

Influences of M-commerce and Social Media on Wine Purchases: A Multi-Cultural Study

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Abstract

Wine shoppers may transition effortlessly back and forth between the real and digital worlds, using their mobile phones to research products, consult with friends near and far, compare prices, and order online. It may behoove wine marketers to engage with consumers in both the real and digital worlds. While the wine industry has been adopting online marketing and e-commerce, research into the potential of mobile (m) - commerce has not yet been undertaken. This exploratory study examines how consumer behavior is shaped by the use of mobile devices and social media and consumer expectations about m-wine purchasing. This study of 2853 respondents from six countries examines the characteristics of mobile users regarding several variables: use of mobile phone - wine purchase and consumption - m-wine purchasing. The survey research was conducted using both online and personal questionnaires. Our findings show that mobile phone usage and m-wine purchasing differed by country. Different ways of selling are observed and results show that small and medium sized wine making companies may wish to consider mobile platforms in their strategy to advertise, market, promote and sell more wine. Results show that m-commerce websites/applications using social media offer potential for wine marketers. Implications for the international wine industry are detailed. Limitations and suggestions for future research are discussed.

Key words: wine, e-commerce, m-commerce, cross cultural, social media, m-wine purchasing

1. INTRODUCTION

Continued growth of smartphones is favoring the surge of mobile commerce (m-commerce) and some experts such as research firm Gartner Inc. predict that m-commerce will soon overtake e-commerce (Gartner, 2011). Indeed, mobile transactions are experiencing exponential growth, with reports indicating annual 356% growth rates for sales via smartphones and tablets (IMRG Capgemini, 2012). As for any product sold using mobile, Pelet, Diallo & Papadopoulou (2013) state that m-wine purchasing should take off, if the right conditions are in place. These conditions include positive user experience, trust and seamlessness including shareable content that is simple and focused on the particular product or service. Social networks favour such progression in the way consumers behave with their smartphones. Their simple interfaces that display important and recent information with brief content comprising images, short text, or just a few words make them a powerful tool to enhance sales.

Like other industries, the wine industry began using the Internet in the 1990s but the early adopters were constrained by complicated wine shipping regulations and security concerns by customers, among other things (Bruwer & Wood, 2005; Gebauer & Ginsburg, 2003; Quinton & Harridge-March, 2003; Thach, 2009). A study by Thach (2009) found that 61% of USA winery websites had e-commerce ability but a much smaller proportion had interactive components such as vlogs/online videos (11%), blogs (2%) and podcasts (1%). While the literature regarding the wine industry during the last decade has seen a growth in studies of wine consumption behavior (examples include Bitsani & Kavoura, 2012; Cohen, d’Hauteville & Sirieix 2009; Nowak, Thach & Olsen, 2006; Ritchie, Ritchie & Ward, 2009; Thach & Olsen, 2004, 2006), with some examining the use of online marketing, none have so far explored the potential of m-commerce as it relates to the wine industry. Following Lockshin & Corsi’s suggestions (2012), we strive to delve into one of the areas with the greatest research needs: m-wine purchasing. This article starts with a review of literature relating to mobile marketing and online wine marketing. We present the methodology and results of our research study of wine and m-commerce among six countries, France, Greece, Germany, Canada, United States, South Africa, followed by conclusions, limitations, and ideas for future research.

2. LITERATURE REVIEW

2.1 Wine consumption by country

On a per capita basis, among the countries examined in this study, French wine consumers consumed the most wine in 2011 (see Table 1). Wine consumption by country as a proportion of world consumption in 2011 indicates that consumers in the United States consumed more wine in total than the other countries examined in this study (see Table 1).

Table 1: Wine Consumption by Country in 2011 (Trade Data and Analysis, 2011)

Country	Litres Per Capita in 2011	% of World Consumption in 2011
France	45.61	12.29%
Greece	26.00	1.15%
Germany	24.48	8.17%
Canada	11.70	1.65%
United States	10.46	13.47%
South Africa	7.23	1.45%

Differences in wine consumption in general have been found by gender (Atkin, Nowak, & Garcia, 2007; Bruwer, Saliba, & Miller, 2011; Garcia *et al.*, 2007; Thach, 2012), generation (Barber, Dodd, & Ghiselli, 2008; Teagle, Mueller & Lockshin, 2010; Bruwer *et al.*, 2011), lifestyle (Bruwer & Li, 2007), country (de Magistris *et al.* , 2011; Goodman *et al.*, 2008; Mueller, Remaud & Chabin, 2011), extent of knowledge of and experience with wine (Barber, Ismail, & Dodd, 2007), and choice criteria used in wine purchases (Lockshin & Cohen, 2011).

2.2 Internet penetration by country

Of the countries examined in this study, Internet penetration from any device, including mobile phones ranged from 87% in Canada to 41% in South Africa, as shown in Table 2. Penetration is the percentage of a country's population who are Internet users and the country rank is related to the number among the 211 countries in the world.

Table 2: Internet Users from Any Device 2012 (International Telecommunications Union, 2013; United States Census Bureau, 2012)

Country	Internet Penetration (%)	Rank	Number of Internet Users
Canada	87%	16	29,760,764
Germany	84%	22	68,296,919
France	83%	24	54,473,474
United States	81%	28	254,295,536
Greece	56%	71	6,029,983
South Africa	41%	108	20,012,275

2.3 Mobile Phone usage

In the United States, consumers have about equal access to mobile phones and personal computers. In the BRIC countries (Brazil, Russia, India, and China), there are almost four times as many mobile phone subscriptions as there are personal computers. In countries such as Italy and Germany, penetration rates of mobile phones exceed 100%, with some consumers owning more than one mobile phone (Kaplan, 2012). With this increase in mobile phones and mobile devices a related increase in mobile commerce is being observed (Venkatesh, Ramesh & Massey, 2003; Ngai & Gunasekaran, 2007).

Mobile users are increasingly accessing social networks using their mobile devices. A study by Adobe (2013) among mobile users in the United States, Canada, United Kingdom, France and Germany found that most had accessed social networks using a mobile device, ranging from 94% for those 18-29 years of age to 75% of those 50-64 years of age. In fact, Facebook was the second most visited web property that was accessed by smartphones and was the top smartphone app in the United States in August 2013 (ComScore, 2013).

While most, if not all of the Internet-enabled activities that can be accomplished through desktop and laptop computers can now be accomplished through smartphones and tablets, some activities are particularly well suited to mobile devices, such as SMS messages (or text messages), Quick Response (QR) codes and location-based services. Location-based services include consumers using their mobile devices to obtain directions based on their current location or mobile social media users who include location in their posts or who use a geo-social service such as Facebook to “check in” or announce their presence to a location (Pew Research Center, 2013). Mobile social media is defined as “a group of mobile marketing applications that allow the creation and exchange of user-generated content” (Kaplan, 2012), such that a geo-social service such as “Facebook Check In” is a subset of mobile social media.

In the United States, 74% of adult smartphone users obtain directions or other information based on their location while 12% of adult smartphone users utilize a geo-social service to “check in” to a location (Pew Research Center, 2013). However, there has been a decline in the use of geo-social services, from 18% of smartphone owners in 2012 to 12% in 2013 due to a concern about privacy (Pew Research Center, 2013). Adoption rates by audience segment for mobile technology differ depending on the application (De Marez *et al.*, 2007). Smartphone users under 50, those in higher-income households and college graduates are more likely to use location-based services (Pew Research Center, 2013). Through location-based services, a consumer can receive a location-based alert about a special offer available for one hour only on his/her favourite wine when he/she is close to a wine retailer, assuming the consumer has opted in. This is facilitated by mobile technology’s distinct capacity for targeting by both location and time (Ghose & Han 2011, Shankar *et al.*, 2010).

However, while location-based services may be attractive to marketers, permission from the consumer needs to be taken into consideration. In their article about success factors for mobile marketing, Scharl, Dickinger & Murphy (2005) reported that practitioner experts in mobile marketing deemed that permission-based campaigns are essential to the success of any mobile marketing communications strategy. Even with permission, marketers need to manage their mobile marketing such that the communications are not seen as too intrusive (Lamarre, Galarneau & Boeck, 2012). This applies equally to m-commerce. Unlike personal computers, mobile phones are very personal and constant companions to their owners (Shankar *et al.*, 2010), such that one’s mobile phone could be the first thing one checks upon waking up and the last thing one checks before going to sleep.

Buying a product and sharing information in real time are two inherent aspects of the new consumption experience (Pelet & Papadopoulou, 2013). Behaviours are increasingly affected by the way consumers use the web to make purchasing decisions. As more consumers access social media via mobile devices, it changes the way they research and shop for products and services (Pelet & Papadopoulou, 2013). M-commerce hasn’t surpassed e-commerce yet, but the rapid growth of mobile telephony has fuelled the expansion of mobile commerce (Lee & Benbasat, 2004). The mobile Internet has unique strengths because users can connect to it wherever and whenever they want (Kakihara & Sorensen, 2001). This offers companies the opportunity to conduct marketing campaigns that can drive both the company’s mobile and in-store traffic and sales in ever expanding possibilities. Applications (especially when they are free) have become a way of life for consumers and can address each stage of the consumer purchase funnel - awareness, engagement, consideration, conversion and loyalty (Pelet & Papadopoulou, 2013). Smartphone penetration favours the surge in mobile shopping of wine, as consumers can be connected to social networks with embedded location-based applications.

Location-based applications help brands to locate their fans and target their mobile strategy to quickly interact with shoppers. Consider the scenario of someone walking on a street receiving an SMS on her/his mobile phone, indicating that Restaurant X on the same street is offering her/him a glass of wine if s/he turns up within the next hour. The person who receives this alert is a fan of the X restaurant brand on a social network such as Facebook. S/he has opted to allow Facebook’s geo-social service to locate her/him anywhere anytime. At the same time, the restaurant has learned that this person is also fan of this particular wine, and has friends who also are fans of the food they cook and the wine they serve, so invitations are sent to these people as well. Availability of informative and communicative m-services regarding local gastronomy and wine consumption is also important for tourists, a fact that highlights the importance of the tourism sector to enhance wine consumption (Katsoni & Dionysopoulou, 2013).

2.4 Online wine marketing

There are differences between online and in-store wine purchasing habits, with trust being important for the first time online buyer (Quinton & Harridge-March, 2008). Online wine purchases also tended to be larger, likely due to shipping charges (Stening & Lockshin, 2001). With rising online wine sales (Berglund & Tinney, 2008), e-commerce is becoming more widespread in the wine industry with a variety of tools available to provide customer interaction and influence, such as social networks, blogs, vlogs, podcasts and online virtual communities (Thach, 2009). Although adoption of these tools in the United States has been moderate, Thach (2009) found that the most commonly used tool was wine vlogs or wineries featuring videos on their websites. More recently Wine.com has launched its “customized pages featuring personalized product recommendations for individual customers. Customers who log into the site will receive unique recommendations based on their recent purchases, product searches and purchases made by customers deemed similar to them. Another recent site addition made to enhance the customer shopping experience is the Wine.com Tasting Room, an educational resource to help customers learn about and explore new wines” (Technology Business Journal, 2012). Quinton & Harridge-March (2008) recommend that online wine retailers add avatars to their websites to improve the customer’s interaction experience. Many of the tools also facilitate the development of online wine communities and interaction amongst wine consumers (Horowitz, 2012). Recent studies on social media recommend that wine companies need to be involved with and manage the interaction with consumers through social networks (Reyneke *et al.*, 2011; Thach, 2010). However, another study among 18 product categories found that only 0.5% of consumers were engaged with the brands on Facebook (Nelson-Field & Taylor, 2012).

A 2011 study (Pelet & Lecat, 2012) on online wine consumption amongst students in France found limited evidence of online wine activities. Only 7.4% of respondents were members of a wine group or community. Most of the respondents ‘never’ used the Internet to look for information on wine (82.1%). When asked what would be important for purchasing wine via their mobile phone, 72.6% of them named on-time delivery to develop their trust. The fact that the wine is delivered in good condition was important to 76% of respondents. Similarly an Australian study found that only 12% of respondents had purchased wine from a website and the primary use of the Internet was for information searches and price comparisons (Bruwer & Wood, 2005). Thus while the wine industry appears to be embracing e-commerce technologies and tools, consumer use thereof seems limited.

2.5 Influences of online wine consumption

Various demographic attributes have been linked to the online wine consumer. Bruwer & Wood (2005) found the Australian online wine consumer to be predominantly male, aged 35 – 44, better educated and more affluent than the average online consumer. Trust has been found to be a major influencer of online wine purchases (Quinton & Harridge-March, 2003), with images and reputation of the wine-seller being particularly important. Recommendations by family and friends enhance trust more than media recommendations (Quinton & Harridge-March, 2008). High price was also found to influence trust particularly of unknown wine providers (Quinton & Harridge-March, 2008). Also in relation to the influence of price, Lynch and Ariely’s (2000, p. 100) experiment found that “making it easy for consumers to compare across stores need not intensify price competition.” Experience with and high usage of the Internet have been found to be positively related to online wine purchasing (Bruwer & Wood, 2005; Quinton & Harridge-March, 2008). However, we could not find empirical studies relating to online buying behaviour of wine, consistent with the conclusions of Lockshin &

Corsi (2012) who wrote that it would be important to conduct more studies on the differences between on-line and off-line purchasing, as this would improve the strategies retailers should adopt to improve sales, including direct wine sales by wineries.

3. RESEARCH METHOD AND ANALYTICAL TECHNIQUE

To answer our research question, a quantitative study examined mobile phone ownership, wine purchasing and consumption, and wine purchasing via mobile phones across six countries each of which varies in terms of wine consumption levels (Trade Data and Analysis, 2011), Internet penetration (International Telecommunications Union, 2013; United States Census Bureau, 2012) and mobile phone usage (Adobe, 2013; ComScore, 2013; Kaplan, 2012). This research involved 2,853 respondents from six countries, including France, Germany, Greece, South Africa, the U.S. and Canada. Data was collected between October 1 and December 15, 2013, using both personal and online questionnaires. The online survey resided on a landing page designed using responsive web design (e.g. adaptable to all screen sizes and devices). The questionnaire was structured into three sections: (1) use of mobile phone (2) wine purchasing and consumption and (3) m-wine purchasing.

Since the study objective was to examine wine purchasing and mobile phone usage, only participants who were above the legal drinking age in their country were included in the analysis. Non-probability criterion-based purposive sampling was used because it allowed the researchers to intentionally select participants who have experience with the central phenomenon or the key concept being explored (Hair, Bush, & Ortinau, 2009; Patton, 2002). The sample included a large number of students as they are active Internet and mobile users amounting to 42.7% of total participants. Internet users tend to be young adults with a 95% Internet usage penetration within the age group of 18–29 (Lenhart *et al.*, 2011; Pew Research Center, 2013). Hence, though our sample is heavily weighted toward younger subjects, it is argued that they are an important group of online consumers (Delafrooz *et al.*, 2010) and are useful as a sample for empirical studies in m-commerce, in line with previous research (e.g. Kim *et al.*, 2008).

3.1 Participant characteristics

The initial sample size was 3317. An initial screening for legal drinking age and ownership of a smartphone for online access resulted in 464 unusable responses. The final sample was 2853 responses. There were 870 participants from France, 645 from Greece, 502 from Germany, 306 from Canada, 296 from South Africa and 234 from the United States. The sample comprised 61% females and 39% males. Fifty-one percent of participants were aged under 25 and 19% were aged between 25 to 34 years. Eighty-one percent were Caucasian. The second largest ethnic group was Middle Eastern and Latin American (MELA), comprising 8%, followed by Asian and African at 6% and 4%, respectively. Seventy-one percent of respondents live in Western Europe, 19% in North America and 10% in Africa.

4. RESULTS AND ANALYSIS OF THE QUANTITATIVE STUDY

To attain our stated objective of understanding consumer behavior using smart phones and m-wine purchasing, we asked participants to respond to close ended questions about the type of mobile phone ownership, contract and smart phone usage. Dichotomous ordinal data was transformed where 1 represented 'Yes' and 0 represented 'No'. Cross-tab analysis was performed to explore how phone ownership, contract type and usage were represented by six countries. We employed a non-parametric method, Kruskal-Wallis, to compare phone

ownership and usage across six countries for ordinal data types. Wine consumption was examined, as well as m-wine purchasing. Data analysis involved descriptive statistics, cross-tabs and validity tests, one-way analysis of variance (ANOVA) with Tukey post hoc test for metric data and Kruskal-Wallis test for non-parametric data. One-way analysis of variance is deemed suitable since the objective of the study was to compare differences between countries (or groups) and to understand where the groups differ via post-hoc analysis.

4.1. Mobile phone ownership and use

Mobile phone ownership varies across countries, Android is more popular in France and iPhone ownership is highest in the U.S. and Canada. Blackberry was rated high in South Africa where as Classic model was in France and Germany. Windows was also very popular in South Africa (See Table 4).

Table 3: Cross-tab of phone ownership by countries

N=2853 Mobile Phone Type	Nationality (%)						Total
	France	Germany	Greece	South Africa	the U.S.	Canada	
iPhone	31.7	38.6	41.6	36.8	48.7	48.0	38.8
Android	43.2	37.3	39.8	35.8	31.2	31.0	38.3
BlackBerry	4.3	7.6	6.2	11.5	9.4	7.5	6.8
Classic	19.1	13.1	10.2	11.1	7.3	11.4	13.4
Windows	1.7	3.4	2.2	4.7	3.4	2.0	2.6

Next we wanted to examine if the types of mobile ownership differ across the six countries. We employed the Kruskal-Wallis Test. The Kruskal–Wallis one-way analysis of variance by ranks is used for comparing more than two samples that are independent. The parametric equivalent of the Kruskal-Wallis test is the one-way analysis of variance (ANOVA). The aim is to find mean ranks that are significantly different from each other in terms of mobile ownership between countries. Participants from France and Germany differ in their ownership and use of Smartphone types except classic phones. These differences are statistically significant. The percentage of participants who owned iPhone also differed between South Africa and the U.S. $X^2(1, N =530) = 7.6, p =.006$. The percentage of participants from Greece and South Africa differed in their ownership and use of Blackberry Smartphone, classic model and Windows Smartphone (See Table 4).

Table 4: Cross-country comparison: type of smart phone ownership

Types of Mobile	Kruskal-Wallis Test by Nationality	Chi-Square	Sig.
iPhone	France vs. Germany	6.7	.009**
	South Africa vs. the U.S.	7.6	.006**
Android	France vs. Germany	4.7	.030*
	BlackBerry	France vs. Germany	6.7
Classic	Greece vs. South Africa	7.8	.005**
	Greece vs. South Africa	5.9	.015*
Windows	France vs. Germany	3.9	.049*
	Greece vs. South Africa	4.6	.032*

* $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

4.1.1 Mobile phone bills and payment

For French participants mobile phone contract type was split: 37% reported that they have pre-paid contract, 60% had a monthly contract and less than 5% reported having an annual

contract. German participants preferred monthly contract types more than any other form of contract. The majority of South African, Greek and U.S. participants reported monthly plans. Similarly, 40/60 for Pre-paid and monthly plan was observed in Canada.

4.1.2 Cross country comparison of mobile phone bills

Tukey’s multiple comparison shows that Canadian and German participants differ significantly from their French counterparts. Further, U.S. and Canadian mobile phone bills differ significantly from the French, German and Greek in US dollars (see Table 5). The U.S. and Canadian participants spent more on smart phone bills than French, German and Greek participants suggesting different levels of phone use. The average phone bill spent across the sample was \$60 per month and the average talk time (in hours) on smart phones per week was 13 hours.

Table 5: Cross-country comparison: Mobile Phone Bill paid per month (US \$)

Tukey HSD by Nationality	Sig.
France vs. the U.S.	.001**
France vs. Canada	.000***
Germany vs. the U.S.	.043*
Germany vs. Canada	.001**
Greece vs. the U.S.	.003**
Greece vs. Canada	.000***

* $p < 0.05$ ** $p < .01$ *** $p < .001$

4.2 Wine purchase and consumption

When asked how many bottles of wine were purchased in a typical month, the mean difference was significantly different between countries. Thirty-eight percent of French respondents within the drinking age reported buying no wine and the remainder reported buying only one bottle of wine per month. Sixty percent of respondents in Germany mentioned buying one bottle of wine and the remaining 40% bought two bottles of wine per month. Greek respondents varied in wine purchases per month: 37% bought two bottles, whereas 58% reported buying three to four bottles of wine per month. South African respondents bought more wine compared to the other six countries with 34.8% reporting they purchased four bottles; 48% reported five bottles; and 17.2% bought six bottles of wine per month. 9.8% of all respondents from the US mentioned they bought more than 7 bottles of wine per month. Interestingly all respondents from Canada reported that they did not buy wine despite being in legal drinking age. When participants were asked to reveal glasses of wine consumed during a week 80% said they drink 0-5 glasses, 14% mentioned drinking 6-10 glasses of wine/ week, 2.6% revealed drinking 11-15 glasses of wine, 1.5% reported drinking 16-20 glasses per week and another 1.5% reported drinking more than 20 glasses of wine per week. In terms of drinking South African respondents reported drinking more wine than respondents from France, Germany and Greece.

Table 6: Cross-country comparison: glass of wine consumption per week

Tukey HSD by Nationality	Sig.
France vs. South Africa	.000***
Germany vs. South Africa	.000***
Greece vs. South Africa	.000***

* $p < 0.05$ ** $p < .01$ *** $p < .001$

4.3 Wine and mobile

The majority of wine was purchased in supermarkets, accounting for 56% of total responses. 21% reported buying wine from hypermarkets and 12% chose wine shops to purchase wine,

3% used laptop/desktop–Internet to purchase wine and only 2% reported purchasing wine via mobile apps (See Table 8). To investigate m-commerce, respondents were asked to state what types of product/services were purchased via a smart phone: 11% (clothes), 10% (books), 9% (travel product) and only 2% reported buying wine using Internet enabled smart phones.

Table 7: Cross-country comparison: modes of wine purchase

N=2853	Frequency (%)
Supermarket	55.9
Hypermarket	21.0
Wine Shop	11.9
Internet	3.0
Mobile Apps	1.6
Wine Fair	.5
Convenience Store	.4
Winery	.4
Others	5.3

5. CONCLUSION, LIMITATIONS AND IDEAS FOR FUTURE RESEARCH

This paper examined the extent of m-commerce in wine purchasing, the combination of smart phones and social media and the consumer as an omnichannel shopper in wine purchasing, using comparisons among six countries: France, Germany, Greece, South Africa, United States, and Canada.

This empirical examination across six countries established a low prevalence of m-wine purchasing which suggests m-wine purchasing remains in an infancy stage. The infancy of m-commerce suggests that a solution to gather and mine data about m-consumption is yet to be found. Active m-commerce users browse and purchase a few items on the mobile web but many brands still don't have the proper interface and many consumers still prefer a bigger screen. As a result, it is not easy to link user comments to their browsing and purchasing history.

5.1 Limitations and future research

Our research was limited to 6 countries. Interesting additions for future research could be China and Russia, both with growing wine consumption. Further, this examination was restricted to understanding device use and wine purchasing behaviours. Future research is recommended to examine attitudes towards m-wine purchasing to identify the benefits and barriers of m-wine purchasing. Specifically, a comparison between m-wine purchasing users and non-users is recommended to understand how barriers can be overcome to further extend uptake of m-wine purchasing behaviour.

The topic of m-commerce, social media and wine has future research potential because it is a growth area. With the tech-savvy millennials now consuming 24% of the total volume, according to the Wine Market Council and with AC Nielsen in March (2011) indicating that Internet and mail-order are representing 10% of the total wine sales in the UK, these data show that Internet purchasing is becoming increasingly important. Social networks highlight the advantage of good service on an m-commerce website, as this translates into satisfied customers who will become brand advocates. When customers tell others about a negative experience, they often do so on social networks. This is why social networks must be taken into account when planning an m-commerce strategy. Consumers can be quick to punish those who are slow to respond to questions or fail to deliver their purchases on time, for example. Wine

marketers that stumble stand to lose business to rivals and become vulnerable to negative social buzz.

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