

## Channels of social influence for decision making in restaurants: A case study

### Canais de influência social na tomada de decisão em restaurantes: Um estudo de caso

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#### Abstract

Consumers use the Internet to obtain information on tourism products and services. When evaluating the alternatives, they are faced with a large volume of information that makes their purchasing decision difficult. In this context, the generalized use of mobile instant messaging (MIM) has led to the implementation of chatbots in these channels, to help to plan the purchase. This research explores restaurant selection through a WhatsApp mobile instant messaging (MIM) chatbot. A study is made of the channels consulted by travellers on Web 2.0 as well as the search models and restaurant selection processes, and a case study is presented. The results allow the diagnosis of the main criteria of user behaviour in this type of conversational interface in the decision-making process related to gastronomic consumption.

**Keywords:** User-generated content (UGC); decision-making; tourist platforms; chatbots; MIM.

#### Resumo

Os consumidores pesquisam na Internet à procura de informações sobre produtos e serviços turísticos. No momento de avaliar as alternativas disponíveis, encontram-se perante um grande volume de informação que gera dificuldades na decisão de compra. Perante este contexto, o uso generalizado de serviços de mensagens instantâneas (SMI) têm vindo a provocar a implementação de *chatbots* nestes canais, com o fim de ajudar no planeamento da compra. Nesta investigação, estuda-se o processo de escolha de um restaurante com recurso a um *chatbot* existente para o serviço de mensagens instantâneas disponibilizado pela aplicação WhatsApp. Será feito o estudo dos canais consultados pelos turistas na Web 2.0 e dos modelos e processos de pesquisa na eleição de um restaurante, assim como é apresentado um estudo de caso. Os resultados do estudo vão permitir detetar as principais variáveis comportamentais dos utilizadores deste tipo de interfaces conversacionais no momento da tomada de decisões associada ao consumo gastronómico.

**Palavras-chave:** Conteúdo gerado pelo utilizador (CGU); tomada de decisão; plataforma de turismo; chatbots; SMI.



## 1. Introduction

Web 2.0 has created new patterns of behavior and consumption when looking for information about any product or service. The experience of other consumers plays a very important role in this search (Brucks, 1985; Rao & Sieben, 1992) and thus influences purchasing behaviour (Mallalieu & Palan, 2006).

In the tourism sector, travelers consult content channels generated by other users such as blogs, social networks or specialized forums when planning their trip to make a purchase decision at each stage in the travel cycle. For example, during their stay at the destination, before going to any restaurant, travelers seek comments and reviews from other consumers about that particular restaurant, which then decisively influences their choice (Sen & Lerman, 2007; Chu & Kamal, 2008; Lee, Park & Han, 2008; Doh & Hwang, 2009; Lee & Youn, 2009; Martin & Lueg, 2013).

However, sometimes the evaluation of information from other Internet travelers is too tedious and complicates decision making as a result of too many opinions about a product or service (Park & Lee, 2008). In this context, it is considered how the peak in Mobile Instant Messaging (MIM) can be a channel, not only for social communication but also as a source of automated information in the tourism sector. This automation in MIM channels is realised by the implementation of a chatbot. Chatbots are software programs which communicate with their users using a natural language (Griol, Carbó & Molina, 2013; Shawar & Atwell, 2007; Kerly, Hall & Bull, 2007) and engage in a conversation with the user, generating a natural language as a result (Griol *et al.*, 2013). The aforementioned chatbots enable automatic response to consumer messages for product purchases through the messaging interface (Constine, 2016; Shopify, 2016). Airlines such as KLM or the gastronomic recommendations social network, Foursquare, invite travelers to make queries through Facebook Messenger through a chatbot.

There are few studies dealing with traveler behavior when looking for recommendations of restaurants in chatbots. Therefore, in this study, it is proposed through a study of case to analyze the search process that a traveler goes through to choose a restaurant using a chatbot in WhatsApp instant messaging. The objective is to analyze criteria decision-making process of a regular chatbot user (a tourist) when following its recommendation, to see what the effect is on the consumption decision and the assessment regarding the chatbot and the recommended restaurant.

This article includes the following sections for the development of the research: firstly, a review of the literature on the search for information carried out by tourists when choosing a restaurant by studying the key indicators for their choice, studying chatbots in mobile instant messaging and an analysis of existing ones in the gastronomic tourism sector and analyzing the communication process maintained. Once this review has been undertaken, the objectives and methodology of this paper are defined. Finally, it concludes with the main contributions of this study.

## 2. Social channels: Web 2.0 and MIM for restaurant decision making

The advances in new technologies have facilitated the exchange of information on products between consumers. Specifically, in the tourism industry, the use of Information and Communication Technologies (ICT) is a key element for tourists at various stages in the travelcycle (Ricci & Werthner, 2001).

The phenomenon of Web 2.0 has given rise to a series of social channels that facilitate everything from the choice to the way travel is enjoyed: travelers share photos and videos on social networks right up to transferring their experience during and after their trip (Dey & Sarma, 2010; Gretzel & Yoo, 2008).

The massive adoption of mobile instant messaging (MIM) such as WhatsApp, Facebook Messenger, WeChat or LINE for social communication has created new ways of relationship between brands and consumer. This scenario allows consumers and companies to interact through short messages within a chat. This has led to the reappearance of the chatbots.

### 2.1. Gastronomic Chatbots in mobile instant messaging

Chatbots are virtual assistants based on artificial intelligence that can be used to automate the interaction between a company and a client (Eeuwen, 2017). Other authors define them as software that communicates with its users using natural language (Griol *et al.*, 2013; Shawar & Atwell, 2007; Kerly *et al.*, 2007) and engage in a conversation with the user generating a natural language as a result (Griol *et al.*, 2013).

These machine-to-machine conversation systems interact with human users through natural conversational language (Shawar & Atwell, 2015). Users interact with these applications primarily to participate in short talks. This approach to natural language processing is an extension of the same technique used in the first chatbot by web site; Weizenbaum's ELIZA (Weizenbaum, 1966). However, current chatbots are being implemented in the mobile instant messaging interface (MIM). Their commercial application is at the beginning of a development called conversational commerce where customers can communicate easily with companies through a chat.

Instant messaging chatbots are presented as digital services where they can be accessed from anywhere and at any time from a mobile device. These chatbots help customers to analyze data, products and make decisions (Moatti, 2016; Van Manen, 2016).

In the case of tourism, they are developed to assist the traveler in the different stages of the trip and to offer restaurant recommendations, customer services or the purchase of tourist products and services. There are some tourist brands that already utilise these new ways of interaction with their users such as Destinia, Foursquare or Kayak which communicate with their customers through chatbots on Facebook Messenger.

According to Business Insider Australia (2016), mobile instant messaging channels such as Facebook Messenger, Slack, WhatsApp and Telegram have more active users than any other Internet application, including social networks and mail applications (Kar & Haldar, 2016). There are only ten messaging platforms representing almost 4 billion users (Mckitterick, 2016). The above shows that chatbots through the European Investment Fund (EIF) are an opportunity for brands to use it as a communication channel to address their users (consumers, tourists, etc.).

Current chatbots are built on existing instant messaging applications such as Facebook Messenger, Slack, Telegram, Kik, Skype, Line and Twilio SMS where a user interacts with the bot itself. In this study, the aim is to verify the adoption and use of a gastronomic chatbot when searching for information at destination. This chatbot is based on the formulation of questions and answers in order to recommend gastronomic establishments.

As shown in Table 1, 100,0% of gastronomic recommendation chatbots support the English language and only 20,0% include a language aligned to their place of creation. This shows that the recipients of these chatbots are tourists and therefore use the most common language nowadays, English.

Table 1. Chatbots by MIM for gastronomic consultations

Chatbot name	MIM channel	Consultation phase	Functionality	Chatbot Coverage	Language
Ask Vicente	WhatsApp Facebook Messenger	Search for Destination Subsequent	Recommendation based on: -Location -Price -Momento de consumo -Número de personas	National (Spain)	Spanish English
Foursquare	Slack Skype	Search for Destination	Recommendation based on: -Location	International	English
E-8T	Facebook Messenger	Search for Destination	Recommendation based on: Location Type of food Type of premises Kitchen type	National (Singapore)	English
Kiki	Facebook Messenger	Search for Destination	Recommendation based on: Location No location Book a chat	National (Japan)	English Korean Chinese
Milly	Facebook Messenger	Search for Destination	Recommendation based on: Expert opinions Type of food City events weekly report	Local (Queens, New York)	English
Paitbhar	Facebook Messenger	Search for Destination	Recommendation based on: Location No location Kitchen type Reservation in chat	Local (Lahore, Pakistan)	English
Surebot	Facebook Messenger	Search for Destination Subsequent	Recommendation based on: Location Instagram food hastags Redirect to the restaurant web site for reservations	International	English
Where bot	Facebook Messenger	Search for	Recommendation based on: Location	International	English

Source: Botlist, 2016.

In addition, 90,0% of this type of chatbots are implemented in the MIM Facebook Messenger channel. This is due to: (1) the number of monthly users that Facebook Messenger has; 1200 million users (author and year), which makes it an ideal channel for the relationship between customers and brands; and (2) the opening of its API (Application Programming Interface) for the development of chatbots. It should be noted that only the Ask Vicente chatbot collects all the information stages of the journey cycle (search, destination and later).

2.1.1. MIM versus web 2.0 platforms - the difference between the social platforms generated in Web 2.0 and Mobile Instant Messaging is mainly based on the exchange of information with the user. When looking for a restaurant, in the case of social platforms such as TripAdvisor, Yelp or Foursquare, the user shows his preferences by filtering labels related to the type of food, price, services, location, type of cuisine, options to eat, etc. Those results in the search are based on the comments of other consumer experiences, which have rated that particular restaurant positively. The user reads the comments derived from this experience, as well as the evaluation by items of the restaurant. Access to this type of platform is done by web site or mobile application download.

On the other hand, in the case of gastronomic chatbots by MIM, the user searches for a restaurant chatbot specialized in restaurants. So, through several short messages in a chat the most appropriate sites according to the preferences are recommended. Preferences include: price, location, type of food, type of consumption, date and time, and number of companions. By taking this information into account, through various messages, the chatbot performs the filtering between a UGC social database to immediately show the user a series of restaurants through a conversational interface.

In both cases, however, this is an e-WOM communication, since the intention of this aim is for consumers to make a purchase (Cheung, Lou, Sia & Chen, 2009; Doh & Hwang, 2009; Zhang, Craciun & Shin, 2010). e-WOM is understood as a process of personal influence, in which communications between communicator (transmitter) and receiver can change the attitude and purchases of the decision receiver (Kiecker & Cowles, 2002; Park & Lee, 2008; Cheung *et al.*, 2009).

Therefore, the difference between Web 2.0 social platforms and the communication established in EIF through chatbots is the way of presenting the information; in the former, the communication is from one to several, while in the latter the communication is one to one.

### **3. Communication in digital media that generates social influence**

When buying a product or service, we go to our social environment to receive recommendations on the Internet to evaluate the best alternatives of products and purchase services. Studies have shown how social or individual influence affects people's choices (Arndt, 1967; King & Summers, 1970; Herr, Kardes & Kim, 1991).

These recommendations are found in content and conversations generated within these digital ecosystems, in some cases by users, in others by experts or by the gastronomic sector's own brands or restaurants. In terms of the issuer's role in communication, there are

diferente types of digital recommendation speeches based on: (1) User Generated Content (UGC); (2) Online Consumer Reviews (OCR); and (3) Conversational Commerce.

With respect to the first type, UGC, the recommendation contents are developed by digital users who create online comments, photographs, videos, reviews produced and published by them as sources of information about products and services. These contents generated by them as travelers in Web 2.0 (Dellarocas, 2006; Chung & Buhalis, 2008; Libai, Bolton, Bügel, De Ruyter, Götz, Risselada & Stephen, 2010) influence the consumption decision making of other potential travelers. Positive or negative comments become sources of consumer credibility and, in many cases, have an impact on the purchasing decision (Duan, Gu & Whinston, 2008; Elwalda, Lü & Ali, 2016; Forman, Ghose & Wiesenfeld, 2008).

Travel-related UGCs are found on specific travel-related websites or on social networks in general. This content shows the experiences that travelers have had in their destinations with products or services. Due to the intangibility of hotel and travel products, potential travelers depend on the recommendations and advice of other travelers, especially when planning trips to a high-risk or unfamiliar destination (Cox, Burgess, Sellitto & Buultjens, 2009; Litvin, Goldsmith & Pan, 2008).

Second, OCR communications are online reviews about a specific experience of a product or service by a consumer or expert. They are asynchronous one-way communications between a consumer and many readers or audience (single-to-many communication) (Litvin *et al.*, 2008). OCRs can be defined as any positive, negative or neutral commentary on a product, service, brand made by a previous customer and shared with other consumers in an unstructured format. These can take the form of a blog, a publication or a more structured format such as consumer reviews published on an independent consumer review website.

Within this type of digital communication of social influence, we highlight the examples observed in platforms such as TripAdvisor or Yelp. These opinions through many OCRs have influenced how consumers decide where to go, what to see and what to do or where to eat during their holidays. (Litvin *et al.*, 2008; Vermeulen & Seegers, 2009; Sparks & Browning, 2011; Filieri & McLeay, 2014).

There is another type of OCR that is issued by an expert that validates content and reviews the experiences or content of other users or platforms. Some studies have suggested that consumers tend to seek and follow advice, not just from people like them, but that recommending expert communications has a greater impact on purchasing decisions (Austin, 1983; Ashenfelter & Jones, 2013; Hilger, Rafert & Villas-Boas, 2011). This is due to them being expected to provide valuable and reliable information on product characteristics and quality product (Bristor, 1990; Chen & Xie, 2008; Eliashberg & Shugan, 1997).

Consumers perceive expert information as reliable and useful, and this information tends to have a strong influence on consumer attitudes toward brands, purchase intentions and purchasing behavior (Austin, 1983; Holbrook, 1999).

This large volume of OCR has generated in digital discourse, in many cases a broad social e-WOM (Hennig-Thurau, 2010) on experiences of gastronomic consumption with a great social influence (Hennig-Thurau, Gwinner, Walsh & Gremler, 2004).

Third, conversational commerce is a type of communication offered by brands where consumers can chat with company representatives, get customer support, ask questions, receive personalized recommendations, read reviews and click to buy everything within

instante messaging applications (Shopify, 2016). Messina (2016) defined it as the way to use chat, messages or other language interfaces.

Therefore, the implementation of chatbots in instant messaging channels for commercial purposes is part of the so-called conversational commerce. Van Manen (2016) mainly highlights the characteristics of this type of conversational commerce and states that it offers convenience, customization and assistance to the user's decision-making processes.

The great opportunity that chatbots present as a sales and recommendation channel is to use communication through a chat using natural language to influence the consumer in their planning and decision making in restaurant consumption.

These chatbots by MIM generate a type of interpersonal communication with technological mediation in addition to multiplying the possibility of relationship with the habitual contacts (family, friendly, affectionate, professional). These allow new forms of proximity and reciprocal intimacy with other unknown and uncertain contacts, establishing new modes of encounter and relationship (social networks such as Facebook, MySpace or Tuenti), exchange (file exchange P2P) and cooperation (forums, platforms of collaborative work). All things being considered, this indicates a new media sociability that could be renamed as virtual sociability that makes it possible, for example, to place trust in anonymous subjects who are given enough credibility and good will to make their experience and knowledge available to advise and guide in a consultation (for example, the forums in which they seek, and find, answers to practical doubts on how to resolve various issues), or new forms of financing projects.

Table 2. Characteristics of e-WOM and WOM

Features e-WOM	Authors	Features e-WOM	Authors
Multidirectional information exchanges in asynchronous mode	Hung & Li, 2007; Goldsmith & Horowitz, 2006	Exchange of information between an issuer known to the recipient of the information	Avery, Resnick & Zeckhauser, 1999; Li & Hitt 2008; Dellarocas 2003; Steffes & Burgee, 2009; Matos-Bazó & Vargas-Acosta, 2008; Weimann, 1983; De Bruyn & Lilien, 2008; Katz & Lazarsfeld, 1955;
Persistent and accessible	Herr <i>et al.</i> , 1991; Hennig-Thurau <i>et al.</i> , 2004; Park & Lee, 2008; Hung & Li 2007; Lee <i>et al.</i> , 2008	Non-persistent & Unavailable	Arndt, 1967; Engel, Kegerreis & Blackwell, 1969; Richins, 1983; Richins & Root-Shaffer, 1988; Brown & Reinigen, 1987; Huang & Wu, 2008; Matos & Rossi, 2008
Measurable communication	Lee <i>et al.</i> , 2008; Park & Kim, 2008	Controlled communication	
Voluminous information	Chatterjee, 2001; Goldsmith & Horowitz, 2006	Two-way message	
Interactivity	Duarte Alonso, O'neill, Liu & O'shea, 2013; Armañanzas, Díaz Noci & Meso, 1996	Non-interactive	
Hyperconnectivity	Cáceres, Ruiz San Román & Brändle, 2009	Single channel	

This virtual sociability generated through these chatbots has a greater influence on advice and consumer guidance on a consultation when it applies the characteristics that define mainly e-WOM communication compared to WOM (see Table 2). These characteristics refer to any positive or negative statement about a product, service or brand made by an issuer that influences the belief, attitude and intent to purchase of potential consumers

(Arndt, 1967; Hanna & Wozniak, 2001) and are as follows: Multidirectional information exchanges in asynchronous mode; persistent and accessible communication; measurable; bulky information; interactivity; and hyperconnectivity.

### 3.1. Consultation criteria applied in the conversational protocols of gastronomic recommendation chatbots

Regarding the consultation criteria, that gastronomic chatbots ask for on the part of the user depends on the type of purchase to be made and its implication (Henry, 1987), and the process of consumer decision in which they are: recognition of the problem, search for information, evaluation of alternatives, purchase decision and post-purchase behavior (Kotler & Armstrong, 2012). In any case, the process to be followed by a restaurant referrer chatbot's conversation protocol should be tailored to the needs of applicants taking into account the criteria contemplated in the literature and detailed in Table 3: price, availability, location, image of the dish, restaurant location, users' assessment, quality of food, social information, aesthetics, quality of service, place or environment and value for money.

Table 3. Criteria for the choice of the restaurant

<b>Search criteria for a restaurant</b>	Winarno & Allain 1991; Tripp, Greathous, Shanklin & Gregoire, 1995; Mak, Lumbers, Eves & Chang, 2012; Teas & Agarwal, 2000; Zeithaml, 1988; Hsiao <i>et al.</i> , 2016
<b>Price</b>	Teas & Agarwal, 2000; Zeithaml, 1988; Brown & Sperow, 2005
<b>Availability</b>	Tripp <i>et al.</i> , 1995; Hwang & Masud, 2012; Mak <i>et al.</i> , 2012; Prayag, Landré & Ryan, 2012; Tzeng, Teng, Cheng & Opricovic, 2002; Kuo, Chi & Kao, 2002; Litz & Rajaguru, 2008; Prayag & Ryan, 2012
<b>Location</b>	Heung, Wong & Qu, 2002
<b>User rating (qualification)</b>	Tripp <i>et al.</i> , 1995; Hwang <i>et al.</i> , 2012; Harrington <i>et al.</i> , 2012; Duarte Alonso <i>et al.</i> , 2013; Frash, DiPietro & Smith, 2015
<b>Food quality</b>	Gretzel & Yoo, 2008; Nilashi, bin Ibrahim, Ithnin & Sarmin, 2015; Cheng & Loi, 2014; Lu & Stepchenkova, 2012; Sparks, Perkins & Buckley, 2013; Xiang & Gretzel, 2010
<b>Social Information/Online Reviews</b>	Charters & Pettigrew, 2005; An, Ryu, Park, Lee, Park, Shin & Shim, 2011
<b>Photo/Aesthetics (representative image of the plate)</b>	Bojanic & Rosen, 1994; Jani & Han, 2011; Sulek & Hensley, 2004; Hancer & George, 2003; Oronsky & Chathoth, 2007; Tripp <i>et al.</i> , 1995; Hwang & Masud, 2012; Muller & Woods, 1994
<b>Quality of service (feasibility of staff, cleanliness...)</b>	Sulek & Hensley, 2004; Tripp <i>et al.</i> , 1995; Hwang <i>et al.</i> , 2012; Muller & Woods, 1994
<b>Place and atmosphere</b>	Mak <i>et al.</i> , 2012
<b>Quality/price</b>	Winarno & Allain 1991; Tripp <i>et al.</i> , 1995; Hwang, Lee & Park, 2012; Mak <i>et al.</i> , 2012; Teas & Agarwal, 2000; Zeithaml, 1988; Hsiao <i>et al.</i> , 2016

## 4. Empirical study methodology

This research aims to define what criteria Ask Vicente use, a restaurant recommendations chatbot based on WhatsApp mobile instant messaging, to recommend restaurants. Furthermore, in this research it studies the level of user satisfaction with the

recommendations offered by the chatbot to choose a restaurant when making consumer decisions.

In order to achieve this general objective, the following specific objectives have been established:

- Define the general criteria for finding a restaurant;
- Describe the stages of the decision-making models for purchasing tourism products and services that apply to chatbots;
- Study the conversational protocol of a chatbot to generate recurrence of use in the gastronomic consumer;
- Define the conversational protocol criteria that generate more satisfaction in the consultation of a repeat consumer;
- Know the level of consumer satisfaction with these chatbots.

To carry out this research, we conducted a real case study of a chatbot by MIM WhatsApp of recommendations in restaurants that applies conversational interfaces to generate influence in the planning and decision making of the user on the consumption of restaurants. This user is a tourist who regularly visits the recommendations of a WhatsApp instant messaging chatbot. The case study applies to MIM WhatsApp Ask Vicente Chatbot. This study allows us to compare whether the indicators and stages of purchase decision models in gastronomic consumption that are collected in the literature have been applied in its conversational protocol. These include: the level of satisfaction that its users have with it; what criteria of this protocol generate more satisfaction in the consultation of this type of Chatbot; and what other stages are suggested by consumers.

In order to compare and identify the indicators and stages of gastronomic consumption contemplated in the chatbot, we carried out an analysis of the content of the conversations between this social influence channel and its users in order to satisfy the queries of gastronomic recommendations. In order to ascertain the level of satisfaction and acceptance of this chatbot's service of recommendations, as it is the most reliable when making a decision in gastronomic consumption, a survey and a descriptive statistical analysis of its results was carried out.

This survey, considering the very specific population who consults this type of chatbot, was applied to a convenience sample of the 339 consumers with the greatest recurrence of restaurant consultation. The fieldwork was carried out from June 1<sup>st</sup> to July 31<sup>st</sup>, 2016.

There are several reasons why this case study and its consumers were selected as the most relevant to this research: (1) This chatbot is the only one that provides coverage in Spain in both English and Spanish, while the rest are only available in English at an international or local level; (2) Spain and its citizens are the country in Europe that most uses this type of recommendation channel with more than 1200 million users worldwide (Eurobarómetro, 2016); (3) Ask Vicente has a market share of 92,8% used by Spanish people in the mobile applications of MIM (AIMC, Marzo 2017).

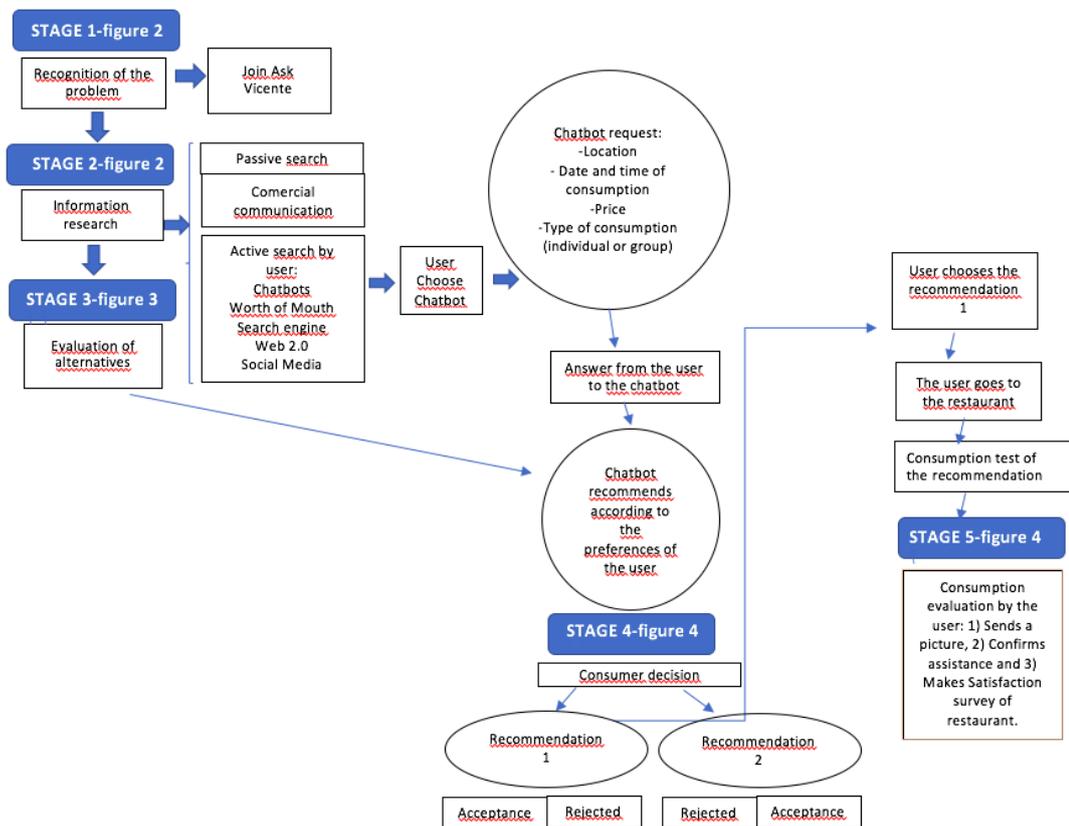
#### **4.1. Case study Ask Vicente by WhatsApp**

Ask Vicente is a chatbot by instant mobile messaging (WhatsApp) that establishes a conversation with a user, emulating the dialogue that a user would maintain with a real

expert who makes gastronomic recommendations. The following results are presented below: (1) Conversational protocol, consumption selection criteria and stages of consumption models used; (2) Satisfaction level and most important criteria for the choice of recommendation and chatbot.

4.1.1. Ask Vicente chatbot conversational interface protocol – through the content analysis of the conversational protocol followed by Ask Vicente, we detect that it applies the Kotler and Armstrong (2012) purchase decision making model to describe the stages of the consultation process: Recognition of the need, information search, evaluation of alternatives, recommendation on consumption decision, recommendation consumption, evaluation of post-purchase or post-consumption behaviour. Figure 1 shows the stages of the AskVicente chatbot according to the user's gastronomic consumption stage and the activated conversational protocol to approach it.

Figure 1. Stages of Ask Vicente Chatbot

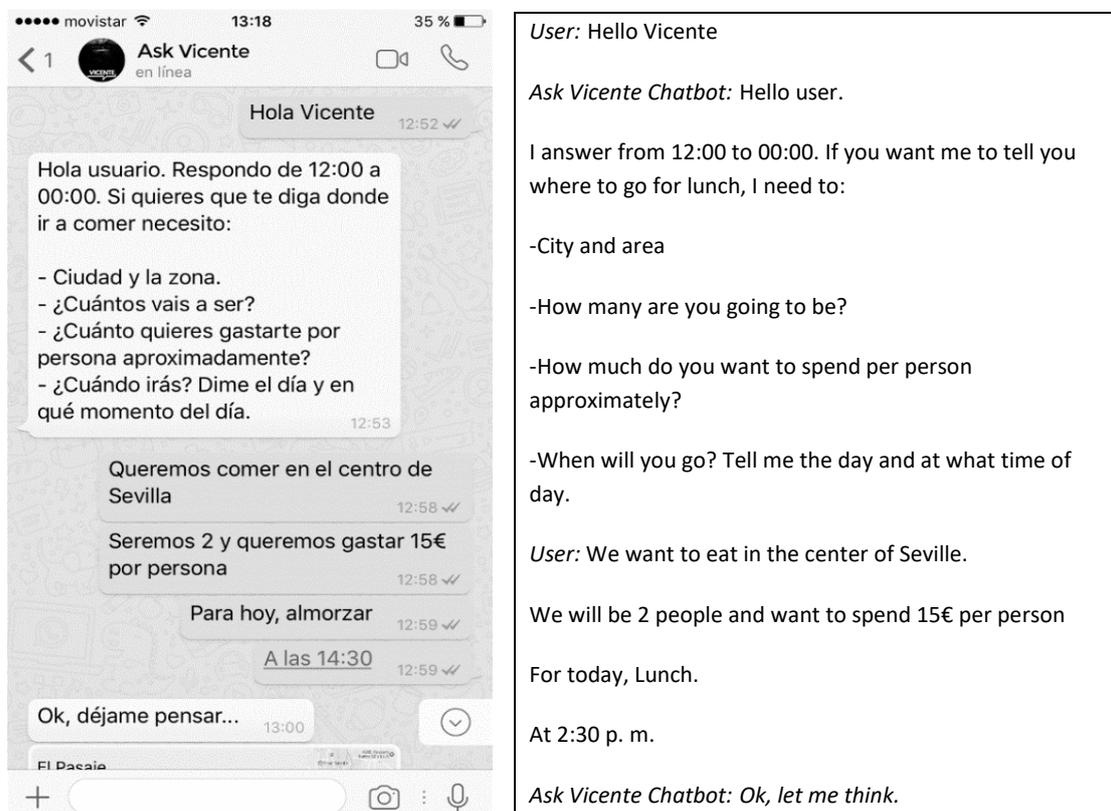


In the Figure 1, the wide arrow represents the stages that the consumer performs in the process of choosing a restaurant to eat. This process takes into account the recognition of the problem, the search for information and the type of information found, the choice of the information source chosen by the user and the evaluation of the alternatives. On the other hand, the narrow arrows represent the user's relationship with the chatbot (source chosen for a restaurant recommendation). The square figure represents the user while the circle to the chatbot.

In stages 1 and 2 of the model, the consumer recognizes a problem "wants to know a good restaurant to eat" and the search for information is proactive on the part of the gastronomic user when he wants to do so through this type of Chatbot. Other consumption models in the search are passive or ahead of other search channels where the user does not have to disclose personal information. In the Ask Vicente chatbot, in order to obtain information from this social influence channel, the consumer has to be proactive to start their consultation and also add the connection of their mobile phone voluntarily to this chatbot. The user voluntarily adheres to this platform by providing his or her mobile number and for this reason, the user can generate greater confidence since it is he or she who initiates the first approach.

In the search or information query phase, a conversational protocol is initiated by the chatbot based on the criteria that the consumer uses to choose the best alternative for their gastronomic consumption decision (see Figure 2).

Figure 2. Conversational protocol of the stages of recognition and search for information

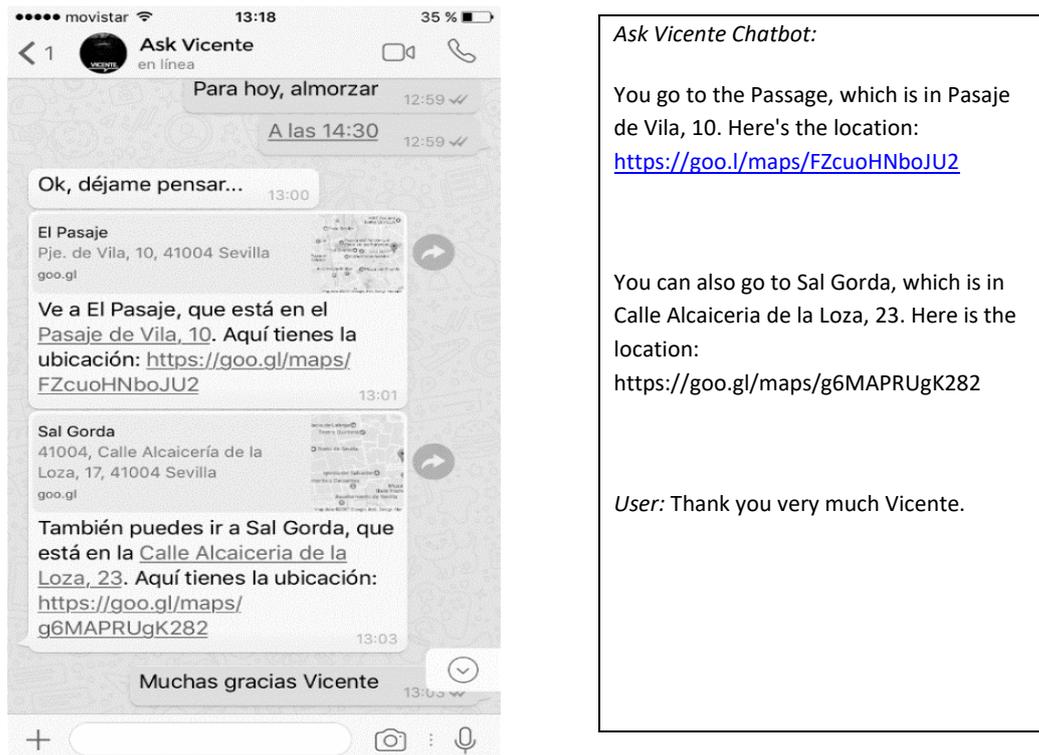


Source: Chatbot Ask Vicente.

As can be seen in Figure 2, the chatbot uses a natural language to mimic and empathize as a human with the consumer who consults. In addition, the conversational protocol asks the same questions and on the same criteria that any user would ask him or herself to satisfy the need that he/she has: (1) Situation criteria (city and zone response with the location link, when will you go?); (2) Family (individual or group consumption - how many will you be?) (3) Gastronomic Product Mix: (how much do you want to spend?). The user has a specific need:

he needs a restaurant in an area or city for a number of diners with a price that does not exceed their budget on a specific day and time. The conversational protocol fits that human need and issues the questions of these criteria in a user-friendly manner as the user initially asks them to choose an alternative. Due to the very nature of this friendly protocol, there is a very humanized interpersonal communication between the user and the chatbot, even adopting “human” expressions on the part of this automated channel. The chatbot uses expressions like “Okay, let me think...”

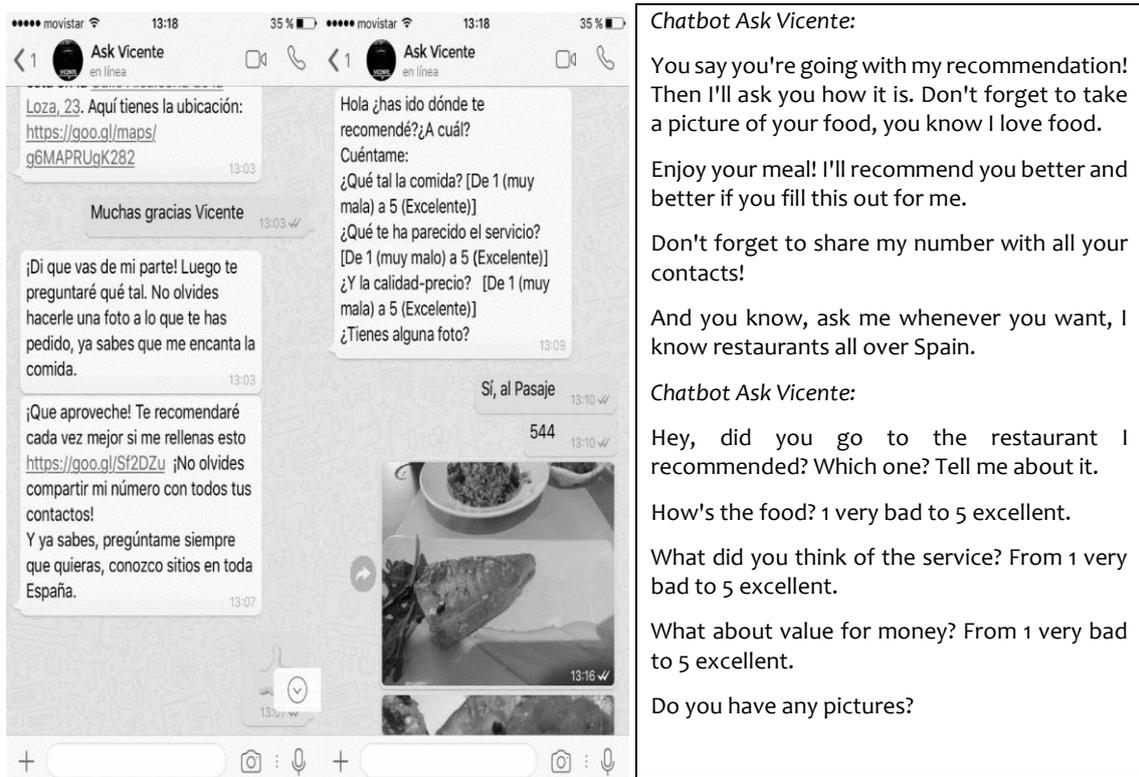
Figure 3. Conversational protocol of the evaluation stage



Source: Chatbot Ask Vicente.

In stage 3, evaluation of alternatives, the gastronomic consumer reduces his or her time in the selection of restaurants compared to evaluation through other information channels. In the chatbot conversational protocol, a previous segmentation of the recommended restaurant alternatives is carried out according to the preferred answers that cover the user's needs. In order to simplify the alternatives, the Chatbot recommends according to the criteria that will influence the consumption behavior of this user (see Figure 3) simplifying the information protocol by generating two recommendation options that meet the user's preference criteria and specifying in each option the name of the restaurant and its location.

Figure 4. Conversational protocol of the consumption decision stage and post-consumption evaluation



Source: Chatbot Ask Vicente.

In stage 4, recommended consumption decision, the chatbot consumer chooses one of the two options but does not communicate in the conversational protocol and neither does the chatbot ask what their final decision is before the recommended ones are given (see Figure 4). The chatbot provides a flexible option to get feedback on the consumer's decision by motivating the user to make two protocols. The first one is related to social behavior, very common in the use of shared content from WhatsApp technology and also in the WOM recommendation: (1) Share a photo of the moment in which the user experiences (“Don't forget to take a picture of what you asked for!”); and (2) Share a contact through WhatsApp (“Don't forget to share my mobile number with your contacts!”). And the second one is related to a questionnaire where users value the recommendation service of the chatbot.

At this stage, the communication style of the friendly and humane conversational protocol of the platform is manifesting itself again (e.g. Say that I am on your side “ask me whenever you want...”).

This is interesting because if for some reason the recommended establishment is closed, the tourist can enjoy the other option. At the end of the conversation the chatbot invites the tourist to indicate to the establishment finally chosen that it has been recommended by Ask Vicente. This is with the aim of promoting the e-WOM in addition to suggest taking a photo of some of the dishes consumed to evaluate the recommendation as well as the consumption.

In phase 5, evaluation of post-consumer behavior, satisfaction or not with the consumption of the recommendation is considered, as well as the recommendation service

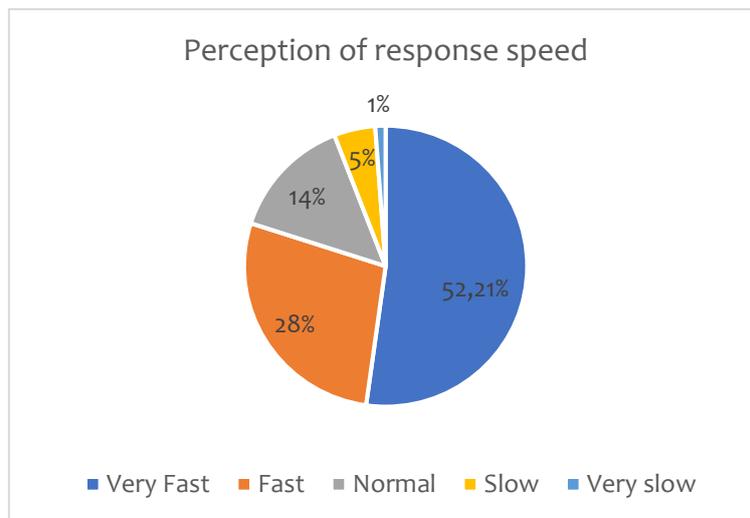
provided through the Chatbot (satisfaction or dissatisfaction). In this phase, the Ask Vicente influence channel asks the user directly if he or she has consumed at one of its two recommendations and asks him or her to rate the food, service and value for money from 1 to 5. It also asks you again for the photo asked for in the previous phase 4 (see Figure 4).

#### 4.2. Satisfaction of consumers in the use of Ask Vicente for gastronomic recommendations

The sociodemographic profile of the sample that answered the survey was a higher percentage of women than men (65,2% vs. 34,8%). The age range of the sample ranges from 18 to 56 years old and over, with 39,97% in the range of 18 to 25 years, 27,4% between 26 and 35 years of age, 18,3% between 36 and 45 years of age, 16,81% between 46 and 55 years of age, and 6,2% among the rest.

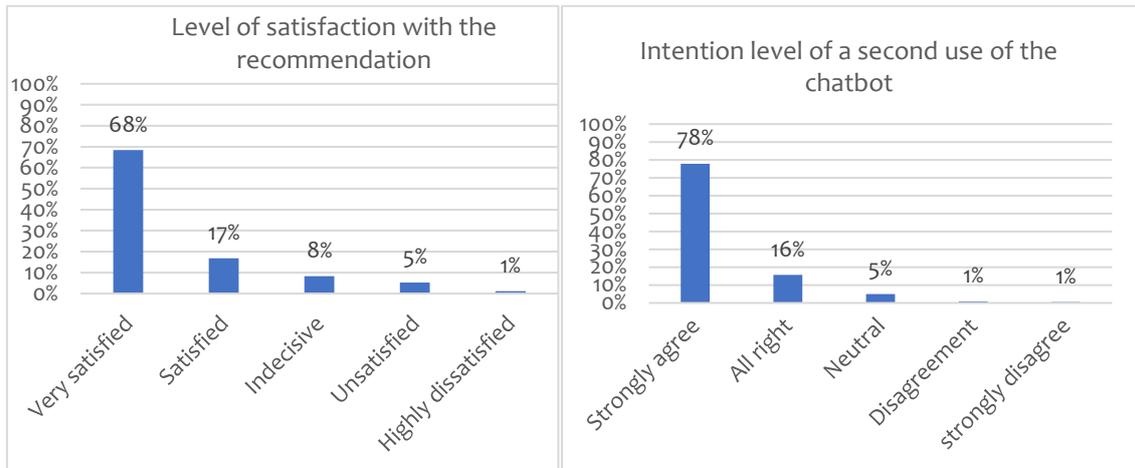
As a result of the survey, the following responses were extracted in relation to the satisfaction with the use of this recommendation chatbot: In relation to the speed of response of the chatbot, as shown in Figure 5, Ask Vicente users positively value the speed of response when answering users' queries to offer recommendations on restaurants. 52,2% of users perceived the chatbot response to be very fast, 28,0% rated it as fast. Only 6,0% rate it slow or very slow.

Figure 5. Perception of speed of response of the Ask Vicente



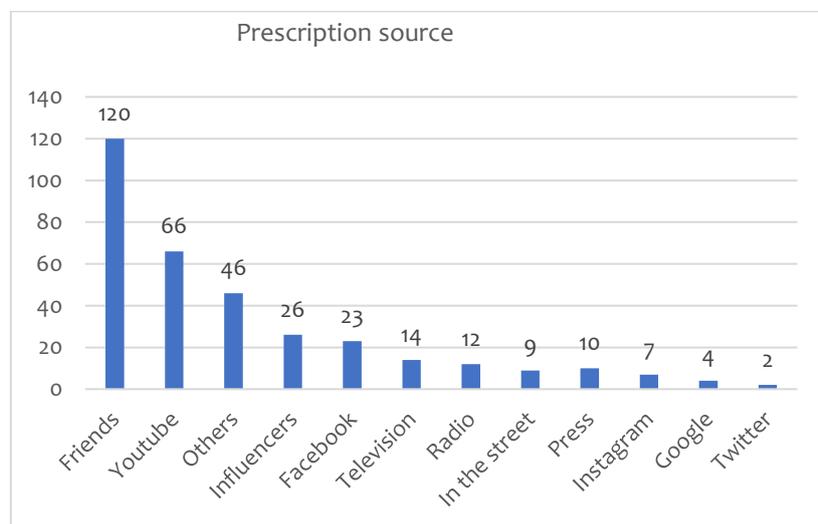
In terms of the level of satisfaction with the recommendation made by Ask Vicente after consumption (see Figure 6): 68% of respondents are very satisfied with the recommendation and only 5,0% are dissatisfied and very dissatisfied (1,0%) with the recommendation made. In addition, the degree of intentionality that users would have in a second use of Ask Vicente for gastronomic consultations is 94,0%.

Figure 6. Level of satisfaction with the recommendation and intention of recurrence in the use of Chatbot



The Figure 7 shows that the channel through which these chatbots are recommended for the consultation of consumption recommendations, is generated mainly through the shared contact of Ask Vicente to a friend. That is to say, that the user reaches its maximum fidelity of the service, not only with its recurrence (see Figure 6), but also recommending the service as requested in the conversational protocol Ask Vicente in its last stage of post-consumer evaluation.

Figure 7. Prescription source for the use of Ask Vicente.



## 5. Discussion and conclusions

The results of our study show that WhatsApp's MIM chatbots define their conversational interactions by following the stages of the consumption decision models that the existing literature contemplates. There are also criteria in the conversational protocols of these chatbots used identical to those that the user makes for choosing a restaurant.

### 5.1. Theoretical implications

Our results show that users use chatbots to request recommendations from restaurants tailored to their needs for quicker and faster decision making than if they used other channels of social influence. More than 80,0% of consumers reward speed in response and are satisfied with the recommendations given by consumers. Therefore, a new trend in the use of chatbots is emerging. They are not only channels of consultation but also take on a new role as channels of social influence for consumer decision-making in restaurants (Moatti, 2016; Van Manen, 2016).

The conversational protocol of the chatbot studied adopts the patterns of an interpersonal communication. Specifically, it emits the questions in a friendly way and as a user would initially ask them to look for and choose an alternative. It also uses a human language or natural language to converse with it. It thus becomes a channel of social influence where conversational commerce prevails (Shopify, 2016; Messina, 2016). Chatbots integrate the new communication behaviours that the digital user usually has in their conversational protocols: in the study carried out, the use of e-WOM (Fileri & McLeay, 2014) is observed to share the moment of consumption with a photo or to share the contact of the chatbot with friends; and even with the generation of user content in social networks about the consumption experience recommended by the Chatbot.

The design of the conversational protocol of the analyzed chatbot takes as a model in the stages of interaction with the consumer to give recommendations, the model of decision to buy (Kotler & Armstrong, 2012). In the case study, the chatbot recognizes the user's problem, offers alternatives to the search query of the user, gives alternatives for making the decision and makes a post-purchase evaluation to know the customer's satisfaction. However, despite following the stages of this model of consumption behaviour, a new stage is introduced: "the activation of the expert recommender or Chatbot". This stage is an intermediate step between recognition and information search. In the case of recurring consumptions, the "expert recommendation" stage shortens the purchasing decision process, going directly to ask the expert chatbot without entering a phase of searching for new information channels. Therefore, chatbots could become "recommended experts" that reduce the user's time when it comes to making decisions about restaurant consumption.

The user's initiative to activate the chatbot in their purchase decision process by adding their mobile number on a voluntary basis, is a favorable starting attitude for the adoption of this "expert recommender" in how to influence their decision making.

Compared to other Web 2.0 recommendation channels or platforms which lack proactivity, instantaneity, natural language and the use of conversational protocols similar to consumer thinking (Kerly *et al.*, 2007; Hill *et al.*, 2015), chatbots are not only presented as one more recommendation channel. They also adopt a role of "reliable influencer" precisely because in their conversational protocols they use similar thought patterns to the one that the consumer establishes in the choice of a restaurant and offering very adjusted recommendations.

With respect to the criteria for the search, selection and evaluation of a restaurant by the user, the chatbot conversational protocols analyzed find some that have already been recognized by authors and also identify new criteria (see Table 4).

Table 4. Criteria in the conversational protocol of Chatbot Ask Vicente

Stages	Criteria collected by literature and applied in the conversational protocol	New criteria identified in the conversational protocol
Information search	Price, availability, location	Number of restaurant
Restaurant decision	Location of the restaurant	Route to the recommended restaurant
Post-consumer evaluation	Quality of food, restaurant service, value for money. Image or aesthetics of the consumed dish (photo of the plate).	Recommendation to influence (chatbot)

In the literature, one of the criteria for decision making in choosing a restaurant is “the assessment of other users towards the restaurant”. In this case, the consumer does not consider this relevant criterion when considering the platform as the best recommendation option, since most of them receive the positive prescription on this Chatbot through some contact or acquaintance who has experienced it (see Figure 7) more than from any other source.

Faced with this positive prescription made by a person who has experienced it and who is from the environment of the new user, it is likely that these chatbots will become channels of greater confidence a priori when it comes to their use compared to other alternative recommendation platforms. Moreover, this prescription by an acquaintance who has had a satisfactory experience with a chatbot, positions it as a new channel in influence marketing, being an expert channel that acquires notoriety because its recommendations are based exclusively on covering the social need through satisfying experiences of consumer consumption of particular users. These chatbots put the satisfaction of the user's or society's needs before the positioning needs that restaurant brands want.

Satisfaction with the chatbot analyzed as a channel of social influence by the surveyed recurrent consumer in more than 80,0% is highly satisfied. The conversational protocol itself establishes a qualitative indicator of satisfaction through the photos of consumption in the restaurant (photo or ticket).

In short, unlike the social platforms of web 2.0, chatbots should be understood as an interpersonal channel mediated by technology that allows one-to-one communication that facilitates adaptation to consumer preferences at all times. Moreover, in these digital platforms of restaurant reviews, at a time of immediacy being in a specific place, the evaluation of all these reviews is complicated and makes it difficult for the user to choose where to consume. On the other hand, the possibility of having a channel of recommendation and influence with immediate responses facilitates the choice of the restaurant and the subsequent consumption by any user who requests it.

## 5.2. Managerial implications

With these results, the foundations are laid for the development of a future decision-support model through a conversational interface for choosing restaurants. These user decision

support models make these chatbots a more reliable means of recommendation by introducing consumption alternatives in a more user-friendly, responsible and responsive manner tailored to the specific needs of the user. For companies and brands that want to work in a context of trust and responsibility with the gastronomic consumption offered to the user, these chatbots can become a recommendation of their products and services socially credible.

### 5.3. Further research

In future research, it would be interesting to establish scales of user satisfaction based on the response given by the user in the conversation with the restaurant. In future research, it would be interesting to establish satisfaction scales based on photographs or videos of the dishes consumed or the restaurant visited.

For the economic and social sustainability of these chatbots as reliable channels of influence, it would be interesting to conduct an RFM (Regency frequency monetary) study to estimate the approximate expenditure of each recommended consumption.

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