answer such a question.

The question was formulated to determine whether this is an easier method to use than other feedback methods. Based on the theoretical part, which confirmed the difficulties in using "traditional" feedback methods, as well as from the interviewees' answers, which mentioned ease of use, it seemed relevant to ask a question to confirm or not confirm these thoughts.

Analyzing the answers to question 9, 65% said that voice feedback was much easier to use, while 7% said that "traditional" feedback methods were easier to use. 14% agreed that all methods were easy to use, while 2% were somewhat indifferent. Also, there are as many as 12% of the answers that the respondent did not want or could not compare and answer this question. The latter can be explained by the fact that not all forty-three respondents had experience with feedback methods other than voice feedback, so they decided not to give an exact answer.
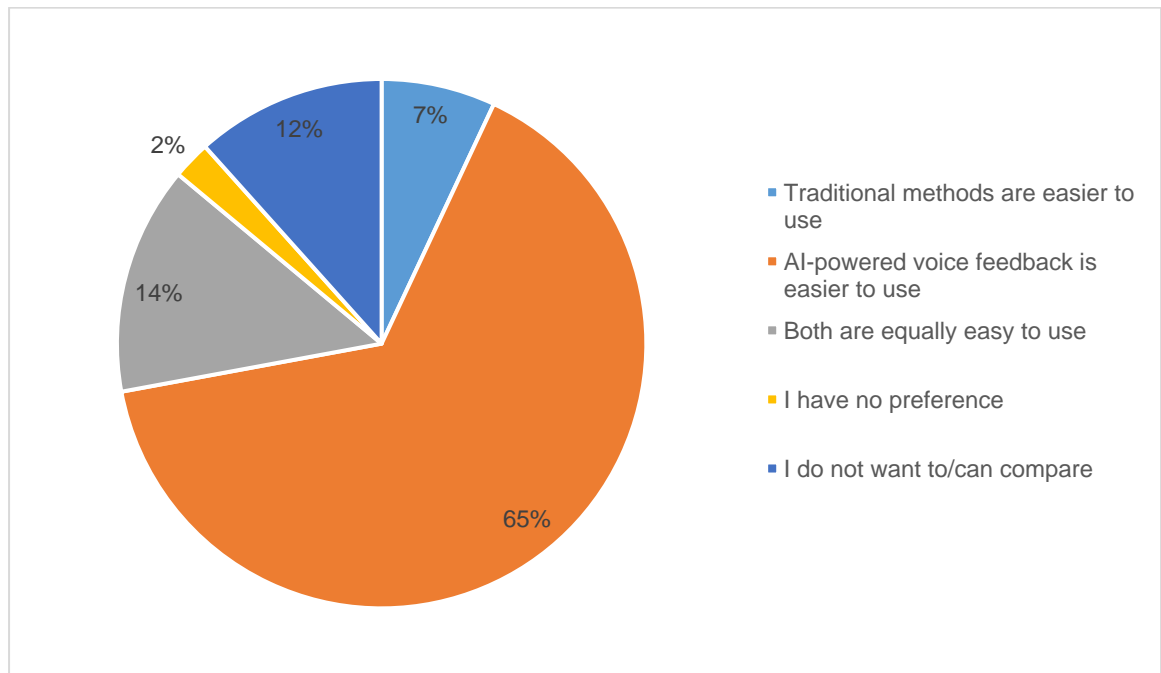
Figure 17. Easiness of different feedback methods

10. Which method do you believe provides more accurate and valuable insights for hospitality services to improve customer satisfaction?

The majority of respondents chose that, using voice feedback based on artificial intelligence, hospitality services receive more accurate and valuable information to improve customer satisfaction. 11% said that "traditional" methods are more important. 12% showed the result that all methods have the same effect on obtaining more accurate and valuable information. 7% are not sure which is more important.

Opinions are divided on this issue, but with each question the point arises that a positive assessment of the effectiveness of voice feedback always exceeds, and quite makes a significant difference.
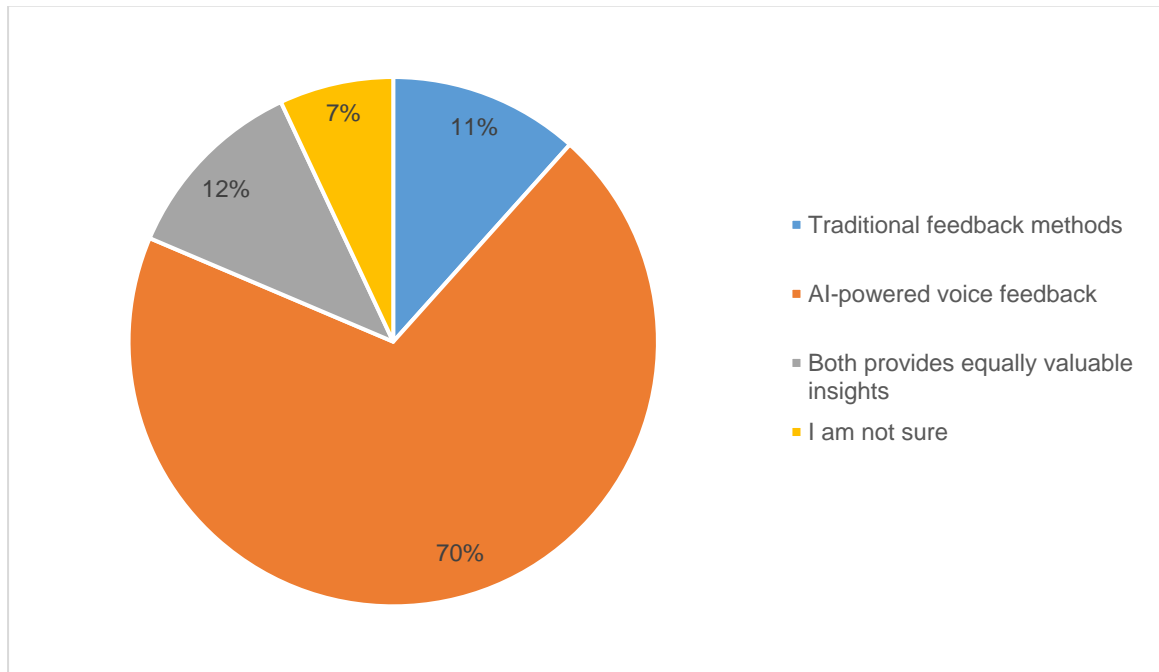
Figure 18. Accuracy and evaluability of each method

11. Considering your experiences with both traditional and AI-powered voice feedback system (or just with AI-powered voice feedback system) how satisfied are you with the overall customer experience provided by hospitality services?

Respondents who had experience only with voice feedback or with traditional methods, summarizing the answers, were satisfied with the quality of customer service provided by the hospitality sector, or more precisely by companies in which a voice feedback system based on artificial intelligence was already integrated. 19% remained neutral, but there is not a single answer out of all forty-three answers that anyone was not satisfied with the quality of work. This can be regarded as a fairly good indicator, because with answers with an advantage in the effectiveness of voice feedback, and even with the assumption that traditional methods are also effective and, according to some, even superior, respondents assessed the companies' work positively. The reason for this is the fact that all the companies whose clients were surveyed had already had a voice feedback system in place for some time, primarily highlighting this particular method of receiving feedback rather than face-to-face, phone calls, letters, reviews in applications, etc.
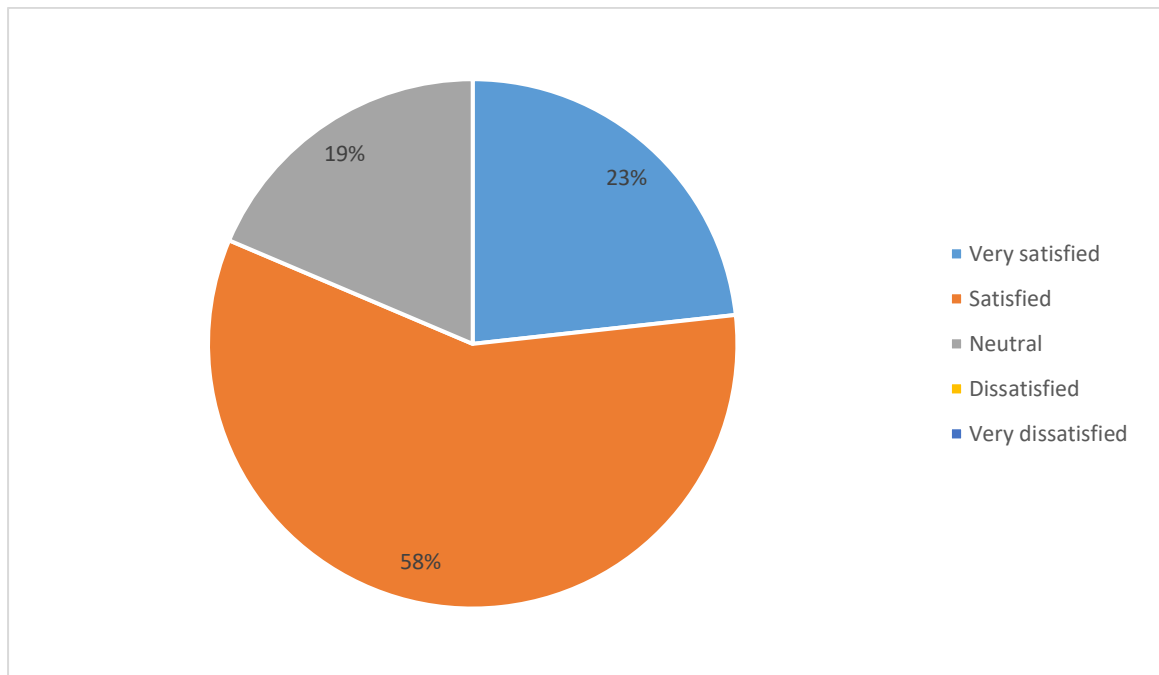
Figure 19. Satisfaction with different feedback methods

12. If you would like to provide any additional comments or suggestions regarding the use of feedback methods in the hospitality sector, please feel free to share them here.

When completing the questions, it was decided to end the questionnaire with the option that each respondent could leave any additional comments or suggestions regarding the use of feedback methods in the hospitality sector. In this way, it is possible to summarize the questionnaire, which will have a logical ending, and also give the opportunity to speak to any respondent if there is a desire and time.

The last item, which was not required to be answered, received fourteen responses, but they turned out to be quite simple. To summarize, the responses consisted of respondents being interested in taking the questionnaire and being part of the research work. The responses did not consist of suggestions regarding the use of feedback in the hospitality sector, nor did they have recommendations. However, there was additional evaluation of the effectiveness of voice feedback in a positive direction.

R1: "Cool, thanks for the questionnaire! I enjoy using voice feedback in cafes, and often say things that can be corrected in the audio, or more often give compliments and encourage the staff. I think it's fun and cool."

R9: "As soon as I discovered voice feedback, I used it almost immediately to check how it worked. I like innovations. While going through the questionnaire, I noticed that while doing it at first out of interest, later became interested in the process. Now I constantly record feedback. It started with negative comments, and turned to constructive talk about all the points, including the good aspects."

6 CONCLUSION AND DISCUSSION

6.1 Key results and findings

Despite the fact that the analysis consists of different methods, each form of information is dependent on each other and complements each other. The findings and analysis supported the theoretical part, complementing the point about assessing the effectiveness of the new system presented by the commission company. Based on the analysis, conclusions were drawn in this work.

The research question of this dissertation is: How effective is AI-powered voice feedback for customer satisfaction in the hospitality sector? The analysis shows that the new, implemented system in the surveyed companies, voice feedback based on artificial intelligence, brings a positive effect on business processes and customer satisfaction in the hospitality sector. Customers interviewed, end users of this system, together with customers observed by interviewees, showed a positive outcome from the use of voice feedback, showing results of improved customer satisfaction. Often in the interview and questionnaire questions, there was wording in the form of a comparison between the "traditional" feedback that was used previously in the company, and the new voice feedback system, in order to reveal the effectiveness of one and the ineffectiveness of the other. The results of such questions only supported the new voice feedback system based on artificial intelligence, talking about interest in the system, desire to leave feedback, ease of use, quality of feedback and improvement of work for customer satisfaction. An interesting discovery during the analysis was the moment of one of the interviewees, who shared that after voice feedback, which is converted into text and automatically sent to the employees' phones, the motivation to work increases.

The answer to the question of this dissertation is quite short, but very obvious and understandable, based on the results and analysis of the responses of the respondents and interviewees. The effectiveness of artificial intelligence-based voice feedback surpasses the effectiveness of previous methods that were implemented in companies in the hospitality sector. Ease of use and engagement played a key role in increasing demand for the feedback system, and critical issues were immediately corrected because employees had a positive reaction to the new system. Based on their experience, the interviewees were able to evaluate the effectiveness of the new system quite easily in a positive direction, and end users not only all used voice feedback, but also assessed the functionality and work of the companies well. Generally speaking, to summarize and answer the question of this research work, AI-based voice feedback is much more effective than previous feedback methods and has many advantages.

Also, we need to highlight the moment from the interview when problems with voice feedback based on artificial intelligence implemented in the company were discussed. Interviewees did not note any problems at the moment with the new feedback system, however, one of the respondents shared his fears for the future. Trends change from year to year, and there is always the possibility that an artificial intelligence-based voice feedback system may become outdated and lose the effectiveness it has today.

In conclusion, both the interviewees and those surveyed, that is, the end users of the artificial intelligence-based voice feedback system, are satisfied with the implementation in the company. All respondents highly appreciated the implementation of voice feedback from the perspective of business processes and customer satisfaction.

6.2   Managerial implications

Today, companies still face challenges in obtaining feedback to improve customer satisfaction. Various feedback methods have been used over the years, and new ones are always replacing old ones. If initially these were personal phone calls, emails with a questionnaire, then after digitalization emails, social networks and applications appeared. Having called all the presented methods traditional, the authors wanted to talk about a new technology based on artificial intelligence. In general, artificial intelligence has now greatly influenced all areas of life, and of course it has affected business, as well as the hospitality sector. Artificial intelligence, as explained in the theoretical part of this research work, has facilitated the processes of collecting feedback, analyzing feedback, and so on. It is now so flexible and fast that businesses need to adapt and accept new technologies into their business processes.

Thus, the commission company, having developed a voice feedback system based on artificial intelligence to satisfy customers, burst into the market with a new technology that is not available anywhere. This system does not provide direct competitors on the market. However, it was important to check the effectiveness of this system, in fact, why both representatives of companies in

which voice feedback was implemented, and end users who are familiar with this technology were interviewed.

Based on the results and summaries of the results, it was stated that the system is effective to date. There were not many the commission company recommendations found with positive results, but there are some.

Since traditional methods are a little outdated in their effectiveness, innovations also have a chance of losing their relevance and former effectiveness. Moreover, based on the interview results, one can see that there is such a fear. Therefore, it is important to maintain some kind of continuous improvement of the system. By theoretically studying the various uses of artificial intelligence in business, the current system can always be improved or expanded in terms of functionality. Also, you can integrate the system not only to receive feedback, but also to provide the company with a booking and management system. This option is perfect for hotels in which this system has been implemented, as well as cooperation with other hotels and new partners.

It is important to note the expansion of the commission company's client base. To start, expand into other regions of the UK, and go international by integrating systems in different continents to strengthen the business. Since the commission company is based in the UK and is not currently widely popular, it makes sense to expand internationally. The problem of ineffectiveness of "traditional" methods applies to the entire hospitality sector in any country, and it is important to work not only in one location.

Long-term strategy is the most important point for every business for long-term operation and existence in the market. With the expansion of business in other locations and the improvement of the system with the introduction of other processes will ensure long service in the market for the commission company.

A commission company can implement these recommendations for long-term business in the market by eliminating potential competitors that may arise with

the popularity of the use and integration of artificial intelligence. All recommendations were submitted to the commission company during the writing of the research paper, which were evaluated.

6.3   Reliability and future development

The extensive topic of this thesis took up several areas of research in the theoretical part. Since it was not just the classification of traditional feedback methods that was studied, but also the hotel industry and the importance of customer satisfaction. Along with this, and understanding the representation of the commission company, artificial intelligence and use in business was superficially studied, and even more deeply the hospitality sector, so that this had one area of understanding. Due to the fact that the voice feedback system based on artificial intelligence is a new technology and does not have theoretical support from studies and books, this was the main difficulty in writing a research paper. Without supporting the theoretical part, the authors of this work needed to somehow explain and prove the importance and necessity of a voice feedback system based on artificial intelligence in roundabout ways. Literature is only now developing towards artificial intelligence and all the facets and possibilities of this could not be explored to date. To evaluate the effectiveness of this work, the authors conducted interviews and a questionnaire to maintain the practical value of this topic. The 8 companies surveyed, which represent different areas of the hotel business, helped to obtain a more extensive assessment than if only hotels or restaurants were surveyed. However, it cannot be said with certainty that the results are broadly generalizable, since the number of companies interviewed was quite small.

The diversity of the businesses that were interviewed helps the study make recommendations and bring entirely new ideas to other companies or developers who are focused on artificial intelligence and integration across industries. The results of this research may bring the idea of creating voice feedback to larger companies that are already working with artificial intelligence but have a different system.

The authors of this thesis have been familiar with the company since the spring of 2023 and have had constant communication in the form of calls and maintaining communication for the common purpose of conducting research work on this topic. The need for this research arose when the commission company, SAYT Tech, was asked by the authors to write a research paper for the company. A common goal with the head of the commission company, measuring customer satisfaction performance in the hospitality sector, contributed to the value and useful data of this study. The managerial implications of this work include the desire for long-term operation in the commission company market because the results of the analysis showed quite positive results. The only point was the possible improvement of the voice feedback system in order not to lose its relevance and remain on the market. It is also natural to expand to strengthen the business not only in one location. The founder of the commission company has a deep understanding of the voice feedback system based on artificial intelligence, because he himself worked in the development of the technology, which helped the authors understand the functionality of the system even if they are not specialists in the development and artificial intelligence area.

The two methods chosen, interview for the qualitative method and questionnaire for the quantitative method, support the theme and purpose of this research work. The interviews were always conducted in a professional manner, maintaining complete confidentiality, because the interviewees did not want to reveal either their personalities or their specific place of work, or rather the names of their businesses. Each interviewer was responsible during the interview, providing a broad explanation for each answer. Also, the interviewees contributed to completing the questionnaire, since the respondents were clients of these companies, and the authors did not have direct communication with the respondents. Support and assistance helped the authors to compile the practical part of this study. The two methods complemented each other perfectly, since all respondents had encountered an artificial intelligence-based voice feedback system and could really evaluate its effectiveness.

Ideas were collected to develop the commission company for future work. The answer from the interviewee, who spoke about fears of effectiveness in the future, was of great help, explaining that everything may lose its relevance. Based on this and the general analysis of the research work, the authors suggested small ways for further development. However, the difficulty was that the assessment of the effectiveness of the voice feedback system was predominantly high compared to the assessment of "traditional" methods. Since the authors of this work are not experts in the development of various artificial intelligence-based systems, suggestions for future work were not clearer. This thesis was aimed at evaluating efficiency, based on this and based on some knowledge of the operations of the commission company, it also cannot offer business development from the outside, for example, marketing, sales, etc.

Due to the fact that the commission company was recently founded, and the voice feedback system has not been integrated into businesses representing the hospitality sector for so long, conclusions were drawn up based only on those companies that were interviewed. If the company had a wider customer base, then the number of respondents and interviewees would be larger, creating a larger research paper from a practical point of view.

The study was narrowed because it only provides an assessment of the effectiveness of artificial intelligence-based voice feedback, which does not currently have theoretical support. This study was not focused on artificial intelligence and its facets but may provide some insight for people familiar with the development and operation of artificial intelligence-based voice feedback systems. It can also provide its value for new ideas that can form the basis of the commission company's work.

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LIST OF FIGURES

A cover note for the open interviews

Dear participant,

We are writing to you to present a critical part of our research, which includes interviews with companies working with the commission company SAYT Tech. We are grateful for your initiative and contribution to the research work in pursuit of the goal of evaluating the effectiveness of AI-powered voice feedback for customer satisfaction in the hospitality sector. Your cooperation and support will be invaluable to the success of this thesis, and we are committed to conducting interviews with the utmost professionalism, ethical standards, and respect for the confidentiality of all concerned.

As part of our commitment to strict confidentiality, we wish to emphasize that the identities of all interview participants, your names and name of organizations, will be protected. Our priority is to create a safe and open environment in which our interviewees can openly share thoughts, perspectives, and experiences.

Thank you for your time and participation.

Best regards,
Danara Satayeva & Tagir Murtazin

Interview questions

1. Could you speak broadly about your field of activity, experience and time working in the hospitality sector?
2. Based on your vision and work experience, how effective were feedback methods before the advent of artificial intelligence-based voice feedback technology?
3. What do you think are the disadvantages of traditional feedback methods when collecting customer satisfaction data?
4. What differences have you noticed between voice feedback based on artificial intelligence and traditional methods?
5. From your perspective, what are the potential benefits of implementing AI-powered voice feedback to collect customer satisfaction data?
6. Can you describe the main problems and successes that you encountered after implementing a voice feedback system based on artificial intelligence?
7. How do you see the future of AI-powered voice feedback in the hospitality sector and what changes or improvements do you expect to see in the coming years?
8. Has the introduction of an artificial intelligence-based voice feedback system become a more effective feedback method for customer satisfaction in the hospitality sector?
9. Do your organization's clients often use an artificial intelligence-based voice feedback system?
10. Do your organization's clients use other feedback methods?
11. Would you consider your organisation's current level of customer satisfaction excellent?

A cover note for survey

Dear participants,

To begin with, we would like to thank you for your contribution and assistance in developing the research work. Your contribution is highly appreciated.

To develop the practical part and fully compile the research work, we need not only interviews, but also a survey with the end users of the voice feedback system, which are your clients directly. We understand that sharing your customer base may be prohibited and is business confidential information. However, we would like to ask for any assistance on your part to be able to interview end users.

We offer a simple solution to this situation, where you can leave a link for end users so that they can complete the questionnaire that we have compiled and are ready to share. We will be waiting for your answer and if this solution does not suit you, then we are open to discuss any other.

Looking forward to hearing from you soon,
Danara Satayeva & Tagir Murtazin

Survey for thesis

Dear participants,

We are conducting a research questionnaire for clients
who have used an artificial intelligence-based voice feedback system. Your
answers will influence the evaluation of the effectiveness of AI-powered voice
feedback for customer satisfaction in the hospitality industry. The results of
the questionnaire are anonymous, your personal data will not be covered or made
public anywhere. We prioritize creating security and anonymity for a
comfortable completion of the questionnaire. The 4-minute survey comprises 11
brief multiple-choice questions and 1 open ended question.

We thank you for your
participation and assistance in the research work,

Danara
Satayeva & Tagir Murtazin.

Age *

○ Under 18

○ 18-24

○ 25-34

○ 35-44

○ 45-54

○ 55-64

○ 65 or over

Gender *

○ Male

○ Female

○ Non-binary

○ Prefer not to say

How often do you use hospitality services (e.g., hotels, restaurants, travel accommodations)?

○ Daily

○ Weekly

○ Monthly

○ Occasionally

○ Rarely

Have you ever provided feedback to a hospitality service (e.g., through surveys, *
comment cards, online reviews) using traditional methods?

○ Yes

○ No

If yes, how satisfied are you with the effectiveness of traditional feedback methods in addressing your concerns or improving your experience?

○ Very satisfied

○ Satisfied

○ Neutral

○ Dissatisfied

○ Very dissatisfied

Are you familiar with AI-powered voice feedback systems used by hospitality services?

○ Yes

○ No

If yes, have you ever used an AI-powered voice feedback system to provide feedback on your experiences?

○ Yes

○ No

If you have used an AI-powered voice feedback system, please rate the effectiveness of this technology in addressing your concerns or improving your experience:

○ Very effective

○ Effective

○ Neutral

○ Ineffective

○ Very ineffective

In your opinion, how do traditional feedback methods compare to AI-powered voice feedback in terms of ease of use?

○ Traditional methods are easier to use

○ AI-powered voice feedback is easier to use

○ Both are equally easy to use

○ I have no preference

○ I do not want to/can compare

Which method do you believe provides more accurate and valuable insights for hospitality services to improve customer satisfaction?

○ Traditional feedback methods

○ AI-powered voice feedback

○ Both provide equally valuable insights

○ I'm not sure

Considering your experiences with both traditional and AI-powered voice feedback system (or just with AI-powered voice feedback system) how satisfied are you with the overall customer experience provided by hospitality services?

○ Very satisfied

○ Satisfied

○ Neutral

○ Dissatisfied

○ Very dissatisfied

If you would like to provide any additional comments or suggestions regarding the use of feedback methods in the hospitality industry, please feel free to share them here.

Your answer