A varietal-specific approach to investigate wine risk perception in South Africa

Recommendations for Chenin blanc

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Abstract

Purpose – This study aims to describe South African consumers' wine risk perception on varietal level with recommendations for Chenin blanc.

Design/methodology/approach – An exploratory mixed methods approach was followed where qualitative data were used to develop the questionnaire. Quantitative data were collected from 2,051 respondents using an online survey. ANOVA and Fischer least significance difference tests were used to indicate statistical significance.

Findings – Significant perceived risks (PRs) associated with Chenin blanc across age and ethnic groups were functional, time and financial risks. Risk-reducing strategies (RRS) in the white wine category were favourite brands and a trusted store, while Sauvignon blanc was also described as an RRS. Recommended Chenin blanc RRS include tastings and events with food.

Research limitations/implications – Measurement of PR remains challenging. This research approach can be reproduced and/or adapted to investigate other struggling varietals and/or regions-of-origin. The convenience sample limits generalisability.

Practical implications – Segments were identified to develop new markets for Chenin blanc. RRS emphasise the importance of real sensory experience rather than media exposure to build knowledge and familiarity.

Originality/value – This study is a pioneering endeavour in terms of using an exploratory mixed methods research approach to investigate and describe risk perception of a specific wine varietal. Recommendations, with implications for strategic marketing decisions, are made for South African Chenin blanc.

Keywords Risk perception, Consumer behaviour, Chenin blanc, Consumer risk perception, South African white wine, Varietal perceived risk scale

Paper type Research paper

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Introduction

In South Africa, the world's 8th largest wine-producing country (SAWIS, 2017), only approximately 14 per cent of adults consume wine (The Moss Group, 2015). South Africa, therefore relies heavily on exports, but low price points and rigorous international competition are threats to the wine industry (WESGRO, 2017). Therefore, exploration and development of new markets, including the domestic market, are prioritised by the South African wine industry (WESGRO, 2017). Although South Africa is a beer-drinking nation, the local wine market has developed with new interest from the growing black middle class (Holtzkampf, 2015), which has substantial buying power (The Moss Group, 2015).

Wine consumption habits and preferences are often acquired from previous generations and require some experience (Melo *et al.*, 2011) to rationally evaluate attributes, prior to and post the purchase (Lockshin and Cohen, 2011). Wine, as a category, elicits significant uncertainty, i.e. perceived risk (PR), especially amongst younger and less experienced consumers (Spawton, 1991). As South Africa does not have an established wine drinking culture, it can be assumed that, albeit diverse in terms of demographics, the majority of consumers are inexperienced wine consumers. White wine accounts for 65 per cent of South African wine produced while most packaged wine is sold in 750 mL glass bottles (SAWIS, 2017). In South Africa, bottled still wine is mostly marketed using the varietal name as differentiator on the front label.

In the bottled South African white wine category, at least three times more Sauvignon blanc was sold per annum than either Chardonnay or Chenin blanc for the period 2011-2017 (SAWIS, 2017). However, Chenin blanc, South Africa's most planted wine grape, representing 18.6 per cent of all vineyards, only contributed 9.5 per cent to the total domestic bottled white wine sales in 2017 (SAWIS, 2017). Chenin blanc adapts to different terroir and produces a variety of wine stylesand internationally award-winning single varietal wines (Nieuwoudt *et al.*, 2013).

Developing markets for Chenin blanc was identified a priority by the South African wine industry and the Chenin Blanc Association, a collective, which supports South African Chenin blanc wine producers. In support of the Chenin Blanc Association's (2019) aim to establish Chenin blanc as South Africa's flagship wine varietal, it was important to investigate the apparent sales barrier from the wine consumer's perspective. As an investigation into PR would provide the necessary insight to ultimately increase sales through risk-reducing strategies (RRS) (Bruwer *et al.*, 2013; Spawton, 1991), risk perception was an appropriate construct to explore consumers' Chenin blanc perspectives. Most wine is sold in the off-consumption domain in South Africa (WESGRO, 2017); therefore, this study focussed exclusively on risk perception during in-store purchase decision making. This study contributes to the theory base of risk perception and wine consumer behaviour through inclusion of a wine varietal PR scale.

Literature review

Risk perception and risk dimensions

Risk perception is described as a bi-dimensional construct of importance of loss (I) and probability of loss (P) (Bauer, 1960). In a purchase situation, the importance relates to the uncertainty about the anticipated consequences after a decision had been made, while probability relates to the likelihood that a decision might lead to negative consequences (Cunningham, 1967). Mitchell and Greatorex (1988) identified four risk dimensions that apply to buying and consuming wine, namely, functional, social, financial and physical risks. Spawton (1991) suggested that functional, economic and psychological dimensions are the three significant wine-related PRs. However, Schiffman *et al.* (2014) report on six generic risk types used in research approaches of wine risk perception (Bories *et al.*, 2014; Bruwer *et al.*, 2013), namely,

(1) functional risk involves product performance and relates to the sensory experience of wine, with or without food (Mitchell and Greatorex, 1988; Spawton, 1991);

(2) social risk relates to others' approval of the wine (Mitchell and Greatorex, 1988);

(3) financial risk relates to the price and perceived value of the wine (Mitchell and Greatorex, 1988; Spawton, 1991);

(4) physical risk includes the risk of a hangover and other side effects as a result of the wine (Mitchell and Greatorex, 1988);

(5) psychological risk relates to one's own negative feelings due to a perceived "poor" wine choice (Spawton, 1991); and

(6) time risk involves the time spent to evaluate and choose an appropriate wine (Bruwer *et al.*, 2013).

The (I) and (P) are typically applied to each risk dimension and wine would be identified as a functional risk when the taste is an important attribute, but there is a high probability that it would not taste as expected. Therefore, PR is often described according to a hierarchy of risk dimensions, where functional and financial risks were previously identified as the most important for wine consumers (Bories *et al.*, 2014; Bruwer *et al.*, 2013; Bruwer and Rawbone-Viljoen, 2013; Lacey *et al.*, 2009; Mitchell and Greatorex, 1988).

Perceived risk is, however, known to be product-specific, as suggested in the risk perception definition by Dowling (1999): "the uncertainty of the possible adverse consequences, which a person thinks will attach to buying or using a product". According to Mitchell (1999), the (I) is associated with the generic category, while the (P) is associated with a specific brand/product within the category. For purposes of this study, the category was, therefore, identified as South African white wine per 750 mL bottle, and Chenin blanc as the product (varietal).

A product-specific approach to perceived risk

Risk perception is described as product-specific due to generic conditions, i.e. risk drivers that cause heightened levels of risk associated with certain products and/or product categories. Bettman (1973) identified certain conditions as causes of PR in a purchase situation: insufficient product/category information; lack of experience and/or self-confidence to evaluate products in a category; a product being new or expensive; perceived quality variations between products in the same category; and the importance of the purchase. However, it appears that the measurement of generic risk drivers has been neglected in previous wine risk perception studies. The reason could be threefold. Firstly, most researchers followed a quantitative approach, possibly assuming that wine is inherently considered a higher-risk category (Spawton, 1991), and therefore, did not consider why and when consumers perceive wine-related risk. Secondly, these researchers recognised and focussed on the practical value of studying PR dimensions and RRS for strategic marketing purposes (Atkin and Thach, 2012; Bruwer, *et al.*, 2013; Cho, *et al.*, 2014; Johnson and Bruwer, 2004; Lacey, *et al.*, 2009; Mitchell and Greatorex, 1989; Mitchell and Greatorex, 1988). Finally, none of these studies were region or varietal-specific, but were generic and applied in the contexts of restaurants (Lacey *et al.*, 2009; Bruwer and Rawbone-Viljoen, 2013), online purchasing (Cho *et al.*, 2014), point-of-purchase (Bories *et al.*, 2014) and comparing PR behaviour between consumer groups (Atkin and Thach, 2012; Johnson and Bruwer, 2004; Mitchell and Greatorex, 1988).

Only two wine-specific PR drivers have explicitly been identified:

(1) Consumption occasions; and

(2) Wine risk-taking behaviour.

Bruwer *et al.* (2013) reported on different occasions being a risk driver: buying wine for gifting/celebrations was for instance associated with a higher PR than buying wine for at-home consumption. Affinity for risk, i.e. risk-taking behaviour in the wine category, has also been described as a potential risk driver. Consumers portraying risk-taking tendencies would explore buying unfamiliar wines, while those with a low affinity for risk would rather buy the same wines habitually (Bruwer and Rawbone-Viljoen, 2013; Vigar-Ellis *et al.*, 2015). Considering the varietal-specific approach of this study, it can be envisaged that one wine varietal might be perceived as a riskier choice for a specific occasion and that consumers might also be risk-averse towards unfamiliar varietals.

Risk-reducing strategies

In efforts to reduce uncertainty during the wine purchase situation, RRS can be considered as decision heuristics gathered from a variety of information sources (Atkin and Thach, 2012; Spawton, 1991) (Table I). Once consumers gain the information needed from their preferred RRS, they often continue to purchase a product (Mitchell and Greatorex, 1989; Spawton, 1991); hence, insights into consumers' RRS are most sought-after for strategic marketing purposes (Bruwer *et al.*, 2013). To ensure effective targeting of different consumer segments, demographic characteristics such as age (Atkin and Thach, 2012), socio-economic class (Mitchell and Greatorex, 1989) and lifestyle segments (Johnson and Bruwer, 2004) are commonly used as segmentation bases to identify and describe differences in preferred RRS. Reassurance through tastings has been described as a significantly more important RRS across socio-economic classes than the price of wine (Mitchell and Greatorex, 1989), while brand name was found to be the most important RRS across consumers of all ages (Atkin and Thach, 2012).

The generic RRS (Table I), as identified by Mitchell and Greatorex (1989) and Schiffman *et al.* (2014), are recognised as the six RRS during wine consumers' decision making process (Bruwer *et al.*, 2013), but do not necessarily allow for well-differentiated marketing strategies. Johnson and Bruwer (2004) matched retailer strategies to the generic RRS relevant to wine, which does provide direction for allocating marketing resources, but shows considerable overlapping. The retailer strategy of "advertising and promotions" has, for example, been suggested as useful for "brand loyalty", "well-known brands" and "price", without providing any details on the type/channel of advertising and promotions relevant to

Table I. RRS in wine decision making

Mitchell and Greatorex (1989) and Schiffman *et al.* (2014)	Spawton (1991)	Atkin and Thach (2012)
Search for information	Wine appreciation education	Store personnel and newspaper
Brand loyalty	Learn from others	Wine steward and bottle label
Reliance on store image	Retail assistants	Wine magazine and friends or family
Well-known brands	Known brands	Shelf talker and brand name
Price	Pricing	Vintage and country of origin
Reassurance through tastings or sample sizes	Packaging and labelling	Region and alcohol content
		Label imagery and medals won
		State appellation and organic

the different RRS. Therefore, after careful evaluation, a more specific approach to RRS, similar to Spawton (1991) and Atkin and Thach (2012) (Table I), is considered suitable for a varietal-specific investigation. Consequently, concrete strategies could be recommended to reduce varietal-specific PRs.

Concerning the RRS of "brand loyalty", it seems as if the boundaries of what consumers consider a brand are hazy in the context of wine. According to Gluckman (1986) consumers often evaluate and become emotionally connected to a wine varietal and region as if these are true brands. It is somewhat surprising, then, that no previous studies pertinently included and described varietals as RRS. Brand loyal consumers' behaviour is often based on the convenience of repeating the same purchase, and to a lesser degree on knowledge of product attributes (Peter and Olsen, 2005). In a country where a wine culture is not yet established, these traits of often less informed brand loyalists (Vigar-Ellis *et al.*, 2015) might, therefore, explain South African consumers' overwhelming preference for Sauvignon blanc – a RRS in the white wine category? Furthermore, differences in PR behaviour between age and ethnic groups are to be expected, given the heterogeneous South African population, underdeveloped status of the South African wine market and demographic differences in PR behaviour.

Research aims

After a scrutiny of relevant literature, the three main constructs of risk drivers, risk dimensions and RRS were judged appropriate to be included in a varietal-specific approach to risk perception. This study therefore aimed:

- to describe current perceptions of Chenin blanc according to known risk driver variables;
- to describe the most severe Chenin blanc risk dimensions across age and ethnic groups; and
- to recommend strategies to reduce Chenin blanc PRs.

Methodology

To the knowledge of the authors, this study was the first to follow an exploratory sequential mixed methods approach to investigate wine risk perception. Similar to previous wine risk perception research, quantitative data, collected from a large sample, were required to provide South African wine industry role-players with recommendations for strategic marketing decisions to promote Chenin blanc. However, as this was a pioneering effort to investigate varietal-specific PR and because South African consumers' perceptions about Chenin blanc were previously unknown, an initial qualitative phase explored Chenin blanc risk perception. Based on a combination of reviewed literature and qualitative findings, hypotheses and a questionnaire were developed to collect data in a sequential core quantitative phase.

Qualitative results, questionnaire development and hypotheses

Semi-structured interviews were used to explore the phenomenon of Chenin blanc PR from wine buyers' perspective. Data were collected within a network of non-expert, acquainted wine drinkers until data saturation and to a point where the data were judged sufficient to inform the questionnaire. An adequate sample size ($n = 8$), as prescribed for phenomenological studies (Collins, 2010), was obtained. Data were coded according to an *a priori* framework of risk drivers, risk dimensions and RRS. Using content analysis,

qualitative findings stressed the importance of investigating Chenin blanc as part of the white wine category and were particularly helpful to identify Chenin blanc risk drivers.

Risk drivers. Certain risk drivers were identified as "category" risk drivers, namely, insufficient information, lacking availability, low confidence to evaluate wine and risk-taking behaviour (Table II).

Consequently, the questionnaire was adapted from previous scales for risk-taking behaviour and self-confidence (Bruwer and Rawbone-Viljoen, 2013; McClung *et al.*, 2015) and newly developed for a lack of information and availability. Questionnaire items for each of the aforementioned risk drivers were included for both the white wine category and Chenin blanc, as shown in the "risk-taking behaviour" example (Table III):

H1. There are significant differences between Chenin blanc and the white wine category in terms of availability (*H1.1*), lack of self-confidence (*H1.2*), risk-taking behaviour (*H1.3*) and perceived amount of information available (*H1.4*).

Lack of experience (subjective knowledge and purchase frequency), quality variations and occasions were identified as "varietal risk" drivers, as indicated in the interview excerpt examples (Table IV). Based on interview data and national sales statistics of bottled white wine, the varietals of Sauvignon blanc, Chardonnay, Chenin blanc and "white blends" were included in this study.

Table II. Interview excerpts indicating category risk drivers

Theme	Sub-theme	Quote
Category risk driver	Lack of information	". . . I think in the bigger scheme of things, where I live, there is less information about white wines to start off with . . . and okay then even less information about white wine varietals (Chenin blanc) that is not that well-known . . ."
	Risk-taking behaviour	". . . Not very comfortable, no. Any white wine for that matter, but the Chenin specifically . . . I would probably go for something else . . ."

Table III. Questionnaire statements measuring risk-taking behaviour

White wine category	I am willing to spend R75 or more on a white wine I have not tasted before
	I enjoy buying unfamiliar white wines
Chenin blanc	I am willing to spend R75 or more on a Chenin blanc I have not tasted before
	I enjoy buying unfamiliar Chenin blanc

Source: Adapted from Bruwer and Rawbone-Viljoen (2013)

Table IV. Interview excerpts on varietal risk drivers

Theme	Sub-theme	Quote
Varietal risk driver	Occasions	". . . If I buy (Chenin blanc) just for consumption at the house then it's a safe bet. If I give it as a present to someone that I don't know . . . then it's not a safe bet . . ."
		". . . normally Sauvignon blanc, I think that is a very safe wine to give to people . . ."
	Quality variations	". . . I think for me, Chardonnay has got a . . . stands on the top podium, number one place, then Sauvignon blanc and then Chenin with regard to perceived value and the price tag . . ."

For occasions, questions were developed to rank the different varietals according to best-worst (1-4) choice to buy as a gift, for special occasions, everyday enjoyment with friends and family and for own consumption (adapted from Bruwer *et al.*, 2013). Three-, four- and five-point Likert scales were used to, respectively measure purchase frequency (1 = never [. . .] 3 = always) (adapted from Fountain and Lamb, 2011), subjective knowledge (1 = know nothing at all [. . .] 4 = expert) and perceived quality (1 = very poor [. . .] 5 = very good) (adapted from D'Alessandro and Pecotich, 2013):

H2. There are significant differences between Chenin blanc and other white wine varietals in terms of quality (*H2.1*), consumer experience (*H2.2*) and goodness of fit for occasions (*H2.3*).

Perceived risk and risk dimensions. In the interviews, there was evidence that Chenin blanc was perceived as a higher risk varietal ("it will be a major risk buying a Chenin that I do not know"). Therefore, questionnaire items were included to measure subjective overall risk for the white wine category and Chenin blanc (Table V).

Qualitative data furthermore confirmed the relevance of all six risk dimensions on varietal level. Three to four questionnaire statements represented each of the risk dimensions on both the I and P facets, which were adapted from previous scales and/or newly developed, as indicated in Figure 1:

H3. Functional risk is a significantly more severe PR than financial risk.

H4. Financial risk is a significantly more severe PR than functional risk.

Overall white wine risk	When I buy white wine, I am concerned that it will not meet my expectations
	Buying white wine is risky
	When I face a shelf of white wine, I feel uncertain to make my choice
Overall Chenin blanc risk	Buying Chenin blanc is risky
	When I face a shelf of white wine, I feel more uncertain about Chenin blanc than other white wines

Source: Adapted from McCarthy and Henson (2005)

Table V. Questionnaire statements for overall PR

Functional risk (I)	Taste is an important factor when I buy white wine	Adapted from Bruwer *et al.* (2013)
	It is important that the wine I buy complements my food	
	Buying white wine of consistent quality is important to me	Adapted from Atkin and Johnson, (2010)
	It is important for me to know what to expect from a specific white wine varietal in terms of taste	New items: interview data
Functional risk (P)	I like the taste of Chenin blanc	
	Chenin blanc generally goes well with food	
	The quality of Chenin blanc is consistent	
	I know what to expect from Chenin blanc in terms of taste	

Figure 1. Questionnaire statements measuring functional risk

H5. There are significant differences between age groups' Chenin blanc PR.

H6. There are significant differences between age groups according to PR dimensions.

H7. There are significant differences between ethnic groups according to Chenin blanc PR.

H8. There are significant differences between ethnic groups according to PR dimensions.

Risk-reducing strategies. Concerning RRS applied during white wine buying on category level, 14 previously described RRS (Atkin and Thach, 2012; Johnson and Bruwer, 2004; Goodman, 2009) emerged from the qualitative findings. However, discourse analysis of interview data (Harding, 2013) suggested Sauvignon blanc loyalty, which was consequently included as RRS in the questionnaire. Based on the three core components of the definition (Schiffman *et al.*, 2014), participants' descriptions of Sauvignon blanc resembled brand loyalty (Table VI):

H9. Sauvignon blanc is a significantly more important RRS than well-known brands.

H10. Sauvignon blanc is a significantly more important RRS than price.

Finally, based on participants' own recommendations, seven Chenin blanc-specific RRS categories were identified, namely, store promotions (five items); recommendations from others (four items); packaging and labelling (five items); social media (three items); promotions/tastings outside store (five items) and matching food (two items). Because of the extensive list of items (26), and to mitigate agreement bias, two ranking scales were included, where the list was randomly divided into 13 items each (which three strategies would be the most effective to promote Chenin blanc?):

H11. There are significant differences between the importance of Chenin blanc RRS.

Quantitative data collection and reliability and validity measures

Screening questions were used to include potential respondents who met the following criteria: South African citizens of legal drinking age (18+) who had to at least be aware of

Table VI. Qualitative results indicating Sauvignon blanc loyalty

Components of brand loyalty	Quotes
Consumer learning/satisfaction	". . . with more people consuming Sauvignon blanc over the years, people know the product . . . so, they know what it tastes like, they know what to expect. So that's a safe bet . . ."
	". . . Sauvignon blanc you can get a flavour and you can get a taste and there is some consistency in it . . ."
Behavioural component (resistance towards other varietals)	". . . we always go for the Sauvignon blanc, we don't drink the Chardonnay or Chenin blancs or any of the others . . ."
	". . . I would look at the whites and first of all go the Sauvignon blancs . . ."
Affective component	". . . Sauvignon blanc for me is fresh, fresh, clean, crisp. Which I love . . ."
	". . . everyone I know loves Sauvignon blanc."
	". . . In my opinion, Sauvignon blanc is just a crowd pleaser to serve it as white wine . . ."

Chenin blanc and buy white wine at least occasionally. Wine industry employees were excluded. Using snowball sampling, the questionnaire was administered online and pilot-tested ($n = 62$) to assess functionality and internal reliability. Data were successfully extracted and analysed, and amendments were made to items with Cronbach's alpha scores $\alpha < 0.6$ and item-total correlations $r < 0.3$.

For the main study, data were collected from a sample of convenience. Considering the length of the questionnaire and heterogeneous South African population, a large sample size was required. Due to the low response rate of online surveys (Brace, 2013), data were collected with the support of a market research company with access to a large South African online consumer database. At a response rate of 8.4 per cent, 2,554 responses were gathered over seven months ending July 2018. Based on inclusion/exclusion criteria, 503 respondents were disqualified and 2,051 usable questionnaires were retrieved. Unless otherwise stated, all questionnaire items were measured on a five-point Likert scale (1 = Strongly disagree [. . .] 5 = Strongly agree).

After data collection, the questionnaire was again assessed for internal reliability, which, in general, improved after the pilot test. After careful consideration, 10 items with Cronbach's alpha scores $\alpha < 0.6$ and item-total correlations $r < 0.3$ were identified as threats to the instrument's reliability and were deleted prior to further analysis. In a third-round reliability analysis the majority of variables displayed acceptable to very good reliability ($\alpha \leq 0.70 \leq 0.94$) (Table VII). Only two variables – risk-taking behaviour and time risk – both relevant to the white wine category, had α-scores <0.6. As the corresponding variables relevant to Chenin blanc had acceptable α-scores, however, no further amendments were made.

As the questionnaire items were *a priori* structured according to constructs and variables identified from theory and interview data, confirmatory factors analysis (CFA), co-variance based structural equation modelling (SEM) was used to assess construct validity (Schmitt, 2011). Due to the large number of questionnaire variables and items, individual SEMs was calculated for the latent variables with goodness of fit indices, indicated in Table VII. In the case of large sample sizes, as in this study, p-values and Chi-square (χ^2/df) are of little value (Hair *et al.*, 2010). Rather, RMSEA, GFI and CFI indicated a good fit for all the latent variables, except for Chenin blanc risk drivers, where only the RMSEA was 0.09. Finally, as risk dimensions are known to be correlated (Mitchell, 1999), it was important to establish discriminant validity. Heterotrait-monotrait (HTMT) ratios (Henseler *et al.*, 2015) confirmed that all construct variables were discriminant (HTMT < 1.00).

Statistical analyses

The data were analysed electronically using Statistica (version 13.4.0.14), which involved a combination of descriptive and inferential analysis. Lisrel-SEM was used for CFA and Smart-PLS to calculate HTMT-ratios. To test the hypotheses, a series of ANOVA with post-hoc Fischer least significance difference (LSD) tests were used to indicate statistical significance at 95 per cent confidence intervals. As Chenin blanc RRS have managerial implications, effect sizes using Cohen's d-value and Hedges' g-value were calculated to indicate practical significance (Cohen, 1988). Similar to previous research (Atkin and Thach, 2012; Melo *et al.*, 2011), respondents were divided into younger (<30 years) and older (≥30 years) age groups.

Results and discussion

Demographic, wine-buying and consumption characteristics

Most respondents were female (56 per cent), years of age between 31-60 years (64 per cent), obtained tertiary qualifications (84 per cent), were Afrikaans (46 per cent) or English (40 per cent)

Latent variable	Measured variables	No. of items	α-score	χ^2/df	p	RMSEA	CFI	GFI
Chenin blanc risk drivers	Self-confidence	3	0.71	17.38	0.00	0.09	0.95	0.98
	Information	3	0.75					
	Availability	3	0.74					
	Risk-taking behavior	2	0.63					
White wine risk drivers	Importance of decision	4	0.72	12.04	0.00	0.08	0.95	0.96
	Self-confidence	3	0.64					
	Information	3	0.75					
	Availability	3	0.66					
	Risk-taking behavior	2	0.49					
Overall risk	White wine	3	0.75	5.38	0.00	0.05	1.00	1.00
	Chenin blanc	2	0.80					
White wine risk importance of loss	Functional	4	0.71	6.94	0.00	0.06	0.97	0.97
	Financial	3	0.70					
	Physical	3	0.83					
	Social	4	0.78					
	Psychological	3	0.87					
	Time	2	0.50					
Chenin blanc risk probability of loss	Functional	4	0.85	9.15	0.00	0.07	0.98	0.97
	Financial	3	0.72					
	Physical	3	0.87					
	Social	4	0.74					
	Psychological	3	0.94					
	Time	2	0.78					
Chenin blanc RRS	Store promotions	5	0.64	8.94	0.00	0.07	0.97	0.97
	Recommendation from others	4	0.65					
	Packaging/labelling	5	0.74					
	Social media	3	0.89					
	Traditional media	2	0.78					
	Tastings outside store	5	0.76					
	Matching food	2	0.86					

Table VII.
Reliability and construct validity of questionnaire

Notes: GOF indices (Hooper *et al.*, 2008): $\chi^2/df < 5$; p-value > 0.05; RMSEA ≤ 0.08; and CFI and GFI ≥ 0.9. Cronbach's alpha scores (α) internal reliability indicators (DeVellis, 2012): <0.6 = unacceptable; $\geq 0.6 < 0.65$ = acceptable with caution; $\geq 0.65 < 0.7$ = acceptable; $\geq 0.7 < 0.8$ = good; and ≥ 0.8 = very good

speaking and Caucasian (75 per cent). Consistent with the national wine drinking population (The Moss Group, 2015), most respondents resided in the three provinces of Gauteng (45 per cent), Western Cape (30 per cent) and KwaZulu–Natal (9 per cent).

Most respondents purchase white wine from a general supermarket (48 per cent) or large national retailer (29 per cent) and spend between ZAR50-100 (73 per cent) on a bottle. Although more respondents prefer red wine (44 per cent) than white wine (41 per cent), most respondents were frequent consumers, enjoying white wine once a week or more (60 per cent). Consistent with the mean age of the sample (M = 46.5), most respondents were experienced white wine drinkers, having been consuming white wine for 16 years or more (53 per cent).

Chenin blanc in the white wine category based on a comparison of risk driver variables

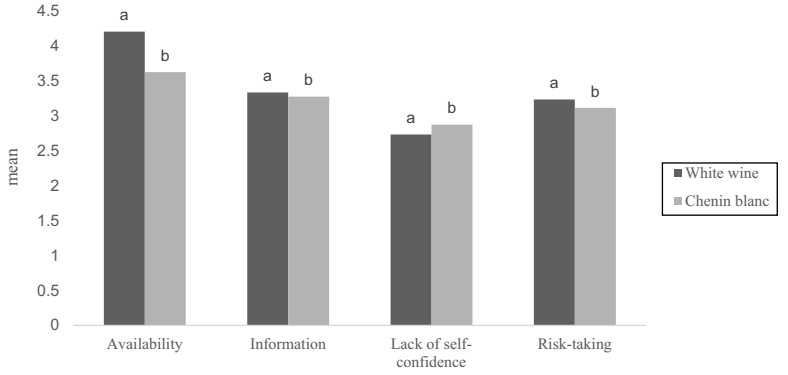
To describe wine consumers' current perceptions, Chenin blanc was compared to the white wine category and other varietals based on previously identified risk drivers. ANOVA and

post-hoc LSD tests indicated significant differences ($p < 0.05$) between Chenin blanc and white wine according to all category risk drivers (Figure 2).

In terms of product characteristics, Chenin blanc was judged to be less available ($p = 0.00$), with less information ($p = 0.01$) than white wine. In terms of personality/psychological characteristics, respondents lacked confidence ($p = 0.00$) to evaluate Chenin blanc and were less likely to engage in risk-taking behaviour ($p = 0.00$) when considering Chenin blanc in a white wine purchase situation. *H1.1-H1.4* are therefore accepted.

ANOVA indicated significant ($p < 0.01$) differences in respondents' mean quality perception, knowledge, purchase frequency and goodness of fit for occasions between different varietals (Table VIII).

Chenin blanc quality was considered below both Sauvignon blanc ($p = 0.00$) and Chardonnay ($p = 0.00$), but above white blends ($p = 0.00$). There was no significant difference between subjective knowledge of Chenin blanc and white blends ($p = 0.38$), which were,



Notes: [ab]Means with different superscripts indicate statistically significant differences ($p < 0.05$)

Figure 2.
Differences between Chenin blanc and white wine according to category risk drivers

	Chenin blanc Mean	Sauvignon blanc Mean	Chardonnay Mean	White blends Mean	*p*	*F*
Quality	4.09b	4.29a	4.28a	3.83c	0.00*	41.23
Experience						
Subjective knowledge	2.22b	2.43a	2.39a	2.19b	0.00*	18.27
Purchase frequency	1.99bc	2.26a	2.06b	1.96c	0.00*	20.63
Occasions						
Gift	2.5b	1.76a	1.95a	3.05c	0.00*	74.44
Special occasions	2.43c	1.78a	2.00b	3.12d	0.00*	98.97
Friends/family	2.49bc	1.91a	2.19b	2.72c	0.00*	18.27
Own consumption	2.49c	1.84a	2.13b	2.89d	0.00*	27.38

Notes: *Indicates statistical significance ($p < 0.01$; and $p < 0.05$); [abcd]Means with different superscripts indicate statistically significant differences ($p < 0.05$), read by row. For occasions, varietals were ranked, lower means indicate a better choice

Table VIII.
Differences between varietals according to varietal risk drivers

however, significantly below Sauvignon blanc ($p = 0.00$) and Chardonnay ($p = 0.00$). Chenin blanc was indicated to be purchased less frequently than Sauvignon blanc ($p = 0.00$), but similar to Chardonnay ($p = 0.51$) and white blends ($p = 0.1$). Chenin blanc was indicated an inferior choice for all occasions, compared to Sauvignon blanc ($p < 0.01$), which was judged a superior choice ($p < 0.01$) over Chardonnay, Chenin blanc and white blends for special occasions, occasions with friends/family and for own consumption. *H2.1-H2.3* are accepted. Consistent with previous research (Bruwer *et al.*, 2013; Hirche and Bruwer, 2014), occasions seem to be an important influencing factor and could explain the significantly higher ($p < 0.01$) Sauvignon blanc purchase frequency, compared to the other varietals.

Chenin blanc perceived risk

Based on a subjective measurement of overall risk, 26 per cent of respondents confirmed that they feel more uncertain about Chenin blanc than other white wines, while 16 per cent agreed that Chenin blanc is risky to buy. Using an objective measure, the two-component summated model (I + P) (Cunningham, 1967; Mitchell, 1999) was adopted to measure PR in this study:

$$\text{Perceived Risk (PR)} = \sum_{n} I(\text{white wine}) + \text{P (Chenin blanc)}$$

$$n = \textit{risk dimensions}$$

$$PR = [functional_i + social_i + financial_i + physical_i + psychological_i + time_i] + [functional_p + social_p + financial_p + physical_p + psychological_i + time_p]$$

Assuming that all six dimensions are of equal weight, a moderate level of Chenin blanc risk was perceived by respondents (PR = 35.69). The findings of this study furthermore confirmed a hierarchy in PR dimensions. ANOVA indicated statistically significant differences ($p < 0.01$) between the six PR dimensions, which were ranked according to severity (Table IX). Chenin blanc functional risk (medium-high risk) was indicated to be

PR dimension	I $p = 0.00$* $F = 262.26$ Mean	P $p = 0.00$* $F = 50.90$ Mean	I + P $p = 0.00$* $F = 175.98$ Mean	
Functional	4.21[a]	2.45[c]	6.65[a]	Medium-high risk
Time	3.72[b]	2.79[a]	6.51[ab]	
Financial	3.94[c]	2.44[c]	6.38[b]	
Social	3.31[d]	2.53[b]	5.81[c]	Medium risk
Physical	3.01[e]	2.63[b]	5.62[c]	
Psychological	2.61[f]	2.13[d]	4.72[d]	Low risk
PR	–	–	35.69+	–

Notes: *Indicates statistical significance ($p < 0.01$; and $p < 0.05$); [abcdef]Mean scores with different superscripts indicate statistical significant differences ($p < 0.05$), read by column. Means were rounded to the second decimal and interpreted according to the indicators: I and P means ≥4.5 = very important/very likely; ≥3.5 < 4.5 = important/likely; ≥2.5 < 3.5 = uncertain; <2.5 = unimportant/unlikely; I + P means ≥9.0 = severe risk; ≥7.5 < 9.0 = high risk; ≥6.0 < 7.5 = medium high risk ≥4.5 < 6.0 = medium risk; ≥3.0 < 4.5 = low risk; and <3.0 = no risk. PR: ≥55 = severe risk; ≤46 < 55 = high risk; ≤35 < 45 = moderate risk; ≤25 < 35 = average risk; and <25 = low risk

Table IX.
Differences in Chenin blanc PR

significantly higher ($p < 0.01$) than financial (medium-high risk), social and physical risks (medium risks) and psychological risk (low risk). *H3* is accepted while *H4* is rejected. Although time risk has been excluded in previous wine risk perception studies (Mitchell and Greatorex, 1988; Spawton, 1991), it was indicated to be as high as functional ($p = 0.06$) and financial risk ($p = 0.10$) in this study.

Importantly, mean scores on the majority of the probability of loss dimensions indicated that respondents were uncertain ($M \geq 2.5 < 3.5$) and possibly lacked the know-how to rationally evaluate Chenin blanc risk, most likely due to inexperience. Therefore, the higher mean scores on the importance of loss dimensions had a larger influence on the PR and summated scores. When buying white wine, functional$_i$ risk (i.e. the sensory properties and food pairing ability) was the most important ($p < 0.05$), followed by financial$_i$ risk, with time$_p$ the most likely ($p < 0.05$) Chenin blanc risk associated with loss. As most respondents buy wine from a supermarket or large retailer, wine is most likely purchased during general grocery shopping, where consumers increasingly seek convenience and are time-pressed, and therefore, reluctant to spend time evaluating products (Rahkovsky and Jo, 2018).

Demographic differences in Chenin blanc perceived risk

Contrary to expectations, three-way ANOVA indicated no statistically significant ($p = 0.25$) difference between younger (PR = 35.42) and older (PR = 35.97) respondents' Chenin blanc PR (Table X), and *H5* is rejected. For risk dimensions there was only one significant difference ($p < 0.05$), as older respondents indicated higher levels of psychological risk than younger respondents – *H6* is therefore accepted.

Ethnicity seemed to have a significant influence on Chenin blanc PR, as Black African (PR = 37.46) and coloured (PR = 36.20) respondents perceived significantly higher ($p < 0.05$) Chenin blanc risk than Caucasian respondents (PR = 33.43). *H7* is, therefore, accepted. There were no significant differences for the three highest ranked PR dimensions, but significant ($p < 0.05$) differences were found for the three lowest ranked PR dimensions. Caucasian respondents perceived lower psychological ($p = 0.00$) and physical risk ($p = 0.00$) than Black African and coloured respondents. Black African respondents perceived higher levels of social risk ($p = 0.00$) than Caucasian respondents, perhaps, due to their inexperience with wine and associated consumption practices. *H8* is accepted.

	I + P age		I + P ethnicity			I + P ethnicity: age					
	$p = 0.01^*$ $F = 3.29$		$p = 0.00^*$ $F = 21.69$			$p = 0.08$ $F = 1.68$					
				Black				Black			
			Caucasian	African	Coloured	Caucasian		African		Coloured	
PR dimension	<30	≥30				<30	≥30	<30	≥30	<30	≥30
Functional	6.69	6.62	6.50	6.73	6.73	6.49	6.51	6.79	6.68	6.77	6.69
Time	6.50	6.51	6.20	6.74	6.58	6.33	6.08	6.67	6.81	6.50	6.66
Financial	6.41	6.36	6.35	6.34	6.45	6.39	6.31	6.47	6.21	6.35	6.54
Social	5.74	5.88	5.56^a	6.07^b	5.80^{ab}	5.62	5.51	6.05	6.10	5.57	6.02
Physical	5.60	5.65	4.75^a	6.16^b	5.97^b	4.71	4.78	6.08	6.23	6.00	5.93
Psychological	4.48^a	4.95^b	4.07^a	5.42^b	4.67^c	4.04	4.10	5.14	5.70	4.27	5.06
PR	35.42^a	35.97^a	33.43^a	37.46^b	36.20^b	33.58	33.29	37.20	37.73	35.46	36.90
	$p = 0.25$ $F = 1.30$		$p = 0.00^*$ $F = 49.99$			$p = 0.28$ $F = 1.29$					

Notes: *Indicates statistical significance ($p < 0.05$); ^{abc}Summated mean scores with different superscripts indicate statistical significant differences ($p < 0.05$), read by row

Table X. Chenin blanc PR differences according to age and ethnicity

Sauvignon blanc: a risk-reducing strategy

Respondents in this study identified Sauvignon blanc (M = 3.70) as an important RRS in the South African white wine category, where bottled wine is marketed with the varietal and brand name indicated on the front label. In total, 71 per cent of respondents confirmed that they buy Sauvignon blanc when they are uncertain in a purchase situation. The only two significantly ($p < 0.05$) more important RRS than Sauvignon blanc were buying favourite brands (M = 4.05) and from a trusted store (M = 3.90) (Figure 3). *H9* is rejected. Sauvignon blanc was, however, indicated to be a significantly ($p < 0.05$) more important RRS than the price of white wine (M = 3.36), attractive label artwork (M = 3.27), medals/awards (M = 3.09), expert review (M = 2.97), advice from a store assistant (M = 2.84) and a mobile wine application (M = 2.25), which was the only unimportant RRS. *H10* is accepted.

According to the quantitative results, Sauvignon blanc, indeed, seems to fit the criteria of brand loyalty. Sauvignon blanc is a superior choice for various occasions and is purchased significantly more frequently than other varietals. Brand loyalty is known to be an outcome of repetitive satisfaction, and thus, a process of learning (Schiffman *et al.*, 2014). In the case of wine, this could certainly point to the sensory characteristics and enjoyment of wine upon consumption (Melo *et al.*, 2010). It has been found that the taste of wine *per se* is less important to consumers than the taste of wine linked to a specific brand (Mitchell and Greatorex, 1988), which might furthermore explain why Sauvignon blanc has become a habitual and/or convenient choice. The definition proposed by Bruwer *et al.* (2014) in a study of country-of-origin wine brand loyalty was adapted for this study to describe varietal brand loyalty: wine varietal brand loyalty is a "behavioural response" expressing commitment to continuously repurchase a preferred varietal due to "psychological dimensions of satisfaction, commitment, emotional attachment, word-of-mouth, purchase intent and resistance to brand switching". This finding holds significant value when marketing strategies for Chenin blanc are considered.

Segment(s) to target based on differences between age and ethnic groups' Sauvignon blanc and Chenin blanc purchase frequency

An important practical consideration of this study was to identify segments where markets for Chenin blanc can be developed without cannibalisation of Sauvignon blanc sales. A

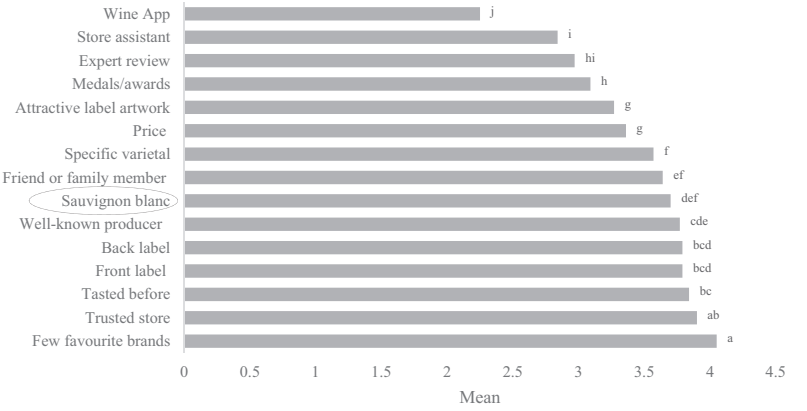


Figure 3.
RRS in the white wine category

Notes: Indicators for interpretation of means: ≥4.5 = very important; ≥3.5 < 4.5 = important; ≥2.5 < 3.5 = uncertain; < 2.5 = unimportant; and ^{abcdefghij} means with different superscripts indicate statistical significant differences ($p < 0.05$)

substantial number of the respondents (20 per cent) indicated that they never buy Chenin blanc, which motivated further analysis to identify this segment according to demographic characteristics. ANOVA indicated statistically significant ($p < 0.05$) differences between age and ethnic groups' purchase frequency of Sauvignon blanc and Chenin blanc (Table XI). It appears that younger Caucasian respondents are following the Sauvignon blanc trend of older Caucasian respondents, as there were no significant ($p > 0.05$) differences in their purchase frequency of Sauvignon blanc. However, older Black African and coloured respondents indicated to purchase Sauvignon blanc significantly ($p < 0.05$) more often than their younger counterparts.

For young Black African and young coloured respondents, there was no significant difference ($p > 0.05$) in the purchase frequency of Sauvignon blanc and Chenin blanc. Therefore, in terms of growth potential for Chenin blanc and without compromising substantial Sauvignon blanc sales, it is recommended to target younger Black African and coloured consumers. These segments also hold substantial buying power, as Black African and coloured consumers years of age 20-29 years represent 17 per cent of South Africa's total population of 57.7 million. As wine consumption habits are acquired (Melo *et al.*, 2011), it also seems sensible to target a younger generation that could become familiar with Chenin blanc after exposure and experience over time.

Risk-reducing recommendations for Chenin blanc

ANOVA indicated statistically significant differences between all Chenin blanc RRS ($p < 0.05$) (Table XII). *H11* is accepted. However, there were no practically significant differences ($d < 0.5$) between events and/or information matching Chenin blanc with food (M = 3.96), tastings outside the store (M = 3.84), store promotions (M = 3.73) and information on packaging and labelling (M = 3.67), and they are, therefore, considered as equally important. Social media was indicated to be significantly (statistically and practically) less important than all other RRS, with medium or large effect sizes ($p \leq 0.01$; and $d > 0.5$). For the young Black African and coloured segments, the order of importance of Chenin blanc RRS was consistent with that of the rest of the respondents. For these segments, there were also significantly higher Chenin blanc risk perceivers ($p < 0.05$) than for Caucasian respondents, and RRS should, therefore, be targeted mainly to reduce the three biggest risks: functional, financial and time risks.

Respondents' ranking of individual RRS items supported the RRS variables identified as important. Based on the frequency of items ranked as the most effective RRS for Chenin blanc (Table XIII), the five highest ranked items were in-store tastings (53 per cent), promotions at restaurants (45 per cent), discount price promotions (37 per cent), food pairing

	Age $p = 0.01^{*}$ $F = 4.08$		Ethnicity $p = 0.00^{*}$ $F = 8.10$			Ethnicity: age $p = 0.01^{*}$ $F = 2.90$					
				Black				Black			
	<30	≥30	Caucasian	African	Coloured	Caucasian <30	Caucasian ≥30	African <30	African ≥30	Coloured <30	Coloured ≥30
Sauvignon blanc	2.17^{b}	2.35^{a}	2.43^{a}	2.18^{b}	2.18^{b}	2.41^{ab}	2.45^{a}	2.08^{c}	2.29^{b}	2.05^{c}	2.31^{b}
Chenin blanc	1.98^{c}	1.99^{c}	2.11^{b}	1.88^{c}	1.97^{bc}	2.08^{c}	2.14^{bc}	1.95^{cd}	1.81^{d}	1.90^{cd}	2.04^{cd}

Notes: *Indicates statistical significance differences ($p < 0.05$); ^{abcd}Mean scores with different superscripts indicate statistical significant differences ($p < 0.05$), read by row and column. Indicators for interpretation of means: ≥2.5 = very often; ≥2 < 2.5 = regularly; ≥1.5 < 2 = occasionally; ≥1 < 1.5 = seldom; and <1 = never

Table XI. Differences in Chenin blanc and Sauvignon blanc purchase frequency according to age and ethnicity

RRS $p = 0.00^{*}$ $F = 68.67$	Mean	p	d	Black African <30 Mean	p	g	Coloured <30 Mean	p	g
Matching food	3.96[a]	–	–	4.18[a]	–	–	3.88[ab]	–	–
Tastings outside store	3.84[a]	0.01**	0.14	3.90[ab]	0.02**	0.38	3.93[a]	0.81	0.07
Store promotions	3.73[a]	0.00*	0.35	3.88[ab]	0.01**	0.37	3.75[abc]	0.54	0.16
Information: Packaging/labelling	3.67[ab]	0.00*	0.40	3.75[b]	0.00*	0.59	3.59[bcd]	0.16	0.38
Recommendations from others	3.47[b]	0.00*	0.74	3.65[b]	0.00*	0.70	3.53[c]	0.09	0.50
Traditional media	3.44[b]	0.00*	0.50	3.58[b]	0.00*	0.67	2.97[e]	0.00*	0.96
Social media	3.19[c]	0.00*	1.13	3.57[b]	0.00*	0.60	3.38[de]	0.01**	0.54

Notes: *Indicates statistical significance ($p < 0.01$); **Indicates statistical significance ($p < 0.05$); [abc]Mean scores with different superscripts indicate medium or large practical significant differences, read by column. Effect size (Cohen's d/Hedges g) guidelines: 0.2 = small; 0.5 = medium; and 0.8 = large. Indicators for interpretation of means: ≥4.5 = very important; ≥3.5 < 4.5 = important; ≥2.5 < 3.5 = uncertain; and <2.5 = unimportant

Table XII.
Chenin blanc RRS

Which three strategies would be the most effective to promote Chenin blanc?	(%)	Rank
In-store tastings	53	1
Promotions at restaurants	45	2
Discount price promotions	37	3
Food pairing events	35	4
Information about how Chenin blanc is different from other varietals	33	5
More advertising in-store (no tastings)	8	22
Facebook	7	23
Celebrity endorsers	6	24
Twitter	1	25
YouTube	1	25

Table XIII.
Highest and lowest ranked Chenin blanc RRS

events (35 per cent) and information about how Chenin blanc is different from other varietals (33 per cent). Although store promotions *per se* were identified as an important RRS, the individual item of more advertising in-store (no tastings) (8 per cent) was ranked among the five lowest RRS, stressing the importance of sensory exposure and experience ahead of information and advertising without tastings. Consistent with previous findings in an underdeveloped wine market (Mitchell and Greatorex, 1989), an opportunity to taste Chenin blanc, with or without food, would, therefore, most likely be more effective than merely creating awareness through various forms of media.

Conclusions, implications, limitations and future research

Although PR is known to be product-specific (Dowling, 1999), this study was an international first to investigate consumer risk perception on a wine varietal level. This study aimed to describe consumers' risk perception of Chenin blanc, according to risk drivers, risk dimensions and RRS. This study delivered much needed insights for Chenin blanc-specific marketing strategies. To the knowledge of the authors, this study is the first in wine risk perception research that used and described an exploratory sequential mixed methods approach. An exploratory qualitative phase, in combination with previously

described literature, was required to develop a varietal-specific questionnaire, used in a sequential core quantitative phase. A series of measures, including a pilot test and CFA, ensured acceptable reliability and validity of the questionnaire. This varietal-specific approach to risk perception can be replicated to investigate other struggling wine varietals or regions-of-origin.

Concerning risk drivers, quantitative results indicated a lack of availability, information, confidence to evaluate and reluctance to engage in risk-taking behaviour for Chenin blanc, compared to the white wine category. It was found that respondents had less knowledge about Chenin blanc and perceived it as being of less quality than Chardonnay and Sauvignon blanc. Chenin blanc was also purchased less frequently than Sauvignon blanc, the preferred varietal for a variety of occasions.

The I + P model (Cunningham, 1967) was adopted to measure risk perception with (I) applied to the white wine category and (P) to Chenin blanc. Time risk (excluded in previous risk perception studies), together with functional and financial risk, was indicated as the most significant Chenin blanc risks. The majority of respondents buy wine from supermarkets and might therefore not have the time to rationally evaluate Chenin blanc, which would require effort due to their lack of experience. Age appeared to have little influence on PR, while there were significant differences in Chenin blanc PR in terms of ethnicity. Black African and coloured respondents were identified as moderate Chenin blanc risk perceivers, with higher levels of perceived social, physical and psychological risks than Caucasian respondents, who were identified as average risk perceivers.

The two most important RRS identified in the white wine category were buying favourite brands and buying from a trusted store. Sauvignon blanc was identified as an important RRS in the South African white wine category, with characteristics of brand loyalty. To develop markets for Chenin blanc without significantly compromising the Sauvignon blanc market share, it is recommended to target younger Black African and coloured respondents who are currently buying equal amounts of Chenin blanc and Sauvignon blanc. Considering the current status of Sauvignon blanc amongst the more traditional wine drinking Caucasian segment, an opportunity might arise to establish Chenin blanc as an equal brand amongst the identified younger segments. Due to a lack of knowledge, younger and less experienced consumers tend to be more brand loyal (Vigar-Ellis *et al.*, 2015). However, to establish brand loyalty requires efforts beyond creating awareness.

To ultimately use Chenin blanc as a decision heuristic would require a voyage of repetitive satisfaction, and therefore, a process of learning to a level where it becomes familiar and recognised as distinct from other varietals. Based on respondents' recommendations, promotions involving true sensory experience with Chenin blanc would be most effective. Repeated exposure to Chenin blanc tastings, both in-store and at restaurants, with food pairings and food pairing suggestions, is specifically recommended to reduce functional risk. Information about Chenin blanc through media sources should be supplementary at most. Finally, it is recommended to associate Chenin blanc with a specific occasion, perhaps, as a varietal to enjoy with friends and family – this would not only create more exposure but also relieve social risk, which seems to be higher amongst Black African consumers.

Although the sample was large, with elements of representativeness, generalisability to the South African wine drinking population is limited. The length of the questionnaire, in combination with the inherent complexities of the risk perception construct, can be considered a limitation of this study. Respondent fatigue might have caused agreement bias; and construct validity of the instrument had to be handled separately according to the latent variables as structured *a priori*. Generally, this approach to individual SEMs produced valid

and reliable measures. However, as this study was a pioneering effort to investigate varietal-specific risk perception, a minority of Cronbach's alpha values below the desired threshold of $\alpha = 0.7$ were retained and results should be interpreted with caution. As the interview findings were particularly helpful to explore Chenin blanc risk perception and enhanced the questionnaire's validity, future risk perception studies should consider a qualitative and/or mixed methods approach. However, due to the extensive questionnaire, an explanatory sequential mixed methods approach might be the most appropriate methodology to study risk perception, i.e. a reduced-item quantitative survey followed by a qualitative phase to clarify results.

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