



MASTER THESIS

# Bridging the Gap: A Textual Analysis of Quinta da Gricha for Enhanced Marketing Strategies and Tourism Offer

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# ABSTRACT

This research delves into the optimization of marketing strategies and tourism offers through the analysis of textual data. The study focuses on examining the winery's official text content sources related to tourism offers and marketing materials, and the feedback from the audience. By employing digital analytical tools, the research aims to identify the key topics of the brand. Additionally, visitor experience data is collected through surveys to identify key points of interest for customers. Through correlation analysis, the study points out the relationship between the identified key topics and visitor interests. The findings of this research contribute to enhancing marketing strategies and improving tourism offers by addressing gaps and discrepancies. Furthermore, the study explores the potential applicability of the proposed approach to other wineries and regions, widening the scope of winery tourism research.

**Keywords:** customer experiences, wine storytelling, branding strategy, text mining, destination competitiveness

# LIST OF ABBREVIATIONS

SEO: Search Engine Optimization

NLTK: Natural Language Toolkit

LDA: Latent Dirichlet Allocation

TF-IDF: Term Frequency-Inverse Document Frequency

# 1. Introduction

## 1.1 Company and internship overview

Churchill's Port, a renowned wine brand in Vila Nova de Gaia and Douro Valley, Portugal, has established itself as a symbol of exceptional quality and craftsmanship. Founded in 1981 by John Graham, the company's commitment to producing high-quality and elegant wines has garnered widespread acclaim. All grapes used in their port wines are sourced exclusively from Grade-A vineyards, ensuring the highest standards of quality from the outset. The winemaking process, including the traditional method of foot-treading in granite lagares, embodies the company's dedication to preserving the time-honoured practices that contribute to the distinctive character of their wines.

In 1999, Churchill's made a significant acquisition by purchasing Quinta da Gricha, a remarkable 50-hectare Grade A Vineyard estate located in the prestigious Cima Corgo sub-region of the Douro Port Wine region. This acquisition not only solidified Churchill's position in the industry but also provided an opportunity to explore new avenues of winemaking excellence. Quinta da Gricha wine represents a distinctive sub-brand within Churchill's, with a special emphasis on still Douro wines. Situated on a north-facing slope in the Cima Corgo, this Gricha is expressing the initial idea of the brand, high quality and elegance. The old vines have a history of 80 years, accompanied by historic granite lagares dating back to 1852. Notably, Gricha wines are renowned for their vibrant fusion of freshness, minerality, and natural acidity. At Quinta da Gricha, wine tourism takes the dominant stage, offering visitors an immersive experience that combines hospitality, gastronomy, and leisure services, aimed at showcasing the wines together with the breathtaking valley scenery. The main experiences are wine tasting, guided tours of the Quinta (including the view of the vineyard, Lagares, stainless steel vats warehouse, and the wine house), wine and local food pairings, picnics complemented by fine wines, vineyard hikes, exclusive wine events, grape harvesting, and more.

The influence of Churchill's brand extends far beyond Porto, captivating wine enthusiasts worldwide. Its iconic wine lodge in Vila Nova de Gaia acts as a magnetic attraction, attracting thousands of visitors from across the globe to immerse themselves in the brand's rich history. Additionally, the high reviews of Quinta da Gricha make it always fully booked, wine lovers bask in the splendid scenery and enjoy their vacations. Moreover, the brand's British gene makes it popular in the UK in particular, where it established an exclusive high-end wine membership club to explore the local market.

During my internship at Quinta da Gricha, I had the opportunity to immerse myself in wine tourism in the Douro Valley. Living in this beautiful region, I gained practical knowledge of winemaking processes and experienced the unique traditions and local climate that shape the wines.

One of the most memorable aspects of my internship was the close interactions I had with visitors. As a wine tour guide and tasting facilitator, I had the pleasure of engaging with diverse individuals from all walks of life, sharing my passion for wine and uncovering their unique motivations and experiences. Through these interactions, I learned about their motivations and experiences, and I carefully reviewed and analysed their feedback to better understand their interests and expectations.

Living in the heart of the Douro Valley allowed me to witness and participate in the winemaking process firsthand. I had the opportunity to learn more about the traditional practices, such as the foot-stomping of grapes, which is an integral part of the region's winemaking heritage. This hands-on involvement enhanced my understanding of the craft and provided me with a greater appreciation for the dedication, and I was able to share these insights with customers, enriching their experience and fostering a deeper appreciation for the wines they tasted. I also customise my tour speeches based on their preferences.

In addition to my role as a wine tour guide and tasting facilitator, I actively contributed to the continuous improvement of our tourism offerings. This included conducting extensive online marketing research to identify emerging trends and explore innovative strategies to enhance our reach and engage with a broader audience. Furthermore, I worked on a customer survey questionnaire, aiming to gain insights into customer preferences, expectations, and overall satisfaction. This data allowed us to refine our tourism experiences, customise our guide speeches, and further tailor our offerings to meet the unique desires of our discerning customers.

Overall, my internship at Quinta da Gricha was a transformative experience that deepened my knowledge of winemaking, exposed me to the rich winemaking traditions of the Douro Valley, and provided me with the opportunity to engage with customers, analyse their feedback, and contribute to the ongoing development of our tourism offerings. It was a remarkable journey that not only expanded my skills but also instilled in me a profound appreciation for the beauty and complexity of the world of wine.

## 1.2 Research objectives

In my internship, I had the opportunity to engage in direct face-to-face interactions with customers, which presented a significant departure from my previous experience in digital marketing. This first hand interaction allowed me to gather immediate and unfiltered feedback from customers, prompting me to focus my research on analysing their experiences with our marketing and tourism offerings. Specifically, I aimed to explore how well our ideas were received by customers and whether any gaps existed between our areas of focus and their expectations.

Drawing on my background in digital humanities, I devised an innovative methodology that leveraged distant reading and word relationship analysis to digitally analyse our marketing and tourism textual materials. This approach not only provided a fresh perspective but also facilitated a systematic examination of customer reviews. By applying this methodology, it is possible to identify keywords and calculate topic gaps, shedding light on the alignment between our offerings and customer expectations. Furthermore, the utilisation of an automated model enables the collection and processing of a vast amount of information, making it highly suitable for conducting research on a larger scale. This approach opens up the possibility of investigating not only the specific offerings of Quinta da Gricha but also broader contexts such as a winery cluster, a wine region, or even a country. By employing an automated model, we can capture and analyse data from a diverse range of sources, including social media, online reviews, and other relevant textual materials, providing a more comprehensive and nuanced understanding of the tourism landscape. This broader scope enhances the applicability and generalizability of the research findings, contributing to the advancement of knowledge in the field of tourism studies. Consequently, the outcomes of this research not only provided valuable findings for our specific winery but also offered potential implications and applications for the broader tourism industry.

Based on these considerations, my research questions were formulated as follows:

1. What are the dominant topics presented in the text of Quinta da Gricha's marketing and tourism offers, such as website contents, oral speech during the visit, commercial articles, reports, social media posts, and so on?
2. How do tourists receive and perceive the information presented in the marketing and tourism materials?
3. Is there any gap between the offer by Quinta da Gricha and the needs of the customers?

4. Based on the findings of the research, how can the marketing strategy and tourism offer be improved to better align with the expectations and interests of the target customers?

By addressing these research questions, the research aimed to use the qualitative and quantitative methods to gain a comprehensive understanding of the effectiveness of Quinta da Gricha's marketing strategies, identify the unique selling points, summarise the areas for potential improvement, and propose brief ideas to enhance the tourism experience.

### 1.3 Significance

Faced with existing marketing materials that contain multimodal data, this study will focus on textual data. The proposed research aligns with the current trend of utilising text mining and textual analysis methodologies in marketing strategy and business model analyses. Text mining is a process that uses techniques like information retrieval and natural language processing to find patterns in text (Feldman, R. & Sanger, J., 2009). It involves collecting, extracting, and analysing data from various sources. Text mining has been widely used in different research fields, including the analysis of marketing and customer feedback. By analysing large-scale data from online sources, these studies have offered critical perspectives into the tourism industry, deepening our understanding of customer experiences.

While these methodologies are widely employed in marketing research, their application to wine tourism, particularly in the context of single wineries or wine brands, is relatively limited. This research aims to fill this gap by exploring the application of text analysis techniques specifically within the wine industry's marketing domain.

Furthermore, most existing text mining studies primarily focus on analysing official materials such as brand homepages, social media platforms, and travel agency websites (Fagioli et al., 2022). However, there is a lack of sufficient attention given to understanding the audience and customers' reactions to these materials. This research seeks to address this gap by analysing the text reviews from customers, examining the impact and influence of marketing strategies, their preference for tourism offers, and assessing the extent to which the strategies align with their expectations. By considering the perspectives of both the marketing strategies and the customers' responses, this research endeavours to bridge the gap between the two and provide a comprehensive understanding of the effectiveness of marketing efforts.

Moreover, the opportunity for me to work on face-to-face communication with customers in the context of wine tourism is a great support to this research. This allows me to get firsthand and comprehensive feedback, and further explore customer experiences, motivations, and preferences, which can not only reveal their reaction to the current marketing materials, but also provide the customer corpus for deeper text mining research.

By incorporating customer perspectives, this study aims to provide a comprehensive understanding of the marketing dynamics within the wine industry. By analysing marketing materials and customer responses, we can generate key topics from both perspectives. In turn, we can calculate the alignment of the two topics, which can help assess the customer's fit with existing strategies. By examining the alignment between marketing strategies and customer expectations and presenting them visually, this study can provide practical recommendations for wineries to enhance their wine tourism marketing strategies. Understanding the topics and themes that resonate with customers allows wineries and wine brands to effectively tailor their marketing efforts.

In addition, one of the key characteristics of wine and wine tourism brands compared to many other products is a clear appellation attribution and regional narrative (Paunovic et al., 2022). Neither wine brands nor tourism programs exist independently of the culture and terroir of the region in which they are located, making homogeneous competition between the same regions particularly intense. It is also one-sided for research to study individual wineries' marketing strategies separately from regional themes, and distant reading helps to obtain a larger sample size through automated text collection and model analysis within a reasonable workload, which is innovative for more in-depth brand strategy research, and even regional brand and tourism strategy research.

Therefore, this study aims to use a digital humanities approach to analyse the marketing perspective and customer perspective in wine tourism, guided by textual data, to suggest potential sales highlights, and tourism experience enhancement solutions.

## II. Current wine tourism overview

As introduced, wine tourism plays a vital role in the development of the Churchill's and Quinta da Gricha. The industry has witnessed significant growth in recent years, with more people seeking wine-related travel experiences in Porto and Douro valley. As a result, Churchill's has been actively developing and expanding its wine tourism offerings to cater to

the growing demand. Meanwhile, in today's digital age, effective digital marketing strategies are essential for engaging customers. Leveraging digital platforms and online marketplaces allows the wine brands to reach a broader audience, promote its wine tourism offerings, and build brand awareness(Gurneet, 2017).

By combining the theoretical perspectives of wine tourism with practical insights, a comprehensive understanding of the current status of Quinta da Gricha can be obtained. The analysis of the current facts can help to build the corpus and choose the text analysis methods in a more reliable and actionable way.

## 2.1 Tourism offers

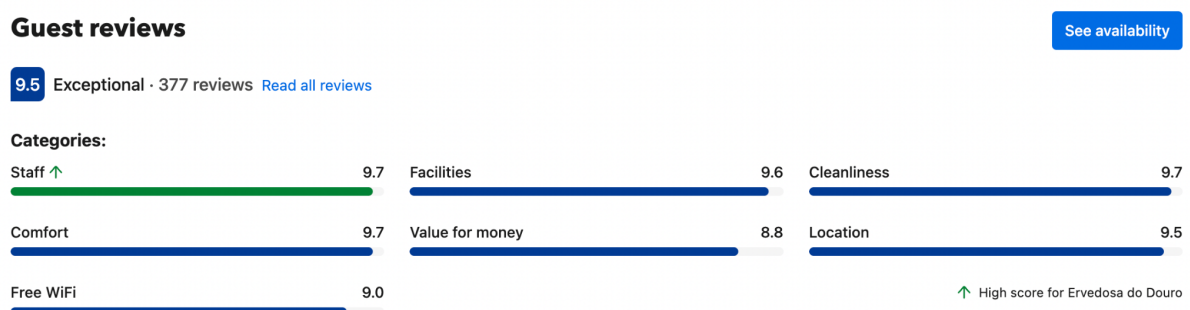
Quinta da Gricha is located in the central part of Cima Corgo, 160km away from Porto and 40km away from the nearest train station, Pinhao. Unlike the Churchill's wine lodge in Vila Nova de Gaia, Quinta da Gricha's remote location presents challenges in terms of transportation and time required for each visit, which leads to a relatively longer stay and higher expectation. The vineyard house is also working as a private hotel, with only four rooms. In this context, the limited availability makes every experience exclusive and unique.

To meet the need, and attract more customers, Quinta da Gricha offers a wide range of wine tour and tasting experiences:

### 1. Luxury Rooms:

Experience of staying overnight at Quinta da Gricha in only four suit rooms. Available year-round, these rooms offer a stunning view of the river from their private patios. Free breakfast and facilities, including an outdoor infinite swimming pool, garden, wine bar, shared lounge, and free Wi-Fi.

Figure 1 Quinta da Gricha's rating reviews from Booking.com



On Booking.com, Quinta da Gricha has received outstanding reviews for its overnight stay experience, with a remarkable score of 9.5 based on more than 380 reviews. This

exceptional rating places it among the top establishments in the prestigious Douro Valley. Guests have praised various aspects of their stay, especially the staff, facilities, cleanliness, comfort, and location. Additionally, Quinta da Gricha has implemented extra health and safety measures, which have been recognized and acknowledged by Booking.com.

## 2. Wine Tastings with tours:

The wine tourism team is providing wine tasting and tours in English, Portuguese, Spanish, and French. With a professional presentation of Douro valley and Port winemaking, visitors can leisurely wander and discover the historic granite Lagares and grape stomping tradition.

Figure 2 Tours, Tasting and Gastronomy Menu of Quinta da Gricha

TOURS AND TASTINGS	GASTRONOMY
<p><b>Step into the ancient treading tanks, taste wine while standing on the earth that produced it. We offer tours and tastings, so give us a shout and come on by.</b></p> <p><b>Classic</b> <span style="float: right;"><b>25,00 € / pax</b></span>            Churchill's Reserve Port            Churchill's Dry White Port            Churchill's 10 Year Old Tawny Port</p> <p><b>Douro Classics</b> <span style="float: right;"><b>25,00 € / pax</b></span>            Churchill's Estates Grafite white            Churchill's Estates Grafite red            Churchill's Estates Grafite Grande Reserva  <b>w/ indigenous grape varieties</b> <span style="float: right;"><b>37,50 € / pax</b></span>            Churchill's Estates Grafite Touriga Nacional            Churchill's Estates Grafite Tinta Roriz</p> <p><b>Blind Tasting</b> <span style="float: right;"><b>40,00 € / pax</b></span>            Blind Tasting. Taste four premium wines from Churchill's selected by our team.</p> <p><b>Winemakers' Selection</b> <span style="float: right;"><b>50,00 € / pax</b></span>            Churchill's 20 Year Old Tawny Port            Churchill's LBV Port            Churchill's Quinta da Gricha Vintage Port</p> <p><b>Gricha Terroir</b> <span style="float: right;"><b>60,00 € / pax</b></span>            Gricha Douro            Quinta da Gricha Douro            Quinta da Gricha Talhão 8 Douro</p> <p><b>w/ Quinta da Gricha Vintage Port</b> <span style="float: right;"><b>75,00 € / pax</b></span></p> <p><b>Tasting with the Winemaker</b> <span style="float: right;"><b>150,00 € / pax</b></span>            Once in a lifetime experience of tasting eight Churchill's ports and wines together with our winemaker.</p>	<p><b>Breathe in the aromas of our farm kitchen, dare to resist the quinta dogs trading belly rubs for scraps, and enjoy the perfect meal gazing out at the Douro with our terroir wine pairings.</b></p> <p><b>Portuguese Cheese Board</b> <span style="float: right;"><b>25,00 € / 2 pax</b></span>            Selection by Queijaria da Praça            Selection of three portuguese cheeses by Queijaria da Praça, portuguese jam and crackers.</p> <p><b>Iberian ham</b> <span style="float: right;"><b>15,00 € / 2 pax</b></span>            Iberian ham plate, Gricha olive oil and bread.</p> <p><b>Portuguese "Petiscos" shared plates</b> <span style="float: right;"><b>32,50 € / pax</b></span>  <b>Available at lunch or dinner.</b>            Portuguese "tapas" shared lunch, developed by our partner chefs according to season.</p> <p><b>Celebrating Portuguese cuisine</b> <span style="float: right;"><b>40,00 € / pax</b></span>  <b>Available at dinner.</b>            Includes starter, soup, main course and desert. Ask our team what's the dish of the day.</p> <p><b>A DAY AT QUINTA DA GRICHA</b> <span style="float: right;"><b>120,00 € / pax</b></span>  <b>Spend a day at Gricha (12h30 - 18h00).</b>            Includes the Portuguese "Petiscos" to Share lunch, paired with Churchill's award-winning ports and Douro wines; a tour around the property and a Blind Tasting with four Churchill's ports and four Churchill's wines; and some relaxation time by the pool or for a walk around the vineyards.</p>

Referring to Figure2, over eight options are provided at tasting, including Port and Douro DOC wine tastings, blind tastings, winemaker selections, single variety tastings, and interactive sessions of tasting with the winemaker. At the same time, basking in the breathtaking scenery and tasting the wines from the vineyard in front of, is a practical way to build an immersive space and provide a multi-sensory experience(Martins et al., 2017). It can be positive to enhance the visitor's impression of the brand and the satisfaction of the experience.

## 3. Gastronomy Experience:

Quinta da Gricha offers a delightful gastronomic journey, pairing their wines with local Douro food and desserts. Guests can enjoy lunch and dinner options in scenic locations such as a balcony with a stunning view or amidst the orange groves. The cuisine showcases traditional dishes from the Douro region and northern Portugal.

#### 4. A Day at Gricha:

For those looking to spend a full day at the winery, Quinta da Gricha provides additional services such as picnics, hiking opportunities, and access to the swimming pool. Guests can immerse themselves in the natural beauty of the surroundings while enjoying the estate's amenities.

#### 5. Walks & Trails:

Adventure enthusiasts can embark on self-guided vineyard walks, carefully curated by Quinta da Gricha. Guests can take in the picturesque landscapes, bringing along a bottle of estate wine and a picnic to make the journey even more enjoyable.

#### 6. Private Events:

Quinta da Gricha is available to host small and medium-sized groups for various occasions. With a flexible and dedicated team, the estate can accommodate up to 100 people, ensuring a memorable and customised experience for every guest.

These experiences aim to provide visitors with unique insights into the winemaking process and the beauty of the surrounding Douro Valley. By offering diverse wine-related activities, Quinta da Gricha strives to enhance the overall visitor experience and create lasting memories. The winery's commitment to providing exceptional wine tours and tastings reflects its dedication to showcasing the region's rich winemaking heritage.

## 2.2 Online presence

Under Churchill's brand influence, Quinta da Gricha has established a strong online presence through effective digital marketing strategies. Leveraging various platforms, the brand has been able to reach a wider audience and showcase its unique offerings.

Homepage:

Quinta da Gricha shares its homepage with Churchill's, while maintaining an individual module that highlights its distinct hospitality offerings and wine tourism in Douro Valley. This

approach allows Quinta da Gricha to benefit from the established brand reputation and traffic of Churchill's while also showcasing its own unique identity and offerings.

Booking.com:

Quinta da Gricha relies heavily on Booking.com as its primary channel for room bookings. As introduced in the last chapter the property has received high ratings and good reviews on the platform, which has contributed to its visibility and recommendation by the platform itself.

Social Media:

Quinta da Gricha has a strong presence on multiple social media platforms, allowing them to connect with their audience closer and showcase their unique offerings.

Instagram:

- Followers: 12.1K
- Posts: 582

Figure3 Instagram information of Quinta da Gricha



quintadagricha

Following ▾

Message



582 posts

12.1K followers

529 following

Quinta da Gricha

Churchill's unique winery in the Douro Valley. Book your experience here 📍 RNAL 52240/AL  
[linkin.bio/quintadagricha](https://linkin.bio/quintadagricha)

Quinta da Gricha's Instagram account serves as a visual diary, capturing the essence of their vineyard, hotel facilities, tourism activities, landscape, and pets. With stunning photos and engaging captions, they provide a glimpse into the beauty of their estate, and the pictures containing the infinity swimming pool always get the most likes. They are also posting the staff team and vineyard pets, completing the storytelling and building a warm brand image. Through regular updates and storytelling, they create an immersive experience for their followers, and foster a sense of connection and engagement.

Facebook:

- Followers: 17K

On Facebook, Quinta da Gricha maintains an active presence, sharing updates, news, and events with their followers. They leverage the platform to engage with their audience,

provide valuable information about their wines and wine tourism experiences, and foster conversations through comments and discussions. Quinta da Gricha's Facebook page serves as a hub for their community, allowing followers to stay connected and informed about the latest happenings.

YouTube:

- Subscribers: 79
- Videos: 31

Quinta da Gricha shares the same YouTube account with Churchill's, but its performance on this platform has been relatively limited. With only 71 followers, the channel has a slow update speed, with the most recent post being 6 months ago, followed by one posted 2 years ago. Although the videos feature good quality content, they lack trending topics, resulting in only 4 videos surpassing 1,000 views. Improving the YouTube presence by increasing the frequency of updates and creating content that resonates with trending topics will be crucial to expanding the channel's reach and engagement.

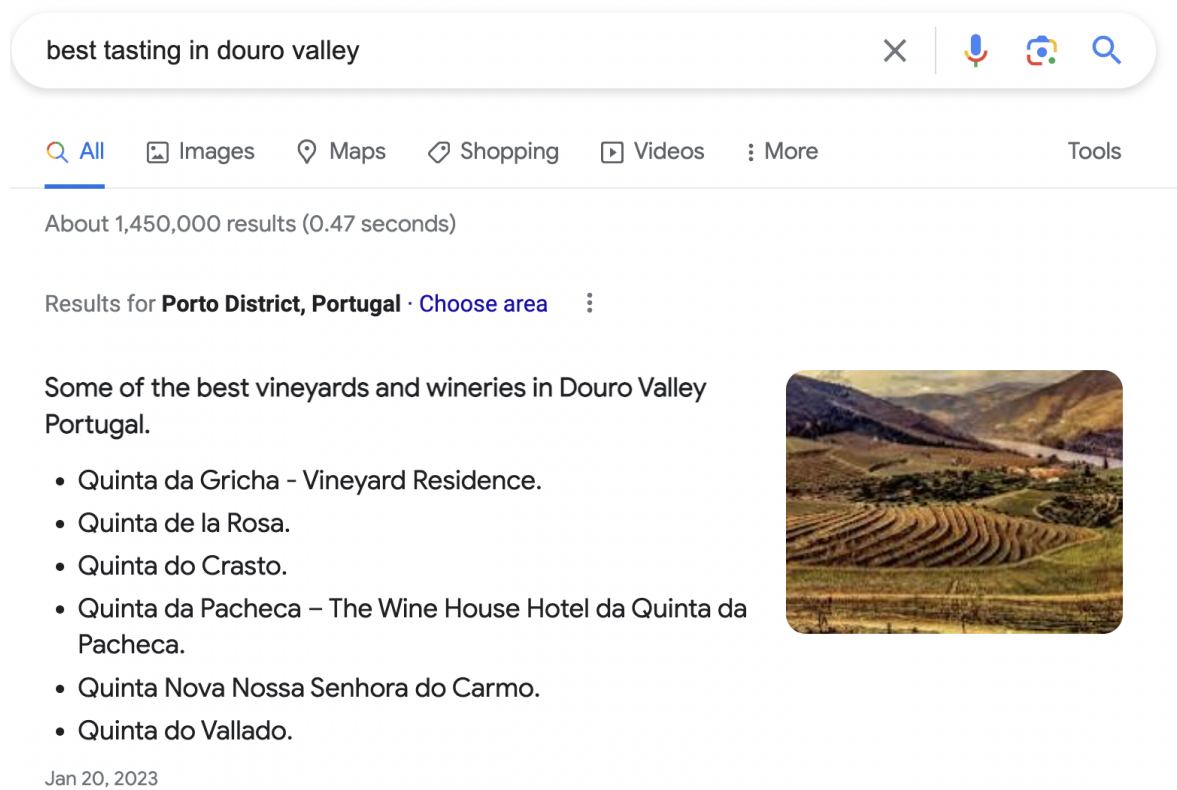
Search Engine Optimization:

Quinta da Gricha has implemented effective SEO strategies to enhance their online visibility and ensure they appear prominently in relevant search engine results. Here are some key search inquiries related to their offerings and their performance in those searches:

Quinta da Gricha has implemented effective digital marketing strategies to enhance its online presence. Their website showcases individuality while sharing the homepage with Churchill's. They have established a strong presence on social media platforms such as Instagram and Facebook.

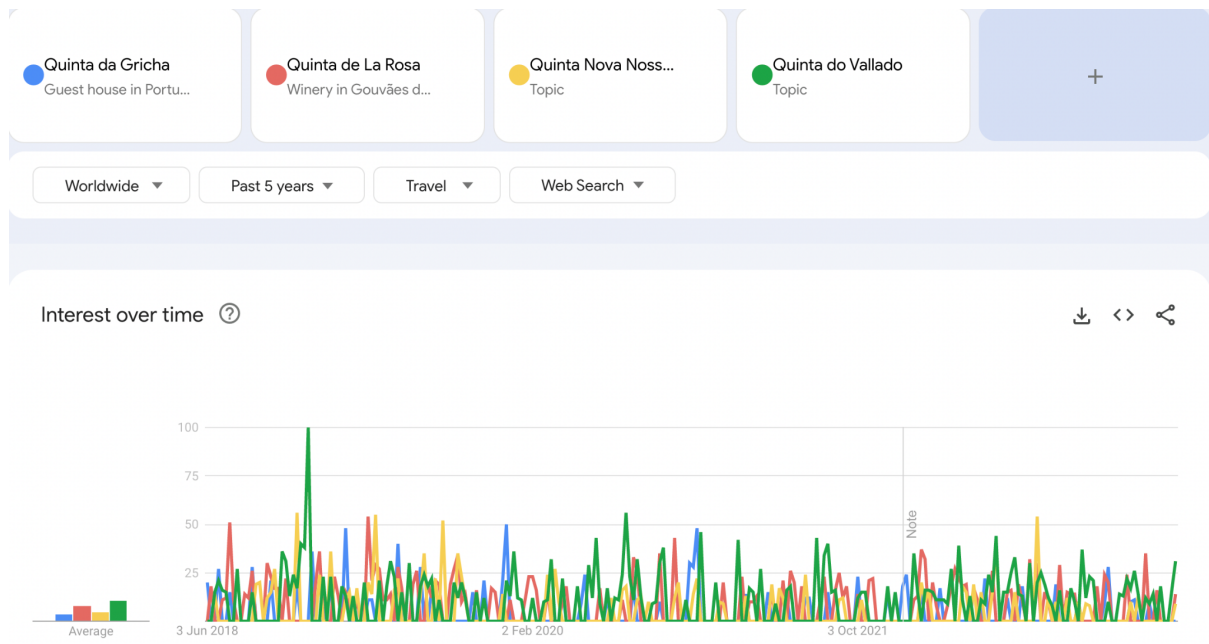
Additionally, Quinta da Gricha has successfully utilised SEO techniques to rank highly in key search inquiries related to Douro Valley tasting, Port wine, and wine tours. Notably, they have captured the top position for the search query "Best tasting in Douro valley ," attracting approximately 35% of tasting visitors during 2023 Spring through this powerful search result. This demonstrates their successful efforts in leveraging online channels to attract and engage with a wide audience interested in wine experiences in the Douro Valley.

Figure 4 Google research page of query 'best tasting in douro valley'



In the competitive landscape of Douro Valley, Quinta da Gricha faces competition from other wineries, such as Quinta do Vallado and Quinta de La Rosa, who have generally achieved higher search volumes on Google over the past five years. To enhance their online visibility and improve their SEO performance, Quinta da Gricha needs to focus on enhancing their SEO design and identifying unique selling points that differentiate them from other wineries in the region. By highlighting their distinct offerings, such as their exclusive wine tours or gastronomy experiences, Quinta da Gricha can attract more organic search traffic and establish a stronger online presence.

Figure 5 Google Trend comparison of Quinta da Gricha and three other famous competitors in Douro Valley in the worldwide within past 5 years



Overall, Quinta da Gricha has established a solid online presence. However, in a highly competitive landscape with numerous strong competitors in the same region, there is still room for improvement. It is crucial for Gricha to identify its unique selling points and leverage them to enhance its marketing and tourism strategies. By differentiating itself from competitors and emphasising its distinct offerings, Gricha can attract a larger audience and strengthen its position in the market. Taking immediate action to refine its marketing approach based on its unique strengths will be instrumental in securing a competitive edge and driving further success.

### III. Methodology

In the methodological chapter of this study, the study is based on wine tourism theory and uses text mining and qualitative analysis. Based on the theoretical framework, a text corpus was constructed by collecting online marketing and tourism content materials. Various text analysis techniques, including word frequency analysis, TF-IDF, and topic modelling, were used to derive data-supported insights from the corpus.

To make the findings of the text analysis more practical and actionable, an integrated approach was also used in this study to collect first-hand data from tourists. The

questionnaire was designed based on wine tourism consumer behaviour theory to provide greater insight into how customers understand and are influenced by current marketing. This integrated approach was designed to aid in the digital parsing of distant reading texts and to gain meaningful perspectives from customer comments and feedback.

The ultimate goal of the research is to identify and address gaps or discrepancies between a brand's marketing strategy and customer expectations, and to find strong and unique marketing points for the brand. To fill these gaps, this research will suggest potential strategies to strengthen the brand's performance and improve the customer experience in the current wine tourism context.

### 3.1 Corpus design and building

The approach to building the corpus follows established principles of corpus creation, emphasising the importance of a representative and balanced collection of texts. By incorporating a variety of channels and sources, the corpus aims to cover a wide range of textual material related to the Gricha brand. This approach ensures a comprehensive and multifaceted representation of the brand's online presence and customer interactions.

In response to the research question at hand, the corpus is composed of three main themes: promotional and tourism presentation materials published by Quinta da Gricha, customer feedback, and the online presence of the Douro Valley as a reference. Studying the differences between these three sub-corpora can achieve the research objectives to some extent.

The corpus design for the **Gricha brand** includes:

- Official website: All homepage text, including each sub-section and superlinks.
- Main tourism booking platforms' pages: introductions on Booking.com and TripAdvisor
- Tourism offer: full text of the wine tasting tour speeches
- Google search: the first 30 Google search results of a list of keywords: "Quinta da Gricha," "Gricha," "Churchill's port," "Gricha wine," and "Gricha Tasting."
- Social media pages, specifically Instagram, where the updates of Instagram and Facebook are essentially the same.

The corpus design for the **Customer review** includes:

- Booking.com reviews: Feedback and ratings provided by customers on the popular booking platform.
- TripAdvisor reviews: Reviews and opinions shared by visitors on the well-known travel website.
- Handwritten guestbook (OCR result): Transcriptions of the handwritten entries made by guests at Gricha reception, converted into text using Optical Character Recognition technology.
- Impression sections of questionnaires: Customers' initial impressions and overall experiences captured through survey questionnaires.
- Suggestion sections of questionnaires: Suggestions and recommendations offered by customers for improving the services and offerings at Gricha.

The corpus design for the **Online presences of Douro Valley** includes:

- Google search: the first 30 Google search results of a list of keywords: "Douro Valley tasting", "Douro Valley winery", "Douro Valley wine tour"

In order to obtain a representative corpus, the texts were selected using a systematic approach that considered the different channels that contribute to the brand's digital footprint. In addition, the corpus building process emphasised balance, encompassing as much as possible a proportion of different sources. This approach ensures that no single channel dominates the corpus, allowing for a fair and comprehensive analysis of the brand's online presence.

Overall, the corpus construction approach combines theoretical principles of corpus creation with a practical approach that prioritises representativeness and balance (Pustejovsky & Stubbs, 2012). By incorporating various channels of pre-processed text, building the corpus aims to provide a rich and comprehensive dataset that facilitates in-depth analysis and insight into the Gricha brand's online presence, customer feedback and potential areas of improvement.

### 3.2 Questionnaire survey

The Questionnaire survey serves as a complementary component to the text analysis, providing insights into customer perceptions and experiences. It consists of three main parts:

1. Customer's basic information: This section collects demographic details such as age, gender, nationality, and other relevant information to understand the customer profile.
2. Impression of the brand and experience: Here, customers are asked to share their impressions of their overall experience. Furthermore, this part includes questions related to the information sources that customers relied upon and their motivation for choosing Gricha. This helps in assessing the effectiveness of marketing strategies and identifying the key channels that influence customer decisions.
3. Suggestions: Customers are encouraged to provide suggestions and recommendations for improving the offerings and services at Gricha.

In addition, the survey explores the relationship between Churchill's and Quinta da Gricha brands by asking customers about their impressions of each brand. This allows for a deeper understanding of how the two brands complement each other and contribute to the overall perception and experience of visitors.

By incorporating the Questionnaire survey alongside the text analysis, a comprehensive understanding of customer perceptions, preferences, and suggestions can be gained. This combined approach enables Gricha to identify areas of improvement, refine marketing strategies, and enhance the overall customer experience.

### 3.3 Text analysis techniques

The analysis of text should be divided into three parts, which are text preprocessing, analysis, and visualisation.

In the text-cleaning process, firstly, punctuation marks and special characters were removed from the text to eliminate noise. Common English stop words, such as "the," "and," and "is," were removed as they do not carry significant meaning in the analysis. These preprocessing steps helped to refine the text data and prepare it for further analysis, enabling a more accurate exploration of the content and extraction of meaningful insights.

For the analysis, the main programming language is Python3, several tools from the Natural Language Toolkit (NLTK) will be used to analyse the corpus:

1. N-gram analysis: N-grams help in exploring the relationships between phrases and generating key topics. By examining the co-occurrence of words and phrases, we can uncover patterns and identify important themes within the text.
2. TF-IDF analysis: TF-IDF (Term Frequency-Inverse Document Frequency) is a technique used to determine the unique terms that are characteristic of the Douro Valley and Quinta da Gricha. It calculates the importance of a term in a document relative to its frequency in the entire corpus, allowing us to identify significant and distinctive terms.
3. Word frequency analysis: Basic word frequency analysis will be conducted to determine the most frequently used terms in the corpus. This helps in identifying common themes and important keywords related to the brand and tourism in the Douro Valley.
4. Topic distance analysis: Topic distance analysis measures the similarity or dissimilarity between topics within the corpus. By quantifying the semantic distance between topics, we can uncover relationships, clusters, or patterns among different aspects of the text.

These tools will provide valuable insights into the textual data, allowing us to extract meaningful information, identify key themes, and uncover unique characteristics of the Douro Valley and Quinta da Gricha, and find the topic gaps between the brand and customers.

According to the result above, visualisation with graphs will be helpful to better showcase and explain the raw data:

1. Word Cloud: Word clouds use font size and colour to emphasise the importance and frequency of words, providing a quick overview of the prominent terms.
2. Heatmaps: Utilise heatmaps to illustrate the correlation results from TF-IDF. Colour-coded cells can show the strength of uniqueness, making it visually intuitive to identify connections and clusters.
3. Topic Modeling Visualization: Latent Dirichlet Allocation (LDA), visualise the resulting topics and their distribution across the corpus. This can be done through topic proportion bar charts or interactive visualisations.

### 3.4 Correlation analysis

Firstly, a main topic list will be generated based on the analysis of the textual corpus. This list will serve as a representation of the key themes and subjects derived from the text data. The correlation between the brand list and customer list will then be examined, aiming to identify any significant associations or relationships between them.

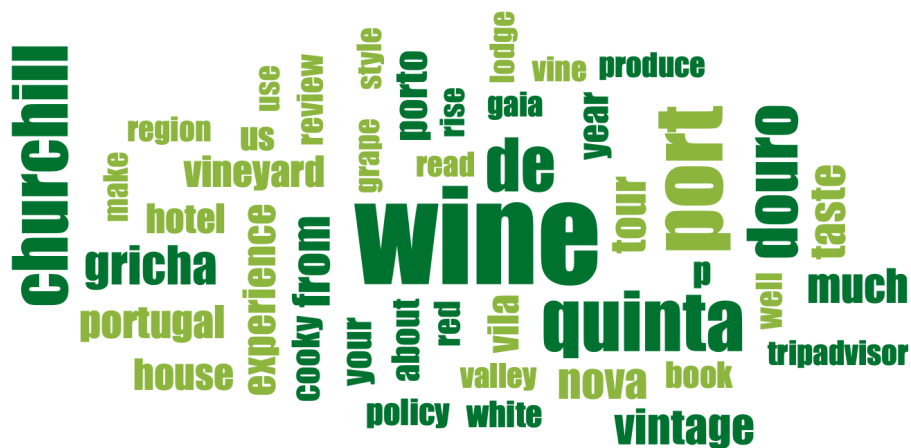
Additionally, the questionnaire responses will be analysed to explore potential correlations among different variables. This includes examining the relationship between respondents' information sources and their impressions or suggestions, as well as exploring the correlation between respondents' brand impressions of Quinta da Gricha. By conducting correlation analysis, significant findings can be gained regarding the interplay between different variables, shedding light on the connections between brand perceptions, customer experiences, and other relevant factors.

## IV. Results

### 4.1 Analysis of brand official texts

As shown in Figure 6, the word cloud derived from the GRICHA Corpus offers insights into the prominent terms associated with the brand, the size of each word corresponds to its frequency, with larger fonts indicating higher occurrence.

Figure 6 Word cloud of GRICHA corpus based on term frequency



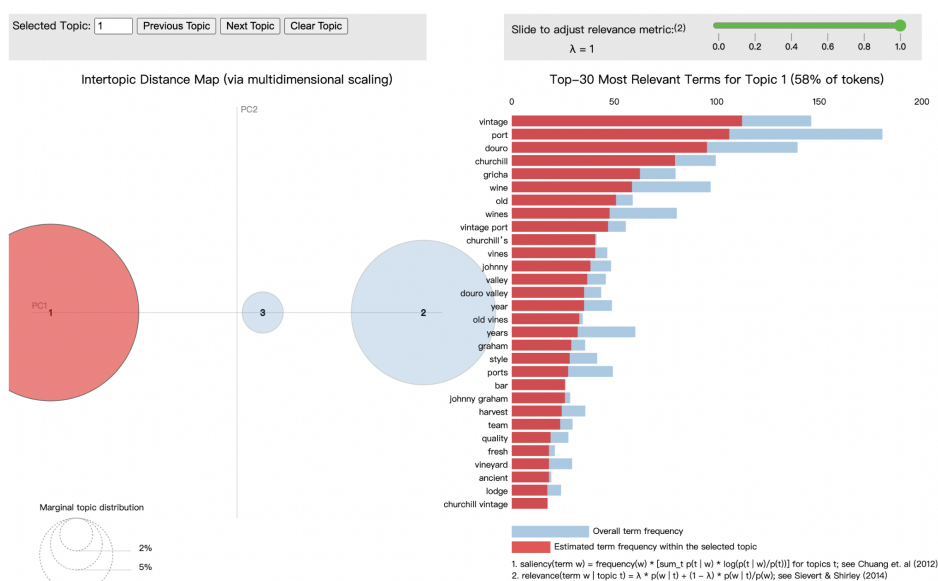
From a simple word frequency analysis, several key themes emerge. The presence of words like "Churchill's", "Gaia" and "Douro" suggests that Gricha emphasises its properties in this region, indicating their significance in the brand's identity and offerings. Furthermore, the word cloud highlights Gricha's focus on its wine production and styles. Words such as "vineyard," "port," and "wine" indicate the importance of wine in Gricha's offerings. The cloud also includes terms like "experience," "book," and "tour," which signify Gricha's efforts to provide engaging and immersive experiences for visitors.

It is important to note that this word cloud is based on a basic word frequency analysis and may not capture the nuanced aspects of the corpus. To gain deeper insights into the textual data, more advanced natural language processing techniques, such as using the NLTK library, can be employed to analyse the corpus and extract meaningful patterns and topics.

Based on the N-gram LDA topic module of GRICHA, with 3 topics, we can analyse and explain the main findings of Quinta da Gricha's official marketing strategy and tourism offer as shown in Figure 7, detailed graphs of the data and scripts are presented in **Annexes A and Annexes C**.

Topic 1, representing 58% of the tokens, includes key words such as: port, douro, vintage, wines, grapes, tawny, valley, production, and vineyard. This topic highlights Quinta da Gricha's expertise in producing high-quality vintage port wines, showcasing the unique characteristics of the Douro Valley, and emphasising the importance of the vineyard in the wine production process.

Figure 7 N-gram LDA topic module of GRICHA corpus



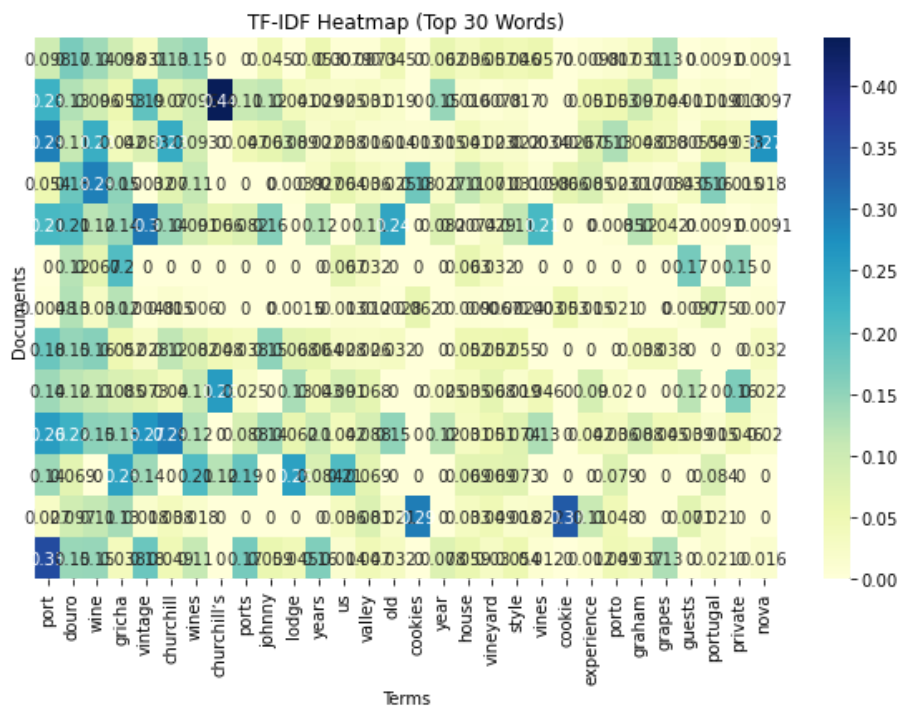
Notes. The figure shows three distinct topics, each represented by a cluster of words. The distance between topics indicates their dissimilarity, while the words and scores provide details about the first topic.

Topic 2, accounting for 38.8% of the tokens, features key words such as vintage, port, churchill, wines, valley, graham, and grapes. This topic focuses on the vintage port production, highlighting the age and quality of the wines, and showcasing the brand's association with Churchill and the significance of the grapes and vineyards in the Douro Valley.

Topic 3, representing 3.1% of the tokens, includes key words such as wine, gricha, nova, tasting, experience, and red. This topic revolves around the overall wine experience, highlighting Quinta da Gricha's offerings such as wine tastings, exploring new wines, and creating memorable experiences for visitors.

Considering these topics, the main finding of Quinta da Gricha's official marketing strategy and tourism offer is the emphasis on their expertise in producing high-quality vintage port wines, the significance of the Douro Valley and vineyards, and providing a comprehensive wine experience to visitors. The focus is on showcasing the unique characteristics of their wines, the age and quality of the vintage ports, and offering opportunities for wine tastings and experiences that leave a lasting impression on visitors.

Figure 8 Top 30 high score words of TF-IDF with the heatmap of each document in the GRICHA corpus



*Notes. Each row in the heatmap corresponds to a document in the corpus, and the colour intensity represents the TF-IDF score for each word in that document. The darker the colour, the higher the TF-IDF score, indicating the relative importance of the word in the document.*

Referring to Figure 8, the TF-IDF heatmap and the corresponding keywords and scores provide insights into the main ideas and strategies of GRICHA corpus. The detailed scripts are presented in **Annexes C**.

1. **Emphasis on Port:** The high TF-IDF score for the keyword "port" indicates a strong focus on this type of wine. This suggests that the brand corpus revolves around showcasing and promoting Port wine as a key offering.
2. **Douro Valley and Wine:** The keywords "douro," "wine," and "gricha" have relatively high TF-IDF scores, indicating the importance of the Douro Valley and the brand's association with it. This suggests that the brand corpus highlights the unique characteristics and qualities of wines from the Douro Valley, including the Quinta da Gricha brand.
3. **Vintage and Churchill:** The keywords "vintage" and "churchill" have notable TF-IDF scores, suggesting a focus on vintage wines, and there is also the fact that Quinta da Gricha is a single quinta vintage port sub-brand of Churchill's - which makes them connected. This highlights the brand's commitment to producing high-quality vintage wines and potentially leveraging the reputation and prestige of the Churchill brand.
4. **Wine Offerings:** The presence of keywords such as "wines," "ports," "lodge," and "style" suggests a diverse range of wine offerings and a focus on providing unique wine experiences. This indicates that the brand corpus aims to showcase a variety of wine styles and options to cater to different preferences and interests.
5. **Visitor Experience:** The inclusion of keywords like "years," "guests," "experience," and "private" indicates a focus on creating memorable experiences for visitors. This suggests that the brand corpus aims to provide not only exceptional wines but also a personalised and immersive experience for guests, potentially through private tastings or events.

Overall, the TF-IDF scores and keywords highlight the brand's emphasis on Port wine, the significance of the Douro Valley, the focus on vintage wines and creating unique wine experiences, and the integration of online marketing strategies. These insights collectively suggest a brand strategy that aims to position Quinta da Gricha as a reputable producer of

high-quality wines, offering diverse wine options, and providing memorable experiences to visitors.

## 4.2 Analysis of visitor experience texts

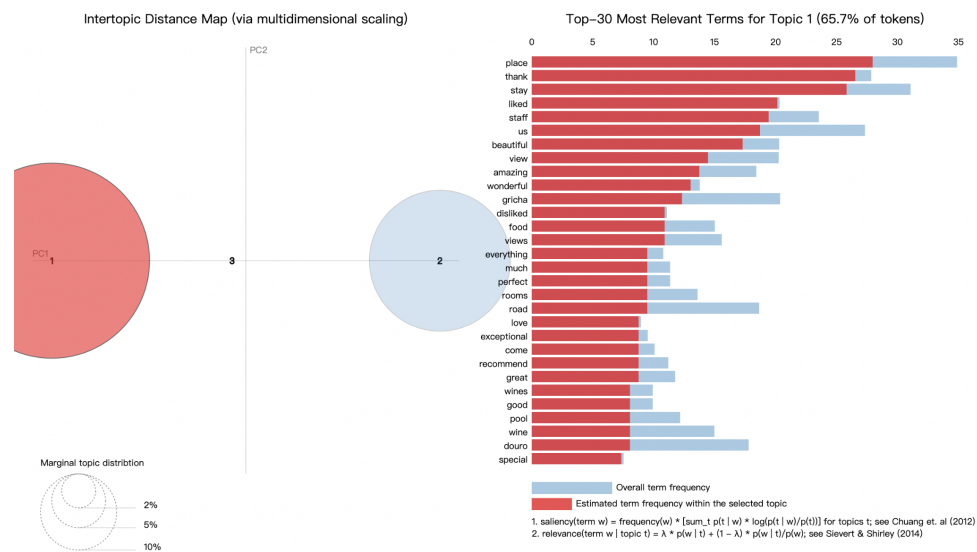
Figure 9 Word cloud of VISITOR corpus based on term frequency



From Figure 10, the LDA module has three topics in the VISITOR corpus, the distance of each other is pretty distinctive.

Topic 1: This topic reflects aspects related to the physical attributes and ambiance of the place, including the road, place, view, stay, staff, rooms, dinner, experience, and the beautiful Douro Valley. It indicates positive feedback about the overall atmosphere, scenic views, and dining experiences.

Figure10 N-gram LDA topic module of GRICHA corpus



Topic 2: This topic focuses on expressing gratitude and appreciation for the wonderful stay, beautiful surroundings, amazing food, friendly staff, and special wines. It suggests a high level of satisfaction and enjoyment during the visit, with a desire to return in the future.

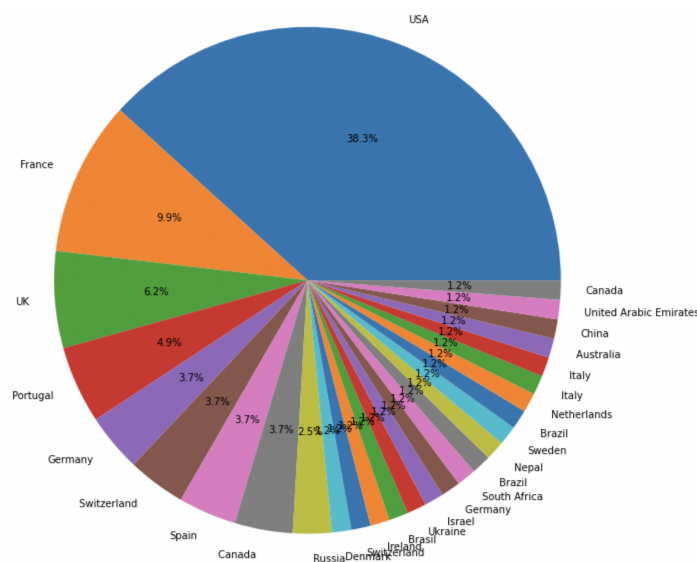
Topic 3: This topic highlights the enjoyment of various aspects such as the comfortable bed, great food, memorable experiences, and the serene and relaxing atmosphere. It emphasises the positive feelings and experiences associated with the stay, with mentions of returning in the future.

Overall, the LDA module topics for the VISITOR corpus indicate positive sentiments and satisfaction among customers. They highlight the scenic views, quality of service, dining experiences, and overall enjoyment of the stay. The topics also reflect a sense of gratitude, love for the place, and a desire to revisit in the future.

### 4.3 Questionnaire

The questionnaire in our customer research plays a significant role. This research collected 81 responses from visitors to Gricha between March and May 2023. The results revealed some interesting insights regarding the visitors' demographics. For instance, 38% of the respondents were from the USA, 9.9% from France, followed by the UK, Portugal, and Germany. Detailed graphs of the data are presented in **Annexes B**.

Figure 11 Proportion of Customer Age Groups Based on Questionnaire Responses



From Figure 11, the majority of the visitors showed a strong preference for the "Classic Douro" tasting option, indicating their fondness for Douro wines. This preference sets them

apart from visitors to Gaia Lodge. Interestingly, 44.4% of the respondents expressed their interest in trying the "Classic Douro" still wine option specifically at the Gricha vineyard.

A significant proportion (80.9%) of the respondents chose the food pairing option, highlighting their inclination towards gastronomic experiences. Additionally, 69.1% of these respondents were overnight guests at the Gricha wine house, indicating a preference for longer stays and the availability of culinary services.

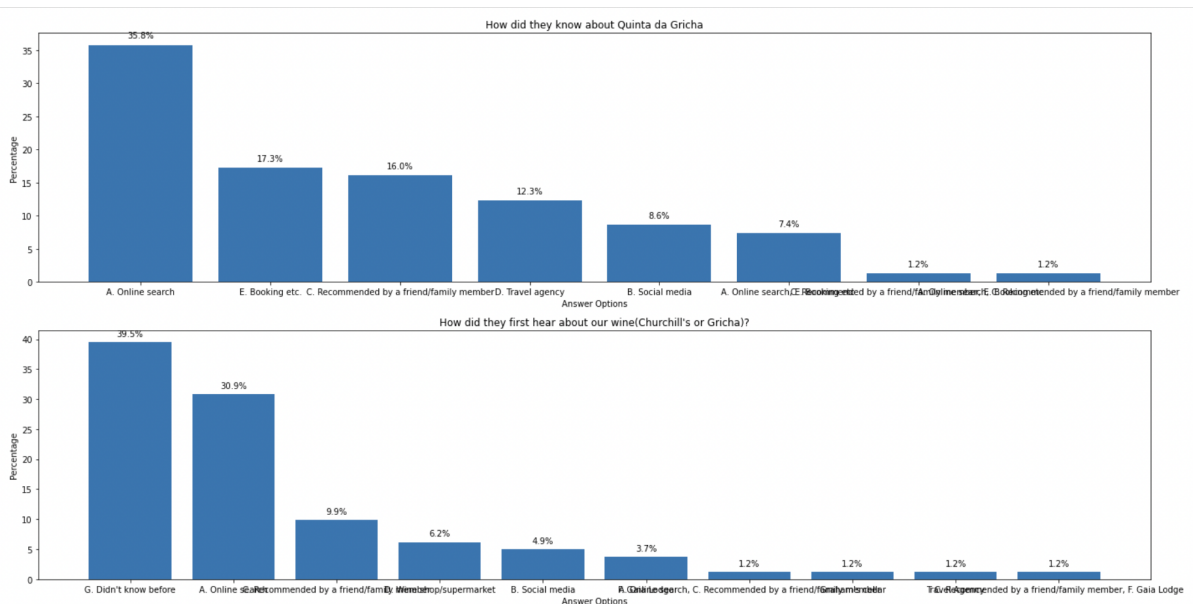
It is worth noting that 89% of the respondents had a basic understanding of wine knowledge and concepts, suggesting a certain level of familiarity with the subject. Surprisingly, nearly 40% of the visitors indicated that they were not aware of Churchill's lodge prior to their visit, implying that their information about Gricha primarily came from sources such as visitation or hotel booking pages, rather than from the official Churchill's brand homepage or related branding pages.

In the design of the questionnaire, the research focuses primarily on two key aspects:

A. Brand Awareness Channels/Platforms:

It includes questions related to how visitors learned about the brand. By exploring the brand awareness channels, the research aims to gain insights into the effectiveness of different marketing and communication strategies employed by the brand.

Figure 12 Sources of Awareness for Quinta da Gricha and Churchill's/Gricha Wine



As shown in Figure 12, a significant finding from the analysis of the questionnaires is that 39.5% of Gricha customers had no prior knowledge of Churchill's or Gricha wine. On the one hand, it indicates a potential disparity in brand association between Gricha and Churchill's, on the other hand, it also suggests that the decision to open Gricha to the public was a strategic move by Churchill's, aimed at leveraging Gricha as a means to introduce people to the broader Churchill's brand experience. This finding highlights the importance of improving brand visibility and awareness through official channels to ensure that customers have a comprehensive understanding of the brand and its offerings.

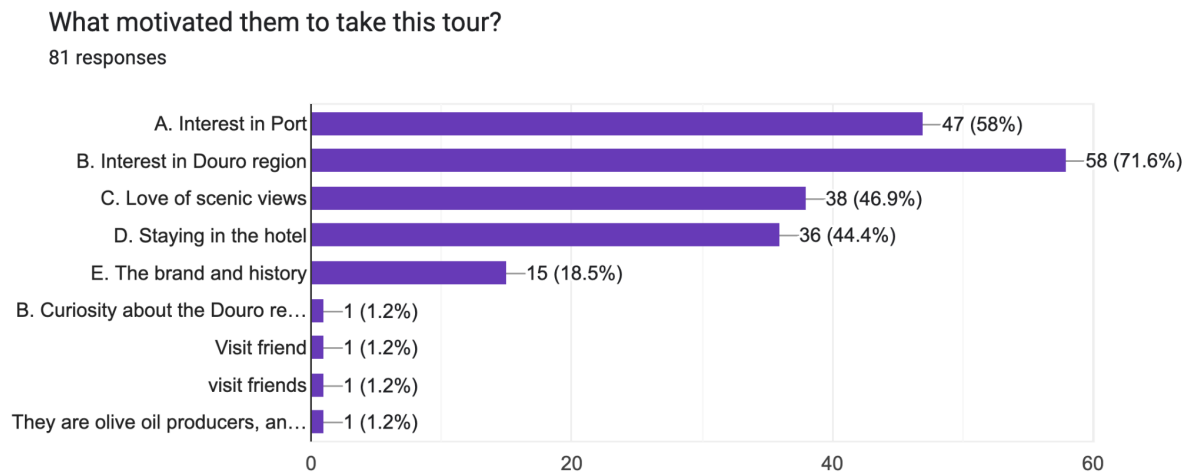
Quinta da Gricha has a strong online presence, with 35.8% of visitors being attracted through online research. This indicates a successful SEO strategy and online marketing efforts. The brand's visibility in search engine results and online platforms is driving potential customers to explore Quinta da Gricha further. This finding underscores the importance of investing in online marketing and ensuring that the brand's online presence is optimised to attract and engage potential customers.

The high recommendation rates of 16% and 9.9% indicate that Quinta da Gricha offers exceptional quality service and wine. Satisfied customers who have had positive experiences at Gricha are likely to recommend the brand to others. Positive word-of-mouth marketing plays a crucial role in attracting new customers and building brand reputation. Social media has shown some effectiveness in attracting visitors, but it is not the primary channel for brand awareness. The analysis reveals that the main age group of visitors falls between 18 and 50, suggesting that there is an opportunity to further engage this demographic through social media platforms. By developing a targeted social media strategy, Quinta da Gricha can effectively reach and connect with potential customers in this age group, leveraging the power of social media to increase brand awareness and engagement.

#### B. Visitor Motivations and Impressions:

This section aims to delve into the motivations and impressions of visitors before and after their experience at Gricha. It includes questions about their motivations for choosing Gricha, their expectations prior to their visit, and their overall impression of the brand and experience after their visit.

Figure 13 Motivation of visitors



From Figure 13, The analysis of visitor motivations reveals that 71.6% of visitors have a strong interest in the Douro region and Port wine. This aligns with the previous findings and indicates that the proportion of "Douro" and "Port" mentioned in the official branding materials effectively captures the customers' preferences. The emphasis on promoting the unique qualities and offerings of the Douro region and Port wine resonates well with the target audience.

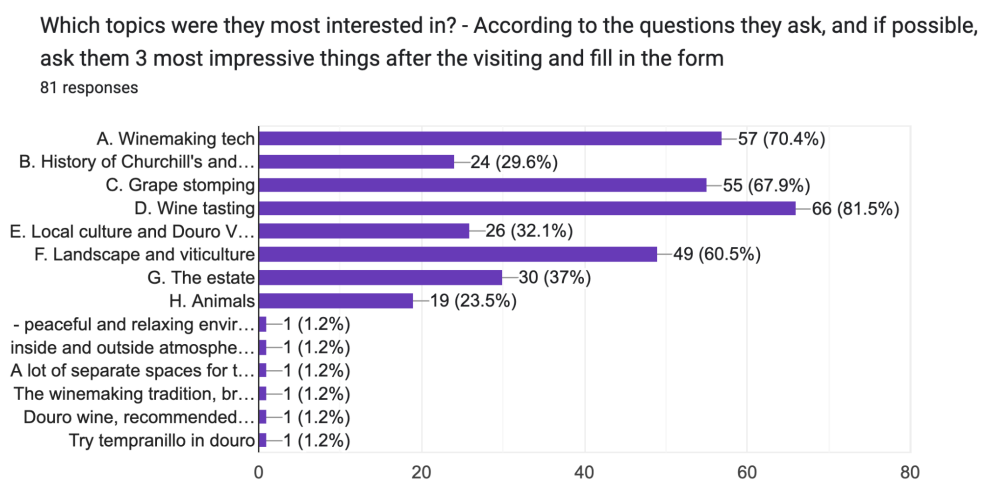
However, the analysis also indicates that the storytelling aspect of the brand and its history did not receive as much attention from customers, with only 18.5% of visitors being attracted by it. This suggests that the current approach to digital storytelling may need to be enhanced to create a more captivating and engaging narrative for customers. A more dynamic and exciting way of presenting the brand's history and story could help capture the attention and interest of visitors, leading to a deeper connection with the brand.

By leveraging digital platforms and technologies, such as immersive videos, interactive content, and social media campaigns, Quinta da Gricha can enhance its storytelling efforts and create a more attractive approach. This can involve showcasing the brand's heritage, vineyards, winemaking processes, and unique experiences in a visually compelling and emotionally engaging manner. By embracing innovative storytelling techniques, Quinta da Gricha can capture the imagination of customers and create a lasting impression, ultimately driving higher interest and engagement with the brand. As shown in Figure 14, grape stomping is an incredibly captivating aspect, leaving a lasting impression on 67.9% of visitors. Therefore, it holds significant potential as a catalyst or enhancer for online promotion and storytelling efforts.

Additionally, it is essential to regularly evaluate and refine the storytelling strategies based on customer feedback and preferences. By actively seeking input from visitors and incorporating their perspectives, Quinta da Gricha can ensure that its digital storytelling efforts align with customer expectations and effectively convey the brand's history and values.

Overall, by striking a balance between highlighting the allure of the Douro region and Port wine and revamping the digital storytelling approach, Quinta da Gricha can maximise visitor motivations and create a memorable and compelling brand experience.

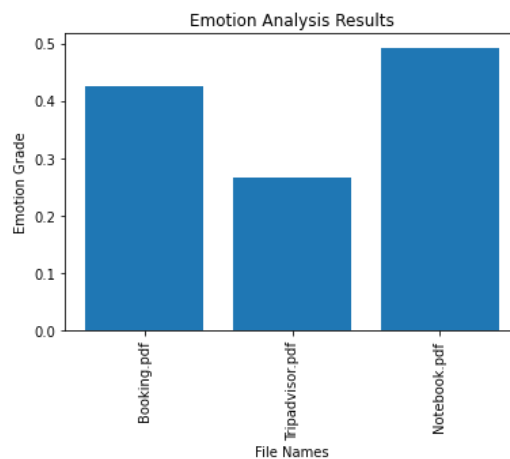
Figure 14 Visitor's Most Interested Topics During the Tour



#### 4.4 Similarities and correlations

##### 1. Textual emotion analysis of VISITOR corpus

Figure 15 Emotion Grades of Visitor Reviews from Different Sources



Based on the text emotion scores obtained, shown in Figure 15, the Guestbooks received the highest score, indicating higher satisfaction from guests who provided feedback through this channel. The scores for booking.com are also relatively high, suggesting that customers who booked their stay through this platform had a positive experience. On the other hand, the TripAdvisor reviews received lower scores, which may indicate lower satisfaction among customers who provided reviews on this platform. This result is also in line with the review rating on the platforms, 9.5/10 on Booking.com, 4/5 and 2.5/5 on TripAdvisor. Additionally, it is important to note that TripAdvisor reviews may not always provide reliable information, as there is no validation process to confirm whether the reviews are from genuine experiences or potentially biased sources such as competitors or individuals with negative motives.

This analysis reveals that customers who stayed overnight at Gricha had a generally higher level of satisfaction compared to customers who visited for a tasting experience only. It suggests that the longer duration of stay allows guests to fully experience and appreciate the offerings and services at Gricha. It is worth noting that TripAdvisor reviews may be influenced by customers who visited for a shorter duration, resulting in relatively lower satisfaction scores.

One significant reason for this result is the challenging road and long-time driving experience to reach the estate, which may have heightened the expectations of tasting visitors. Furthermore, the limited time spent by tasting visitors at Gricha may have prevented them from fully immersing themselves in all that the estate has to offer, leading to lower satisfaction levels.

## 2. Textual similarity:

Figure 16 Cosine Similarity Formula for Text Similarity

$$\text{similarity} = \cos(\theta) = \frac{\mathbf{A} \cdot \mathbf{B}}{\|\mathbf{A}\| \|\mathbf{B}\|} = \frac{\sum_{i=1}^n A_i B_i}{\sqrt{\sum_{i=1}^n A_i^2} \sqrt{\sum_{i=1}^n B_i^2}},$$

DOURO - GRICHA: Cosine Similarity: 0.633, a relatively high similarity between the vectors

GRICHA - VISITOR: Cosine Similarity: 0.367, a slightly lower but still moderate similarity.

### 3. Top 15 most common words

The top 15 most common words in the GRICHA and DOURO corpus can provide insights into their online strategies and regional promotion, the word list can be found in Figure 17. These words represent popular trends and themes associated with both GRICHA and the DOURO. By analysing these common words, GRICHA can identify the key areas where they align with the online strategies and leverage these trendy words to their advantage.

However, it's important to note that these common words may not necessarily be unique selling points for GRICHA. While they indicate the prevalent themes and interests related to GRICHA and the DOURO region, GRICHA needs to go beyond these common words to differentiate itself and offer unique value propositions to its target audience. By understanding the commonalities and trends, GRICHA can refine its online strategies and create a comprehensive brand narrative that highlights its distinctive features, experiences, and offerings.

In summary, the common words in the GRICHA and DOURO corpus provide meaningful findings into popular themes and trends, which Gricha can leverage for online promotion and regional marketing. For optimisation, GRICHA should also focus on developing its unique selling points and delivering exceptional experiences that set it apart from competitors in the market. This has been improving since the past two years with words like " exclusivity," "feeling at home", and "honesty bar"

Figure 17 Top 15 Duplicate Words in the Corpus

Word	Count	Word	Count
wine	577	stay	41
douro	550	us	41
port	539	gricha	31
wines	264	douro	28
portugal	198	place	27
porto	158	wine	23
tasting	155	road	22
nova	151	experience	22
experience	131	valley	19
hotel	125	view	19
vineyard	121	property	18
valley	120	views	18
tour	115	one	18
us	113	pool	18
cookies	101	port	17

Douro - Gricha

Gricha - Visitor

# V. Discussion

## 5.1 Interpretation of findings

1. **Brand Integration and Official Channels:** The biggest challenge lies in the need for a closer integration of the Gricha and Churchill's brands. Many visitors were unaware of the brand before their visit, indicating the importance of strengthening official brand channels. Although the performance of the homepage and official social media platforms is decent, it is not as dominant as expected. This highlights the need to enhance brand visibility and messaging through these channels.
2. **Leveraging Popular Channels:** While the official brand channels require improvement, popular platforms like booking.com lack sufficient information about the brand's selling strategy points. To reach a wider audience, it is crucial to ensure that these platforms convey the unique selling points and brand messaging effectively.
3. **Uniqueness and Branding Presence:** The TF-IDF analysis reveals that Gricha shares most high-score words with the Douro corpus, indicating a strong branding presence. However, to stand out in the highly competitive region, Gricha needs to develop more distinctive and unique selling points.
4. **Customer Preferences and Storytelling:** Customers show a higher interest in experiential aspects such as tastings, property views, and transportation conditions. While the branding strategy focuses on wine styles, winemaking, and history, incorporating more interactive and captivating storytelling and promotion techniques could enhance customer engagement and satisfaction. Additionally, sentiment analysis of TripAdvisor reviews indicates that tasting-only visitors may have lower satisfaction levels due to spending considerable time travelling to the winery but without a fully immersive experience.

These key points emphasise the importance of brand integration, effective communication through official channels, leveraging popular platforms, developing unique selling points, and enhancing customer experiences through storytelling. Addressing these areas will help Gricha strengthen its brand presence, attract more visitors, and improve overall customer satisfaction.

The findings suggest the need for a closer integration of the Gricha and Churchill's brands and a focus on strengthening the official brand channels. Improving the synergy between the

two brands will help create a more cohesive brand identity and ensure that potential customers have a clear understanding of the relationship between Gricha and Churchill's. By enhancing the official brand channels, such as the website and social media profiles, Quinta da Gricha can deliver consistent and accurate information, establish trust with potential customers, and reinforce the brand's positioning in the market.

## 5.2 Implications for marketing strategies and tourism offers

### 1. Textual highlights on marketing

**Textual highlights:** Pay more attention to topics that are highly focused by customers, such as "stay," "experience," and "property." To improve visibility, Gricha could optimise the website's SEO writing in these areas and consider adding modules like "customer reviews", "Winehouse gallery" on the homepage. This may provide valuable reference to potential visitors.

**Optimise Storytelling:** Enhance storytelling by incorporating more narratives about key aspects like "harvest", "Lagares work", and "winery diary". Highlighting the founder's story and emphasising the elegant wine style can effectively capture the interests of customers who are passionate about wine and history. These stories should be integrated into the brand's messaging and marketing materials to create a cohesive and compelling narrative.

**Highlight Unique Selling Points:** Address the missing description of unique selling points by focusing on historical aspects and showcasing the distinct winemaking style. By utilising terms and phrases associated with "Harvest" and "Lagares work", highlight elegant wine styles in the narrative of the founders' motivations and choices, can cover the two popular topics of wine and history, and complement each other. Additionally, based on customer feedback from the questionnaire, keywords like "Lagares," "cocktail," "pets," "swimming pool" and "couple" have been mentioned positively, indicating potential areas of focus for further exploration and promotion.

### 2. Visiting speech updates

The topics like "grape stomping", "Lagares", which is popular among customers but not prominent in the general hot word list of the Douro region, has the potential to become a unique selling point. In addition to updating marketing materials, live presentations can more directly and effectively communicate and establish these concepts.

Visiting speech updates can focus on highlighting unique topics in the traditional wine making process. This can be achieved by showcasing the granite Lagares, explaining the winemaking process, and highlighting the rich traditions of the Douro region. By doing so, visitors will have the opportunity to engage with these popular topics and gain a deeper understanding of the wine production and cultural heritage.

In addition to information sharing, it is important to encourage customer interaction and engagement. This can be done by allowing visitors to take pictures at various scenic spots, pop quiz, short discussion, and sharing interesting facts and anecdotes. By bridging the gap between informative speech and the emotional connection that visitors seek, the brand can create a more memorable and satisfying experience, ultimately leading to positive reviews and word-of-mouth recommendations.

### **3. Wine Trail Experience: Discovering Gricha**

As previously discussed, the satisfaction levels of TripAdvisor customers who opt for a day trip and tasting experience are significantly lower compared to those who stay overnight. In order to enhance the overall experience for day visitors, a proposal of an extension to the existing tourism offer known as "A Day at Gricha" can be helpful.

Overview:

The Winery Hiking Plan involves offering three well-designed hiking routes that showcase the breathtaking beauty of our Quinta and the surrounding Douro Valley. Each route will be accompanied by a detailed map, signboards at key locations, and identifiable milestones for participants to collect.

Key Features of the Winery Hiking Plan:

**Scenic Routes:** We will curate three distinct hiking routes that cater to different hiking abilities, ensuring that visitors of all fitness levels can participate and enjoy the experience.

**Detailed Maps:** Each route will be accompanied by a visually appealing and informative map that highlights landmarks, viewpoints, rest areas, and the milestones participants need to collect. These maps will serve as guides and souvenirs for our visitors.

**Signing Barrels:** As a way to create a memorable experience and add an additional point of interest, we propose the inclusion of three signature barrels at the end of each hiking trail. These signature barrels will provide visitors with the opportunity to leave their mark by signing their names and capturing memorable photos. This interactive element not only

serves as a memento for the visitors but also adds a unique and personalised touch to their journey through Gricha.

**Engaging Signboards:** Strategically placed signboards along the routes will provide important information about our Quinta's history, winemaking process, and varieties of plots. These signboards will captivate visitors and deepen their connection with our brand.

**Milestones:** We will identify several milestones along each route, such as picturesque viewpoints, vineyards, or ancient trees, that participants can collect. These milestones will serve as photo-worthy spots, encouraging participants to document their journey and share their experiences.

**Social Media Promotion:** To further engage visitors, we will encourage them to post pictures or videos of their milestone collection on social media platforms using a designated hashtag. Participants who successfully complete the challenge will be rewarded with a free glass of wine at our Quinta, creating an incentive for them to share their experiences and promote our brand.

Benefits:

**Enhanced Visitor Experience:** The Winery Hiking Plan will provide a unique and memorable experience for our visitors, allowing them to explore the beauty of our Quinta and Douro Valley while collecting milestones along the way.

**Increased Brand Exposure:** By encouraging participants to share their experiences on social media, we will generate user-generated content that promotes our Quinta to a wider audience. This will increase our brand visibility and attract more visitors to our establishment.

**Differentiation:** The Winery Hiking Plan sets us apart from other wineries in the region, offering a dynamic and engaging activity that combines nature, exercise, and wine appreciation. This unique experience will attract a diverse range of visitors and increase our competitiveness in the market.

### 5.3 Limitations and future research directions

In the context of our study, it is important to acknowledge the limitations and potential future research directions. One of the limitations lies in the distant reading approach within the realm of digital humanities. While this method allows for large-scale analysis and identification of patterns, it tends to be more focused on structural aspects and correlations

rather than establishing causality(Moretti, 2013). Therefore, it is necessary to complement this approach with a deeper understanding of wine tourism and customer behaviour, including psychological and cognitive factors. By incorporating a more comprehensive perspective, future research can enhance the interpretation and analysis of strategies in the wine tourism industry.

Looking ahead, there are several avenues for future research in this field. Firstly, expanding the scope of analysis to include larger regions and more entities within the wine tourism domain can provide a broader understanding of trends and patterns. Additionally, delving into more in-depth research questions can shed light on specific aspects of customer experiences and preferences. Furthermore, future research can explore the potential for multimodal analysis, which integrates the analysis of various modes such as images, voice, and facial expressions alongside text analysis. This holistic approach can offer a more comprehensive understanding of the wine tourism phenomenon and provide insights into the interplay between different modes of communication and customer engagement.

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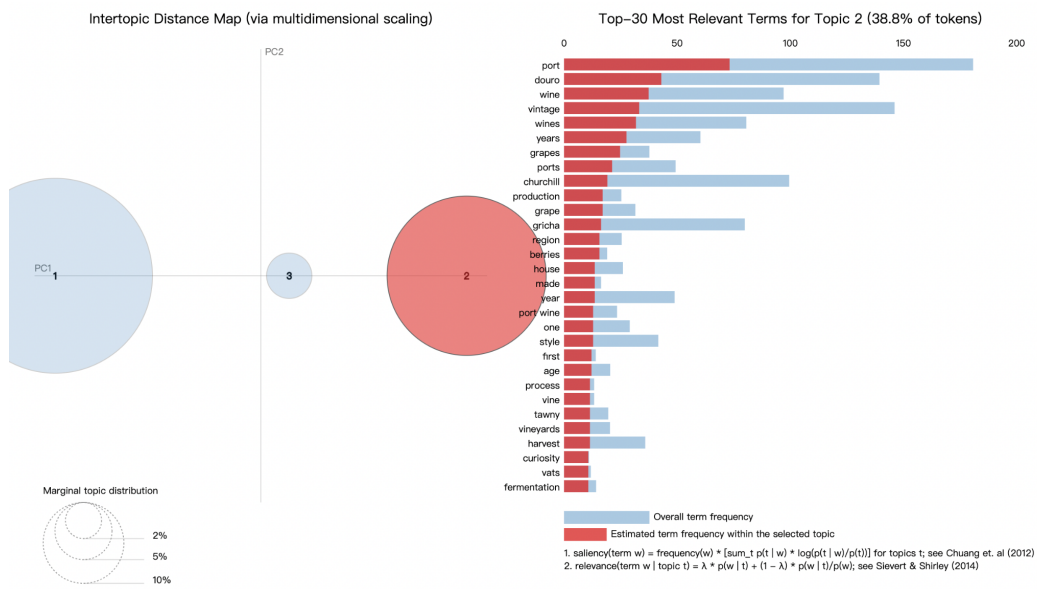
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# VII. Annexes

## A. Additional NLTK data

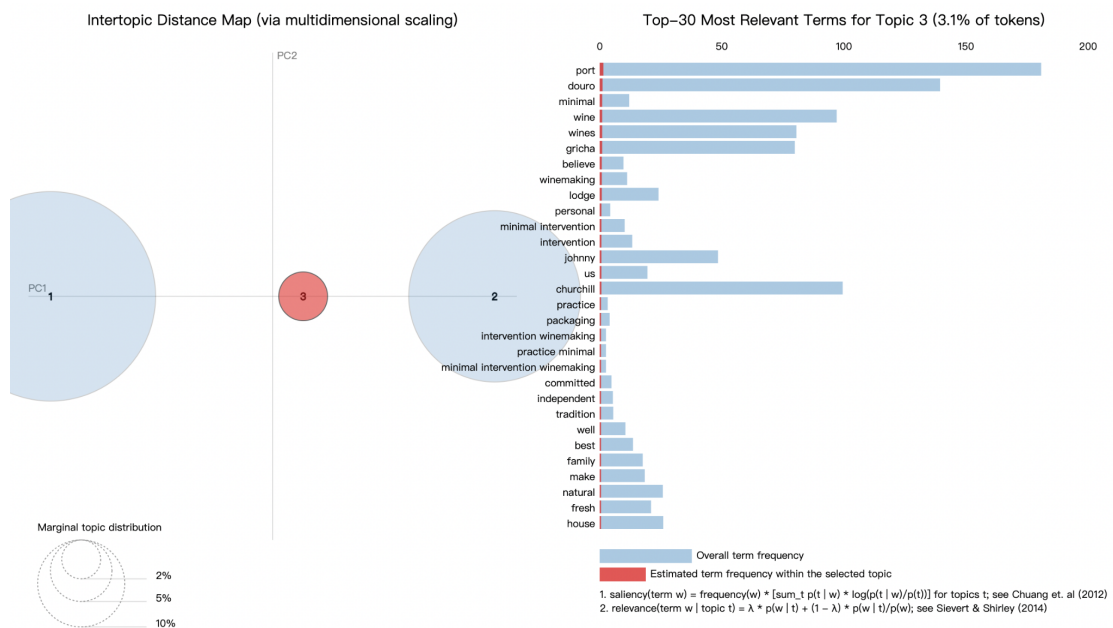
**Figure A-1.**

N-gram LDA topic module of GRICHA corpus, detailed topic No.2



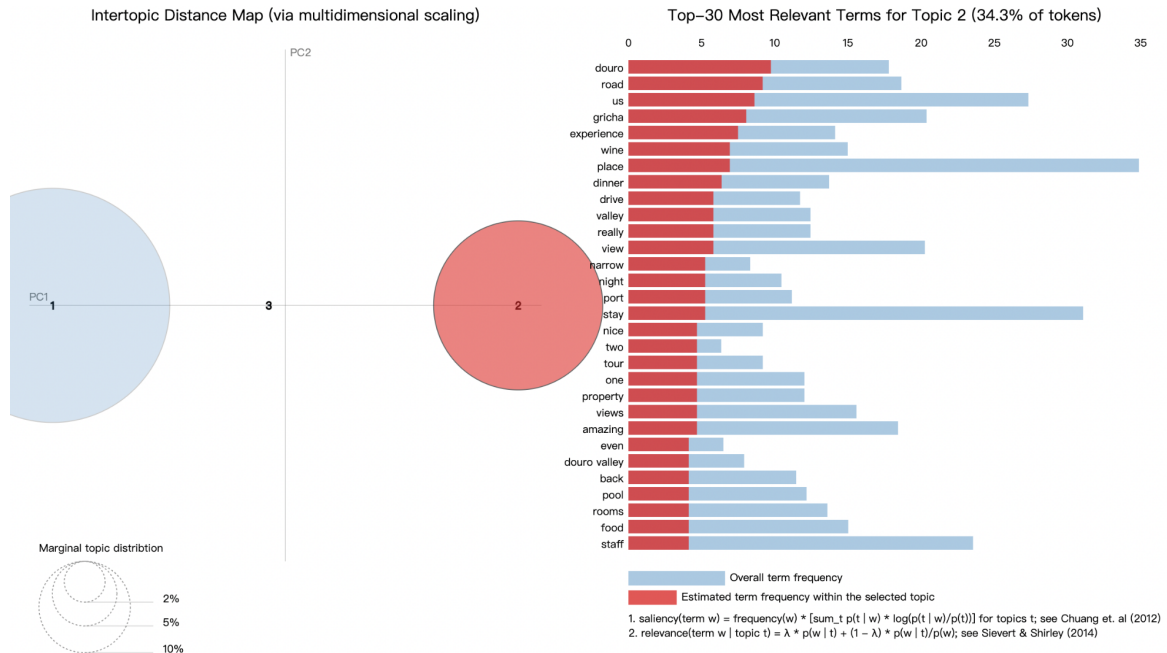
**Figure A-2.**

N-gram LDA topic module of GRICHA corpus, detailed topic No.3



**Figure A-3.**

## N-gram LDA topic module of VISITOR corpus, detailed topic No.2

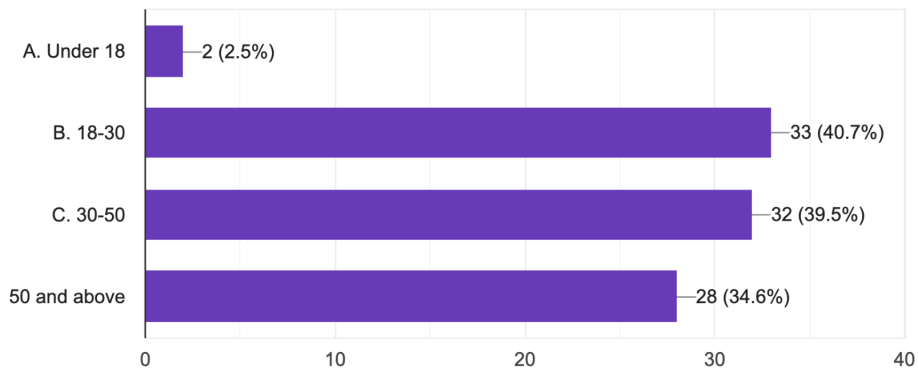


## B. Survey questionnaire

**Figure B-1.**

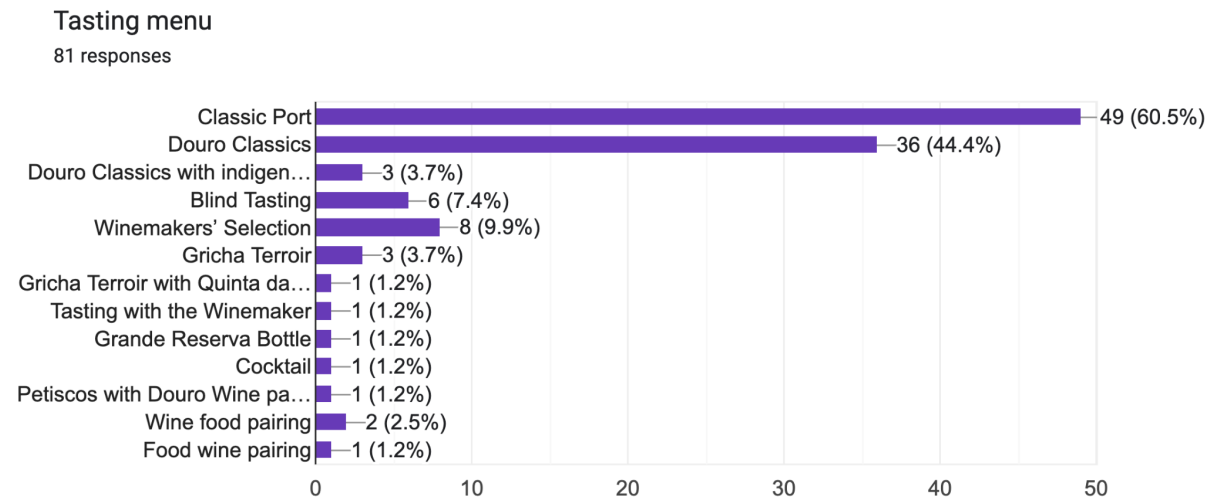
Age

81 responses



**Figure B-2.**

## Tasting menu

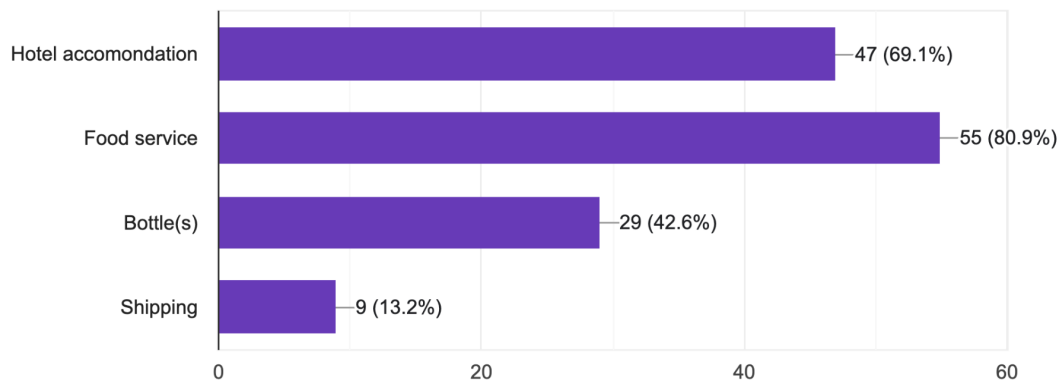


**Figure B-3.**

## Other choice

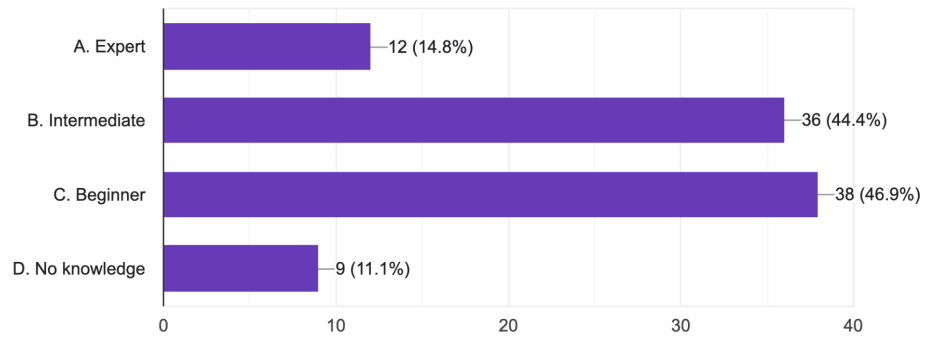
### Other service they chose

68 responses



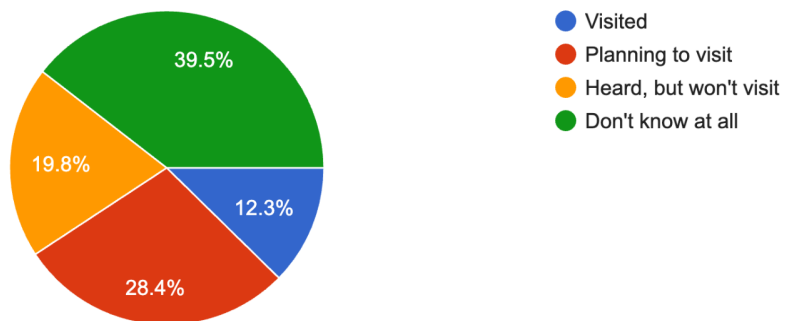
**Figure B-4.**  
Knowledge of wine

Knowledge of wine? (you can choose more than one)  
81 responses



**Figure B-5.**  
Churchill's Lodge

Churchill's Lodge  
81 responses



## C. Python Scripts

### Figure C-1

#### LDA Topic Module

```
# Function to extract text from a PDF file
def extract_text_from_pdf(file_path):
    with open(file_path, 'rb') as file:
        pdf_reader = PdfReader(file)
        text = ''
        for page in pdf_reader.pages:
            text += page.extract_text()
    return text

folder_path = '/Users/StandardCY/Desktop/CORPUS/GRICHA'

pdf_files = [os.path.join(folder_path, file) for file in os.listdir(folder_path) if file.endswith('.pdf')]

documents = []
for file_path in pdf_files:
    text = extract_text_from_pdf(file_path)
    documents.append(text)

stop_words = set(stopwords.words('english'))
additional_stop_words = ['quinta da gricha', 'da', 'quinta', 'de', 'un', 'os', 'com', 'um']

stop_words.update(additional_stop_words)

preprocessed_documents_GRICHA = []
for document in documents:
    document = document.lower()

    tokens = word_tokenize(document)

    tokens = [token for token in tokens if token.isalpha() and token not in stop_words]

    preprocessed_documents_GRICHA.append(tokens)

preprocessed_documents_GRICHA = [' '.join(tokens) for tokens in preprocessed_documents_GRICHA]

# Initialize the CountVectorizer with the desired N-gram range
ngram_range = (1, 3)
vectorizer = CountVectorizer(ngram_range=ngram_range)

# Fit and transform the preprocessed documents
X = vectorizer.fit_transform(preprocessed_documents_GRICHA)

# Get the feature names (N-grams)
feature_names = vectorizer.get_feature_names()

# Initialize the LDA model with the desired number of topics
num_topics = 3
lda = LatentDirichletAllocation(n_components=num_topics)

# Fit the LDA model to the N-gram matrix
lda.fit(X)

# Get the topic-word distributions
topic_word_distributions = lda.components_

# Visualize the topics
vis_data = lda_vis.prepare(lda, X, vectorizer)
pyLDAvis.display(vis_data)

pyLDAvis.save_html(vis_data, 'Final_GRICHA_TOPIC.html')
```

### Figure C-2

#### Cosine Similarity Heatmap

```

# Create TF-IDF vectorizer
vectorizer = TfidfVectorizer()
X = vectorizer.fit_transform(corpus)

# Calculate cosine similarity between the two lists
similarity = cosine_similarity(X[:len(list1)], X[len(list1):])

# Visualize the similarity matrix as a heatmap
plt.figure(figsize=(10, 10))
heatmap = plt.imshow(similarity, cmap='YlGnBu')
plt.title('Cosine Similarity Heatmap')
plt.colorbar(heatmap)
plt.xticks(np.arange(len(list2)), list2, rotation=45)
plt.yticks(np.arange(len(list1)), list1)
plt.xlabel('List 2')
plt.ylabel('List 1')

# Find the indices of the most similar and most unique words
max_indices = np.unravel_index(np.argmax(similarity), similarity.shape)
min_indices = np.unravel_index(np.argmin(similarity), similarity.shape)

# Highlight the most similar word
plt.text(max_indices[1], max_indices[0], 'Max', ha='center', va='center', color='red')

# Highlight the most unique word
plt.text(min_indices[1], min_indices[0], 'Min', ha='center', va='center', color='blue')

plt.show()

```

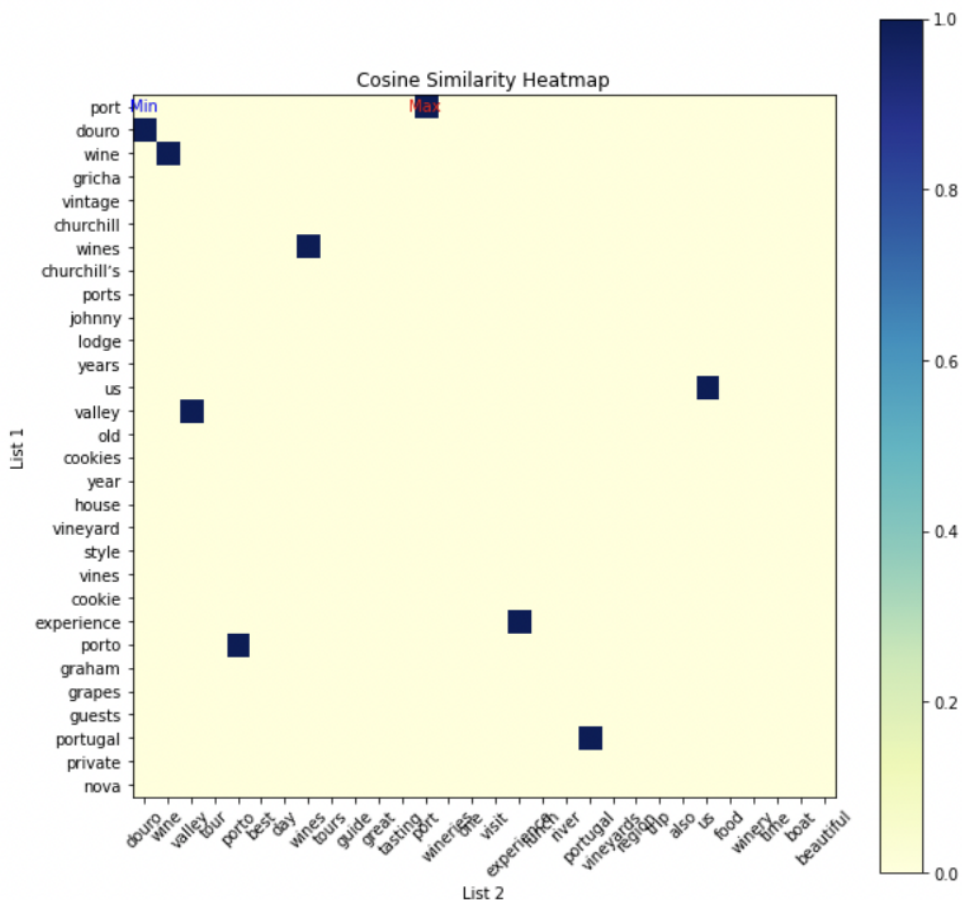


Figure C-3

TF-IDF Heatmap

```
documents_GRICHA = preprocessed_documents_GRICHA

vectorizer = TfidfVectorizer()
X = vectorizer.fit_transform(documents_GRICHA)

tfidf_df = pd.DataFrame(X.toarray(), columns=vectorizer.get_feature_names())

# Compute the average TF-IDF scores for each term
mean_scores = tfidf_df.mean()

# Select the top 30 words based on average TF-IDF scores
top_words_GRICHA = mean_scores.nlargest(30)
top_terms_GRICHA = top_words_GRICHA.index.tolist()

top_tfidf_df = tfidf_df[top_words_GRICHA.index]

# Apply a logarithmic transformation to the TF-IDF scores
top_tfidf_df = np.log1p(top_tfidf_df)

plt.figure(figsize=(10, 6))
sns.heatmap(top_tfidf_df, annot=True, cmap='YlGnBu', xticklabels=True, yticklabels=False)
plt.title('TF-IDF Heatmap (Top 30 Words)')
plt.xlabel('Terms')
plt.ylabel('Documents')
plt.show()
```

