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Evaluating Social Media Marketing in the Greek Winery Industry

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Abstract: In recent years, wineries have incorporated social media into their marketing strategies to promote their products and services. They offer wineries the opportunity to interact with their customers in real time, allowing them to share their experiences, preferences, and feelings, and create a sense of community. The objective of this paper is to investigate digital presence and consumer engagement and reactions in social media used by the Greek winery industry, using a three-step methodology. The study focuses specifically on Facebook and Instagram and compares data for the period between 2019 and 2022, including the COVID-19 outbreak, collected from the profiles of 311 Greek wineries using a social media analytics tool. The contribution of this work lies in demonstrating the change in consumers' engagement and reactions witnessed on wineries' profiles. The outcomes indicate consistently limited interactions on these profiles, reflecting low levels of consumer engagement and overall reactions across social media platforms. These findings underscore the necessity for additional research into wineries' marketing strategies and the motivations driving user engagement. The proposed methodology can be used as a social media brand engagement approach that aids brands in attracting audience attention and fostering active participation in various business sectors.

Keywords: social media marketing; analytics tools; winery industry; businesses; consumers; COVID-19; Greece

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1. Introduction

Wine is a highly valuable product and a major industry worldwide. It plays a significant role in the global economy and has a rich cultural heritage [1]. It is an experiential product that facilitates social interaction [2]. Wineries are the heart of the wine industry: there, winemaking takes place through a series of controlled steps to produce wine with a unique identity.

Particularly in Greece, the wine sector has traditionally been one of the most important primary sectors, playing an important role in the promotion and trade of Greek products in international markets and making a significant economic contribution to the national economy [3]. Several wine producers kept pace with the rapid technological development of the internet and laid the foundations for e-commerce activities as early as 1995 [4]. The dissemination of COVID-19 and the restrictive measures imposed during this period (suspension of all operations for about two months, etc.) was a catalyst for consumers to turn to online transactions and reduce visits to physical shops [5]. Although this situation seems to have had a negative impact on the wine industry in Greece, as wine exports for 2020 amounted to 21,337 tons (8% less than 2019, which translates into EUR 48.5 million less in economic terms) online wine sales (either through company e-stores or online marketplaces) are estimated to have increased by 80% in the last two years [6].

Wineries also use other means to enhance their digital presence. Social media (SM) platforms are suitable marketing tools in the wine industry used to attract new customers,

communicate valuable information (e.g., promotion of new and existing products), and develop customer loyalty and long-term relationships, which play an essential role in purchase decisions [7–13]. In comparison to traditional marketing methods, Greek wineries have the potential to become even more innovative and creative in SM platforms for motivating and building meaningful dialogue and participation with their customers [14], by implementing different types of SM marketing, such as wine influencers [15] and SM analytics tools.

The objective of this paper is to bring new evidence on consumers' activity in winery SM. The research focuses on the Greek case. Although there are a few studies regarding the use of SM by Greek wineries [16,17], information from the consumers' side related to their behavior, engagement, and reactions to these SM platforms is very limited and outdated. Moreover, this is the first time that the research has taken into account the COVID-19 period's impact on the Greek case. Investigating whether wineries' SM profiles are encouraging consumers to interact can help wineries at a practical level, namely to improve their digital presence, create more efficient marketing strategies, and, therefore, link their SM activities to financial sustainability [16,18].

The novelty of the paper has to do with proof of the changes in consumers' engagement and reactions observed on winery SM in four consecutive years from 2019 to 2022. This period includes pre- and post-COVID-19 outbreak and the first and second lockdowns in Greece. Consumers' activity is monitored using data obtained from Facebook and Instagram platforms. Particularly, this paper tries to shed light on the following research questions:

- RQ1: What digital means and SM do wineries use for their online presence?
- RQ2: Are there significant changes in wine consumers' engagement on Facebook and Instagram in the years 2019–2022?
- RQ3: Are there significant changes in wine consumers' reactions on Facebook and Instagram in the years 2019–2022?

The structure of this paper is as follows. Section 2 presents the background through a systematic literature review on the level of adoption of SM by wineries and an overview of both existing social media analysis (SMA) tools and the Greek wine sector. Section 3 illustrates the research methodology, which consists of three phases: sample identification and analysis, SM data collection, and statistical analysis. Section 4 presents the study results based on descriptive statistics and repeated measures analysis of variance (RM ANOVA) statistical analysis. Specifically, a sample of 311 Greek wineries is analyzed using an SMA tool, to identify changes in the activity of wine companies and consumer behavior on SM during the selected period. Finally, the conclusion discusses the interpretation of the findings, the limitations of this work, and future research avenues.

2. Background

2.1. Systematic Literature Review

There has been a notable increase in scholarly exploration of SM in recent years [19–21]. The literature highlights the importance of large-scale quantitative studies, data-driven experimentation, and qualitative investigations to uncover new behaviors arising from human–digital interactions, with implications for digital marketing decisions and consumer satisfaction. Particularly for the wine industry, despite research conducted on SM marketing for various issues, such as brand awareness and sales [22], product improvement [23], and winery owners' attitudes and perceptions [24], there is a lack of works that systematically extract and analyze data.

To confirm this research gap, a systematic literature review is undertaken, following the basic principles outlined in the PRISMA guidelines [25]. Specifically, it focuses on the following question: How many publications have been published on SM and data analysis in the wine industry? To answer this question, the review includes the following elements: (1) eligibility criteria; (2) information sources; (3) search strategy; (4) study selection; and (5) results [26]. These elements are detailed below.

Eligibility criteria: The eligibility criteria for this review were as follows. Inclusion criteria: published original research and review articles on SM in the wine industry. Exclusion criteria: (1) manuscripts written in a language other than English; (2) essays and conference proceedings; (3) books or book chapters; and (4) editorials.

Information sources and search strategy: The academic research databases Scopus and Web of Science were searched on 6 October 2023 using relevant keywords related to SM and the wine industry. These scientific databases have been chosen since they are the two world-leading bibliographic databases most used in research studies and provide high-quality content filtered by various content types (e.g., articles and conference papers) [27,28]. The databases were searched using appropriate keywords and operators (i.e., AND, OR) to obtain the most accurate results. The following search criteria were used in both databases: ("social media" OR Facebook OR Instagram OR Twitter OR YouTube OR Pinterest) AND (wine OR winery OR wineries OR winemaking) AND ("data analysis" OR "data analytic*"). For the Scopus database, the search criteria were applied to titles, abstracts, and keywords. Similarly, the Web of Science database was searched using the "topic" option, i.e., title, abstract, and keywords (defined by the authors and "keywords plus").

Study selection: After the database search phase, a three-step process was used to review all identified articles based on the predefined eligibility criteria. This process involved the sequential assessment of (1) the title; (2) the abstract; and (3) the full text of each article. Two of the authors participated in this three-step process of reviewing the articles.

2.1.1. Scopus Database Results

Based on the established eligibility criteria, a total of four articles were identified. The results were then restricted to the following research categories: Business, Management, and Accounting (3); Computer Science (1); and Economics, Econometrics, and Finance (1). The following category was excluded: Engineering (1). Since an article can be classified in more than one category, the total number of articles remains four. A thorough review was then carried out using the three-step procedure. As a result of this process, the dataset was reduced to one article.

2.1.2. Web of Science Database Results

Similarly, based on the established eligibility criteria, the result was a total of four articles. The results were then restricted to the following research categories: Agronomy (2); Business (1); Environmental Studies (1); and Management (1). The following categories were excluded: Hospitality, Leisure, Sport, and Tourism (1). However, the total number of articles remains four (articles classified in more than one category). A thorough examination was then carried out according to the three-step procedure. As a result of this process, the dataset was reduced to one article. Figure 1 shows the above processes for Scopus (right) and Web of Science (left).

Therefore, as regards the number of publications on SM and its data analysis in the wine industry, both databases identify the same paper by Vlachvei and colleagues [29]. The aim of the paper in question is to investigate how content types relate to customer loyalty and to examine the effects of different types of content generated by the company.

2.2. Social Media Analytics Tools

SM is used by billions of people worldwide and has quickly become one of the defining technologies of our time that facilitate users' personal experiences and sharing a variety of information that is valuable for determining their behavior [30]. They have an impact on both individuals and businesses [31]. Recent statistics show that among a variety of SM platforms, global users prefer Facebook and YouTube. Specifically, in January 2023, Facebook had 2958 million monthly active users, while YouTube had 2514 million. Instagram, Twitter, and Pinterest had 2000 million, 556 million, and 445 million active users respectively. Typically, the most popular SM platforms support many languages and allow

users to interact with friends or others across political or economic borders. As the use of mobile devices and mobile SM becomes more popular, the number of active users is expected to increase [32].

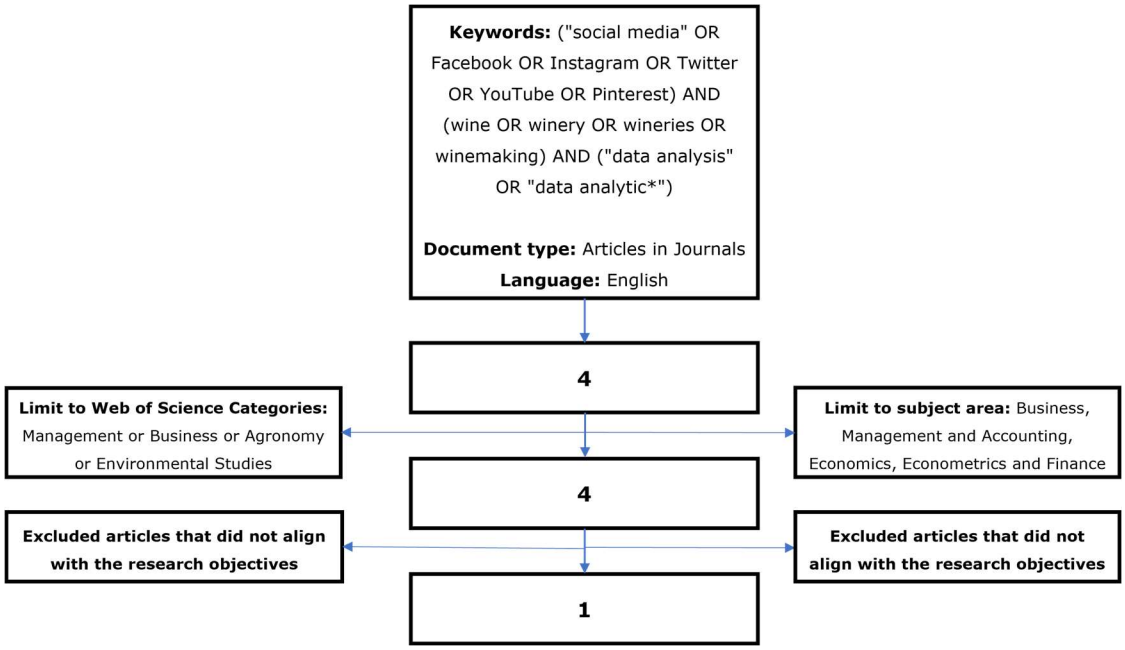

Figure 1. Results from the Scopus and Web of Science databases.

The use of SM has changed both consumer behavior and the way companies operate. SM marketing refers to the process of using technologies and SM channels to create, communicate, and deliver marketing offers that enhance the value of the company's members [33]. SM marketing has been incorporated into the company's marketing plan to increase awareness of the company's brand name, attract a wide consumer audience, learn more about the wants and needs of current and potential customers, and increase online sales [19,34], which indicates a very promising way for companies to create value [35].

Due to the vast amount of data communicated on these platforms [36], companies are using SMA tools to generate knowledge that will guide them to successful long-term strategic planning and decision-making [37]. The term SMA describes the process of gathering information from SM and using it to make decisions [38]. These tools are specifically designed to facilitate the marketing industry, leading to the maximization of profits for companies [39].

In the literature, these tools have been used in different sectors, such as agriculture, tourism [30], politics, health, and business [40]. Specifically for the agricultural sector, there are examples of the use of SMA tools to generate knowledge about plant diseases from posts made by a community of farmers within SM [41]; the behavior of agricultural stakeholders during COVID-19 through agriculture-related tweets [42]; and farmers' attitudes towards technology adoption [43].

SMA enables the continuous collection, monitoring, analysis, and aggregation of user-generated content and social interactions to provide in-depth analysis of real-time user preferences, choices, and sentiments [44]. Finally, SMA has been used in the business sector to analyze data in various business processes such as marketing, product review, customer segmentation, and other intelligence information gathering [40]. With this in mind, a search for existing SMA tools was conducted to identify appropriate SMA tools for the purposes of the current study. The search was carried out between March and July 2022 using the keywords "social media", "analytics tools", and "data analytics" in scientific literature databases (e.g., Scopus, Scholar Google) and the Google search engine. It categorizes SMA tools according to four core characteristics: "Platform" refers to how many and which

SM platforms (e.g., Facebook, Twitter) the tool can assess; "Type" refers to the type(s) of analytics (e.g., sentiment analysis, visual analytics) that the tool uses to assess an SM platform; "Cost" refers to whether payment is required to use the tool and its functionalities; and "Mobile App" refers to whether the tool can be downloaded and installed on a mobile device. In total, sixty-eight (68) SMA tools were identified and categorized according to the above characteristics. The complete list of these tools is available in Appendix A. The results are as follows:

Platform: A total of 12 tools are dedicated to the assessment of only one SMA tool. Specifically, two (2) tools assess only Facebook; three (3) assess Instagram; six (6) assess Twitter; and one (1) assesses LinkedIn. However, the majority of SMA tools (56) can assess more than one SM, most notably Facebook, which can be assessed by the majority (52) of these tools.

Type: Different types of analysis are presented, such as sentiment analysis, trend analysis, visual analysis, content analysis, and social network analysis, as also evinced by the bibliography [40]. It should be noted that the tools use a variety of indices and attributes to assess an SM platform. An analysis of the gathered SMA tools (Appendix A) indicates that the predominant types are "aggregate activity" (19 tools), followed by "engagement" (10 tools); "audience analysis" (8 tools); and "predictive analysis", "sentiment analysis", "reach, and impressions" each used by three tools; and "managing accounts" and "scheduling posts" are used by two tools. It must be noted that one tool can support more than one type of analysis. Although some tools use identical terms for their attributes (e.g., engagement), the definition of these attributes or the way these attributes are measured is different.

Cost: The majority of tools (55) require payment for the provision of services. The remainder (13) are free with limited functionality. However, more functionalities are provided with additional payment.

Mobile app: Half of the tools (34) offer a mobile application or the possibility of installation on a mobile device. More specifically, twenty-two (22) can be installed on the iPhone, twenty-five (25) on Android, and ten (10) on any mobile device regardless of the operating system.

2.3. Wine Sector in Greece

Greek wine dates back to ancient times. Due to ideal climatic and soil conditions, its history is the longest in the world in terms of continuous cultivation of grapes and wine production. Viticulture in Greece started in the Neolithic period and was particularly developed between the 13th and 11th centuries B.C. Important figures of antiquity, such as Homer in the Iliad and Odyssey, and Plato and Xenophon in their Symposia, frequently refer to famous wines of the time [45].

In modern times, the extensive development and production of bottled wine in Greece began in the 1960s. This development was preceded by significant investment in facilities and mechanical equipment, resulting in the rapid improvement of Greek wines [46]. Greece has 109 thousand hectares (kha) of vine crops, representing 1.5% of the world total. For 2020, the main wine-growing areas are the Peloponnese with 247,739 ha of vineyards, Crete with 221,845 ha, and Western Greece with 164,521 ha [47]. There are approximately 180,000 grape growers in Greece. According to [48], the number of Greek wineries has increased by more than 100% in the last decade. Today there are approximately 1350 wineries, of which 692 are certified to produce wines with Protected Designation of Origin (PDO) and Protected Designation of Indication (PGI). The majority of companies in the sector are medium-sized, but there are also a significant number of small local companies and cooperatives. The large wineries, although few in number, account for a significant percentage of domestic production, as they have modernized facilities and offer a wide variety of products [49].

The volume of domestic wine produced varies from year to year and is also influenced by the weather. Annual production in 2017 was 2.6 million hectoliters, making Greece the 17th largest wine-producing country in the world. For 2020, production reached 2.3 million

hectoliters, a historically low amount for Greek wine production, as it is 6% lower than the previous year and 17% lower than the last five years but maintains Greece's position in the world ranking [50]. It should be noted that there are 280 indigenous varieties that combine different production methods and quality origins, producing a wide range of excellent quality wines (7500 labels) to meet national and international demand. Indigenous varieties account for about 90% of total production.

The three most important varieties in terms of production are "Savvatiano" (16.52% of total production), a historical white grape variety that is among the most widely planted varieties with light-green color, bright look, intense and surprising aromas, balanced taste of medium acidity; "Roditis" (14.34%), a white grape variety, grown in various regions of Greece, it is known for its fresh and fruity character and is used to produce both still and sparkling wines; and "Agiorgitiko" (5.28%), a red grape variety and one of the most widely planted in Greece, particularly in the Peloponnese region. Wines made from Agiorgitiko grapes can range from light and fruity to more full-bodied and age-worthy. From total land with vineyards, "Savvatiano" and "Roditis" together represent 23.5%, and "Agiogitiko" represents 6.7% [51].

Other notable Greek wine varieties are "Assyrtiko", well-suited to the volcanic soils of Santorini Island and other parts of Greece; "Xinomavro", a red grape variety grown in the northern regions; and "Moschofilero", a white grape variety grown primarily in Peloponnese, known for its floral and citrusy aromas.

White wines predominate, while red wines account for a third of total production [52]. There has been a decline in wine consumption across the country in recent years, leading to a significant increase in corporate inventories (a 17.9% increase in inventories from 2019 to 2018). There is fierce competition between wine and other drinks that serve as substitutes (such as beer) [53]. However, given that the economic environment is highly competitive and constantly changing, companies need to innovate and modernize so as to survive and thrive.

3. Research Methodology

The methodology used in this research work consists of three steps:

- Sample identification and analysis: to identify the sample of Greek wineries to be used for the current research, well-known search engines were searched in the spring of 2022 with appropriate keywords, namely "winery" and "wine-producing company". In addition, the sample was composed of companies from the General Commercial Register of Greece and the ICAP CRIF register. Specific data are recorded for each winery, namely the geographical location of the winery, the existence of a website and the year of publication of the website, the languages available for the website, the existence of an e-shop, the availability of payment methods, and whether there are SM profiles on the most popular SM, namely Facebook, Instagram, Twitter, YouTube, and Pinterest.
- SM data collection: the SMA tool selected to collect data from the SM profiles of the Greek wine sample was Fanpage Karma. It is a popular and robust SMA, was developed in 2012, and has been used in the literature to monitor activities and content on social networks for businesses, universities, and governments [54–57]. It makes it possible to examine the SM interactions of a company and its competitors. Reports can be exported to spreadsheets. This allows for real-time trend detection, fan identification, and analysis of the publications themselves [35]. In addition, Fanpage Karma uses indicators (KPIs) to measure and evaluate SM [58]. It offers a range of features and capabilities for analyzing and optimizing SM performance across various platforms, such as competitor analysis, audience insights, content analysis and scheduling, sentiment analysis, influencer identification, hashtag tracking, reporting and visualization, paid advertisement analysis, and real-time monitoring and alerts. Some of the reasons underlying the choice of this tool were that it provides meaningful metrics for the purposes of this study and that it is one of the few SMA tools that

allows multiple comparisons of these metrics for different datasets from large samples of businesses' SM profiles. Of the indicators it evaluates, the following were selected for the purposes of this study:

1. Engagement: It shows how successful a profile is at encouraging users to interact. It shows the average number of times a fan interacts with a page's posts. This is calculated by dividing the daily number of reactions, comments, and shares by the number of fans. This metric is independent of the size of the profile because interactions are divided by the number of followers. This makes it possible to compare profiles within a specific period.
2. Total Reaction, Comments, and Shares: This refers to the number of interactions (i.e., reactions, comments, and shares) on page posts that were published in a specific period.

As noticed, for each of the indicators Fanpage Karma provides data analysis for a specific period. In this work, for comparable results this period was selected as follows: the months that the 1st and 2nd lockdowns were imposed were identified. The only calendar month that falls within them is April, which also is the month of high wine consumption due to the Greek Orthodox Easter celebration. Therefore, this study focuses on the following time periods:

a. "2019" refers to the pre-COVID-19 period from 1 April to 30 April 2019.
b. "2020" refers to the period within the first lockdown in Greece from 1 April to 30 April 2020.
c. "2021" refers to the period within the second lockdown in Greece from 1 April to 30 April 2021.
d. "2022" refers to the period of recession of restrictive measures from 1 April to 30 April 2022.

- Statistical analysis: Finally, the collected data were analyzed using descriptive statistics and RM ANOVA statistical analysis using JASP software, version 0.17.1 to illustrate the SM activity of Greek wineries during the selected periods and to make appropriate comparisons.

4. Results

4.1. Sample Identification and Analysis

The sample identification resulted in 311 wineries. Firstly, based on their geographical location, wineries were classified according to Greek first-level administrative entities—regions. The largest number of wineries included in the sample is located in southern Greece, namely in the regions of Peloponnese and Attica. More specifically, 18.04% of wineries are located in the region of Peloponnese; 13.76% in Central Macedonia; 10.70% in Attica; 9.48% in Eastern Macedonia and Thrace; 8.56% in Crete; 7.34% in South Aegean; 7.03% in Central Greece; 6.12% in Thessaly; 5.81% in Western Greece; 4.59% in Ionian Islands; 3.67% in Western Macedonia; 3.36% in North Aegean; and 1.53% in Epirus.

Of the 311 wineries, 85.85% maintain a website, 2.9% own a domain name but their website is under construction, and 11.25% do not possess a website. Moreover, using the "Internet Archive" tool (https://archive.org/) it was found that 30.37% of wineries established their website from 2015 to 2018; 21.85% from 2019 to 2022; 17.04% from 2011 to 2014; 12.96% from 2007 to 2010; 9.63% from 2003 to 2006; and 8.15% from 1999 to 2002. Regarding the number of languages supported by the websites of the wineries, the majority (84.57%) are in Greek. They also support English (69.13%), German (9.32%), French (4.82%), Russian (1.61%), and Chinese (1.29%).

Only 52.24% of the wineries have their own e-shop, while 46.80% do not sell online through their website. Moreover, 0.96% of wineries have an online store that is under construction. However, during the research, it was found that a few wineries sell their products online through a third party. Wineries with an online store offer different payment

methods: cash on delivery (46.39%), credit/debit card (46.01%), and PayPal (40.68%). A few also support payments by bank transfer.

Furthermore, it was studied the presence of 311 wineries on SM, namely on Facebook, Instagram, Twitter, YouTube, and Pinterest. The above-mentioned SM platforms are among the most popular worldwide. Regarding the existence of SM profiles, it was found that 10 wineries out of 311 do not have any SM profiles. Specifically, the majority of wineries (60.79%) have a profile on only one of the five SM platforms examined in this study, 30.89% have profiles on two SM platforms, 9.96% have profiles on three SM platforms, and 4.31% have profiles on four SM. Only 0.66% of wineries have profiles on five SM platforms (Table 1).

Table 1. Number of social media platforms used by Greek wineries.

No. of Social Media Used	Wineries Using Social Media	
	No.	%
1	183	60.79
2	93	30.89
3	30	9.96
4	13	4.31
5	2	0.66

Of the wineries that use SM, 77.07% have Facebook, 57.14% Instagram, 25.58% Twitter, 9.30% YouTube, and 5.31% Pinterest (Table 2).

Table 2. Social media usage by Greek wineries.

Social Media	Wineries Using Social Media	
	No.	%
Facebook	232	77.07
Instagram	172	57.14
Twitter	77	25.58
YouTube	28	9.30
Pinterest	16	5.31

4.2. Social Media Data Collection and Statistical Analysis

Fanpage Karma was used to provide data analytics of the Greek wine sample SM profiles on Facebook, Instagram, Twitter, YouTube, and Pinterest. Nonetheless, statistical analysis regards only Facebook and Instagram which provide complete datasets. For Twitter, YouTube, and Pinterest the datasets were incomplete, due to a lack of information that had to be registered in wineries' profiles.

The complete dataset provided by Fanpage Karma for "Engagement" and "Total Reaction, Comments and Shares" (in short, "Total") features are used in descriptive statistics and RM ANOVA statistical analysis. The study data were quantitative. The variables "Total" and "Engagement" were operationalized as continuous variables in this analysis (i.e., descriptives, correlations, and repeated measures analysis of variance.) It should be noted that in the text and tables that follow there is a number at the end of each variable (i.e., 19, 20, 21, and 22), which refers to the corresponding periods under examination, i.e., 2019, 2020, 2021, and 2022.

Descriptive statistics (Tables 3 and 4) showed that our data had severe deviations from normality, thus failing to meet the basic assumptions for the use of parametric statistics. We removed extreme problematic cases that appeared as outliers and performed certain data transformations (e.g., log10), which failed to produce normal datasets for all the years under consideration (2019–2022). We, therefore, decided to proceed with non-parametric statistical analyses (Kendall's τb correlations and Friedman repeated measures (RM ANOVA)) to answer our research questions (i.e., RQ2 and RQ3). Extensive statistical

and multidisciplinary research has demonstrated the numerous benefits of using Kendall's tau as a measure of variable correlation. Consequently, we have opted to use Kendall's tau in place of Spearman's rho due to its efficiency in heavy-tailed distributions [59], ability to control Type I errors [60], and clear and straightforward interpretation [60,61]. Additionally, there is a body of statistical research that suggests that Kendall's tau is superior to Spearman's rho [62,63]. The correlation and RM ANOVA results are presented below separately for the Facebook and Instagram datasets.

Table 3. Descriptive statistics for Facebook data.

Variables	Median	Mean	SD	Minimum	Maximum	Skewness	$Skewness_z$	Kurtosis	$Kurtosis_z$
Engagement19	0.000	0.002	0.004	0.000	0.035	3.752	23.450	20.222	63.194
Engagement20	0.000	0.002	0.004	0.000	0.034	4.134	25.838	24.781	77.441
Engagement21	0.000	0.001	0.003	0.000	0.031	5.791	36.194	44.083	137.759
Engagement22	0.001	0.001	0.002	0.000	0.017	3.533	22.081	17.056	53.300
Total19	89.500	318.417	752.796	0.000	9013.000	7.670	47.938	80.118	250.369
Total20	107.000	409.843	930.145	0.000	9758.000	5.806	36.288	47.688	149.025
Total21	80.000	367.348	996.720	0.000	10,163.000	6.440	40.250	51.434	160.731
Total22	73.500	303.822	1056.258	0.000	13,386.000	9.421	58.881	107.164	334.888

Note: SD: Standard Deviation; Standard Error of Skewness: 0.160; Standard Error of Kurtosis: 0.320; $Skewness_z$: Skewness/Std Error of Skewness; $Kurtosis_z$: Kurtosis/Std Error of Kurtosis.

Table 4. Descriptive statistics for Instagram data.

Variables	Median	Mean	SD	Minimum	Maximum	Skewness	$Skewness_z$	Kurtosis	$Kurtosis_z$
Engagement19	0.000	0.000	0.002	0.000	0.025	13.000	69.519	169.000	455.526
Engagement20	0.000	0.000	0.003	0.000	0.028	8.168	43.679	77.143	207.933
Engagement21	0.000	0.001	0.004	0.000	0.033	5.557	29.717	34.516	93.035
Engagement22	0.003	0.003	0.004	0.000	0.026	2.018	10.791	5.999	16.170
Total19	76.000	349.888	953.031	0.000	10,588.000	7.946	42.492	80.355	216.590
Total20	142.000	438.923	930.293	0.000	8315.000	5.016	26.824	33.923	91.437
Total21	190.000	562.621	926.540	0.000	6256.000	2.865	15.321	10.432	28.119
Total22	148.000	476.627	936.557	0.000	5932.000	3.734	19.968	15.951	42.995

Note: SD: Standard Deviation; Standard Error of Skewness: 0.187; Standard Error of Kurtosis: 0.371; $Skewness_z$: Skewness/Std Error of Skewness; $Kurtosis_z$: Kurtosis/Std Error of Kurtosis.

4.2.1. Facebook Correlations

In Table 5, Kendall's tau correlations are presented for the "Engagement" variable for the years 2019 to 2022. The highest correlation exists for 2019 to 2021 ($\tau b = 0.753$, $p < 0.000$) and the lowest for 2020 to 2022 ($\tau b = 0.291$, $p < 0.000$). Overall, all paired correlations for "Engagement" show a significant, medium to strong, positive association between the variables of interest.

Table 5. Kendall's tau correlations for Engagement (2019–2022).

Variables			Kendall's Tau B	*p*-Value
Engagement19	-	Engagement20	0.726 ***	<0.001
Engagement19	-	Engagement21	0.753 ***	<0.001
Engagement19	-	Engagement22	0.342 ***	<0.001
Engagement20	-	Engagement21	0.695 ***	<0.001
Engagement20	-	Engagement22	0.291 ***	<0.001
Engagement21	-	Engagement22	0.330 ***	<0.001

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, one-tailed.

Table 6 shows paired correlations for the "Total" variable for 2019 to 2022. All paired correlations are significant and show a medium to strong positive association among the variables. The highest correlation exists for 2021 to 2022 ($\tau b = 0.573$, $p < 0.000$) and the lowest for 2020 to 2022 ($\tau b = 0.446$, $p < 0.000$).

Table 6. Kendall's tau correlations for Total (2019–2022).

Variables			Kendall's Tau B	*p*-Value
Total19	-	Total20	0.506 ***	<0.001
Total19	-	Total21	0.485 ***	<0.001
Total19	-	Total22	0.461 ***	<0.001
Total20	-	Total21	0.479 ***	<0.001
Total20	-	Total22	0.446 ***	<0.001
Total21	-	Total22	0.573 ***	<0.001

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, one-tailed.

4.2.2. Facebook Repeated Measures ANOVA

The Friedman test (Table 7) was used to examine whether there is an annual significant effect on users' engagement. Conover's post hoc pairwise comparisons show whether there were significant differences in users' engagement in each year (Table 8).

Table 7. Friedman test for Facebook Engagement (2019–2022).

Factor	χ^2	df	*p*-Value
YEARS	27.174	3	<0.001

Table 8. Conover's post hoc comparisons for Facebook Engagement (2019–2022).

		T-Stat	df	W_i	W_j	*p*	P_{bonf}
2019	2020	0.379	687	559.500	567.500	0.705	1.000
	2021	1.207	687	559.500	534.000	0.228	1.000
	2022	3.763	687	559.500	639.000	<0.001	0.001
2020	2021	1.585	687	567.500	534.000	0.113	0.680
	2022	3.384	687	567.500	639.000	<0.001	0.005
2021	2022	4.969	687	534.000	639.000	<0.001	<0.001

Note: Grouped by subject.

The Friedman test showed that Facebook engagement scores varied significantly from year to year: χ^2 (3) = 27.174, $p < 0.001$ (Table 7). Conover's pairwise post hoc comparisons showed that Facebook engagement peaked between 2021 and 2022 (T(687) = 4.969, $p < 0.001$). Differences were also observed between the years 2019 and 2022 (T(687) = 3.763, $p < 0.001$) and 2020 and 2022 (T(687) = 3.384, $p < 0.01$) (Table 8). Figure 2 shows the error bars for the annual changes in Facebook engagement.

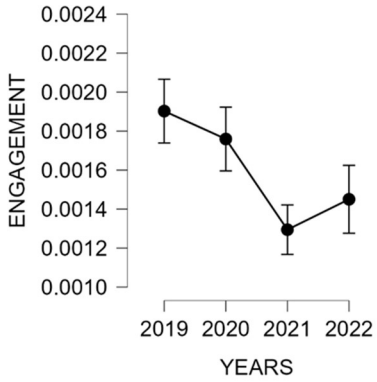

Figure 2. Error bars for Facebook Engagement (2019–2022).

Similarly, the Friedman test was conducted to assess if there were differences between the mean ranks of the Facebook Total reactions, χ^2 (3) = 19.223, $p < 0.001$ (Table 9). This

indicates that there were differences among the mean ranks. Conover's post hoc pairwise comparisons showed that Facebook Total reactions were significant between 2019 and 2022 (T(687) = 2.631, $p < 0.05$) and between 2020 and 2022 (T(687) = 4.352, $p < 0.001$) (Table 10). Figure 3 shows the error bars for the total annual Facebook reactions.

Table 9. Friedman test for Facebook Total (2019–2022).

Factor	χ^2	df	*p*-Value
YEARS	19.223	3	<0.001

Table 10. Conover's post hoc comparisons for Facebook Total (2019–2022).

		T-Stat	Df	W_i	W_j	*p*	P_{bonf}
2019	2020	1.721	687	582.500	626.000	0.086	0.514
	2021	0.277	687	582.500	575.500	0.782	1.000
	2022	2.631	687	582.500	516.000	0.009	0.052
2020	2021	1.998	687	626.000	575.500	0.046	0.277
	2022	4.352	687	626.000	516.000	<0.001	<0.001
2021	2022	2.354	687	575.500	516.000	0.019	0.113

Note: Grouped by subject.

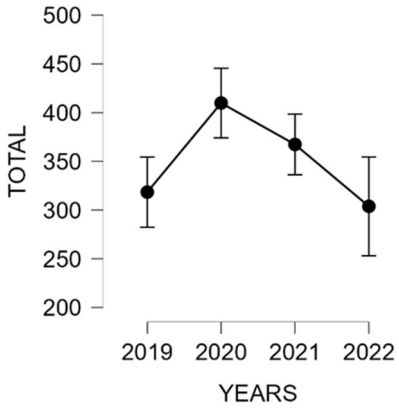

Figure 3. Error bars for Facebook Total (2019–2022).

4.2.3. Instagram Correlations

Table 11 shows the Kendall's tau correlations for the "Engagement" variable for the years 2019 to 2022. The strongest relationship exists between the years 2020 and 2021 (τb = 0.711, $p < 0.000$) and the weakest between the years 2019 and 2022 (τb = 0.113, $p < 0.05$). All pairwise relationships for users' engagement are positive and significant.

Table 11. Kendall's tau correlations for Engagement (2019–2022).

Variables			Kendall's tau B	*p*-Value
Engagement19	-	Engagement20	0.406 ***	<0.001
Engagement19	-	Engagement21	0.306 ***	<0.001
Engagement19	-	Engagement22	0.113 *	0.042
Engagement20	-	Engagement21	0.711 ***	<0.001
Engagement20	-	Engagement22	0.140 *	0.016
Engagement21	-	Engagement22	0.245 ***	<0.001

Note. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, one-tailed.

Paired correlations for the "Total" variable for the years 2019 to 2022 are shown in Table 12. The highest correlation is found between the years 2021 and 2022 (τb = 0.580, $p < 0.000$), and the lowest correlation is found for the years 2019 and 2022 (τb = 0.387,

$p < 0.000$). Overall, the correlation table shows a medium to strong positive relationship between the variables.

Table 12. Kendall's tau correlations for Total (2019–2022).

Variables			Kendall's tau B	*p*-Value
Total19	-	Total20	0.481 ***	<0.001
Total19	-	Total21	0.422 ***	<0.001
Total19	-	Total22	0.387 ***	<0.001
Total20	-	Total21	0.512 ***	<0.001
Total20	-	Total22	0.490 ***	<0.001
Total21	-	Total22	0.580 ***	<0.001

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, one-tailed.

4.2.4. Instagram Repeated Measures ANOVA

The Friedman test showed that Instagram engagement scores varied significantly from year to year: χ^2 (3) = 277.979, $p < 0.001$ (Table 13). Conover's pairwise post hoc comparisons (Table 14) showed that Instagram engagement peaked between 2019 and 2022 (T(504) = 14.305, $p < 0.001$). Significant differences were also observed between the years 2020 and 2022 (T(504) = 13.662, $p < 0.001$) and 2021 and 2022 (T(504) = 12.794, $p < 0.001$). Figure 4 shows the error bars for the annual changes in Instagram engagement.

Table 13. Friedman test for Instagram Engagement (2019–2022).

Factor	χ^2	df	*p*-Value
YEARS	277.979	3	<0.001

Table 14. Conover's post hoc comparisons for Instagram Engagement (2019–2022).

		T-Stat	df	W_i	W_j	*p*	P_{bonf}
2019	2020	0.643	504	358.500	368.500	0.521	1.000
	2021	1.511	504	358.500	382.000	0.131	0.789
	2022	14.305	504	358.500	581.000	<0.001	<0.001
2020	2021	0.868	504	368.500	382.000	0.386	1.000
	2022	13.662	504	368.500	581.000	<0.001	<0.001
2021	2022	12.794	504	382.000	581.000	<0.001	<0.001

Note: Grouped by subject.

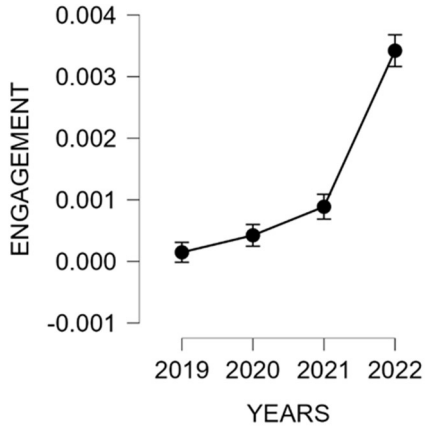

Figure 4. Error bars for Instagram Engagement (2019–2022).

The Friedman test showed that Instagram total reaction scores varied significantly from year to year: χ^2 (3) = 24.652 $p < 0.001$ (Table 15). Conover's pairwise post hoc

comparisons (Table 16) showed that Instagram total reactions peaked between 2019 and 2021 (T(504) = 4.945, $p < 0.001$) and decreased between 2019 and 2022 (T(504) = 2.657, $p < 0.05$). Figure 5 shows the error bars for the Instagram yearly total reactions.

Table 15. Friedman test for Instagram Total (2019–2022).

Factor	χ^2	df	*p*-Value
YEARS	24.652	3	<0.001

Table 16. Conover's post hoc comparisons for Instagram Total (2019–2022).

		T-Stat	df	W_i	W_j	*p*	P_{bonf}
2019	2020	2.842	504	366.000	427.500	0.005	0.028
	2021	4.945	504	366.000	473.000	<0.001	<0.001
	2022	2.657	504	366.000	423.500	0.008	0.049
2020	2021	2.103	504	427.500	473.000	0.036	0.216
	2022	0.185	504	427.500	423.500	0.853	1.000
2021	2022	2.287	504	473.000	423.500	0.023	0.135

Note: Grouped by subject.

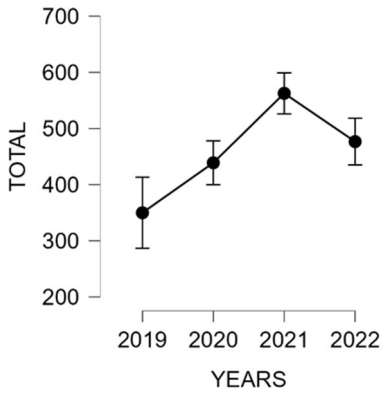

Figure 5. Error bars for Instagram Total (2019–2022).

5. Discussion

This study makes evident that wineries are taking steps to increase their digital presence. Therefore, answering the first research question (RQ1), this progress can be seen chronologically over the last decade. According to the results, the majority of wineries in the sample (85.85%) have a website. Half of these sites have been published since 2015. Half of the wineries (52.24%) have their own e-shop. However, some of them also promote and sell their products through third-party platforms. SM also appears to be a preferred means of digital presence and promotion, with 96.7% having an SM profile. It should be noted that a third of them use two SM platforms. This is also supported by a recent study [8] where, among the different wine promotion tools (e.g., websites, international exhibitions, competitions, sponsors, tastings, magazines, and press), websites and SM are the tools most frequently used by Greek wineries to attract new potential customers looking for quality and value-for-money wines. The most popular SM platforms used by wineries are Facebook (77.07%) and Instagram (57.14%), followed by Twitter (25.58%), YouTube (9.30%), and Pinterest (5.31%). This result is in agreement with other research in the current literature [13], which shows that these media are the dominant SM for business purposes, and for this reason, wineries use them, among others, to increase brand awareness [18,64,65].

Overall, the digital presence of wineries in SM is far from resounding. It is a fact that companies maintain their profile in a status of simple presence, essentially without interactions with the public. Specifically, providing an answer to the second research

question (RQ2), for each of the four periods studied, the mean scores of "Engagement" on both Facebook and Instagram are extremely low (below 1%) indicating virtually no interaction by consumers with what is posted on a page. Likewise, providing an answer to the third research question (RQ3), the mean scores of both Facebook and Instagram "Total" reactions are also low, ranging between 304 and 410 for Facebook and between 350 and 563 for Instagram. As each period covers thirty days, this translates into an average of 11–14 reactions per day for Facebook and 12–19 reactions per day for Instagram.

Specifically for Facebook, all paired correlations for "Engagement" and "Total" variables show significant, positive, medium to strong associations between 2019 and 2022. RM ANOVA indicated that 2022 was a landmark year in which most observable differences occurred in wine customers' engagement as well as total reactions. Similarly, for Instagram, all paired relationships for "Engagement" and "Total" variables are significant and positive for all assessed years. RM ANOVA results show that 2022 was the year with the most notable difference in customer "Engagement" as compared to 2019, 2020, and 2021. In contrast, as regards "Total" customer reactions, we can observe a marked difference between the base year (2019) and the subsequent years assessed (2020, 2021, and 2022). However, the difference between 2020, 2021, and 2022 is insignificant. The overall trend for Facebook is that users' "Engagement" and "Total" responses show a downward trend, while for Instagram an upward trend is observed over the years studied.

6. Conclusions

This research tries to investigate digital presence and consumer engagement and reactions in the SM used by the Greek winery industry. Results show that the majority of wineries support corporate digital presence mainly through Facebook and Instagram. However, despite this pervasive digital presence, the study notes a lack of robust engagement. Interactions on wineries' SM profiles remain minimal, with low consumer engagement and total reactions on both SM platforms. The proposed methodology of this study can be used as a social media brand engagement approach that can help brands capture the attention of audiences and encourage participation. Overall, the research underscores the need for creating more comprehensive and meaningful SM strategies by wineries to enhance customer interactions.

Limitations of this study concern, firstly, the SMA tool used, namely Fanpage Karma, which does not provide data on when profiles were created. Therefore, it is not possible to take into account profiles that have been created recently. In addition, it collects data on a profile from the moment it is first entered into the database by a user. There are metrics that cannot be obtained retrospectively for the time before the first entry, such as the number of followers. Secondly, another limitation regards the interval of time for the data analysis, which includes only four years, and the focus on a particular country.

The results raise questions for both businesses and consumers that could be explored in future research. For businesses, the relevant questions are as follows: Is there an overall SM strategy? Does this strategy take into account consumers' reactions? How often do they post? What kind of content is posted? For consumers, relevant questions include the following: Is the content of the posts interesting and attractive? Do the wineries' posts motivate them to interact? Gathering information on the demographics of wine consumers interacting with wineries' profiles could contribute to a better understanding of the above questions about their engagement [66]. It should also be noted that SM campaigns need to be designed for specific purposes [67], which wineries should consider in the future. Moreover, many Greek wineries are family businesses [8] and do not have the resources to recruit an SM marketer or dedicated staff to run SM campaigns, which are complex and multidimensional processes requiring specialized skills [68].

Therefore, to make strategic decisions, wineries should consider managerial implications that regard the allocation of resources (e.g., financial, human, technological) for supporting SM initiatives; the prioritization of investments for different campaigns and platforms; the identification of potential risks associated with SM activities such as repu-

tation damage; the provision of training to employees involved in SM management; the collaboration with wine influencers to reach a broader audience; the integration of SM efforts with sales and managing strategies to drive traffic to wineries' websites. Moreover, it is crucial for SM content to adhere to legal requirements concerning age restrictions. Also, combining different SMA tools to extract more data on other SM indicators or using empirical research to identify the SM platforms used by winery audiences is needed. In addition, future research can investigate the preference of companies to use Facebook and the current shift of consumers towards Instagram. Moreover, this research can be expanded to include other wine-producing countries.

Gaining insight into the changing business landscape of wineries within the digital era is essential to unlocking business expansion in a competitive industry.

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Conflicts of Interest: The authors declare no conflicts of interest.

Appendix A

No.	SMA Tool	URL	Platform	Type	Cost	Mobile App
1	Agorapulse	https://www.agorapulse.com/var1/ Accessed on 10 June 2022	Facebook, Instagram, Twitter, YouTube, LinkedIn	Comparison between brands	Paid	Android, iOS
2	Brandwatch	https://www.brandwatch.com/ Accessed on 9 March 2022	Facebook, Instagram, Twitter, YouTube, LinkedIn, Pinterest	Sentiment analysis	Paid	-
3	Buffer	https://buffer.com/ Accessed on 28 March 2022	Facebook, Instagram, Twitter, LinkedIn	Scheduling of posts	Paid	For all devices
4	Cyfe	https://www.cyfe.com/ Accessed on 21 May 2022	Facebook, Instagram, Twitter, YouTube, LinkedIn, Pinterest, Vimeo	Automatic data retrieval and analysis	Free	-
5	Followerwonk	https://followerwonk.com/ Accessed on 15 April 2022	Twitter, Instagram	Exploration and growth of social graph	Free and Paid	-
6	Hootsuite	https://www.hootsuite.com/ Accessed on 12 July 2022	Facebook, Instagram, Twitter, YouTube, LinkedIn, Pinterest	ROI for business	Free and Paid	iPhone, iPad, Android
7	Meltwater	https://www.meltwater.com/en Accessed on 15 March 2022	Facebook, Instagram, Twitter, YouTube, LinkedIn	Business intelligence	Paid	-

No.	SMA Tool	URL	Platform	Type	Cost	Mobile App
8	Socialbakers	https://www.socialbakers.com/ Accessed on 9 March 2022	Facebook, Instagram, Twitter, LinkedIn, Pinterest	Predictive with benchmarks	Paid	-
9	Socialmention	https://brandmentions.com/socialmention/ Accessed on 21 May 2022	Facebook, Instagram, Twitter, TikTok, YouTube, Pinterest	Aggregates user-generated content	Free and Paid	-
10	SproutSocial	https://sproutsocial.com/ Accessed on 27 March 2022	Facebook, Instagram, Twitter, LinkedIn	Brand communication between customers	Paid	Android, iOS
11	Tailwind	https://www.tailwindapp.com/ Accessed on 2 May 2022	Instagram, Pinterest	Schedule posts, monitor conversations	Paid	Android, iOS
12	TweetDeck	https://tweetdeck.twitter.com/ Accessed on 15 June 2022	Facebook, Twitter	Managing accounts	Free	Mac
13	Tweetreach	https://tweeetreach.en.softonic.com/web-apps Accessed on 6 July 2022	Twitter	Hashtag searching	Free and Paid	-
14	Viralwoot	https://viralwoot.com/ Accessed on 10 June 2022 https://viralwoot.partnerstack.com/ Accessed on 10 June 2022	Pinterest, Instagram	Engage influencers, boost performance	Free and Paid	-
15	Facebook Insights	https://www.facebook.com/business/insights/tools/audience-insights Accessed on 3 March 2022	Facebook	Audience analysis	Free	-
16	Google Analytics	https://marketingplatform.google.com/about/analytics/ Accessed on 12 April 2022	Facebook, Instagram, Twitter, LinkedIn, Pinterest	Aggregate activity	Free	For all devices
17	Iconosquare	https://pro.iconosquare.com/ Accessed on 30 July 2022	Facebook, Instagram, Twitter, LinkedIn, TikTok	Audience analysis	Paid	iPhone, iPod
18	Keyhole	https://keyhole.co/ Accessed on 9 March 2022	Facebook, Instagram, Twitter, YouTube	Text analysis (tagging and sentiment)	Paid	For all devices
19	Quintly	https://www.quintly.com/ Accessed on 18 March 2022	Facebook, Instagram, LinkedIn, Pinterest, Snapchat, Twitter, YouTube, TikTok	Aggregate activity	Paid	-
20	Sociograph.io	https://sociograph.io/landing Accessed on 10 June 2022	Facebook (Groups, Pages)	Engagement	Free	-
21	Union Metrics/TweetReach	https://cmp.falcon.io/unionmetrics/ Accessed on 28 March 2022 https://twilert.com/tweetreach/ Accessed on 28 March 2022	Facebook, Instagram, Twitter, Tumblr	Aggregate activity	Paid	-

No.	SMA Tool	URL	Platform	Type	Cost	Mobile App
22	Tweepi	https://tweepi.com/ Accessed on 21 May 2022	Twitter	Growing brands with artificial intelligence	Paid	-
23	Postchup	https://twitter.com/tweetchup Accessed on 3 March 2022	Twitter	Hashtag analytics	Free	iPhone
24	Twitonomy	https://www.twitonomy.com/ Accessed on 2 May 2022	Twitter	Analytics	Free	iOS, Android, iPod
25	Audience	https://audiense.com/ Accessed on 22 May 2022	Twitter	Audience analysis	Paid	iOS, Android
26	Talkwalker	https://www.talkwalker.com/ Accessed on 5 April 2022	Twitter	Sentiment analysis	Free	For all devices
27	Owlmetrics	https://www.producthunt.com/upcoming/owlmetrics Accessed on 16 March 2022	Instagram	Audience analysis	Free	Android, iOS
28	Schedugram	https://www.capterra.com/p/179839/Schedugram/ Accessed on 28 March 2022	Instagram	Aggregate activity	Paid	Android, iPhone, iPad
29	Kicksta	https://kicksta.co/ Accessed on 7 April 2022	Instagram	Growing followers organically with artificial intelligence	Paid	-
30	Sensible	https://www.sendible.com/ Accessed on 19 July 2022	Facebook, Instagram, LinkedIn, Twitter, YouTube	Managing accounts	Paid	iPhone, iPod, Mac
31	Brand24	https://brand24.com/ Accessed on 10 June 2022	Facebook, Instagram, Twitter, TikTok, YouTube, Pinterest	Engagement	Paid	iOS, Android, Mac
32	AdEspresso	https://adespresso.com/ Accessed on 4 May 2022	Facebook, Instagram	Audience analysis	Paid	-
33	Digimind	https://www.digimind.com/ Accessed on 16 March 2022	Facebook, Instagram, Twitter, YouTube	Brand reputation, influencer identification, campaign analysis	Paid	For all devices
34	SumAll	https://sumall.com/ Accessed on 25 April 2022	Facebook, Instagram, Pinterest, Twitter	Aggregate activity	Free and Paid	Android, iOS, Linux, MacOS, Windows
35	Snaplytics	https://www.snaplytics.io/ Accessed on 28 March 2022	Snapchat, Instagram	Automated analytics	Paid	-

No.	SMA Tool	URL	Platform	Type	Cost	Mobile App
36	Storyheap	https://www.storyheap.com/ Accessed on 7 March 2022	Facebook, Instagram, Twitter, Snapchat, TikTok	Elevate brand's social presence, engagement	Paid	-
37	Mention	https://mention.com/en/ Accessed on 25 April 2022	Facebook, Instagram, Twitter, LinkedIn	Aggregate activity	Paid	-
38	BrandMentions	https://brandmentions.com/ Accessed on 10 June 2022	Facebook, Twitter, LinkedIn, Pinterest, YouTube	Aggregate activity	Paid	-
39	TapInfluence	https://www.tapinfluence.com/ Accessed on 16 March 2022	Facebook, LinkedIn, Twitter, Instagram, YouTube, Pinterest	Create influencer campaigns	Paid	-
40	NetBase	https://netbasequid.com/ Accessed on 18 July 2022	Facebook, Instagram, Twitter	Aggregate activity	Paid	-
41	Oktopost	https://www.oktopost.com/ Accessed on 13 June 2022	Facebook, Twitter, LinkedIn, Google+	Social analytics, community management	Paid	For all devices
42	Rival IQ	https://www.rivaliq.com/ Accessed on 6 April 2022	Facebook, Instagram, Twitter, YouTube, LinkedIn, TikTok	Aggregate activity	Paid	-
43	Social Studio	https://www.salesforce.com/eu/ Accessed on 28 March 2022	Facebook, Reddit, Twitter, Snapchat, Yelp	Aggregate activity	Paid	For all devices
44	Klear	https://klear.com/ Accessed on 24 June 2022	Instagram, Facebook, YouTube, TikTok	Influencer analytics	Paid	-
45	Funnel.io	https://funnel.io/ Accessed on 16 May 2022	Instagram, Facebook, YouTube, Twitter, LinkedIn	Collect, prepare, and analyze marketing data	Paid	-
46	Sprinklr	https://www.sprinklr.com/ Accessed on 9 March 2022	Facebook, Instagram, YouTube, Twitter, LinkedIn, Pinterest, TikTok	Aggregate activity	Paid	Android
47	MeetEdgar	https://meetedgar.com/ Accessed on 21 May 2022	Facebook, Instagram, Twitter, LinkedIn, Pinterest	Aggregate activity	Paid	-
48	MavSocial	https://mavsocial.com/ Accessed on 5 March 2022	Facebook, Instagram, Twitter, LinkedIn, YouTube	Engagement, schedule posts	Paid	For all devices
49	ZohoSocial	https://www.zoho.com/social/ Accessed on 5 April 2022	Facebook, Instagram, Twitter, LinkedIn, YouTube, Pinterest	Manage brands	Paid	For all devices
50	Eclincher	https://eclincher.com/ Accessed on 27 July 2022	Facebook, Instagram, Twitter, LinkedIn, YouTube, Pinterest, TikTok	Aggregate activity	Paid	For all devices
51	Everypost	https://everypost.me/ Accessed on 16 March 2022	Facebook, Twitter, LinkedIn	Aggregate activity	Paid	Android
52	Socialinsider	https://www.socialinsider.io/ Accessed on 10 June 2022	Facebook, Instagram, Twitter, LinkedIn, YouTube, TikTok	Aggregate activity	Paid	-

No.	SMA Tool	URL	Platform	Type	Cost	Mobile App
53	Socialoomph	https://www.socialoomph.com/ Accessed on 10 June 2022	Facebook, Instagram, Twitter, LinkedIn	Post scheduling	Free and Paid	Android
54	Crowdbooster	https://www.crunchbase.com/organization/crowdbooster Accessed on 28 March 2022	Facebook, Twitter	Most engaged customers, statistical analysis	Paid	-
55	Datasift	https://datasift.github.io/ Accessed on 3 April 2022	LinkedIn, Facebook, Twitter	Filtering of historic data, effective campaigns	Paid	iPhone
56	GaggleAMP	https://www.gaggleamp.com/ Accessed on 16 March 2022	LinkedIn	Create gaggle and send message	Paid	iPhone, iPod touch
57	Howsociable	https://howsociable.com/ Accessed on 13 June 2022	Twitter, Facebook	Social performance	Free	-
58	Quickmetrics	https://quickmetrics.io/ Accessed on 21 May 2022	Facebook, Twitter, Instagram	Generate data metrics, calculate ROI	Free	-
59	Socioboard	https://socioboard.com/ Accessed on 24 June 2022	Google Analytics, Twitter, Facebook	Predictive analysis, sentiment analysis	Free	Android
60	Social Harvest	https://github.com/SocialHarvest Accessed on 28 March 2022	Twitter, Facebook	Predictive analysis	Free	-
61	Viralheat	https://www.crunchbase.com/organization/viralheat Accessed on 13 June 2022	Twitter, Blogs, Facebook	Predictive analysis	Paid	iPhone
62	Amplifr	https://www.g2.com/products/amplifr/reviews Accessed on 6 April 2022	Facebook, Instagram, LinkedIn, Pinterest, Twitter	Aggregate activity, audience analysis, engagement, reach and impressions	Paid	iPhone
63	Grytics	https://grytics.com/ Accessed on 21 May 2022	Facebook (Groups)	Aggregate activity, engagement, post types	Paid	-
64	SharedCount	https://www.sharedcount.com/ Accessed on 25 April 2022	Any url including Facebook profiles	Aggregate activity, engagement	Paid	-
65	Social Pilot	https://www.socialpilot.co/ Accessed on 18 July 2022	Facebook (Pages), LinkedIn, Twitter, Pinterest	Aggregate activity, audience analysis, engagement, post types	Paid	iPhone, iPad, iPod touch, Mac

No.	SMA Tool	URL	Platform	Type	Cost	Mobile App
66	Sotrender	https://www.sotrender.com/ Accessed on 10 June 2022	Facebook (Pages), Instagram, Twitter, YouTube	Audience analysis, engagement, reach and impressions, post types, content consumption overtime	Paid	-
67	Wiselytics	https://www.getapp.com/marketing-software/a/wiselytics/ Accessed on 17 May 2022	Facebook (Pages), Twitter	Engagement, reach and impressions	Paid	-
68	Fanpage Karma	https://www.fanpagekarma.com/ Accessed on 21 May 2022	Facebook, Instagram, Twitter, LinkedIn, YouTube, Pinterest, WhatsApp, TikTok	Analytics, engage, publish, discovery	Paid	Android, iPhone/iPad

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