

ASSESSING ACCURACY PREDICTORS IN
MEGATREND QUALITATIVE FORECASTING IN
THE HOSPITALITY AND TOURISM INDUSTRY

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ABSTRACT

Plenty of literature on megatrends escapes the logic of validation. Most publications on forecasting apply quantitative methods and the use of qualitative forecasting is scarce especially in the Hospitality and Tourism (H&T) industry, which is so sensitive to macro level factors. Alongside this, it is surprising that studies that explore the accuracy of such predictions are scarce which hampers the capacity to improve forecasting techniques. With this in consideration, the main goal of this study was to uncover the potential predictors of accuracy in qualitative forecasting sources in H&T. In order to do so, we identified and selected a set of documents that used qualitative forecasting methods to predict trends in H&T for the 1998-2008 period, and devised an empirical study that puts to test the expected trends against the test of time. With a panel of 14 experts in H&T that indicated what occurred in the aforementioned period, we computed a weighted score of accuracy for each document and classified it according to four potential causal variables (*Explicit methods*, *Number of cites*, *Multisource*, and *Multimethod*, thought of as indicators of forecasting quality). The model was tested with a fuzzy set qualitative comparative analysis (fs/QCA) which indicated that clarifying the qualitative forecasting methods (*Explicit*) and having multiple sources (*Multisource*) are the main predictors of the qualitative forecasting sources' accuracy in H&T.

Keywords: Qualitative forecasting, Megatrends, Predictors, Hospitality and Tourism, fs/QCA

SUMÁRIO

A maioria das publicações sobre previsão usam métodos quantitativos e a previsão de base qualitativa é escassa especialmente no sector da Hospitalidade e Turismo (H&T) que é tão sensível a fatores de nível macro. Em acréscimo, é surpreendente que os estudos que exploram a precisão de tais previsões sejam escassos, o que reduz a capacidade de melhorar as técnicas de previsão. Considerando isto, o principal objetivo deste estudo foi o de descobrir os potenciais preditores de precisão nas fontes de previsão qualitativa em H&T. Para o concretizar, identificámos e seleccionámos um conjunto de documentos que usam métodos qualitativos de previsão para as tendências de H&T para o período de 1998-2008 e desenvolvemos um estudo empírico que põe à prova as tendências esperadas em relação ao teste do tempo. Com um painel de 14 peritos em H&T que indicaram o ocorrido no período mencionado calculámos um score ponderado de precisão para cada documento e classificámo-lo de acordo com quatro potenciais variáveis causais (métodos explícitos, número de citações, multi-fonte e multi-método, tidos como indicadores da qualidade da previsão). O modelo foi testado por via da análise comparada qualitativa de conjunto difuso (fs/QCA) que indicou que clarificar os métodos de previsão usados (explícito) e contar com várias fontes de informação (multi-fonte) são os principais preditores da precisão dos documentos que oferecem previsões qualitativas em H&T.

Palavras-chave: Previsão qualitativa, Megatendências, Preditores, Hotelaria e Turismo, fs/QCA

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INTRODUCTION

The Hospitality and Tourism industry (H&T) became one of the most important service industries across the globe, turning into a worldwide force of social, economic and environmental importance, and is expected to double or triple this socio-economic contribution over the next 40 years (Scott & Gössling, 2015a). H&T industry implies a large array of fields within the service industry, ranging from hotel and resort management, restaurants, tourism destination and attractions, to event planning, airlines, cruises or even leisure and wellness management.

Trends, defined as changes or developments in a general or particular direction, are a ubiquitous feature in all fields of management, where hospitality and tourism has not been an exception. Quite the opposite. According to Moutinho, Rate and Ballantyne (2013), H&T industry continues to expand whilst undergoing major change at an unparalleled pace. Whether Political, Economic, Social, Technological, Legal or Environmental (PESTLE), all these trends affect the H&T industry at different levels, affecting tourists, destinations and tourism enterprises.

The need for accurate forecasting in the H&T industry cannot be understated, given the importance it has in assisting decision makers improving their strategic planning. For instance, Witt and Witt (1995) remind us that unfilled airline seats and unoccupied hotel rooms cannot be stockpiled. However, given the key role H&T industry plays in global economies, along with the globalization and the unprecedented pace of PESTLE changes happening nowadays, the need for forecast has never been greater (Scott & Gössling, 2015b). Forecasting per se is a ubiquitous factor simply because it conditions and frames decision makers' perception and therefore, their ability to consider all possibilities.

Despite the proliferation of papers and outlets targeting future trends in hospitality, there is a fashion-like attitude where the past soon becomes less interesting than the prospects of the future with a renewed trend. Although this process is understandable in dynamic industries such as hospitality and tourism, it is against the philosophy of cumulative knowledge in science (Girod-Séville & Perret, 2001; Hirsch & Levin, 1999).

The act of forecasting can be based upon technical expertise or merely intuition from professionals in the field. It will possibly differ as regards its accuracy and comprehensiveness,

and therefore, it should be subjected to a process of systematic study in order to identify the best practices in forecasting trends in hospitality and tourism.

The purpose of this study is thus to identify to what extent is H&T qualitative forecasting accurate, and what conditions contribute the most to its accuracy. To achieve this goal we will devise an empirical study that puts to test the expected trends against the test of time. Judges on the level of fulfillment are current experts and leading professionals in the field that will state if each of a set of past predictions actually occurred.

The research design will count with the identification and selection of a set of documents that explicitly state trends in H&T industry. These documents date back to a time window that allows retrospective analysis with the intention of measuring the level of fulfillment and therefore providing evidence of accuracy. Documental selection will follow a set of criteria to filter out less credible ones and thus build upon a reliable documental corpus. By contrasting those documents that achieve higher accuracy with those that failed to do so, we expect to qualitatively uncover the conditions that offer better megatrend forecasting accuracy.

Because not all trends have the same scope or even focus, we will select only those pertaining H&T context such as PESTLE, and also those pertaining hospitality industry in itself. Another criterion must concern if those predictions were of a quantitative nature (e.g. forecasting how the figures of a specific subsector might evolve) or of a qualitative nature (e.g. emerging activities, products, technologies etc.) as this research is focused on the qualitative dimension.

This thesis is structured to explain the research problem, the leading research question, theoretic background, hypotheses, the methods used to empirically test the hypotheses, the findings and respective discussion and conclusion.

1. LITERATURE REVIEW

Literature review will develop to cover the topics that are more directly linked with the research problem, namely that forecasting in H&T is critical for the industry but there is not yet a systematic review on qualitative forecasting accuracy based on methods and techniques employed.

The corresponding research question that reflects this problem is the following: which conditions increase accuracy in qualitative megatrend forecasting in H&T?

1.1. H&T industry: its nature, dynamics and complexity, interdependence and global phenomenon

Even though the terms “Hospitality” and “Tourism” are commonly used, there is still not a widely accepted and clear definition for the two terms, as well as for the existing relation between them (Selwyn, 2000; Butler & Jones, 2001; Slattery, 2002; Hemmington, 2007; Marasco, De Martino, Magnotti, & Morvillo, 2018). The authors Butler and Jones (2001) described Hospitality as dealing specifically with accommodation and feeding tourists, while Tourism was more broadly defined as covering every aspect of people staying away from home. Likewise, and as a recommendation on tourism studies, the World Tourism Organization (WTO) / United Nations defined tourism as involving all the activities of people travelling and staying in places that are not their usual environment for less than one consecutive year, regardless of the purpose, whether it is tourism, business or other (WTO, 2001). Tourism can also be described as the practice of travelling and the business of providing associated products, services and facilities (Edgell, Allen, Smith & Swanson, 2008). The same authors remind us that tourism is not one single industry, but a combination of a wide range of industry sectors that include the buying, selling and management of services and products (to tourists) that can range from selling souvenirs to buying hotel rooms or managing an airline.

The establishment of the commercial airline industry and more specifically the development of the jet aircrafts in the 1950s led to a boom of the international travel. This rapid growth and expansion developed a whole new industry: the Hospitality and Tourism. By 1992, it had already turned into the largest industry and largest employer worldwide (Theobald, 2005) and still remains (Kotler, Bowen, Makens, & Baloglu, 2017). Alongside with this growth, the H&T

was also creating some side-effects on destination areas and its residents as well as raising some alertness for the future of those same places and people (Ross, 1992; Honggang, 2003; Theobald, 2005; Page, 2009a).

Measuring its total economic impact remains a challenge given the industry's fragmentation and diversity (Theobald, 2005; Hemmington, 2007) although it is widely taken as having as huge economic and social impact worldwide (Kotler, Bowen, Makens, & Baloglu, 2017). In 1999, Jones explained the Hospitality industry's complexity by comparing it to an impressionist painting – from afar we see a clear picture but close up we find out that it is made up by thousands of tiny different dots. The author claims that the Hospitality industry as a single entity does not exist, and that there are legal, financial and economic structural differences in the Hospitality industries between countries. Given the industry's complexity and diversity, it is particularly difficult to identify common issues and future trends.

1.2. Volatility in the H&T industry: sensitivity to macro events

The H&T industry has a remarkable economic power and is a fundamental development factor for many countries. However, despite its apparent resiliency, the nature of the H&T industry's products is intangible and extremely vulnerable to both external and internal shocks such as epidemic diseases, natural disasters, socio-political instability, economic turndowns or international conflicts (Sönmez, Apostolopoulos & Tarlow, 1999; Ritchie, 2004; Tasci & Gartner, 2007). Global economic recessions and financial problems in major travel markets have a big influence on tourism downturns, and according to Hall (2010, p. 406) this is not a surprise because “of the role that levels of disposable income and economic confidence have in holiday selection”. The same author adds that energy crisis and political instability may also influence Tourism business cycles.

The H&T industry is unpredictable in its nature, and some of its vulnerability comes from fashion changes, trends and shock events like the 9/11 in New York City. Therefore, trying to understand these variations is of the interest of public and private entities (Page, 2009b). Natural and man-made disasters and crises are the most relevant influences to the H&T industry's volatility, according to Goodwin (2008). The same author exemplifies his thought with the decrease of American tourists in London theaters due to wake of the first Gulf War in 1990, the

devastating influence of the 2004 tsunami in tourist areas of Thailand, Sri Lanka and Indonesia, as well as the tourism drop in Taiwan and surrounding countries as a result of the SARS epidemic in 2003.

According to Neumayer (2004, p. 2) “tourists are only willing to travel to foreign places in mass numbers if their journey and their stay are safe and shielded from events threatening a joyous holiday experience”. When doubts start arising about a certain destination due to actual or perceived risks, and tourists begin to fear for their physical integrity or even for their lives, they will naturally tend to choose safer places and avoid risky situations or destinations. If tourists can choose a safer place, the local tourism of the affected destinations will suffer greatly (Sönmez et al., 1999; Neumayer, 2004). Sönmez et al. (1999) also add that natural disasters can slow down the tourism flow of the affected destination, but a terrorist attack will intimidate the traveling public in a more negative way, which will lead to the cancellation of their vacations for those periods of perceived or real terrorist activity. A single or random act of terrorism will limit the tourism and travel activity of the affected destination until the public’s memories of the negative incidents fade. However, recurrent acts of terrorism will destroy the affected destination’s image and attractiveness, and the H&T industry will be largely affected due to lack of safety. After such shock situations, the destination and their enterprises will not only have to heal their own wounds but also look after their guests and clients. Therefore, public and private entities have to be very careful when managing a situation of crisis, because a mismanaged disaster has the potential to destroy the destination’s image and drag their H&T industry into a long-term crisis (Sönmez et al., 1999).

Tunisia is a good example of a country that depends greatly on the H&T sector and had to rise again after the terrorist attacks to the Bardo National Museum in the capital Tunis, and the beach resort in Sousse, both in 2015. During that same year, and after the terrorist attacks, the Tunisian government implemented emergency management procedures, not only to avoid new attacks, but also to relaunch the H&T sector. The state of emergency was declared, which gave special powers to the police and the military forces. An armed security unit was formed especially to protect tourists in the coast and areas close to the resorts and hotels. In addition to these security measures, the Tunisian authorities attempted to mitigate the feeling of insecurity caused by the images of terror with some tourist marketing campaigns focused on restoring international trust in regards to the security of this African country and its tourist infrastructures (Soro, Milano, Mansilla & Bergara, 2018). Despite these measures, the tourism revenue for Tunisia registered for 2017 was

still below 55% of that registered in 2014, the year that preceded the attacks cumulating a loss of about 3 billion USD by reference to the revenue of 2014 (CEIC, 2019).

According to Faulkner (2001), the number of disasters and crises affecting the H&T industry has been increasing, whether the incidents are of natural or human influence. Likewise, Glaesser (2006) argues that the need for tools for crisis management is becoming more evident, as natural disasters and shock events are happening more frequently. Sudden changes in trends and shock events like wars and natural disasters have a great impact in the H&T industry, which turns the forecasting process even more challenging (Goodwin, 2008). However, the same author adds that the research into the prediction of “turning points” is quite limited, despite the importance for planners to know when a trend or change is likely to happen.

Because of this volatility, forecasting has gained a special interest in H&T in order to lower uncertainty and thus improve the chances of better decisions, both at a strategic level as well as at current managerial level.

1.3. Forecasting: the art of predicting the future

Generally speaking, we can define forecasting as the process of predicting the future based on past and present data. Its purpose is not only to describe what is probable to happen sometime in the future, under a given set of circumstances, but also to indicate results for a specific time period in the future if no conditions are changed (Drake, 1976). Moreover, in 1985, Armstrong argued that forecasting is not concerned with determining what the future should look like, but instead in determining what the future will look like. The same author defends that forecasting is necessary for decision-making, and especially when those decisions have long-term consequences.

1.3.1. Forecasting types and techniques

The literature on forecasting is vast and it is not a recent topic. Many authors have researched and published articles on forecasting and forecasting methodology, especially since the decade of 1970s. One aspect that all the authors agree on is that there are several methods and techniques used by analysts to do forecasting. According to Makridakis and Wheelwright (1977), those forecasting methods and techniques can be grouped according to some dimensions: whether

they are statistical versus non-statistical, time-series methods versus causal methods, or quantitative methods versus qualitative methods. For this study we will follow the quantitative versus qualitative basic approach, present by Frechtling in 2001.

Frechtling (2001) divides the business and tourism forecasting methods into two major categories: the quantitative methods, that intent to predict future patterns by gathering past information and underlying patterns and relationships of the data, using mathematical rules; and the qualitative methods, that do not require historical data series and do not use mathematical rules, but instead it is based on the experts own judgement and knowledge about the forecast variable. Frechtling (2001) continues and identifies two major sub-categories within the quantitative methods: the extrapolative or time-series methods and the causal methods. This distinction between the quantitative methods has been mentioned in the literature by several authors (Drake, 1976; Witt & Witt, 1995; Athanasopoulos, Hyndman, Song & Wu, 2011). The main difference between the two sub-categories is that only the causal models identify a causal relationship between the variables and its influencing factors (Song & Li, 2008).

The extrapolative or time-series analysis are statistical techniques that focus solely on patterns and pattern changes, and assume that those past patterns can be well identified and are likely to be repeated in the future (Drake, 1976; Frechtling, 2001). These techniques are ideal when the historical data for several years back is available, and when relationships and trends are clear and firm (Chambers et al., 1971). Examples of time-series methods, according to Frechtling (2001) are: Naïve; Single moving average; Single exponential smoothing; Double exponential smoothing; Classical decomposition; Auto-regression; and Box-Jenkins approach (ARIMA). The non-change Naïve model is described by Moro & Rita (2016) as basically a model that assumes that the past conditions that generated the present observed value will continue in the future. The moving average (MA) models seek to eliminate the seasonality and irregularity effects (Chambers et al., 1971) and estimate a trend-cycle by smoothing the past history data and thus reduce the random variation (Makridakis, Wheelright & Hyndman, 1998). The exponential smoothing is very similar to the MA model, except that in this model the more recent values have more weight than the older values by using an exponentially decreasing set of weights (Makridakis & Wheelwright, 1977; Bergmeir, Hyndman & Benítez, 2016). Classical decomposition is a common forecasting technique when the analyst pretends to estimate the seasonality of a single univariate time series (Makridakis et al., 1998). Lastly, the autoregressive integrated moving average (ARIMA) is

described by Moro & Rita (2016, p. 3) as being a model with “three parameters referring to the terms autoregressive, differencing, and moving average for the seasonal part of the model”.

The causal models are called that way because they relate one variable with two or more other variables in order to find a relationship amongst them (Drake, 1976; Frechtling, 2001). Another characteristic of the causal models is mentioned by Witt & Witt (1995, p. 448-449), when the authors refer that causal models involve “the use of regression analysis to estimate the quantitative relationship between tourism demand and its determinants; the estimation is carried out using historic data, and future values of tourism demand are obtained by using forecasts of the demand determinants in conjunction with the estimated relationship”.

Examples of causal methods, according to Frechtling (2001) are: Regression analysis; and Structural econometric models. Statistically speaking, the simple or multiple regression models assume that the dependent variable (the one to be forecasted) is associated to two or more independent variables, which are outside the control of the dependent variable and thus are assumed to be “exogenous” (Drake, 1976; Milano, Baggio & Piattelli, 2011). Makridakis & Wheelwright (1977) add that when using a regression technique, the forecast will be based not only on past values of the variable being forecasted, but also on other variables who are thought to have some degree of relationship.

Econometric models are more complex than multiple regression models, and use sets of two or more regression equations. The fact that the interrelationship between the independent variable in any single equation can be incorporated in other equations and simultaneously determine their values is a strong plus for this quantitative method (Makridakis & Wheelwright, 1977). Clements & Hendry (1998, p. 16) argue that the econometric models are not just another quantitative forecasting method, but rather this model helps “consolidate existing empirical and theoretical knowledge of how economies function, provide a framework for a progressive research strategy, and help explain their own failures.”

In the new millennium, and in addition to the time-series and causal models proposed by Frechtling (2001), there is a third sub-category of quantitative methods that has emerged: the artificial intelligence (AI) models (Song & Li, 2008; Claveria, Monte & Torra, 2015; Moro & Rita, 2016). In a time where the need for more accuracy has never been greater, the fact that AI techniques are able to handle non-linear performances turn them into an indispensable tool for economic and tourism forecasting. Grey theory, fuzzy time series, rough sets approach, support

vector machines and artificial neural networks (ANN) are the five categories of the AI methods (Claveria, Monte & Torra, 2015). Song & Li (2008) argue that the core advantage of AI techniques is that they do not need prior or any additional information about the data being tested, such as probability or distribution. The ANN method is one of the most used AI models. It is a very interesting computing technique that tries to mimic the learning process of a human brain and neural processing (Law, 2000; Asensio et al., 2014). The ANN's also feature the unique abilities to adapt to deficient data, nonlinearity, and arbiter function mapping, which turns this model into a great alternative to the classic regression forecasting models (Song & Li, 2008).

The last type of forecasting techniques we are going to analyze in this section are the qualitative methods. In 1976, Drake stated qualitative forecasting methods were mainly used when there was lack of data, or the existing one was vague. Years later, in 2001, Frechtling went further and described five specific conditions where the qualitative methods are normally used instead of the quantitative ones. The first condition is when there is not enough historical data available, which is usually the case for new products, or products trying to penetrate in a new market. The second condition to favor the use of qualitative methods over quantitative ones is when the time-series available is unreliable or invalid. The third condition proposed by Frechtling (2001) is when external factors to the macroenvironment are unpredictable, which means that the entire scenario can change quickly. The fourth condition is when there is a scenario where major disturbances can be expected. For this particular condition, the author gives the example of most Middle Eastern countries and several African ones, where wars, terrorism, floods or other natural disasters happen quite frequently. The fifth, and final condition, proposed by Frechtling (2001) to use qualitative methods over quantitative ones is when the goal is to produce a long-term forecast. This is true because it is difficult for the quantitative methods to generate reliable forecasts for three to five years or more in the future, since a large number of factors may affect the original scenario and may not be accounted for into an equation.

According to Frechtling (2001), examples of qualitative forecasting methods are: Jury of executive opinion; Subjective probability assessment; Delphi method; and Consumer intentions survey. The Jury of executive opinion approach is described by Frechtling (2001, pp. 212-213) as a method that “comprises corporate executives or government officials meeting together and reaching consensus estimates of key variables in the future. The output is specific values or a range of values expected at specific points in the future”. The Subjective probability assessment

approach is a method where each member of a group (judges) is asked to propose a probability distribution for the variable that is being forecasted, which is often easier to deal with than suggesting a specific and single future value (Frechtling, 2001). The same author adds that the Subjective probability assessment “usually produces point estimates of future variables as the most likely forecast, with perhaps a range on either side of possible values, as well” (Frechtling, 2001, p. 215).

The Delphi method is one of the most popular qualitative forecasting methods because it is designed to produce a group consensus on forecasts and at the same time avoid some problems of other group forecasting methods (Frechtling, 2001). According to Austin, Lee & Getz (2008), there are two variations of the Delphi method: the classic, where the panel of jurors is asked to suggest and identify items in the first round and then rate them in the following rounds until a certain level of consensus is reached; and the modified Delphi technique, where a list of pre-identified trends (through literature review) is already provided to the panel of jurors to be rated in the first round. The jurors are also asked to suggest additional items that they consider that should be in the list of trends. The top-rated trends are selected to the next rounds to be rated until consensus is reached.

Unlike the three qualitative methods described above, the consumer intentions survey does not rely on the forecasts of experts as judges, but rather asks the consumers themselves about their intentions on a specific topic, which may end up providing advantages over the expert judges (Frechtling, 2001).

Just like any other type of forecasting methods, the qualitative methods have advantages and disadvantages. In this part of the chapter we will summarize the biggest advantages and disadvantages found in the literature.

Starting with the potential disadvantages of qualitative forecasting methods, in 1985, Armstrong called out for the possible errors when using qualitative or judgmental forecasting methods. Namely the bias and “anchoring” of the judge. The same author describes the judges’ bias with the preconceived ideas of the world they may have, which can obviously affect their forecasts, as well as their “optimism”, which may make them forecast something that they hope will happen as oppose to what they think will happen. The anchoring, which can also be called “conservatism”, is the under prediction of future changes due to the assumption that the future will

not look much different from the past and present, and that there will be no abrupt changes (Armstrong, 1985).

The idea of this “human tendency” to confuse what they desire to happen with the actual future forecast, as well as the possible anchoring of the judges in the present and underestimation of future changes is also shared by Makridakis et al. (1998), Frechtling (2001) and Li (2008). In regards to the level of expertise of the judges’ and their bias, while Armstrong (1985) argues that the more the involvement of the judges’ in the forecast situation, the greater the expected bias, Frechtling (2001) adds that the lack of expertise may also negatively affect the forecast outcome. A great way to overcome the potential expected bias by the judges is the use of the Delphi method, where the goal is to reach a certain level of consensus after some rounds of trends’ rating.

When it comes to advantages, the qualitative forecasting methods have a few as well. One of the main advantages of the qualitative forecasting methods is their cost of production, which tends to be low, turning them into quite inexpensive methods (Makridakis et al., 1998; Frechtling, 2001; Song & Lin, 2012). Another, if not the biggest advantage of the qualitative forecasting methods, is that many times it can be the only method to deal with some types of forecasts, especially when appropriate past data is not sufficient or inappropriate for the statistical analysis (Li, 2008).

1.3.2. Forecasting accuracy and risk management

Forecasts are used to plan and guide decisions, and therefore, forecasting accuracy is fundamental for all those that rely on it (Diebold & Mariano, 1995). In regards to the forecasting methods’ accuracy, there is a wide consensus in the literature that no single model or method outperforms others in all occasions (Witt & Witt, 1995; Goodwin, 2008; Song & Li, 2008). In order to choose the appropriate forecasting method for a forecasting analysis, the analyst should pay close attention to the environment-specific conditions. This being said, when there is a multitude of alternatives, the analyst must carefully choose the forecasting method to adopt for the specific situation being forecasted (Song & Lin, 2012).

Even though there is not a wide consensus about what forecasting methods and techniques are more accurate, some authors defend the efficiency of some of them. For instance, Goodwin

(2008) defends that the modern econometric methods tend to perform well, whereas Moro and Rita (2016) defend that the ANN (AI) method has become a very effective prediction method.

A wider consensus is patent when it comes to the use a combination of forecasting methods, or the actual use of multiple forecasting techniques. Wacker & Sprague (1998) defend the use of multiple techniques as oppose to single techniques in order to achieve a higher forecasting accuracy. Goodwin (2008) argues that it is a smart idea to combine different forecasting methods and techniques (calculating the average of their results) as it would decrease the risk if one of them is completely off and inaccurate. Shen, Li and Song (2008) agrees that combining forecasting methods beat individual forecasting techniques, as their average will be more accurate than the one single technique that performed the best. Goeldner and Ritchie (2009) defend that when it comes to forecasting tourism demand, combining quantitative methods with the Delphi technique tends to produce more reliable results in all situations.

Despite the relevance of forecasting for the success of organizations, Wacker and Sprague (1998) argue that the literature is poor in studies comparing judgmental techniques in terms of their effectiveness, as oppose to quantitative techniques. To our knowledge, the only accuracy assessment study made about qualitative forecasting techniques was performed by Chambers et al. in 1971. That study, however, as the authors admit, was based on their own experience. Nevertheless, in that study, the authors compare some types of qualitative forecasting techniques. In terms of accuracy in the long term, the Delphi technique is the one that performs better, having a “fair to very good” rating. The market research (surveys) come next with a “fair to good” assessment. Panel consensus (focus group) and “visionary forecast” (expert judgment) are all rated with “poor” accuracy levels in the long term (Chambers et al., 1971).

Striving to increase accuracy, researchers have put effort into designing techniques and methods that favor higher objectivity (so that anyone can objectively measure whatever is being under analysis), higher replicability (so that anyone that is interested in repeating the research can do it rigorously), comprehensiveness (to account for the largest possible number of variables) and theory based (so that the relationships between variables are not merely empiricist, but instead driven by logic and meaningful causal nexus).

Overall, qualitative forecasting has been motivated by gains in rigor that control all contributive factors of measurement error. Thus, objectivity (defining variables as well as possible), triangulation (crossing information sources), replicability (giving all information

required to conduct the precise same study), and theoretic based (making the rationale underlying forecasted trends visible so that the reader may reason about its plausibility) contribute to the improvement of qualitative forecasting.

1.4. Forecasting in the H&T industry

The identification of emerging trends in the H&T industry, along with the stimulation of adequate measures for orderly growth will not only benefit both tourists and communities, but will also promote the own industry's sustainability (Edgell et al., 2008).

In order to identify trends and forecast in the H&T industry, analysts can use several different approaches. Furthermore, depending on the characteristic of the data, those forecasting approaches and techniques will fall into two major categories: quantitative or qualitative (Pan, Chon & Song, 2008).

There is plenty of literature on quantitative forecasting methods and particularly on tourism demand forecasting (e.g. Witt & Martin, 1987; Witt & Witt, 1995; Frechtling, 2001; Song & Li, 2008; Moro & Rita, 2016). On the other hand, it is much harder to find studies targeting qualitative trends in H&T and qualitative forecasting. The literature on qualitative forecasting methods in tourism is less common and limited (Witt & Witt, 1995; Goodwin, 2008). Even the outcomes of articles and reports on "Tourism trends" (e.g. Smeral & Weber, 2000; WTO, 2001) are typically of a quantitative nature and not qualitative as desired for the purpose of this study.

Song and Lin (2012), present a more comprehensive approach on qualitative forecasting methods in Tourism. The authors define four sub-categories, according to the target audiences involved in the process of forecast, namely: Asking the stakeholders; asking the experts; asking the public; and judgment-aided methods. Asking the stakeholders include techniques such as the single "*expert judgment*", "*focus groups*", "*think tanks*", "*single or multiple interviews*" to someone who is familiar with whatever is being forecasted. Asking the experts englobe techniques such as the popular "*Delphi*" technique, but also "*brainstormings*" and "*seminars*". Generally speaking, group forecasting methods where the analysts are together tend to reduce the forecasting aptitude of the entire group, as the most expert analysts will tend to dominate the discussion and bias the others' opinions. Asking the public includes basically "*survey*" techniques to the

industry's own target audience. Lastly, the most relevant and popular "judgment-aided" method is the "*scenario writing*" (Song & Lin, 2012).

In regards to the forecasting accuracy in H&T, Witt and Song (2001) say that it is crucial for planning in all the sectors of the industry. Moreover, the same authors defend that accurate forecasts are of particular relevance in H&T due to the perishable nature of the product. Yu and Schwartz (2006) add that the H&T public and private entities' need to decrease the risk and uncertainty in the industry is self-reinforcing, leading to even more need of accurate forecasting. Buckley, Gretzel, Scott, Weaver, and Becken (2015) defend that predictions based on possible social or cultural changes are less reliable than those based on big phenomena such as the growth of global populations.

Exponential smoothing and autoregressive integrated moving average (ARIMA) models are amongst the most used time-series models in forecasting tourism trends (Cho, 2003; Claveria, Monte & Torra, 2015). When it comes to qualitative forecasting methods, Lin and Song (2014) admit that there are only a few studies assessing their accuracy. However, the Delphi method was identified as a powerful tool in leisure and tourism research, and seems to have attracted the most attention in the H&T literature (Witt & Witt, 1999; Veal, 2006). Scenario writing is also a very popular qualitative forecasting technique. Both Delphi and scenario writing are the two most popular qualitative forecasting techniques in H&T (Calantone, Benedetto, & Bojanic, 1987; Witt & Witt, 1995; Song & Lin, 2012).

According to Lin and Song (2014), qualitative forecasting methods can be applied to predict three main subjects: tourism demand; events; and future trends/market conditions. The goal of forecasting events is to specifically predict what trends or events are going to occur in the short or long-term and define a 5 or 10 year period where they are most likely to happen (Ng, 1984). Forecasting future trends or market conditions, on the other hand, emphasizes more on predicting future patterns and trends and what potential impact they could have in H&T. Structural changes of the H&T industry, or social value changes are examples of future patterns or trends that can come out of one of these forecasts (Lin & Song, 2014). This being said, in this research we will focus only on documental sources that use qualitative forecasting methods to predict events and future trends / market conditions.

To our knowledge, there is no single qualitative forecasting method or technique that is reputed as being the best. All have limitations. However, as in scientific research, forecasting as a

technique struggles to cut to the possible minimum measurement error. There is a set of fundamental rules that prevent measurement error inflation. To address these errors (Babin & Zikmund, 2015) some traditional principles should be observed. Namely, striving to keep objectivity in conceptual definitions and measures as high as possible, use a theory to guide the relationships established between variables, cross information (triangulate) to control for bias, and apply multiple methods to control for method bias (Goodwin, 2008).

Taking these dimensions of accuracy into consideration we hypothesize that:

Hypothesis 1 (H1): The more explicit techniques and methods are in an article, the higher its forecasting accuracy. (objectivity and replicability)

Hypothesis 2 (H2): The more articles/Documents cite existing literature on forecasting, the higher its forecasting accuracy. (theory based, cumulative knowledge)

Hypothesis 3 (H3): Multisource methods (e.g. Delphi, multiple interviews) leads to superior forecasting accuracy (multisource, triangulation)

Hypothesis 4 (H4): Using different methods/techniques to conduct the forecasting, leads to higher forecasting accuracy

2. METHOD

In this chapter we will describe the methods used in this study with the intent to fully comprehend its structure. It is advantageous to keep in mind the purpose of the research: to identify accuracy predictors in H&T qualitative forecasting.

The method has a twofold nature. It starts by identifying and content analyzing documental sources with forecasted trends in H&T in order to build the scenario to be tested, i.e. the specific forecasted trends associated with each document (paper, book, report etc.). After this, it is necessary to identify a set of experts to be invited to retrospectively judge on each trend's actual occurrence. Therefore, the methods description will cover the sample criteria and description for each phase as well as respective data analysis procedures.

2.1. Procedure

The first phase of data collection started off by searching for documental sources with forecasted trends in H&T. In order to find such documents, we browsed the following search engines for academic publications: b-on; Elsevier Science Direct; Google Scholar; and ISCTE-IUL's library resources. These search engines were chosen for querying their databases for documental sources using the following search strings:

“Hospitality + forecast(ing)” OR “hospitality + trend(s)” OR “hospitality + future” OR “tourism + future” OR “tourism trend(s)” OR “tourism forecast(ing)” OR “qualitative forecasting + tourism” OR “qualitative forecasting + hospitality”

The only filter applied was to set the timeframe period for publications from 1998 up to 2008, as our main goal was to analyze forecasted trends in H&T for the ensuing ten-year period from 2008 to 2018. In order to select a set of credible and objective documents, we thought it was advisable to set criteria to filter out unreliable sources. Therefore, documental sources were selected on the basis of the following criteria:

- Must have as an explicit target the intention to put forward trends or predictions;
- Must incorporate trends or predictions;

- Must adopt a qualitative approach to forecasting;
- Must target either the context of hospitality and tourism industry or the industry itself;
- Must have been published in either professional or scholar outlets;
- Must not be anonymous;
- Must have been published between 1998 and 2008;
- Must allow for the inference or understanding of the qualitative forecasting techniques deployed to identify the trends.

The second phase of data collection consisted in interviewing experts in the H&T industry. For this matter, we invited key players for interview, which included experts from academia, as well as key decision makers, both at policy making and management in the H&T industry. The experts were invited via e-mail, and all of the interviews were conducted in person, except for one, which was done via Skype. The interview comprised two main questions. In the first question the experts were asked to name the most impacting megatrends in the H&T in the past ten years (2008-2018). In the second question, the experts were invited to rate on a scale from 1 (Totally Agree) to 10 (Totally Disagree) sixteen megatrends forecasted for that same period (2008-2018) that had been previously selected from the documental sources. Moreover, the experts were welcome to comment on any of those specific megatrends, providing some insights or opinions about the way they occurred (or not). The full details on the interview questions can be seen in the annex I (annex section).

2.2. Sample

This research operates with two different sorts of samples. The first sample comprises documental sources that state H&T trends. This sample was built to identify the trends forecasted for the 2008-2018 period. The second sample consists of the set of experts selected to judge the forecasted trends in H&T mentioned in the sources from the previously mentioned sample.

2.2.1. Sample – Documental sources

After researching the chosen academic databases, we identified 22 possible documental sources. From applying the full criteria we retained 13 documents, namely:

- IH&RA (1999). One to one: marketing in the interactive age, 36th Annual Congress Report.
- Jones, P. (1999). Operational issues and trends in the hospitality industry. *International Journal of Hospitality Management*, 18(4), 427-442.
- National Intelligence Council (NIC) (1999). *Global Trends 2015: A Dialogue about the Future with Nongovernmental Experts*. Retrieved from https://www.dni.gov/files/documents/Global%20Trends_2015%20Report.pdf
- Garrod, B., & Fyall, A. (2000). Managing Heritage Tourism. *Annals of Tourism Research*, 27(3), 682-708.
- Cetron, M. (2001). The world of today and tomorrow: the global view. In A. Lockwood and S. Medlik (Eds.), *Tourism and Hospitality in the 21st Century* (pp. 18-28). Oxford: Butterworth Heinemann.
- Müller, H. (2001). Tourism and hospitality into the 21st century. In A. Lockwood and S. Medlik (Eds.), *Tourism and Hospitality in the 21st Century* (pp. 62-70). Oxford: Butterworth Heinemann.
- Willmott, M., & Graham, S. (2001). The world of today and tomorrow: the European picture. In A. Lockwood and S. Medlik (Eds.), *Tourism and Hospitality in the 21st Century* (pp. 30-38). Oxford: Butterworth Heinemann.
- Dwyer L. (2005). Trends Underpinning Global Tourism in the Coming Decade. In W. F. Theobald (Ed.), *Global Tourism* (3rd ed., pp. 529-545). Oxford: Butterworth Heinemann.
- Weber, K., & Ladkin, A. (2005). Trends Affecting the Convention Industry in the 21st Century. *Journal of Convention & Event Tourism*, 6(4), 47–63.
- Cetron, M., DeMicco, F., & Davies, O. (2006). The Past Is Prologue. In *Hospitality 2010: The Future of Hospitality and Travel* (pp. 157-164). Upper Saddle River, NJ: Pearson/Prentice Hall.

- Deloitte (2007). *The magazine for the Tourism, Hospitality and Leisure Industry: Executive Report* (Issue 9 – July 2007). Retrieved from <https://www.hospitalitynet.org/file/152003075.pdf>
- Technology trends for modern hotels. (2007, August). *Hotel Technology*. 18-24.
- Deloitte (2008). *Industry Trends 2008*. Retrieved from [http://oportunidades.deloitte.cl/marketing/Archivos%20en%20la%20web/cl\(en\)Tourism_hospitality_leisure_240108.pdf](http://oportunidades.deloitte.cl/marketing/Archivos%20en%20la%20web/cl(en)Tourism_hospitality_leisure_240108.pdf)

The chosen sample of thirteen documental sources includes five professional documents and eight academic documents. From the thirteen documents, eight were merely based on the authors' intuition, this is, expert judgment was the forecasting technique used. Two documents used the Delphi technique as their main forecasting tool, and another document conducted a single interview to an expert in the H&T field. The remaining two documental sources used a mix of forecasting techniques; one used expert judgment and a survey to the public, and the other one used multiple interviews to experts and a think tank group. The scarcity of qualitative forecasting publications in H&T (Lin and Song, 2014) is indeed reflected on the number of usable sources.

2.2.2. Sample – Experts

The second sample comprises a set of sixteen experts that were the judges on the trends selected from the sources mentioned above. This sample includes four experts from academia, as well as twelve key decision makers in the H&T industry. The list of experts selected for the interviews is presented below:

- Prof. Youcheng Wang*, Dean at Rosen College of Hospitality Management;
- Prof. Alan Fyall*, Associate Dean at Rosen College of Hospitality Management;
- Prof. Sandra Loureiro, Assistant Professor at ISCTE-IUL;
- Dr. Silvia Rio, Hotel Manager at PortoBay Liberdade;
- Dr. Jorge Catarino, Hotel & Real Estate - Investment & Asset Management Advisor;
- Dr. Pedro Rebelo, Assistant Director at Turismo Fundos;
- Dr. Francisco Moser, Managing Director at Discovery Hotel Management;
- Dr. Luis Patrão, Board Member at ANA - Aeroportos de Portugal, SA;

- Dr. Gonçalo Rebelo de Almeida, Board Member at Vila Galé, SA;
- Prof. João Guerreiro, Assistant Professor at ISCTE-IUL;
- Dr. Rita Magalhães, Executive Manager at Turismo Fundos;
- Dr. Rita Lavado, Project Manager at Turismo Fundos;
- Dr. Miguel Ângelo Ribeiro, Hotel Operations & Sale Manager at Vale d’Azenha;
- Dr. Sérgio Guerreiro, Senior Director - Knowledge Management & Innovation at Turismo de Portugal;
- Dr. Mário Azevedo Ferreira, CEO at NAU Hotels & Resorts;
- Dr. Daniel Vink, Director for Retail Operations at Top Atlântico.

Experts signaled with an asterisk were both interviewed in Orlando, Florida, at a very early stage in the process for a more comprehensive insight on the topic. At this stage, the interview questions were not clearly defined yet, and especially the second question did not include the 10-point Likert scale yet. This being said, we were not able to use their answers to the second questions as the rating was missing. Therefore, we have a final sample of 14 experts that replied to the questions of the interview.

2.3. Data Analysis Strategy

2.3.1. Documental sources analysis through content analysis

After the documental source selection, the next step was to identify and select forecasted trends in those documents. In order to select the trends, we conducted a qualitative content analysis (Mayring, 2004) to the selected documental sources. Firstly we selected all the H&T trends that were forecasted in those documents. Secondly, we divided the trends into four major categories: socio-demographic (S); environmental (E); technological (T); and political-economic-globalization (P). Lastly, we devised megatrends based on aggregations of trends identified in the documents (annex V). After this final step, we ended up with 16 megatrends. Six megatrends were of socio-demographic nature, two were environmentally related, three were about technology, and finally five were of a political-economic-globalization nature. The final list of megatrends selected in the documental sources is presented below in table 1.

Table Erro! Não existe nenhum texto com o estilo especificado no documento.1 - List of megatrends selected from the forecasting documental sources

Number	Megatrend	Category
1	Ageing of Population	S
2	Trend towards weekend getaways/short vacation	S
3	The boundaries between business and leisure travel are blurring	S
4	The emergence of new types of tourism/specialization to meet the changing needs of costumers	S
5	Trend towards loyalty to high quality perceived brands	S
6	Trend towards more wellness during holidays/Concerns about health	S
7	Increasing environmental awareness	E
8	Trend towards authentic/natural and ecotourism	E
9	Trend towards self-booking/e-commerce/direct-marketing/Travel agencies getting outdated	T
10	Technology made it possible to practice lower prices/polarization of the offer	T
11	New technologies will spread and benefit both tourism enterprises and costumers	T
12	Trend towards personal service and attention to detail/Mass marketing gives place to personal and direct marketing	P
13	Big brands will overtake medium brand enterprises	P
14	Trend towards strategic alliances	P
15	Trend towards simple accommodation/basic prices	P
16	Globalization: Trend to promote widespread economic dynamism and growth, which will lead to an increased demand for tourism experiences	P

Each document presented a set of forecasted trends for the upcoming years in the H&T industry. After the creation of the megatrends, we nested all the trends into the specific megatrend that corresponded to it. Table 2 shows the megatrends that were present in which documental sources, as well as the forecasting techniques used to predict those.

Table 2 - Categorization of sources by type, megatrends and forecasting techniques used

Source	Type	Forecasted megatrends	Forecasting technique used
IH&RA (1999)	Professional	9 and 11	Expert judgement (EJ)
NIC (1999)	Professional	11 and 16	Multi-Interview/Think-tank
Jones (1999)	Academic	6, 7, 9 and 11	EJ
Garrod & Fyall (2000)	Academic	1	Delphi
Cetron (2001)	Academic	1, 2, 4, 5, 7, 8, 9, 11, 12, 13 and 14	EJ
Willmott & Graham (2001)	Academic	1, 3, 4, 8, 9, 10, 11 and 15	EJ
Müller (2001)	Academic	1, 2, 4, 6, 7, 8 and 10	EJ
Weber & Ladkin (2005)	Academic	1, 3 and 7	Delphi
Dwyer (2005)	Academic	4, 5, 7, 8, 9, 10, 12, 13 and 14	EJ
Cetron, DeMicco & Davies (2006)	Academic	1, 7, 9 and 11	EJ
Deloitte (2007)	Professional	7 and 8	EJ
Hotel Technology (2007)	Professional	11	Single Interview
Deloitte (2008)	Professional	1, 11 and 16	EJ
		2, 3, 4, 7, 8 and 9	Survey

2.3.2. Interviews and content analysis

For this research, a total of sixteen interviews were conducted. As mentioned, fifteen of those interviews were conducted face-to-face, and only one was conducted via Skype, due to the impossibility of the expert to meet in person. Moreover, from those fifteen face-to-face interviews, two were conducted in the Rosen College of Hospitality Management, in Orlando, FL, USA. The remaining thirteen interviews were conducted in Lisbon, at the experts' office or workplace. As previously mentioned, the interviews conducted at the Rosen College were not able to be included in the study, and therefore we have a total of 14 valid interviews.

Having in consideration the experts' privileged role in the H&T industry, for confidentiality reasons, their full statements were not described *ipsis verbis*, but only the main ideas. This being said, for the first question (main megatrends affecting the H&T industry from 2008-2018) we wrote down all the experts' answers and identified which ones matched the megatrends predicted in the documental sources and that were going to be judged in the second question. The second question had a 10 point Likert scale in which the experts would judge the

megatrends' actual occurrence. Therefore, after conducting the interviews we took note of all the scores for each megatrend and calculated the weighted average and standard deviation for each one, in order to check each megatrend's accuracy according to the experts. It should be clear that no expert was aware of the specific set of documental sources that was to be used in this research in order to prevent possible bias.

2.3.3. Data Analysis method – fs/QCA

The main goal of this study is to understand how certain factors combine with each other in order to determine the accuracy of the qualitative trend forecasting in the H&T industry. This being said, the traditional statistic methods of analysis would not be suitable for this study. Therefore, the Fuzzy-Set Qualitative Comparative Analysis (fs/QCA) was the adequate data analysis method chosen for this thesis. The fs/QCA is a variant of the Qualitative Comparative Analysis (QCA) method developed by Charles Ragin in 1987 (Verweij, 2014).

Just like its name suggests, the fs/QCA method works with fuzzy scale data, which means that all the variables used will have to have a value between 0 and 1, instead of a discrete value. The fs/QCA has the great advantage of being both quantitative and qualitative. On the one hand, it uses quantitative data for the variables, but on the other hand the results focus on the possible combination of factors and not on the variables themselves, thus it is considered a qualitative comparative method. It has a comparative nature, since it tries to explore the different combination of variables and their influence and relationship with the final outcome (Marx, 2006).

This method focuses also on diversity (Rihoux & Ragin, 2009), meaning that all possible combinations are important, even if they only explain a small percentage of cases. Additionally, with fs/QCA it is possible to remove all variables that have no causal relation to the final outcome/result (Fiss, 2011). Just like the other variants of QCA, the fs/QCA has the principle of "equifinality", allowing different combination of sets of factors/variables create the same result. Moreover, this method allows the occurrence of a phenomenon/result to be explained by the combination of different conditions. This feature is called "Multiple Conjunctural Causation" and is one of the main advantages of the fs/QCA (Marx, 2006; Rihoux & Ragin, 2009).

One of the main features of the fs/QCA is to identify the existence of necessary and sufficient conditions. A certain condition is considered to be necessary when the result cannot

occur without its presence, however, its presence does not guarantee that the result will happen (Rihoux & Ragin, 2009; Fiss, 2011). On the other hand, the sufficient conditions are those that guarantee the occurrence of the result just with its own presence (e.g. if the condition B is present, the result occurs) (Ragin, Patros, Strand & Rubinson, 2017). The main functionality of the fs/QCA is the *truth table*. This functionality presents in a clear and objective way all possible combinations between variables to achieve the outcome/result, as well as the cases explained by them (Ganter & Hecker, 2014).

This method can be used for studies with very short samples (from 10/15 cases) but also in studies with much bigger samples (more than 100) (Marx, 2006; Rihoux & Ragin, 2009; Fiss, 2011). Since our study counts with a sample of only 13 documental sources to be analyzed, we decided that the fs/QCA would be the best program to run our data and provide meaningful results.

2.4. Measures

For this part of the study we built a model (table 3) to explain what factors of the forecasting documental sources influence the most its *accuracy*. This being said, *Accuracy* was defined as the *outcome* variable, or in other words, the *Accuracy* is the dependent variable of this study.

The independent or causal variables are the features of forecasting documental sources that indicate its quality: *Explicit*; *NofCites* (*number of cites*); *Multimethod*; and *Multisource*. The variable *Explicit* was defined as the presence or absence of an explicit forecasting technique in the documental source. We assume that clarity benefits from stating options explicitly. If the forecasting technique used was merely expert judgment, then we considered that it was not explicit. Therefore it is a *dummy* variable, where it assumes the value 1 when the documental source has an explicit forecasting technique, and assumes the value 0 when the technique is not clear. The *NofCites* is the actual number of references in the forecasting documental source. We assume that the systematic use of extant knowledge to build new one will be reflected upon the number of references cited (independently of their academic or professional nature). The *Multisource* is also a *dummy* variable defined as the presence (1) or absence (0) of any forecasting technique that counts on more than a single source of data (e.g. multiple interview, Delphi, Think Tank / Focus group). Likewise, the *Multimethod* variable was defined as the presence (1) or absence (0) of more than one forecasting technique in the documental source.

Table 3 - Variables used in the fs/QCA model

Causal Variables	
<i>Explicit</i>	<i>Dummy variable: 1 if there is an explicit forecasting technique, 0 if not or if the technique is expert judgment</i>
<i>NofCites</i>	Number of references in the documental source
<i>Multisource</i>	<i>Dummy variable: 1 if there is any forecasting technique that counts on more than a single source of data, 0 if not</i>
<i>Multimethod</i>	<i>Dummy variable: 1 if there is more than one type of forecasting technique used, 0 if not.</i>
Outcome	
<i>Accuracy</i>	Level of accuracy of each documental source, according to the experts

As mentioned, the outcome of this model is the level of accuracy of the forecasting documental sources, that we named *Accuracy*. The level of accuracy of each documental source was defined by the weighted average of the accuracy of the trends presented in that document. Each trend was rated on a 10-point Likert scale by the experts, and therefore the accuracy of each trend was the weighted average of the experts' answers to that particular trend. This being said, the *Accuracy* variable was a value between 1 and 10. However, with the intent to ease the analysis of this variable, we divided the accuracy value of each documental source by 10, in order to obtain values between 0 and 1.

In order to go ahead and run the data analysis using the fs/QCA method, all the variables have to be a value between 0 and 1 (Ragin et al., 2017). Those values will correspond to the "fuzzy membership", which indicates the degree to which different cases belong to a given set. A value of 1 indicates full membership and a value of 0 indicates full non-membership, while intermediate values correspond to partial membership (Rihoux & Ragin, 2009). Moreover, the value of 0.5 corresponds to the cross-over point, where there is ambiguity about whether or not the case belongs to the whole (Ragin et al., 2017). This being said, we had the need to calibrate the variable *NofCites*. The number of references in the documental sources varied from 0 to 23, and there was an outlier with 68 references. The calibration of the *NofCites* variable is shown in the table 4.

Table 4 - Calibration of the variable *NofCites* on fs/QCA

Number of references	fs/QCA calibration
21 and up	1
16 to 20	0.75
11 to 15	0.5
6 to 10	0.25
0 to 5	0

3. FINDINGS AND RESULTS

3.1. Trends and sources' overall level of accuracy

In the first question of the interview, the experts were asked to name the most impacting megatrends in the H&T in the past ten years (2008-2018). The main goal of this question was actually to see if the experts would name some of the trends chosen for the following question (number 2). As a result (annex III), more than half of the megatrends chosen for the second question (9 out of 16) were direct or indirectly mentioned by the experts on question one of the interview. The trend that was mentioned the most (11 out of 14 experts mentioned it) was the trend number 11 - New technologies will spread and benefit both tourism enterprises and costumers. Trends number 2, 3, 5, 6, 8, 10 and 14 had no direct or indirect mentions.

The second question in the interview with the experts was the most relevant to this study. We asked the experts to judge on the forecasted megatrends' actual occurrence, using a 10-point Likert scale. The final scores for the megatrends after 14 interviews are shown in Table 5.

The top three trends in terms of overall score were the number 1 (Ageing of Population) with a score of 9.000, the number 16 (Globalization: Trend to promote widespread economic dynamism and growth, which will lead to an increased demand for tourism experiences) with the final score of 8.714, and the number 11 (New technologies will spread and benefit both tourism enterprises and costumers) with a score of 8.571.

On the other hand, the megatrend number 5 (Trend towards loyalty to high quality perceived brands) had the lowest overall score (6.214) in *ex aequo* with the megatrend number 13 (Big brands will overtake medium brand enterprises). The third megatrend with the lowest overall score was the megatrend number 10 (Technology made it possible to practice lower prices/polarization of the offer), with an overall average of 6.643.

Table 5 - Overall level of forecasted megatrends' accuracy

Megatrend	Average	Standard deviation
1	9.000	1.604
2	8.214	1.206
3	7.786	1.520
4	8.429	1.591
5	6.214	2.076
6	7.714	1.578
7	7.929	1.869
8	7.500	1.402
9	7.000	2.138
10	6.643	2.255
11	8.571	1.498
12	8.214	1.820
13	6.214	2.425
14	7.071	2.604
15	7.429	1.761
16	8.714	0.881

(Note: Values obtained from annex IV)

As seen on the table 5, the megatrend number 16 was also the one with the lowest standard deviation, meaning that this was the megatrend where the experts' ratings converged the most. On the other hand, the megatrend number 14 (Trend towards strategic alliances) was the one where the experts' ratings diverged the most. Some experts totally agreed that there were some strategic alliances formed in the past ten years, but some other experts also commented that instead of strategic alliances what happened in the past ten years in the H&T industry were mergers and acquisitions.

In the table 6, we can see the overall level of accuracy of each documental sources, as well as the forecasting techniques used in those forecasts. The level of accuracy was based on the experts' judgement of the forecasted trends in those documental sources.

Table 6 - Overall level of sources' forecasting accuracy

Source	Techniques used	Accuracy (Accuracy)
IH&RA (1999)	Expert judgement	7.786
Jones (1999)	Expert judgement	7.804
NIC (1999)	Multi-Interview/Think-tank	8.643
Garrod & Fyall (2000)	Delphi	9.000
Cetron (2001)	Expert judgment	7.669
Willmott & Graham (2001)	Expert judgment	7.795
Müller (2001)	Expert judgment	7.918
Weber & Ladkin (2005)	Delphi	8.238
Dwyer (2005)	Expert judgment	7.246
Cetron, DeMicco & Davies (2006)	Expert judgment	8.125
Deloitte (2007)	Expert judgment	7.714
Hotel Technology (2007)	Single Interview	8.571
Deloitte (2008)	Expert judgment and Survey	8.127

The top three forecasting documental sources with the higher accuracy were Garrod and Fyall (2000), NIC (1999) and finally Hotel Technology (2007). On the other hand, the three documents with the least accuracy level were Dwyer (2005), Cetron (2001) and Deloitte (2007).

3.2. fs/QCA data analysis

To better understand what characteristics of the documental sources influence the most its final accuracy, we employed a model using the fs/QCA method. According to Schneider and Wagemann (2010), the first step of the fs/QCA method is to check for necessary conditions. These conditions must be present for the result to occur, but their presence does not guarantee such an occurrence, and are interpreted as a superset of the result (the result values are within the condition values). Therefore, the existence of necessary conditions must be tested so that further analysis can be executed in a more efficient way. This being said, any condition that passes the test as a necessary condition does not need to be included in the *truth table* (Rihoux & Ragin, 2009).

Table 7 - Consistency and coverage of each causal variable

Causal variables	Consistency	Coverage
<i>Explicit</i>	0.406929	0.851587
<i>NofCites</i>	0.468765	0.891811
<i>Multisource</i>	0.398738	0.834445
<i>Multimethod</i>	0.160269	0.838492

(Adapted from the annex II in the annex section, obtained through the functionality “Necessary Conditions” from the fs/QCA method, having the Accuracy as the outcome variable)

To identify necessary conditions, the first step is to analyze the causal variables’ consistency, which represents the degree to which each case corresponds to the theoretical standards (Fiss, 2011). This is, a consistency of 1 would mean that all causal combinations would match the rule and produce a result in all cases. For the present analysis, we used the degree of consistency defended by Ragin et al. (2017). These authors defend that a variable is considered necessary when its consistency is equal or greater than 0.9. When checking for necessary variables, the second step is to assess the triviality level of those variables. A condition can be assumed as trivial if it occurs in all cases, regardless of the presence or absence of a certain result. The triviality of a causal condition is measured by its coverage. Ragin et al. (2017) define coverage as the indicator of empirical relevance of a consistent superset. This being said, the closer the coverage value is to 0, the more trivial the variable.

As seen on table 7, no causal variable has a consistency equal or greater than 0.9, meaning that none of them can be considered necessary conditions. Also, given this result, there is no need to analyze the triviality of the causal variables, and all of them were included in the following procedures

In order to identify the sufficient conditions, a *truth table* was constructed, which allowed us to assess the sufficiency of each causal condition. According to Rihoux and Ragin (2009), a causal condition is classified as sufficient if it can produce a certain result by itself. The truth table is presented with 2^k rows, where k equals the number of causal variables and each row represents a possible combination (Ordanini, Parasuraman and Rubera, 2014). In this study, we used 4 independent variables, thus the table obtained consisted of 2^4 rows = 16 rows. The first 4 columns concern the different causal variables, while the *number* column indicates the number of cases

found in each causal combination. *Reminders*, which correspond to combinations that do not include any case, that is, that have the value 0 in column number, should be deleted from the *truth table*. This way, the solution is simplified as these lines do not contain any data (Kent & Olsen, 2008). After this process was performed, the *truth table* finished with only 5 rows, representing five possible combinations that lead to a result.

Once the truth table has been obtained, it was necessary to define a *cut-off* value so that it is possible to calibrate the column concerning the dependent/*outcome* variable and to ensure that a minimum number of empirical observations is reached for the evaluation of the subset relations (Ragin et al., 2017). The *cut-off* limit is based on the *raw consistency* level of the combination. The *raw consistency* indicates the proportion in which a given combination of variables covers part of the solution, and thus allows to verify whether the different causal combinations values are higher or lower than the *fuzzy set consistency* (Rihoux & Ragin, 2009). According to Ragin et al. (2017), the larger the sample size the higher *cut-off* value. Fiss (2011) and Ganter and Hecker (2014) argue that the value 0.8 should be used, but Kent (2008) defends that a *raw consistency* level of 0.75 can already be considered acceptable. For this study we decided to use the 0.75 limit, since our sample size is rather small.

Once the cut-off limit was set, the causal combinations with raw consistency values higher than the cut-off value are coded with 1, while those with lower values are assigned 0 (Rihoux & Ragin, 2009). The figure 1 presented below shows the truth table with this process already completed.

Figure 1 - *Truth table* obtained through a functionality of the fs/QCA method

Explicit	NofCites	Multisource	Multimethod	number	Accuracy	raw consist.	PRI consist.	SYM consist.
1	1	1	0	1	1	0.933333	0.918288	1
1	0	1	1	1	1	0.909524	0.884693	1
1	0	0	0	1	1	0.857143	0.833333	1
0	1	0	0	3	1	0.834987	0.763921	1
0	0	0	0	4	1	0.834323	0.773762	1

Looking at the figure 1, we can see that the combination rows that present a higher number of cases are the 4th and 5th rows. The row with the most cases explained was the fifth row. This row presents a combination of the negation of the causal variables, meaning that a non-explicit

forecasting method, a low number of references, a single source of expertise and one forecasting technique only used were sufficient to produce accurate results in four cases. The fourth row explains three cases, in a combination of non-explicit methods, high number of references, a single source of expertise and one forecasting technique only applied.

According to Ragin et al. (2017), a variable can be identified as sufficient, if it is able to produce a certain outcome but it is not the only one with this capability. Therefore, as seen on the rows three and four, we can classify the variables *Explicit* and *NofCites* as potentially sufficient.

Once the truth table was built, it was possible to obtain, through a functionality of the fs/QCA, three standard solutions that differ according to the assumptions taken into account: Parsimonious Solution, Complex Solution and Intermediate Solution (Ragin et al., 2017). Ganter and Hecker (2014) defend that researchers typically choose to use the latter because it presents a simple solution but only takes into account justifiable assumptions. This being said, we decided to use the *Intermediate Solution* outputs to analyze, which can be found below in figure 2. In these outputs, “~” means the negation whereas “*” means the intersection of two causal variables.

Figure 2 - *Intermediate Solution* obtained through a functionality of the fs/QCA method

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--- INTERMEDIATE SOLUTION ---
frequency cutoff: 1
consistency cutoff: 0.834323
Assumptions:

```

	raw coverage	unique coverage	consistency
~NofCites*~Multisource*~Multimethod	0.40086	0.0819167	0.838887
~Explicit*~Multisource*~Multimethod	0.519346	0.200402	0.776316
Explicit*NofCites*Multisource*~Multimethod	0.133797	0.133797	0.933333
Explicit*~NofCites*Multisource*Multimethod	0.130384	0.130384	0.909524
solution coverage:	0.865444		
solution consistency:	0.82324		

Regarding the different parameters presented, *raw coverage* indicates the amount of the result that is explained by each solution term (Ragin et al., 2017), while *unique coverage* indicates the proportion of the result that is only explained by each of the combinations (Ragin et al., 2017). The second combination is the one with the highest values for both raw and unique coverage (0.519346 and 0.200102, respectively), thus covering the most data as a whole (Onwuegbuzie & Frels, 2017).

The *consistency* values of each combination are between 0.78 and 0.93, meaning that the majority of the cases display the result (Onwuegbuzie & Frels, 2017).

In regards to the indicators covering the entire solution, the *solution coverage* allows to analyze the proportion of the model that is covered by the solutions (Schneider & Wagemann, 2010). The total result shows a *solution coverage* of 0.865 indicating that most of the result is covered by the four combinations. The *solution consistency* allows to determine the combined *consistency* of the different causal conditions, or in other words, the degree to which solution *membership* (the combination of solutions) is a subset of result *membership* (Thomas, O’Mara-Eves & Brunton, 2014). The solution presents a *consistency* of 0.823, meaning that the majority of the solution *membership* is part of the outcome *membership* (Onwuegbuzie & Frels, 2014).

The table 8 presents in a clear and objective way the combination of causal variables obtained through the *Intermediate Solution* of fs/QCA.

Table 8 - Combination of causal variables obtained through fs/QCA by *consistency* level

	Combination	Documental source characteristics	Consistency
1	Explicit*NofCites*Multisource*~Multimethod	Uses an explicit single forecasting technique with multiple sources, as well as multiple references	0.933333
2	Explicit*~NofCites*Multisource*Multimethod	Uses multiple explicit forecasting techniques that use multiple sources, but few references	0.909524
3	~NofCites*~Multisource*~Multimethod	Uses a single forecasting technique with a single source and few references	0.838887
4	~Explicit*~Multisource*~Multimethod	Uses a single non-explicit forecasting technique with a single source	0.776316

(Adapted from Figure 2)

The two combinations with the highest consistency level are considered the most meaningful for this research, and are represented in the first and second rows of table 8. In the first row, with a *consistency* level of 0.933, we have the “Explicit*NofCites*Multisource*~Multimethod” combination. This combination shows that

using an explicit single forecasting technique with multiple sources, as well as a large number of references is more likely to produce results. Or in other words, a forecasting documental source with these characteristics is more prone to be accurate. The second combination with the highest level of consistency was the “Explicit*~NofCites*Multisource*Multimethod”, with a consistency level of 0.909524. This combination tells us that a forecasting documental source that uses multiple explicit forecasting techniques with multiple sources, but few references, is also very likely to produce accurate results. In both combinations the variables *Explicit* and *Multisource* are fundamental to obtain the outcome.

The two combinations with the lowest *consistency* level are both combinations of the negation of the causal variables. The combination on the third row, “~NofCites*~Multisource*~Multimethod”, tell us that it is also possible to get results using a single forecasting technique with a single source and few references. This combination had a consistency level of 0.838. The fourth and last combination, with the lowest consistency level (0.776) is the “~Explicit*~Multisource*~Multimethod”. This result means that a documental source using a single non-explicit forecasting technique with a single source, may also get somewhat accurate results. Both combinations (3 and 4) have something in common: the negation of *Multisource* and *Multimethod* is present in both of them.

Finally, in a global view, it is possible to identify two distinct group of documental sources that produce accurate results: the ones that have explicit forecasting techniques and use multiple sources (combinations 1 and 2); and the ones that rely on a single forecasting technique with a single source (combinations 3 and 4). This being said, even though the 3rd and 4th combinations seem to cover more cases than the first two (raw coverages of 0.400 and 0.519, respectively), the first two combinations achieved a higher level of *consistency* and thus can be considered more prone to produce accurate forecasting results.

Hypotheses were stated individually, separating the four features that were thought to be indicators of forecasting quality and therefore, potential predictors of its accuracy. However, fs/QCA operates with configurations of these features which makes hypotheses testing not straightforward. Nonetheless, by judging on the most consistent configurations and especially how these four features are repeated or not across them, we can infer which ones may receive empirical support, be it partial or full.

Therefore, given the fact that the causal variables *Explicit* and *Multisource* are present in both combinations with the highest consistency level, we conclude that H1 and H3 are fully supported. The other two causal variables (*NofCites* and *Multimethod*) are only present in one of the two combinations with highest *consistency* level. Given this fact, we consider that H2 and H4 are only partially supported.

4. DISCUSSION AND CONCLUSION

The goal of our study was to identify and assess the predictors of accuracy in qualitative forecasting sources in H&T. In order to do so, we identified and selected a set of documents that used qualitative forecasting methods to predict trends in H&T. We selected the most relevant trends from those documental sources and created megatrends according to those. The selected megatrends were then put to test with a set of experts by retrospectively evaluating their true occurrence. To uncover the potential predictors of accuracy in qualitative forecasting sources in H&T, we used the results from the interviews with the experts and created a model using four causal variables (*Explicit*, *NofCites*, *Multisource* and *Multimethod*, that were thought to be indicators of forecasting quality) to predict the outcome *Accuracy*. That model was tested using the qualitative data analysis technique fs/QCA. The discussion of all the study findings follows below.

Regarding the selected megatrends' accuracy scores, it is safe to say that all of them passed the test and somewhat happened (table 5). This is true because all megatrends have a final average greater than 5 (above the midpoint of the scale, ranging from 1 to 10). However, a deeper analysis can be more informative. As an example, the two megatrends with the lowest score (6.214) were the numbers 5 (Trend towards loyalty to high quality perceived brands) and 13 (Big brands will overtake medium brand enterprises). Even though we can assume that the experts overall agreed that both megatrends happened, their comments showed otherwise. In regard to the megatrend number 5, the experts revealed some discomfort when they heard the term "high quality perceived brands", and most of them actually disagreed with the megatrend, saying that either a brand has truly a high quality, or there is no such thing as "high quality perceived brand". The megatrend number 13 predicted that big brands were going to take over medium brand enterprises, and most experts do not disagree, however, they mention that there is always going to be space for smaller/unique enterprises, especially because the experience counts much for nowadays' tourists. The experts also mentioned that the new technologies allowed the smaller enterprises to grow and compete with bigger brand enterprises and exemplified with the case of AirBnB.

The third megatrend with the lowest overall score was the megatrend number 10 (Technology made it possible to practice lower prices/polarization of the offer), with an overall average of 6.643. This score was actually surprising because most experts commented negatively

on the megatrend, but then ended up rating it better than their comments. There was a general consensus that the technology did not come to polarize the offer in the H&T, but instead it made the market more transparent to its customers. The experts mentioned that nowadays one can go online and see all the possible price ranges, from low-cost to luxury, and therefore the new technologies just brought more transparency.

The scores for the top three megatrends (1 - Ageing of Population; 16 - Globalization: Trend to promote widespread economic dynamism and growth, which will lead to an increased demand for tourism experiences; and 11 - New technologies will spread and benefit both tourism enterprises and costumers) were not surprising at all. The experts had a large consensus on all three megatrends.

One megatrend that we will highlight in this analysis is the number 7 (Increasing environmental awareness). This environmentally related megatrend received an overall score of 7.929, which by itself does not say much. Many of the experts agreed that globally the H&T enterprises, as well as their customers, are more environmentally aware. However, they also mentioned that the efforts in the industry are still far from what other industries do. Some experts went further and said that even though they do not feel the environmental awareness as a decisive factor for the customers yet, it is a great “excuse” to cut costs and save money.

In terms of forecasting documental sources’ overall accuracy level (table 6), it is fair to say that all the documental sources did fairly well, as all of them received an overall accuracy higher than 7 (from 1 to 10). Moreover, it is interesting to notice that the top tree documental sources with the highest accuracy scores used four different forecasting techniques. Garrod & Fyall (2000) used the Delphi method, NIC (1999) used both multi-interview and think-tank groups, and finally Hotel Technology (2007) used a single interview. Two aspects are worth mentioning: three out of the four techniques used were multisource techniques; and none of the four techniques was expert judgement. On the other hand, it is also interesting to notice that the three documental sources with the lowest score all used the expert judgement as their forecasting technique.

Finally, the results from fs/QCA (table 8) present four possible combinations of the causal variables to achieve the outcome (*accuracy*). The two combinations with the highest *consistency* level represent documental sources that: Use an explicit single forecasting technique with multiple sources, as well as multiple references; OR Use multiple explicit forecasting techniques that use multiple sources, but few references.

In both combinations with the highest *consistency* level (1 and 2) we can note that the variables *Explicit* and *Multisource* are present and are of fundamental importance to obtain the final result (*accuracy*). This finding seems to indicate that regardless of the number of references (*NofCites*) and number of methods (*Multimethod*), what really makes a difference in order to have accurate results is having a well-defined method (*Explicit*), as well as a multiplicity of sources (*Multisource*). It is important to note that when we defined the causal variables, the expert judgment was not considered as an explicit forecasting technique, thus a documental source using expert judgement only was considered to be not explicit.

As a conclusion, the H1 (The more explicit techniques and methods are in an article, the higher its forecasting accuracy) and H3 (Multisource methods leads to superior forecasting accuracy) are fully supported by the findings of this study. The final results also tell us that the number of references and the multiplicity of methods may not be required to guarantee higher accuracy, which does not completely discard H2 (The more articles/Documents cite existing literature on forecasting, the higher its forecasting accuracy) and H4 (Using different methods/techniques to conduct the forecasting, leads to higher forecasting accuracy). Citing per se may not be the best indicator of backing forecasting reasoning on extant theory although we judge it is a good proxy. So, it is not how many cites a document has but probably which credited references it has. Unlike previous literature, we did not found a statistically significant support to *multimethod*. As regards the lack of support to *multimethod*, this can be interpret by its scarcity. Not only in the set of sources limited in number, as the occurrence of multimethod-based forecasts was a mere couple. This is the best explanation we find to explain it as most literature will advise the use of multi-source and multiple methods (Wacker & Sprague, 1998; Goodwin, 2008; Shen, Li & Song, 2008).

4.1. Limitations and future studies

Most studies have limitations and their findings may have been conditioned that way. This study is no different. If on one hand, the sample size for the expert interviews was a good one (14 interviews), on the other hand the number of documental forecasting sources was rather low (only

13 sources) and may be considered as a downside for external validity purposes (generalizability of the results).

This small sample size of documental sources can, however, be explained by the criteria that we used when selecting such sample. We opted for choosing documental sources that forecasted trends in the H&T industry using qualitative methods. As it was previously mentioned in this study, most forecasting documents in H&T use quantitative methods. Moreover, those documents use quantitative methods to predict quantitative trends, such as tourism demand, and that was not what we were looking for. There are only a few documents that use qualitative techniques to forecast future trends in the H&T.

We also decided to set a 10 year timeframe for the date of publication of the forecasting documental sources, from 1998 to 2008. In order to have more published documental sources, we would have needed to widen the timeframe. That, however, would not make sense because forecasting for more than 10 years would most likely lack in terms of effectiveness (Lin & Song, 2014). Given the H&T market complexity, the “long-term” forecasting can be set to 5-10 years, and not more than that. Given the small sample of documental forecasting sources, it is also not surprising that there is not much variety of forecasting techniques used.

The fact that we did not select all forecasted trends in the documental sources, but only the main/most relevant ones for the H&T industry, may also have impacted the results, either positively or negatively. Selecting all of them would turn the task of judging occurrence hardly feasible when one considers the time limitations such experts have. It would also lead to a long tail of subsidiary trends that do not add up much to the most impactful ones.

A third and last issue that may have had an impact on the findings of this study was the 10-point Likert scale used to rate the megatrends in the interviews. When interviewing the H&T industry experts, we clearly felt that for some of them it was very hard to rate a megatrend below 5, even if they disagreed with its occurrence. Perhaps the use of a 5-point Likert scale would have helped getting a more accurate representation of the experts’ thoughts about the megatrends occurrences.

Lastly, to our knowledge, our study is one of the first to analyze the determinant characteristics of the qualitative documental sources in order to find the predictors of higher accuracy. Therefore, it would be interesting to replicate our study with a larger sample size (of

documental sources) and using alternative scales or methods to increase the external validity of the current results.

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ANNEX

Annex I

Interview questions:

Q1) Regarding what has happened in the last 10 years (2008 to 2018) what would you elect as the big issues (megatrends) that characterized the hospitality & tourism industry overall?

SOCIAL/DEMOGRAPHIC

Answer:

ENVIRONMENTAL

Answer:

TECHNOLOGICAL

Answer:

ECONOMICAL/GLOBALIZATION

Answer:

Q2) Specifically about the following predicted megatrends for the past decade, on a scale from 1 (totally disagree) to 10 (totally agree), how much would you agree they occurred?

SOCIAL/DEMOGRAPHIC

- Ageing of population

Answer:

- The boundaries between business and leisure travel are blurring

Answer:

- Trend towards weekend getaways/short vacation

Answer:

- The emergence of new types of tourism/specialization to meet the changing needs of customers

Answer:

- Trend towards loyalty to high quality perceived brands

Answer:

- Trend towards more wellness during holidays/Concerns about health

Answer:

ENVIRONMENTAL

- Increasing environmental awareness

Answer:

- Trend towards authentic/natural and ecotourism

Answer:

SCIENCE AND TECHNOLOGY

- Trend towards self-booking/e-commerce/direct-marketing/Travel agencies getting outdated

Answer:

- Technology made it possible to practice lower prices/polarization of the offer

Answer:

- New technologies will spread and benefit both tourism enterprises and costumers

Answer:

ECONOMICS AND GLOBALIZATION

- Trend towards personal service and attention to detail/Mass marketing gives place to personal and direct marketing

Answer:

- Big brands will overtake medium brand enterprises

Answer:

- Trend towards strategic alliances

Answer:

- Trend towards simple accommodation/basic prices

Answer:

- Globalization: Trend to promote widespread economic dynamism and growth, which will lead to an increased demand for tourism experiences

Answer:

Annex II

Analysis of Necessary Conditions (fs/QCA)

Analysis of Necessary Conditions

Outcome variable: Accuracyl

Conditions tested:

	Consistency	Coverage
Explicit	0.406929	0.851587
NofCites	0.468765	0.891811
Multisource	0.398738	0.834445
Multimethod	0.160269	0.838492

Annex III

Answers from Q1 that matched Q2 megatrends

Expert/Megatrend	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Prof. Sandra Loureiro	1	0	0	1	0	0	1	0	0	0	1	0	1	0	0	0
Dra. Silvia Rio	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Dr. Jorge Catarino	1	0	0	0	0	0	1	0	0	0	1	1	0	0	0	1
Dr. Pedro Rebelo	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Dr. Francisco Moser	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0
Dr. Luis Patrão	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1
Dr. Gonçalo R. Almeida	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	0
Prof. João Guerreiro	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Dra. Rita Magalhães	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
Dr. Rita Lavado	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Dr. Miguel A. Ribeiro	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1
Dr. Sérgio Guerreiro	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	1
Dr. Mário Ferreira	0	0	0	1	0	0	1	0	1	0	0	0	1	0	0	0
Dr. Daniel Vink	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
Total	4	0	0	7	0	0	7	0	2	0	11	1	2	0	1	5
% of experts that mentioned the trend	29%	0%	0%	50%	0%	0%	50%	0%	14%	0%	79%	7%	14%	0%	7%	36%

Annex IV

Megatrend scores/ratings from Q2 of the interview

Expert/Megatrend	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Prof. Sandra Loureiro	10	9	9	10	7	10	8	9	9	8	7	4	7	9	8	9
Dra. Silvia Rio	8	9	7	9	6	10	8	5	8	10	8	9	7	9	8	9
Dr. Jorge Catarino	5	5	8	8	3	7	10	7	8	8	8	10	9	9	7	9
Dr. Pedro Rebelo	10	9	5	8	6	6	3	6	6	7	10	10	6	10	8	8
Dr. Francisco Moser	8	8	7	10	8	7	10	8	4	3	8	9	9	7	10	7
Dr. Luis Patrão	10	8	6	7	6	8	9	9	7	8	10	5	6	6	9	8
Dr. Gonçalo R. Almeida	10	8	6	4	5	8	7	5	5	2	8	8	5	6	5	9
Prof. João Guerreiro	10	7	8	9	6	8	9	7	5	8	10	7	3	7	7	8
Dra. Rita Magalhães	9	9	7	7	5	8	8	8	10	5	9	9	8	5	7	8
Dr. Rita Lavado	10	8	8	9	8	9	8	8	8	7	7	7	3	7	7	9
Dr. Miguel A. Ribeiro	10	10	8	10	2	5	5	10	10	10	5	10	8	10	7	10
Dr. Sérgio Guerreiro	6	7	10	8	6	10	8	7	9	5	10	8	4	10	8	8
Dr. Mário Ferreira	10	9	10	10	10	6	10	8	6	6	10	9	10	2	10	10
Dr. Daniel Vink	10	9	10	9	9	6	8	8	3	6	10	10	2	2	3	10
Weighted average	9.000	8.214	7.786	8.429	6.214	7.714	7.929	7.500	7.000	6.643	8.571	8.214	6.214	7.071	7.429	8.714
Standard deviation	1.604	1.206	1.520	1.591	2.076	1.578	1.869	1.402	2.138	2.255	1.498	1.820	2.425	2.604	1.761	0.881

Annex V

Trend analysis and used forecasting methods table– Long version

Source	Trend	Context (C) or Industry Specific (IS)	Forecasting method
<i>Ageing of Population</i>			
Garrod & Fyall (2000)	with an ageing national population, a growing tendency towards early retirement and wider car ownership, the share of older people in the visitor profile is likely to increase	C	Delphi
Cetron (2001)	Healthier habits and science are extending later life	C	EJ
Cetron (2001)	More retirees will travel off-season	C	EJ
Willmott & Graham (2001)	Elderly travelers might blunt the edges of seasonality	C	EJ
Müller (2001)	There will be fewer young people and more active 'younger senior citizens' with time and money	C	EJ
Weber & Ladkin (2005)	The aging of the population, noted in several industry studies was also perceived by the Australian expert panel as a key trend affecting the country's industry due to its potential to affect the profile of delegates and their needs.	IS	Delphi
Cetron, DeMicco & Davies (2006)	The population of the developed world is living longer. Older diners will make up a growing portion of restaurant clientele and seek out stronger flavors to make up for the declining sensitivity of their taste buds.	IS	EJ
Deloitte (2008)	This group of 80 million 44 to 62 year-olds (...) they are expected to use a significant portion of their accumulated financial resources for THL-related offerings such as spas and all-inclusive resorts, restaurants, cruising, and traveling abroad	C	EJ
<i>Trend towards weekend getaways/short vacation</i>			
Cetron (2001)	Multiple, shorter vacations spread throughout the year will continue to replace the traditional two-week vacation	IS	EJ
Cetron (2001)	Demand for luxurious 'weekend getaways' will grow rapidly	IS	EJ
Müller (2001)	Trend towards more frequent, shorter trips: seeking products that offer occasional variety	IS	EJ
Müller (2001)	Trend towards spontaneous travel decisions (last-minute bookings)	IS	EJ
Deloitte (2008)	Mini-vacations: The new norm. While two-week getaways have become less popular, evidence suggests there has been an increase in workers taking a week or less.	IS	Survey
<i>The boundaries between business and leisure travel are blurring</i>			
Willmott & Graham (2001)	Willmott and Graham believe that the distinction between work time and holiday time will increasingly become eroded.	IS	EJ

Weber & Ladkin (2005)	Increased time pressure on the workforce on one side and a greater desire to balance work and private life on the other have to be also accounted for in meeting management, especially when business people are trying to maximize time by combining conference attendance with personal travel—a key trend identified by the panel.	IS	Delphi
Deloitte (2008)	The boundaries between business and leisure travel are blurring; Many business travelers extend their business trips and take family members along.	IS	Survey
<i>The emergence of new types of tourism/specialization to meet the changing needs of costumers</i>			
Cetron (2001)	Cuisines will offer a growing opportunity for hotels and tourist destinations to distinguish themselves from the competition	IS	EJ
Willmott & Graham (2001)	Specialization is the new watchword across the industry: companies will offer activities and accommodation to suit any demographic segment, pocket or inclination	IS	EJ
Müller (2001)	Trend towards adventure-oriented holiday behavior: seeking a more intensive leisure experience	IS	EJ
Müller (2001)	Trend towards more sophisticated travel products: seeking trips that offer culture and education, as well as variety; both passive recreation and hyperactive sport are ‘out’	IS	EJ
Müller (2001) ref. Opaschowski	Culture and study trips will develop into a stable market segment	IS	EJ
Dwyer (2004) ref. Butler & Jones	Industry suppliers must become more flexible in catering to tourists’ changing needs	IS	EJ
Dwyer (2004)	Spiritual rejuvenation is quite likely to be next including increased ‘religious tourism’	IS	EJ
Dwyer (2004)	The main challenge for the tourism industry is to develop products and services that meet the changing needs of the consumer	IS	EJ
Dwyer (2004)	Tourists will increasingly want to undertake new experiences, interact with the community, and learn about a destination at more than a superficial level	IS	EJ
Dwyer (2004)	Several emerging special-interest markets may be identified including senior tourism, cultural tourism, health tourism, nature-based tourism, cruise tourism, and wine tourism, among others	IS	EJ
Deloitte (2008)	Tourism, Hospitality & Leisure (THL) companies are realizing the power of a more targeted approach that connects niche consumer markets with their special interests and hobbies. Individuals representing these groups are often repeat customers and more willing to purchase related products and services. In addition, these consumers typically provide valuable word-of-mouth referrals within their networks	IS	Survey
<i>Trend towards loyalty to high quality perceived brands</i>			
Cetron (2001)	Brands credibly positioned as “affordable luxury” will prosper	IS	EJ
Dwyer (2004) ref. Olsen	The price of loyalty will be superior products that add real and significant value to the tourist experience	IS	EJ
<i>Trend towards more wellness during holidays/Concerns about health</i>			
Jones (1999)	In response to concerns about food, diet and health, caterers may have to provide consumers with information about their food sourcing	IS	EJ
Cetron (2001)	Genetically modified food will be the fastest growing new product area in the next 15 years	C	EJ

Müller (2001)	Trend towards more wellness during holidays	IS	EJ
<i>Increasing environmental awareness</i>			
Jones (1999)	Environmental issues will play an increasing role in operational decisions making	C*	EJ
Cetron (2001)	Concern for indoor environment will spread, with increasing new regulations to control the quality of indoor air	C*	EJ
Cetron (2001)	Recycling, air quality, waste disposal, kitchen safety and other aspects of the workplace environment will be increasingly regulated and will require greater management attention and investment	IS*	EJ
Müller (2001)	Environmental awareness is continuing among broad segments of the population. Holidaymakers too are becoming more and more environment conscious	IS	EJ
Dwyer (2004)	Travel and tourism's main problem will be the environmental impact of other polluting industries within, or proximate to, destinations	IS	EJ
Dwyer (2004)	Due to the increasing demand for nature-based tourism, demands for still more environmental controls are inevitable, especially in relatively pristine regions	IS*	EJ
Dwyer (2004)	Tourism operators may be expected to better appreciate the increasingly recognized fact that today, 'green' business can increase profits and equates to 'good' business	IS	EJ
Dwyer (2004) ref. Sauvante	The 'triple bottom line approach' to sustainable development will help tourism/hospitality firms integrate social, environmental, and economic information into managerial decision making	IS	EJ
Weber & Ladkin (2005)	The increasing awareness of environmental issues will significantly affect the industry	IS	Delphi
Cetron, DeMicco & Davies (2006)	Eco-backlash: Global protests against this perceived despoiling of our common heritage will quickly give rise to stringent limits on the number of tourists who can visit what little true wilderness remains in the world.	IS	EJ
Deloitte (2007)	A growing environmental consciousness should create demand for more green travel products which promote and safeguard the natural world.	C	EJ
Deloitte (2008)	As awareness and understanding increases regarding the global risks of climate change and various health and wellness issues, corporate responsibility is becoming a key attribute for consumers in selecting products and services	IS	EJ
<i>Trend towards authentic/natural and ecotourism</i>			
Cetron (2001)	'Ecotourism' will continue to be one of the fastest growing areas of the tourism industry, as an unique and necessary chance to escape from keyboards and cell phones	IS	EJ
Willmott & Graham (2001)	Consumers are increasingly looking to more exotic destinations	IS	EJ
Müller (2001)	In the new century, potential guests will be on the lookout for the natural, organic, unmistakable and authentic	IS	EJ
Dwyer (2004)	As the world's supply of pristine natural environments dwindles and the demand for them increases, their price will increase compared with mass tourism experiences	IS	EJ

Deloitte (2007)	Climate change threatens many destinations and types of holiday, but ecotourism may turn out to be one of the winners. A growing environmental consciousness should create demand for more green travel products which promote and safeguard the natural world.	IS	EJ
Deloitte (2008)	Also known as sustainable or “green” travel, individuals in the “ecotourism” niche are looking to immerse themselves in the culture and society of the land – selecting ecofriendly destinations and choosing activities that have minimal impact on the environment	IS	Survey
<i>Trend towards self-booking/e-commerce/direct-marketing/Travel agencies getting outdated</i>			
IH&RA (1999) ref. Connolly	Hotels will need to reconsider yield management in the context of the internet and world wide web.	IS	EJ
IH&RA (1999) ref. Connolly	Travel intermediaries and central reservations systems will be by-passed and the tendency to do-it-yourself bookings and voice-interactive commands increase	IS	EJ
Jones (1999)	Hotel chains will develop interactive TV to enable customers to place reservations from home using their remote control as, unlike the internet, such connectivity enables hotels firms to know from whom and from where the booking has been made, thereby creating real one-to-one marketing	IS	EJ
Cetron (2001)	Tourism enterprises are finding it increasingly easy to market themselves directly to consumers, rather than relying on intermediaries	IS	EJ
Cetron (2001)	Travelers are buying their airline seats and hotel rooms on the Internet, which will sharply reduce the number of travel agencies required	IS	EJ
Willmott & Graham (2001)	The single most important element in the future of the travel and tourism experience will be the impact of technology across the distribution and delivery chain.	IS	EJ
Dwyer (2004) ref. Frew	The emergence of e-commerce and online technologies presents enormous opportunities for tourism enterprises, intermediaries, and destination managers to expand markets and to improve efficiencies in product delivery and communications management	IS	EJ
Dwyer (2004) ref. Affolter	The internet has expanded the marketplace which will increase the importance of yield management for optimal use of capacity and revenue maximization	IS	EJ
Cetron, DeMicco & Davies (2006)	Travel agents (TA) are an endangered species. Only the cruise industry still relies on TA for their booking. The authors predict a harsh future to the TAs.	IS	EJ
Deloitte (2008)	Consumer usage of the Internet to find information and purchase THL services is growing exponentially. The proliferation of THL-specific tools, including rating and review sites like TripAdvisor, DineSite, and MyTravelGuide; the popular Web log, Travelblog; and social networks, TripPlanner, Gusto, and TripConnect, indicate the significance of this burgeoning trend.	IS	Survey
Deloitte (2008)	The industry has a way to go to fully embrace today’s global transparent marketplace, where technology-savvy consumers have instant access to information and are exploiting it to meet their needs. With lower entry barriers and a flurry of new competitors, THL providers should consider how to leverage advanced technology and analysis tools to enhance business models and strengthen customer relationships	IS	Survey
<i>Technology made it possible to practice lower prices/polarization of the offer</i>			

Willmott & Graham (2001)	We may see a more pronounced polarization of the offer (because of the technology penetration in the industry), from the very cheapest 'no-frills' basic service provision to a more sophisticated selection process	IS	EJ
Müller (2001)	Trend towards cheaper travel: seeking (cheap) products that represent value for money: holidays at rock-bottom prices and growing market transparency thanks to the Worldwide Web encourage this tendency	IS	EJ
Dwyer (2004) ref. Seekings	Improved technology in both aviation and surface travel may be expected to result in greater speed, frequency, comfort, safety, availability of information, access, and cost efficiencies that reduce price	IS	EJ
<i>New technologies will spread and benefit both tourism enterprises and costumers</i>			
IH&RA (1999) ref. Ferrier	Centralization and more effective use of database systems for customer profiling, guest recognition and loyalty programs will spread in order to reduce hardware and software costs, reduced manpower costs, reduce maintenance costs, and improve data security	IS	EJ
NIC (1999)	Diffusion of information technology	C	Multi-Interview/Think-tank
Jones (1999)	Technology will impact on the nature of the hotel guest experience and the nature of service. Many mechanical and electronic tasks will become computer controlled allowing voice activation	IS	EJ
Jones (1999)	Jones predicted that people would implant a small computer "chip" under the skin to store personal information and perform in-room tasks with little effort. Jones also predicted that the age of the "smart card" used in hotels was going to be extremely short-lived	IS	EJ
Jones (1999)	Flat screen televisions will be built-in to the hotel room, simplifying cleaning	IS	EJ
Jones (1999)	Customers in the future may also be able via virtual reality to pre-determine their room decor to their personal taste	IS	EJ
Cetron (2001)	Information appliances that combine a computer, fax, duplicator and telephone with a large, flat screen will usher in the truly global economy	C	EJ
Cetron (2001)	The World Future Society identified ten technologies as most important for the next ten years: genetic mapping, super materials, high-density energy sources, digital high-definition television, miniaturization, smart manufacturing, anti-ageing products and services, medical treatments, hybrid-fuel vehicles and 'edutainment'	C	Multi-Interview/Think-tank
Cetron (2001)	Cashless credit/debit systems of payment will continue to proliferate. Expect the use of 'smart cards' to provide detailed customer information for use in more efficient target marketing	C	EJ
Cetron (2001)	The Internet makes it possible for small businesses throughout the world to compete for market share on an even footing with industry leaders	C	EJ
Cetron (2001)	Tourism will benefit as video replace printed brochures in promoting vacation destinations	IS	EJ
Cetron (2001)	Video conferencing will make it possible to train and monitor workers at locations around the world	C*	EJ

Willmott & Graham (2001)	Cheap webcams will allow us to see our friends and family via the Internet in real time for the cost of a local telephone call. Willmott and Graham believe that increased “remote” contact may well inspire more face-to-face trips	IS	EJ
Cetron, DeMicco & Davies (2006)	Those self-service ticket kiosks appearing in major airports will proliferate rapidly and spread to train stations, sports arenas, concert venues and other transportation hubs and destinations. Airport personnel will shrink by 20 percent no later than 2010.	IS	EJ
Cetron, DeMicco & Davies (2006)	Advertising in 3D: Today, holographic videos are cutting-edge technology. Twenty years from now, they will be consumer products. For tour operators, hotels and other segments of the hospitality industry, 3D videos – delivered either by mail or over the internet – will be the ultimate advertising medium, showing potential visitors exactly what they will experience at their destinations.	IS	EJ
Hotel Technology (2007)	Malone-Williams says the faster process is not about speeding guests through check-in, but allowing staff more time to talk to the guest.	IS	Single Interview
Deloitte (2008)	Technological advances help to streamline and enhance security procedures, mitigate consumer wait times in airports, and improve the traveler’s experience.	IS	EJ
<i>Trend towards personal service and attention to detail/Mass marketing gives place to personal and direct marketing</i>			
Cetron (2001)	Personal service and attention to detail set the best hotels, restaurants and resorts apart from the rest. This is the battleground on which hotels and restaurants will fight the competitive wars of the early 21st century	IS	EJ
Dwyer (2004) ref. Singh	In light of the increasingly competition, traditional methods of marketing a destination to the masses has yielded to more focused marketing segmentation strategies and themed campaigns	IS	EJ
<i>Big brands will overtake medium brand enterprises</i>			
Cetron (2001)	The single most powerful business trend for the past 20 years is that the big get bigger, thanks to economies of scale. The small prospers by providing high levels of service in niche markets. The middle-sized, lacking either advantage, are either squeezed out or absorbed by larger competitors.	C	EJ
Cetron (2001)	Few companies, if any, are too large to be potential take-over targets. Hotel industry consolidation will be fastest in Europe, the Middle East and the Pacific Rim and Third World countries	IS	EJ
Dwyer (2004)	Branded hotels will have support from image marketing and networking power. As branding gains strength, the unbranded may find themselves increasingly isolated from other industry stakeholders	IS	EJ
<i>Trend towards strategic alliances</i>			
Dwyer (2004)	Associated with the increasing competitiveness of the industry is a realization of the benefits of forming strategic alliances, as access to databases becomes critical and direct marketing progresses, these alliances will drive the industry	IS	EJ
Dwyer (2004)	Joint promotions and alliances between NTOs and the private sector will create a stronger collective tourism product that will increase arrivals and enhance tourism growth	IS	EJ

Dwyer (2004)	Liberalization of air transport is increasingly recognized as enhancing trade and tourism growth, and it will lead to more multilateral open skies agreements between countries	IS	EJ
<i>Trend towards simple accommodation/basic prices</i>			
Willmott & Graham (2001)	Airlines are struggling to justify their top fares as consumers have seen that it is possible for airlines to operate cheaply and well on much lower tariffs	IS	EJ
Willmott & Graham (2001)	Hotels are finding a wide clientele among travelers who want a bed for the night but little more	IS	EJ
<i>Globalization: Trend to promote widespread economic dynamism and growth, which will lead to an increased demand for tourism experiences</i>			
NIC (1999)	Political pressures for higher living standards	C	Multi-Interview/Think-tank
NIC (1999)	Improved macroeconomic policies.	C	Multi-Interview/Think-tank
NIC (1999)	Rising trade and investment	C	Multi-Interview/Think-tank
NIC (1999)	Increasingly dynamic private sectors	C	Multi-Interview/Think-tank
Deloitte (2008)	Travel across international borders is being driven by increased public awareness. Consumers are exposed at an earlier age to other cultures and regions of the world, due to such factors as heightened global media presence, online access to information, and the increasing number of ex-pats living and working globally	IS	EJ