Determining the predictors of wine purchase intention through the use of meta-analysis

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Abstract

Purpose – Wine consumer behavior has long been a topic of discussion among scholars and industry professionals aiming to understand the underlying predictors of key behavioral outcomes. To help explain wine consumer behavior, concepts such as involvement, expertise, loyalty, satisfaction and perceived risk are often examined. The overarching objective of this study is to determine the relationship between these predictors and their impact on wine purchase intention utilizing a meta-analytical structural equation modeling (MASEM) technique.

Design/methodology/approach – As MASEM provides substantive evidence regarding the relationships between theoretical constructs through the combination of multiple studies, the researchers' aim is to make definitive statements about the predictors of purchase intention.

Findings – Findings revealed several relationships that support previous research but also identified relationships that contradict previous literature. This study contributes valuable insights into consumer behavior that wine brands can utilize to improve their marketing efforts.

Practical implications – Wine marketers with a greater understanding of the stronger predictors of purchase intention should be able to create marketing plans that drive wine sales.

Originality/value – Despite the abundance of research that has utilized these theoretical constructs to demonstrate their propensity for determining behavioral outcomes such as purchase intention, no previous attempts have synthesized this body of literature through the use of meta-analysis.

Keywords Consumer behavior, Wine, Loyalty, Satisfaction, Meta-analysis

Paper type Research paper

For over the past three decades, scholars examining wine marketing phenomena have aimed to identify theoretical constructs responsible for explaining underlying consumer behavior processes (Mitchell & Greatorex, 1988; Dodd, Pinkleton, & Gustafson, 1996; Brown & Getz, 2005; Bruwer & Buller, 2012; Afonso, Silva, Gonçalves, & Duarte, 2018; Yang & Choi, 2022). Indeed, the wine industry is particularly interested in studying the predictors of consumer purchase decisions, given the myriad of choices wine consumers face today. In addition, the wine industry firmly sits in hospitality and agriculture, further complicating purchasing decisions. Within the broad context of consumer purchase behavior is relatively well studied. However, wine purchase intention should be viewed as unique due to its hedonic nature (Bruwer & Alant, 2009), link to well-being (De Toni, Pompermayer, Lazzari, & Milan, 2022) and consumer attitudes (Olsen, Thompson, & Clarke, 2003).

The quantitative wine consumer behavior literature regularly considers a theoretical framework that examines involvement (Bruwer, Chrysochou, & Lesschaeve, 2017), expertise (Coppin, Audrin, Monseau, & Deneulin, 2021), loyalty (Quadri-Felitti & Fiore, 2013), satisfaction (Yuan & Jang, 2008) and perceived risk (Bruwer, Coode, Saliba, & Herbst, 2013;

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Bruwer, Fong, & Saliba, 2013). These concepts are often discussed together or separately as the dominant predictors of wine purchase behavior. Despite a wealth of research suggesting that these constructs are fundamental in explaining wine consumer behavior, no previous attempts have synthesized this concept via meta-analysis. Meta-analysis allows researchers to make definitive statements about the relationship between theoretical constructs. Even more so, Meta-analytic structural equation modeling (MASEM) further provides substantive evidence regarding constructing relationships through synthesizing correlations and fitting SEM. (Cheung & Chan, 2005). Thus, the overarching objective of this study is to determine the relationship between these predictors and their impact on behavioral outcomes in wine purchase intention. The aggregated results of a wide range of wine purchasing literature will provide a holistic picture of the importance of these variables in purchasing contexts. Furthermore, wine researchers and marketers will gain a greater understanding of the critical determinants of wine purchase intention. This understanding is highly salient for wine industry managers and leaders as they aim to increase sales.

The paper begins with the reviewed literature. After introducing the major drivers of wine purchase intention, hypotheses are proposed to guide the research. Following the steps of MASEM, results are discussed, and subsequent models are proposed. The discussion relates the results to past research and enforces the implications of the results from a practical and theoretical standpoint. The paper concludes with the limitations of the study and directions for further research.

Literature review

Wine industry

After a challenging year in 2020 due to the Covid-19 pandemic, the wine industry in 2022 saw recovery and growth for the premium wine market (McMillan, 2023). During the pandemic, wineries were tasked with learning how to pivot their strategies to conform to this new reality. Alongside this shift, some sale trends that were observed over the past two years include increased premium wine sales, declined on-premise wine sales and an increase in e-commerce sales (McMillan, 2023). In the future, the wine industry needs to encourage purchasing behavior to promote industry growth. In order to encourage purchase behavior, first, the antecedents of purchase intention must be identified. Given that wine may be seen as an intimidating product for consumers (Taylor, Bing, Reynolds, Davison, & Ruetzler, 2018), it is pertinent to understand consumers' perceptions of wine better, what factors influence that perception, and how those perceptions may lead to purchase intention.

Expertise

Expertise, also called knowledge, encompasses the information an individual has learned from their experience with wine (Brucks, 1985). Accordingly, it consists of three dimensions: objective (what an individual knows), subjective (what an individual believes they know) and prior experience (the number and variety of unique encounters). While there exists competing conceptualizations and definitions in the literature (e.g. Alba & Hutchinson, 1987), researchers examining wine consumer behavior have most often relied on one or more categories from Brucks' (1985) seminal paper (Dodd, Laverie, Wilcox, & Duhan, 2005; Famularo, Bruwer, & Li, 2010; Bruwer & Buller, 2012; Bruwer *et al.*, 2017). Prior experience is often conceptualized as a related but distinct concept to knowledge. These streams of research have been found to explain variance in many outcomes, such as information search (Dodd *et al.*, 2005; Barber, 2009), utilization of wine cues (Bruwer & Buller, 2012; Bruwer *et al.*, 2017) and wine purchasing (Vigar-Ellis, Pitt, & Caruana, 2015; Kim & Bonn, 2015; Pucci, Casprini, Nosi, & Zanni, 2019). For this paper, only past research that explored wine purchasing was included in the sample.

Involvement

Much of the literature (e.g. Sparks, 2007; Taylor *et al.*, 2018; Wu & Liang, 2020) utilizes Zaichowsky's (1985) unidimensional conceptualization that defines involvement as "A person's perceived relevance of the objective based on inherent needs, values, and interests" (p. 342) and items from her Personal Involvement Inventory (PII) scale. Other work, such as Brown, Havitz, and Getz (2007), adopted items from Laurent and Kapferer's (1985) Consumer Inventory Profile (CIP) scale on ego involvement, in addition to using a focus group to further generate items contextualized to the idiosyncrasies of high-end wine consumers. Like knowledge, it is well-established that involvement can predict important behavioral outcomes, including product purchase intention (Hollebeek, Jaeger, Brodie, & Balemi, 2007; Acuti, Mazzoli, Grazzini, & Rinaldi, 2019), visitation and revisit intention (Santos, Ramos, & Almeida, 2017; Afonso *et al.*, 2018). High involvement with wine can be viewed as a person being more engaged with wine purchases. In contrast, consumers with low involvement with wine tend to put little effort into their wine information search process (Bonn, Kim, Kang, & Cho, 2016).

Loyalty

Given the vast amount of literature discussing loyalty, there does not exist a universally agreed upon definition; however, there are generally accepted concepts when defining loyalty. Brand loyalty, as defined by Aaker (1996), is the "combination of purchase behavior, consumer switching costs, customer satisfaction, and brand linking." Similarly, Dick and Basu (1994) define a loyal consumer as one that has a strong attitude toward a particular product or service and displays repetitive, intentional behavior. Dick and Basu (1994) also determined three consequences of loyalty; the motivation to search for additional information, resistance to counter-persuasion and word-of-mouth recommendations. Therefore, loyalty can be viewed as not only a powerful predictor of purchase intention for an individual but also can lead others toward loyal behaviors.

Moreover, Oliver (1977) links loyalty to rebuying and re-patronizing intentions and goes as far as to diagram a four-stage loyalty model that demonstrates observable loyalty-driven behaviors (1999). The commonality between these definitions and the plethora of additional conceptualizations in other bodies of literature is that loyalty is measured by both an attitude and behavior propensity. Hence, loyalty is posed as a fundamental determinant of consumer purchase behavior.

In the wine industry, consumer product loyalty is an achievement that brands strive for as it can indicate that a consumer has an emotional bond to their product and will demonstrate purchase and repurchase behavior (Bruwer, Coode *et al.*, 2013; Bruwer, Fong *et al.*, 2013). Previous research examining the role loyalty plays in the wine industry discusses loyalty in the context of purchase intention (Espejel & Fandos, 2009; Passagem, Fernandes Crespo, & Almeida, 2020) and visitation intention (Quadri-Felitti & Fiore, 2013). Interestingly, several previous studies looking at loyalty include wine purchasing behavior as part of the operationalization (Lee & Chang, 2012; Drennan *et al.*, 2015). In short, previous research has demonstrated that brand loyalty effectuates behavior intentions in the wine industry.

Satisfaction

Customer satisfaction is well studied and has been defined in several different ways in previous literature; however, as denoted by Fornell (1992), researchers most often view satisfaction as a post-evaluation of a purchase or similar transaction. Hausknecht (1990) provided a synthesis of several measures of satisfaction that parsed out key distinctions in conceptualization. In doing so, Hausknecht demonstrates that satisfaction can also be achieved if a particular outcome conforms to one's expectations (Oliver, 1977; Day, 1984), and

a lack of satisfaction would occur from the deviation of that said expectation (Bearden & Teel, 1983; Tse & Wilton, 1988). Oliver (1999a, b) succinctly defines satisfaction as a judgment based on the combined outcomes of expectations, performance and disconfirmation. Accordingly, satisfaction plays a key role in the purchase decision process and often functions as an evaluation of a product or service in a wide array of industries. Furthermore, existing research on satisfaction presents convincing evidence that it is viewed as a precursor to product loyalty (Aaker, 1996; Torres-Moraga, Vásquez-Parraga, & Zamora- González, 2008; Brandano, Osti, & Pulina, 2019). In consumer behavior research, existing studies on satisfaction within the wine industry present evidence of satisfaction's propensity to drive purchasing behavior (e.g. Nowak & Newton, 2006; Gill, Byslma, & Ouschan, 2007; Yeh & Jeng, 2015; Bufquin, Back, Park, & Nutta, 2018; Leri & Theodoridis, 2019).

Perceived risk

The role of perceived risk is often considered when evaluating consumer behavior. Perceived risk acts as a negative attitude juxtaposed with the positivity of loyalty and satisfaction. At its simplest definition, perceived risk is "the consumer's perception of the uncertainty and adverse consequences of buying a product (or service)" (Dowling & Staelin, 1994, p. 119). Mitchell and Greatorex (1993) measured overall risk as the amalgamation of certainty and consequences and established four types of risk: financial, functional, physical and social (1988). Furthermore, Dowling and Staelin (1994) posit that when faced with uncertainty, consumers feel a greater sense of risk and worry about the consequences of a purchase. During the decision-making process, there are many uncertainties surrounding the purchase of wine (Atkin & Thach, 2012), and consequently, consumers feel a sense of risk when purchasing it. Consumers who experience a sense of risk when purchasing a particular item or service will feel a lower sense of confidence in their choice and will often employ risk-reducing strategies to combat their uncertainty.

Unlike loyalty and satisfaction, perceived risk was not widely explored by scholars in the wine industry until the 1980s (e.g. Gluckman, 1986; Mitchell & Greatorex, 1988). Early discussions focused on building a structured approach to analyzing risk in the wine purchasing process. Later work by scholars looking to further explore risk reduction strategies for wine consumers continued to build upon these original research approaches (e.g. Johnson & Bruwer, 2004; Lacey, Bruwer, & Li, 2009; Atkin & Thach, 2012; Bruwer, Fong *et al.*, 2013). In addition, current research has explored how consumers handle perceived risk regarding wine purchase intention (Johnson & Bruwer, 2004).

Hypotheses

Given the research and findings in the literature discussed above, the following hypotheses are proposed to guide the research.

H1. Higher levels of perceived expertise will lead to wine purchase intention.

H2. Higher levels of perceived involvement will lead to wine purchase intention.

H3. Higher levels of loyalty will lead to wine purchase intention.

H4. Higher levels of perceived satisfaction will lead to wine purchase intention.

Method

Search procedure and inclusion criteria

To obtain a broad sample, the researchers collected studies through a comprehensive literature search (Podsakoff, MacKenzie, & Bommer, 1996). The aim of the search was to

collect empirical findings involving wine purchase intention. First, a review of top hospitality journals was conducted, starting with journals cited in previous literature reviews with a wine business research focus. Second, a similar search for studies was conducted in eight academic research databases. Keywords included in these searches are listed below. Finally, using the snowballing technique, studies cited in the manuscripts located during the first stages were examined to find additional papers. Similar to other meta-analyses (Gui, Luo, Zhang, & Deng, 2020), the papers had to be published in peer-reviewed journals and contain the proper variables and statistics needed for the analysis. Journals are listed in Table 1.

To be included in the sample of studies, studies had to meet a defined set of criteria.

(1) Studies had to be empirical; thus, case studies, conceptual articles and literature reviews were excluded.

(2) Studies had to provide statistics that measure the association between two or more variables in the model, such as the Pearson product-moment correlation coefficient, independent *T*-tests and one-way ANOVA statistics.

(3) Studies had to include at least two variables that were defined in ways consistent with the construct definitions that were used.

(4) Studies had to be based on consumers' evaluation of wine products as opposed to other alcoholic beverages.

(5) Studies had to report the variables of interest at the individual consumer level; thus, studies at the firm level of analysis were excluded. The researchers searched for studies using terms such as "wine," "wine purchase," "wine sales," "wine marketing," "wine purchase intention," "wine behavior," "wine attributes," "wine consumer," "wine preference," "wine consumer behavior," and "wine choice."

Journals
Annals of Tourism Research British Food Journal
Cornell Hospitality Quarterly Current Issues in Tourism Food Quality and Preference
International Journal of Contemporary Hospitality Management
International Journal of Culture
International Journal of Hospitality Management International Journal of Tourism Research International
Journal of Wine Business Research International Journal of Wine Marketing
Journal of Cleaner Production
Journal of Destination Marketing and Management Journal of Hospitality and Tourism Management Journal of
Hospitality and Tourism Research Journal of Travel and Tourism Marketing
Journal of Travel Research Journal of Wine Research Tourism and Hospitality Research
Tourism Management
Tourism Management Perspectives Tourism Review
Research Databases
EBSCOHost JSTOR
Sage Journals Online Science Direct Scopus
SpringerLink Web of Science
Wiley Online Library
Not Published in Peer-reviewed Work
ProQuest Dissertations Global Google Scholar
RePEC
Druid SSRN

Source(s): Table by authors

Table 1. List of journals included in MESEM study of the predictors of wine purchase intention

The search procedure resulted in 127 manuscripts that met the initial screening criteria. The final sample consisted of 62 studies that met the required criteria. A list of studies included in the sample and their characteristics are shown in Table A1 in Appendix.

Measures

The constructs included in the study are listed below.

Knowledge refers to a consumer's wine knowledge and is measured subjective and objective wine knowledge. *Prior Experience* refers to one's prior exposures to wine that may affect their purchasing confidence and is measured as prior wine experience, personal/past wine experience, prior wine activities, wine consumption frequency and wine purchase frequency. *Involvement* refers to a consumer's engagement with wine and is measured as purchase and product involvement as well as interest/involvement with wine. *Loyalty* refers to one's allegiance to a particular brand, region, or style and is measured as loyalty, brand loyalty and brand love. *Satisfaction* is the feeling of being satiated or content and is measured as self-reported customer satisfaction. The measure of satisfaction did not include self-reported emotions such as delight or arousal. *Risk Perception* refers to the amount of risk felt by a consumer when making a wine purchasing decision and is measured as perceived risk, time risk, social risk, functional risk, psychological risk, risk aversion and tolerance of ambiguity. Finally, i*ntention* refers to a consumer's intent to make a wine purchase and is measured as the intention to purchase wine, online purchase intention and repurchase intention.

Statistical analysis

MASEM was selected as the best fitting methodology because it is the strongest tool to summarize and extend existing knowledge. There has been a significant increase in research efforts focusing on wine consumer behavior from academics, industry professionals and consumers (Lockshin & Corsi, 2012). Therefore, attempts at synthesizing the different results of this volume of studies should be made. As explained by Bergh *et al.* (2016), MASEM provides a synthesis of effect sizes in terms of greater strength and directionality than traditional meta-analysis or SEM alone. Furthermore, since MASEM includes an expansive data pool for a given relationship, it can maximize external validity (Bergh *et al.*, 2016). Indeed, MASEM provides findings with greater statistical power that can be tested using alternative model structures (Bergh *et al.*, 2016). Hence, this analysis is valuable in the wine sector when determining what drives consumer behavior.

The term 'meta-analysis' was initially coined by Glass (1976), where he referred to this secondary analytical research as the "statistical analysis of a large collection of analysis results from individual studies for the purpose of integrating the findings." (p. 3) Through the use of MASEM, meta-analytical models can be extended to incorporate the covariance between predictors, test mediation and compare different theoretical models. MASEM is conducted in two stages; in the first stage, a pooled correlation matrix is estimated; in the second stage, an SEM model fits into the pooled correlation matrix (Cheung & Chan, 2005).

The fixed-effects meta-analytic model assumes that all studies were conducted in the same setting and conditions and that all errors are due to nonstochastic sampling errors (Wilson & Lipsey, 2001). Because the assumptions of the fixed effects model are unrealistic in this case, the random-effects meta-analysis model was used, which estimates a random-effects heterogeneity variance to account for unexplained differences between each of the studies beyond sampling error (Bergh *et al.*, 2016). When a study reports more than one effect size for a relationship between two constructs, these effect sizes are not statistically independent. For this reason, including each effect size on the sample would violate the assumption of independence of data points in a regression model. To account for the dependence between

effect sizes from the same sample of respondents, the researchers used a three-level meta-analytic model in which the random effects variance estimate is bifurcated into a between-study heterogeneity variance component and a within-study heterogeneity variance component (Wilson, Polanin, & Lipsey, 2016).

Meta-analyses were conducted following the procedures denoted by Hunter and Schmidt (2004). In the first stage, the researchers estimated the pooled correlation matrix and its asymptotic covariance matrix, while during the second stage, the researchers applied weighted least squares to fit the conceptual model onto the pooled correlation matrix using the asymptotic covariance matrix as the weight matrix. Using the asymptotic covariance matrix as the weight matrix when fitting the conceptual models allowed the researchers to parcel out more weight to relationships in the pooled correlation matrix that are based on a larger sample size by incorporating information about the standard error of each relationship on the pooled correlation matrix. The pooled correlation matrix is shown in Table 2. A series of meta-regression analyses were conducted using the metafor package (Viechtbauer, 2010) in R following the best practices recommended by Gonzalez-Mulé & Aguinis (2018). SEM analyses were conducted using the metaSEM package (Cheung, 2015) in R.

Results

The results section is organized as follows. First, the authors discuss the direct effect model to understand how each of the measured variables relates to wine purchase intention. Next, a mediated model was estimated with satisfaction, loyalty and risk perception mediating

	(1)	(2)	(3)	(4)	(5)	(6)
(1) Knowledge						
(2) Experience						
r	0.45					
N	29,205					
K	17					
(3) Involvement						
r	0.39	0.41				
N	8,167	6,254				
K	12	9				
(4) Loyalty						
r	0.06	0.23	0.32			
N	8,903	9,270	3,461			
K	4	4	6			
(5) Satisfaction						
r	0.07	0.31	0.34	0.53		
N	5,183	7,361	2,868	12,371		
K	5	8	5	11		
(6) Risk						
r	−0.17	−0.22	−0.33	−0.27	−0.31	
N	1,727	1,466	1,009	491	641	
K	3	4	4	3	3	
(7) Intention						
r	0.07	0.54	0.31	0.57	0.23	−0.10
N	6,314	8,746	883	1,414	3,057	3,160
K	4	5	3	6	6	7

Note(s): r = mean weighted effect size; N = number of observations; K = number of studies
Source(s): Table by authors

Table 2. Pooled correlation matrix

variables toward wine purchase intention. Finally, a *post-hoc* model was estimated based on the relationships observed in the mediated model.

The *direct effect* model estimates paths from all the variables in the conceptual model directly to purchase intention. The results of the direct effect model suggest that only prior experience ($\beta = 0.58$; $p < 0.001$) and loyalty ($\beta = 0.56$; $p < 0.001$) have a significant effect on purchase intention.

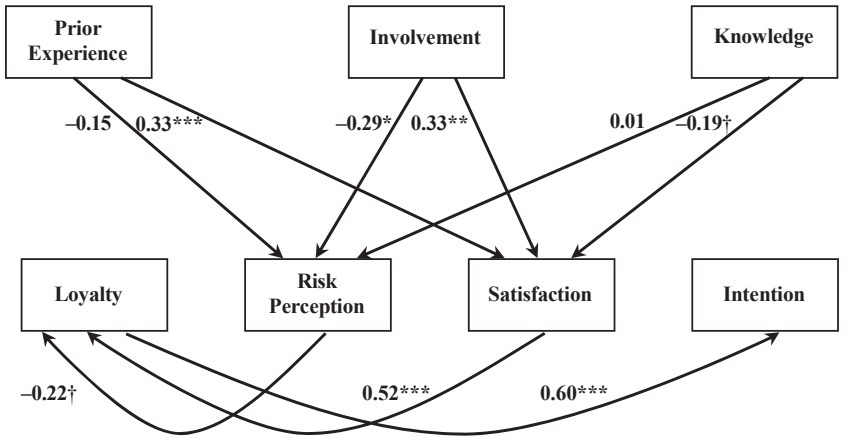
A mediated model was estimated to test the mediating effect of satisfaction, loyalty and risk perception on the relationship between the three exogenous variables (knowledge, prior experience and involvement) and purchase intention. In the mediated model, the three exogenous variables only indirectly affect purchase intention, fully mediated by satisfaction and loyalty. The results of the mediated effect model suggest that the mediated model (χ^2 (3) = 16.13; $p < 0.001$; CFI = 0.96; RMSEA = 0.01; SRMR = 0.08) attains a better fit than the direct effect model (χ^2 (9) = 79.39; $p < 0.001$; CFI = 0.78; RMSEA = 0.02; SRMR = 0.17). The results suggest that prior experience ($\beta = 0.43$; $p < 0.001$) and involvement ($\beta = 0.26$; $p < 0.05$) have a positive and significant effect on loyalty ($\beta = 0.80$; $p < 0.001$) which in turn has a significant correlation with purchase intention. Knowledge ($\beta = -0.20$; $p < 0.10$) is shown to have a negative, although only slightly significant, effect on loyalty. In addition, the results of the mediated model suggest that involvement is the only significant predictor of risk ($\beta = -0.28$; $p < 0.05$), but in this model, perceived risk ($\beta = 0.-.03$) is not a significant predictor of purchase intention. Prior experience ($\beta = 0.24$; $p < 0.05$) and involvement ($\beta = 0.29$; $p < 0.05$) are positively and significantly correlated with satisfaction, but satisfaction is not a significant predictor of purchase intention.

The researchers fit a *post-hoc* model in which the effect of perceived risk and satisfaction on purchase intent is fully mediated by loyalty. The results of the *post-hoc* model shown in Table 3 and Figure 1 suggest that perceived risk is negatively correlated with loyalty ($\beta = -0.22$; $p < 0.10$), while satisfaction is positively correlated with loyalty ($\beta = 0.52$; $p < 0.001$). Knowledge ($\beta = -0.19$; $p < 0.10$) is shown to have a negative effect on satisfaction. The *post-hoc* model (χ^2 (8) = 27.04; $p < 0.001$; CFI = 0.94; RMSEA = 0.01; SRMR = 0.10) fits the data better than the mediated model (χ^2 (3) = 16.13; $p < 0.001$; CFI = 0.96; RMSEA = 0.01; SRMR = 0.08).

Table 3.
Post-hoc model MASEM results

	Coefficient	SE	95%CI	*z* value	*p* value
Loyalty - Intention	0.60***	0.09	0.43 : 0.77	7.02	0.00
Risk - Loyalty	−0.22†	0.11	−0.45 : 0.00	−1.95	0.05
Satisfaction - Loyalty	0.52***	0.07	0.38 : 0.66	7.41	0.00
Experience - Risk	−0.15	0.12	−0.39 : 0.09	−1.21	0.22
Involvement - Risk	−0.29*	0.12	−0.52: −0.05	−2.39	0.02
Knowledge - Risk	0.010	0.15	−0.28 : 0.29	0.03	0.97
Experience - Satisfaction	0.33***	0.09	0.15 : 0.50	3.60	0.00
Involvement - Satisfaction	0.33**	0.11	0.11 : 0.54	3.03	0.00
Knowledge - Satisfaction	−0.19†	0.12	−0.42 : 0.04	−1.66	0.10

Note(s): χ^2 (8) = 27.04; $p < 0.001$; CFI = 0.94; RMSEA = 0.01; SRMR = 0.10; N = 34,845
SE = standard error; 95%CI = 95 percent range confidence interval; CFI = comparative fit index; SRMR = standardized root mean square residual; N = number of observations; RMSEA = root mean square error of approximation
***$p < 0.001$; **$p < 0.01$; *$p < 0.05$; †$p < 0.10$
Source(s): Table by authors



Source(s): Figure by authors

Figure 1.
Post-hoc model

Discussion

This paper describes how wine business researchers can leverage MASEM and provide new conceptual illustrations regarding wine purchase intention. The results revealed several implications about wine purchase intention, the most important being that although many researchers attribute satisfaction to being a strong predictor of intention, the results demonstrate that satisfaction does not play a significant role in forecasting purchase intention. Many of the findings support previous results found in other papers but also identified several relationships that contradict those established in preceding bodies of literature. These are discussed further below.

Findings demonstrate that loyalty is the strongest predictor of wine purchase intention. This was true for all three models that were tested. Thus, the researchers find support for H3. One explanation for these findings is that loyalty is often conceptualized with the preface of behavior intention as part of the definition; this is demonstrated as purchase or repurchase behavior (Aaker, 1996; Drennan *et al.*, 2015) and intention to visit or revisit (Oliver, 1977; Quadri-Felitti & Fiore, 2013). An alternative explanation for this result is simple since loyalty is an attitude felt with great vehemence, it stands to reason that it would significantly impact behavior. The data suggests that loyalty should be established as the key determinant of wine purchase intention.

Results from the *post-hoc* model show that loyalty is significantly and positively correlated with satisfaction, thus, confirming the findings in several other bodies of literature (e.g. Lee & Chang, 2012; Brandano *et al.*, 2019; Lau, Cheung, Pires, & Chan, 2019). Furthermore, as noted by Fornell (1992), satisfied customers are often loyal customers. Given this, it can be determined that satisfaction should be posited as a predicting variable when evaluating loyalty; this can be expected in both wine tourism, such as the findings of Lee and Chang (2012) corroborate and restaurant settings, as was studied in Lau *et al.* (2019).

Satisfaction has long been engrained as a determining factor of future intentions, and although previous work suggests that satisfaction is a predictor of wine purchase intention (e.g. Nowak & Newton, 2006; Gill *et al.*, 2007; Yeh & Jeng, 2015; Bufquin *et al.*, 2018; Leri & Theodoridis, 2019), the results do not support satisfaction as a significant predictor of purchasing intention. In fact, in the mediated model, satisfaction is shown to have a negative, although insignificant, relationship with purchase intention. Consequently, H4 is not

supported. Regarding affecting wine purchase intention, the difference between loyalty and satisfaction is perhaps due to loyalty being conceptualized and operationalized with both attitudinal and behavioral aspects, whereas satisfaction is most often viewed as a singular judgment (Oliver, 1999a, b; Tse & Wilton, 1988). Results from this study would suggest that scholars might need to adjust the importance they place on satisfaction when predicting consumer behavior.

Scholars pointing to the role of perceived risk in the wine purchasing process demonstrate the propensity of certain elements to reduce risk. By demonstrating in the *post-hoc* model that there is a significant and negative relationship between loyalty and risk perception, the researchers extend the findings of Johnson and Bruwer (2004), who identified that brand loyalty is a key risk-reducing strategy; this suggests that wine consumers who feel loyal to a particular wine will not feel uneasy or feel a sense of risk when making that purchase. These results confirm the findings of previous literature (Quester & Lin Lim, 2003; Bruwer, Coode *et al.*, 2013; Bruwer, Fong *et al.*, 2013; Bruwer & Buller, 2013), demonstrating the importance of utilizing involvement as a mechanism to reduce risk when purchasing wine. Findings are also consistent with the positioning of involvement as a risk-reducing strategy, as was found in the works of Quintal, Lee, and Soutar (2010) and Bruwer, Coode *et al.* (2013), Bruwer, Fong *et al.* (2013). Thus, individuals who have an interest and have invested time into a particular wine are more reassured with their purchase decision.

The results from this research suggest that wine knowledge has no significant effect on purchase intention. This result contradicts the work of both Kim and Bonn (2015) and Pucci *et al.* (2019), who concluded that higher levels of wine knowledge led to stronger purchase intention. However, these results support the findings of Wen and Leung (2021), who found no significant impact of wine knowledge on wine purchase decisions. However, the results do show a significant finding that increased wine knowledge culminates in diminished satisfaction. Similarly, increased wine knowledge leads to a decrease in loyalty. Given the decrease in satisfaction and loyalty, these findings demonstrate that as consumers' wine knowledge increases, their expectations of wine increase. Hence, purchasing a wine that does not meet the expectations of a knowledgeable consumer will lead to lower satisfaction upon consumption. Furthermore, they are more sensitive to brand switching and are likely to buy wines that are different or even unfamiliar to them.

In addressing the effect of prior experience when it comes to purchasing intention, the data shows that a consumer with prior experience is more likely to purchase. Thus, the researchers find partial support for H1, as in the direct model, prior experience has a positive and significant relationship with purchase intention, but knowledge has a negative, although the insignificant, relationship with intention. Unlike knowledge, the data suggest that prior experience will lead to greater satisfaction and loyalty. The results validate the work of Drennan *et al.* (2015) and Loureiro and Cunha (2017) by confirming that exposure and familiarity with wine are predicted to increase consumer satisfaction and loyalty.

Existing research on involvement demonstrates its propensity for predicting purchase intention (Hollebeek *et al.*, 2007; Santos *et al.*, 2017; Acuti *et al.*, 2019; Afonso *et al.*, 2018); however, the data suggests that there is no significant link between involvement and purchase intention. Therefore, H2 is rejected. However, the results do show that involvement and loyalty are positively correlated. This finding supports the work of Lee and Chang (2012) but opposes the results of Bruwer and Buller (2013). To provide insights into this relationship, Cox (2009) posits that commitment is a key factor of brand loyalty and, thereby, a consumer would display involvement tendencies with said brand. To further clarify, involvement tends to boost loyalty, but the increase in loyalty is not sufficient to drive purchase intent.

Implications and conclusion

This study aimed to explore commonly conceptualized variables that are used to predict consumer behavior, precisely wine purchase intention. To date, this is the only meta-analysis on this topic. Thus, the results offer insights into the interrelatedness between identified constructs. In addition, findings further help researchers understand which relationships are strongest when predicting which existing relationships are the strongest when predicting purchasing behavior. Finally, these results open the door to studies that want to pursue deeper insights into wine purchase intention. Such possibilities for future study ideas include exploring why satisfaction may not lead to purchase intention and how increased wine knowledge may lead to decreased loyalty.

Several interesting relationships were identified regarding purchasing behavior. These findings could prove valuable to wine brands as they strive to predict consumer purchasing behavior and improve marketing efforts. A quick overview of some of the key findings is discussed below. Further discussion on the most critical findings is discussed in greater detail in the following paragraphs. First, given that loyalty is the strongest predictor of purchase intention, brand loyalty needs to be poised as a critical goal for wine brands (Bianchi, Drennan, & Proud, 2014; Passagem *et al.*, 2020). Second, as satisfaction was not found to be a strong indicator of purchase intention, wine brands may want to rethink their marketing strategies if they are focused solely on gaining customer satisfaction. Third, given the insights about the relationships between satisfaction, loyalty and purchase intention derived from the data, the challenge wine brands face is positioning their brand to gain loyal customers to purchase and repurchase their wine. Finally, as it was found that increased wine knowledge leads to lower consumer loyalty and satisfaction levels, a dilemma is posed as education is universally valued. However, when it comes to purchasing behavior, it may detract from purchase intentions. A possible solution could be for brands to appear more empathetic and socially engaging instead of cultivating a more informed consumer (Santos *et al.*, 2017; Pelegrín, González-Menorca, & Meraz, 2019; Lu, Chi, & Zou, 2019; Pelet, Durrieu, & Lick, 2020).

Perhaps the study's most important finding for wine industry practitioners is the relationship between loyalty to wine purchase intention. The obvious implication is that wine businesses should focus on gaining and attaining a loyal customer base, suggesting that wine businesses should create marketing messages encouraging customers to exhibit these loyal behaviors. The results demonstrate that growing a loyal consumer base is a fundamental strategy to increase product sales. The next step is to determine how a loyal consumer is created. Previous literature indicates that some of the best determinants of loyalty are experienced (Quadri-Felitti & Fiore, 2013), brand love (Drennan *et al.*, 2015) and product attributes (Corsi, Overton, & Casini, 2014). These are all further avenues to explore. In addition, Romaniuk and Sharp (2022) indicated the importance of brand exposure on sales. Therefore, one possible avenue of marketing implications can be increasing brand exposure as a first step for wine brands looking to curate a loyal customer base.

It is important to note that the findings posit that satisfaction has a stronger relationship with loyalty than wine purchase intention. Suggesting that wine businesses may have more success influencing satisfaction measures more proximal to loyalty behaviors than those not directly linked to wine loyalty behaviors. In addition, although our findings demonstrate a clear relationship between satisfaction and loyalty, it is important for wine businesses to note that the antecedents of loyalty and satisfaction may be the same.

Limitations and future research

There were a few limitations associated with this study. As meta-analysis requires the correlations between predictors, the number of studies that could be included in the final

study was limited by the relationships that previous work has analyzed as correlations. Consistent with previous meta-analyses in the hospitality and tourism literature (Tanford & Jung, 2017; Gui *et al.*, 2020), this study only included published journal papers due to the difficulty of accessing unpublished papers, further limiting the availability of data. Additionally, due to the reliance on previous studies, some relationships, such as knowledge and prior experience, had many examples. In contrast, others, such as involvement and satisfaction, only appeared a few times. While the study has many papers included in the analysis to accurately predict effect sizes, the number of studies could be more comprehensive. Adding more papers could strengthen the results. However, as the researchers continued to run analyses with more correlations added, the results continued to be the same. This led to the notion that the only possible change in adding more studies would be increasing the significance of certain relationships. Most importantly, there may be a potential bias regarding the strength of relationships due to method variance and the use of single-source data for dependent and independent variables in some included studies (Podsakoff, Whiting, Podsakoff, & Blume, 2009).

In addition to the above points, the researchers posit that several other avenues should be addressed in future research. First, further exploration into predicting purchase intention is recommended to improve the understanding of consumer behavior continuously. Additional research should be done utilizing other variables such as willingness to pay, price, trust, brand image, region of origin, attitudes toward health and attitudes toward organic products to predict purchase intention. This study merits the acknowledgment of additional investigation into the antecedents of loyalty as it is the strongest indicator of purchase intention. The researchers explored the effects that satisfaction, perceived risk, involvement and prior experience have on loyalty. However, these constructs do not explain other drivers of loyalty, and awareness of those other components is critical to perpetuating the understanding of the pretexts of purchase intent.

Furthermore, other strongly felt attitudes and emotions, such as passion, love and enthusiasm, can also be analyzed as leading to purchase intention (e.g. Knowles *et al.*, 2022; Meraz-Ruiz, Olague, Flores-Villanueva, & Perez-Cruz, 2023). Given the changed consumer environment due to the Covid-19 pandemic, topics such as environmental sustainability (e.g. Chi, Ouyang, Lu, & Zou, 2021) and corporate social responsibility (e.g. Ng, 2022) should be explored. Ultimately, further work in this area may lead to greater and more accurate predictions of consumer behavior, thus closing the gap researchers and marketers have long sought after.

Notwithstanding these limitations, the findings of the meta-analysis indicate that various factors can cause wine purchase intention. Overall, these results confirm the importance of these behaviors to researchers and practitioners alike and suggest the importance of future research to increase the understanding of the theoretical mechanisms that explain these relationships.

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Further reading

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(The Appendix follows overleaf)

Appendix

Table A1. List of studies included in our meta-analysis and their characteristics

Author(s)	Country	Sample size	Time period	Variables
Agnoli, Capitello, and Begalli (2016)	Italy, France	140	2013	Purchase Intention, Financial/ Functional Risk
Atkin and Thach (2012)	the USA	346	2008	Wine Knowledge, Risk Perception
Aurifeille, Quester, Lockshin, and Spawton (2002)	Australia	431	N/A	Purchase Involvement, Brand Loyalty/Involvement
Bianchi (2015)	Australia	300	2014	Wine Brand Loyalty, Wine Experience, Wine Brand Satisfaction
Bianchi *et al.* (2014)	Australia, Chile	1,175	2012	Brand Loyalty, Brand Satisfaction, Wine Knowledge, Wine Experience
Bonn *et al.* (2016)	the USA, Korea	425	2014	Involvement, Purchase Intention
Brandano *et al.* (2019)	Italy	153	2014	Loyalty, Satisfaction
Brown *et al.* (2007)	Canada	161	2008	Knowledge, Prior Experience, Involvement
Bruwer and Buller (2013)	Australia	173	2011	Loyalty, Involvement, Risk
Bruwer and Huang (2012)	Australia	101	2011	Involvement, Financial/Social, Functional Risk
Bruwer, Buller, John Saliba, and Li (2014)	Australia	173	2013	Satisfaction, Purchase Intention, Loyalty/Inertia
Bruwer, Fong, and Saliba (2013)	Australia	105	2013	Brand Loyalty, Perceived Risk
Calvo-Porral, Lévy-Mangin, and Ruiz-Vega (2020)	Croatia & Spain	1,269	2016	Involvement, Satisfaction, Loyalty
Camillo (2012)	the USA	438	2009	Consumption Frequency, Wine Knowledge
Canziani, Hwang, and Byrd (2016)	the USA	734	2014	Subjective Wine Knowledge, Frequency
Cho, Bonn, and Kang (2014)	the USA	463	2014	Online Wine Repurchase Intention, Perceived Risk
Choi and Silkes (2010)	the USA	99	2008	Knowledge, Satisfaction
Cox (2009)	Australia	310	2009	Purchase Frequency, Involvement, Subjective Wine Knowledge
Dobele, Greenacre, and Fry (2018)	Australia	298	2016	Wine Knowledge, Wine Consumption
Dodd (1994)	the USA	636	1994	Purchase Involvement, Knowledge
Dodd *et al.* (2005)	the USA	655	2004	Subjective Knowledge, Objective Knowledge, Personal Experience
Drennan *et al.* (2015)	Australia, Chile, France, Mexico, & Portugal	3,462	2014	Brand Loyalty, Brand Satisfaction, Wine Knowledge, Wine Experience
Espejel and Fandos (2009)	Spain	145	2007	Customer Loyalty, Customer Satisfaction, Buying Intention
Flynn and Goldsmith (1999)	the USA	120	N/A	Subjective Knowledge, Consumption, Involvement
Goyal and Verma (2022)	India	241	N/A	Brand Loyalty, Purchase Intention

(*continued*)

Author(s)	Country	Sample size	Time period	Variables
Hammond, Velikova, and Dodd (2013)	the USA	330	N/A	Subjective Knowledge, Objective Knowledge, Experience, Involvement
Hirche and Bruwer (2014)	Australia	147	2013	Knowledge, Satisfaction/ Enjoyment, Risk Perception, Involvement, Experience/Activity
Hussain, Cholette, and Castaldi (2007)	the USA	122	2007	Wine Consumption Volume, Wine Knowledge Level
Johnson and Bastian (2015)	Australia	1,017	2014	Objective Wine Knowledge, Subjective Wine Knowledge, Wine Involvement, Prior Experience
Koksal (2021)	Lebanon	498	2017	Involvement, Experience/ Frequency
Kolyesnikova, Dodd, and Laverie (2007)	the USA	357	2005	Knowledge, Product/Purchase Involvement
Lacey *et al.* (2009)	Australia	105	2008	Perceived Risk Elements, Restaurant Wine Purchase/Visit Intention
Lau *et al.* (2019)	Australia, China	302	2017	Customer Satisfaction, Customer Loyalty
Lee and Chang (2012)	Taiwan	871	2006	Activity Involvement, Experience, Satisfaction, Loyalty
Lockshin, Spawton, and Macintosh (1997)	Australia	347	N/A	Frequency, Brand Risk
Loureiro and Cunha (2017)	Portugal	479	2016	
Lu *et al.* (2019)	China	1,745	2019	Satisfaction/Pleasurable, Purchase Intention
Lunardo and Rickard (2019)	the USA, France	271	2019	Risk Taker, Purchase Intention
Maksan, Kovačić, and Cerjak (2019)	Croatia	315	2015	Purchase Intention, Purchase Frequency
Montgomery and Bruwer (2013)	Australia	101	2011	Knowledge, Involvement
Nowak and Newton (2006)	the USA	89	2004	Customer Satisfaction, Loyalty/ Commitment to the Winery
Olsen, Thach, and Hemphill (2012)	the USA	321	2009	Satisfaction/Enjoyment, Risk Reduction
Parboteeah, Taylor, and Barber (2016)	the USA	80	2014	Product Involvement, Purchase Intention
Passagem *et al.* (2020)	Portugal	208	2019	Purchase Intention, Brand Loyalty
Passagem *et al.* (2020)	Portugal	63	2019	Purchase Intention, Brand Loyalty
Pomarici, Lerro, Chrysochou, Vecchio, and Krystallis (2017)	Denmark, Australia	504	2015	Subjective Wine Knowledge, Involvement, Loyalty
Priilaid, Sevenoaks, Aitken, and Chisholm (2013)	South Africa	73	2012	Years of Drinking, Drinks Per Week Consumed, Knowledge of Wine
Pucci, Casprini, Rabino, and Zanni (2017)	Italy, the USA	4,156	2014	Subjective Knowledge, Product Experience
Pucci *et al.* (2019)	Italy	2,597	2016	Online Wine Buying Intention, Online Wine Buying Frequency
Quadri-Felitti and Fiore (2013)	the USA	970	N/A	Loyalty, Satisfaction

(*continued*)

Table A1.

Author(s)	Country	Sample size	Time period	Variables
Quintal *et al.* (2010)	Australia	396	N/A	Perceived Risk, Intention
Roe and Bruwer (2017)	Australia	213	2016	Purchase Involvement, Loyalty, Brand Risk
Szolnoki and Hoffmann (2014)	Germany	2,000	2012	Self-Reported Wine Knowledge, Self- Reported Involvement
Taylor and Barber (2016)	the USA	505	2014	Subjective Knowledge, Objective Knowledge, Personal Experience
Taylor *et al.* (2018)	the USA	235	2012	Satisfaction/Pleasurable, Consumption Frequency
Tanzaretha and Rodhiah (2022)	Indonesia	238	N/A	Brand Loyalty, Purchase Intention
Vigar-Ellis *et al.* (2015)	Sweden, Canada, Malta	225	2014	Subjective Wine Knowledge, Objective Wine Knowledge, Purchase Involvement
Wen and Leung (2021)	the USA	203	2019	Wine Knowledge, Purchase Intention
Wu and Liang (2020)	China	378	2019	Intention, Involvement
Yang and Paladino (2015)	Australia, China	617	2013	Risk Aversion, Objective Knowledge, Subjective Knowledge, Intention

Table A1. **Source(s):** Table by authors

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