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Domain-specific market segmentation: a wine-related lifestyle (WRL) approach

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Abstract

Purpose – The purpose of this paper is to illustrate the use of a domain-specific research instrument (the wine-related lifestyle (WRL)) to determine the different lifestyle-related wine market segments in a country and compare the findings cross-culturally.
Design/methodology/approach – The research instrument included 48 psychographic activities, interests and opinions (AIO) statements, plus socio-demographic, product consumption and purchasing questions. A final sample of 376 South African wine consumers was utilised, whereon exploratory and confirmatory factor analysis, combined with Hough's Euclidean test, were applied to determine the existence of clusters (segments), assign descriptions to them, and link these to product consumption data.
Findings – Five wine segments recurred when comparing wine market segmentation studies cross-culturally. This means that cross-culturally, similar types of people drink wine with similar AIOs towards wine. In the South African market, four of these segments were identified.
Research limitations/implications – This study achieved a robust lifestyle-based market segmentation algorithm which can be used by researchers in different country environments for wine as a domain-specific product.
Originality/value – The contribution of this research is threefold in that it tested the WRL instrument in a cross-cultural context which is the first time this has been done; in the process it interpreted the wine consumer segments in South Africa for the first time; using a WRL-based (AIO) approach. The study demonstrated that market segmentation based on psychographic (lifestyle) behaviour is strengthened when supported by two additional segmentation methods, namely, socio-demographics and product involvement (purchasing and consumption).

Keywords Market segmentation, Involvement, Socio-demographics, Psychographics, Wine-related lifestyle (WRL)

Paper type Research paper

Introduction

A market can be segmented in many ways although, in general, there are three distinct approaches to specify market segments. These include analysis of consumer characteristics (i.e. socio-demographics, personality, attitude), analysis of consumer response (situation-specific), and simultaneous analysis of consumer characteristics and consumer response (Oppedijk van Veen and Verhallen, 1986). Strong support that the simultaneous analysis of consumer response and characteristics at the domain-specific (product-market) level is the most feasible level for segmenting markets has come from several works (i.e. van Raaij and Verhallen, 1994; Ahmad, 2003; Pirc, 2005; Bruwer and Li, 2007; Bruwer, 2014). Moreover, Steenkamp and Hofstede (2002, p. 208) offered conditional support in the sense that domain-specific segmentation bases "tend to be more (less) construct equivalent and yield more (less) accessible and stable segments, but tend to be less (more) actionable and responsive".

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Segmentation can be based on situations, product-situation, and person-situation interactions (Van Raaij and Verhallen, 1994). Most market segmentation studies have involved an a priori or backward type of analysis, also known as the traditional approach (Ahmad, 2003). They are particularly well suited to situations where it is known, from either prior research or experience, which (demographic) variable can be used to split consumers into homogeneous sub-groups in terms of their responses. If, on the other hand, the situation is not conducive to an a priori approach, a response-based, *post hoc* or a posteriori approach can be used to construct homogeneous response sub-groups (Dolnicar and Leisch, 2004). According to Wind (1978), "real-world" segmentation studies have followed one of two prototypical research designs, namely, a priori or cluster-based. For the cluster-based designs, the non-hierarchical methods, such as *K*-Means, became dominant during the late 1980s for segmenting large data sets (Schaffer and Green, 1998).

It has been an on-going challenge for academic researchers to find the segmentation basis that is "optimal" for a specific market (Bruwer, 2014). The use of the more traditional approaches to market segmentation, most notably those based on demographics, to explain or predict consumer behaviour, has been questioned mainly because demographics lack richness (Grunert *et al.*, 1997; Wedel and Kamakura, 2000; Ahmad, 2003). In the case of wine, Bruwer *et al.* (2001) asserts that demographics are inadequate to describe, let alone provide the information basis from which to successfully penetrate wine target segments. Social class can add more depth to demographics, but it also often needs to be supplemented to obtain meaningful insights (Kucukemiroglu, 1999). Kucukemiroglu (1999, p. 473) goes on to say that "lifestyle patterns provide, broader more three-dimensional views of consumers so that marketers can think about them more intelligently".

A development in the evolvement of lifestyle as a segmentation approach has been at the product-specific level (Wedel and Kamakura, 2000) with two notable examples being food (Grunert *et al.*, 1997) and wine (Bruwer *et al.*, 2002). This approach has also been referred to as "domain-specific" market segmentation (Van Raaij and Verhallen, 1994). It simply means that consumers are segmented on psychographical data that are specific to a particular consumption situation or a set of consumption behaviours such as that found with wine. The domain-specific market segmentation approach is singled out by Bruwer and Li (2007), (Pirc, 2005), Ahmad (2003), and Van Raaij and Verhallen (1994) as the most feasible for segmenting markets. The development of a domain-specific wine-related lifestyle (WRL) segmentation approach in the foundational studies (Bruwer *et al.*, 2001, 2002; Bruwer and Li, 2007) started the process of knowledge evolvement using wine in a product-specific context. To date, these studies have been confined to the Australian environment despite suggestions to broaden the scope in other country environments (Bruwer and Li, 2007). In the current study, we used this domain-specific lifestyle-related research instrument (known as the WRL) to determine the different wine market segments in a different country. Our paper's contribution is threefold in that it tests the WRL instrument in a cross-cultural context which is the first time this has been done; in the process it interprets the wine consumer segments in South Africa which is the country of our study; and is the first time this has been done using a WRL-based activities, interests and opinions (AIO) approach.

Literature review

Market segmentation is the first step in the segmentation, targeting, positioning process that businesses adopt as a core aspect of their marketing strategy (Kotler and Keller, 2012). Hunt and Arnett (2004, p. 8) asserted that "a strategy of targeting specific segments can lead to competitive advantages in the marketplace and, in turn, superior financial performance". Sound market segmentation offers the advantage of dividing the market into smaller, meaningful and relatively homogenous consumer segments. The market offerings (4Ps) of a

business can then be designed to meet the needs, wants, tastes and preferences of such segments (Dibb *et al.*, 2002; Hunt and Arnett, 2004; Lynn, 2011).

In most markets, there is a need for market segmentation from the marketing managerial viewpoint, in order to cope with the large diversity of consumer behaviour and expectations. The aim of market segmentation is to find homogeneous sub-groups of people with different patterns of domain-specific values and behaviours (Oppedijk van Veen and Verhallen, 1986). "These sub-groups should be large enough for a differentiated marketing approach, and should be within reach for advertising and distribution" (Van Raaij and Verhallen, 1994, p. 63). Not surprisingly, almost every consumer behaviour variable has been proposed for segmenting markets (Bock and Uncles, 2002).

Businesses usually take a sequential process for segmenting their target markets (Kotler and Keller, 2012) using criteria/variables that differentiate groups based on their purchasing behaviour (Geraghty and Torres, 2009). There are two broad methodologies for segmenting a market, either descriptive in nature (geographic, demographic and psychographic) or behavioural in nature (benefits-sought, occasion-based and involvement) (Kotler and Keller, 2012). Ideally a combination of both methods provides a greater understanding to the different segments. However, any method of segmentation can be used as long as the segments are measurable, substantial, accessible, differentiable and actionable and provided it is functional for marketers (Kotler and Keller, 2012). There are several research published works on the conceptual and methodological foundations of market segmentation (i.e. Orth *et al.*, 2004) and hence there is no need for an elaborate general discussion thereof in this paper. The discussion that follows will therefore focus on the domain (product) specific lifestyle segmentation approach and its association with consumer involvement with the focus product.

Psychographic (lifestyle) segmentation

Although psychographics, which means putting together "psychology", and "demographics" (Vyncke, 2002), are often equated with lifestyle segmentation studies, it is essentially used by researchers to describe consumer market segments, whereas lifestyle research techniques group consumers into segments based on certain lifestyle factors (Schiffman *et al.*, 2011). Ahmad (2003, p. 376) points out that lifestyle segmentation is "somewhat complex, harder to understand and apply" and that empirical research first has to be done on consumers to capture their psychographical information. Demographical and socio-economic data are useful for the purpose of identifying the size, judging the attractiveness and accessing a group of consumers. Psychographical data are, on the other hand, useful for the purpose of predicting consumption and/or buying behaviour (Ahmad, 2003). There is ample evidence that psychographic constructs as well as demographic variables are linked to rates of alcoholic beverage use (Lesch *et al.*, 1991).

The lifestyle construct used in market segmentation is based on research into motivation. As such, the construct presents an overall view of a consumer by encompassing variables from the rational, concrete and behavioural psychology fields (Gonzalez and Bello, 2002). The conceptualisation of lifestyles therefore "fits" within the broader framework of psychological segmentation (Lawson and Todd, 2002). It has also been stated that "the concept of lifestyle represents a set of ideas distinct from that of personality" (Kucukemiroglu, 1999, p. 473). Consumer lifestyle-based segmentation has been successfully used to profile and predict the consumer market segments of a number of products and services (Fournier *et al.*, 1992; Orth *et al.*, 2004). Lifestyle, social and family-related variables are found to have a greater ability to profile market segments and explain segment membership than demographic variables (Honkanen *et al.*, 2004; Liu *et al.*, 2014).

According to Gonzalez and Bello (2002) and Bruwer *et al.* (2002), the lifestyle construct is defined by AIOs. Activities refer to how time and money are spent, interests refer to what is important and opinions refer to the individuals' views of themselves and the world. It is the

combination of these elements that provides a well-rounded insight to both work and leisure habits of an individual. This is further supported by Bruwer and Li (2007, p. 22) who defined lifestyles as "patterns in which people live and spend time and money" and therefore lifestyles link the product or service offering with a perception of value. The value systems are relatively stable at the level of societies (Brangule-Vlagsma *et al.*, 2002) but that of individual members within differ. Fournier *et al.* (1992) advocated the classification of products and services in terms of the needs and values that they reflect. They further asserted that by "clustering people on their purchase patterns in relation to those categories, a rich and valid typology of consumption lifestyles emerge" (Fournier *et al.*, 1992, p. 330). Their assertion falls squarely within the ambit of the domain-specific lifestyle-related market segmentation approach that is further expounded in this study.

This approach provides information about how consumers truly feel towards a product (Tshwaedi, 2002). Johnson and Bruwer (2003) also favoured lifestyle segmentation as characteristics thereof provide a life-like understanding of who the consumer is. Furthermore, lifestyle segmentation is powerful when the domain is specific to a single product, as is the case with wine, compared to most studies that do not have one product as their specific focus (Bruwer and Li, 2007). Hence lifestyle as a segmentation method was the preferred choice for our study as it is defined by AIOs which provide a well-rounded life-like understanding of the patterns in which people live, spend time and money. Furthermore, it provides information about the different subjective preferences of how consumers relate to a product.

Product involvement segmentation

Involvement refers to the relationship between an individual and an object. Lesschaeve and Bruwer (2010) identified that consumer involvement can take place on three levels, namely, product involvement, brand involvement and purchasing decisions involvement. The level of involvement displayed differs from person to person. Most literature classifies involvement as either high or low involvement (Celsi and Olson, 1988). However, medium (moderate) involvement has also been used to identify a third level of involvement (Charters and Pettigrew, 2006). High and low involvement consumers are believed to behave differently. Involvement segmentation is strongly correlated to the consumer's consumption behaviour and therefore purchasing behaviour (Bruwer and Huang, 2012; Kaasin-Montgomery and Bruwer, 2013; Ogbeide and Bruwer, 2013).

The cross-examination of involvement, demographics and behavioural information has led to further discoveries. Charters and Pettigrew (2006) found that income and age are causal influences associated with consumers' involvement levels for wine. It was found that older people with a higher income were more likely to be highly involved with wine. Consumption patterns are also influenced by level of involvement.

Some product categories engage its consumers more than others. Wine as a product category has all the attributes Laurent and Kapferer (1985) argued are the source of involvement. It has the ability to give the consumer pleasure value. Furthermore, the beverage can have significant sign value and is perceived by some as an important product. There is also a perceived risk level when purchasing a bottle of wine.

Domain-specific (wine-related) lifestyle segmentation

There have been a number of published domain-specific (wine) segmentation studies internationally. The earliest dated study was completed in 1986 in the Australian wine industry (McKinna, 1986). It utilised an exploratory qualitative study and identified five wine segments based on WRLs: connoisseurs, aspirational drinkers, beverage wine consumers, new wine drinkers and young bottle wine drinkers.

To date, there have been 11 published domain-specific (wine) segmentation studies internationally (see Table I). The majority of the literature on wine market segmentation is

Table I.
Identified segments from previous domain-specific (wine) market segmentation studies

Identified segments	Previous wine segmentation studies										
	McKinna (1986, Australia)	Hall and Winchester (1999, Australia)	Lockshin and Spawton (2001, Australia)	Bruwer *et al.* (2001, Australia)	Johnson and Bruwer (2003, Australia)	Thomas and Pickering (2003, New Zealand)	Fry (2006, SouthAfrica)	Bruwer and Li (2007, Australia)	Goodman *et al.* (2007, Several countries)	Geraghty and Torres (2009, Ireland)	Brunner and Siegrist (2011, Switzerland)
Basic wine drinker	X Beverage wine consumer	X Risk averse drinkers	X Uninvolved shoppers	X	X	X Light wine drinkers	X Unpretentious knowledgeable	X	X In-store based cluster	X Casual wine buyer	X Basic and indifferent
Experimenter, highly knowledgeable wine drinker	X Connoisseur	X Connoisseur	X Choosy buyers		X	X Medium wine drinkers	X Experimenter, variety-seeking		X Cognitive based cluster	X Wine traditionalists	X Involved, knowledgeable
Enjoyment orientated social wine drinker		X	X Interested shoppers	X	X	X Heavy wine drinkers	X Confident, knowledgeable enthusiasts	X			X
Fashion and image oriented wine drinkers	X Aspirational drinkers	X	X Brand conscious, hate to shop	X							X
Conservative knowledgeable wine drinkers			X Lazy involved shoppers	X Purposeful inconspicuous premium wine drinker	X		X	X			
Young bottle wine drinkers	X							X	X Assurance based cluster		
Ritual oriented conspicuous wine enthusiast				X	X Image knowledge seeking		X Social conformist, image seeking				
Price conscious and value seeking										X	X
New wine drinkers	X										
Mature time rich wine drinkers								X			

Note: X, Analogous to previously identified segment

based on research executed in Australia as this country regularly builds on its research findings to refine its understanding of the domain-specific (wine) market segments.

From Table I it is clear that there are five wine segments that continuously reoccur, more so than others, in (wine) domain-specific segmentation studies completed over time, irrespective of the country where the study was implemented:

- basic wine drinkers;
- experimenter, highly knowledgeable wine drinkers;
- enjoyment orientated social wine drinkers;
- fashion and image-oriented wine drinkers; and
- conservative knowledgeable wine drinkers.

Bruwer *et al.* (2001) developed a WRL instrument based on the food-related lifestyle instrument of Grunert *et al.* (1997) as wine is closely and naturally related to food (Johnson and Bruwer, 2003; Brunner and Siegrist, 2011). Lifestyle comprises of an individual's AIOs that create the patterns, in which they live, spend time and money. Segmentation using this (lifestyle) method divides the market according to different subjective preferences. Three studies using the WRL instrument, all to segment the Australian wine market, have been executed to date.

Bruwer *et al.* (2001) implemented the WRL instrument through a household survey in Australia that was exploratory in nature (Johnson and Bruwer, 2003; Bruwer and Li, 2007). In the first study, the following five segments were identified (Bruwer *et al.*, 2001):

- enjoyment-oriented social wine drinkers;
- purposeful inconspicuous premium wine drinkers;
- ritual-oriented conspicuous wine enthusiasts;
- basic wine drinkers; and
- fashion and image-oriented wine drinkers.

Bruwer and Li (2007) conducted a similar research study to both fine-tune the WRL model and to monitor changes as individual preferences develop over time. Two new segments emerged in this study, namely, the "mature time rich wine drinkers" and "young wine drinkers". Three segments were, however, consistent in the three WRL studies, namely, "enjoyment oriented social wine drinkers", "conservative knowledgeable wine drinkers" and "basic wine drinkers".

Choice of the method for domain-specific segmentation

It is an on-going challenge for academic researchers to know which segmentation method will provide the best information for a specific target market (Bruwer and Li, 2007). According to Berni *et al.* (2005), when a product is as versatile as wine, traditional approaches (geographic, demographic and psychographic), can be restrictive. Others (McKinna, 1986; Hall and Winchester, 1999; Bruwer *et al.*, 2001) prefer lifestyles as a form of segmentation as it provides an understanding to the consumer's AIOs around wine which affects both their consumption and purchasing habits. For the purposes of this research study, it was decided to use the established WRL research instrument as a domain-specific market segmentation tool to determine the different wine segments in South Africa. This is the only application that has been repeatedly implemented in a wine market (used three times in Australia). Furthermore, its results correlate to the wine markets that reoccur worldwide, proving its efficiency. Lastly, it bases segmentation on psychographic (lifestyle) behaviours which provide a life-like understanding of the market and it can be used in conjunction with other segmentation methods, namely, demographic and involvement (purchasing and consumption).

Research method

The methodology used was a quantitative analysis (factor analysis and cluster analysis) of primary data collected through an online survey. Quantitative data are preferred for determining and understanding the behaviour and characteristics of a large sample and is similar to other segmentation studies done in the wine market (Hall and Winchester, 1999; Bruwer *et al.*, 2001; Johnson and Bruwer, 2003; Fry, 2006; Bruwer and Li, 2007; Geraghty and Torres, 2009; Brunner and Siegrist, 2011; Somogyi *et al.*, 2011). Although the majority of wine market segmentation studies were conducted by convenience sampling through in-store interviews (Bruwer *et al.*, 2001; Johnson and Bruwer, 2003; Berni *et al.*, 2005; Fry, 2006; Geraghty and Torres, 2009), this was not the method chosen for this study. The WRL research instrument had thus far only been used in Australia (Bruwer *et al.*, 2001; Johnson and Bruwer, 2003; Bruwer and Li, 2007). In the process, the content, criterion and construct validity of the WRL instrument has been established through successful implementation in these segmentation studies.

An online survey was used as the method of data collection due to its convenience, low cost and turnaround speed. This methodology is similar to previous wine segmentation studies completed (i.e. Brunner and Siegrist, 2011). Neither an accurate population nor an accurate sampling frame was available for the wine drinkers of South Africa. Access was granted to a database of 3,000 e-mail addresses classified as lifestyle segment "LSM 8-10 premium food customers who shop at top retailers" (South African Advertising Research Foundation (SAARF), 2012). Due to the South African Consumer Protection Act, No. 68 of 2008, no third party may e-mail the database without consent provided by members themselves. The owner of the database therefore e-mailed respondents to introduce and invite them to participate in the survey. A period of ten days was given to respond with an incentive of winning two cases of South African wine to the value of R1,500 (±US$ 100). From a possible database of 3,000 individuals, this was narrowed to a secondary database of 518 individuals (17 per cent retention) after the volunteering process as described above had taken place and this became the sampling frame.

The questionnaire was built on Google Documents whereby respondents could access and complete online after a unique hyperlink had been provided via e-mail. The questionnaire was designed to take 10-15 minutes to complete and comprised of three sections. The first section related to WRL statements and included 48 AIO items each measured by a seven-point Likert scale with values ranging from 1 = completely disagree to 7 = completely agree which respondents used to evaluate each statement. The second section included basic demographic questions covering gender, age, education, employment, residence, marital status and household income. The last section related to wine purchase and wine consumption habits (personal and household) and comprised of eight questions. Before administering the survey, it was pretested on a randomly selected sub-sample of 20 individuals in the database while ensuring a balance in terms of gender, age and origin. Completion of the questionnaire took 13.5 minutes on average and no issues, structurally or otherwise, were identified where after the main survey was executed.

A total of 518 respondents were e-mailed and given a ten-day lead time to complete the questionnaire. After four days the response rate was 279 (54 per cent). On the fifth day, which marked the halfway point of the data collection period, a reminder e-mail was sent to the 239 e-mail addresses to encourage those who had not yet responded to complete the questionnaire. This generated an additional 102 responses and no further reminders were sent. The final response was 381 completed surveys, which amounted to a 74 per cent response rate from the volunteered database. After cleaning data, deleting duplicates and removing incomplete entries, a final sample of 376 valid responses was utilised. The intention was to gather a minimum sample size of close to 400 responses to ensure a 95 per cent level of confidence in the analysis of the data which is considered

an acceptable level in human sciences research (Johnson and Bruwer, 2003). The 376 responses received are relatively close to this target and was therefore deemed suitable to execute segmentation.

Stepwise domain-specific wine-related lifestyle segmentation approach

All data were exported from Google Documents into Microsoft Excel, a suitable format for transferring it to the Statistica 11 software that was used to perform factor and cluster analysis.

Exploratory factor analysis (EFA)

Prior to performing factor analysis, the suitability of data was checked by completing the generally accepted tests; the KMO measure of sampling adequacy and Bartlett's test of sphericity (Johnson and Bruwer, 2003; Bruwer and Li, 2007). Table II summarises the results and indicates that the data were indeed suitable for factor analysis.

The purpose of factor analysis is to determine whether the AIO items (observed elements) can be described by a fewer number of variables (unobserved elements) due to the correlation between questions. There are two ways in which factor analysis can be done, either exploratory or confirmatory (Wedel and Kamakura, 2000). As there were no previously defined dimensions, the exploratory method was used. The reduction of factors forms the basis for cluster analysis.

Determining the number of factors

Kaiser's criterion was used to determine the number of factors by using components with eigenvalues greater than 1.0. According to this, 12 factors were identified. However, it has been suggested that Kaiser's criterion not be used in isolation as it tends to over extract the number of factors (Lance and Vandenberg, 2008). Instead, Horn's Parallel Analysis (PA) was used as this is one of the most recommended rules to determine the number of factors (Ledesma and Valero-Mora, 2007). This method compares the observed eigenvalues with those obtained from randomly generated data (using a Monte Carlo-based simulation). The number of factors is determined where actual data are greater than simulated data. As a result, six factors were identified as shown in Figure 1.

Determining the descriptors of the factors

To identify the descriptor of each factor, both unique and varimax normalised factor loading methods were used and both generated similar results. Through this method, each AIO item attributes a value to each of the six factors. Where the greatest value was attributed, that question element was classified to that factor. Table III indicates the classifications, the six factors and their percentage total variance.

Although there is similarity between the above identified factors and previous WRL studies, the six factors only account for 42.8 per cent explanation of data. This is an unsatisfactory result with more than half of the variability not being accounted for. Therefore, an alternative method was investigated as basis for the EFA.

Test	Acceptable result	Actual result	Status
KMO measure of sampling adequacy	> 0.6	0.86	Acceptable
Bartlett's test of sphericity	$p < 0.05$	0.00	Acceptable
	Approximate χ^2	6,404.82	
	Degrees of freedom (df)	1,128	

Table II. Suitability of data for factor analysis

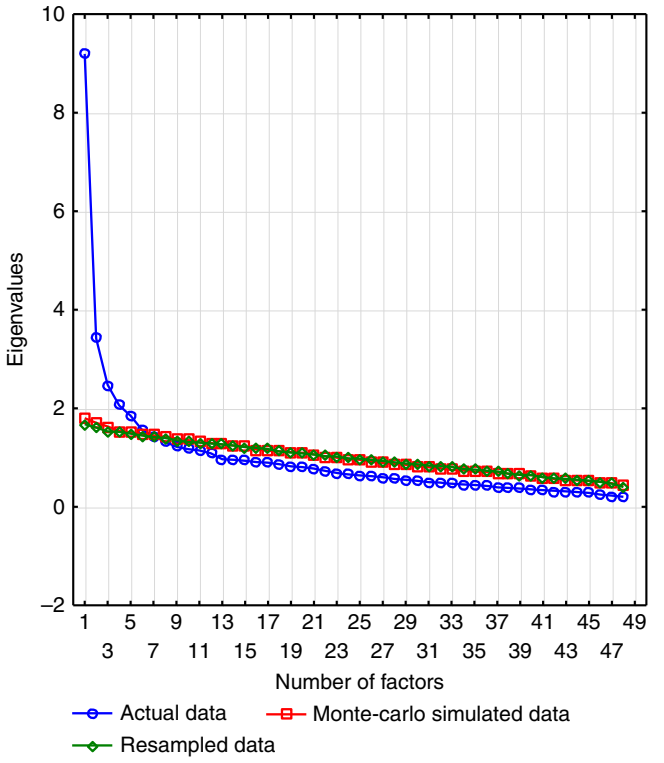

Figure 1.
Discrete plot generated from Horn's parallel analysis

Factor	Description	Eigenvalue	Individual %	Cumulative %
Factor 1	Wine knowledge and connoisseur tendencies	9.19	19.15	19.15
Factor 2	Consumption situation	3.42	7.12	26.27
Factor 3	Reasons for wine consumption	2.48	5.16	31.43
Factor 4	Quality attributes	2.06	4.29	35.72
Factor 5	Purchasing decisions	1.85	3.85	39.57
Factor 6	Packaging of product	1.56	3.26	42.83

Table III.
Factors identified in the EFA

Confirmatory factor analysis (CFA)

Determining the number of clusters. The tree clustering method was used to determine the number of clusters. This method used the dissimilarities (or distances) between the AIO questions when forming the clusters. The most straightforward way of computing distances between these elements in a multi- dimensional space was to use Euclidean distances (Burns and Burns, 2009). This was calculated as the geometric distance in the multidimensional space with the following formula:

$$\text{Euclidean distance } (x, y) = \left\{ i(x_i - y_i)^2 \right\}^{1/2}$$

At each level, a linkage or amalgamation rule is needed to determine when two clusters are sufficiently similar to be linked together. Ward's method was used because of its

methodology to use analysis of variance (ANOVA) approach to evaluate the distances between clusters. This method attempted to minimise the Sum of Squares (SS) of any two clusters that can be formed at each step (Burns and Burns, 2009). Figure 2 indicates that four distinct clusters are apparent between the linkage distances of 50 and 100.

Confirmation of the number of clusters

K-Means Cluster Analysis divided the total number of observations into a number of predefined clusters using the similarities of answers from the questionnaire. As the tree clustering method identified four groups, the number of clusters specified was $K = 4$. After the data had been separated the "fit" between the four identified groups from the tree clustering method was compared to the four identified clusters from the *K*-Means Cluster Analysis method by means of categorised histograms. In addition to this statistical approach to identify four clusters, the clusters identified also conform to the criteria for market segmentation, namely, they are measurable, substantial, accessible, differentiable and actionable.

Determining the descriptors of clusters

Rules for terminal node. At this point, four clusters had been identified but not yet described, which is necessary to operationalise the segmentation approach adopted in this study. The rules for terminal node seek out the individual questions that best separate clusters into their homogenous groups. Figure 3 indicates what these questions are and visually depicts their differences in the clusters. It rarely happens for a terminal node graph to show such clear distinctions between the different groups (Kucukemiroglu, 1999). Usually survey respondents weight different questions with high importance. However, in this study, the majority of survey respondents weighted the same questions with high importance and therefore it explains a large portion of the variability in clusters. This is somewhat of an anomaly and no sound reason can be provided for the similar weighting.

Principal component analysis (PCA). Using PCA, which is a type of factoring, Figure 4 is generated. This biplot once again confirms that there are four distinguishable clusters. Furthermore, it also identifies more than two key questions (as was the case with rules for terminal node) that determine the differences in AIO behaviour between the clusters. These questions also relate to the importance plot and to the ANOVA results where large differences of answers were given between the clusters.

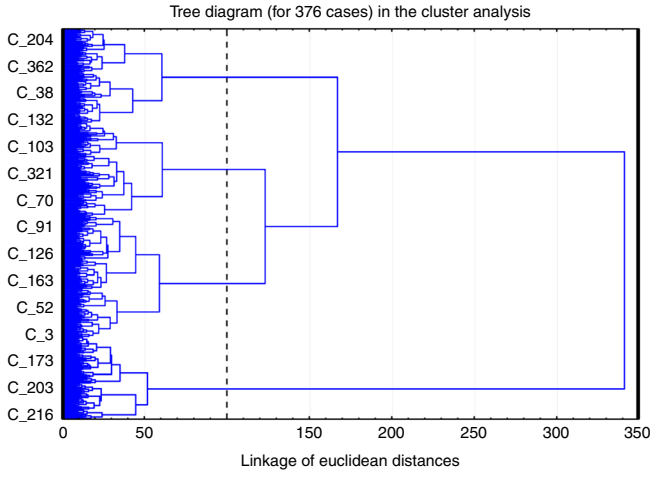

Figure 2.
Tree diagram in the cluster analysis

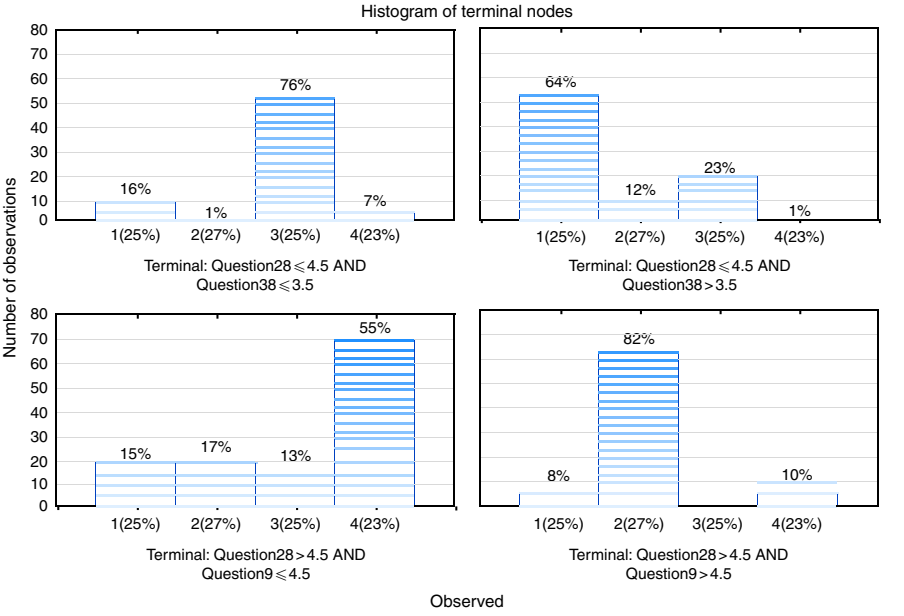

Figure 3.
Histogram of terminal nodes

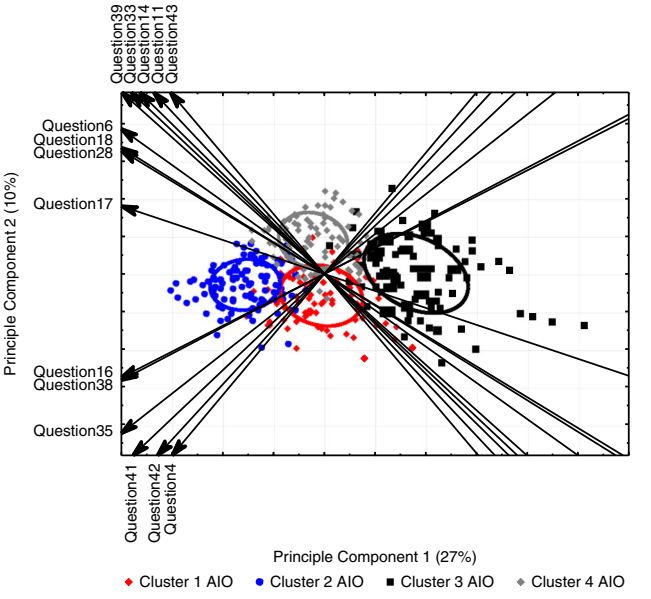

Figure 4.
Biplot generated from principal component analysis

Factor analysis, using Horn's PA identified six factors. These were described as wine knowledge and connoisseur tendencies, consumption situation, reasons for wine consumption, quality attributes, purchasing decisions and packaging of product. However, as the six factors only accounted for 42.83 per cent variance of the data, an alternative method was investigated as basis for cluster analysis.

The tree clustering method confirmed four homogenous groups. This was used as a basis for the number of clusters prescribed in *K*-Means Cluster Analysis. The categorised histograms for both tests confirmed a "cluster fit" in that the same four groups appeared in both the tree clustering method and the *K*-Means clustering method. The four segments identified meet all the criteria of Kotler and Keller (2012, p. 253) that segments are "measurable, substantial, accessible, differentiable and actionable".

The rules for terminal node were used to provide a cursory examination of the four clusters:

(1) they do not drink wine often BUT they do know about wine;

(2) they do drink wine often AND they have connoisseur tendencies;

(3) they do not drink wine often AND they do not know about wine; and

(4) they do drink wine often BUT they do not have connoisseur tendencies.

PCA identified the key questions that determined the differences between the clusters. In the next section, PCA, the importance plot and ANOVA results form the basis of describing the socio-demographics and wine consumption metrics of the clusters.

Research findings and discussion

The domain-specific (WRL) research instrument bases segmentation on psychographic (lifestyle) behaviour and is supported by two additional segmentation methods, namely, socio-demographic and product involvement (purchasing and consumption). By understanding the consumer behaviour and human preferences of the segments, one can maximise marketing effectiveness through cost efficiencies, differentiation, competitive advantage, streamlining of marketing approaches and concentrating efforts on profitable consumers.

Lifestyle-related characteristics of the clusters: analysis and interpretation

Table IV is a combination of AIO items (listed in accordance to the importance plot) together with the ANOVA results from *K*-Means Clustering. This serves as a guideline of where large differences of answers were given between the clusters and is the basis for analysis and interpretation.

An analysis of the results in Table IV reveals the differences between the clusters that assisted with identification and allowed for distinctions to be drawn between clusters. These distinctions were translated into characteristics (individual descriptors) of each cluster and are listed in Table V.

Socio-demographic characteristics of clusters

In the literature review section it was mentioned that although demographics is the most common method to segment a market, within wine segmentation consumer behaviour and human preferences are seldom determined by demographic variables only. For this reason, it was used only as a supporting segmentation method. It provides an easy to measure and quick description of individuals in each segment that is simple to understand (Table VI).

Product involvement and purchasing characteristics of clusters

Involvement refers to the relationship between the consumer and thus product. Involvement segmentation was used as a supporting segmentation method as it is strongly correlated to the consumer's consumption behaviour and therefore purchasing behaviour (Bruwer and Huang, 2012; Bruwer and Buller, 2013). Table VII is a summary of product involvement questions relating to wine consumption behaviour.

Component	Theme	Cluster means[a] 1	2	3	4
Knowledge	Connoisseur	4.64	5.72	2.52	3.85
Storage	Connoisseur	3.08	5.3	2.04	1.98
Vintages	Purchase decision	4.36	4.75	2.33	3.12
Accessories	Connoisseur	2.86	3.82	1.35	2.01
Breathe	Connoisseur	4.86	5.06	2.92	3.56
Recommendations	Purchase decision	4.19	4.78	2.03	3.22
Rare wines	Purchase decision	3.69	4.57	2.19	2.36
Cork taints	Connoisseur	4.97	5.64	2.9	3.63
Specialty stores	Place of purchase	3.74	4.43	2.09	3.01
Attend wine tastings	Occasion	2.44	3.51	1.45	1.62
Varietal	Purchase decision	4.70	5.34	2.91	3.63
Country of origin	Purchase decision	4.95	5.21	2.82	4.07
Glassware	Connoisseur	5.35	5.87	3.33	4.51
Wine farm	Place of purchase	3.47	4.6	2.2	2.85
Drink with family	Occasion	4.52	6.23	3.85	6.38
Case or more	Purchase decision	3.34	5.7	2.42	3.92
Regularity	Occasion	3.58	5.87	2.94	6.27
Drink alone	Occasion	2.52	5.07	2.43	5.52
Decant	Connoisseur	2.78	3.53	1.65	2.24
Light to heavy wines	Occasion	3.27	4.4	2.35	3.05
Celebrations	Occasion	5.79	6.28	4.56	6.19
Drink with friends home	Occasion	5.42	6.54	4.72	6.37
Drink with friends out	Occasion	5.34	6.19	4.34	6.28
Wine clubs	Place of purchase	2.04	2.41	1.36	1.69
Internet	Place of purchase	1.75	2.58	1.35	1.69
n	376	91	100	99	86
%	100	24	27	26	23

Note: [a]Cluster means based on seven-point Likert scale ranging from 1 = completely disagree to 7 = completely agree

Table IV. Lifestyle-related characteristics of clusters

Table VIII is a summary of product involvement questions relating to wine purchasing behaviour.

Purchasing habits on their own did not provide sufficient richness of information to assign people to clusters. Purchasing habits refer to whether an individual classifies themselves as a buyer, consumer, decision-maker, or neither. Individuals could mark all that apply and therefore totals do not add to 100 per cent:

- Clusters 1, 3 and 4 describe themselves in diminishing incidence as a buyer, a consumer, and a decision-maker. Of the three, cluster 4 had the highest average household expenditure on wine;
- Cluster 2 describes themselves first as a buyer (88 per cent), and with almost equal incidence as a consumer (81 per cent) and decision-maker (80 per cent), thus making cluster 2 the dominant decision-making one among the four clusters; and
- Cluster 2 (81 per cent) and cluster 4 (80 per cent) have the highest percentage of wine consumers.

As the database used was classified as "LSM 8-10 premium food customers who shop at top retailers" (SAARF, 2012), one can assume that this is the reason that individuals naturally associate themselves as a buyer first. A correspondence analysis (CA) was done to provide more insight to this finding as shown in Figure 5. CA is a variant of PCA as it applies to categorical data rather than continuous data (Greenacre, 2013) and its function here is to display the data in a two-dimensional graphical form.

Cluster	Identified characteristics	Cluster name
1	Connoisseur-related tendencies Interested in the provenance of wine Seeks recommendations about wine Not adventurous in purchases Consumes different wine at home compared to restaurants Does not drink wine regularly, except occasions	Conservative, knowledgeable wine drinker
2	Connoisseur-related tendencies Interested in the provenance of wine Seeks recommendations about wine Willing to try new wines Drinks wine regularly alone, with friends and family Drinks wine on all occasions, at home and when going out	Experimenter, highly knowledgeable wine drinker
3	Little interested in the provenance of wine No connoisseur tendencies Does not seek out information Purchases safe brands Consumes same wine at home compared to restaurants Does not drink wine regularly and never drinks wine alone Prefers to drink wines only for celebrations	Basic wine drinker
4	Does not seek out information Purchases safe brands Drinks wine regularly alone, with friends and family Drinks wine on all occasions, at home and when going out	Enjoyment oriented, social wine drinker

Table V.
Preliminary identified clusters

Figure 5 confirms that cluster 2 is indeed the decision-maker but indicates that cluster 4 is clearly more consumer-driven than buyer-driven. Cluster 3 is driven by buyer behaviour. Cluster 1 is both the buyer and decision-maker but not the consumer. This relates to the objective of determining the consumption metrics of the identified WRL segments.

Descriptions of identified WRL market segments

All findings from previous sections were collated and grouped according to the four identified WRL segments. Wine segments are differentiated predominantly by AIOs (psychographics) and not by demographic parameters. Each segment is first described based on demographic characteristics as it provides a quick description of individuals and is easy to understand. Thereafter, an interpretation of their socio-demographics and wine consumption metrics is provided. As lifestyle was the predominant segmentation method, these descriptions provide a well-rounded life-like understanding of the patterns in which the people grouped in the clusters live, spend their time and money.

Cluster 1: conservative, knowledgeable wine drinker (24 per cent)

The majority of cluster members are married females, mostly high school or college educated, and either employed or self-employed earning an average annual household income. They are likely to have children under the age of 18 years still living in the household and are slightly younger than other clusters with a skew towards 35-39 and 50-54 year olds. Wine consumption occurs on a weekly basis but at a comparatively low level of only one bottle a week, excluding the sparkling wine consumed at celebration occasions. With an average of 2 people consuming wine in the household, it is likely that consumption occurs in the company of other wine consumer(s) in the household.

	Cluster				
	1 (%)	2 (%)	3 (%)	4 (%)	Sample (%)
Gender					
Female	80	72	77	79	77
Male	20	28	23	21	23
Age group					
18-24	3	2	1	0	2
25-29	7	4	7	2	5
30-34	4	6	6	8	6
35-39	18	16	8	6	12
40-44	8	9	20	15	13
45-49	9	10	13	10	11
50-54	19	15	13	20	16
55-59	16	14	14	14	14
60-64	8	13	8	9	9
65-69	4	7	7	8	7
70-74	3	1	2	3	2
75+	1	3	1	5	2
Education					
High school incomplete	1	0	2	1	1
High school complete	26	17	24	15	21
College diploma	41	34	36	45	39
Bachelor degree	15	21	16	19	18
Honours degree	10	15	11	12	12
Masters degree	5	12	7	6	8
Doctorate degree	2	0	3	2	2
Province					
Gauteng	43	47	39	51	44
Western Cape	47	43	51	37	44
KwaZulu-Natal	8	4	8	9	7
Eastern Cape	2	5	2	2	3
Other	0	1	0	1	2
Marital status					
Single	10	15	19	7	13
Married	80	73	67	86	73
Separated	0	0	0	2	1
Divorced	9	13	14	6	10
Widowed	2	0	0	0	3
Household income[a]					
Less than R160,000	5	5	8	3	6
R160,001-R250,000	11	7	12	13	11
R250,001-R346,000	19	13	20	15	17
R346,001-R484,000	20	8	15	16	15
R484,001-R617,000	11	19	18	15	16
R617,001 and above	34	48	27	38	36

Note: [a]R15.20 ≈ US$1.00 (August 2015)

Table VI.
Socio-demographic characteristics of clusters

This person is not the main decision-maker but rather the buyer for the household. An amount of almost R500 a month is spent on wine purchases, mainly from large liquor retail chain stores but frequently also from wine specialty stores, wine estates' cellar doors and wine clubs. These purchases are most likely to be in the R30-R99 price ranges.

	Cluster 1	2	3	4	Sample
Number of people in household					
Number of people < 18 years old (mean)	0.86	0.49	0.77	0.67	0.69
Number of people ⩾ 18 years old (mean)	2.27	2.22	2.29	2.29	2.26
Consumption habits					
Number of people who consume wine (mean)	2.02	1.99	1.86	1.83	1.93
Number of bottles personally consumed in a month	4	9	3	9	6
Number of bottles household consumed in a month	7	14	5	13	10
Consumption frequency					
More than once a week	31%	76%	30%	82%	54%
Weekly	40%	20%	30%	10%	24%
2-3 times per month	29%	4%	39%	7%	19%
Once every 2 months	0%	0%	1%	0%	1%
Less often than 3 months	0%	0%	0%	1%	1%
Consumption category					
Red	42%	43%	41%	38%	41%
White	38%	41%	38%	48%	41%
Sparkling	12%	10%	12%	7%	10%
Rose	6%	5%	8%	6%	6%
Fortified	2%	1%	1%	1%	1%
Consumption of cask wine					
Yes, I drink cask wine	16%	20%	14%	43%	23%
No, I do not drink cask wine	84%	80%	86%	57%	77%

Note: The descriptions derived from Table VII are summarised in the section "descriptions of identified wine-related lifestyle market segments"

Table VII. Wine consumption characteristics of clusters

Cluster 2: experimenter, highly knowledgeable wine drinker (27 per cent)

The majority of males are found in this cluster and are mainly single or divorced and are the least likely to have children under the age of 18 still living in the household. This person is highly educated holding bachelor, honours and/or masters' university degrees and in either employed or self-employed careers and earns the largest household income of all the clusters. Age wise, this is the second oldest cluster with the largest percentage of 60-64 year olds. Cluster members are regular red wine consumers, enjoying wines on all occasions both alone or with friends and family, at home or out at restaurants.

This person is the buyer, consumer and especially decision-maker when it comes to purchasing wines. In terms of buying, this cluster spends the most money on wine in a month, almost R900, and will frequently pay above R100 for a bottle of wine. Wine purchases are direct from cellar doors at wine estates, wine clubs and via the internet and could often be a 12-bottle case of wine or more at a time. In consumption terms, this group drinks the most, averaging nine bottles a month per person.

Cluster 3: basic wine drinker (26 per cent)

Among the age sub-groups of 40-44 year olds, this cluster has the highest representation. The majority of cluster members are 40-44-year-old single and divorced females residing in the Western Cape province. Educational qualification level is the lowest of all clusters, as is annual household income earned in a salaried job position. Often this person has the role of the household's homemaker as far as employment status is concerned. Wine consumption is

	Cluster				
	1	2	3	4	Sample
Purchase habits					
I am the buyer	82%	88%	86%	91%	87%
I am the consumer	70%	81%	72%	80%	77%
I am the decision-maker	65%	80%	57%	64%	65%
I am none of the above	trace	trace	trace	Trace	4%
Purchase price					
Average house spend in a month	R481.39	R890.71	R354.34	R769.29	R626.66
Means[a]					
Less than R30	2.22	2.59	2.45	3.28	2.62
R30-R49.95	4.27	4.59	4.20	5.00	4.51
R50-R99.95	4.33	4.82	3.52	3.47	4.05
R100 and above	2.40	3.08	1.91	1.74	2.30
Purchase place					
Retail liquor store chains	52%	45%	63%	69%	57%
Specialty wine stores	17%	13%	14%	11%	14%
Grocery/supermarket stores	4%	7%	2%	3%	4%
Wine estate's cellar door	10%	11%	6%	4%	8%
Restaurant	9%	11%	11%	8%	10%
Bar or Pub	3%	3%	3%	1%	2%
Internet	2%	6%	0%	3%	3%
Wine Clubs	4%	4%	0%	1%	2%

Notes: The descriptions derived from Table VIII are summarised in the section "descriptions of identified wine-related lifestyle market segments". [a]Means based on seven-point Likert scale ranging from 1 = completely disagree to 7 = completely agree

Table VIII.
Wine purchasing characteristics of clusters

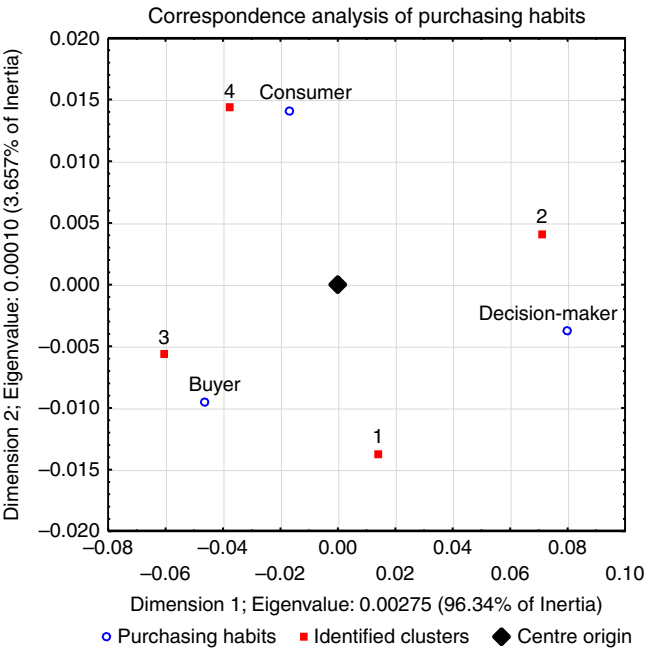

Figure 5.
Correspondence analysis of wine purchasing habits

the lowest among all the clusters, drinking only 2-3 times a month and is most likely to be in the form of rosé or sparkling wine at special occasions and celebrations only.

Given their relatively low product involvement, this person is unlikely to be the decision-maker and is most likely to be the buyer of wine for other individuals living in the household. Wine expenditure is the lowest of any cluster, averaging only R350 a month and is most likely to occur at R30-R49.95 per bottle from retail liquor store chains. The likelihood of cask wine consumption is the lowest of all clusters. When drinking wine in restaurants, this person remains brand loyal, drinking the same wine repeatedly.

Cluster 4: enjoyment oriented, social wine drinker (23 per cent)

The majority of cluster members are married females, most often in possession of a college diploma residing in the Gauteng province. As the oldest cluster, with the largest percentage of 60+ year olds, this person is nearing the end of employment or, is already retired. Members of this cluster are regular white wine consumers, drinking more than once a week, consuming more than two bottles a week and enjoy wine on all occasions both alone or with friends and family, either at home or in restaurants.

This person is highly likely to be the household's wine buyer and spends the second most on wine, just less than R800 per month, most frequently on wines priced R30-R49.95 a bottle bought from a retail liquor chain outlet. Buying wine priced at more than R100 a bottle is a rare occurrence and s/he seldom deviates from his/her trusted brands. Wine is purchased to be consumed soon after purchase and almost half of the cluster members regularly drink cask wine. Wine is enjoyed as a beverage for all occasions.

Comparison between countries of identified segments

Table I provided a summary of the five wine segments that continuously reoccur in wine segmentation studies with descriptions based on WRL characteristics. A comparison is made below between the identified wine segments in South Africa and those from Table I to investigate where similarities and differences occur and these are collated in Table IX. The fashion and image-oriented wine drinkers cluster was eliminated from Table IX as this segment was not identified in the current study's wine market, meaning that in the South African wine market, four segments were confirmed.

In previous WRL segmentation studies, markets were always explained by five different segments (Bruwer *et al.*, 2001; Johnson and Bruwer, 2003; Bruwer and Li, 2007). This suggests that there is not enough differentiation in the total South African market to be described by the equivalent number of segments, or that the total market is not big enough to be described by five groups. However, the four segments are relatively equal in size meaning that all clusters are more or less of equal importance. Segments also meet Kotler and Keller's (2012, p. 253) criteria of being measurable, substantial, accessible, differentiable and actionable and therefore having fewer identified groups is not a concern.

Conclusions, implications, limitations and recommendations

Wine domain-specific segmentation studies, completed in five countries over a period of 25 years resulted in five wine segments continuously reoccurring more so than others, irrespective of when and where the study was implemented. This means that around the world, similar types of people drink wine with similar AIOs towards wine. Only four segments occur in the study country (South Africa) compared to countries like Australia where it is five. It was suggested that not enough differentiation occurs or that the total market is not big enough to have five clusters.

The contribution of our research is threefold in that it tested the WRL instrument in a cross-cultural context which is the first time this has been done. In the process it interpreted

Segment name[a]	Combined segmentation description	Current study segmentation description	Comparison
Basic wine drinker	Low education and low income	Not highly educated, earning lowest household income	Similar
	Drinks red, white and rose wines	Most likely to drink rosé or sparkling wine	Part similar
	Does not look for information and little appreciation for wine	No desire to seek out recommendations	Similar
	Buys safe familiar brands that are consistent in taste	Remains brand loyal, drinking the same wine	Similar
	Purchases from retail outlets, looks for promotions	Under R100 per bottle from retail outlets	Similar
Experimenter, highly knowledgeable wine drinker	Highly educated male earning large income	Highly educated, earns largest household income	Similar
	Mostly prefers red wine	Regular red wine consumer	Similar
	Enjoys experimenting with new products and brands	Experimenter and adventurous in trying all wines	Similar
	Knows about wine and seeks out information	Highly knowledgeable in wine information	Similar
	Purchases from specialty stores, wine clubs and internet	Purchase wines from wine farms, wine clubs and internet	Similar
	Has connoisseur tendencies	Connoisseur tendencies and wine provenance	Similar
Enjoyment orientated social wine drinker	Average education	College diploma	Part similar
	Drinks red, white and sparkling wine	Regular white wine consumer	Part similar
	Consumes mostly on weekends or special occasions	Drinks more than once a week	Dissimilar
	Seeks information on wine but buys value for money	Limited wine knowledge and will not seek information	Dissimilar
	Wine is seen as both fun and stylish	Wine is a beverage for all occasions	Similar
Conservative knowledgeable wine drinkers	Above average education	College education	Part similar
	Knows about wine	Has wine knowledge	Similar
	Has connoisseur tendencies	Connoisseur tendencies and wine provenance	Similar
	Drinks regularly	Consumes on a weekly basis	Part similar
	Purchases safe brands	Finds information and follows recommendations	Part similar
	Buys wine from both retail and specialty stores	Buys from retail, specialty stores, wine farms, wine clubs	Similar

Source: [a]Bruwer and Li (2007)

Table IX.
Comparison between reoccurring segments and identified segments

the wine consumer segments in South Africa by for the first time using a WRL-based (AIO) approach. The study demonstrated that market segmentation based on psychographic (lifestyle) behaviour is strengthened when supported by two additional segmentation methods, namely, socio-demographics and product involvement (purchasing and consumption). Moreover, our study mapped out a stepwise domain-specific segmentation approach which is conducive to replication studies in different environments and/or further development of the research instrument. It culminated in a robust lifestyle-based market segmentation algorithm which can be used by such minded researchers.

Market segmentation is both an action and a strategy that businesses can use and hence our study has several practical implications. There are five wine segments that continuously reoccur more so than others in studies conducted around the world during the last 25 years. Around the world, similar types of people thus drink wine with similar AIOs towards wine. Businesses cannot connect with all customers (Kotler and Keller, 2012) and furthermore not all consumers are alike (Cahill, 1997). Wine producers should determine which segments are the "right" types of consumer, given their products.

As limited (published) wine segmentation studies have been implemented in the South African wine industry all stakeholders in the wine industry can benefit from such research. Basic economic theory tells that businesses will gravitate towards markets where the returns are best. However, as everyone currently targets the same critical mass, competition increases and the returns therefore decrease. By providing various wine segments marketers can streamline their strategies to specific target audiences that have been identified as the "right" customer for their product (Kotler and Keller, 2012). Therefore, wine cellars, retailers, restaurateurs and any entity that sells wine in the local market can maximise marketing effectiveness through cost efficiencies, differentiation, competitive advantage, streamlining of marketing approaches and concentrating efforts on profitable consumers (Cahill, 1997; Thomas and Pickering, 2003; Thach and Olsen, 2006).

This study can also benefit the trademark owner, in terms of further developing the WRL instrument, the criterion and the construct validity. Prior to this study the instrument had only been used in Australia.

As is the case with most primary research studies, ours had some limitations. Due to legislation around privacy of personal information in South Africa, a non-probability sample had to be used. Although conducting online surveys has the benefits of cost efficiency and fast execution time, sample control is an issue in as far as ensuring the "right" person completes the survey is concerned. The results are limited to the South African market environment only and are not generalisable globally.

Given the findings of this study, the following is proposed for future research on wine market domain-specific segmentation studies:

Conduct in-store interviews in the same way that the majority of wine domain-specific market segmentation studies were conducted to determine whether this has an influence on the identified wine segments. This will also remove the problem of internet restrictions and accessing the survey online through a hyperlink provided.

Better understand the experimenter, highly knowledgeable wine drinker which is an attractive market for those with niche or specialist products. Research is required to measure just how risk prone this segment is and whether it pertains to varietal, packaging, availability etc. This will provide a greater understanding of the strong differentiating factor (willingness to experiment) of this cluster.

Continue to implement the WRL instrument in other countries to further develop the instrument and provide alike-comparison between countries. This will further augment the contribution of our study to robustness of the WRL instrument form a cross-cultural viewpoint and add to the knowledge base in this research field. There are five wine segments that continuously reoccur more so than others in countries where segmentation studies have been conducted. Therefore, it would be worth investigating what marketing approaches to such wine segments have worked in other countries.

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