UNIVERSITY OF LJUBLJANA BIOTECHNICAL FACULTY

Hristo HRISTOV

THE INFLUENCE OF YOUNG ADULTS' KNOWLEDGE, SENSORY COMPETENCE AND SELF-CONFIDENCE IN SELECTION OF INFORMATION SOURCES FOR WINE PURCHASES

DOCTORAL DISSERTATION

Ljubljana, 2017

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DOCTORAL DISSERTATION

VPLIV ZNANJA, SENZORIČNIH KOMPETENC IN SAMOZAVESTI PRI MLADIH ODRASLIH NA IZBIRO VIRA INFORMACIJ OB NAKUPU VINA

DOKTORSKA DISERTACIJA

Ljubljana, 2017

On the basis of the Statute of the University of Ljubljana and according to the decisions of the Senate of the Biotechnical Faculty and the University Senate dating 25.09.2013, it has been confirmed that the candidate fulfils all the conditions for acquiring a PhD in Interdisciplinary Doctoral Programme in Bioscience, scientific field Economics of Natural Resources. Professor dr. Aleš Kuhar has been appointed as candidate's supervisor.

Commission on doctoral dissertation assessment and defence:

Chairman: prof. dr. Luka JUVANČIČ University of Ljubljana, Biotechnical Faculty, Department of Animal Science

Member: prof. dr. Tatjana KOŠMRL University of Ljubljana, Biotechnical Faculty, Department of Food Science and Technology

Member: prof. dr. Martin PAVLOVIČ University of Maribor, Faculty of Agriculture and Life Sciences

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Komisija za oceno zagovor:

Predsednik:	prof. dr. Luka JUVANČIČ
	Univerza v Ljubljani, Biotehniška fakulteta, Oddelek za zootehniko
Član:	prof. dr. Tatjana KOŠMRL
	Univerza v Ljubljani, Biotehniška fakulteta, Katedra za tehnologije, Oddelek za živilstvo
Član:	prof. dr. Martin PAVLOVIČ,
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- LA en
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- AB Search is defined as the intentional exposure to information prior to purchase (Moorthy et al., 1997). The consumer behaviour literature classifies consumer information search into two types: internal and external search (Blackwell et al., 2001). Internal searching refers to the process of using relevant information from memory to find a solution to a problem, while external search indicates the process of seeking additional information from external stimuli relevant to solving the problem. This study examines the wine-related behaviour and information search of young adults. It utilises a model which attempts to demonstrate the impact of past experience, knowledge, sensory competence and self-confidence on external information search for wine. The results show a positive relationship between prior experience and objective and subjective knowledge. Furthermore, it was found that experience significantly influences sensory competence in wine. Of the three factors influencing self-confidence, only subjective knowledge was proved to have an effect, and this happens to be positive. The latter suggests that what an individual believes they know about wine signals their confidence in purchase decisions. A positive relationship was also found between consumers' self-confidence and the importance of label as a source of information. Moreover, self-confidence was shown to mediate the extent by which subjective knowledge influences the use of personal sources and extrinsic label attributes. The study supports the previous findings (Frøst and Noble, 2002) of no relationship between objective knowledge and sensory expertise for wine, and a positive relation between objective and subjective knowledge (Flynn and Goldsmith, 1999). Overall, the results of this study reinforce and expand the previous work on information search regarding wine (Barber, 2009; Dodd et al., 2005; Philippe and Ngobo, 1999; Raju et al., 1995) by specifically identifying how sensory competence influences the wine behaviour and information search of young adults for wine.

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- OP XIII, 139 str., 47 pregl., 12 sl., 5 pril., 272 ref.
- IJ en
- AL en/sl
- AL Iskanje je definirano kot namerna izpostavljenost informacijam pred nakupom (Moorthy in sod., 1997). Literatura o vedenju potrošnikov uvršča iskanje informacij potrošnikov v dve kategoriji: notranje in zunanje iskanje (Blackwell in sod., 2001). Notranje iskanje se nanaša na pristop, pri katerem se uporabljajo bistvene informacije iz spomina za rešitev problema, medtem ko zunanje iskanje označuje pristop, pri katerem se iščejo dodatne informacije iz zunanjih stimulov, ki so pomembni za reševanje problema. Ta raziskava preučuje vedenje mladih odraslih v odnosu do vina in iskanja informacij o vinih. Študija uporablja model, ki poskuša pokazati vpliv preteklih izkušenį, znanja, senzoričnih sposobnosti in samozavesti na zunanje iskanje informacij o vinih. Rezultati kažejo pozitivno povezavo med predhodnimi izkušnjami ter objektivnim in subjektivnim znanjem o vinih. Poleg tega je bilo ugotovljeno, da izkušnje bistveno vplivajo na senzorično kompetenco za vino. Na samozavest pozitivno vpliva le subjektivno znanje, kar nakazuje, da kar posameznik meni, da ve o vinu, zaznamuje njegovo zaupanje v odločitve o nakupu. Pozitivno razmerje je bilo ugotovljeno tudi med samozavestjo potrošnikov in pomembnostjo etikete kot vira informacij. Kljub temu se pokazalo, da samozavest opredeljuje obseg, s katerim subjektivno znanje vpliva na uporabo osebnih virov in informacij glede ekstrinzičnih lasnosti vina. Raziskava podpira predhodne ugotovitve, ki kažejo, da ni povezave med objektivnim in senzoričnim znanjem o vinu (Frøst in Noble, 2002), kažejo pa pozitivno razmerje med objektivnim in subjektivnim znanjem (Flynn in Goldsmith, 1999). Skupni rezultati te raziskave s specifičnim prepoznanjem, kako senzorične sposobnosti mladih odraslih vplivajo na njihovo vinsko vedenje in iskanje informacij o vinu, potrjujejo in razširjajo predhodne ugotovitve o iskanju informacij o vinu (Barber, 2009; Dodd in sod., 2005; Philippe and Ngobo, 1999; Raju in sod., 1995).

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1 INTRODUCTION

The wine market experienced significant changes in the past thirty years. The increase in the production of wine in countries with no previous wine tradition and the markets' fast internationalisation have resulted in an increased market competion. This is compounded by the decline in the consumption of wine in traditional wine producing countries and the change in the consumption habits on the new wine markets towards choosing quality rather than quantity. Thirty years ago Italy, France, and Spain produced slightly more than half of all the world's wine (Anderson and Nelgen, 2015). Also, these three countries contributed the most on the demand side. However, during the past three decades things have changed. The consumption of wine in the traditional wine producing countries has dramatically decreased to around 40% in Italy and France and to 20% in Spain, which resulted in an oversupply of European wine (Anderson and Nelgen, 2015; USDA, 2014; Weininstitut, 2017). At the same time the United States and China, previously not considered traditional wine markets, have increased their wine consumption. Moreover, consumers in these two countries have started to drink more expensive and better quality wines, behaviour that was previously only characteristic of European wine consumers (Kierath and Wang, 2013). The change in the global wine markets was quickly recognised by the so called New Worldwine producers (Australia, New Zealand, Chile, USA, South Africa, and Argentina), which have in the period of twenty years significantly increased their exports from 2 to 15%, largely at the expense of "Old World" countries (France, Italy, Spain, Portugal, and Germany) (Anderson and Nelgen, 2015; Kierath and Wang, 2013).

In terms of consumption, the wine market has also faced changes. They have manifested both geographically and demographically. While in the past the import side of the market was mainly dominated by Germany in terms of quantity and by the United Kingdom in value (Kierath and Wang, 2013; USDA, 2014; Weininstitut, 2017), the recent data show a change on the value side of the market, with the United States becoming the market value leader. Also, beginning in 2013, the United States have become the world's largest wine consumer, taking over the primate from France (Weininstitut, 2014). Regarding the demographics, the influence of the older generation is gradually giving way to younger cohorts, who in New World wine countries drink wine more than any of the previous generations did at their age, while in the Old World wine countries the younger cohorts present behaviour similar to the older generation and drink less, but better quality wine (Mueller et al., 2011).

The global increase in the popularity of wine among young consumers has faced many wine producers with the dilemma of whether to continue marketing their wines to mainstay consumers of the past or shift their marketing activities towards easily influenced consumers of the future. Over the past two decades, the successes of some wine companies in the New World suggest that the answer may lie somewhere in between, which is reflected in the increased interest for publishing studies of the group of young wine consumers.

The existing literature is focused on young consumers' interaction with wine, their wine preference, consumption, and purchasing behaviour (Agnoli et al., 2011; Ritchie and Valentin, 2011; Marinelli et al., 2013); the differences in wine behaviour from older consumers

(Chrysochou et al., 2012; Fountain and Lamb, 2011; Garcia et al., 2013; Qenani-Petrela et al., 2007); the lifestyle and attitudes regarding wine (Bruwer and Li, 2007; Charters et al., 2011); and the importance given to wine attributes and information sources (Atkin and Thach, 2012; Chrysochou et al., 2012; Hammond et al., 2013; Hristov and Kuhar, 2014a; Hristov and Kuhar, 2014b). Although important, little is known about the level of knowledge and self-confidence of young consumers regarding wine. Moreover, there is a lack of previous information on the influence of knowledge, specifically perceptual knowledge, and self-confidence on consumers' selection of information sources for wine.

In the fast moving global environment of today, understanding how consumers acquire information and what influences the information search process is of significant importance for both marketing managers and public policy decision-makers (Srinivasan, 1990; Wilkie and Dickson, 1991). For marketing managers, understanding the determinants of search is crucial for designing effective marketing communication campaigns. On the other hand, understanding how consumers seek and use information provides public policy decision-makers with additional information on the basis of which they can prepare policies to improve the quality and accessibility of information.

Researchers have established the difference between internal and external information search activities (Fodness and Murray, 1999; Moore and Lehmann, 1980). While internal search refers to retrieving stored information, external search encompasses all other activities the consumers engage in to obtain relevant information to use in the purchase decision. Internal search has received comparatively less attention in the information search literature. This is owed to the empirical difficulties in determining product knowledge.

The literature distinguish two ways by which product knowledge can be measured, and that is by using objective and the subjective measures (Brucks, 1985). To measure objective knowledge usually some testing procedure is used, whereas subjective knowledge is measured by means of self-evaluation. Objective knowledge measures detect consumers' true knowledge, while subjective measures may help define better consumer purchasing strategies as they are based on individuals' self-reported experience with the product (Park et al., 1994). The literature has also discovered the correlation between these two measures (Flynn and Goldsmith, 1999). Additionally, their separability was connected with their antecedents, and thus, objective knowledge was considered to be largely dependent on stored information for a product class and subjective knowledge on the other hand on the product experience (Park et al., 1994). Also, the literature recognises another form of knowledge, and that is perceptual knowledge (Latour K.A. and Latour M.S., 2010). According to Park et al. (1994) perceptual knowledge is related to product usage frequency and is different from general knowledge of the product category. The authors argue that expert consumers have high levels of both types of knowledge and, vice versa, that novice consumers have low levels of both. The study of Frøst and Noble (2002) investigated the relationship between conceptual and perceptual knowledge of wine and found no correlation between the two types of knowledge. Moreover, they call for more studies on larger and representative samples that would include participants with different experiences and involvement in wine.

The body of literature investigating external information search categorises information sources into consumer-dominated, interpersonal (e.g. word-of-mouth recommendations from friends and family), marketer-dominated (e.g. advertisements, brochures, product displays, communication with salespeople), and neutral (i.e. objective market information contained in consumer reports and newspapers). While marketer-dominated sources are controlled by the marketer, consumer-dominated sources referr to interpersonal information channels over which the marketer has little control. Neutral sources are controlled neither by the marketer nor by the consumer (Olshavsky and Wymer, 1995).

While it is commonly accepted that the consumer can undertake information search before making a purchase decision, it is also believed recommended that the extent of search from the environment tends to be limited rather than extensive (Johnson and Bastian, 2007; Newman, 1977). According to Midgley (1983) consumers "rely on a small subset of all available information sources (personal, neutral, and advertising)". The limited search activities undertaken by consumers ask for more comprehensive research on the external search determinants (Mata and Nunes, 2010). In this context the present study investigates the effect of prior experience, objective knowledge, subjective knowledge, sensory competence, and selfconfidence on the importance attached to three classes of information sources for wine. For this purpose, the study proposes ten hypotheses focusing on two mediating effects and one relationship among two latent variables. The first mediating effect relates to the impact of knowledge (subjective, objective, and sensory) over prior experience on consumer selfconfidence in decision-making for wine. The second concerns the influence of self-confidence over prior experience and knowledge (subjective, objective and sensory) on the selection of information sources in decision-making for wine. The tenth hypothesis examines the relationship between objective knowledge and sensory competence in wine.

The existing literature demonstrates the influence of past experience, knowledge, and selfconfidence of consumers on product decision-making (Bettman et al., 1998; Payne et al., 1999), however their association specifically at the information search stage has not received significant attention. A few studies have looked at the effect of knowledge and self-confidence on consumers' selection of product attributes and information sources (Mourali et al., 2005). According to Fiske et al. (1994), the findings of these studies are inconsistent, on the one hand due to the many different definitions for consumer information search, on the other hand because of the different instruments used for measuring consumer knowledge and self-confidence. Thus the current study, before analysing the effects proposed with the hypotheses, first develops two new measurement instruments. The first instrument measures consumers' sensory competence in wine and the second their search for external information on wine. In the construction of the former a new methodology was used, wherein through a qualitative study of previously selected sensory attributes it is first determined which wine samples are appropriate for the evaluation of consumers' sensory competence in wine, and then a test questionnaire is designed to assess these competences. In respect to the second measure pertaining to external information search, the measuring items were selected though a qualitative study, while were determined using a recent methodology Best-Worst scaling. The main data were collected using a quantitative study. The sample was drawn from the population of young urban wine consumers by means of nonprobability convenience sampling controlled for the respondents' age, experience, and basic knowledge in wine. The selection of the measurement scales, except for the previously mentioned ones, was based on the existing literature. The analytical procedures included the best-worst scaling method, latent class cluster analysis, as well as exploratory and confirmatory factor analysis. To test the study hypotheses, a structural equation modelling method was used.

2 LITERATURE REVIEW

This chapter aims to put the research problem into perspective by examining the relevant literature and explaining the current understanding of consumers' decision-making, information search and purchase self-confidence. In the first sections of the chapter, fundamental concepts of consumer behaviour are introduced, particularly decision-making behaviour. The evolution of these theoretical concepts over half a century is discussed in detail, providing a basis for this study. The later sections present consumer information search and purchase self-confidence literature as well as specific literature on the wine is presented.

2.1 CONSUMER BEHAVIOUR AND DECISION-MAKING OVERVIEW

The science known today as Consumer Behaviour developed sometime in the 1960s. Several disciplines have importantly contributed to its formation, most of all economics, marketing, and behavioural sciences (Malhotra, 2011; Pachauri, 2001; Van Raaij et al., 2013). As a relatively new science, in its beginnings, it adopted concepts developed by other scientific disciplines such as psychology, social psychology, anthropology, and economics (Smith and Rupp, 2003). There is a general consensus that the subjects studied by Consumer Behaviour are part of the marketing concept (Blackwell et al., 2001; Quester et al., 2007), an important orientation of marketing management (Kotler, 2000). It is widely accepted that knowledge of Consumer Behaviour provides the marketer with an ability to understand and predict the patterns of consumption and purchasing behaviours. Moreover, the different methods used by the discipline help gain insights into the differences between consumers as well as understand their behaviour and how it changes with time and purchase situation. The study of Consumer Behaviour provides marketers with knowledge of the internal (individual) determinants and external (environmental) factors that influence peoples' behaviour. The individual determinants usually investigated are psychological components such as personal motivation and involvement, perception, learning and memory, attitudes, self-concept and personality, and decision-making. Commonly studied environmental factors include sociological, anthropological, and economic components such as family, social groups, reference groups, social class, culture, sub-culture, cross-culture, and national and regional influences.

Solomon et al. (2013) define Consumer Behaviour as "a study of the processes involved when individuals or groups select, purchase, use, or dispose of products, services, ideas, or experiences to satisfy needs and desires". The term "Consumer" in the marketing context has been recognised in relation not only to the act of purchase itself, but also to the activities associated with it such as pre-purchase and post-purchase evaluation. The growing awareness of a need or want and the search for and evaluation of information about products that could satisfy it is a part of the pre-purchase activity. On the other hand, post-purchase includes product assessment and the reduction of any anxiety that comes along with the purchase.

An important aspect of consumer behaviour is the consumers' approach to decisionmaking strategies. Questions related to consumer decision-making have been of great interest to researchers for a long time. According to Loudon and Della Bitta (1993) early studies of the subject place more attention on the purchase action. The current concepts of marketing, which include a wider range of consumer activities, were introduced after the 1960s (Engel et al., 1990). Contemporary research indicates that consumers are involved in other activities apart from the purchase itself. The research has shown that not only motivation related to purchase outcome other factors as well influence consumer decision-making. A number of studies have investigated these factors, and consequently, many models have been developed.

2.1.1 The evolution of consumer decision-making theories

Consumer decision-making theories have developed over time. On the evolutional scale, their beginnings are with rational choice theories, also known as the economic view. They look at the individual as a rational being free of emotions, which operates to maximise its benefits in a buying situation (Pachauri, 2001; Quelch and Jocz, 2008). This observation assumes a rational decision-maker who has clear preferences and a defined set options. Individuals assign to each alternative in the choice set a certain utility score that is only dependent on the option itself. Then each option is computed to maximise the utility, upon which the decision is made. From this perspective, there is perfect competition in the marketplace where consumers make rational decisions.

However, limitations exist in reality that render this theory unable to explain commonly observed, less "rational" behaviour (Bettman et al., 1998). Also, the impulsive purchases that happen due to the influence of commercials and advertisements, word-of-mouth recommendations, as well as mood, emotions, and any other circumstances fall outside the scope of rational decision-making (Smith and Rupp, 2003). For the economic view to be true, consumers would have to be aware of all product alternatives, be able to correctly rank the advantages and disadvantages of each alternative, and ultimately select the best alternative. However, it is clear that this expectation is idealistic. In most cases, consumers do not have access to "all the facts", they lack time for extensive information searching, and they are not proficient or motivated enough to make the "perfect" decision. They are generally "unwilling to engage in extensive decision-making activities" and will satisfied with an option that is sufficient rather than optimal (Pachauri, 2001). According to Wright (1975), consumers not only assess the utility of a certain choice, but potentially also engage in a "cost-benefit" analysis in selecting a decision-making procedure. In this regard, the theory goes beyond the choice of the optimal solution. Regardless of the many criticisms, the rational choice theory has made a significant contribution to the prediction of consumer decisions (Bettman et al., 1998), and therefore merits certain attention.

2.1.2 Early models of consumer choice behaviour

Two models from the middle of the 1960s have had a significant influence on the works of consumer researchers (Andreasen, 1968; Nicosia, 1966). They attempt to describe consumer buying decisions for new products. However, the two scholars differed in their approach.

The consumer choice behaviour model of Andreasen (1968) is centred on consumer attitude formation and change. Moreover, it emphasises the combination of previous knowledge with the information processing capabilities of the consumer. The model focuses on the decision of consumer whether or not to purchase a new product. The author believes that the reactions of consumers in purchase situations, whether favourable or unfavourable, are influenced by the attitudes that have been formed about the products. To understand the choice behaviour of consumers, according to Andreasen (1968) one has to determine the disposition of various attitude subsystems in the time of the buying decision.

The author recognises five formative factors that might influence consumer attitudes about products. They are the following:

- the individual consumer's personality;

- information and feelings resulting from past experiences involving the satisfaction of wants;

- the information yielded from past experiences not involving want-satisfaction;

- the individual's social perception, i.e., their perceptions of the beliefs, norms, and values of significant other;

- the individual's attitudes towards objects relating to the product of interest, e.g. product substitutes or complements.

Andreasen (1968) believes that the change of attitude towards a product happens when a change in one or more of these factors occurs. Figure 1 presents the Andreasen model in the form of a flow diagram. It depicts various informational and attitudinal "inputs" and behavioural "outputs". In the model, information is sought from four sources (advocate impersonal sources, independent impersonal sources, advocate personal sources, and independent personal sources), after which a "filtration process" takes place. This intermediate filtration simply mirrors the effect of perceptual mechanisms on stimuli influencing the organism.

Andreasen (1968) contends that once the filtration process is finished, a variety of factors (feelings, beliefs, and dispositions) interact with information, producing a resultant attitude which affects behaviour. As indicated previously, three consumer choice behaviours are possible. The consumer can choose the product, initiate an information search process, or take no action. The purchase decision has to consider certain constraints (budget priorities, income, household capacity and physical capacity). The other two decision alternatives



Slika 1: Andreasenov model (Andreasen, 1965)

(search or no action) encompass a feedback mechanism that affects future processes of filtration.

A year after Andreasen (1968) presented his model, Nicosia (1966) in his book "Consumer Decision Processes: Marketing and Advertising Implications" proposed his own. The book is distinctive in at least two aspects. It includes a comprehensive review of the mid-1960s literature on consumer behaviour, and it lays out an original model describing new product consumer choice behaviour.

Both Andreasen (1968) and Nicosia (1966) highlight the importance of the decision processes occurring before the act of purchase. Unlike Andreasen (1968), Nicosia (1966) in his model explicitly emphasises the role of the seller. The model puts forward the nature of the interactive relationship between buyer and seller, particularly the communication between buyer and seller, which happens in two directions. While sellers address buyers through marketing messages, the communication of buyers with sellers is through the acts of purchase (or non-purchase). Nicosia (1966) with his model demonstrates the circularity of these communication patterns. To fully understand the complexity of the model, it is necessary to study the detailed flow charts included in the author's book. Figure 2 presents a summary depiction of the model.



Field: 1



As indicated therein, the model comprises four basic fields:

- the chain of events starts with activation of company marketing message leading to formation of consumer attitude;
- search and evaluation processes;
- the purchase act; and
- the feedback process.

The first field of the model is composed of two subfields. A company's marketing and communication activities that influence consumer attitudes are included in the first subfield. The second subfield consists of psychological attributes, particularly the predispositions of consumers that affect their reception of the company's marketing messages. It also includes the processes of search and evaluation. In particular, the focus is on the search or information relevant to the purchase and the comparison of one option to the others. The outcome of these processes is the motivation for buying the best option. If the decision is for purchasing the brand, then the act of purchase is represented in the third field. The last, fourth stage provides two types of feedback from the purchase act. The first feedback is to the company, observable through sales data, and the second feedback is to the consumer, manifested as satisfaction or dissatisfaction resulting from the purchase experience. This second feedback affects consumer predispositions in respect to future marketing communications from the firm.

The model that Nicosia (1966) developed is adaptive. It emphases the continuing flows of information through the four components. The latter, together with several others characteristics such as the explicit recognition of the seller's role in the buyer-seller relationship, have received favourable comment by several researchers (Van Raaij et al., 2013). Hoverer, the model also has its critics. Zaltman et al. (1973) addresses his criticism to the lack of precise specification of the model's variables. Moreover, concern has been raised about the misspecification of the definitions for motivation and attitude (Rau and Samiee, 1981). Nonetheless, the model significantly contributes to the literature of consumer behaviour, and is still receiving attention fifty years after its development.

2.1.3 Contemporary models of consumer choice behaviour

The 1960s, as indicated above, were years when the models of Andreasen and Nicosia dominated the consumer behaviour literature. However, in the absence of amendments to the models that would incorporate recent developments in research and practice, the impact of these models beyond this period was limited. The mid-1960s saw a significant increase in consumer behaviour research activity, and much of this research was conducted with sophistication and rigour that were missing from earlier studies in the field. The same period also marked an increase in consumer activities that initiated a new emphasis by both business and government on handling consumers' complaints – an issue that is emphasised in Nicosia's (1966) model, in the part where feedback to the firm is stressed. While models that were not subject to further development since the mid-1960s are expected to be outdated, the two models (the Howard-
Sheth model and the Engel-Kollat-Blackwell model) presented in this section have not faced obsolescence since they have been revised several times since their initial release.

2.1.3.1 The model of Howard-Sheth

Following the first model that was developed in 1963 by Howard, Howard and Sheth (1969) in 1969 publish a second version of the model in their book "The Theory of Buyer Behaviour". This version attracted significant attention within the research community. It is depicted in Figure 3. This consumer choice behaviour model distinguishes five stages of the consumer decision process: attention, brand comprehension, attitude, intention, and purchase. In the 1977 version of the model, three more stages were added: evoked set, arousal, and memory.



Figure 3: The Howard-Sheth model (Howard and Sheth, 1969)

Slika 3: Model Howard-Sheth (Howard in Sheth, 1969)

The model reviewed in this section consists of five major types of variables: inputs, perceptual constructs, learning constructs, outputs, and exogenous variables. Their meaning is briefly explained below.

Three types of information from the environment are included in the input variables. The physical or brand characteristics are subsumed under the significate stimuli. The symbolic stimuli refer to visual or verbal information. The latter indirectly represent the product. The consumers' social environment is framed through a special type of symbolic stimuli labelled social.

Compared to the models examined in previous sections, the Howard-Sheth model has been extensively tested, however with no consistent support of the model hypothetical relationships (Farley and Ring, 1970). At the time the model was developed, empirical tests raised serious concerns of methodological problems. To relieve some of these concerns, Horton (1984) stated "Perhaps the most important and general methodological limitation is that the sheer complexity of the theory makes a truly comprehensive test at this time virtually impossible" (Prasad and Jha, 2014). Moreover, Laroche and Howard (1980) explained that nonlinear relationships among the variables might be the reason for the poor fit of the model to the behavioural reality. In spite of all, the model of Howard and Sheth (1969) is considered by many consumer behaviour researchers as a base upon which to develop theories of consumer behaviour (Van Raaij et al., 2013).

2.1.3.2 Engel-Kollat-Blackwell model of consumer decision making

In the middle of the 1960s three scholars Engel, Kollat and Blackwell engaged in a process of writing a comprehensive consumer behaviour textbook. Since they could not find an appropriate model of consumer behaviour to serve as a pattern was found, the authors developed a new one with the assistance of their former student M. Lawrence Light. The model was firstly published in the 1968 textbook "Consumer Behaviour". The subsequent revisions of the textbook in 1973, 1978, and 1982 present further elaborations of the model (Blackwell et al., 2001; Engel et al., 1990).

Figure 4 depicts the latest version of the model. Two forms of the model have been proposed. The one presented below pertains to high-involvement purchase decisions. The other form refers to purchase decisions with low consumer involvement. As indicated by the authors, the formulation of the model is similar to the Howard-Sheth (1969) model and the Howard model from 1963 (Blackwell et al., 2001; Engel et al., 1990). The similarity was confirmed using mathematical symbols to represent the components of these models in general equation form. According to Engel et al. (1990), all three models Howard-Sheth (1969), Howard from 1963 and Engel-Kollat-Blackwell model "hypothesize a hierarchy of effects in which a change in attitude leads to similar changes in intention and behaviour". In terms of differences, Engel et al. (1990) argue for the uniqueness of Engel-Kollat-Blackwell model "to highlight the decision process and explicitly include the proven relationships of the Fishbein behavioural intentions model under alternative evaluation". However, Horton (1984) as indicated by Stone and Desmond (2007) questioned the claim of uniqueness in highlighting the decision process.

Nevertheless, the use of the Fishbein formulation in the model of Engel-Kollat-Blackwell is indeed an original and significant contribution.

2.1.4 Overview of the consumer decision process

In the consumer decision theory, the behaviour of consumers is explained through a series of processes where goods, services, or ideas are selected and used. As presented in Figure 4, consumer buying behaviour includes five decision points: problem or need recognition, search for information, alternatives evaluation, purchase, and post-purchase outcomes (Du Plessis et al., 1990; Jansson-Boyd, 2010; Schiffman et al., 2008; Pachauri, 2001; Solomon et al., 2013; Stone and Desmond, 2007; Wanke, 2008).

The first and crucial stage of the consumer decision-making process is recognition of the need or problem. If the need is not recognised no purchase will happen. This phase of the process is mainly dependent on the change of the balance between the actual state and the desired state (Bruner and Pomazal, 1988). Consumers recognise a need or problem when the departure from the homeostasis reaches a certain point. Changes in either actual or desired state trigger a need or crate a problem, upon which action are taken. The Bruner (1983) study contends that Problem Recognition Styles ranges between two extremes: Actual State Styles and Desired State Styles. The Actual State Style considers the changes in actual state that lead to problem recognition, and the Desired Style recognises a problem when changes in desired states occur. Scholars have shown that problem recognition styles are related to the subsequent stages of the consumer decision process, specifically pre-purchase processes such as the Information Search process (Bruner, 1983; Bruner and Pomazal, 1988; Punj and Staelin, 1983).

The second stage of the consumer decision-making process is information search. This stage consists of internal search and external search. The former refers to recalling information from memory and is determined by existing knowledge about the products and by consumer ability to retrieve relevant product information (Blackwell et al., 2001). When the internal search is not sufficient to satisfy the consumer's needs, external search is considered. The latter involves mainly personal interaction or mass-market communication (Hirschman and Holbrook, 1982).

Bruner and Pomazal (1988) further classify external information into four quadrants based on the type of information source: personal-marketer dominated (e.g. sales assistant), nonpersonal-marketer dominated (e.g. paid advertisement), personal non-marketer dominated (e.g. family members, friends), and non-personal non-marketer dominated (e.g. newspaper or magazine articles not endorsing particular products). Bruner (1988) in his research about consumers' clothing product information search patterns finds that consumers rank "personalnon-marketer dominated (information) sources the most important followed by non-personalmarketer dominated (information) sources, with the other two information sources being of lesser importance".



Hristov H. The influence of ... knowledge, sensory competence and self-confidence in selection of information sources for wine purchases. Doctoral Dissertation. Ljubljana, University of Ljubljana, Biotechnical Faculty, 2017

Figure 4: The Engel-Kollat-Blackwell model (Blackwell et al., 2001) Slika 4: Model Engel-Kollat-Blackwell (Blackwell in sod., 2001)

Dissonance

Purchase

choice

Outcomes

Satisfaction

Situational Influences

Acceptance

Retention

External search

The third phase of the consumer's decision-making process is evaluation of the alternatives. It is the process by which an alternative is evaluated and selected to meet the consumer's needs. Generally speaking, brand name, price, and country of origin are the most referred criteria consumers use to make evaluation of the alternatives. The influence of these three criteria on consumer's product selections is different and some attributes have a greater impact than others, which is defined as "salience" (Blackwell et al., 2001).

The fourth stage of the consumer decision process is purchase. Three purchase decision categories have been identified by Blackwell et al. (2001): fully planned purchase (before the

store is visited, the decision for the purchase has been made); partially planned purchase (there is an intention to buy the product, but brand selection is deferred until shopping); impulse purchase (both the product and the brand are chosen in the store). Also, due to situational factors such as product promotion, store atmosphere, and weather, these three purchase types might overlap.

The last stage of the consumer decision process is purchase outcome. It refers to te postconsumption evaluation of the buying decision. The satisfaction or dissatisfaction with the purchase action will affect the decision process in the next similar purchase, specifically at the stages of need recognition and information search.

2.2 CONSUMER INFORMATION SEARCH

Information search is defined as "the motivated activation of knowledge stored in memory or acquisition of information from the environment" (Blackwell et al., 2001). According to the definition, information search can be either internal or external. The first is based on the retrieval of knowledge from memory, and the second consists of collecting information from the marketplace (Blackwell et al., 2001).

2.2.1 Internal search

When consumers realise that they have an information need, they first try to retrieve the information from their memory; in other words, they first conduct an internal information search (Engel et al. 1995). If the internal information search provides sufficient information regarding a product, then external information search is obviously unnecessary (Beatty and Smith 1987). Searching the memory for product-related information is fast and requires relatively little cognitive effort (Punj and Staelin, 1983). The stored information stems largely from previous product experiences. It can be also acquired from previous passive searches. Whether consumer rely solely on internal information search heavily depends on the perceived adequacy and quality of their existing knowledge.

2.2.1.1 Past product experience

Experience reflects past reasoning. It can be understood as existing domain specific knowledge: knowledge content that accumulated over time as well as cognitive operations and formatting processes that developed in relation to it (Alba and Hasher, 1983). Most commonly, the past experience construct is conceptualised as the consumer's actual purchasing and usage behaviour with a product category (Bettman and Park, 1980). Direct experience, through ownership, increases the consumer's evaluation of a product (Hoch, 2002). Given prior

experience with a product, consumers are more confident in their ability to evaluate the product (Griffith and Chen, 2004).

According to Alba and Hutchinson (1987), experience is defined as the summation of a consumer's past product related consumption activities (Alba and Hutchinson, 1987), consisting of (1) information search regarding the product class, (2) usage or consumption of the product, and (3) ownership. When consumers are faced with a purchase decision, they first consider past experience or memory of prior usage. It is expected that for the already experienced product, the internal search of past experience strongly influences the expectation, which could be manifested with repeated purchase or product refusal (Bettman, 1979; Bettman and Park, 1980; Brucks, 1985; Dodd et al., 2005; Raju et al., 1995).

Brucks (1985) finds product experience to be positively related to objective knowledge. Manffedo (1989) suggests that knowledge differences between experienced and inexperienced consumers influence the acquisition of incoming information from external sources. Dodd et al. (2005) applied a portion of the consumer decision-making model to wine purchase decisions. Specifically, they analysed the relationship(s) among experience, subjective and objective knowledge, and potential sources of information when consumers are faced with purchasing wine for home or restaurant consumption. They find that for both types of consumption, past experiences are positively associated with subjective and objective knowledge. Similarly, Barber (2009), studying the relationship between past experience, knowledge, and purchase self-confidence regarding wine, reports a positive relationship between prior experience and subjective knowledge of wine.

2.2.1.2 Product knowledge

Consumers' product knowledge has been analysed in consumer behaviour literature in two different aspects; (1) objective knowledge or subjective knowledge and (2) familiarity and expertise (Alba et al., 1991; Brucks, 1985; Rao and Sieben, 1992). Objective knowledge is accurate information stored in the memory (Brucks, 1985) while subjective knowledge refers to people's perceptions of what or how much they know about a product or product class (Park et al., 1994). Familiarity denotes the number of product-related experiences that have been accumulated through purchase, use, vicarious experiences, ongoing involvement, and learning. Finally, expertise refers to the ability to perform product-related tasks. Familiarity represents the early stages of learning, while expertise represents the later stages of learning. In the following subsections, studies discussing the different forms of knowledge are presented.

Objective knowledge

The literature defines objective knowledge as an individual's true knowledge, one that can be practically demonstrated (Brucks, 1985). Objective knowledge is the knowledge that the consumer has stored in their memory (Barber et al., 2008). According to Alba and Hutchinson (1987), the cognitive structures and processes that determine expertise are included in objective

knowledge. Alba and Hutchinson (2000) furthermore, explain that objective knowledge also has to do with the accuracy of knowledge. Individuals exhibit objective knowledge on a topic when they are able to give the correct answers to questions about that topic. The cognitive effort required in decision-making decreases with increase in objective knowledge. Moreover, objective knowledge improves "a consumer's ability to analyse, elaborate on, and remember product information" (Alba and Hutchinson, 1987). According to Srull (1983), knowledgeable subjects recall and recognise more items than low knowledgeable subjects. Celsi and Olson (1988) show that subjects with high domain knowledge generate more product-related thoughts. Menguc and Uray (2015) explain that consumers with objective knowledge exhibit a richness of information and more sophisticated knowledge organisation, which assists these consumers in processing more complex information, in information presentations, and in more complex learning environments.

Knowledge about products is developed through search and use of information as well as through experience acquired through "advertising exposures, information search, interactions with salespersons, choice and decision making, purchasing, and product usage in various situations" (Alba and Hutchinson, 1987). Veale and Quester (2007) state that this knowledge is developed as a result of cognitive learning as well as credible experience. According to Pechtl (2008), knowledge may develop intentionally or incidentally. Incidental knowledge may be due to mere exposure to stimuli, while intentional learning occurs when consumers make a conscious attempt to memorise. When consumers seek information on which to make decisions, they first search for information internally or in their memory. This happens before the onset of external information search behaviour (Taylor et al., 2008).

Some consumers exhibit no desire of learning about products. They acknowledge their low objective knowledge levels, have a low need for cognition, and are reltively ambivalent towards the purchase decision. Their information search is limited and is restricted to seeking opinions from others or using readily recalled marketing messages that highlight product benefits (Maheswaran et al., 1996). For this group, therefore, the cognitive shortcut provided by extrinsic cues such as price and country of origin is especially attractive. Consequently, unlike experts, this type of consumers finds it much more difficult to correctly match the proper brand or model with a specific usage situation (Brucks 1985).

Subjective knowledge

Subjective knowledge in the consumer behaviour literature refers to self-assumed knowledge, or more simply to how much one thinks they know about a topic. Flynn and Goldsmith (1999) define subjective knowledge as "a consumer's perception of the amount of information they have stored in their memory". According to Alba and Hutchinson (2000), confidence reflects subjective knowledge. Thus "purchase confidence reflects consumers' subjective evaluations of their ability to generate positive experiences in the marketplace" (Barber et al., 2008). Some researchers argue that because subjective knowledge reflects confidence, it provides a better basis for understanding of decision making (Dodd et al., 2005;

Park and Lessig, 1981; Raju et al., 1995). Selnes and Grønhaug (1986) and Park et al. (1994) find that subjective knowledge is a stronger motivator of purchase-related behaviours than objective knowledge. According to Amyx et al. (1994), subjective environmental knowledge is a "better predictor of ecological purchasing intentions compared to objective knowledge". In Ellen's (1994) account, subjective knowledge is positively associated with more political action behaviours and environmental behaviours such as recycling than objective knowledge. Self-perceived experts have been found to search for less information in some product decisions (Moore and Lehmann, 1980), but deem more attributes to be important than novices do (Viot, 2012).

Consumers relying on subjective knowledge lack an extensive collection of pertinent information upon which to draw. They can usually only recall a few brand names and models, and perhaps only one or two specific attributes about each (Mitchell and Dacin, 1996). Consumers with high levels of self-assessed knowledge have been found to use their own experiences as the basis for their expertise and limit their external search for up-to-date information, believing they already "know enough". However, the empirical evidence strongly suggests they usually know much less about products than they believe (Alba and Hutchinson 2000) and that they are less accurate in their interpretation of collected product information (Alba and Hutchinson, 1987). On the other hand, Packard and Wooten (2013) assert that "people who believe they are knowledgeable about products tend to share product information more with others". According to Hadar and Sood (2014), consumers who lack subjective knowledge are more likely purchase when there is a wide choice of brands. The authors explain that the effect of the number of options in the considered set on purchasing behaviour is moderated by subjective knowledge.

Product familiarity

Product familiarity has been recognised as an important factor in consumer decisionmaking (Bettman and Park, 1980; Park and Lessig, 1981). According to Baker et al. (1986), familiarity is a unidimensional construct that is directly related to the amount of time individuals spend processing information about a product or service, regardless of the type or content of the processing involved. Therefore, familiarity is described as awareness or perception of the product/service and does not necessarily come from actual experience (Srull, 1983). According to Alba and Hutchinson (1987), consumers' familiarity is measured as a continuous variable that reflects consumers' direct and indirect knowledge of a product category.

Studies show that product familiarity has a direct impact on information utilisation. Park and Lessig (1981) find that consumers with different levels of familiarity exhibit significant differences in the use of functional and non-functional dimensions as well as in the confidence in utilizing incoming information. In both familiar and unfamiliar product categories, consumers may search the memory for certain information to help them make decisions. Consumers' familiarity with a product category is likely to lead them to the direct acquisition of available information from their memory (Brucks, 1985; Coupey et al., 1998). If sufficient information in the memory exists, there is no need for additional information and the decision is based purely on internal information (Brucks, 1985). Furthermore, in familiar product categories, deciding is likely to be an easily performed task because the consumer is likely to know which attributes are most important and is thus likely to search for external information on those attributes (Coupey et al., 1998). Searching for information on only a few specific attributes is likely to make the informed consumer utilizing fewer external information sources compared to an unfamiliar consumer. Therefore, familiar consumers are likely to rely on external information sources to make decisions to a lesser extent than unfamiliar consumers.

There has been some scientific debate as to what the relationship between increasing familiarity and the extent of cognition may be. Two competing curves have been discussed for conceptualizing this relationship: an inverted U-shape curve and a positively climbing curve (Johnson and Russo, 1984; Kardes and Strahle, 1986). The question has been raised as to which of the two curves better depicts the relationship between familiarity and the extent of information processing (Johnson and Russo, 1984). It appears plausible that the inverted U-shaped curve depicts the relationship between familiarity and external information search, while the positively climbing curve depicts the relationship between familiarity and internal information search. With increasing familiarity, external information search is likely to become less important while internal information search and processing is likely to increase.

According Schwalenstocker (2006), familiarity is strongly related to product typicality, i.e. the degree to which a product is representative of its overall category concept. Generally, consumers tend to be somewhat reluctant to try very new and unfamiliar products. This reluctance stems from a lack of understanding of the product's value and potential use as well as from aversion to the learning costs associated with effectively using a new product (Mukherjee and Hoyer, 2001). Whereas for familiar products, a consumer can easily retrieve relevant characteristics and determine whether the product is appropriate for an intended use more or less irrespective of context and external elements (Giacalone et al., 2015), the same task is more difficult for unfamiliar products. For understanding new, unfamiliar products, contextual elements can provide a frame of reference by e.g. orienting consumers towards particular features that may be of salience in relation to a given context usage (Hoeffler, 2003). Accordingly, extant literature on consumer research suggests that contextual influences might be more relevant for the consumers' choice of novel products, particularly because contexts have been shown to facilitate consumers' cognitive categorisation of unfamiliar items. Evidence for this argument has emerged also in the field of food choice and acceptance. For instance, Tuorila et al. (1994) and Mielby and Frøst (2010) have demonstrated that providing verbal information increases the acceptability of unfamiliar food dishes. Other authors have suggested that the acceptance and choice of familiar and well-liked foods might be relatively less influenced by specific consumption contexts (King et al., 2007; King et al., 2004).

Expertise

The early stages of learning are represented by familiarity, and the later stages by expertise. The product related experience according to Alba and Hutchinson (1987) includes openness toward advertising exposures, information search, interactions with salespersons, choice and decision-making, purchasing, and product usage in various situations. In the consumer behaviour literature, the term consumer expertise has been used in a broad sense in the context of the cognitive structures and cognitive processes required to carry out product related tasks effectively. An example of cognitive structures are beliefs concerning product attributes, while cognitive processes are related to the the actions based on these beliefs beliefs. Alba and Hutchinson (1987) argue that consumer expertise is a result of increased familiarity with a product or service. However, the type of expertise needed to perform a product related task is dependent on the type of task, and different tasks require various types of expertise. Thus, to successfully perform a certain task, more than one type of knowledge is generally required (Alba and Hutchinson, 1987). In light of this, Alba and Hutchinson (1987) have proposed five qualitatively distinct aspects of expertise, which can be improved with increase in product familiarity: automaticity, expertise in utilizing memory, expertise in building cognitive structures, expertise in analysis, and expertise in elaboration (Alba and Hutchinson, 1987).

Alba and Hutchinson (1987) argue that simple repetition might improve task performance, reduce the cognitive effort required to perform the task, and consequently increase familiarity. The increased familiarity caused by repetition might lead to automatic performance. Moreover, more sophisticated and more complete cognitive structures used to distinguish products might be generated in the process. The increase in familiarity likely improves the ability of an individual to analyse information and to be able to isolate the important and task relevant information. Another consequence of increased familiarity is the improved ability for elaborating given information. The latter might lead to the generation of accurate knowledge which goes beyond what is presented and might improve the ability to remember information about a product.

2.2.2 External search: Information sources

Understanding consumer information search is vital to an understanding of potential customers' information needs. It is therefore not surprising that there is a long tradition of research into information search in the consumer behaviour literature, including Newman and Staelin (1972), Kiel and Layton (1981), Punj and Staelin (1983), Beatty and Smith (1987), Urbany et al. (1989), Srinivasan (1990), and, more recently, Moorthy et al. (1997) and Barber (2009).

The temporal dimension of search distinguishes between information sought when a purchase need arises and ongoing information search activities, which are independent of a specific purchase need. Interestingly, past literature suggests that identical sources are often used for both search processes. However, the purpose of the search is different. In the case of

purchase related search, the goal is to make a better purchase decision. In the ongoing search case, on the other hand, the goal is to build a knowledge base for future use or to achieve some intrinsic satisfaction from the search process (Bloch et al., 1986; Fodness and Murray, 1999).

The operational dimension of search pertains to the relative value of the information sought in terms of its influence on the final decision (Fodness and Murray, 1999). A piece of information or a source of information which has a major influence on the choice decision is referred to as decisive. Contrastingly, a source or a piece of information which may have some influence, but has a limited impact on the final decision is referred to as contributory.

Compared to the previous dimensions, the extent of external search has attracted much more interest from scholars. As early as 1987, Beatty and Smith (1987) identified over 50 studies that dealt with the possible antecedents of information search extent. They also listed approximately 60 variables that have been studied empirically as determinants of external search. Based on the earlier work by Bettman (1979) and Newman (1977), Moore and Lehmann (1980) developed five broad categories to classify the numerous determinants of the extent of information search: market environment, situational variables, potential payoff/product importance, knowledge and experience, and individual differences. Later, Beatty and Smith (1987) have updated this list by adding two more categories: conflict and conflict resolutionas well as cost of search. Beatty and Smith (1987) extensive literature review led them to the following conclusions concerning the determinants of external search:

- "Consumers tend to engage in more search when purchasing higher priced, more visible, and more complex products."

- "Search is also influenced by individual factors, such as the perceived benefits of search (e.g., enjoyment, self-confidence), demographic aspects, and product knowledge possessed."

- "Search efforts tend to be further influenced by factors in the market place such as store distribution and by situational factors such as time pressure impinging on the shopper."

Andreasen (1968) suggested five main types of information sources used by consumers: impersonal advocate (e.g. mass media advertising), impersonal independent (e.g. consumer reports), personal advocate (e.g. advice from sales assistants), personal independent (e.g. recommendations from friends) and direct observation or experience (e.g. reading information on the label). Conversely, Cox (1967) classified information sources into three categories: consumer dominated, marketer dominated, and neutral sources. While marketer dominated sources (i.e. packaging, promotion, advertising) are controlled by the marketer, consumer dominated sources refer to interpersonal informational channels, over which the marketer has little control. Neutral sources (i.e. consumer reports, newspapers) are controlled neither by the marketer nor by the consumer. Thorelli and Engledow (1980) defined a consumer information system as the "particular mix of sources existing at a given place and time" and proposed that the elements of consumer information systems (commercial, personal, and independent) are "interactive and potentially complementary."

Kiel and Layton (1981) identified four major aspects of search, reflecting the source and amount of search information: retailer search, media search, interpersonal search, and time. Retailer search refers to retail store visits and discussions with salespeople. Media search denotes the search of advertisements and articles in the media, regardless of their source. Interpersonal search refers to discussions with friends and relatives who may already own the product being searched. Time designates the amount of time available for searching. Subsequently, Duncan and Olshavsky (1982) broadened the interpersonal category to include general consultations with relatives, friends, and neighbours, without regard to whether they own the product, and added new elements such as neutral sources of information (e.g. consumer reports). With this, media search became a search of marketer-dominated sources. Over time, researchers have tended to put information sources into four categories: personal sources, neutral sources, marketer- dominated sources.

The purpose of an information source is to contain information. Many sources can contain equivalent information. This leads to an interesting issue for an individual who requires information to complete a task: they are confronted with the decision about which source to select. One criterion by which individuals select information sources is the relationship they form with the source. Research have explored the role of information source type in the search process (Murray, 1991). Various studies found that different information source types carried different perceived levels of credibility with consumers, and that consumers with different search determinant characteristics utilised sources differently (Schmidt and Spreng, 1996). For example, most consumers found marketer-dominated sources to be less credible than personal or neutral sources of information. Yet, more experienced consumers seemed more willing to consult marketer-dominated sources, ostensibly because they felt they had enough product knowledge not to be easily deceived. The consumer, however, must not only search for information, but must also judge when enough information has been collected to make a satisfactory selection. Therefore, search is tied closely to the evaluation of information as well. The more risk is perceived by the consumer, the more likely more search will ensue.

The length and depth of search is determined by variables such as personality, social class and income, size of the purchase, past experiences, prior brand perceptions, and customer satisfaction. If consumers are delighted with the brand of product they currently use, they may repurchase the brand with little if any search behaviour, making it more difficult for competitive products to catch their attention. When they are unhappy with current products, search expands to include other alternatives.

External search studies have also focused on identifying different search patterns by clustering individuals who utilised sources of information differently during the search process. Midgley (1983), for example, found five clusters of consumers who differed in their style of search for men's suits: minimal external search (deliberate), peer assisted external search, extensive external search, spouse assisted external search, and minimal external search (decisive). Kiel and Layton (1981) also suggested that consumers can be classified into groups according to their search behaviour for a car. They proposed three major groups: a low search group, a high search group, and a selective search group. Similarly, Furse et al. (1984) identified six distinctive search patterns among purchasers of automobiles: (1) a low search group, (2) a purchase-pal-assisted group, (3) a high search group, (4) a high-self-search group, (5) a retail shopper group, and (6) a moderate search group.

2.3 CONSUMER SELF-CONFIDENCE

Self-confidence has been referred as an important construct in the study of consumer behaviour (Bearden et al., 2001). Past research has studied the construct through the psychological determinant of self-esteem, which has produced inconsistent results. In fact, the limited association of self-esteem with consumer and marketplace is the reason for the poor representativeness of the purchase self-confidence construct measure (Loibl et al., 2009).

In the literature, self-confidence has been cited as a determinant of product-specific perceived risk (Locander and Hermann, 1979). In addition, its influence on consumers' external search behaviour has been reported (Barber et al., 2007). Scholars have most often used the concept of self-confidence to define the perceived risk which in fact involves the uncertainty and adverse consequences of buying a product or service (Barber et al., 2007; Bearden et al., 2001; Locander and Hermann, 1979; Loibl et al., 2009; Olsen et al., 2003; Veale, 2008). Specifically, the level of anxiety and concern regarding the marketplace purchase decision is believed to be a critical component of the perceived risk. In this regard, interest is placed on how buyers handle this anxiety that is to say on the results of perceived risk (Locander and Herman, 1979).

Murray (1991) argues that the level of perceived risk may influence consumers to use several risk reduction strategies. The two most important are search for additional information and evaluation of alternatives. Cox (1967) contends that the "amount and nature of perceived risk will define consumers' information needs, and consumers will seek out sources, types, and amounts of information that seem most likely to satisfy their particular information needs". This position in relation to depth of search, types of sources, types of risk, and personality factors is supported by the literature (Locander and Hermann, 1979; Lutz and Reilly, 1973). Locander and Hermann (1979), on the basis of five products, have focused on the effect of generalised and specific self-confidence with respect to information sources and found significant use of sources of information for individuals with increased perceived risk. The authors also reported that consumers with high self-confidence were more likely to depend upon their past experience rather than external search to reduce perceived risk. Andreasen (1968) contends that consumers faced with a possible purchase decision risk will use a personal source, an impersonal source, and/or a self-determined experience to reduce this risk. According to Alba and Hutchinson (1987), experience with products strengthens a consumer's objective knowledge, and thus positively influences consumer confidence (Park and Lessig, 1981). Hammond et al. (2013) maintains that consumers with a high level of self-confidence do not fear the social risks of making wrong buying decisions and that they consider less external search compared to consumers with a low level of self-confidence, who rely less on their own judgements and seek help when making a purchase choice. In addition, a confident consumer is expected to seek less advice from friends and to consider more information from commercial sources since they believe to be better able to handle attempts of commercial "manipulation". According to Newman and Staelin (1972), significantly longer information search processes are recognised for consumers with high confidence in their own ability to judge the product compared to those who feel they have to trust others' judgment. The examination of different sources of information by Mourali et al. (2005) has shown a positive relationship between consumer selfconfidence and their preference for interpersonal information sources. Conversely, Kiel and Layton (1981), among a sample of car buyers, have documented a negative relationship between self-confidence and search: consumers with low levels of self-confidence undertook the greatest search efforts, a result that may be contextually specific.

The interpretation and use of both intrinsic and extrinsic cues has been reported to depend on consumer self-confidence levels (Bearden et al., 2001; Jover et al., 2004; Veale, 2008; Wilson and Brekke, 1994). It is believed that faced with a strong opposing opinion or predictive extrinsic cues, individuals with low self-confidence allow their better judgment to be overridden. This can also happen to an individual who is a true product expert in a specified category. On the other hand, consumers with high self-confidence due strong self-belief are very difficult to influence and made to change their opinions (Maio and Olson, 1999). Although such individuals consider themselves "experts", their knowledge is possibly only subjective. As this variable has not been measured concurrently with all other aspects of knowledge including perceptual knowledge, it might be one of the factors contributing to inconsistent and conflicting results (Bearden et al., 2001; Veale, 2008). Nevertheless, the focus of the previous literature suggests the need for a better understanding of the influence of information sources and attributes on consumers' purchase risk-reduction (Murray, 1991).

2.4 CONSUMER DECISION-MAKING BEHAVIOUR FOR WINE

Many studies have tried to better describe the behaviour of wine buyers and consumers. They have tried to apply the principles of demand marketing, which state that it is up to the producer to adapt to consumer expectations, needs, and desires, increasingly changing and adopting diversified ways of life. A wide variety of consumer behaviour models have been tested with more or less success in the wine industry.

Figure 5 presents the model developed by Assael (2004) to explain the behaviour of wine consumers. The model is centred on consumer decision making. The author contends that both the consumer's individual and environmental characteristics affect and control their decision-making for wine. As indicated previously, when consumers face a purchase decision, they will respond with either action (purchase) or non-action. The response of the consumer influences not only their future decision making, but also their greater environment by means of word-of-mouth communication.

Hristov H. The influence of ... knowledge, sensory competence and self-confidence in selection of information sources for wine purchases. Doctoral Dissertation. Ljubljana, University of Ljubljana, Biotechnical Faculty, 2017



Figure 5: Model of wine consumer behaviour (Assael, 2004) Slika 5: Model obnašanja potrošnikov vina (Assael, 2004)

Sánchez and Gil (1998) describe the wine decision making process with four stages: needs recognition, search for information, evaluation of alternatives, and final choice. Figure 6 illustrates the authors' model. It highlights the key areas of consideration for understanding preference, and choice. Three stages of the decision making process are indicated as important; the search for information, the evaluation of alternatives, and, to a lesser extent, need recognition. These stages are complex for the consumer and hence are of concern to wine marketers. They are indicated as critical in wine brand formulation and positioning as well as for preparing successful marketing strategies.

The first step in the consumer purchase decision model refers to satisfying two needs: thirst and occasion of intended wine consumption. Thirst is a need that can be easily satisfied, while occasion of wine consumption is something more important, something that generally influences the wine decision-making process (Barber, 2009). Research discussing the difference between preliminary decisions and decisions at the point of sale shows that if the wine consumer does not make an impulse purchase, they will certainly decide first about the occasion of wine drinking (Szolnoki et al., 2010). The study stresses the role of values in influencing the choice for wine in different dining situations. It illustrates how the consequences of the desire for wine consumption can influence the wine choice. The consequences investigated were impressing others with one's wine choice, complementing food with wine, best value for money wine, mood enhancement, and avoiding negative emotions. In different circumstances, different consequences are considered desirable: dinner with the family, good taste etc. In a business related occasion, the preferable consequence is to impress others (Hall et al., 2001).

After realizing the need, consumers begin to search for information about wine. According to Olsen and Thach (2001), the information search for wine can be defined with the actions that consumers go through before making a wine selection. The search for wine information can be

extensive or non-extensive. The determinants of search are product involvement, product knowledge, situational involvement, perceived risk, and risk capital of the consumer (Blackwell et al., 2001; Solomon et al., 2013). The importance of the purchase increases with an increase of the these factors (Zaichkowsky, 1988). The amount of search is positively associated with the importance of the purchase. The more important the purchase, the more likely it is for an individual to search and use quality signals.

The preference and evaluation of wine attributes belongs to the stage that in the consumer decision model by Kollat et al. (1972) is referred to as "evaluation of alternatives". Johnson et al. (1991) believes that in the consumer choice process is hierarchically structured. As the most important attributes, the authors have indicated wine colour and style. In this regard, other studies have presented different opinions, and thus Atkin and Thach (2012) have found the brand to be the most important attribute, followed vintage and country of origin . Previous research has also found that the perceived importance of wine attributes can vary substantially in different markets. The analysis of Cohen et al. (2009) of the factors influencing wine choice across 12 countries has shown that previous wine taste and the recommendations of others exert the greatest influence. Individual markets show particular wine attributes to influence the consumers' choice for wine. For instance, in Brazil and China, the most important influencer is



Figure 6: Wine consumer decision-making process (Sánchez and Gil, 1998) Slika 6: Proces potrošnikovega odločanja o vinu (Sanchez in Gil, 1998)

brand (Cohen et al., 2009), while Irish consumers find brand the fifth most important wine attribute (Geraghty and Torres, 2009). The grape variety is the top influencer in Austria (Cohen et al., 2009), but for Irish consumers, it is the fourth most important attribute in purchasing wine. For the international wine markets, these considerations are important as brands might need to rely on different selling points depending on the country. The perceptions of the importance of different attributes allow marketers to know what buyers identify as cues of quality. Upon on this information, successful communication strategies can be developed.

2.4.1 Wine risk and the reduction strategies

The concept of risk has been separated by researchers into several categories such as functional, social, economic, and psychological (Dowling and Staelin, 1994; Lee et al., 2005; Mitchell and Greatorex, 1989; Spawton, 1991). Wine taste is an example of a functional risk, whereas the risk associated with the value of wine is an economic risk. Psychological risks concern self-confidence in terms of choosing the correct wine. To handle this risk, both internal and external sources of information are considered. Specifically, a consumer will use information from memory of past uses of a product first, if it exists, before absorbing information from the environment. Consumers use the information to reduce the risk or minimise uncertainty. The information helps in describing the unfamiliar (Dodd et al., 1996) and guides the choice among the available options (Chaney, 2000). The search for information could be used to increase consumer knowledge and reduce risk or minimise uncertainty, however without purchasing and tasting the wine it is very difficult to assess its characteristics such as colour and aroma (Barber et al., 2006). Scholars have shown wine consumers to rely heavily on descriptions from labels, wine writers, journalists, and retail sales associates (Barber et al., 2006; Chaney, 2000; Lee et al., 2005). Other studies indicate that those with a higher knowledge of wine will rely more on a search of their own memory, which depends on their past experiences. Thus, each positive consumption experience reduces the likeliness of using external information sources and increases these consumers' self-confidence. They will view themselves as a source to be relied on and will be less likely to depend on a salesperson, wine magazine, or other form of advertisement (Taylor et al., 2008). Consumers that are selfconfident about a specific product might be more inclined to experiment with a new wine label or package design. Olsen et al. (2003) believes that if consumer confidence increases, it may reduce anxiety and lead to testing and accepting new products.

2.4.2 Consumer wine knowledge

The measures for wine knowledge were established relatively late. The early researchers were more interested in examining the comprehensibility of wine descriptions to consumers than their actual knowledge of wine. The first knowledge measure for wine was developed in 1975 by Lehrer (1975). In her seminal work, she investigated knowledge of wine using a written test. The author used the obtained scores for segmenting the respondents. Three segments

emerged, with considerable differences in the analysed variables among the groups. In 1984, the same instrument was used by Lowless (1984). She found subjects with formal training in wine or employed in the wine industry (classified as experts) scoring significantly higher compared to novices or non-experts. The next to develop a measure for wine knowledge was Solomon (1990). The author segmented respondents according to their wine expertise using a measure that did not include a written test. In his study, experts were limited to those with professional involvement in wine while respondents who lacked experience in wine were classified as novices. In a subsequent study, Solomon (1997) segmented respondents by means of a self-directed questionnaire that included five questions into novices, intermediates, and experts. To determine the respondents' knowledge of wine, the author also considered the frequency of wine consumption and the engagement towards improving wine knowledge. Melcher and Schooler (1996), using a "General Wine Knowledge Test", segmented respondents into three classes. Similarly, to Solomon (1997), the authors included consumption frequency, formal wine training, and professional involvement in wine as segmentation criteria. Parr et al. (2002), analysing expertise in wine, used measures similar to those of Melcher and Schooler (1996). With the purpose of investigating the differences in wine preferences among respondents with different levels of conceptual and perceptual knowledge of wine, Frøst and Noble (2002) developed a measure consisting of two tests. The first analysed respondents' objective knowledge of wine, and the second their perceptual knowledge. Among other aspects, the authors also examined the relationship between perceptual and conceptual wine knowledge in their study. Their findings confirmed no correlation between the two forms of wine knowledge. With the many measures for wine expertise that have been developed, weaknesses related to validity have been observed. Moreover, few authors have tried to measure besides conceptual knowledge of wine also perceptual knowledge (Frøst and Noble, 2002; Hughson and Boakes, 2001; Parr et al., 2002).

Scholars have found wine knowledge to significantly influence the extent of information search and the sources used (Barber et al., 2009; Bishop and Barber, 2012; Dodd et al., 2005). They have also recognised the importance of knowledge in evaluating wine attributes (Forbes et al., 2008; Veale, 2008; Vigar-Ellis et al., 2015; Viot, 2012). Dodd et al. (2005) have investigated the relationship between consumer experience, knowledge, and information sources when making a decision about purchasing wine. Their findings stress the importance of wine experience in forming a basis for both subjective and objective knowledge. Such experience-based knowledge has been found to be positively related to the use of impersonal sources (media information) when making a wine purchase decision. The authors' result implies that consumers with high levels of wine knowledge are more likely to depend on information received from wine media compared to those with low levels of knowledge, who do not recognise wine media as an important factor influencing wine purchases. Studies that have measured the consumers' subjective knowledge of wine have found that consumers with low subjective knowledge have a narrower vision of what branding represents in relation to wine (Viot and Passebois-Ducros, 2010), use fewer attributes in purchase decision making for wine (Viot, 2012) and use mostly extrinsic cues (Spielmann, 2015), rely more on the use of personal sources of information such as the recommendations of friends or others (Barber et al., 2009;

Dodd et al., 2005), are characterised by a lesser degree of brand use (Bianchi et al., 2012), and as a result have weaker purchasing intentions (Kim and Bonn, 2015) and ultimately prefer different wines to those liked by consumers with a higher subjective knowledge (King et al., 2012). Furthermore, they place greater value on wine quality signals such as region of origin or awards compared to perceived experts (Perrouty et al., 2005). According to Dodd et al. (2005), perceived wine experts tend to rely more on themselves and on impersonal sources of information such as adverts and guides compared to recommendations by others. They have also been found to exhibit "lower sensitivity to expert's opinions" (Chocarro et al., 2013). According to Barber et al., (2009), consumers with a high level of subjective knowledge of wine are more prone to use published information such as articles in magazines and advertisements compared to those with a low subjective knowledge of wine.

The study of Perrouty et al. (2005) on the effect of consumer expertise on the relationship between product attributes and wine region equity suggests that the effects of wine attributes on the perception of region of origin when making a wine choice is stronger for the expert group compared to the novice group. Orth (2002), studying Czech wine consumers, has found that when making a wine purchase, the segment with less knowledge of wine is more likely consider the medals displayed on bottles an indicator of good quality. Particularly, these consumers use the medals attribute as a means to conveniently and quickly identify samples that are worth purchasing, implying that awards, specifically their importance, is a good signal for targeting less knowledgeable consumers. In recent times, Wiedmann et al. (2014) and Bruwer and Buller (2012) have shown that wine consumers who lack objective knowledge place more importance to extrinsic cues when making wine selection.

Mitchell and Hall (2001) have examined a large sample of New Zealand's winery visitors in terms of how consumer subjective knowledge relates to other wine behaviour variables such as consumption of wine at home, wine club participation, and median monthly wine purchases. The authors report that wine subjective knowledge is significantly correlated with all of the aforementioned behaviours. They further contend that this relationship also suggests a high level of objective knowledge of wine. Forbes et al. (2008) have developed an objective wine knowledge test and used it in conjunction with a combination of items from a general consumer knowledge scale (Flynn and Goldsmith, 1999) as well as the subjective wine knowledge scale developed by Perrouty et al. (2006) to investigate the relationship between objective and subjective knowledge and how variables such as gender, age, education influence these two constructs. The authors found that both aspects of wine knowledge are significantly associated, and further that objective knowledge is significantly correlated with familiarity, that males have a higher level of objective knowledge compared to females, and that a significant relationship exists between higher objective knowledge and higher education level. Barber (2009), on a large sample of wine consumers of different ages, has found that self-assessed knowledge of wine is more closely related with past wine experience compared to actual knowledge of wine. In addition, a higher subjective knowledge was detected for older respondents in comparison with younger respondents (Barber et al., 2008) and for males compared to females (Barber et al., 2008; Bruwer and Johnson, 2010).

Beverland (2003), in a study conducted in New Zealand, considered consumer knowledge of wine and found more knowledgeable consumers to be less prone to purchase in supermarkets and general liquor stores. Moreover, consumers with higher levels of knowledge of wine were found more likely to opt for better or high priced wine. Other studies also show that consumers who possess high levels of objective knowledge of wine are able to recognise wines of a particular category and typical of the class based on smell and taste alone (Ballester et al., 2008) and are better able to match wines to descriptors (Hughson and Boakes, 2002).

2.4.3 Wine quality dimensions and values

Perceived quality is the consumer's judgment about the benefits or performance of a product (Zeithaml, 1988). The perceived quality of a wine is based on a number of dimensions. These quality dimensions consist of higher level abstractions derived from more concrete lower level quality signals (Zeithaml, 1988). The lower level quality signals therefore communicate quality to the consumer by being highly associated with higher level abstractions. Covariation occurs for example when consumers associate the quality of a wine with the reputation of the country of origin or grape variety (Robinson et al., 2014). The more concrete lower level quality signals differ across products, but the higher level abstract dimensions are more general for a whole product category. The higher level abstractions of wine are called quality dimensions and comprise sensory characteristics, pleasure, appearance, paradigmatic or signals that the consumers associate with higher quality (eg. country of origin, brand), aging potential, and sustainability.

Paradigmatic quality signals covariate with the quality dimension of both sensory characteristics and appearance since they try to predict a wine's sensory potential and outer looks (Charters and Pettigrew, 2007). Awards covary with the sensory characteristics dimension as well as with the pleasure dimension since they raise status. Sensory characteristics, pleasure, appearance, paradigmatic and potential are the quality dimensions that define the perceived quality of a wine (Charters and Pettigrew, 2007). Certifications of organic cultivation and social responsibility are associated with the quality dimension of sustainability. Colour, concentration, clarity, and structure are the concrete/ lower level signals grouped under appearance. This dimension together with the other quality dimensions makes up the perceived benefits of a wine (Charters and Pettigrew, 2007). The consumer perceives value when the perceived quality of a product is combined with the perceived costs to obtain the product (Zeithaml, 1988). This trade-off between benefits and costs is different for every consumer (Zeithaml, 1988).

2.5 WINE SENSORY EVALUATION

Wine sensory evaluation can be used for various purposes. One such purpose is to detect elements within the wine such as "off" characteristics indicating spoilage. An example of off-flavour is the detection of 2.4.6-trichloroanisole, which is the main chemical involved in cork taint (Prescott et al., 2005). Another reason to use wine sensory evaluation is to communicate

to the consumer what the wine tastes like (Gawel, 1997). The description of a wine testes serves as an important marketing tool (Edwards et al., 1986). Thus, to communicate the properties of the wine, they have to be described in sufficient detail to give the consumer an idea of what to expect so as to help them determine if it is a product they would like to purchase.

2.5.1 Sensory components of wine and senses

The first sensory contact with a wine usually involves vision. The visual properties of a wine can change the perceived odour and flavour of the stimulus (Lelièvre et al., 2009; Parr et al., 2003; Zampini et al., 2007). One famous example is the experiment by Pangborn (1963), where white wine was coloured pink to resemble a rosé wine, a style that is often sweeter than most white wines. The rosé version of the wine was rated as a sweeter wine than the white version of the wine, despite the colouring having no taste. Visual cues in the wine can also be used to determine wine characteristics such as age (older wines, both white and red, tend to have a browner colour) and alcohol content (such as observing the viscosity of the wine by examining the "legs") as well as also to give cues about the winemaking technique (such as a cloudy wine, where fining and filtration were not used).

The next sensation will usually be orthonasal olfaction (sniffing). The volatile odorants react with olfactory receptor cells embedded in the olfactory epithelium. Whether or not these odorants are then consciously perceived depends on the complexity of the wine, the salience of the odorant (or combination of odorants), the skill of the person, and other factors such as whether their attention has been directed towards or away from the odour with visual cues or experimental instructions.

Following orthonasal olfaction, the next step is usually "tasting" the wine, where the purpose is not just to detect the specific tastes (sourness, sweetness and perhaps bitterness), but also to determine specific flavours through the combination of these taste elements with the odours that are detected via retronasal olfaction, the trigeminal elements of sulphur and alcohol, and the touch sensations of astringency, temperature, and effervescence.

2.5.2 Sensory expertise in wine

Wine expertise has been demonstrated to be the combination of conceptual and perceptual knowledge of wine. Frøst and Noble (2002), studying wine expertise, report it to involve two discrete components, which interact extensively during deployment of the special skill. The first component is perceptual expertise, which seems to be acquired passively via experience (Melcher and Schooler, 1996). The second component of expertise is semantic knowledge. It is gained through active learning about the products (Solomon, 1990). One of the benefits of semantic knowledge is the ability to verbally communicate about the product in a reliable manner.

Gawel (1997) has described the difference between winemakers, who are not only highly experienced in tasting wine, but have also undergone formal training, and subjects who have

practical experience in wine but no formal training. The author defined experience as familiarity with a class of products due to long-term exposure, where that exposure has occurred in conjunction with "considered thought as to the product's sensory characteristics", whereas training is "a uniform and directed program of instruction". Melcher and Schooler (1996) have outlined another categorisation scheme for wine experts. They used three groups for their experiment. The first were non-red wine drinkers, who had virtually no perceptual or descriptive experience with the stimulus. Participants in the second group were regular wine drinkers who had developed a palate for red wine, that is, had perceptual experience, and yet did not know how to describe wines with much precision. Finally, the wine expert group had developed extensive vocabulary dedicated to the chemosensory properties of wines.

Many studies into wine expertise use the experience criterion rather than formal training. For example, the experts in the study of Hughson and Boakes (2002) were required to have at least 10 years of tasting experience in the wine industry, with no requirement of formal training. Parr and colleagues used an even broader category, allowing not just established winemakers, but also wine-science researchers, wine professionals (e.g. wine judges), graduate students in Viticulture and Oenology, and people with more than 10 years of wine involvement (Parr et al., 2002).

While there is no accepted definition of what constitutes a wine expert in the literature, the majority of the studies agree that an expert requires not just a large amount of perceptual experience, but also some sort of non-perceptual training (Hughson and Boakes, 2001, 2002, 2009).

In agreement with Hughson and Boakes (2002), a relatively old study examined the detection abilities of wine experts and novices using wine-related stimuli (e.g. grape seed tannins) and found no significant differences (Berg et al., 1955). Similarly, when testing detection thresholds, Bende and Nordin (1997) found no significant difference between wine experts and novices using 1-butanol, nor did Parr et al. (2002). However, 1-butanol is not a wine related odour, although it is widely used for detection threshold measures (Auffarth, 2013). A more recent study by Hayes and Pickering (2011) reports the testing of 331 participants who were classified as novices or experts through the use of a questionnaire. A relationship was found between the perceived bitterness of 6-n-propylthiouracil, a substance known as PROP that is commonly used to determine sensitivity to bitterness and taste in general, and wine expertise, such that mean rated PROP bitterness was significantly higher amongst wine experts compared to novices. While experts do not appear to have the ability to detect odours that nonexperts cannot, there is some evidence that wine experts may be more sensitive to particular sensations. Furthermore, there is some evidence to suggest that experts are better than novices at discriminating between wine samples. Perceptual training using wine can increase performance in tasks that requires a same/different judgement of two wines, despite an initial and persisting bias towards a "different" judgement (Owen and Machamer, 1979, cited by Hughson and Boakes, 2001). This has also been tested using a "triangle test", where two of three samples are identical and the task is to determine which one is different.

While experts perform better than novices in some experiments (Solomon, 1990), this difference is not always observed (Solomon, 1997). Thus, there appears to be limited evidence

that experts have superior detection or discrimination ability compared to novices, even for wines.

3 MATERIALS AND METHODS

This chapter provides an in-depth discussion of the research design and methodology adopted in the thesis. The review of the literature has highlighted the importance of the research questions addressed in this study. There is a lack of scientific knowledge of the relationship between wine knowledge, wine sensory competence, and purchase self-confidence as well as the influence they have on young adult consumers' search for information. No studies uncovered in the literature review have looked at the relationship between consumer wine sensory competence and wine purchase self-confidence. Furthermore, only a limited number of studies address the relationship between consumers' objective knowledge and sensory competence in wine (Frøst and Noble, 2002).

This chapter presents the research instruments, methods, and procedures used to collect and analyse the data. The general research design is presented in the beginning of this section. This is followed by the presentation of the research hypothesis. The qualitative study sampling, data collection, and analysis are discussed in Subsection 3.3. The selection of the study population, the sampling method, construct definition and measures, the pilot study, and the development of the final instrument are described in Subsection 3.4. Subsection 3.5 provides an overview of the analytical approach.

3.1 GENERAL RESEARCH DESIGN

The research design is the framework for implementing a specific marketing research project and provides details on the procedures to be followed to obtain the information for addressing the research objectives and problem statement. The approach outlined in this chapter was developed following a comprehensive review of consumer behaviour and methodology literature. The study is composed of four stages (Figure 7). The first is qualitative in nature. Its purpose is to provide necessary information for the next three quantitative stages.



Figure 7: Stages of the research



The first stage includes two focus groups. The subsequent sections outline the research methodology, including the sampling plan as well as the data collection instruments, and procedures.

Stage 2 consists of a self-administered pilot questionnaire. In this stage, respondents were required to provide answers to questions asking about their experience and knowledge (subjective and objective) in wine, purchase self-confidence, and use of information sources in

wine purchases. The pilot questionnaire also included test questions evaluating respondents' sensory competence in wine.

Using the questionnaire developed and refined in the pilot study, stage 3 consists of an on-line survey, where all the variables, except one measuring respondents' objective knowledge and sensory competence in wine, were assessed. The survey link was sent to respondents, who for this purpose were recruited from a poll of urban young wine consumers, visitors of wine festivals, and purchasers of wines in wine stores.

In the fourth stage, the respondents with previously completed on-line surveys were invited to participate in a wine tasting. This event was used to collect the remaining information related to the respondents' sensory and objective knowledge of wine.

3.2 RESEARCH HYPOTHESIS AND CONCEPTUAL MODEL

According to several scholars, no clear answers have been provided to what motivates consumers in their wine selection. Although broad generalisations concerning choice processes can be made, the ability to understand and predict a consumer's behaviour is still weak (Hoyer, 1984).

The literature has shown that information search (Barber and Almanza, 2006; Dodd et al., 2005; Barber, 2009), self-confidence (Spawton, 1989, 1990, 1991; Gluckman, 1990; Olsen et al., 2003; McClund et al., 2015) and taste (Lange et al., 2002; Enneking et al., 2007) are thought to play a major part in the decision-making process for wine. Studies have determined the consumer characteristics that influence individual behaviour. Dodd et al. (2005), Olsen et al. (2003), Lockshin et al. (2001), Spawton (1991) and Gluckman (1991) have found different risk profiles or levels of self-confidence among different consumers. In this regard, some consumers tend to make 'safe' wine choices while others are more adventurous. According to Veale (2008), the level of product self-confidence affects the number of product attributes used in the choice process and also the way those attributes are used (Veale, 2008). Moreover, the level of product self-confidence consumer's use of different information sources and channels in reducing the purchase risk (Barber, 2009).

This section proposes a model that analyses the relationships between past product experience, objective and subjective product knowledge, product sensory competence, self-confidence, and sources of information used in the wine purchase decision process. Figure 8 depicts the model adapted from the studies of Dodd et al. (2005), Raju et al. (1995) and Barber (2009). As discussed earlier, it is modified to consider the influence of consumer sensory competence. The aim is to reflect the process a consumer would follow from the state of knowing a wine need to the point of selecting a source of information to finalise the purchase.

As has been presented in the literature review, knowledge and self-confidence can influence the sources of information consumers rely on. The previous research showed inconsistent information processing theories related to the different components of knowledge, their relationship, and the relationship with other constructs. In addition, there is a lack of information related to knowledge, specifically of the perceptual domain, and external information search. The following text presents the findings of previous studies. The information presented in the literature was used to propose a hypotheses and develop a model.

- Brucks (1985), Dodd et al. (2005) and Barber (2009) refer to a positive relationship of knowledge and various information sources.

- Brucks (1985) contends for a relationship between objective knowledge and information such as product attributes, the kind of impersonal information usually found in advertising. The author also suggests a relationship between subjective knowledge and oneself as a source of information and between subjective knowledge and personal sources when making a purchase decision.

- Park and Lessig (1981) have shown that subjective knowledge better explains consumers' decision biases compared to objective knowledge, and that measures of subjective knowledge can indicate self-confidence levels such that perceived self-confidence might influence decision strategies and tactics.

- Park et al. (1994) have developed a model of self-assessed knowledge, including predeterminants, and compared the differential determinants of subjective and objective knowledge. The authors have found no relationship between general level of self-confidence and self-assessed knowledge. Comparing subjective to objective knowledge, the authors have observed a stronger relationship between stored product class information and objective knowledge compared to the relationship with subjective knowledge. Product experience was also found to be more strongly related to self-assessed knowledge (Bettman and Park, 1980; Brucks, 1985; Rao and Monroe, 1988).

- Dodd et al. (2005) and Park et al. (1994) have documented a stronger relationship between prior experience with a product and self-assessed knowledge than with objective knowledge. The authors recommend that consumers believe knowing more than they actually do.

- Experiences measured through wine purchase and consumption, wine club participation, and winery visits have been positively correlated with consumer's subjective knowledge of wine (Forbes et al., 2008; Mitchell and Hall, 2001).

- Barber (2009) has found past experience to be the most significant predictor of a consumer's wine knowledge, particularly their level of subjective knowledge.

- Barber (2009) reports consumers with high levels of subjective knowledge as likely to have high levels of self-confidence.

- Locander and Hermann (1979), investigating individuals who perceive an increased risk in product purchasing, has found their level of self-confidence to relate to the use of sources of information. In addition, high self-confidence was found to depend more likely upon consumers' past experience than on external search.

- Sheth (1974) has found that as confidence about a product declines, the consumer's search for information increases.

- Peter and Olson (2005) report that more confident consumers perform lower levels of product search as compared to consumers with moderate or low levels of confidence.

- Increase in self-confidence leads to increase in relying on oneself as a source of wine information (Barber, 2009).

- Frøst and Noble (2002) have found a lack of correlation between consumers' objective knowledge and sensory expertise in wine.

The model depicted in Figure 8 was developed upon the review of the literature. Nine hypotheses were postulated to investigate the relationships between the constructs. The first three examine the effect of prior experience on sensory competence as well as subjective and objective knowledge. The following three investigate the effect of sensory competence as well as subjective and objective knowledge on consumers' self-confidence. The last three explore the effect of self-confidence on the selection of different sources of information. The fourth hypothesis, testing the relationship between objective knowledge and sensory competence in wine, was not used in developing the model. It is analysed separately, by means of confirmatory factor analysis. The proposed hypotheses are as follows:

- H1: Prior wine experience is related positively to subjective knowledge in decision making.

- H2: Prior wine experience is related positively to objective knowledge in decision making.

- H3: Prior wine experience is related positively to sensory competence in decision making.

- H4: There is a relationship between objective knowledge and sensory competence in decision making.

- H5: Sensory competence is related positively to self confidence in decision making.

- H6: Subjective knowledge is related positively to self-confidence in decision making.

- H7: Objective knowledge is related positively to self-confidence in decision making.

- H8: Self-confidence is related positively to direct observation of extrinsic product attributes in decision making.

- H9: Self-confidence is related negatively to impersonal sources of wine information in decision making.

- H10: Self-confidence is related negatively to personal sources of wine information in decision making.



Figure 8: Hypothesised model displaying the questions and latent constructs Slika 8: Hipotetični model, ki prikazuje vprašanja in latentne konstrukte

3.3 QUALITATIVE STUDY

The qualitative study was conducted by means of a focus group discussion to gain insight into young adult consumers' behaviour for wine and the importance given to wine attributes and information sources in making decisions for wine.

From the literature it is known that group interviewing enables interaction amongst participants and allows the researcher to easily and quickly gain valuable insight into consumer opinions regarding topics of specific interest (Goldman, 1962; Malhotra and Birks, 2005). The social science literature suggests focus groups as a useful way of triangulating information from other sources and also as a method that can reveal new and unexpected findings for further investigation (Näslund, 2002). To initiate discussion, topics presented in the studies of Atkin and Thach, 2012; Ritchie and Valentin, 2011; Chaney, 2000; Chrysochou et al., 2012 were used.

After the group interview, the respondents were presented with a structured survey. It consists of an objective knowledge test and seven point Likert type questions investigating the importance assigned to the most citied wine attributes and information sources. The questionnaire used for this purpose includes modified items previously developed in the studies of Barber et al., 2009; Chaney, 2000; Dodd et al., 2005; Frøst and Noble, 2002; Hughson and Boakes, 2002.

Following the structured survey, the focus group respondents were asked to participate in a wine sensory evaluation. Twenty-four wines were evaluated for six wine sensory characteristics.

In the following subsections, sample selection and data collection methods are presented first, followed by the protocols for the focus group discussion and sensory evaluation. In the last subsection, the results of the qualitative study are shown.

3.3.1 Sample selection and data collection

A judgment sample of master's students and young teaching staff from the Faculty of Technology and Metallurgy in Skopje between 25 and 35 years of age participated in two groups of 8 and 7 participants, respectively. While small judgment samples have limitations, in particular that the views of such a limited number of participants are not generalizable, this sampling method can be justified for use in qualitative, exploratory research (Malhotra and Birks, 2005). Prior to final selection, all group members were screened to ensure they purchase and consume wine on a regular base. The demographics of the group members are provided in Table 1. The group interview, structured survey, and wine sensory evaluation were organised at the premises of the Faculty of Technology and Metallurgy in Skopje.

Identification	Gender	Age	Highest education
Group 1			
Resp.1	Male	26	Bachelor's degree
Resp.2	Male	28	Bachelor's degree
Resp.3	Female	25	Bachelor's degree
Resp.4	Female	29	Bachelor's degree
Resp.5	Male	28	Bachelor's degree
Resp.6	Female	26	Bachelor's degree
Resp.7	Female	27	Bachelor's degree
Resp.8	Male	26	Bachelor's degree
Group 2			
Resp.9	Female	31	Master's degree
Resp.10	Male	32	Master's degree
Resp.11	Male	34	Master's degree
Resp.12	Female	35	Doctoral degree
Resp.13	Male	35	Doctoral degree
Resp.14	Female	34	Master's degree
Resp.15	Female	33	Master's degree

 Table 1: Demographic profile of focus groups participants

Tabela 1: Demografski profil fokusnih skupin udeležencev

3.3.2 The focus group discussion

The two focus group interview sessions were scheduled over two days and structured in the same way around three topics: (1) wine purchase and consumption habits, (2) interest and

motivation for wine, and (3) perception and use of wine attributes and information sources. A discussion guide was produced to aid in directing the focus group participants in their discussion. The moderator guided the discussion and raised topics following a guided development approach to the focus group sessions (Langford and McDonagh, 2003). This approach was necessary to keep the discussion within the allocated time period. However, the moderator had the freedom to explore topics as they were raised if considered appropriate. Each focus group session was 60–75 minutes in length and took place in the evening as it was the most convenient time for the participants due to their study and work commitments during the day. The two focus group sessions were recorded on individual score sheets and large sheets of paper.

At the beginning of each session, after introducing himself to the participants, the moderator provided an overview of the study, information on data use, and assurance about confidentiality. After the introduction, the discussion was started by asking the participants about their wine experience as well as purchasing and consumption habits. This was followed by the discussion on the motivation to drink wine. The last topics were perception and use of wine attributes and information sources for wine. After the focus group interviews, the participants were presented with a short survey asking for responses on a combination of test and seven-point Likert-type scale questions. The survey included questions measuring objective knowledge of wine as well as preferences for wine attributes and information sources. The group members were asked to rate 11 wine attributes and 13 information sources according to the overall importance when making a choice. Furthermore, 10 test questions were used to measure participants' objective knowledge of wine. The questions pertained to knowledge about world wine regions, grape varieties, and sensory and technical characteristics of wine. No prompting or suggestions were given in relation to the survey questions. When the respondents completed the survey, they were invited to participate in a wine sensory evaluation.

3.3.3 The wine sensory evaluation samples and procedure

Following the focus group discussions and the structured survey, a wine sensory evaluation was conducted. The samples used in the sensory evaluation were sourced from five different wineries from three Macedonian wine districts: Skopje, Tikves, and Bitola. The selection of wines was made from the Vranec grape variety on the basis of five criteria: (1) young wines, (2) semi-dry wines, (3) barrel aged wines, (4) astringent (bitter) wines, and (5) faulty wines. Vranec wines were used since experts had recommended them in consultations for being the most familiar to the wider population of wine consumers.

Sixteen inexpensive red wines, either purchased or donated by wineries, were included in the experiment. Their vintages, wine districts, producers and alcohol contents are provided in Table 2. Within each category except barrel aged wines, all wines were from the same vintage. The samples of young and reductive wines were from the same producer, whereas the other categories include wines from different producers. The category of wines with faults consisted of two subcategories: oxidative¹ and reductive² wines. The first were made in the laboratory as they were not expected to be found in stores or in a winery. To simulate wine undergoing oxidation, the chemical compound acetaldehyde was used. A base Vranec wine was spiked to three different concentrations of acetaldehyde: 75 mg/L, 100 mg/L, and 150 mg/L. The concentrations used in the experiment were within the range reported for oxidative wines in the literature (Silva Ferreira et al., 2002). As for the young and reductive wines, they were sampled in a winery, from the tank, upon the recommendation of the responsible winemaker. These wines were from the latest harvest.

Table 2:	Wines	used in	the	laboratory	sensorv	experiment
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Abbreviation	Category	Grape variety Windistr	Wine	Producer	Wine	Alcohol
			district		vintage	Volume (%)
YS131		Vranec	Skopje	Skovin	2013	11.5
YS132	Young wines	Vranec	Skopje	Skovin	2013	12.0
YS133		Vranec	Skopje	Skovin	2013	12.5
SDT12		Vranec	Tikves	Tikves	2012	12.5
SDS12	Semidry wines	Vranec	Skopje	Skovin	2012	12.5
SDST12	-	Vranec	Tikves	Stobi	2012	12.5
BAS210		Vranec	Skopje	Skovin	2010	13.5
BAP207	Barrel aged wines	Vranec	Tikves	Popov	2007	13.0
BAST09	_	Vranec	Tikves	Stobi	2009	13.5
AWD12		Vranec	Bitola	Vila Dihovo	2012	11.5
AWS11	Astringent wines	Vranec	Skopje	Skovin	2012	12.5
AVST11		Vranec	Tikves	Stobi	2012	13.5
RWS131		Vranec	Skopje	Skovin	2013	12.0
RWS132	Wine with Reduction	Vranec	Skopje	Skovin	2013	12.5
RWS133	faults	Vranec	Skopje	Skovin	2013	12.0
OWS10	Oxidation	Vranec	Skopje	Skovin	2010	13.0

Tabela 2: Vina, uporabljena v laboratorijskem senzoričnem poskusu

Wine tasting procedure

Following the structured survey, the respondents were asked to participate in a wine sensory evaluation. In groups of four, they were invited into a tasting room where they were expected by a trained evaluator who explained the procedure: he instructed participants for each wine first to look, then to sniff and place it in their mouth, move it around for few seconds, and finally expectorate. Before the tasting of each wine, respondents were advised to rinse their mouth with water and wait 15 seconds. To reduce sensory fatigue and remove the impact of the previously tasted wines, respondents were provided with bits of bread crumbs. During the wine

¹ The term describes wine that has experienced too much exposure to oxidation.

² The term is used to describe the evolution of volatile sulphur compounds in wine.

tasting, communication between the participants was strictly prohibited. The wines were served in clear wine glasses at room temperature, in a volume of 20 mL each.

The experiment consisted of two parts. In the first part, the intensity of five of the six wine attributes were measured. The attributes considered were colour depth (related to the wine's vintage), sweetness level, oak flavour, reductive flavour (smell of rotten eggs), and level of astringency (bitterness). The respondents were asked to evaluate sensorially three different wine samples for each wine attribute. They were expected to rate the wines according to attribute intensity on an interval scale with 1 meaning very low and 10 meaning very high . For instance, a respondent was asked: "On a scale from 1 to 10, where 1 is very low and 10 very high, how would you rate the intensity of the oak flavour in each of the three wines". The same procedure was used in the study by Lowengart (2010).

The second part analysed the sensitivity of the respondents to wine oxidation was analysed. The sensory evaluation procedure was constructed on the basis of the triangle sensory evaluation method. For this purpose, the participants were asked to taste nine wine samples divided into three series of three wines each. In each set, two wine samples were the base Vranec wine while the third was created by adding acetaldehyde in different concentration to the base Vranec wine. The respondents were expected to identify the wine containing the off-flavour (acetaldehyde) without being informed of its name: the attribute's name was intentionally withheld as it was assumed that it might help in easier recognition of the altered sample. The samples containing acetaldehyde through the series were presented in ascending order; by means of the concentration of acetaldehyde in the odd sample. The position of acetaldehyde sample within each triangle test was randomised across each series and for every respondent.

3.3.4 Findings of the exploratory part

The qualitative study analysed informants' perspectives on different subjects related to the consumption and purchasing of wine. The primary goal was to determine the most important attributes and information sources influencing the young consumers' decisions for wine. The first set of questions looked at the participants' history of and reasons for drinking wine. Many of the respondents indicated friends or family members as responsible for the first wine experience. Some reported that they had tasted wine for the first time wine during a family meal. Others first sampled wine in bars, clubs, or restaurants. Many of the respondents reported pleasure and enjoyment as the most important reasons for drinking wine. They associated wine with relaxation and facilitating social relations. In addition, wine was indicated as a drink to be shared with others.

"I drink wine for personal pleasure. Wine makes me happy and relaxed".

(Resp. 3)

"I keet a bottle of wine in the refrigerator and occasionally have a glass to relax when I get home from work".

(Resp.15)

"I like to drink wine together with my friends. Drinking wine with friends allows me to share a nice experience".

(Resp.10)

"When a good wine is on the table, there is always something to talk about".

(Resp.12)

Many interviewees made reference to the complementarity of wine and food. This association appears to be highly conscious, and an important aspect of the decision to drink wine is seen in the food consumption context:

"If I am eating I would much rather have wine" [...] "I think wine is just naturally associated with food."

"I can drink wine with or without food. I must admit I enjoy it more with food" [...] "There is something about choosing wine for the food you are having that is appealing".

(Resp.15)

Taste was indicated as the most important attribute for purchasing wines. For consumers who do not feel confident in their taste, the interviewees agreed that it was better to ask for someone's advice or consider familiar brands.

"I usually purchase wines from producers whose wines I have already tasted. I rarely experiment with new wine producers".

(Resp. 8)

"The wines differ in taste to those who can discriminate between them. For those who can't, it's better to ask for someone's advice, or to stick to familiar brands".

(Resp. 1)

All the interviewed respondents prefered bottled wine, believing that wine in cartons was cheap, of lesser quality, and only suitable for cooking. Some of the respondents regarded wine as a sophisticated drink allowing people with higher incomes to differentiate themselves from others.

"Some people want to be distinguished from others, and drinking expensive wines allows them to do that".

(Resp.7)

Regarding the use of wine attributes, the participants indicated grape variety, brand, vintage, and price as the attributes with the highest credibility in terms of the expected quality when selecting wine. Example of quotes concerning wine attributes are as follows:

Wine brand

"I only purchase wine from certain producers [...] I trust in the quality of their products". (Resp.1)

"In my wine purchases, I always stick to brands I know".

(Resp.5)

Grape variety

"I believe Vranec wines are of the highest quality" [...] "I like Vranec because of its powerful and astringent taste".

(Resp.2)

"My experience tells me that wines made from international grape varieties are fruitier and tasty".

(Resp.9)

Wine price

"When I want to reduce the risk of purchasing a bad wine, I pay more" [...] "For wine I think it stands that you only get what you pay for".

(Resp.15) "I don't know a lot about wine, so I'd be afraid to buy a cheap wine as a gift" [...] "I believe that good wines are usually for those who appreciate them, and are expensive".

(Resp.12)

"I think that good quality wines with reasonable prices can be still found on the market" [...] "In my opinion, price is not always a reliable indicator of the quality of the wine" [...] "I've tried some known wine brands, domestic and foreign, whose price did not match the expected quality".

(Resp.1)

"Wines in restaurants are extremely expensive" [...] "It is more affordable to drink good wines at home".

(Resp.6)

Wine type and style

"I think most young people begin by drinking sweet wines. As they become older, their taste changes towards dry".

(Resp.7)

"Wines should have a sweet taste to be tasty".

"White wines should be drunk younger, while red older".

(Resp.12)

(Resp.1)

<u>Wine vintage</u>

"Vintage is an excellent indicator of the quality of wines. I think many wine consumers pay little attention to this attribute".

(Resp.6)

"It is not always true that wines from older vintages are of better quality".

(Resp.3)

Country of origin

"I prefer drinking foreign wines. In our country, they are still relatively expensive. The same brands can be found cheaper abroad".

(Resp.11)

"I don't think good wines are made in South Africa" [...] "South Africans don't have a tradition of wine, do they"?

(Resp.1)

"I have heard a lot of wine is made in Argentina and Chile. The wines must be good". (Resp.2)

Medals and awards

"When I purchase wines, I usually look for ones are being awarded".

(Resp.6)

"It's a bit strange that only some wine producers are always being awarded medals. Sometimes I doubt the regularity of this process in our country".

(Resp.10)

Wine closure

"I do not know whether it is a snobbish view, but I think the screw cap signals low quality wine" [...] "High quality, expensive wines have to have a cork". [...] "Wines with a cork are better as they can be stored for a longer time".

(Resp.4)

The comments related to the use of information sources have been classified into three categories: personal, impersonal, and label related. Several information sources emerged as either important or not important in each group. Friends, family members, and experts (sommeliers, wine sales assistants etc.) were considered important personal information sources. The internet, television, and magazines were the three most mentioned, in positive and negative contexts, impersonal sources. Wine labels (front and back), in-store information (particularly that related to wine awards), and previous tasting experiences on the other hand were the most frequently indicated sources of self-selection. The comments reflecting the importance of information sources are as follows:

Personal wine information sources

"I usually ask my friends to recommend me a wine. They know more about wine than I".

(Resp.14)

"My father is a hobby wine producer. When I purchase wine, I usually consider his opinion". (Resp.12)

"I think that liking a wine is related to social influence, in my case, it was my family" [...] "I am used to drinking wine with my family, and I think this influences me more than ads".

(Resp.7)

"Unexperienced wine consumers are better off considering the waiter's opinion in a restaurant, while in the store they should ask for a store assistant's help".

(Resp.1)

"Some waiters, by the way how they describe the wines, I have a feeling they haven't tried them".

(Resp.6)

Impersonal information sources

"I have never used the internet to search for information about wine. Every once in a while, I see wine posts on Facebook, but I don't pay them much attention". Hristov H. The influence of ... knowledge, sensory competence and self-confidence in selection of information sources for wine purchases. Doctoral Dissertation. Ljubljana, University of Ljubljana, Biotechnical Faculty, 2017

(Resp.14)

"I like to cook, that is why I enjoy watching food and wine programmes" [...] "Food and wine programmes educate wine consumers on how to pair wines with food. Matching wine with food is something important to me in wine decision-making".

(Resp.10)

All of the focus group participants were aware of a particular TV sponsorship, although they were not necessarily sure whether it was the Tikves or Stobi winery that was supporting the most famous programme related to food and wine broadcast on the national TV. A respondent indicated:

"Food and wine programmes broadcast on domestic television stations are paid advertisement for the big corporate wineries" [...] "The best way to find information on wine is searching the internet, or reading wine magazines. Also, it is very useful to search for wine information using applications installed on mobile phones".

(Resp.13)

Self-selection attributes

"In my wine purchases, I never experiment. I usually purchase recommended wines" [...] "If it is possible, before I purchase a wine, I ask to taste it".

(Resp.2)

"Sometimes the information presented on the wine labels is confusing" [...] "I very often find labels with inconsistent information. They are usually related to the description of the wine's aroma and the combination with food".

(Resp.7)

"I always look at the wine label for information about the grape variety and the wine's vintage. To me, they are very important signals of the quality of the wine".

(Resp.9)

"Little information about wines is available in retail stores" [...] "Domestic retailers have poorly organised wine shelves. Much time is wasted finding a wine according to the vintage and appellation".

(Resp.15)

Following the interviews, the respondents were provided with a structured survey. They were asked to give answers to questions addressing preferences in wine attributes and information sources. The respondents were also tested for their knowledge of wine. Apart from determining the sample's knowledge of wine, the test was also used to check for the respondents understanding of the questions. The latter was particularly important as the objective knowledge instrument was intended to be used in the quantitative study.

The results from the survey are presented in Table 3 and Table 4. The information sources and wine attributes considered important by the group members when making decisions for wine were measured on a Likert-type scale from 1 to 7, where 1 was not important at all and 7 extremely important.
Table 3: Important wine information sources

Tabela 3: Pomembni viri informacij o vinu

Information sources listed	Group 1* ratings (median score)	Group 2 [*] ratings (median score)				
Front label information	6	6				
Back label information	6	6				
Wine medal stickers	3	5				
Point of sale information	2	6				
Waiter recommendation	3	4				
Family member recommendation	7	5				
Friend or colleague recommendation	7	5				
Salesperson recommendation	2	4				
Wine expert recommendation	6	6				
TV wine programs and advertisements	2	3				
Online information	2	3				
Magazines and newspapers	2	3				
Information from billboards 2 1						
* Scale item ratings 1–7, where 1 is not at all important and 7 is extremely important						

Table 4: Important wine attributes

Tabela 4: Pomembne lastnosti vina

Wine attributes listed	Group 1 [*] ratings (median score)	Group 2 [*] ratings (median score)			
Wine type (red/white)	4	4			
Wine style (dry/sweet)	7	6			
Brand	7	6			
Price	7	5			
Wine medals and awards	5	5			
Country of origin	3	4			
Grape variety	6	6			
Food and wine matching	3	4			
Label design	4	4			
Wine vintage	3	6			
Bottle type	5	4			
* Scale item ratings 1–7, where 1 is not at all important and 7 is extremely important					

Table 5 presents the aggregated results of 10 test questions measuring the respondents' objective knowledge of wine. Each question included four possible answers, of which only one was correct. The participants showed no problems with understanding the questions. Based on the aggregated scores, the sample showed moderate knowledge of wine. Thus it met the study's aim of focusing on participants with an average knowledge of wine.

The respondents evaluated 24 wines according to the procedure explained in the previous section. The average time needed for one group of five participants to finish the procedure was 45 (SD=1.2) minutes. The results of the sensory evaluation of the 15 wines, assessed on an intensity scale from 1 to 10, are shown in Table 6, presenting the mean score and standard deviation for each wine based on the attribute evaluated.

Table 5: The sample's objective knowledge of wine Tabela 5: Objektivno znanje vzorca o vinih

Questions	Number of	Percentage of
Questions	correct answers	correct answers
Sample objective knowledge of wine	72	47.5
Which of the following is a red wine?	11	73.3
A peppery character is most associated with which wine?	3	20.0
Which of the following wines contains more tannins and astringent taste?	12	80.0
Which is not a famous French wine region?	6	40.0
Table wines have an alcohol content of:	13	86.7
Which of the following wine flavours is rarely found in barrel-aged wines?	5	33.3
Burgundy is the French term for which wine?	5	33.3
Which grapes are never used to make Champagne?	2	13.3
Which grape variety is used for making the wine "T'ga za Jug"?	8	53.3
What is the distinction between aroma and bouquet?	7	46.7

Table 6 The results for the intensity of wine sensory attributes

Sample number	Attribute	Mean intensity score	SD
YS2013-1		5.33	1.07
YS2013-2	Colour intensity	7.47	1.36
YS2013-3		6.47	1.20
SDT2012		6.67	1.40
SDS2012	Sweetness taste	7.47	1.50
SDST2012		5.20	0.98
BAS2010		5.67	2.12
BAP2007	Oak flavour	7.47	1.15
BASTV2009		6.73	1.29
AWD2012		8.53	1.02
AWS2011	Astringent taste	7.27	1.29
AWST2011		7.13	1.09
RWS2013-1		6.27	1.44
RWS2013-2	Reductive flavour	7.27	0.85
RWS2013-3		5.07	1.12

Tabela 6: Rezultati za intenziteto senzoričnih lastnosti vina

The remaining nine wines were evaluated using the triangle discrimination sensory evaluation test. The respondents were presented with three series of three wines each and were expected to recognise in each series the wine containing acetaldehyde. To determine the detection threshold as a function of acetaldehyde level, binominal distribution tables for triangle tests were used (Prescott et al., 2005; Roessler et al., 1978).

The analysis of the results revealed that even at the lowest (75 mg/L) concentration of acetaldehyde, more than half of the respondents correctly identified the odd sample (53.3%). Figure 9 presents the results for the detection threshold (DT) with the percent of subjects correctly identifying the sample. The lower bound of the confidence interval (CI) represents chance responding (33%), while the higher bound indicates the 5% significance criterion (58.5%) using the binominal distribution for the triangle test (N=15), which is reached at the acetaldehyde concentration of 85 mg/L.



Slika 9: Delež vzorca, ki je prepoznal vino z dodanim acetaldehidom

Table 7 presents general information and the chemical parameters of the wines included in the quantitative analysis. Of the six wines, two were young, two from the 2012 vintage, one from the 2010 harvest, and one an old vintage wine from the year 2007. In terms of sweetness level, only one wine had a sugar content that classified it in the category of semi-sweet wines. All considered wines were from the grape variety Vranec.

Table 7: Information and chemical parameters of the selected samples of wineTabela 7: Informacije o izbranih vzorcih vin in njihove kemijske lastnosti

Wine brand	Producer	Wine category	Vintage	Alcohol vol. %	Total acidity g/L	pН	Volatile acidity g/L	Free SO ₂ mg/L	Total SO ₂ mg/L	Sugar g/L
Vranec Reserve	Popov	Barrel aged	2007	13.50	5.43	3.30	0.80	33	150	3.5
Vranec	Vila Dihovo	Tannic	2012	11.40	4.19	3.50	0.35	19	41	5
Vranec	Skovin	Young	2013	11.53	6.10	3.34	0.24	34	68	1.3
Vranec	Skovin	Reductive	2013	11.42	5.93	3.37	0.23	31	71	3.5
Vranec (Santa Marija)	Skovin	Semidry	2012	12.57	5.50	3.40	0.60	47	120	12
Vranec	Skovin	Oxidative	2010	13.05	5.83	3.31	0.66	39	125	4.2

3.4 QUANTITATIVE STUDY

The primary purpose of this study was to conduct a systematic assessment of the effects of knowledge (objective and subjective), sensory competence, and self-confidence on the sources of information selected by young adult wine consumers. The corresponding sample and sampling procedures, data collection procedures, instrumentation, review of the pre-test, and data analysis procedures are presented in the following sections/subsections.

3.4.1 Sample selection

The target population for this study were Macedonian young adult wine consumers. The sampling frame consisted of consumers living in the capital city of Skopje and the second largest town, Bitola. As it was practically impossible to use probability sampling methods in this study, especially as the size of the population under investigation was unknown, a convenient sample was used. A non-probability convenience sampling method was employed on purchasers of wine in wine stores and visitors of wine festivals between 25 and 34 years of age. The sample size was determined on the basis of existing results in the relevant literature. For testing the proposed hypotheses, the study employs structural equation modelling. The sample size is very important for this method, especially because it relies on tests which are responsive to size of the sample and also to the size of differences in the covariance matrices. The literature suggests different sample sizes for SEM based on the method of calculation:

- According to Hair et al. (2006), a minimum sample size of 100 is generally considered a requirement for maximum likelihood estimation while samples between 100 and 200 are considered suficient. Furthermore, the authors contend that sample sizes that are too large (exceeding 400 to 500) may result in finding indicators that reflect poor goodnessof-fit because of "over sensitivity" in finding differences between indicators, and suggest testing the model with a sample size of 200 irrespective of the original sample size.

- Loehlin (2004) suggests samples sized from 200 to 400, and for models with 10–15 indicators samples of at least 100 cases, preferably 200.

- Chou and Bentler (1995) suggest a sample size of at least 200 for SEM models.

- Ding et al. (1995) review numerous studies and find that the minimum acceptable sample size for applying a structural equation model should be 100 subjects.

- As a general rule, it is suggested that the minimum sample size should be no less than 200 (preferably no less than 400, especially when the observed variables are not multivariate normally distributed) or 5–20 times the number of parameters to be estimated, whichever is larger (Kline, 2005).

- Shah and Goldstein's (2006) review of 75 structural equation models from four management science journals reports a sample size median of 203 respondents.

The model in this study comprises 23 observed variables (see Figure 8). Following the general rule of thumb recommended by Chou and Bentler (1995), Ding et al. (1995), and Hair et al. (2006), a minimum of 150 respondents with clean and usable data were required to avoid problems related to sample size in the analysis.

3.4.2 Constructs and measures

This section details the measurement of the study constructs and the plan to demonstrate the reliability and validity of these constructs. Each construct is defined conceptually and operationally, as reflected in the model in Figure 8. The variables of interest in this dissertation were measured using established scales from previous research studies, the only exception is the measure for sensory competence in wine, which was specifically developed for the purpose of this study. According to Bausell and Li (2002), using established measures whenever possible enhances the replicability and generalizability of the results as well as reduces study costs.

Information search is a critical construct in this research. As discussed in the previous chapter, information search includes both internal (i.e. knowledge and personal experience) and external search. The key dimensions of information search included in this study are the sources of information used. The information sources subsumed under the measure of external search were determined on the basis of the results of the qualitative study. Six constructs are investigated in this study: prior experience, subjective knowledge, objective knowledge, sensory competence, external information search (personal, impersonal, and direct observation or product experience), and self-confidence. The upcoming sections detail the measurement scales.

3.4.2.1 Consumer knowledge and expertise measure development

There are two distinct but related ways in which consumer knowledge is conceptualised and measured: product familiarity or experience and product knowledge (Philippe and Ngobo, 1999). Brucks (1985) suggests that product knowledge consists of three distinct constructs: subjective knowledge, objective knowledge, and familiarity or experience. Subjective knowledge is what a consumer thinks they know about a product, objective knowledge is what they actually know about a product class, and familiarity is their level of experience with regards to the product. Studies incorporating wine knowledge as an independent measure have generally used one of three approaches: 1) measuring the consumer's actual knowledge using questions related to particular features of a wine (Giraud et al., 2011), 2) asking respondents to rate their knowledge relative to others (Viot, 2012), or 3) using respondents' familiarity and experience with wine as a proxy for knowledge (Philippe and Ngobo, 1999).

Measurement of prior experience

Product experience in the consumer behaviour literature has been presented as an important factor for understanding consumer decision-making (Faye et al., 2013; Latour and Latour, 2010; Raju et al., 1995). Alba and Hutchinson (1987) define experience as the summation of a consumer's past product related consumption activities, including (a) information search regarding the product class, (b) usage or consumption of the product, and (c) ownership. Most commonly, this construct is conceptualised as the consumer's actual purchasing and usage behaviour with a product category (Bettman and Park, 1980). Product

usage forms a basis of experience that builds the consumer's knowledge of a product or product category.

To assess the subjects' prior experience in wine, this study uses questions measuring the incidence of drinking and purchasing wine (Table 8). The items developed for this purpose were based upon the studies of Barber (2009), Dodd et al. (2005) and Flynn and Goldsmith (1999). The frequency of wine drinking was examined by asking individuals how often they consumed wine in the last year at home or in restaurants/bars. The options from which the respondents had to choose were "every day", "most days", "weekly", "fortnightly", "monthly", and "up to six times a year". To measure their frequency of wine purchasing, the respondents were asked to indicate how much wine they had been purchasing in a given month.

Table 8: Measurement of prior wine experience

Tabela 8: Merjenje predhodnih izkušenj z vinom

1. During the last year, how often did you drink wine at home?

2. During the last year, how often did you drink wine at a restaurant/bar?

3. Approximately how many bottles (750 ml equivalent) of wine do you purchase per month?

Note: See Annexes A3 and A4 for the complete survey questionnaire.

Subjective knowledge measurement

Flynn and Goldsmith (1999) have defined subjective knowledge as "a consumer's perception of the amount of information they have stored in their memory". In a rigorous scale development process, following the approach suggested by Churchill (1979), these authors have constructed an eight-item self-report measure of a consumer's perceptions of their own subjective knowledge of a topic that can be adapted to various contexts. The scale has been demonstrated to be unidimensional whereby scores on individual items can be summed to produce a composite measure of subjective knowledge of a topic. The measure is also free from methodological confounds and is easy to use. It exhibits Cronbach's alpha coefficients of reliability in the range from 0.80 (Forbes et al., 2008) through 0.82 (Bruner et al., 2001) to 0.89 (Flynn and Goldsmith, 1999). Evidence for aspects of internal validity is provided by Flynn et al. (1996), with high positive correlations reported between subjective knowledge and opinion leadership, innovativeness, and product involvement (Bruner et al., 2001).

To measure subjective knowledge of wine, six items (using a 7-point Likert scale) were taken from the study of Flynn and Goldsmith (1999) with the aim of capturing consumers' "feeling of knowing" facts about wine (Table 9). Two were 7-point scale items anchored at either end with "not at all knowledgeable" and "very knowledgeable", while the other four were anchored with "strongly disagree" and "strongly agree". The internal consistency of the scale reported by Flynn and Goldsmith (1999) is 0.80.

Table 9: Measurement of subjective wine knowledge

Tabela 9: Merjenje subjektivnega znanja o vinih

- 1. Compared to others you know, how knowledgeable are you about different types of wine?¹
- 2. Compared to a wine expert, how much do you feel you know about wine?¹
- 3. I know pretty much about wine²
- 4. I do not feel very knowledgeable about wine²
- 5. Among my friends, I am the wine $expert^2$
- 6. I know less about wine than others do^2

Scale range: (1) 1 = not at all knowledgeable, 7 = very knowledgeable; (2) 1 = strongly disagree, 7 = strongly agreeStem: Please select the appropriate column to indicate your response to the following statement below. Note: See Annexes A3 and A4 for the complete survey questionnaire.

Objective knowledge measurement

A number of marketing scholars have studied consumer objective knowledge with specific reference to wine (Barber et al., 2009; Dodd et al., 2005; Forbes et al., 2008; Frøst and Noble, 2002; Giraud et al., 2011; Hughson and Boakes, 2001; Mueller et al., 2008; Philippe and Ngobo, 1999; Robson et al., 2014; Veale Roberta., 2008; Velikova et al., 2015; Vigar-Ellis et al., 2015). Dodd et al. (2005) and Barber (2009) used a 10-item multiple choice test to measure consumer wine knowledge, including questions on wine alcohol content, grape varieties, pairing, and serving. Van Dijk and van Knippenberg (2005) used a different 10-item test, and in addition to grape varieties, their questions included different vintages and various facts about the French wine industry. Frøst and Noble (2002) used their own wine trivia quiz which consisted of 11 questions from an undergraduate class exam. The questions were of varying levels of difficulty, and accordingly, varying points were awarded for each correct answer. Veale (2008) implemented a 24-item test with specific emphasis on Chardonnay to fit the purpose of her study. Mueller et al. (2008) used an unaided elicitation of grape varieties and Australian wine regions to measure respondents' objective wine knowledge. Forbes et al. (2008) assessed consumer wine knowledge in four countries, so their six questions test pertained to knowledge of various world wine regions and regional grape varieties. More recently, Velikova et al. (2015) developed a 44-item test suitable for assessing wine knowledge across a broad spectrum of expertise.

While many measures of objective wine knowledge have been developed, for the purpose of this study the objective knowledge construct was measured with nine multiple choice questions adopted with modifications from the studies of Dodd et al. (2005), Frøst and Noble (2002), and Hughson and Boakes (2001). The measurement instrument includes questions covering a range of subjects related to the expected knowledge of moderately involved young wine consumers. Prior to use, the instrument was checked for any misunderstanding in the focus groups. Poorly understood questions were modified. In Table 10, the measurement instrument for objective wine knowledge is presented. The correct answers to the questions are shown in italic.

Table 10: Measurement of objective knowledge of wine

Tabela 10: Merjenje objektivnega znanja o vinih

1. Which of the following is a red wine?

a) Riesling, b) Semion, c) Rkatsiteli, d) Teran, e) Don't know

- 2. Which of the following wines contains more tannins and has a more astringent taste?
- a) Red, b) Sparkling, c) White, d) Rose, e) Don't know
- 3. Which is not a famous French wine region?
- a) Bordeaux, b) Champagne, c) Piedmont, d) Alsace, e) Don't know
- 4. Table wines have an alcohol content of:
- a) 1-3%, b) 4-7%, c) 8-14%, d) 15-24%, e) Don't know
- 5. Which of the following wine flavors is rarely found in barrel-aged wines?
- a) Vanila, b) Coffe, c) Mint, d) Coconut, e) Don't know
- 6. Which of the following is the largest wine producer?
- a) Portugal, b) China, c) France, d) Australia, e) Don't know
- 7. Burgundy is the French term for which wine?
- a) Cabernet Sauvignon, b) Merlot, c) Pinot Noir, d) Sauvignon Blank, e) Don't know
- 8. Which grape variety is used for making the wine "T'ga za Jug"?
- a) Cabernet Sauvignon, b) Merlot, c) Pinot Noir, d) Vranec, e) Don't know
- 9. What is the distinction between aroma and bouquet?
- a) Bouquet results from red grapes and aroma by white grapes
- b) Bouquet occurs only in sparkling wines and aroma occurs only in still wines
- c) Aroma is based on climate, bouquet on soils
- d) Bouquet comes from fermentation procedures whereas aroma has its origins in the grape alone

e) Don't know

Note: See Annexes A3 and A4 for complete survey questionnaire.

Wine sensory competence measurement

A review of wine literature produced several studies measuring sensory expertise in wine were found (Annett, 1996; Blackman et al., 2010; Cohen and Cohen, 2011; Frøst and Noble, 2002; Hughson and Boakes, 2002; Latour and Latour, 2010; Lehrner et al., 1999; Lesschaeve, 2007; Mueller et al., 2008; Parr et al., 2003; Perez-Magarino et al., 2011; Prescott et al., 2005). The literature suggests different approaches in assessing subjects' sensory knowledge of wine. The methods can be classified into five broad categories: detection, recognition, differentiation, threshold setting, and scaling. To develop the measure of sensory competence in wine, this study used methods from the first two categories.

Modifying the procedure laid out by Frøst and Noble (2002) and using the wine samples selected in the qualitative study, an instrument consisting of six multiple choice questions was created. Each question had three possible answers of which only one was correct. Table 11 presents the questions included in the instrument and the answers. The correct answers are shown in italic.

Table 11: Measurement of wine sensory competence

Tabela 11: Merjenje senzorične sposobnosti poznavanja vin

1. Please taste the wine sample in front of you and classify it into one of the following categories:

a) Dry wine, b) Semidry wine, c) Sweet wine, d) Don't know

2. Please taste the wine sample in front of you and from the following taste sensations identify the one that stands out in the wine:

a) Sweet, b) Astringent (bitter), c) Sour, d) Don't know

3. Please taste the wine sample in front of you and classify it into one of the following categories:

a) Young and fruity wine, b) Oak maturated, c) Old vintage stainless-steel maturated wine, d) Don't know

4. The wine sample in front of you has a fault. Please taste the wine and from the following three identify which wine fault it is:

a) Cork taint, b) Acetic acid, c) Oxidation, d) Don't know

5. The wine sample in front of you has a fault. Please taste the wine and from the following three identify which wine fault it is:

a) Cork taint, b) Reduction, c) Oxidation, d) Don't know

6. Please taste the wine sample in front of you and from the following wine vintages identify the one that best describe the wine:

a) *Young wine - 2013 vintage*, b) 2009 old vintage wine, c) 2002 old vintage wine, d) Don't know Note: See Annexes A3 and A4 for the complete survey questionnaire.

The instrument shown above addresses the sensory competences of young wine consumers. It assessed the consumers' ability to detect and recognise six intrinsic wine attributes. The first two questions assessed the respondents in terms of their ability to recognise the sweetness level and the excess of tannins in wine. The respondents' recognition of oak flavour is involved in the third question. The following two questions addressed respondents' knowledge for the two most common wine faults, oxidation and reduction. The last, sixth question covered the respondents' competence to detect change in colour, intensity of flavour, and astringency in taste, characteristics related to the vintage of the wine. The maximum of six correct answers was expected for the highest wine sensory competence.

3.4.2.2 Measurement of external search

Measures of external search generally include a variety of self-report measures. Among those found in the literature are: the number of information sources used, the number of types of information sought (Beatty and Smith, 1987; Claxton, et al., 1974; Feldman, et al., 2000; Hoerger and Howard, 1995; Hugstad, et al., 1987; Tumlinson, et al., 1997), the importance of the source and the number of alternatives considered (Feick and Price, 1987; Freiden and Goldsmith, 1988; Murray, 1991; Swartz and Stephens, 1984), the perceived usefulness of the information (Bettman, 1973), confidence or trust in the source (Bettman, 1973; Murray, 1991), and the likelihood of using an information source (Feick and Price, 1987; Murray, 1991; Duhan et al., 1997). Also, there are studies that have measured the number of retail stores visited prior to purchase and the time spent on the purchase decision (e.g. Newman, 1977).

In this study, nine information sources were used to measure consumers' external search for wine. The selection was based on the existing literature (Atkin et al., 2007; Atkin and Thach, 2012; Barber et al., 2008; Chaney, 2000; Chrysochou et al., 2012; Hristov and Kuhar, 2014a; Hristov and Kuhar, 2014b) and confirmed using the qualitative study presented in Section 3.2. The list of the information sources used to measure consumer external search for wine is presented in Table 12. The importance rating of each information source was elicited using the maximum difference scaling method (Lee et al., 2008; Marley and Louviere, 2005).

Table 12: List of information sources

Tabela 12: Seznam informacijskih virov

Information sources
1. Front label (brand, grape variety, vintage, country of origin)
2. Internet (social media, winery websites)
3. Family member recommendation
4. Friend or colleague recommendation
5. Award stickers on the bottle
6. Magazines and newspapers
7. Back label (description of wine aroma and flavour, production method, combination with food)
8. Expert opinion (winemakers, sommeliers, sales assistants)
9. Information from the television (wine programmes)

Maximum difference scaling, also known as Best-Worst Scaling (BWS), is a relatively new research method (Cohen 2003; Cohen and Orme 2004; Chrzan and Golovashkina 2006). It is an extension of the method of paired comparisons, which has been used traditionally in social science. Thurstone, in the 1920s, demonstrated that the paired comparisons method yields an interval scale ordering of items. It is a scale free method, and there is a trade-off among alternatives because subjects have to undertake repeated choices of the best (or the most important) alternative (attribute) in choice sets with two alternatives. The number of choice sets depends on the total number of alternatives, and their relation is exponential. Thus, the task can be exhausting when the number of alternatives is very high. To overcome this limitation, Finn and Louviere (1992) have proposed Best-Worst Scaling (BWS).

The Best-Worst Scaling (BWS) approach is an extension of Thurstone's Random Utility Theory (RUT). The BWS approach has a finite set of potential choice alternatives T (in this case representing all attributes), also called the master set, and there are sub-sets X (they are the choice sets), $X \subseteq T$, of available alternatives. Each choice set has $J \ge 3$ available alternatives and subjects are invited to state the best (or the most important) as well as the worst (or the least important) alternatives (attributes).

BWS provides more information than do paired comparisons, and it requires less input from respondents. For example, if there are 7 attributes to be valued, participants would need to undertake 42 evaluations and provide 21 responses in the paired approach. In the same conditions, the BWS approach would involve 7 choice sets of 3 alternatives that would require

21 evaluations and 14 responses (Jaeger et al., 2008). Although BWS is slightly more difficult to perform than the paired comparison approach, subjects prefer to answer less choice sets, which increase the relevance of BWS. Cohen (2009) explains that the paired comparison approach is a task too repetitive for respondents when the number of choice sets is large.

The BWS approach is suitable for studies which demand trade-offs among alternatives. This discrimination among alternatives is obtained as a consequence of decision processes. During the decision process, subject q identifies and calculates the utility differences of every pair of available alternatives $[J (J -1)]^6$ in a choice set and selects the pair that maximises the utility (or importance) difference. Empirically, Cohen (2003) has contrasted the discriminative powers of BWS, paired comparison, and rating tasks. He finds that BWS has the greatest discriminative power, followed by paired comparison and rating (with a t-test result of 3.3). This superior discriminative power of BWS represents another reason justifying its use.

The first stage in implementing a best-worst scaling survey is to choose a statistical design to construct the comparison sets. Several procedures are available for creating the experimental design of best-worst scaling experiments. They can take the form of Latin Square Designs, Full Factorial Designs, Fractional Factorial Designs, and Balanced Incomplete Block Designs (BIBD). Which type of design will be used depends of the type of best-worst scaling. Three types of best-worst scaling have been discussed in the literature, namely the object case (case 1), the profile case (case 2), and the multiprofile case (case 3). A detailed explanation with examples and associated analyses is presented by Flynn (2010).

As this research was considered with evaluation of the importance of information sources, the best-worst scaling case 1 was selected (Louviere et al., 2013). For this type of best-worst scaling, the literature suggests the BIBD procedure (Casini et al., 2009; Louviere et al., 2013). The BIB design has the capability of greatly decreasing the number of choice sets to be evaluated while maintaining the balanced appearance and co-appearance of items across the sets (Green, 1974; Raghavarao and Padgett, 2005).

To create the BIB design, the functions find.BIB and GYD from the crossdes package of the R programming language were used (Sailer, 2004; R Development Core Team, 2014). Nine wine information sources were combined into 12 different choice sets as presented in Table 13.

Table 13: The balance incomplete block design for the choice sets

						Ch	oice	e set	S				
Information source	1	2	3	4	5	6	7	8	9	10	11	12	Appearance
1. Information on the front label	х				х			х	х				4
2. Information on the internet	х	х				х				х			4
3. Family member recommendation	х			х							х	х	4
4. Friend or colleague recommendation		х		х			х	х					4
5. Award stickers on the bottle		х	х		х							Х	4
6. Magazines and newspapers			х					х		х	х		4
7. Information on the back label			х	х		х			х				4
8. Expert opinion					х	х	х				х		4
9. Information from the television							х		х	х		Х	4
Total information sources per choice set	3	3	3	3	3	3	3	3	3	3	3	3	

Tabela 13: Uravnotežena zasnova nepopolnih blokov za izbiro setov

Note: x denotes the information sources included in a choice set

Each choice set consisted of three different alternatives out of nine. The design ensured that each information source appear in the same number of choice sets (four). Table 14 shows an exemplary choice set which was applied in the questionnaire to ask for an evaluation of the nine wine information sources presented above. Each choice task began with the following question: "From the wine information sources proposed in the following table, please indicate the most important and the least important to you to take into consideration when choosing a wine".

Table 14 Best-worst choice set

Tabela 14: Izbirni set najbolši-najslabši

MOST IMPORTANT	LEAST IMPORTANT
$\sqrt{1}$ Friend or colleague recommendation	Friend or colleague recommendation
Back label information (description of wine aroma and flavour, production method, combination with food)	Back label information (description of wine aroma and flavour, production method, combination with food)
Family member recommendation	Family member recommendation

3.4.2.3 Measurement of the self-confidence construct

Many scholars have emphasised the importance of the self-confidence construct for understanding consumer behaviour (Bearden et al., 2001; Locander and Hermann, 1979; Loibl et al., 2009; Olsen et al., 2003). With researchers focusing on how buyers handle anxiety in purchase situations, a variety of conceptualisations of the self-confidence construct have emerged (Barber et al., 2009). The first measures of consumer self-confidence investigated

personal self-esteem; the findings suggest the existence of a relation between self-esteem and confidence in one's judgment (Locander and Hermann, 1979). Other factors that contribute to self-confidence include previous experiences, perceived locus of control, and dominance (Bearden et al., 2001).

As the objective of this study was to clearly isolate respondent subjective knowledge from self-confidence and measure the constructs independently, the items developed by Bearden et al. (2001) were adopted. The construct of self-confidence as conceptualised by the authors reflects two general dimensions. The first dimension is the consumer's perception of their ability to obtain and use information and to make good purchase decisions. This dimension is referred to as "decision-making self-confidence" and reflects four separate aspects: 1) information acquisition, i.e. knowing where to find information prior to making a purchase, 2) consideration-set formation, i.e. knowing which brands will satisfy ones needs, 3) personal outcomes, i.e. worry over purchase decisions, and 4) social outcomes, i.e. impressing others with one's purchase decisions. The second dimension of self-confidence reflects a consumer's ability to protect themself from being deceived or unfairly treated in the marketplace and is referred to as the "protection" dimension. It has two components: 1) persuasion knowledge, i.e. knowing when an offer is not legitimate, and 2) marketplace interferences, i.e. being afraid to complain or say no to salespeople.

Five item statements measuring the concept of "personal outcomes in decision-making" were used to capture the construct of self-confidence. In the scale presented in Table 15, a highly self-confident person was defined as a respondent who strongly disagreed with all item statements.

Table 15: Measurement of self-confidence in wine decision-making

Tabela 15: Merjenje samozavesti glede odločanju o vinih

- 1. I often have doubts about the wine purchase decisions I make
- 2. I frequently agonise over which wine to buy
- 3. I often wonder whether I made the right wine decision
- 4. I never seem to find the right wine for me
- 5. Too often, the wine I buy is not satisfying

Scale range: 1 = strongly disagree, 7 = strongly agree

Stem: Please select the appropriate column to indicate your response to the following statement.

Note: See Annexes A3 and A4 for the complete survey questionnaire.

3.4.2.4 Demographics

Consumer demographics have been described as "vital statistics about consumers" (Walters and Paul, 1970). Demographics are generally used to describe and categorise populations. Demographic statistics may include a wide ranging number of variables, but the four that have been most frequently measured by consumer behaviour researchers are age, income, education, and gender (Pol, 1991). Following studies by Dodd et al. (2005), Barber

(2009), and Forbes et al. (2008), the questionnaire collected demographic information on the respondents' gender, year of birth, level of education, employment status, and income.

3.4.3 Instrument development and data collection procedure

On the basis of the constructs defined in the previous sections, the two questionnaires used for this study included items addressing a variety of general issues relating to consumer wine knowledge, purchase self-confidence, wine sensory competence, usage experience, and sources of information, as well as preference for wine attributes, purchase motivation, wine situational use, and demographics. The measurement instruments in both English and Macedonian is provided in Annexes A3 and A4.

There are 54 questions in the survey. Two survey questionnaires were used to collect the data. The first, self-reported questionnaire was web based. It included six sections. The first section was an introduction to the survey. Section 2 was designed to measure the participants' general wine consumption. This section included nine questions. They covered experience in wine, wine preferences, consumption situation, and place and frequency of wine consumption. Similar questions can be found in the studies of Dodd et al. (2005), Veale (2008), Forbes et al. (2008), and Barber (2009).

Section 3 of the instrument was designed to measure the participants' wine purchase behaviour and self-confidence. Seven questions were used to collect these data, four requiring participants to provide purchase data while three were 7-point-type response questions, of which one covered wine attributes, the other concerned purchase motivation factors, and the third measured the self-confidence construct as presented in Table 15.

Section 4 of the instrument measured the respondents' subjective knowledge. This section consisted of four questions, of which two 7-point-type response questions were included in the construct of subjective knowledge (Table 9). The remaining two questions requested the participants to classify themselves according to their knowledge of wine and to indicate where their knowledge of wine came from.

Section 5 of the instrument was designed to measure external information search. The importance of wine information sources included in this construct was measured using the best-worst scaling methodology. Nine information sources, which for this purpose were selected through a qualitative interview, were included in the best-worst scaling design (see Table 12).

The final, sixth section of the first questionnaire collected demographic data from the participants. Six questions were designed to obtain data on place of residence, gender, age, income, education, and employment.

The second questionnaire included 16 questions divided into three sections. The first measured objective knowledge of wine, the second section tested sensory competence in wine, and the third collected demographic data. Nine multiple choice questions measured the construct of objective knowledge of wine, and six multiple choice questions the construct of wine sensory competence (see Table 10 and Table 11). The demographic section gathered data on place of

residence, gender and age. To link a subject's responses to both questionnaires the provided email address was used.

In accordance with the research objectives, the recruiting procedure was set up to select respondents between 25 and 34 years of age, that is to say young people interested in wine. To meet the study requirements, participants were recruited at two wine festivals and in four wine stores. These locations were chosen as subjects with an interest in wine were expected to be found there. The visitors of the wine festivals and wine store customers were given a short prequestionnaire consisting of 12 questions (see Annex A1). Two of the questions regarding the interviewees' age and experience in wine were inclusion criteria (a five years minimum) while fewer than three correct answers out of ten questions in the test for objective knowledge of wine were the criterion for exclusion. Respondents who met both criteria, the inclusive and exclusive, were selected to participate in the study. Prior to recruitment, respondents were informed that participation in the study is voluntary and the analysis and results would preserve their anonymity.

On 15 May 2014, an URL link with the first part of the questionnaire (see Annex A2) was sent to the respondents. The web based questionnaire was developed on the basis of the principles for constructing web based surveys set out by Dillman (2000). The link to the survey was left open for a period of three weeks. To prevent duplicate responses, an IP-based duplicate protection was used. To enhance the survey response rate and strengthen the study's statistical power, a second e-mail with the URL link was sent to all participants on 28 May 2014, requesting their participation in the survey if they had not already done so. To encourage the participants to complete the survey they were informed about participation in a wine tasting. With the link to the online questionnaire a pre-invitation, addressed to two people, without information about the date and the place of the wine tasting was sent. Participants were told that following successful completion of the online survey, they would receive a second e-mail informing them about the date and place of the wine tasting. The second questionnaire was presented at the wine tasting (see Annex A4). It was used to collect data from the respondents participating in the wine tasting events. The tasting events were organised at the premises of the Faculty of Technology and Metallurgy in Skopje and Faculty of Biotechnical Sciences in Bitola. At the faculty entrances, the participants were welcomed by the host. After being expressed gratitude for participating in the study, they were instructed to complete the questionnaire. The objective knowledge test was presented first, followed by the sensory competence test. The latter requested from the respondents to taste four wines and to give answers to four single-answer multiple choice questions, one for each wine. The respondents were guided through the procedure by trained interviewers. The wines to be evaluated were presented in an identical order for all subjects.

3.4.4 Pilot study

A pilot study was conducted with a standardised questionnaire design before implementing the final survey (see Annex A2). It was conducted during the last two weeks of

October 2013. Respondents from the sampling frame were selected using a convenience sampling technique. Fifty one individuals from Skopje and Bitola were included in the testing of the questionnaire. The participants were interviewed at two wine stores, one in Skopje and one in Bitola. The respondents' completed intercept questionnaires were used to check for face validity (Haynes et al., 1995) to identify problems with the design of the questionnaire, grammatical or spelling errors, and to assure that respondents would understand the directions and questions.

The data from the pilot study were analysed and examined for frequency of the objective knowledge and sensory competence section as well as for the reliability of the question scales. Using Cronbach's alpha coefficients for the item scales and the Kuder-Richardson formula 20 (KR–20) for the objective knowledge and sensory competence questions. The item scales reported a Cronbach's alpha above 0.70, whereas the test questions reported a KR-20 score below 0.7. The reliability of the objective knowledge instrument was 0.6 KR–20, and the reliability of sensory competence 0.3 KR–20. Furthermore, the analysis revealed that questions 5 and 6 in the sensory competence section and question 6 in the objective knowledge section were impacting the results. Once they were removed, the KR-20 for sensory competence increased to 0.50 and the KR-20 for objective knowledge to 0.7.

The result for sensory competence was well below the minimum recommendation for reliability. However, the result was not much different compared to the one published by Barber (2009) using a test and measuring objective knowledge of wine (KR-20=0.57). Based on these results, it was decided that a second pilot test would not be performed. An analysis of the pilot respondents' demographics did not reveal any unusual characteristics that would require modification of the survey.

Table	16:	Expl	oratory	factor	analy	sis of	external	information	search ($N=51$)
			<i>.</i>		~				

Tabela 16: Eksplorativna	faktorska analiza za	zunanje iskanje	informacij (N=51)
*			

External information search dimensions	Cronbach's	Factor	Eigenvalue	Variance
Personal information sources	0.74	loading	3.3	36.26
Family member recommendation		0.693		
Friend or colleague recommendation		0.664		
Expert opinion (winemakers, sommeliers, sales assistants)		0.661		
Impersonal information sources	0.76		2.5	27.75
Internet (social media, winery websites)		0.637		
Magazines and newspapers		0.826		
Information from the television (wine programmes)		0.499		
Self-observation of extrinsic attributes	0.79		0.8	8.6
Front label (brand, grape variety, vintage)		0.789		
Award stickers on the bottle		0.808		
Back label (description of wine aroma and flavour, production method, combination with food)		0.410		
The Kaiser-Meyer-Olkin measure of sampling adequacy			0.768	
Bartlett's test of sphericity (significance level)			0.001	

Based on the findings from the focus group study, nine items were utilised to conduct the pretest of the external information search construct. In order to determine the scale items, a factor analysis was performed (Table 16). The Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett's test of sphericity were examined to determine the appropriateness of this method. The result of the Kaiser-Meyer-Olkin measure of sampling adequacy test indicated an acceptable level (0.768) – a value of 0.60 or above is required for the data to be suitable for factor analysis (Tabachnick and Fidel 2007). Bartlett's test of sphericity was also found to be significant at a level of 0.001. The maximum likelihood analysis revealed the presence of three latent factors, accounting for 72.56% of the total variance. Each factor resulting from the analysis was labelled according to the meaning of the loaded items. The first factor explains 36.26% of the variance and was named the personal information sources factor because of its high correlation with family member recommendation (0.69), friend or colleague recommendation (0.66), and expert opinion (0.66). The second factor was characterised by the high positive correlation with the internet (0.63), television (0.50), and magazines and newspapers (0.82). This factor embraces those consumers who pay great attention to impersonal information sources. The third factor explains 8.6% of the total variance and the three items most correlated with it were attributes on the front (0.79) and back label (0.41) as well as award stickers on the bottles (0.81).

The examination of the Cronbach's alpha reliability score indicated that all factors had acceptable reliability scores. The results for the Cronbach's alpha coefficient, factor loadings, eigenvalue, and variance explained are presented in Table 16. Based on the findings, the expectations that the external search construct would be explained by three dimensions appear to have been correct.

3.4.5 Final survey instrument

The final web survey measured the influence of prior experience, subjective and objective knowledge, sensory competence, and self-confidence on the choice of sources of information on wine. The final instrument contained a total of 51 questions (Table 17). The eight constructs were measured using 30 questions: prior experience (questions 4, 5 and 10), subjective knowledge (question 19, items 1–2, as well as question 20, items 1–4) objective knowledge (questions 40 to 47), sensory competence (questions 48 to 51), self-confidence (question 16, items 1–5), and sources of information (questions 21 to 29).

The eight constructs include 35 variables. Table 18 presents a complete listing of the constructs, the number of items measuring each construct, and their reliability levels. Internal reliability concerns the degree to which scores are free of random measurement error. It ranges from 0 to 1.0. Negative reliability coefficients usually indicate a serious problem with the scores. The most commonly reported measure of reliability is Cronbach's alpha coefficient. It measures the internal reliability, or the degree to which responses are consistent across the items, with a single measure. If the internal consistency is low, the content of the items may be heterogeneous such that the total score is not the best analysis for the measure.

Table 17: Final survey instrument construct questions

Tabela 17: Vprašanja končnega vprašalnika, ki merijo konstrukte

Construct of Past Experience

4. During the last year, how often did you drink wine at home? Every day/Up to six times per year

5. During the last year, how often did you drink wine at a restaurant/bar? Every day/Up to six times per year

10. Approximately how many bottles (750 mL equivalent) of wine do you purchase per month?

Less than 2/More than 15

Construct of Self-Confidence

16.1 I often have doubts about the wine purchase decisions I make: Not very important/Very important

16.2 I frequently agonise over which wine to buy: Not very important/Very important

16.3 I often wonder whether I made the right wine decision: Not very important/Very important

16.4 I never seem to find the right wine for me: Not very important/Very important

16.5 Too often, the wine I buy is not satisfying : Not very important/Very important

Construct of Subjective Knowledge

19.1 Compared to others you know, how knowledgeable are you about different types of wine? Not at all knowledgeable/Very knowledgeable

19.2 Compared to a wine expert, how much do you feel you know about wine? Very little/Very much

20.1 I know pretty much about wine: Strongly disagree/Strongly agree

20.2 I do not feel very knowledgeable about wine: Strongly disagree/Strongly agree

20.3 Among my friends, I am the wine expert: Strongly disagree/Strongly agree

20.4 I know less about wine than others do: Strongly disagree/Strongly agree

Construct of External Information Search

21. Front label information (brand, grape variety, vintage, country of origin): Most important/Least important

22. Back label information (description of wine aroma and flavour, production method, combination with food): Most important/Least important

23. Award stickers on the bottle: Most important/Least important

- 24. Family member recommendation: Most important/Least important
- 25. Friend or colleague recommendation: Most important/Least important
- 26. Expert opinion (winemakers, sommeliers, sales assistants): Most important/Least important
- 27. Internet (social media, winery websites): Most important/Least important
- 28. Information from the television (wine programmes): Most important/Least important

29. Magazines and newspapers: Most important/Least important

Construct of Objective Knowledge

40. Which of the following is a red wine?

- 41. Which of the following wines has more tannins and a more astringent taste?
- 42. Which is not a famous French wine region?
- 43. Table wines have an alcohol content of:
- 44. Which of the following wine flavours is rarely found in barrel-aged wines?
- 45. Burgundy is the French term for which wine?
- 46. Which grape variety is used for making the wine "T'ga za Jug"?
- 47. What is the distinction between aroma and bouquet?

 Table 17: Final survey instrument construct questions (continued)

Tabela 17: Vprašanja končnega vprašalnika, ki merijo konstrukte (nadaljevanje)

Construct of Sensory Competence

- 48. Using your sensory skills, please classify the wine into one of the following categories:
- 49. In the wine you are going to taste, one gustatory sensation stands out. Please identify it.
- 50. Using your sensory skills, please classify the wine into one of the following categories:
- 51. The wine has a fault. Using your wine sensory skills, please identify it.

Cronbach's alphas of latent constructs were satisfactory for the six constructs (>0.6), indicating acceptable internal consistency (Cronbach, 1951). Reliability for the objective knowledge and sensory competence construct calculated using Kuder-Richardson's formula (KR-20), equivalent to Cronbach's alpha, showed 0.72 for objective knowledge and 0.28 for sensory competence. This result for the sensory competence construct was well below the minimum recommendation for reliability suggested by Cronbach (1951), and therefore it was decided that the dimensions have to be reduced before using the construct in the model. The description of the instruments and the reliability measures are presented in the Table 18.

1 able 18: Instrument used to measure constructs in specified model ($N=105$)	Table 18: Instrument used to measure cor	nstructs in specified model (<i>N</i> =165)
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Tabela 18: Instrum	ent, uporabljen za	a merjenje kontstru	ktov v opisanem	modelu (N=165)
			1	· · · · · · · · · · · · · · · · · · ·

Constructs	Туре	Number of observed Variables	Score Range	Cronbach's Alpha
Usage Experience	Close ended	3	1 to 6	$\alpha = 0.72$
Subjective Knowledge	Likert	6	1 to 7	$\alpha = 0.86$
Self-Confidence	Likert	5	1 to 7	$\alpha = 0.84$
Personal Source	Best-worst scale	3	-3 to +3	$\alpha = 0.66$
Impersonal Source	Best-worst scale	3	-3 to +3	$\alpha = 0.8$
Objective Knowledge	Multiple Choice	8	0 to 8	KR-20 = 0.72
Sensory Competence	Multiple choice	4	0 to 4	KR-20 = 0.28
Extrinsic product attributes	Best-worst scale	3	-3 to +3	$\alpha = 0.66$

3.5 ANALYTICAL APPROACH

The Structural Equation Modelling (SEM) was used to find the relationship among latent constructs described in the theoretical framework. The SEM method is a confirmatory technique based on a previously formulated theory, in contrast to exploratory factory analysis. In this context, the data required screening before the analysis could be conducted. The data were screened for missing values, outliers, normality, and linearity using the Statistical Package for the Social Sciences (SPSS) version 21.0. IBM's Analysis of Moment Structures (AMOS) 21.0 computer software was used to estimate the model in terms of the research hypotheses. In order to obtain an overall representation of the sample, descriptive statistics such as frequencies, means, and standard deviations were also employed. The reliabilities of the scales were evaluated using Cronbach's alpha coefficient, whereas individual factor loadings, construct

average variance extracted, and shared variance between the constructs were employed to assess the validity. The latent class (LC) cluster Analysis method was used to discover groups with similar characteristics. Factor analysis was used to determine the underlying dimensions of the external search construct, whereas principal component analysis for reducing the dimensionality of the sensory competence construct.

3.5.1 Principal component and factor analysis

The term "factor analysis" encompasses various related techniques (Thompson, 2004). One of the main distinctions is that between factor analysis and principal component analysis (PCA). Factor analysis and principal component analysis are statistical techniques which are used for a set of variables if the researcher is trying to discover which variables in the set form coherent subsets while being relatively independent from each other (Tabachnick and Fidell, 2007). Variables are correlated with each other, and subsets of variables that are highly independent from other subsets are combined into factors. PCA produces components and FA produces factors.

Factor analysis and principal component analysis are similar in many ways and researchers often use them interchangeably (Thompson, 2004). Both them produce a smaller number of linear combinations from the original variables in such a way that most of the variability in the pattern of correlations is captured. But there is a difference between them. In principal component analysis, the original variables are transformed into a smaller set of linear combinations and all the variance in the variables is analyzed. When doing factor analysis, a mathematical model is used to estimate the factors and only the shared variance is analyzed. Often however these two approaches produce similar results.

The goal of the researcher using principal component analysis is to reduce a big number of variables to a smaller number of components, to describe in a compact way the relationships among observed variables, or to test a theory about certain processes (Tabachnick and Fidell, 2007). In this study, both techniques were used. Principal component analysis was used to determine the components of the sensory competence construct, and factor analysis to assess the underlying structure of the external search construct. Principal component analysis produces certain linear combinations of observed variables, and each linear combination is a component (Tabachnick and Fidell, 2007). The components summarise the patterns of correlations in the observed correlation matrix. In factor analysis, the original variables are defined as linear combinations of the factors.

Kaiser's criterion and the scree test were used to determine the number of factors. Kaiser's criterion or the eigenvalue rule shows total variance explained by the factor. According to this rule, only factors with an eigenvalue of 1.0 or more should be retained for further investigation.

3.5.2 Best-worst scaling data analysis

The importance of the information sources and channels was measured using the BWS method. The gathered data were analysed using a counting based method. The analysis involved

the inspection of the total number of times an information source was chosen as "Best" (or "Most important") and the total number of times an information source was chosen as "Worst" (or "Least important"). A best-worst score was constructed based on the difference total (Best) – total (Worst) (Coltman et al., 2011). Count analysis was applied at the individual respondent level and across all respondents (Louviere and Flynn, 2010). Positive values of B-W indicated that the given information source was chosen more frequently as best than worst, and negative values revealed that the information source was chosen more frequently as worst. The average B-W scores were calculated by dividing the B-W score by the number of respondents and by the appearance frequency of the information source in the design of the choice set.

3.5.3 Latent class (LC) cluster analysis

In general, latent variable modelling is appropriate when there is reason to believe that the population of interest has an underlying structure defined by a latent construct that is not directly observable, but rather can be indirectly measured using a collection of related indicator items that pertain to different aspects of the underlying latent construct. Latent class analysis (LCA) is a type of finite mixture modelling that is used to identify discrete and mutually exclusive subgroups of individuals within a population based on observed response patterns to a set of indicator items (Collins and Lanza, 2010). According to Vermunt and Magidson (2005), the major assumption underlying LC cluster models is that objects in the same latent class share a common joint probability distribution among the observed variables. Therefore, objects in the same cluster are similar to each other with respect to these observed variables. Objects are classified into the class with the highest posterior membership probability of belonging to that class given a set of observed variables.

The LC cluster models with covariates have the following form:

$$f(Y|Z,\theta) = \sum_{x} \pi(X|Z) f(Y|X,Z,\theta)$$
(1)

where:

- Y is a set of dependent (clustering) variables;
- Z is a set of covariates;
- X is a nominal latent variable (having J classes);
- θ is a set of parameters to be estimated;
- $\pi(X|Z)$ is the probability of belonging to a certain latent class given a set of covariate values;
- $f(Y|X,Z,\theta)$ is the joint distribution specified for Y given a certain latent class and a set of covariate values and parameters;

If the Y variables belonging to the different classes (of variable X) are assumed to be mutually independent given the latent class and the covariates, the following equation is obtained:

$$f(\mathbf{Y}|\mathbf{Z},\boldsymbol{\theta}) = \sum_{x} \pi(\mathbf{X}|\mathbf{Z}) \prod_{m=1}^{M} f(\mathbf{Y}_{m}|\mathbf{X},\mathbf{Z},\boldsymbol{\theta})$$
(2)

As the scores of the latent variable given the covariates are assumed to come from a multinomial distribution, the probability of belonging to a given latent class can be calculated as follows:

$$\pi(\mathbf{X}|\mathbf{Z}) = \frac{e^{\eta_{\mathbf{X}}|\mathbf{Z}}}{\sum_{x} e^{\eta_{\mathbf{X}}|\mathbf{Z}}}$$
(3)

where the term η refers to a linear combination of the main effects of the latent variable (γ_{x_j}) and the covariate effects on the latent variable ($\gamma_{z_j x_j}$), defined as:

$$\eta_{X|Z} = \sum_{j=1}^{J} \gamma_{Xj} + \sum_{l=1}^{L} \sum_{j=1}^{J} \gamma_{ZjXj}$$
(4)

The two main methods to estimate the parameters of LC cluster models are maximum likelihood (ML) and maximum posterior (MAP). In this study, to get ML estimates of the parameters, the Expectation Maximisation (EM) algorithm was used.

To determine the best underlying model to explain the manifest variables, goodness-of-fit measures such as log-likelihood, the likelihood ratio chi-squared (L^2) (with lower values corresponding to better model fit), and a corresponding p-value as well as parsimony statistics such as the Bayesian information criterion or BIC (Schwartz, 1978) and the Akaike information criterion or AIC (Akaike, 1973) were considered. The chi-squared test null hypothesis assumes that the predicted model fits the observed model, therefore a non- significant p-value (p<0.05) is desired. Although a good rule of thumb for the goodness-of-fit assessment are values of the likelihood ratio chi-squared (L^2) equal to or lower than the degrees of freedom, when the contingency table is large and contains sparse data, such as when the number of possible rating combinations for the set of variables becomes much larger than the sample size (Garson, 2011), the likelihood ratio chi-squared (L^2) may no longer follow a chi-squared distribution and, although bootstrapping estimates of the p-value may be calculated, information criteria such as BIC or AIC may be used to assess relative model fit (taking into consideration the model parsimony) when comparing alternative models.

3.5.4 Reliability and Validity

Bausell and Li (2002) recommends verifying the reliability of research measures each time an instrument is used and suggests several strategies for increasing the reliability of measurement instruments. Using measures that are well constructed and tested, that address the key constructs, and that are sensitive will enhance reliability. Strategies that are especially relevant to the use of self-administered surveys are: 1) ensuring that directions for completing

the survey are clear, 2) representing items as clearly and unambiguously as possible, and 3) ensuring that the reading level of the survey matches the abilities of the target sample.

As discussed in Section 3.3, expert review, cognitive interviews, and pilot testing prior to implementation were employed to enhance the reliability of the measures as well as the flow and ease of completing the survey. Internal consistency was evaluated using Cronbach's alpha and composite reliability. Cronbach's alpha estimates were examined for a 0.70 acceptance. The composite reliability (CR) is a better measure of internal consistency because factor scores are calculated from the actual loadings (Kim et al., 2008). The CR of each construct was calculated by dividing the squared sum of the standardised loadings for the given construct by the squared sum of the standardised loadings for the given construct by the squared sum of the standardised loadings reliability score was 0.70 or higher (Churchill Jr, 1979).

Convergent validity was tested by multiple means. The individual factor loadings were evaluated for the hypothesised positive direction and significance as recommended by Bagozzi and Yi (1988). In AMOS, the t-value is the critical ratio (C.R.) and is a calculation of the parameter estimate divided by its standard error. A C.R. greater than 1.96 supports statistical significance of the individual factor loadings (Byrne, 2004). Large factor loadings offer evidence that the measured variables represent the underlying construct (Bollen, 1989). Bagozzi and Yi (1988) suggest that loadings greater than 0.60 indicate convergent validity.

Convergent validity was also tested with the average variance extracted (AVE) method (Fornell and Larcker, 1981). The AVE estimate is the average amount of variance that a latent construct explains in the observed variables to which it is theoretically related (Hair, et al., 1998). Latent constructs correlate with observed variables and the calculation is referred to as the factor loading. The square of this loading is the amount of variance of the observed variable accounted for by the latent variable. The AVE was calculated by squaring the factor loadings and averaging the variances of the observed variables that are theoretically related to a latent construct. Convergent validity is implied when the AVE exceeds 0.50 (Fornell and Larcker, 1981).

Discriminant validity was assessed following the Fornell and Larcker (1981) methodology. The AVE of each construct was compared with the shared variance between constructs. If the AVE for each construct was greater than its shared variance with any other construct, and if the square root of AVE was greater than inter-construct correlations, discriminant validity to be supported.

3.5.5 Structural equation modelling

In the last two decades, confirmatory factor analysis, path analysis, and structural equation modelling have become important tools in the research repertoire of the social scientist, particularly the one who is forced to deal with complex real-life phenomena in the domain of political, social, educational, clinical, and industrial science, personality or developmental psychology, sociology, marketing science, and consumer behaviour. According to Anderson

and Gerbing (1988), one of the reasons for this is the possibilities that confirmatory methods offer in assessing and modifying theoretical models. As most theories in social and behavioural research are formulated by means of hypothetical constructs, which basically are theoretical creations that cannot be observed or measured directly, they need previous specification. Namely, the measurement of the hypothetical construct is conducted indirectly through one or more observable indicators such as responses to questionnaire items that are assumed to represent the construct adequately. When the theoretical constructs are defined using observable indicators, the theory in the next step defines how the constructs are interrelated with hypotheses. Based on their relationships, constructs can be classified into dependent (endogenous) and independent (exogenous). The measurement part of the model is constituted by the relationship between observable indicators and the theoretical constructs, and the structural part of the model by the theoretical relationships between the constructs (Loehlin, 2004).

To evaluate a substantive theory with empirical data through a hypothesised model, Structural equation modelling is usually used. The model represents a series of hypotheses representing in turn relationships between the constructs. The parameters of the model are the regression coefficients and the variables' variances and covariances. To estimate the parameters of the structural equation model, maximum likelihood (ML) and normal theory generalised least squares (GLS) are typically used. Both estimation techniques assume that continuous variables are measured and that multivariate normal distribution is assured. However, maximum likelihood estimation has been the most commonly used approach in structural equation modelling because ML estimations have been found to overcome the problems created by the violations of normality, which means that estimates are good estimates even when the data are not normally distributed. On the other hand, the GLS method has not been intensively studied (Hoyle, 1995). Jöreskog and Goldberger (1972) and Browne (1984) found that GLS estimates are likely to be negatively biased compared to ML estimates. Therefore, the properties of the items of the eight constructs in the proposed model as well as the hypotheses were tested using the AMOS structural equation analysis programme with the maximum likelihood (ML) method of estimation.

3.5.5.1 Measurement model estimation

As recommended by Sethi and King (1994) and Anderson and Gerbing (1988), first a confirmatory measurement model specifying the posited relations of the observed variables to the underlying constructs should be tested. The authors suggest the constructs to be allowed to intercorrelate freely. Namely, the measurement model should aim specify the pattern by which each measure loads on a particular factor. The most appropriate application of confirmatory factor analysis is on measures that have been fully developed and their factor structure validated. In testing for the validity of factorial structure for an assessment measure, the researcher seeks to determine the extent to which the items that are designed to measure a particular factor actually do so. According to Byrne (2004), the measuring instrument may represent one or more

factors. In the case of more, it considers subscales representing different factors. Thus, all items comprising a particular subscale are expected to load onto its related factor.

In building measurement models, it is important to measure each construct with multiple observed indicators because multiple-indicator measurement models allow the most unambiguous assignment of meaning to the estimated constructs. In multiple-indicator measurement models, each indicator should measure only one construct because achieving unidimensional measurement is a crucial undertaking in theory development and testing (Anderson and Gerbing 1988). That is why it is important to make sure that the measures that are posited as alternate indicators of each construct must be acceptably uni-dimensional (Anderson and Gerbing 1988). Therefore, before testing the overall measurement model, the measurement unidimensionality of each latent construct has to be assessed individually (Sethi and King, 1994). The unidimensionality of the constructs that are measured with four or more observed indicators is tested individually, whereas that of constructs with less than four observed indicators. Constructs with unacceptable fits were respecified in this study by deleting the indicators that have not worked out as planned to preserve the potential to have unidimensional measurement (Anderson and Gerbing 1988).

3.5.5.2 Model specification

When conducting structural equation modelling, first the theoretical, i.e. measured model that is to be tested needs to be specified. The proposed model is usually developed upon a review of literature or on the basis of an existing theoretical framework (Kline, 2005; Tabachnick and Fidell, 2007). The model to be assessed should display the hypothesised relationships existing between the participants' observed responses and the measuring constructs. One type of unadulterated measurement are confirmatory factor analysis models whereby there is unmeasured covariance between each likely pair of latent variables, straight arrows from the latent variables to their relevant indicators, and straight arrows from the error and disturbance terms to their relevant variables.

3.5.5.3 Model identification

Following the model specification and before estimating the parameters, it is important to handle the problem of model identification (Kline, 2005). The process by which the researcher asserts which parameters are null, which fixed to a constant (usually 1), and which vary is called model identification.

The effects of the variables in the model are represented with arrows, while null effects correspond to the absence of an arrow. Fixed effects reflect either effects whose parameter has been discussed in the literature, which is rare, or more commonly effects that are set to 1, establishing the metric for a latent construct variable (Byrne, 2004). In SEM, Kline (2005) suggests that each unobserved latent construct variable be explicitly assigned a metric which is a measurement range. This is generally done by constraining, or fixing one of the paths from

the latent variable to one of its indicator variables, by assigning the value of 1 to this path. The remaining paths can then be estimated.

The constrained indicator is the reference item. Usually, the reference item is the one that in factor analysis loads most heavily on the dimension represented by the latent variable, thereby allowing it to anchor the meaning of that dimension (Garson, 2007). If problems with identification occur, then parameters must be adjusted in order to make the model identifiable. The software programmes used to perform structural equation modelling usually offer suggestions, such as modification indices, on which parameters should be altered in order to achieve a properly identified model (Byrne, 2004). When the model is properly identified, the process of estimating the model parameters can begin.

3.5.5.4 Model estimation

According to Byrne (2004), the primary purpose of the estimation process in SEM is to yield parameter values where the residual between the sample covariance matrix and the implied model population covariance matrix is minimal. Furthermore, it is considered important to estimate the extent to which a hypothesised model "fits", that is to say adequately describes the sample data.

Such an assessment of the model fit should draw from a variety of perspectives and be based on several principles that from a range of perspectives can assess the model fit (Byrne, 2004). Generally, the focus is on two principles: adequacy of the parameter estimates and the model as a whole (Byrne, 2004).

According to Schumacker and Lomax (2004), the initial step in evaluating the fit of individual parameters in a model is to determine the viability of their estimated values. The literature recommends that the starting point for parameter estimation be the creation of a correlation matrix used to make comparisons between the sample and an estimated population (Schumacker and Lomax, 2004).

In particular, parameter estimates should exhibit the correct sign and size, and be consistent with the underlying theory. Byrne (2001) suggests that any estimate that falls outside an admissible range is a clear indication that the model is either wrong or that the input matrix contains insufficient information. Correlations larger than 1.0, negative variances, and covariance or correlation matrices that are not positive are examples of parameters that exhibit unreasonable estimates (Schumacker and Lomax, 2004).

3.5.5.5 Model evaluation statistics

Following the estimation of the parameters for the specified model, it was necessary to determine how well the data fit the model and the extent to which the obtained sample data supported the theoretical model. There are two key points to consider in this regard. The first is an overall omnibus test of the fit of the entire model (Schumacker and Lomax, 2004), while the second is the examination of the fit of the individual parameters to the model. There is a large number of model fit indices for SEM. Some of these statistics involve comparing the actual

covariance matrix to the implied covariance matrix. Subtracting the implied matrix from the actual matrix gives the residual covariance matrix. Problems with the model are signalled by large differences between these matrices (Keith, 2014).

Table 19 lists several useful fit statistics suggested by Keith (2014) for assessing the fit of a single model. In addition to these indices of model fit, several other statistics are commonly used in path analysis and SEM to generally compare the fit of alternative possible models for a given set of data. These model-comparison statistics are described in the section 3.5.5.7.

Table 19	9: Measures	of the f	fit of a	single	model
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Tabela 19:	Meritve	skladnosti	modela
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	Measure Interpretation
χ^2	The χ^2 statistic measures the discrepancy between the observed covariance matrix and the one predicted by the model. The smaller the chi-squared value, the better the model. Its p-value indicates the probability that the discrepancy between the two matrices is due to sampling variation. However, this measure is problematic for the case of large sample size and when the multivariate normality assumption is violated.
χ^2/df :	The rules of thumb for good fit is that the ratio χ^2/df should be less than 2.
CFI	The comparative fit index (CFI) provides a population estimate of the improvement in fit of the model over a model in which all variables are assumed to be independent of each other (the null model). CFIs close to 1.0 suggest a better fit. CFIs over 0.95 indicate a good fit and values over 0.90 suggest an adequate fit.
TLI	The Tucker-Lewis index (TLI) provides a slight adjustment of the CFI for parsimony and is relatively independent of sample size. The TLI is interpreted in the same way as the CFI.
IFI	The incremental fit index by convention should be equal to or greater than 0.90 for the model to be accepted.
NFI	Values for the normed-fit index range between 0 and 1, with values greater than 0.90 indicating a good fit. A major drawback to this index is that it is sensitive to sample size, underestimating fit for samples less than 200, and is thus not recommended to be solely relied on.
RMSEA	The root mean square error of approximation is used to assess the approximate fit of a model. Values of the RMSEA below 0.06 indicate a close fit of the model relative to the degrees of freedom.
Source: K	line (2005) and Keith (2014).

3.5.5.6 Model modification

When the fit of the implied measured model is not strong, a modification of the existing model and a subsequent evaluation of the new model is proposed. There are a number of procedures available for the detection of specification errors through the process of specification search so that more properly specified subsequent models may be evaluated. The goal of the specification search is to modify the original model in the search of a model that is better fitting and yields parameters with practical significance and substantive meaning, but no single procedure is sufficient for finding a properly specified model (Kline, 2005; Schumacker and Lomax, 2004).

However, two steps have been suggested to deliver meaningful results. The first is to examine the statistical significance of the parameters to determine whether they should be "fixed" in the subsequent model. The second to consider examining the residual matrix to see

whether anything suspicious is occurring, for example large values for a particular observed variable.

3.5.5.7 Model comparison statistics

AMOS provides several statistics that are useful for comparing competing models. The model-comparison statistics recommended by Keith (2014) are listed in Table 20. The primary model-comparison statistics that were used in this study to compare the hypothetical and the saturated model were the AIC and $\Delta\chi^2$. They were used to assess the mediating strength of the sensory competence and self-confidence construct. This analysis was needed to understand the importance of these two constructs to consumers when choosing a source or channel of information during the purchase decision.

Table 20: Model-Comparison Statistics

TAbela 20: 7	Testi p	rimerialni	ı skladnosti	modelov
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Index	Description and interpretation
$\Delta\chi^2$	The difference in chi-squared statistics (χ 2) indicates whether the difference between the fit of two competing models is statistically significant. This statistic is calculated as the difference between the chi-squared goodness-of-fit statistics for two competing, nested models.
AIC	The Akaike Information Criterion (AIC) is a model-selection criterion that provides a balance between the competing goals of model simplicity (parsimony) and precision of model fit. Smaller values of the AIC are better. The AIC can be used to compare both nested and non-nested models.
BIC	The Bayes Information Criterion (BIC) is similar to the AIC, but it includes a slightly stronger adjustment for parsimony than does the AIC. Smaller values of the BIC are better.
RMSEA	The Root Mean Square Error of Approximation (RMSEA) can be used to compare models by comparing the RMSEA for one model to the 90% confidence interval for another competing model.

Source: adapted from Keith (2014)

4 **RESULTS AND DISCUSSION**

This chapter presents the results of the data analysis and hypothesis testing. It consists of ten sections. The first section discusses issues related to the data collection process. The second section analyses for missing values, outliers, normality, and multicolinearity. This is followed by a section that provides information about the socio-demographic and winerelated characteristics of the respondents. The latent class segmentation based on knowledge (subjective, objective, sensory) and self-confidence of the respondents for wine is presented in the next section. The fifth addresses the descriptive statistics for the constructs and elements, while the sixth section focuses on the descriptive socio-demographics of the samples and segments. Section 7 analyses the consumption and purchasing data of the samples and respective segments. The findings on the importance of the information sources and channels for wine are presented in the eighth section. The ninth section presents the outcome of the dimensionality reduction of the sensory competence construct, and the tenth, last section reports the results of the testing of the research hypotheses. To analyse the data, the chi-squared test, the Bonferroni method, the z-test with Bonferroni adjustment, Latent Class Analysis, Exploratory and Confirmatory Factor Analysis, and Structural Equation Modelling were used.

4.1 DATA COLLECTION AND RESPONSE RATES

The sample for this study was drawn from the young population aged between 25 and 34. The participants were recruited in Skopje, the capital city, and Bitola, the second largest town in the Republic of Macedonia. In the period from October 2013 to May 2014, 626 young people were intercepted and pre-interviewed for participation in the study. The study requirements were met by 563 respondents. On 15 May 2014, an URL link with the first part of the questionnaire was sent to these subjects. The survey was completed by 241 respondents after the initial e-mail request and by a further 60 after the second e-mail reminder sent two weeks later. After preliminary data screening, 22 surveys were eliminated due to violating the criterion of a minimum five years' experience in wine. The remaining 279 surveys resulted in a 49.5% response rate. In terms of size, the obtained sample is comparable with the samples presented in numerous previous wine consumer studies (e.g. Chrysochou et al., 2012; Garcia et al., 2013; Thach and Olsen, 2006). Regarding the response rate, the result is in agreement with that reported by Baruch (1999) who, analysing 175 academic studies, found an average response rate of 55.6% (SD = 19.5).

From the period of June to July 2014, five tasting sessions were organised, three at the premises of the faculty of Technology and Metallurgy in Skopje and two at the faculty of Biotechnical Sciences in Bitola. The 279 participants who have successfully completed the online survey were invited to participate in the events. One month prior they were informed about the dates and were asked to choose the date that best fit their schedules.

A total of 174 participants responded positively to these e-mail invitations. By confirming their presence, they all agreed to carry out the final part of the study, which included the

evaluation of their objective knowledge and sensory competence in wine. For this purpose, a questionnaire that included test questions was used. Following their entrance into the faculty building, respondents were approached by a member of the team and directed to four cabins prepared for carrying out the sensory evaluation. Respondents were asked first to provide answers to the objective knowledge test, followed by a testing of their sensory competence in wine. Nine surveys of participants who provided incomplete data were eliminated, leaving 165 usable surveys for the further analysis. The final sample size is within the range considered appropriate for structural equation modelling studies (Hair et al., 2006).

4.2 DATA ANALYSIS

The responses to the questionnaire were analysed using the Statistical Package for Social Sciences (SPSS 21.0 for Windows) and AMOS (Analysis of Moment Structures, release 21/SPSS 21). To perform the latent cluster analysis, the poLCA package for the R software environment was used (Linzer and Lewis, 2011). The segmentation was conducted based on the respondents' subjective and objective knowledge of wine, sensory wine competence, and self-confidence in wine decision making. The chi-squared test and Bonferroni method were used for association and pairwise comparison analyses, respectively. To obtain a representation of the data set, descriptive statistics were employed. Finally, structural equation modelling (SEM) was conducted because of its unique ability to examine the simultaneous interactions that are hypothesised by the constructs of prior experience, subjective knowledge, sensory competence, self-confidence, and sources of information in the proposed model. Before proceeding with the statistical analysis, the data were screened for missing values, outliers, normality, linearity, and multicollinearity.

4.2.1 Missing values

Missing data are a serious problem in data analysis, especially when the amount of missing data are high or the pattern of the missing data is not random (Tabachnick and Fidell, 2007). Tabachnick and Fidell (2007) say that if the missing data from a large data set are random and little in quantity (below 5%), the difference between deleting the missing data or imputing is not significant. Similarly, Hair et al. (2006) report that missing data of 10–15% for an individual case can generally be ignored. Since the online survey was designed such that all questions required an answer, that is to say the respondents were not be able to proceed to the next question without answering the current, there were no missing values in this data set. However, the final data set, which included answers to both questionnaires, the one presented online and the other on-location questionnaire, lacked some answers to the questions assessing wine objective knowledge and sensory competence. Indeed, by not participating in the on-location wine event, 114 respondents had not provided their answers to questions related to wine objective knowledge and sensory competence, thus generating a relatively high amount of missing data. On the other hand, the literature describes no methodology that would justify the imputation of

non-randomly distributed missing data amounting to 40%. In accordance with study objectives, the data analysis was therefore conducted on two data sets. Subjective knowledge and self-confidence variables were analysed on the sample that provided answers to the online questionnaire, whereas objective knowledge and sensory competence variables on the sample that provided answers to both questionnaires. As for the SEM analysis, the methodology required the data set to be free of missing values, therefore only the sample that provided answers to both questionnaires was considered.

4.2.2 Outliers

Following the treatment of the missing values, the next step was to determine which observations were substantially different from the rest of the data and what their influence was. Generally, an outlier is an observation that lies outside the overall pattern of a distribution (Langford and Lewis, 1998). It is usually connected with the presence of some sort of problem. They can be identified using one or more of the following procedures: univariate (standardised scores), bivariate (scatter plot), or multivariate methods (measuring the multidimensional position) (Bakeman and Robinson, 2005). To determine which observations were outliers, in this study the univariate procedure was used. Each item was checked for univariate outliers. All of the items' scores were changed to standard scores. If their standard score was less than -3.0 or greater than +3.0, the data were commonly identified as an outlier (Bakeman and Robinson, 2005). Accordingly, no outliers were detected in this study.

4.2.3 Normality

Normality is one of the key assumptions, particularly when performing multivariate analysis and maximum likelihood estimation procedures (Hair et al., 2006). For most analyses to work properly, the data need to follow a normal distribution. To assess the normality among the variables in this study, skewness and kurtosis were examined. This was performed using normal probability plots and univariate distributions. Skewness refers to how unevenly the data can be distributed with a greater part of the scores stacked up on one side of the distribution and a few responses (not necessarily outliers) set off in one tail of the distribution (Hair et al., 2006). However, skewness violations are not always a concern because, as discussed, a skewed distribution may actually be a desirable outcome of a criterion-referenced test (Tabachnick and Fidell, 2007). The other assessment concerns kurtosis. It describes how "flat" or "peaked" a distribution is. If too many or all of the scores are piled up on or around the mean, then the distribution is too peaked and is not normal; otherwise, it is too flat.

The literature recommends some ranges of acceptability for skewness and kurtosis. To be considered acceptable, the observed skewness should be between -2 and +2 according to Hildebrand (1986), between -1 and +1 according to Balanda and MacGillivray (1988), and between -7 and +7 according to West et al. (1995). Kline (2005) argues that a standardised skewness greater than 3.0 is usually a serious problem. The author claims that expert opinions

about the kurtosis index vary, but standardised kurtosis values greater than 10.0 might be interpreted as signalling problem. If standardised kurtosis values are over 20.0, the problem is more serious.

In this study, the results for most of the variables did not exceed the critical values; they were within the range of -1 to +1 for both skewness and kurtosis. The variable "expert opinion", skewing slightly to the right in favour of experts' opinion, was the exception to this. To assess the linearity between the variables, scatter plots were also used. With the exception of the "expert opinion" variable, which had an expectedly high positive skewness, the scatter plots of other variables were close to elliptical shapes. Considering all this, normality and linearity were guaranteed.

4.2.4 Multicollinearity

Multicolinearity is a common statistical term used to describe the existence of a high degree of linear correlation among more than two independent variables (Tabachnick and Fidell, 2007). With increasing multicollinearity, the ability to define the effect of any variable is diminished. Namely, the presence of multicollinearity reduces the posibility of assessing the effect of the independent variables on the dependent variable.

A reliable assessment of multivariate multicollinearity can be achieved through the examination of tolerance and the variance-inflation factor (VIF), which are usually recommended and are tested when conducting Collinearity Diagnostics. Both methods were employed in this study. Tolerance cut-offs are usually set below 0.20 (e.g. Hair et al., 2006), however, as a rule of thumb, if tolerance is less than 0.20, a problem with multicollinearity is indicated (Hair et al., 2006; Tabachnick and Fidell, 2007). Similarly, a VIF greater than 4, an arbitrary yet common cut-off criterion for deciding when a given independent variable displays high multicollinearity, is also considered a problem (Hair et al., 2006; Tabachnick and Fidell, 2007). The diagnostic tests were performed on the sample data, revealing that all independent variables had satisfactory tolerance and VIF scores. Therefore, no evidence of multicollinearity was found to exist.

4.3 DESCRIPTIVE SOCIO-DEMOGRAPHIC AND WINE RELATED BACKROUND OF THE SAMPLES

Given that the data collection process was conducted using online and on-location questionnaires and since not all respondents who completed the online survey also completed the paper-based questionnaire, the analysis of the data was carried out on two samples of respondents. The socio-demographic data of both samples are summarised in Table 21.

The analyses of the samples based on the socio-demographics using the chi-squared statistic confirm they both come from the same population. Of the respondents, 54.8% males and 45.2% females completed the online survey, whereas both questionnaires were completed by 60% males and 40% females. The higher frequency of males in the sample that completed

both questionnaires is owed to the higher interest of males in participating in wine tastings. Thirty-three percent of the respondents that provided answers to the online survey were between 30 and 34 years of age and two-thirds were younger than 30 years. Nearly the same distribution was observed for the sample that completed both questionnaires.

Table 21 Socio-demographic	characteristics	of the	samples
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Tabela 21:	Sociodemo	orafske	značilnosti	vzorcev
1 abera 21.	Socioacino	graiske	Lindenniosti	V LOICC V

Variables	Sample 1 (<i>N</i> =279)		Sample 2 (<i>N</i> =165)	
variables	Absolute	%	Absolute	%
Age (mean years)	30		31	
Age groups		$\chi^2 = 0.603$	52 (<i>p</i> =0.44)	
Younger group (25–29)	186	66.7	104	63
Older group (30–34)	93	33.3	61	37
Place of residence		$\chi^2 = 1.55$	85 (<i>p</i> =0.46)	
Bitola	117	42.0	75	45.5
Skopje	128	45.9	67	40.5
Other	34	12.1	23	14
Gender		$\chi^2 = 1.123$	53 (<i>p</i> =0.29)	
Male	153	54.8	99	60
Female	126	45.2	66	40
Education		$\chi^2 = 0.068$	89 (<i>p</i> =0.97)	
High School or lower	37	13.3	24	14.5
Bachelor's degree	158	56.6	93	54.4
Post-graduate degree	84	30.1	48	29.1
Employment		$\chi^2 = 0.322$	34 (<i>p</i> =0.85)	
Employed	234	83.9	137	83
Unemployed	30	10.8	17	9.7
Student	15	5.4	11	7.3
Disposable income		$\chi^2 = 0.659$	96 (<i>p</i> =0.88)	
Very small	26	9.3	15	9.1
Below average	62	22.2	35	21.2
Average	173	62.0	101	61.2
Above average	18	6.5	14	8.5

Forty-two percent of the respondents who completed the online survey reported residency in Bitola, 45.9% in Skopje, and the remaining 12.1% were residents of other urban places, but worked in Skopje or Bitola. Fourteen percent of the respondents participating in the wine tastings were not permanent residents of the town where they attended the tasting. In respect of completed education, 86% of the respondents of both samples reported higher education. The majority of the respondents reported average disposable income. Eighty-four percent of the participants were employed. The number of unemployed participants was nearly the same in both samples. In the sample of wine tasting participants, a higher prevalence of students was observed.

Table 22 presents the results for the wine knowledge background of the survey participants. The findings show the highest amount of the respondents' knowledge of wine came from communication with friends and family members (39.6% was the percentage of selection),

followed by information acquired from the internet (23.8%). Few respondents reported having formal education in wine (6.7%).

Table 22: Knowledge channels used for wine (N=279)

Tabela 22: Pomembnost kanalov znanja o vinih (N=279)

Of the following, indicate where the most of your knowledge of wine comes	Whole sample	
from? (multiple choice question)	Count	%
Communication with friends and family	124	39.6
Wine course attendance	21	6.7
Winery visits	37	11.8
Wine club membership	34	10.8
Books and magazines on wine	47	15.0
Information from the internet	87	16.1

4.4 ESTIMATION OF LATENT SEGMENTS

The next step in the analysis was segmenting the respondents into clusters based on their knowledge (subjective and objective), sensory competence, and self confidence regarding wine. For this purpose, latent cluster analysis was used. A critical step in the empirical application of latent class models is determining the number of segments required to characterise the underlying distribution of heterogeneity. However, formal statistical tests for the number of segments in a population are not readily available. In particular, neither the likelihood ratio test statistic, nor its Wald test and Langrange Multiplier test counterparts, meets the regularity conditions necessary for a limiting chi-squared distribution (McLachlan and Peel, 2000). Therefore, to determine the optimal number of latent classes, multiple fit statistics were assessed (Nylund et al., 2007), including log-likelihood values, likelihood ratio chi-squared (L2), the Akaike Information Criterion (AIC; Akaike, 1974), and the Bayesian Information Criterion (BIC; Schwartz, 1978). Error! Reference source not found. 23 summarises the results for different multi-segment models, ranging from one to five segment solutions for the subjective knowledge and self-confidence segmentation and from one to three segment solutions for the objective knowledge and sensory competence segmentation. For each of model, 10,000 iterations were done in order to find the global maximum of the log-likelihood function (McLachlan and Krishnan, 1997). The log-likelihood values at convergence and the values of the likelihood ratio chi-squared (L2) revealed improvement in model fit with addition of segments to the model. All four segmentations showed a decrease in the values of AIC and BIC with the increase of the number of segments, but tended to flatten out at the four segment model for the subjective knowledge and self-confidence segmentation and at two segment model for objective knowledge and sensory competence segmentation. the Following the recommendations of Landa et al. (2012) and Petras and Masyn (2010), the model that yields the final decrease of AIC and BIC before the values of these criteria started to increase again should be selected as the best fitting model. In Table 23, the models that were been selected for further investigation are bolded.

Table 23: Comparisons	s of the fit of various	latent class models (N=279)
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Segmentation characteristic	Model	Segments	Number of parameters	L ²	Log likelihood at convergence (LL)	AIC	BIC
	1	1	36	2704.8	-2880.3	5832.6	5963.4
	2	2	43	2189.4	-622.6	5331.2	5487.4
Subjective knowledge of wine $(N-279)$	3	3	50	2024.7	-2540.3	5180.5	5362.1
wine $(N=279)$ 4 4 57 18	1893.4	-2474.6	5063.3	5270.3			
	5	5	64	1855.9	-2455.9	AIC 5832.6 5331.2 5180.5 5063.3 5039.8 4780.1 4393.1 4291.6 4238.5 4226.4 1610.3 1474.3 1469.7 824.0 823.6 832.5	5272.2
	1	1	30	1889.5	-2360.0	4780.1	4889.0
Self-confidence about wine (N=279)	2	2	36	1490.6	-2160.6	4393.1	4523.8
	3	3	42	1377.0	-2103.8	4291.6	4444.1
about whic $(1(-27))$	4	4	48	1312.0	-2071.3	4238.5	4412.8
	5	5	54	tersLconvergence (LL)AICBIC2704.8 -2880.3 5832.6 5963.4 2189.4 -622.6 5331.2 5487.4 2024.7 -2540.3 5180.5 5362.1 1893.4 -2474.6 5063.35270.3 1855.9 -2455.9 5039.8 5272.2 1889.5 -2360.0 4780.1 4889.0 1490.6 -2160.6 4393.1 4523.8 1377.0 -2103.8 4291.6 4444.1 1312.0 -2071.3 4238.54412.8 1287.9 -2059.2 4226.4 4422.6 305.6 -797.2 1610.3 1635.2 151.6 -720.2 1474.31527.1 129.0 -708.8 1469.7 1550.4 13.5 -408.0 824.0 836.4 3.1 -402.8 823.6 851.6 2.0 -402.3 832.5 876.1			4422.6
	1	1	8	305.6	-797.2	1610.3	1635.2
Objective knowledge of wine $(N-165)$	2	2	17	151.6	-720.2	1474.3	1527.1
of whic (1(-105)	3	3	26	129.0	-708.8	1469.7	1550.4
C .	1	1	4	13.5	-408.0	824.0	836.4
Sensory competence in wine $(N-165)$	2	2	9	3.1	-402.8	823.6	851.6
m whe (1(-105)	3	3	14	2.0	-402.3	832.5	876.1

Tabela 23: Primerjava skladnosti različnih modelov latentnih razredov (N=279)

Note: $L^2 =$ likelihood ratio chi-squared; The parameters of the selected model are indicated in bold.

4.5 DESCRIPTIVE STATISTICS FOR CONTRUCTS AND ELEMENTS

The segmentation analysis generated four new variables. The first two, the subjective knowledge and self-confidence variables, consist of four levels, and the second two, the objective knowledge and sensory competence variables, include two levels. The first variable, subjective knowledge, was categorised into "high subjective knowledge", "some subjective knowledge", "low subjective knowledge", and "very low subjective knowledge". The second variable, self-confidence, was categorised into "very high self-confidence", "high self-confidence", "some self-confidence", and "low self-confidence". Of the 279 who completed the online survey, 26 (9.16%) reported very low subjective knowledge in wine, 98 (34.96%) reported low subjective knowledge, 125 (44.95%) some subjective knowledge, and 30 (10.93%) high subjective knowledge. With regard to the self-confidence variable, 42 (15.06%) respondents reported low self-confidence, 88 (31.34%) reported some self-confidence, 108 (38.67%) high self-confidence, and 41 (14.93%) very high self-confidence.

The third and fourth new variables were objective knowledge and sensory competence. Both were categorised into "high" or "low". Of the 165 respondents who provided answers to the objective knowledge and sensory competence questions, 72 (43.6%) showed low and 93 (56.4%) high objective knowledge of wine. High sensory competence in wine was found for 74 (44.8%) respondents, and low for 91 (55.2%). The subjective knowledge and self-confidence items' means for the sample and respective segments are presented in Table 24 and Table 25. Table 24: Descriptive statistics for subjective knowledge variables for the sample and clusters (N=279) Tabela 24: Opisna statistika spremenljivk subjektivnega znanja za vzorec in podskupine (N=279)

Subjective knowledge items (not at all/yar)			Subjective knowledge segments								
knowledgeable: wary little/much: strongly	Whole sample		Very Low (9.3%)		Low (34.9%)		Some (44.9%)		High (10.9%)		
disagree/agree)											
uisugree/ugree)	Μ	SD	Μ	SD	Μ	SD	Μ	SD	Μ	SD	
Overall subjective knowledge	3.6	1.5	1.6	0.7	3.1	1.0	4.2	1.0	5.7	1.0	
Compared to others you know, how	3.0	13	21	16	37	0.8	11	07	6.0	07	
knowledgeable are you?		1.5	2.1	1.0	5.2	0.0	4.4	0.7	0.0	0.7	
Compared to a wine expert, how much?	2.3	1.2	1.0	0.8	1.5	0.5	2.6	0.8	4.1	1.3	
I know pretty much about wine.	3.2	1.4	1.5	0.0	2.3	0.9	3.7	0.9	5.4	0.9	
I don't feel very knowledgeable about wine. R	4.1	1.7	1.3	0.5	3.7	1.6	4.6	1.3	5.9	1.4	
Among my friends, I am the wine expert.	3.7	1.7	1.5	0.5	2.9	1.1	4.5	1.1	6.1	0.9	
I know more about wine than others do.	4.8	1.6	2.0	0.6	4.9	1.3	5.5	1.2	6.7	0.5	

Note: ^R indicates reverse coded question; M = mean; SD = standard deviation

Table 25:	Opisna	statistika	spremenljivk	samozavesti z	a vzorec i	in podsku	pine (N=279)
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			Self-confidence segments							
Self-Confidence items (<i>strongly disagree/agree</i>)		nole	Low		Some		High		Very High	
		sample		(15.1%)		(31.3%)		(38.7%)		(14.9%)
	Μ	SD	Μ	SD	Μ	SD	Μ	SD	Μ	SD
Overall self-confidence	5.1	1.7	3.1	1.4	4.7	1.3	6.0	0.9	6.8	0.3
I often have doubts about the wine purchase decisions I make.	5.1	1.6	3.0	1.3	4.7	1.2	5.9	0.9	6.9	0.2
I frequently agonise over which wine to buy.	4.4	1.8	1.9	0.8	3.8	1.2	5.4	1.1	6.6	0.7
I often wonder whether I made the right wine decision.	4.9	1.8	2.2	0.9	4.4	1.1	6.1	0.7	7.0	0.2
Too often, the wine I buy is not satisfying.	5.7	1.5	4.1	2.0	5.4	1.5	6.4	0.7	7.0	0.0
I never seem to find right wine for me.	5.6	1.6	4.4	1.9	5.1	1.6	6.1	1.0	6.7	0.7

Note: M = mean; SD = standard deviation; The questions are reverse coded, higher values indicate higher selfconfidence about wine.

The results on a sample and segment basis showed higher item means for self-confidence compared to subjective knowledge. This suggests a higher level of self-confidence than subjective knowledge of wine among young adults. The highest sample mean for subjective knowledge questions was found for the statement "I know more about wine than others do" (M = 4.8; SD = 1.6), and the lowest for the statement comparing the wine knowledge of the respondents to that of experts (M = 2.3; SD = 1.2). With regard to the self-confidence statements, where the items were rephrased in a "negative" way, the respondents provided the highest mean importance for the item "Too often, the wine I buy is not satisfying" (M = 5.7; SD = 1.5), while the lowest importance was indicated for the reverse coded statement "I frequently agonise over which wine to buy" (M = 4.3; SD = 1.8).

Table 26 and Table 27 present the findings related to objective knowledge and sensory competence in wine. Average knowledge and sensory competence in wine were observed on a sample base. Regarding the segments, more respondents have presented high objective
knowledge of wine (56.4%), while for the sensory competence, with 55.2% of the respondents being classified into the segment with low sensory competence in wine, the opposite was true.

Table 26: Percentage of correct answers to the questions assessing respondents' objective knowledge of wine (N=165)

Tabela 26: Odstotek pravilnih odgovorov na vprašanja, ki ocenjujejo objektivno znanje anketirancev o vinu (N=165)

	Percent of	of correct	answers	
Objective knowledge items	Objective knowled			
		segme	egments	
	Whole	Low	High	
	sample	(43.6%)	(56.4%)	
Overall objective knowledge of wine	47.6	45.5	67.1	
Which of the following is a red wine? Teran	55.7	19.4	83.9	
Which of the following wines has more tannins and more astringent taste? Red	69.0	41.7	90.3	
Which is not a famous French wine region? Piedmont	22.4	1.4	38.7	
Table wines have an alcohol content of: $8-14\%$	72.1	45.8	92.5	
Burgundy is the French term for which wine? Pinot Noir	21.1	4.2	34.4	
Which grape variety is used for making the wine "T'ga za Jug"? Vranec	71.5	52.8	86.0	
Which of the following wine flavours is rarely found in barrel-aged wines? Mint	31.5	5.6	51.6	
What is the distinction between aroma and bouquet?				
Bouquet comes from fermentation procedures whereas aroma has its origins in	38.1	11.1	59.1	
grape alone				

Note: After each question, the correct answer is given in italic

With regard to the answers provided to the objective knowledge questions, the highest knowledge was presented in the question related to the alcohol content of wine (72.1%), followed by the question asking about the respondents' knowledge about the grape variety used for the production of the local wine "T'ga za Jug" (71.5%). In the other questions, the respondents showed a lack of knowledge related to world wine regions and international grape varieties.

In respect of the sensory competence questions, the analysis revealed the respondents to have better mouthfeel than olfactory skills for wine. On a segment base in the cluster into which respondents with higher sensory skills for wine were classified, observed equally good mouthfeel and olfactory competences in wine were observed. At the opposite end, namely in the low sensory competence segment, better mouthfeel than olfactory skills for wine were observed. Table 27: Percentage of correct answers to the questions assessing respondents' sensory competence in wine (N=165)

Table 27: Odstotek pravilnih odgovorov na vprašanja, ki ocenjujejo senzorično kompetenco anketirancev za vino (N=165)

Sensory competence items		Percent of correct answers				
		Sensory co	mpetence			
		segm	ents			
	Whole	Low	High			
	sample	(55.2%)	(44.8%)			
Overall sensory competence	48.8	27.4	70.0			
Please taste the wine and classify it into one of the following categories: <i>Semidry wine</i>	48.8	37.4	62.2			
Of the following, please indicate the taste sensation that stands out? Astringent (biter) taste	77.0	59.3	98.6			
Using your wine sensory skills, classify the wine into one of the categories: <i>Oak maturated wine</i>	44.2	9.9	86.5			
The wine has a wine fault. Please indicate which of the following it is: <i>Oxidised</i> wine	24.2	14.3	36.5			

Note: After each question, the correct answer is given in italic

4.6 DESCRIPTIVE SOCIO-DEMOGRAPHICS OF THE SEGMENTS

After the clusters were established, the socio-demographic data were used to further profile consumers into each segment. The socio-demographic characteristics tested for were education, employment, disposable income, age, and gender.

The tables 28, 29, and 30 reflect the socio-demographic data for the objective knowledge, subjective knowledge, sensory competence, and self-confidence segments.

Cross-tabulation was employed to determine whether statistically significant differences among the clusters of the four segmentations with respect to the selected demographic characteristics exist. The differences between the segments within a particular segmentation were determined using the chi-squared test, followed by the z-test with the Bonferroni adjustment.

The analyses showed that of the four segmentations, the two based upon the respondents' objective and subjective knowledge of wine had the highest discrimination capacity. It appeared that the objective knowledge and subjective knowledge clusters are significantly different with respect to gender, age, educational levels, and income.

The analysis found a significant association between the level of objective knowledge of wine and the variables gender and age group. Males and older respondents had higher objective knowledge of wine than females and younger respondents. In addition, significantly more respondents with above average disposable income were classified into the high objective knowledge segment. The proportion of males to females was significantly higher in the segment with high subjective knowledge of wine compared with other segments, suggesting that males perceive their wine knowledge as higher than do females.

With regard to the sensory competence and self-confidence segmentations, no significant difference between the clusters in terms of socio-demographic characteristics was observed.

Table 28: Socio-demographic characteristics of the objective knowledge and sensory competence segments (N=165)

Tabela 28:	Analiza	social node mograf skih	značilnosti	skupin,	opredeljenih	na	podlagi	objektivnega	znanja	in
senzorične s	sposobno	osti (N=165)								

	Objectiv	e know	ledge segme	ents	Sensor	y comp	etence segme	ents	
Variables	Low		High	l	Low		Higł	1	
	Absolute	%	Absolute	%	Absolute	%	Absolute	%	
Cluster size	72	43.6	93	56.4	91	55.2	74	44.8	
Age (mean years)	30 ^a		32 ^b		31		31		
Age groups	χ^2	=6.137 ((p=0.013)		χ	$^{2}=0.043$	(<i>p</i> =0.835)		
Younger group (25–29)	53 _a	73.6	51 _b	54.8	58	63.7	46	62.2	
Older group (30–34)	19 _a	26.4	42 _b	45.2	33	36.3	28	37.8	
Place of residence	χ^2	=0.460 ((p=0.794)		χ	$^{2}=0.460$	(<i>p</i> =0.794)		
Bitola	33	45.8	42	45.2	40	44.0	35	47.3	
Skopje	30	41.7	36	38.7	38	41.8	28	37.8	
Other	9	12.5	15	16.1	13	13.2	11	14.9	
Gender	χ^2	=8.690 ((p=0.003)		χ	$^{2}=0.588$	(p=0.443)		
Male	34 _a	47.2	65 _b	69.9	57	62.6	42	56.8	
Female	38 _a	52.8	28 _b	30.1	34	37.4	32	43.2	
Education	χ^2	=1.417 ((p=0.049)		χ	$\chi^2 = 0.843 \ (p = 0.656)$			
High School or lower	13	18.1	11	11.8	13	14.3	11	14.9	
Bachelor's degree	40	56.6	53	57.0	54	59.3	39	52.7	
Post-graduate degree	19	26.4	29	31.2	24	26.4	24	32.4	
Employment	χ^2	=0.783 ((p=0.676)		χ	$^{2}=0.470$	(<i>p</i> =0.791)		
Employed	60	83.3	77	82.8	74	81.3	63	85.1	
Unemployed	8	11.1	8	8.6	10	11.0	6	8.1	
Student	4	5.6	8	8.6	7	7.7	5	6.8	
Disposable income	χ^2	=5.831 ((p=0.120)		χ	$^{2}=2.912$	(p=0.405)		
Very small	8	11.1	7	7.5	9	60.0	9.9	8.1	
Below average	15	20.8	20	21.5	18	51.4	19.8	23.0	
Average	47	65.3	54	58.1	59	58.4	64.8	56.8	
Above average	2a	2.8	12 _b	12.9	5	35.7	5.5	12.2	

Note: Values in the same row and sub-table not sharing the same subscript are significantly different at p<0.05 in the two-sided test of equality for column proportions. Tests are adjusted for all pairwise comparisons within a row of each innermost sub-table using the Bonferroni correction.

	Subjective knowledge segments							
Variables	Very L	ow	Low		Some	9	Higl	1
	Absolute	%	Absolute	%	Absolute	%	Absolute	%
Cluster size	27	9.7	95	34.1	127	45.5	30	10.8
Age (mean years)	30		30		31		31	
Age groups								
Younger adults (25–29)	8	29.6	27	28.4	46	36.2	12	40.0
Older adults (30–34)	19	70.4	68	71.6	81	63.8	18	60.0
Place of residence								
Bitola	10	37.0	40	42.1	56	44.1	11	36.7
Skopje	15	55.6	45	47.4	51	40.2	17	56.7
Other	2	7.4	10	10.5	20	15.7	2	6.7
Gender								
Male	11 _a	40.7	42 _a	44.2	72 _a	56.7	28 _b	93.3
Female	16 _a	59.3	53 _a	55.8	55 _a	43.3	2_{b}	6.7
Education								
High School or lower	$3_{a,b}$	11.1	12 _{a,b}	12.6	13a	10.2	9 _b	30.0
Bachelor's degree	18	66.7	58	61.1	70	55.1	12	40.0
Post-graduate degree	6	22.2	25	26.3	44	34.6	9	30.0
Employment								
Employed	23	85.2	82	86.3	106	83.5	23	76.7
Unemployed	3	11.1	10	10.5	13	10.2	3	10.0
Student	1	3.7	3	3.2	8	5.5	4	13.3
Disposable income								
Very small	5	18.5	8	8.4	10	7.9	3	10.0
Below average	9	33.3	24	25.3	25	19.7	4	13.3
Average	13	48.1	60	63.2	79	62.2	21	70.0
Above average			3	3.2	13	10.2	2	6.7

Table 29: Socio-demographic characteristics of the subjective knowledge segments (N=279)

Tabela 29: Analiza socialnodemografskih značilnosti skupin, narejenih na podlagi subjektivnega znanja (N=279)

Note: Values in the same row and sub-table not sharing the same subscript are significantly different at p<0.05 in the two-sided test of equality for column proportions. Tests are adjusted for all pairwise comparisons within a row of each innermost sub-table using the Bonferroni correction.

	Self-confidence segments								
Variables	Low		Some	e	High	1	Very High		
	Absolute	%	Absolute	%	Absolute	%	Absolute	%	
Cluster size	42	15.1	84	30.1	111	39.7	42	15.1	
Age (mean years)	29		30		30		31		
Age groups									
Younger adults (25-29)	9	21.4	31	36.9	37	33.3	16	38.1	
Older adults (30-34)	33	78.6	53	63.1	74	66.7	26	61.9	
Place of living									
Bitola	17	40.5	38	45.2	42	37.8	20	47.6	
Skopje	18	42.9	33	39.3	58	52.3	19	45.2	
Other	7	16.7	13	15.5	11	9.9	3	7.1	
Gender									
Male	21	50.0	45	53.6	63	56.8	24	57.1	
Female	21	50.0	39	46.4	48	43.2	18	42.9	
Education									
High School or below	8	19.0	9	10.7	12	10.8	8	19.0	
Bachelor's degree	23	54.8	40	47.6	72	64.9	23	54.8	
Post-graduate degree	11	26.2	35	41.7	27	24.3	11	26.2	
Employment									
Employed	37	88.1	67	79.8	92	82.9	38	90.5	
Unemployed	2	4.8	12	14.3	13	11.7	2	4.8	
Student	3	7.1	5	6.0	6	5.4	2	2.4	
Disposable income									
Very small	6	14.3	9	10.7	8	7.2	3	7.1	
Below average	9	21.4	19	22.6	28	25.2	6	14.3	
Average	25	59.5	50	59.5	67	60.4	31	73.8	
Above average	2	4.8	6	7.1	8	7.2	2	4.8	

 Table 30: Socio-demographic characteristics of the self-confidence segments (N=279)

Tabela 30: Analiza socialnodemografskih značilnosti skupin, narejenih na podlagi samozavesti (N=279)

Note: Values in the same row and sub-table not sharing the same subscript are significantly different at p<0.05 in the two-sided test of equality for column proportions. Tests are adjusted for all pairwise comparisons within a row of each innermost sub-table using the Bonferroni correction.

4.7 WINE PURCHASE AND CONSUMPTION STATISTICS

The average number of years the respondents had been consuming wine for is 11.7. Those participants with high objective knowledge and sensory competence, high subjective knowledge, and very high self-confidence regarding wine had been drinking wine for significantly longer than the lowest level opposites. Nearly 65% of the respondents reported weekly wine consumption at home, while at restaurants and bars 50% reported consuming wine on a weekly basis. Respondents with high objective knowledge consumed wine at home and at restaurants and bars more often than respondents with low objective knowledge (Table 31). The same was true of the subjective knowledge segmentation, where the frequency of wine consumption at home and at restaurants and bars increased with increase in the level of subjective knowledge of wine (Table 32).

With regard to wine type preference, the sample showed the highest preference for white wine. In addition, with increase in the level of objective knowledge, sensory competence, and subjective knowledge of wine, decrease in the preference of white wine and increase in the preference of red wine was observed.

Eighty-four percent of the respondents reported apart from drinking wine produced by registered wineries also drinking wine made by hobby wine producers. Production of wine at home is a tradition usually connected with the older generations. The share of home-made wine in the total wine consumed, based on the answers of the respondents confirming such wine consumption, was 41%. This is not unusual for people living in the countries of the Balkans, as a similarly high preference for home-made wines was also reported by Noev (2005) and Tzimitra-Kalogianni et al. (1999) for Bulgarian and Greek wine consumers, respectively.

When respondents were asked how they consume wine, 90% reported they drank wine with food. Of the respondents that indicated drinking wine without food, the highest proportion were classified in the segment with very low subjective knowledge of wine (30%). In fact, the wine consumption behaviour among the younger population, due to the less frequent drinking of wine during family meals, showed late beginnings of the consumption of wine and habits that less support drinking wine with food. This has been also noticed by Agnoli et al. (2011) and Teagle et al. (2010), studying New World wine consumers.

Of the questions, one asked of the respondents to indicate where they usually consumed wine. Restaurants (26.6%) were reported the most usual place for drinking wine, followed by the home (23.6%). Wine tastings (3.7%) were ranked the last.

The second level analysis for the segments showed significantly more wine consumed during wine tastings among respondents with high objective knowledge (64.7%) compared to respondents with low of objective knowledge (33.3%), which in a way indicates where they had acquired their knowledge of wine.

Table 31: Wine consumption characteristics of the objective knowledge and sensory competence segments (N=165) Tabela 31: Analiza značilnosti porabe vina za skupine, narejene na podlagi objektivnega znanja in senzoričnih sposobnosti (N=165)

	33/1		Ob	Objective knowledge			Sensory competence			
	san	nnle		segi	ments			segr	nents	
	San	iipie	I	Low	Н	igh	L	OW	Н	ligh
	Abs.	%	Abs	. %	Abs.	%	Abs.	%	Abs.	%
Years of wine consumption (mean value)	1	1.7	1	0.4 _a	12	2.7 _b	1	1.2 _a	12	2.3 _b
Drinking wine at home										
Up to 6 times a year	14	8.5	9	61.5	5	38.5	8	53.8	6	46.2
Monthly	15	9.1	13 _a	86.7	2_{b}	13.3	10	66.7	5	33.3
Fortnightly	22	13.3	10	45.5	12	54.5	13	59.1	9	40.9
Weekly	43	26.1	20	46.5	23	53.5	26	60.5	17	39.5
Most days	59	35.8	17 _a	28.8	42 _b	71.2	29	49.2	30	50.8
Every day	12	7.3	3	25.0	9	75.0	5	41.7	7	58.3
Drinking wine at restaurants/bars										
Up to 6 times a year	15	9.1	8	54.5	7	45.5	10	66.6	5	33.3
Monthly	22	13.3	15 _a	68.2	$7_{\rm b}$	31.8	12	54.5	10	45.5
Fortnightly	32	19.4	12	37.5	20	62.5	18	56.3	14	43.8
Weekly	63	38.2	24	38.1	39	61.9	36	57.1	27	42.9
Most days	33	20.0	13	40.6	20	59.4	15	43.8	18	56.3
Do you drink home-made wine?	139	83.3	50	86.2	45	80.4	53	86.9	42	79.2
Home-made wine consumed (% of total)	39	9.4	4	41.3	3	7.2	3	8.9	3	9.9
How do you usually consume wine (with food)	150	89.5	50	86.2	45	80.4	56	91.8	46	86.8
Type of wine preferred (multiple choice)										
Red wine	67	40.6	31	46.3	36	53.7	36	53.7	31	46.3
White wine	78	47.3	38	48.7	40	51.3	44	56.4	34	43.6
Rosé wine	37	22.4	20	54.1	17	45.9	16	43.2	21	56.8
Sparkling wine	7	4.2			7	100	2	28.6	5	71.4
Place of wine drinking (multiple choice)										
Restaurant	99	60.0	50	50.5	49	49.5	53	53.5	46	46.5
Bar	34	20.6	15	44.1	19	55.9	19	55.9	15	44.1
At wine tastings	17	10.3	6	35.3	11	64.7	8	47.1	9	52.9
At home	89	53.9	43	48.3	46	51.7	48	53.9	41	46.1
At a friend's home	75	45.5	37	49.3	38	50.7	38	50.7	37	49.3
At gatherings/celebrations	71	43.0	32	45.1	39	54.9	36	50.7	35	49.3

Note: Values in the same row and sub-table not sharing the same subscript are significantly different at p<0.05 in the two-sided test of equality for column proportions or in the two-sided test of equality for column means. Tests assume equal variances and are adjusted for all pairwise comparisons within a row of each innermost sub-table using the Bonferroni correction.

Table 32: Wine consumption characteristics of the subjective knowledge segn	(N=279)
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	1 ' 1	• •	11 ' 1' 1'	· () · 070)
Labela 37. Analiza znacilnosti	norabe vina za ski	inine nareiene na	nodlagi subiektivnega	znania (N=2/9)
rubelu 52. / muližu žiluelinosti	porade vina La BRe	ipine, narejene na	poundsi subjenti megi	1 Ziluliju (11–277)

	Whole	comm1		Su	bjecti	ve kno	wledge	segn	nents	
	whole	sample	Very	/ Low	L	OW	So	me	Н	igh
	Abs.	%	Abs.	. %	Abs.	%	Abs.	%	Abs.	%
Years of wine consumption (mean value)	1	1	1	0 _a	1	1 _{a,b}	12	a,b	1	3 _b
Drinking wine at home										
Up to 6 times a year	24	8.6	9a	39.1	11_{b}	43.5	4_{b}	17.4		
Monthly	28	10.0	10 _a	35.7	13_{b}	46.4	5 _c	17.9		
Fortnightly	46	16.5	4	8.7	23	50.0	17	37.0	2	4.3
Weekly	72	25.8	1_a	1.4	27 _b	37.5	39 _b	54.2	$5_{a,b}$	6.9
Most days	97	34.8	3_a	3.1	20 _a	20.6	56 _b	57.7	18_b	18.6
Every day	12	4.3			1_{a}	8.3	$6_{a,b}$	50.0	5_{b}	41.7
Drinking wine at restaurants/bars										
Up to 6 times a year	27	9.7	11 _a	40.9	10_{b}	36.4	$5_{\rm b}$	18.2	1_{b}	4.5
Monthly	54	19.4	12 _a	22.2	16 _b	29.6	24 _b	44.4	2_{b}	3.7
Fortnightly	61	21.9	1	1.6	25	41.0	27	44.3	8	13.1
Weekly	89	31.9	2_{a}	2.2	33 _b	37.1	46 _b	51.7	$8_{a,b}$	9.0
Most days	48	17.2	1_{a}	2.1	11_a	23.4	$25_{a,b}$	53.2	11_b	21.3
Do you drink home-made wine?	235	84.2	27	100	73_a	83	74 _a	82.2	18_a	78.3
Home-made wine consumed (% of total)	41	.3	3	5.4	3	8.0	44	.3	5	0.6
How do you usually consume wine? (with food)	245	87.7	19 a	70.4	8_b	90.9	80 _{a,b}	89	21 _{a,b}	91.3
Type of wine preferred (multiple choice)										
Red wine	126	36.4	1	11.9	43	30.1	67	46.9	16	11.2
White wine	143	41.3	12	8.4	64	44.8	51	35.7	16	11.2
Rosé wine	65	18.8	7	10.8	21	32.3	30	46.2	7	10.8
Sparkling wine	12	3.5			1	8.3	9	75.0	2	16.7
Place of wine drinking (multiple choice)										
Restaurant	200	26.6	21	10.5	79	39.5	80	40.0	20	10.0
Bar	61	8.1	6	9.8	25	41.0	24	39.3	6	9.8
At wine tastings	28	3.7	2	7.1	9	32.1	13	46.4	4	14.3
At home	178	23.6	15	8.4	67	37.6	74	41.6	22	12.4
At a friend's home	151	20.1	18	11.9	56	37.1	60	39.7	17	11.3
At gatherings/celebrations	135	17.9	17	12.6	51	37.8	53	<u>39.</u> 3	14	10.4

Note: Values in the same row and sub-table not sharing the same subscript are significantly different at p<0.05 in the two-sided test of equality for column proportions or in the two-sided test of equality for column means. Tests assume equal variances and are adjusted for all pairwise comparisons within a row of each innermost sub-table using the Bonferroni correction.

Table 33 Wine consum	ption characteristic	es of the self-confiden	ce segments (N=279)
	1		

Tabela 33: Analiza značilnosti	porabe vina z	a skupine, nare	eiene na podlag	i samozavesti (N=279)
Tubblu 55. Thianza zhaoimosh		a bicapine, naic	jone na pouna	

	WI	nole	Self-Confidence							
	san	nple]	Low	So	ome	Н	ligh	Ver	y High
	Abs.	%	Abs	. %	Abs.	%	Abs.	%	Abs.	%
Years of wine consumption (mean value)	1	1		10 _a	1	1 _{a,b}	1	1 _{a,b}		12 _b
Drinking wine at home										
Up to 6 times a year	24	8.6	3	13.0	10	43.5	9	39.1	1	4.3
Monthly	28	10.0	6	21.4	12	42.9	8	28.6	2	7.1
Fortnightly	46	16.5	5	10.9	16	34.8	19	41.3	6	13.0
Weekly	72	25.8	16	22.2	16	22.2	32	44.4	8	11.1
Most days	97	34.8	11	11.3	25	25.8	41	42.3	20	20.6
Every day	12	4.3	1	8.3	5	41.7	2	16.7	4	33.3
Drinking wine at restaurants/bars										
Up to 6 times a year	27	9.7	1	20.0	1	20.0	1	20.0	2	40.0
Monthly	54	19.4	5	22.7	7	31.8	7	31.8	3	13.6
Fortnightly	61	21.9	8	14.8	19	35.2	23	42.6	4	7.4
Weekly	89	31.9	9	14.8	21	34.4	23	37.7	8	13.1
Most days	48	17.2	12	13.5	24	27.0	41	46.1	12	13.5
Do you drink home-made wine?	235	84.2	32	91.4	56	83.6	74	81.3	30	85.7
Home-made wine consumed (% of total)	2	41.3	4	41.3	4	1.2	4	1.5	4	0.6
<i>How do you usually consume wine? (with food)</i>	245	87.7	30	85.7	60	89.6	79	86.8	31	88.6
<i>Type of wine preferred (multiple choice)</i>										
Red wine	126	36.4	22	15.4	40	28.0	61	42.7	20	14.0
White wine	143	41.3	26	18.2	42	29.4	51	35.7	24	16.8
Rosé wine	65	18.8	10	15.4	22	33.8	27	41.5	6	9.2
Sparkling wine	12	3.5	2	16.7	3	25.0	7	58.3		
Place of wine drinking (multiple choice)										
Restaurant	200	26.6	29	14.5	60	30.0	81	40.5	30	15.0
Bar	61	8.1	11	18.0	19	31.1	21	34.4	10	16.4
At a wine tasting	28	3.7	3	10.7	8	28.6	12	42.9	5	17.9
At home	178	23.6	25	14.0	46	25.8	75	42.1	32	18.0
At a friend's home	151	20.1	27	17.9	39	25.8	61	40.4	24	15.9
At gatherings/celebrations	135	17.9	24	17.8	34	25.2	58	43.0	19	14.1

Note: Values in the same row and sub-table not sharing the same subscript are significantly different at p<0.05 in the two-sided test of equality for column proportions or in the two-sided test of equality for column means. Tests assume equal variances and are adjusted for all pairwise comparisons within a row of each innermost sub-table using the Bonferroni correction.

Fifty percent of the respondents reported between 2 and 10 bottles (750 mL) of wine purchased per month, where respondents with high objective knowledge and sensory competence in wine purchasing more wine than their opposites (Table 34). Something similar was observed for the different subjective knowledge segments, where respondents with higher levels purchased wine more frequently compared to low level opposites (Table 35 and Table 36).

Eighty-six percent of the respondents reported purchasing wine at supermarkets, followed by wine stores (6.3%), grocery stores (5.3%), and wineries (2.4%). Respondents with high objective knowledge and sensory competence in wine reported higher percentages of wine purchases in wine stores. The same was observed for respondents with higher subjective

knowledge and self-confidence regarding wine. However, the opposite was true with regard to grocery stores. The respondents with low objective knowledge and sensory competence in wine and those with lower levels of subjective knowledge and self-confidence reported higher purchase rates at grocery stores.

With respect to the type of wine purchased, 62% of the wine purchased for in-house consumption was in standard size (0.750 L) bottles, followed by 22% in medium (1 L) bottles. Outside of their homes, the respondents reported 39% for wine purchased in standard size bottles and 28% in small (0.187 L) bottles. Recently, a slight change in the preference of consumers toward purchasing wines by the glass has been observed (Pecheu et al. 2016). With a 20.4% frequency for this type of wine purchases, this study has also documented this phenomenon. In general, the results related to purchasing and consumption behaviour on a sample basis are comparable to those presented by other authors for the population of young wine consumers (Atkin and Thach, 2012; Charters et al., 2011; Thach and Olsen, 2006; Thach, 2011).

Regarding the preferences of the segments, respondents with high objective knowledge and sensory competence in wine reported more wine consumed in standard (0.750 L) and small (0.187L) bottles compared to respondents with low objective knowledge and sensory competence in wine. However, the opposite was true with regard to wine in bag-in-box and plastic bottles, which were preferred more by respondents with low objective knowledge and sensory competence in wine. Concerning the subjective knowledge segments, it was found that the higher the level of subjective knowledge of wine, the higher the preference for purchasing wine bottled in standard size (0.750L) bottles. Respondents with a very low level of subjective knowledge of wine compared to the rest purchased more wine in medium size (1 L) bottles offpremises, and significantly more wine in magnum size (1.5 L) bottles on-premises. Certain big wineries use magnum size (1.5 L) bottles to bottle wine of medium to low quality. They have seen advantage in the use of magnum bottles as they help them in releasing their supplies. Accordingly, the perceived quality of wine bottled in magnum size bottles is low among knowledgeable wine consumers. Regarding on-premise locations, the results show a high amount of wine is purchased by the glass and in small wine bottles. A similar tendency toward drinking wine from small wine bottles has been reported by Tzimitra-Kalogianni et al. (1999) in a study of Greek wine consumers.

When respondents were asked about the wine purchasing situation, the majority responded that they preferred drinking wine with their partner or spouse (M=5.7 on a 7-point scale), followed by drinking wine with friends (M=5.2). Respondents with very low subjective knowledge assigned the same importances to the purchase situation "meal and drink with partner or spouse" (M=5.7) and the situation "gift for friends and family celebration" (M=5.7). The latter refers to the common practice of bringing a bottle wine as a gift for friends and family occasions.

With regard to the self-confidence segments, the findings show significant increase in the importance for the purchase situations "business related gift" and "gift for friends and family celebrations" with decrease in the level of self-confidence about wine. Tis is slightly unusual as the opposite was expected, namely that such behaviour would be characteristic of respondents with higher levels of self-confidence about wine.

When respondents were asked about their purchase motivation for wine, "for personal pleasure" received the highest mean importance score (M = 6.0; SD = 1.4 on a 7-point scale), followed by "goes well with food" (M = 5.0; SD = 1.5). At the same time, the mean importance score for the statement "to support the domestic wine industry" was the lowest (M = 3.69; SD = 1.7). The second level analysis of the segments showed increase in the motivation for drinking wine, represented by the motivation items' mean scores, with increase of the segmentation level. Similar to the previous study conducted by Hristov and Kuhar (2014), the present research documented a high importance of style (M = 5.1; SD = 1.3 on a 7-point scale), grape varietal wine (M = 4.9; SD = 1.6), and brand name (M = 4.9; SD = 1.5), while vintage (M = 4.3; SD = 1.6) 1.6) and country of origin (M = 4.4; SD = 1.2) had less of an influence. The analysis based on the level of objective knowledge of wine identified significant differences between respondents classified into the "low" and "high" segment group regarding the wine attributes "grape variety" and "wine vintage". The high knowledge segment assigned higher importances to both attributes compared to the opposite segment. With regard to the subjective knowledge segments, significant differences between the segments were observed for the wine attributes "grape variety", "wine style", and "wine vintage". In addition, increase in the mean importance score of the aforementioned attributes as well as "country of origin" with increase in the level of subjective knowledge of wine was noticed. Concerning the level of self-confidence and the importance of packaging cues, significant differences regarding the importance of wine attribute "price" between the high (M = 4.3; SD = 1.3) and very high (M = 4.5; SD = 1.6) self-confidence class on the one hand and the low self-confidence class (M = 5.3; SD = 1.5) on the other were found. In addition, increase in the importance of price was observed with decrease in the level of self-confidence about wine. Based on the sample results, the presented findings support the previous findings of Atkin and Thach (2012) of the high importance of brand, but contrast with the findings of de Magistris et al. (2011). On the other hand, the high preference of the low subjective knowledge segment for "price" and of high subjective knowledge consumers for "grape variety" agrees with those reported by de Magistris et al. (2014) for Spanish wine consumers.

Table 34: Wine purchase characteristics of the objective knowledge and sensory competence segments Tabela 34: Analiza značilnosti nakupa vina za skupine, narejene na podlagi objektivnega znanja in senzoričnih sposobnosti

			Objective knowledge				Sensory competence			
	Whole		segments				segments			
	san	nple	Low		H	igh	L	.ow	H	ligh
	Abs	%	Abs	%	Abs	%	Abs	%	Abs	%
Monthly off-premises wine purchase										
Less than 2 bottles	52	31.5	30 _a	57.7	22_{b}	42.3	30	57.7	22	42.3
More than 2, less than 5 bottles	64	38.8	24	37.5	40	62.5	35	54.7	29	45.3
More than 5, less than 10 bottles	22	13.3	5_{a}	22.7	17 _b	77.3	13	59.1	9	40.9
More than 10, less than 15 bottles	7	4.2	1	14.3	6	85.7	1_a	14.3	$6_{\rm b}$	85.7
More than 15 bottles	5	3.0	3	60.0	2	40.0	3	60.0	2	40.0
I don't purchase wine off-premises	15	9.1	9	60.0	6	40.0	9	60.0	6	40.0
Purchase location										
Wine store	4	3.0	1	2.0	3	4.0	1	1.9	2	4.3
At the wine producer	7	4.0	3	4.1	4	4.0	2	3.8	2	4.3
Local grocery store	7	4.0	5	6.1	2	2.0	3	5.7	1	2.2
Supermarket	147	88.8	70	87.7	74	90.0	47	88.6	41	89.2
Off-premises wine purchase (%)										
Standard bottle (0.750 L)	64	1.3	6	1.2	67	7.9	6	2.3	e	57.2
Medium bottle (1 L)	22	2.7	23	3.0	22	2.4	2	3.3	21.5	
Magnum bottle $(1.5 L)$	3.1		23.0		3.6		2	2.0	4.5	
Bag-in-Box and soft packaging	8	.3	10.1		6.5		10.2		6.1	
Plastic bottle (various volumes)	1	.6	3.1		Ő	.1	2.3		0.7	
On-premises wine purchase (%)	-				0		-			
Wine by the glass	19	9.6	10	19.7		9.6	1	9.8	1	9.5
Small bottle (0.187 L)	24	4.1	21.3		2	7.2	2	2.3	26.6	
Standard bottle (0.750 L)	-40).6	43.5		37.9		41.2		40.1	
Medium bottle (1 L)	15	5.6	1.	5.8	15.5		16.8		1	4.4
Magnum bottle $(1.5 L)$	0	.1	0	.4	10.0		0.15		-	0.3
Wine purchase situation (mean)	0	••	0	••			0.15			0.0
Meal and drink with partner/spouse	5	7	5	4	5	9	4	5 5		58
Meal and drink with friends	5	3	5	1	5	4	4	5.1		5 5
Meal and drink with family	4	8	4	.1	5	1	2	16		5.0
Gift for friends or family celebration	5	3	5	4	5	3	4	5.2		5 5
Business related gift	4	.5	4	. 1	4	6	2	1.2 1.4		4.6
Wine purchase motivation (mean)	•			• •		.0				1.0
For personal pleasure	6	1	5	9	6	3	f	50		62
To support the domestic wine industry	3	7	3	4	3	9	2	3.6		3.8
Goes well with food	5	0	4	.9	5	0	2	18		5.0
Wine is a sophisticated drink	5	.0	5	1	5	.0	4	19		53
Wine attribute importance (mean)	5	.1	5	• 1	5	• 1				0.0
Wine price	4	6	4	5	1	7	/	17		15
Grape variety		.0 Q		л.5 Л	- - -	., 3.	4.7			4.5 / 9
Wine style	4	9	-+.	т _а Я	5.	.J _b	/	17		 5 1
Wine brand	4	1	4	0	5	.1	4	τ. / 5 Ο		5.1 5.1
Wine vintage	1	5	Л	0	Л	. 1 8.	-	1.0		7.1 1.5
Country of origin	4 /	.5	-+. /	$\frac{10}{2}$	-+. /	3	/	1. 1		43

Note: Values in the same row and sub-table not sharing the same subscript are significantly different at p<0.05 in the two-sided test of equality for column proportions or in the two-sided test of equality for column means. Tests assume equal variances and are adjusted for all pairwise comparisons within a row of each innermost sub-table using the Bonferroni correction.

Table 35: Wine purchase characteristics of the subjective knowledge segments (*N*=279)

	W /ł	مام	Subjective knowledge segments								
	sample		Very	Low	Lo	w	So	me	Н	igh	
	Abs.	%	Abs.	%	Abs.	%	Abs.	%	Abs.	%	
Monthly off-premises wine purchase											
Less than 2 bottles	85	7.5	15 _c	17.6	33 _{a,b}	38.8	34 _b	40.0	$3_{b,c}$	3.5	
More than 2, less than 5 bottles	129	30.5	6a	4.7	$41_{a,b}$	31.8	63 _{a.b}	48.8	19 _b	14.7	
More than 5, less than 10 bottles	30	46.2			8	26.7	20	66.7	2	6.7	
More than 10, less than 15 bottles	8	10.8			1	12.5	4	50.0	3	37.5	
More than 15 bottles	8	2.9			1	16.7	3	50.0	2	33.3	
I don't purchase wine off-premises	21	2.2	6 _a	28.6	11_a	52.4	$3_{\rm h}$	14.3	$1_{a,b}$	4.8	
Purchase location			-		-		-				
Wine store	18	6.3			8	7.8	7	5.7	3	9.2	
At the wine producer	7	2.4	1	4.8	1	1.3	4	2.3	1	4.5	
Local grocery store	15	5.3	4	14.2	7	6.5	3	2.3	1	4.5	
Supermarket	239	86.0	24	81.0	85	84.4	105	89.7	25	81.8	
Off-premises wine purchase (%)											
Standard bottle (0.750L)	62	2.1	41	.4a	63.	$1_{a,b}$	66	.2 _b	63	$.2_{a,b}$	
Medium bottle (1L)	23	3.2	3	1.6	19	0.1	23	.2	2	5.4	
Magnum bottle (1.5L)	2	.5	4.8		2.5		2.3		1.6		
Bag-in-Box and soft packaging	10).1	18	3.6	11	.6	7.	.1	8	3.4	
Plastic bottle (various volumes)	2	.1	3.6		3.7		1.	2	1	.4	
On-premises wine purchase (%)											
Wine by the glass	20).4	24.0		21	.0	18	.9	20	0.2	
Small bottle (0.187L)	28	3.0	25.0		27.7		31.8		17.6		
Standard bottle (0.750L)	38	3.6	36.1		40.1		36.1		47.6		
Medium bottle (1L)	12	2.1	10).6	10).6	12	.9	14	4.6	
Magnum bottle (1.5L)	0	.9	4	.3 _a	0.	б _b	0.	3 _b			
Wine purchase situation (mean)											
Meal and drink with partner/spouse	5	.7	5	.4	5	.9	5.	5	5	5.8	
Meal and drink with friends	5	.2	5	.1	5	.4	5.	1	5	5.5	
Meal and drink with family	4	.9	4	.4	5	.1	4.	.6	5	5.0	
Gift for friends and family celebration	5	.2	5	.4	5	.3	5.	2	5	5.5	
Business related gift	4	.7	4	.4	4	.6	4.	4	4	.6	
Wine purchase motivation (mean)											
For personal pleasure	6	.0	4	.9 _a	5.	9 _b	6.	3 _b	6	.5 _b	
To support the domestic wine industry	3	.7	2	.8 _a	3.5	5 _{a,b}	3.9	b _{b,c}	4	.6c	
Goes well with food	5	.0	4	.1 _a	4.9) _{a,b}	5.	2 _b	5.	$3_{b,c}$	
Wine is a sophisticate drink	4	.8	4	.0 _a	4.5	5 _{a,b}	5.	2 _b	5.	$3_{a,b}$	
Wine attribute importance (mean)											
Wine price	4	.7	5	.3	4	.6	4	.5	4	.8	
Grape variety	4	.9	4	.0 _a	4.	5 _a	5.	1 _b	5.7 _b		
Wine style	5	.1	4	.4 _a	5.0) _{a,b}	5.3	B _{a,b}	5	.6 _b	
Wine brand	4	.9	4	.9	4	.8	5.	1	4	.9	
Wine vintage	4	.3	3.	8 _{a,b}	3.	6 _a	4.7	7 _{b,c}	5	.1 _c	
Country of origin	4	.4	4	.2	4	.2	4	.5	4	.7	

Tabela 35: Analiza značilnosti nakupa vina za skupine, narejene na podlagi subjektivnega znanja (N=279)

Note: Values in the same row and sub-table not sharing the same subscript are significantly different at p<0.05 in the two-sided test of equality for column proportions or in the two-sided test of equality for column means. Tests assume equal variances and are adjusted for all pairwise comparisons within a row of each innermost sub-table using the Bonferroni correction.

	Self-confidence segments									
	Whole	sample	L	ow	So	me	H	igh	Ver	y High
	Abs.	%	Abs.	%	Abs.	%	Abs.	%	Abs.	%
Monthly off-premises wine purchase										
Less than 2 bottles	85	7.5	14	16.5	33	38.8	28	32.9	10	11.8
More than 2, less than 5 bottles	129	30.5	19	14.7	30	23.3	59	45.7	21	16.3
More than 5, less than 10 bottles	30	46.2	5	16.7	8	26.7	12	40.0	5	16.7
More than 10, less than 15 bottles	8	10.8			3	37.5	3	37.5	2	25.0
More than 15 bottles	8	2.9			3	50.0	1	16.7	2	33.3
I don't purchase wine off-premises	21	2.2	4	19.0	7	33.3	8	38.1	2	9.5
Purchase location										
Wine store	18	6.3	1	3.2	4	5.0	7	6.1	6	11.8
At the wine producer	7	2.4	1	3.2	3	3.3	3	2.5		
Local grocery store	15	5.3			5	6.7	7	6.1	3	5.9
Supermarket	239	86.0	39	93.5	66	85.0	95	85.3	39	82.3
Off-premises wine purchase (%)										
Standard bottle (0.750L)	62	2.1	5	1.6	65	5.2	6.	5.1	6	0.2
Medium bottle (1L)	2	3.2	2	5.5	21	1.7	22	2.4	25.2	
Magnum bottle (1.5L)	2.5		3.7		3.1		1	.2	2.4	
Bag-in-Box and soft packaging	10	0.1	14	14.4		7.9		9.5		1.3
Plastic bottle (various volumes)	2	.1	4	.8	2	.1	1.8		0.9	
On-premises wine purchase (%)										
Wine by the glass	20	0.4	2	22.5		3.7	17	7.9	18.3	
Small bottle (0.187L)	23	8.0	29.2		31.9		24.9		26.2	
Standard bottle (0.750L)	3	8.6	37.3		34.2		41.6		42.2	
Medium bottle (1L)	12	2.1	10.4		9.9		14.8		10.9	
Magnum bottle (1.5L)	0	.9	0.6		0.3		0.9		2	2.4
Wine purchase situation (mean)					0.5		0.9			
Meal and drink with partner/spouse	5	.7	5	5.9	5.6		5.6		5.8	
Meal and drink with friends	5	.2	5	5.7	5	.1	5	.1	5.0	
Meal and drink with family	4	.9	5	5.5	5	.0	4	.6	4	5.0
Gift for friends and family celebration	5	.2	5	.6h	5.4	1 _{a h}	5	.0.	4	.9.
Business related gift	4	.7	5	.4 _b	4.9	9_{ab}	4	.4.	4	.5.
Wine purchase motivation (mean)				0		u,o		u		u
For personal pleasure	6	5.0	5	5.6	5	.9	6	.0	(5.4
To support the domestic wine industry	3	.7	3	3.4	3	.7	3	.8		3.8
Goes well with food	5	0.0	4	.8	5	.3	4	.9	4	5.0
Wine is a sophisticated drink	4	.8	4	.9	5	.0	4	.6	2	4.8
Wine attribute importance (mean)										
Wine price	4	.7	5	.3 _a	4.	7 _{a.b}	4.5b		4	.3 _{b.c}
Grape variety	4	.9	4	.8	4	.8	4.8		4	5.3
Wine style	5	.1	4	.9	5	.2	5	.0	4	5.4
Wine brand	4	.9	5	5.0	5	.0	4	.9	2	4.8
Wine vintage	4	.3	4	.2	4	.2	4	.3	4	4.6
Country of origin	4	.4	4	.7	4	.3	4	.1	4	4.7

Table 36: Wine purchase characteristics of the self-confidence segments (N=279)
Tabela 36: Analiza značilnosti nakupa vina za skupine, narejene na podlagi samozavesti (N=279)

Note: Values in the same row and sub-table not sharing the same subscript are significantly different at p<0.05 in the two-sided test of equality for column proportions or in the two-sided test of equality for column means. Tests assume equal variances and are adjusted for all pairwise comparisons within a row of each innermost sub-table using the Bonferroni correction.

4.8 IMPORTANCE OF WINE INFORMATION SOURCES AND CHANNELS

This section presents the findings for the importance of the information sources and channels for the sample and the respective segments. The sample respondents assigned the highest importance to the opinion of wine experts (BWS = 2.13), followed by recommendations from friends and colleagues (BWS = 0.94). Wine labels were ranked next with a BWS-score of 0.84 for front labels and 0.54 for back labels. Family members' recommendations and award stickers on the bottle are the remaining two items which have positive scores. The results show respondents attributing the lowest importance to the information on wine provided on the television (BWS = -1.65), information found in magazines and newspapers (BWS = -1.66), and information from the internet (BWS = -1.70) (see Table 37, second column).

Table 37: Information sources' average best-worst scores and ranks for the objective knowledge and sensory competence segments (N=165)

oojenii (negu znanju n		in nomp		100)								
	Whole	ampla	Objecti	ve knov	vledge seg	ments	Sensory of	Sensory competence segments				
Information sources	whole	sample	Lo	w	Hig	h	Low		High			
information sources	B-W	Avg BWS	B-W	Avg BWS	B-W	Avg BWS	B-W	Avg BWS	B-W	Avg BWS		
Front label	145 (3)	0.84	52 (4)	0.72	93 (2)	1.00	85 (3)	0.93	60 (2)	0.81		
Back label	81 (4)	0.54	12 (5)	0.17 _a	69 (3)	0.74_{b}	48 (5)	0.53	33 (5)	0.45		
Award stickers on the bottle	56 (6)	0.34	4 (6)	0.06	52 (4)	0.56	19 (6)	0.21	37 (4)	0.5		
Magazines and newspapers	-260 (8)	-1.58	-124 (8)	-1.72	-136 (8)	-1.46	-148 (8)	-1.63	-112 (8)	-1.51		
Information on the internet	-284 (9)	-1.72	-130 (8)	-1.81	-154 (9)	-1.66	-169 (9)	-1.86	-115 (9)	-1.55		
Information on TV	-250 (7)	-1.52	-120 (7)	-1.67	-130 (7)	-1.4	-143 (7)	-1.57	-107 (7)	-1.45		
Family member recommendation	77 (5)	0.47	72 (3)	1.00 _a	5 (6)	0.05_{b}	51 (4)	0.56	26 (6)	0.35		
Friend or colleague recommendation	153 (2)	0.94	102 (2)	1.42 _a	51 (5)	0.55 _b	98 (2)	1.08	55 (3)	0.74		
Expert opinion	352 (1)	2.13	158 (1)	2.19	194 (1)	2.09	197 (1)	2.16	155 (1)	2.09		

Tabela 37: Povprečne ocene »best-worst« virov informacij in rangiranje segmentov, narejenih na podlagi objektivnega znanja in senzoričnih kompetenc (N=165)

Note: Information sources' ranks are presented in brackets next to the B-W score; Avg is abbreviation for average, and TV for television; Values in the same row and sub-table not sharing the same subscript are significantly different at p<0.05 in the two-sided test of equality for column means. Tests assume equal variances and are adjusted for all pairwise comparisons within a row of each innermost sub-table using the Bonferroni correction

The second level analysis of the clusters show experts and their opinion on wine as the most important to members of all segments. On the other hand, the internet was ranked as the least important wine information channel, except by consumers with very low subjective knowledge, low self-confidence, and high self-confidence about wine. With regard to the second highest ranked, it was "front label" for respondents with a high level of objective knowledge and sensory competence and those with the highest level of subjective knowledge and self-confidence regarding wine. On the other hand, "friends and colleagues" was the second highest

for the low sensory competence, very low and low subjective knowledge, and low selfconfidence groups (Table 4.37, Table 38, and Table 39). In addition, significant differences were observed between respondents with different objective knowledge levels with respect to the importance assigned to "back label" and "friend or colleague recommendation", with the former being more important to respondents with high objective knowledge (BWS = 0.74) and the latter to respondents with low objective knowledge (BWS = 1.42). Back labels were also significantly more important to respondents with high subjective knowledge (BWS = 1.42) compared to respondents with very low (BWS = 0.22) and low subjective knowledge of wine (BWS = 0.25) (Table 38). Concerning the self-confidence segments, significant differences between the segments were detected for the importance given for the information channel "front label" and the information source "friend or colleague recommendation". The former was more important to respondents with very high self-confidence about wine (BWS = 1.38) compared to members of other clusters, while the second to respondents with low self-confidence about wine compared to respondents from other clusters (BWS = 1.69) (Table 39).

Table 38: Information sources' and channels' average best-worst scores and ranks for the subjective knowledge segments (N=279)

			Subjec	tive knov	vledge segm	ents		
Information sources	Very	Low	Lo	W	Sor	ne	Hig	gh
mormation sources	B-W	Avg BWS	B-W	Avg BWS	B-W	Avg BWS	B-W	Avg BWS
Front label	12 (4)	0.44	61 (4)	0.64	125 (2)	0.98	43 (2)	1.43
Back label	6 (5)	0.22a	24 (5)	0.25_a	77 (4)	0.61 _{a,b}	43 (2)	1.43 _b
Award stickers on the bottle	12 (4)	0.44	-10 (6)	-0.11	63 (5)	0.50	13 (4)	0.43
Magazines and newspapers	-55 (7)	-2.04	-155 (8)	-1.63	-200 (7)	-1.57	-51 (6)	-1.70
Information on the internet	-47 (6)	-1.74	-157 (9)	-1.65	-212 (9)	-1.67	-59 (8)	-1.97
Information on TV	-55 (7)	-2.04	-146 (7)	-1.54	-204 (8)	-1.61	-54 (7)	-1.80
Family member recommendation	32 (3)	1.19	69 (3)	0.73	38 (6)	0.30	4 (5)	0.13
Friend or colleague recommendation	34 (2)	1.26	116 (2)	1.22	97 (3)	0.76	15 (3)	0.50
Expert opinion	61 (1)	2.26	204 (1)	2.15	269(1)	2.12	59(1)	1.97

Tabela 38: Povprečne ocene »best-worst« virov informacij in rangiranje segmentov, narejenih na podlagi sujektivnega znanja (N=279)

Note: Information sources' ranks are presented in brackets next to the B-W score. Values in the same row and sub-table not sharing the same subscript are significantly different at p<0.05 in the two-sided test of equality for column means. Tests assume equal variances and are adjusted for all pairwise comparisons within a row of each innermost sub-table using the Bonferroni correction.

Table 39: Information sources' average best-worst scores and ranks for the self-confidence segments (N=279) Tabela 39: Povprečne ocene »best-worst« virov informacij in rangiranje segmentov, narejenih na podlagi samozavesti (N=279)

				Self-confi	dence segme	nts		
Information sources	Lo	ow	Son	ne	Hig	h	Very	High
mormation sources	B-W	Avg BWS	B-W	Avg BWS	B-W	Avg BWS	B-W	Avg BWS
Front label	15 (5)	0.36 _a	64 (2)	0.76 _{a,b}	104 (2)	0.94 _{a,b}	58 (2)	1.38 _b
Back label	9 (6)	0.21	37 (4)	0.44	54 (5)	0.49	50 (3)	1.19
Award stickers on the bottle	17 (4)	0.4	14 (6)	0.17	34 (6)	0.31	13 (6)	0.31
Magazines and newspapers	-80 (9)	-1.9	-124 (7)	-1.48	-179 (8)	-1.61	-78 (8)	-1.86
Information on the internet	-71 (7)	-1.69	-131 (9)	-1.56	-196 (9)	-1.77	-77 (7)	-1.83
Information on TV	-74 (8)	-1.76	-127 (8)	-1.51	-177 (7)	-1.59	-81 (9)	-1.93
Family member recommendation	44 (3)	1.05	28 (5)	0.3	56 (4)	0.5	15 (5)	0.36
Friend or colleague recommendation	71 (2)	1.69 _a	60 (3)	0.71 _b	103 (3)	0.93 _b	28 (4)	0.67 _b
Expert opinion	81 (1)	1.93	185 (1)	2.2	239 (1)	2.15	88 (1)	2.1

Note: Information sources' ranks are presented in brackets next to the B-W score. Values in the same row and sub-table not sharing the same subscript are significantly different at p<0.05 in the two-sided test of equality for column means. Tests assume equal variances and are adjusted for all pairwise comparisons within a row of each innermost sub-table using the Bonferroni correction.

4.9 PRINCIPAL COMPONENT ANALYSIS OF THE SENSORY COMPETENCE CONSTRUCT

Principal component analysis was performed on the three items of the sensory competence construct (Table 40). The purpose was reducing the dimensionality of the uncorrelated items. The appropriateness of the principal component analysis was determined using the Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett's test of sphericity. The results for these measures, as well as for the component loadings, eigenvalue, and variance, are presented in Table 40.

Table 40: Principal component analysis on the sensory competence construct (N=165)

Tabela 40: Analiza glavnih komponent za konstrukt senzoričnih kompetenc (N=165)

Sensory competence items	Component loading	Eigenvalue	Variance explained %
Please taste the wine and classify it into one of the following	0.504		
Of the following, please indicate the taste sensation that stands out:	0.716	1.264	42.1
Using your wine sensory skills, classify the wine into one of the	0.705		
The Kaiser-Meyer-Olkin measure of sampling adequacy		0.62	
Bartlett's test of sphericity (significance level)		0.05	

The analysis revealed the presence of one component with an eigenvalue above 1. 42.1% of the variables' variance was explained by this component. In addition, a scree plot was created (Annex 5), which also confirmed the presence of one component.

The pricipal component analysis allows each respondent to be assigned a score. The variable created in this procedure was named "sensory competence". Hereafter, it is used in estimating the construct assessing sensory competence in wine.

4.10 ANALYSIS OF THE HYPOTHESES

A considerable amount of research has been devoted to understanding the processes by which consumers arrive at some type of purchase decision. Several researchers have suggested that there are no clear answers to what motivates consumers in their selection of a wine. Thus, the hypotheses in this study are:

- H1: Prior wine experience is related positively to subjective knowledge in decision making.

- H2: Prior wine experience is related positively to objective knowledge in decision making.

- H3: Prior wine experience is related positively to sensory competence in decision making.

- H4: There is a relationship between objective knowledge and sensory competence in decision making.

- H5: Sensory competence is related positively to self confidence in decision making.

- H6: Subjective knowledge is related positively to self-confidence in decision making.

- H7: Objective knowledge is related positively to self-confidence in decision making.

- H8: Self-confidence is related positively to direct observation of extrinsic product attributes in decision making.

- H9: Self-confidence is related negatively to impersonal sources of wine information in decision making.

- H10: Self-confidence is related negatively to personal sources of wine information in decision making.

To test the hypothesised model, the structural equation modelling (SEM) process described by Byrne (2004), Kline (2005) and Tabachnick and Fidell (2007) was followed. The hypothesised model assumes no direct effects of the objective knowledge, subjective knowledge, and sensory competence constructs on variables measuring the importance of extrinsic attributes as well as personal and impersonal information sources, but rather presents self-confidence as a mediating variable.

Using the Windows version of the Statistical Package for Social Sciences (SPSS 21), the first step was determining the underlying structure of the sensory competence construct using principal component analysis. The reason for this lied in the low reliability score, measured using the Kuder-Richardson formula on the data from the pilot study. The second step was to confirm the measurement model using the Analysis of Moment Structures (AMOS 21) software package. Next, the hypothesised structural model was tested. After the hypothesised model and hypotheses were fully tested, the saturated model was examined. It was analysed to determine whether objective knowledge, subjective knowledge, and sensory competence had a mitigating

effect on the self-confidence construct, and whether latter had a mitigating effect on consumers' selection of different sources of information when making a wine purchase decision.

4.10.1 The measurement model

A confirmatory factor analysis of the hypothesised model was performed to identify whether the measurement items reliably reflected the a priori latent constructs of prior experience, objective and subjective knowledge, self-confidence, personal and impersonal sources, and extrinsic product attributes. Following the work by Ryu and Jang (2007), Cronbach's alphas, item reliabilities, composite reliabilities, average variance extracted (AVE), maximum shared variance (MSV), and average shared variance (ASV) were computed to check whether the measurement items were valid in measuring each construct. The AVE should exceed 0.50 in order for convergent validity to be met (Hair et al. 2006), the AVE for each construct greater than the MSV and the ASV score. and the square root of AVE greater than inter-construct correlations for discriminant validity to be supported.

The confirmatory factor analysis was computed to determine the underlying structures of eight latent variables: prior experience, subjective knowledge, objective knowledge, sensory competence, self-confidence, personal sources, impersonal sources, and direct observation of extrinsic product attributes. The use of confirmatory factor analysis was similar to the approach adopted in the studies of Ryu and Jang (2007) and Yuan et al. (2005). The indicators were restricted to have nonzero coefficients only for their associated constructs, the error covariances for the indicators were set to 0, and the coefficients of one indicator for each construct were set to 1. All the restrictions imposed were sufficient to attain the necessary condition for the identification of a structural equation system. Table 41 presents the scale items and confirmatory factor analysis results. In addition, the criteria related to the construct reliability and validity are presented.

With the exception of the factor loading scores of the items "How many bottles did you purchase per month" (0.66) and "How often did you drink wine at restaurants/bars?" (0.61), all were above 70%, indicating acceptable internal consistency. Regarding the individual item reliabilities (squared multiple correlations), which indicate the lower bound of the reliability the estimates of all the items except for the aforementioned two ranged from 0.50 to 0.82, indicating an acceptable level of reliability (Hair et al. 2006). The internal consistency of the constructs measured with Cronbach's alpha coefficient and the Kuder-Richardson formula was acceptable and ranged from 0.70 to 0.90. The composite reliabilities of the constructs ranged from 0.73 to 0.88 and were in accordance with the recommendation by Hair et al. (2006) to exceed 0.7. The convergent validity, in terms of the AVE value, in the six tested constructs was greater than 0.50 in all cases, confirming the acceptable level of validity. For the sensory competence variable, the reliability and validity were not assessed since no suitable empirical tests exist (Coltman et al. 2008). In the measurement model, the sensory competence variable was measured with a single item. In addition, high correlations between the items of the different dimensions of the external search construct were observed. This affected the fit of the model. In order to resolve

this issue, items not fitting the desired model were removed, leaving the model with one latent variable less. The variable excluded from the model was "impersonal information sources".

Table 41: Scale items and confirmatory factor analysis results for the hypothesised model (N=165)

Constructs (Cronbach's Alpha)	Target factor loadings	Item reliabilities	CR	AVE	ASV	MSV
Prior experience (0.70)			0.73	0.50	0.16	0.42
How many bottles did you purchase per month?	0.66	0.44				
How often did you drink wine at restaurants/bars?	0.61	0.40				
How often did you drink wine at home?	0.81	0.65				
Objective Knowledge $(KR20 = 0.72)^1$						
Sensory competence ² (42% variance extracted with one	principal comp	onent)				
Subjective knowledge (0.82)			0.83	0.62	0.19	0.54
Compared to others you know, how	0.84	0.70				
Compared to my friends, I am an expert	0.79	0.62				
Compared to a wine expert, how knowledgeable	0.72	0.53				
Self-confidence (0.87)			0.88	0.70	0.04	0.09
I often have doubts about the wine purchase	0.77	0.60				
I often wonder whether I made the right	0.90	0.82				
I frequently agonise over my purchases	0.83	0.70				
Direct observation of extrinsic product attributes (0.75)			0.76	0.61	0.13	0.35
Front label (brand, grape variety, vintage etc.)	0.70	0.50				
Back label (paring with food, aroma profile, storage conditions, producer information etc.)	0.86	0.73				
Impersonal sources (0.80)			0.8	0.57	0.15	0.40
Internet information (social media, winery webs)	0.74	0.54				
Magazine and newspaper information	0.77	0.59				
Information on television (wine programmes)	0.76	0.58				
Personal sources (0.81)			0.81	0.69	0.17	0.40
Friend or colleague recommendation	0.86	0.64				
Family member recommendation	0.80	0.73				

Tabela 41: Indikatorji lestvic in rezultati potrditvene faktorske analize za hipotetični model (N=165)

Note: CR = Composite reliability; AVE = Average variance extracted; MSV = Maximum shared variance; ASV = Average shared variance.

¹ the objective knowledge construct was measured with six binomial variables; two variables (questions 45 and 46) were excluded from the analysis as they affected the construct's internal consistency

² The sensory competence construct was measured using a single item with data obtained from the principal component analysis.

The discriminant validity was established where Maximum Shared Variance (MSV) and Average Shared Variance (ASV) were lower than the Average Variance Extracted (AVE). This was detected for all constructs. In addition, the square root of AVE was confirmed to be greater than inter-construct correlations, which demonstrated support to the discriminant validity (Table 42). In summary, the measurement of the specified model showed good evidence of reliability and validity for the operationalization of the latent constructs.

Table 42: Square root of AVE and inter-construct correlations

Tabela 42.	Kvadratni	koren A	VE in	korelacije	med kor	strukti
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Constructs	Personal sources	OK	Direct Observat.	Prior Exp.	SC	Impersonal sources	Self- confidence	SK
Personal sources	0.828							
Objective knowledge	-0.350	0.527						
Direct observation of extrinsic product attributes	-0.591	0.274	0.778					
Prior experience	-0.269	0.448	0.379	0.690				
Sensory competence	-0.309	0.257	0.022	0.241	0.403			
Impersonal sources	-0.636	0.085	-0.382	0.009	0.334	0.755		
Self-confidence	-0.126	0.151	0.242	0.303	0.046	-0.007	0.838	
Subjective knowledge	-0.356	0.524	0.351	0.647	0.247	0.136	0.281	0.785

Note: Inter-construct correlations are below the diagonal, the square root of AVE on the diagonal.

4.10.2 Hypothesised model

The relations among prior experience, subjective and objective knowledge, sensory competence, self-confidence, observable extrinsic product attributes, and personal and impersonal information sources and channels were explored in a structural model. The proposed model, as a result of the high correlations between the items measuring the three dimensions of external search, showed inadequate fit to the data. In order to improve the fit statistic, insignificant pathways were removed from the hypothesised model, leading to the elimination of the "impersonal sources of information" construct. The new model depicted in Figure 10 was named "modified hypothesised model". It included seven latent variables with 20 measuring items. Dotted lines in the figure indicate non-statistically significant paths while solid lines show significant paths.

The results of the standardised parameters' estimate and significance values are shown in Table 43. The results revealed causal relations between consumers' past experiences with a wine product and their subjective knowledge, objective knowledge, and sensory competence in wine; the strongest was the relationship with subjective knowledge ($\beta = 0.65$, p < 0.01), supporting Hypotheses 1, 2, and 3. The relationship with subjective and objective knowledge has also been demonstrated in the research studies by Barber (2009), Dodd et al. (2005), and Raju et al. (1995).

Subjective knowledge ($\beta = 0.42$, p < 0.05) was found to be significant predictor of a consumer's self-confidence, a finding that supports Hypothesis 6 and was also reported in a study by Barber (2009). The same was not found for objective knowledge and sensory

competence. As a result, Hypotheses 5 and 7 were not supported. The results concerning Hypothesis 7 contrast with those presented by Barber (2009), who found objective knowledge to be a significant predictor of a consumer's self-confidence. In addition, self-confidence was found in the same study (Barber 2009) to affect the reliance on observable extrinsic product attributes ($\beta = 0.27$, p < 0.01). This shows support for the statement presented in Hypothesis 8. Finally, the path from self-confidence to the personal information sources ($\beta = -0.15$, p = 0.13) was not significant, although the coefficient was directionally correct as stated in Hypothesis 10.



Figure 10: Modified hypothesised model showing standardised path estimates

Slika 10: Spremenjeni hipotetični model s prikazom ocenjenih standardiziranih poti

The remaining findings for the modified hypothesised model show that more prior experience has the indirect effect of increasing a consumer's self-confidence ($\beta = 0.2$, p < 0.01), decreasing their reliance on personal information sources ($\beta = -0.26$, p < 0.01), and increasing the importance assigned to extrinsic product attributes ($\beta = 0.27$, p < 0.01) (Table 43). Indirect effects were also found for subjective and objective knowledge. An increase in subjective knowledge affects positively the reliance on label extrinsic attributes ($\beta = 0.06$, p < 0.05). The opposite is true for objective knowledge. The results show more objective knowledge negatively affects reliance on label extrinsic information ($\beta = -0.02$, p < 0.05). Regarding the strength of these effects, none warrants particular attention.

Table 44 presents the findings for the fit indices for the modified hypothesised model. After removing the "impersonal information sources" dimension of the external search construct, the model's fit statistics improved.

Table 43: Modified h	hypothesised model:	Standardised	coefficients and	p-values	(N=165)
	21			1	· · · ·

Table 43: Spremenjeni hipotetični model: Standardizirani koeficienti in p-vrednosti (N=165)

Hypothesised Path	Standardised Coefficient Path	p-value	Hypothesis
Self-confidence -> Personal	-0.15	0.13	H ₁₀ : Not supported
Self-confidence -> Impersonal ³			H ₉ : Not supported
Self-confidence -> Direct observation of extrinsic product attributes	0.27**	0.00	H ₈ : Supported
Objective knowledge -> Self-confidence	-0.17	0.36	H7: Not supported
Subjective knowledge -> Self-confidence	0.42^{*}	0.02	H ₆ : Supported
Sensory competence -> Self-confidence	0.06	0.74	H ₅ : Not supported
Prior experience -> Sensory competence	0.39*	0.04	H ₃ : Supported
Prior experience -> Objective knowledge	0.44**	0.00	H ₂ : Supported
Prior experience -> Subjective knowledge	0.65^{**}	0.00	H ₁ : Supported
	0.01		

Note: Significance levels: * p < 0.05, ** p < 0.01

Table 44: Overall goodness-of-fit comparisons for the modified hypothesised model

Tabela 44: Testi skladnosti za spremenjeni hipotetični model

Model	χ^2	df	χ ² Ratio	р	NFI	IFI	TLI	CFI	RMSEA
Hypothesised Model	238.68	162	1.47	0.00	0.81	0.93	0.91	0.93	0.05

NFI = Normed fit index

IFI = Incremental fit index

TLI = Tucker-Lewis fit index

CFI = Comparative fit index

RMSEA = Root mean square error of approximation

4.10.3 Partial mediating model

One of the objectives of this research study was to determine the effect, if any, of knowledge (subjective and objective), sensory competence, and self-confidence on the selection of different sources of information during wine purchase. Figure 11 presents the structural equation diagram, showing the direction and magnitude of the direct impact using standardised path coefficients. Dotted lines indicate non-statistically significant paths while solid lines show significant paths.

³ The hypothesized model was tested as specified in Section 3.4. As significant direct and indirect paths toward the construct representing impersonal sources of information were not found and since the hypothesized model with impersonal sources of information provided very poor fit to the data, the hypothesized model was modified by means of removing the construct of impersonal sources of information.

Hristov H. The influence of ... knowledge, sensory competence and self-confidence in selection of information sources for wine purchases. Doctoral Dissertation. Ljubljana, University of Ljubljana, Biotechnical Faculty, 2017



Figure 11: Partial mediating model showing standardised path estimates

Slika 11: Delni posredovalni model s prikazom ocenjenih standardiziranih poti

In Table 45, the standardised coefficients and respective p-values of the saturated model are presented. Significant direct paths were found from prior experience to subjective knowledge ($\beta = 0.66$, p < 0.01), objective knowledge ($\beta = 0.45$, p < 0.01), and sensory competence ($\beta = 0.18$, p < 0.05). Moreover, a significant direct path was found from subjective knowledge to self-confidence ($\beta = 0.42$, p < 0.05). There were no significant direct paths found from subjective knowledge, objective knowledge, or sensory competence to the different dimensions of external information search.

Hristov H. The influence of ... knowledge, sensory competence and self-confidence in selection of information sources for wine purchases. Doctoral Dissertation. Ljubljana, University of Ljubljana, Biotechnical Faculty, 2017

Table 45:	Partial Mediating	Model: Standardised Coefficients and	p-values (N=165)
	0		

Tabela 45: Delni posredovalni model: Standardizirani koeficienti in p-vrednosti (N=165)

Hypothesised Path	Standardised Coefficients Path	p-value
Objective -> Direct observation of extrinsic product attributes	-0.01	0.96
Objective -> Personal	-0.13	0.56
Sensory -> Direct observation of extrinsic product attributes	-0.06	0.46
Sensory -> Personal	-0.11	0.20
Subjective -> Direct observation of extrinsic product attributes	0.38	0.16
Subjective -> Personal	-0.27	0.21
Self-confidence -> Direct observation of extrinsic product attributes	0.14	0.16
Self-confidence -> Personal	-0.03	0.72
Subjective -> Self-confidence	0.42	0.02
Objective -> Self-confidence	-0.18	0.37
Sensory -> Self-confidence	0.01	0.72
Prior experience -> Objective knowledge	0.44	0.00
Prior experience -> Sensory competence	0.22	0.05
Prior experience -> Subjective knowledge	0.66	0.00
Note: Significance levels: $* p < 0.05$; $** p < 0.01$		

Note: Significance levels: * p < 0.05; ** p < 0.01.

The results of the standardised parameter estimate and significance values are shown in Table 46. This model, based upon the model-fit-indices ($\chi 2/df = 1.24$, IFI = 0.97, CFI = 0.96 and RMSEA = 0.04), showed very good fit to the data.

Table 46: Overall goodness-of-fit comparisons for the partial mediating model

Tabela 46: Testi skladnosti za delni posredovalni model

Model	χ^2	df	χ ² Ratio	р	NFI	IFI	TLI	CFI	RMSEA
Partial Mediating Model	207.922	156	1.333	0.003	0.83	0.95	0.94	0.95	0.04

NFI = Normed fit index

IFI = Incremental fit index

TLI = Tucker-Lewis fit index

CFI = Comparative fit index

RMSEA = Root mean square error of approximation

4.10.4 Parsimonious model

This section deals with finding the most parsimonious or the best fitting model. A parsimonious model is defined as a model with as few parameters as possible for a given type of model (Kline, 2005). For instance, saturated models always have perfect goodness-of-fit to the data. According to Byrne (2004) and Kline (2005) the purpose of structural equation modelling is eliminating some of the effects while still being able achieving satisfactory goodness-of-fit.

A parsimonious model is the most incomplete model that still achieves a satisfactory level of goodness-of-fit. The restricted model is tested to see if significantly differ from the saturated

model. If significant difference is confirmed, then can be concluded that the effects omitted from the saturated model were not needed to explain the observed distribution of data.

In this study the research hypotheses stated that the relationships of subjective knowledge, objective knowledge, and sensory competence are mediated by the self-confidence construct (modified hypothesised model) and would create a parsimonious model fit. This was tested by constraining the direct effects of objective knowledge, subjective knowledge, and sensory competence on extrinsic attributes and sources of information to zero in the partial mediated model. Two methods are generally used to compare which hierarchical (nested) path models: model trimming and model building. Typically, at least one previous path is fixed to zero and/or another is set as a free parameter. Kline (2005) argue, as a model is trimmed, it becomes worse (χ^2_m increases), while conversely model fit improves when paths are added (χ^2_m decreases). To verify this result, the chi-squared difference test (Kline, 2005; Tabachnick and Fidell, 2007) was used. It was used to determine the statistical significance of the decrease in overall fit as paths are eliminated and, ultimately, which model best fits the data and explains the sensory competence and self-confidence constructs' effects on the sources of information selected. In addition, the AIC values were compared to determine the model with the lowest AIC value.

The comparison is made by subtracting the χ^2_m of one model from the χ^2_m of another, upon which the χ^2_{Diff} difference is examined using the df_{Diff} difference of the degrees of freedom between the two models. The χ^2_{Diff} statistic tests the null hypothesis of identical model fit to the two hierarchical models using the same data. Smaller values of the χ^2_{Diff} lead to failure and having to reject the equal-fit hypothesis while larger values support the equal-fit hypothesis (Kline, 2005; Tabachnick and Fidel, 2007).

Model	$\chi^2_{\rm m}$	df	χ^2 Ratio	р	AIC	NFI	IFI	TLI	CFI	RMSEA
Modified hypothesised Model (A)	238.7	162	1.47	0.00	355.92	0.81	0.93	0.91	0.93	0.05
Partial Mediated Model (B)	207.9	156	1.33	0.02	341.70	0.83	0.95	0.94	0.95	0.04
	χ^2 Diff	df_{Diff}								
Chi-squared Difference (A-B)	30.8	6		0.00						

Table 47: Overall goodness-of-fit comparisons for the Modified Hypothesised and Partial Mediating Models Tabela 47: Testi skladnosti za hipotetični in delni posredovalni model

Note: NFI = Normed fit index; IFI = Incremental fit index; TLI = Tucker-Lewis fit index; CFI = Comparative fit index; RMSEA = Root mean square error of approximation; AIC = Alkaline information criteria

When comparing the hypothesised model (A) with the partial mediated (saturated) model (B), the model trimming resulted in the rejection of the equal-fit hypothesis, which suggests that the full model had been oversimplified. However, the goal of model trimming and building is to find a parsimonious model that still fits the data reasonably well; that is to say, one that has the least number of paths. The results of the testing, reflected in Table 47, show that the modified hypothesised model explains the data well.

4.10.5 Relationship between objective knowledge and sensory competence

To investigate the relationship between objective knowledge and sensory competence, confirmatory factor analysis was used. Namely, a correlation analysis was implemented, with the objective knowledge variable calculated by summing respondents' correct answers to the questions of the objective knowledge test. With regard to the sensory competence variable, the respondents' scores from the principal component analysis were used. The objective knowledge construct was measured using six of the eight items of the objective knowledge scale. Questions 45 and 46 were excluded from the calculation as they were found to negatively influence the reliability of the measure.

Following Srinivasan and Ratchford's (1991) recommendation, the constructs included in the model were measured using a single item. The items' loadings were fixed to 1 and the error variance to 0.3. By doing this, 70% of the indicator's variability was allocated to the latent construct. For the objective knowledge variable, this was justified by the findings for the construct's internal consistency, which measured with the alpha coefficient showed that 72% of the items' variability had been explained by the latent construct. In respect of the sensory competence variable, the methodology that had been applied in the selection of the wine samples justified this approach. In addition, the two-stage sampling procedure ensured that the respondents' sensory skills in wine had been accurately determined.

The results of the confirmatory factor analysis showed no evidence of a relationship between objective knowledge and sensory competence in wine (z = 1.75, p > 0.05). The probability of getting a critical ratio as large as 1.75 in absolute value was 0.081, making the covariance between objective knowledge and sensory competence, at the 0.05 level, not significantly different from zero. In light of this, the hypothesis arguing for the existence of such a relationship was rejected. The result obtained with this analysis is similar to the one published by Frøst and Noble (2002) indicating no relationship between consumers' objective knowledge and sensory expertise in wine.

5 CONCLUSIONS

This study has provided an insight into the consumption and purchasing behaviour of young wine consumers. It also revealed some of the factors influencing these behaviours. Whilst this information carries practical benefits in terms of predicting the behaviour of young wine consumers, it has also added to understanding of consumers on the theoretical level. It is expected that these theoretical contributions will be of interest and assistance to subsequent consumer behaviour researchers.

The primary aim of this research was to investigate the concept of consumer wine information search. A theoretical model and a combination of online and on-location survey was developed on the basis of an extensive literature review. Following this research, hypotheses were formulated and investigated in order to determine the effect of prior experience, subjective and objective knowledge, sensory competence, and self-confidence on the selection of sources and channels of information on wine. This chapter draws conclusions, provides suggestions for future research, and recognises limitations.

5.1 STUDY FINDINGS

Past research has clearly demonstrated the importance of information search within the consumer buying process. Scholars have identified several sources used by consumers in order to obtain information relevant to their purchase situation. The findings of this study have provided confirmation of the previous studies, indicating that personal sources and product extrinsic characteristics exert significant influence on the purchase decisions of consumers for wine. The findings of this study also agree with the rich literature identifying labels as an important source providing valuable information to consumers (Atkin and Thach, 2012; Elliot and Barth, 2012). In agreement with previous research, the study shows reference groups playing a significant role in young consumers' decision for wine (Chaney, 2001; Hristov and Kuhar, 2014a). However, the presented importance varies based upon subjects' prior experience, subjective knowledge, and self-confidence regarding wine. As presented by Atkin and Thach (2012) and Alba and Hutchinson (1987), the study demonstrates a strong reliance of young consumers on the expertise of others, specifically the advice of peers and wine experts. This importance probably stems from the feedback and clarification opportunity available in interpersonal exchanges, but also from the consumers' perception of these non-commercial sources as objective and neutral. Furthermore, both front and back label were rated high by respondents, suggesting preferable assistance on young consumers' wine decision choices. Overall, front labels were seen as slightly more important than back labels, however the importance of both was mediated by individuals' subjective knowledge and self-confidence regarding wine. Although the literature highlights the importance of media presented information for wine (Olsen et al., 2006), the findings of this study do not provide confirmation on this.

The Latent Class Cluster Analysis conducted upon respondents' subjective and objective knowledge, sensory competence, and self-confidence regarding wine resulted in four subjective knowledge and self-confidence cluster segments and two objective knowledge and sensory competence cluster segments. Each of the clusters has its characteristics, adding valuable theoretical and practical information about the wine behaviour of young adults.

With regard to product knowledge, this study was unusual in that it examined four aspects of wine knowledge. The measurement of prior experience, objective knowledge, subjective knowledge, and sensory competence enabled this study to consider how these constructs relate to each other, and the results add considerably to the theory concerning consumer knowledge of wine.

The present research has identified and empirically tested a model of potential the influencers of consumers' preferences in the search for wine information. Ten research hypotheses were postulated to evaluate how past experience, knowledge (objective, subjective, and sensory), and self-confidence affect purchasing decisions through the sources of information selected. Hypotheses 1, 2, and 3 proposed a causal positive relationship between past experiences with wine on the one hand and subjective and objective knowledge as well as sensory competence on the other. The three hypotheses have found support in the strong causal relationships identified. The relationship with subjective knowledge was the strongest, suggesting that an increase in usage experience would significantly increase subjective knowledge, while sensory competence and objective knowledge would increase by a lesser extent. In fact, what the findings suggest is that what wine consumers believe they know about wine is more closely associated to their wine experiences than to their actual wine knowledge. The findings are in line with the previous research showing that the relationship between objective knowledge and usage experience is not as strong as the relationship between usage experience and subjective knowledge (Dodd et at, 2005; Park et al., 1994; Barber 2009). Regarding sensory competence, a similar effect was observed as that found between prior experience and objective knowledge.

Among the other findings, this study shows a difference in respect to the overall objective knowledge as compared to the results of Barber (2009). In this study, 47.6% of the respondents' answers in the objective knowledge test were correct, while Barber (2009) reported an overall objective knowledge of 63.8% for his sample. The difference is probably to be explained with the different data collection methods used in both studies. Barber (2009) collected data by means of an online survey, whereas this study used a paper-based, on-location test. Regarding subjective knowledge, comparable results were observed, more precisely the study by Barber (2009) presents an average subjective knowledge of 3.4 out of 7, while this study found the average subjective knowledge of 3.6 out of 7.

Alba and Hutchinson (1987) and Park et al. (1994) suggest that experience with a product leads to product knowledge and that it can, regardless of low actual knowledge, build confidence in knowledge. According to Loibl et al. (2009), this increase in knowledge can result in an increase in self-confidence in purchasing decisions. In this context, the present research has found that 11 years of experience with wine resulted in higher self-confidences (5.1 out of 7) compared to subjective knowledge (3.4 out of 7) of wine.

Of hypotheses 5, 6, and 7, only the sixth hypothesis was supported with a strong causal relationship between subjective knowledge and self-confidence. Indeed, what Barber (2009) found for the relationship between objective knowledge and self-confidence, this study has not provided evidence for. Regarding subjective knowledge, the relationship with self-confidence was strong, suggesting that what individuals believe to know about wine influences their self-confidence.

Although Park and Lessig (1981) acknowledge that both objective and subjective knowledge measures are valid measures of product class knowledge, their findings suggest that subjective measures better explain consumer strategies because they are based upon perceptions, i.e. what consumers think about their product knowledge.

The findings of this research show that the levels of self-confidence could possibly be regarded as an addition to and part of perceived knowledge levels. The previous agree with what Park and Lessig (1981) have found. The authors suggest that measures of self-assessed knowledge can reflect both, self-confidence and objective knowledge levels. The other results show that knowledgeable consumers are apt to rely on internal memory searches in their purchase decisions. Because subjective knowledge has been demonstrated to increase with each consumption experience, consumers who think they know much about wine could probably be regarded as long-time wine users. Retaining these repeat customers by keeping them satisfied might decrease their external search effort.

The next hypotheses tested were 8, 9, and 10. Of the three, only the eighth hypothesis was supported and has confirmed the existence of a positive significant relationship between self-confidence and direct observation of extrinsic product attributes. This finding was expected since higher levels of self-confidence signal the consumer's preference for label information as a trusted source of information over external sources such as friends and relatives in wine purchasing decisions.

Among the objectives of this study was determining the mediating effect of selfconfidence on objective knowledge, subjective knowledge, and sensory competence in using information sources for wine. The literature has shown that subjective and objective knowledge significantly influence the preference toward the three sources of information examined within the study, however, the findings of the present study do not provide confirmation for this. Although, not previous information exist, however expecting sensory competence to be positively related to direct observation of extrinsic product attributes and impersonal sources, and negatively related to personal information sources, the construct fails to attest a significant relationship to any of the proposed dimensions of external information search. Testing the partial mediated model resulted in no significant direct paths. In addition, no significant direct paths were found from subjective knowledge to "label extrinsic attributes" and "personal sources", which is in contrast to what Dodd et al. (2005) and Barber (2009) report. In terms of objective knowledge, the results support the findings of Barber (2009) of no relationship with "personal sources" and "self" while contrasting the findings of Dodd et al. (2005) of a significant relationship with "impersonal sources" and "self".

There was an indirect positive effect of subjective knowledge and indirect negative effect of objective knowledge on "label extrinsic attributes" through self-confidence. Only a portion of the direct effect of subjective and objective knowledge on self-confidence is transmitted to "direct observation of extrinsic attributes", providing confirmation that self-confidence mediates subjective and objective knowledge. The other findings show that more prior experience indirectly affect consumers' self-confidence, decreases reliance on personal information sources, and an increases the importance of product extrinsic attributes.

This study provides confirmation of the importance of past experience in consumer wine decision making. It shows that this construct is the most influential predictor of a consumer's level of sensory competence as well as subjective and objective knowledge. The study also documents differences between consumers' perceived and actual product knowledge. It shows furthermore that higher levels of self-assessed knowledge correspond to higher levels of self-confidence. This, in turn, increases the consumer's probability of relying on themselves and their own observations of extrinsic wine information rather than relying on other sources. Objective knowledge and sensory competence play a smaller role in this process.

The findings agree with those presented by Frøst and Noble (2002) of no relationship between objective knowledge and sensory competence in wine. The authors recommended both components of wine expertise be examined separately and their influence on the behaviour of consumers investigated independently. Their other findings include a positive relationship between objective and subjective knowledge, which is also reported by Goldsmith and d'Hauteville (1998), Philippe and Ngobo (1999), and Goldsmith (2000).

The primary aim of this study was establishing the validity and reliability of a consumer behaviour model integrating several aspects of product knowledge. The tested model tested has added to the existing body of knowledge of consumer wine behaviour by indicating that selfconfidence and the four aspects of wine knowledge are important constructs in the theory of consumer decision making and that they might be crucial for a better understanding of consumer wine behaviour.

I have approached this study with a desire to make progress in consumer behaviour research as it pertains to the wine industry. The endeavour was undertaken with the belief that concern and awareness about the role of cognitive and perceptual aspects of knowledge in consumer decision theory is not a less popular topic, but rather a new paradigm in marketing research. In order for any business to make continuous progress, it must keep up with product innovations, understand consumers, and meet their demands. In this regard, the study offers exclusive knowledge of an attempt at constructing a measure of consumer sensory competence in wine. The process that I have gone through, despite following the accepted procedures on latent scale development (Clark and Watson, 1995; Hinkin et al., 1997), did not deliver the expected result. That is to say, the instrument used to measure young consumer's sensory competence in wine has failed to produce a reflective latent construct. However, by use of principal component analysis, the study has succeeded in developing a formative construct. The rationale behind this failure lies in the difficulties with determining the causality in the relation indicator-latent construct. This obstacle has been pointed out in the literature and was expected when developing a measure for sensory expertise in wine. According to the literature, there is no consent yet about what determines sensory expertise in wine. Parr et al. (2002) and Parr et al. (2004) contend that superior perceptual skills rather than enhanced semantic and odour recognition memory structures are responsible for experts' superior performance in wine. On the other hand, Ballester et al. (2008) and Hughson and Boakes (2002) think that wine expertise is the results of a superior cognitive rather than perceptual skill. The findings of this study show that both arguments stand. The developed sensory competence instrument shows that if both skills are assessed, the formative construct is what should be expected, or otherwise if only the conceptual (experiential knowledge) skill is assessed, the reflective construct is likely to emerge.

The recommendation for a future study is to include a larger sample of respondents and more questions for assessing different, but specific aspects of sensory competence in wine. In this regard, the formulation of the questions is important. Depending on whether the instrument encourages the investigation of specific experiential knowledge or requests the identification of non-specific wine sensory skills, for instance the recognition of sweetness level, could affect the direction of the causality and the reliability of the construct. The instrument created for this study includes six items, of which four test experiential knowledge and two assess the ability of the respondents to distinguish gustatory components not exclusive to wine. From the results, it is evident that the combination of questions, although this was expected, did not provide a reliabile reflective measure. A future study should include more sensory test questions which through a process of filtration will be reduced into a few that will be able to produce a reliable reflective latent measures.

5.2 MANAGERIAL IMPLICATIONS

With wine marketing being extremely challenging and highly competitive (Thach and Olsen, 2006), there is a need for the global wine industry to improve its management skills (Zalan and Lewis, 2014). One element of this improvement is the marketing management skill. This research study aims to help addressing this need through a better understanding of young consumer knowledge, external information search, and purchase self-confidence as well as its implications for wine marketers.

Today consumers face an increasingly difficult challenge in making purchase decisions. They are typically overwhelmed by information from different sources, which include advertising, news articles, direct mailing, and the growing number of online communication forms. That the variety of products and services available to consumers also continues to grow serves to further compound their difficulties. Consequently, many consumers fear making the wrong decision because of the possible repercussions in financial, social, and emotional terms. On the other hand, marketers face challenge of choosing the right medium in order to present consumers with information on which to base their decisions. This is not a simple task because marketers do not necessarily know what information source an individual or group uses in the search process. The findings of this study shed some light on this dilemma. They generally indicate that young adults use various sources of information when deciding which wine to purchase. More specifically, the study suggests that apart from the well-known socio-demographic variables for segmenting consumers, marketers should use knowledge and self-confidence via should be specifically designed to target segments based on knowledge and self-confidence via

different information sources and channels. The latter was confirmed by significant differences among different knowledge and self-confidence segments in the use of different sources of information for wine. For example, the study has shown that a young adult with a high level of objective knowledge of wine is more interested in seeking information on wine labels, which is not the case with subjects with a high sensory competence in wine, who base their decision for a wine upon the expertise of others. Furthermore, young adults with lower levels of subjective knowledge of wine have been shown to be prone to seek word-of-mouth information. Conversely, young adults with high levels of subjective knowledge are likely to search for information on the labels.

Another suggestion is for marketers to attempt targeting consumers based on their knowledge and preference of wine attributes. The findings of this study show that the style of the wine, the grape variety, and the brand name are the most important attributes in young consumers' decisions for wine. Interestingly, the country of origin has less of an influence. The analysis of a segment base has identified significant differences among consumers with different levels of objective knowledge of wine. Consumers with high objective knowledge award higher importance to "grape variety" and "wine vintage" compared to low objective knowledge respondents. In respect to subjective knowledge, were observed significant differences between the different segments for the attributes "grape variety", "wine style", and "wine vintage". With increased levels of subjective knowledge of wine was observed an increase in the mean importance score of "grape variety", "wine style", "wine vintage", and "country of origin". Furthermore, the results suggest using price when targeting consumers with different levels of self-confidence regarding wine.

The study has provided a number of interesting insights into the wine behaviour and information search of young adults. These insights are of importance to wine producers and marketers. who must develop strategies to influence these consumers. It is essential that such strategies are especially effective at a time when the global wine market is becoming increasingly competitive. As young adults are a segment important for future market grow, the study provides valuable information for targeting this population and for improving the competitiveness of the wine sector against other alcoholic beverage sectors. Moreover, based on the results regarding objective knowledge of and sensory competence in wine, much has to be done in educating young adults about wine. By increasing their knowledge and sensory experience, their confidence about wine will increase so that they might drink more and explore new wine products. Through this education, wineries can remove the mystique surrounding wine and change the consumers' perception such that wine could be consumed on an everyday basis, or they can enhance the knowledge of people who are already familiar with wine and want to continue their practice and education.

5.3 LIMITATIONS OF THE STUDY

There are several limitations to this study, as well as opportunities for future research. The primary limitation is the small sample size that numbered 165 respondents with fully completed objective knowledge and sensory competence questions. Although the initial sample size of those who completed the online survey was large enough, was observed a low interest of the respondents to participate in wine tastings, which resulted in a lower number of completed inplace questionnaires. Another limitation is the non-probabilistic (judgment) sample limited to a single country – the Republic of Macedonia. Moreover, the study only examines the young adult segment of the wine market. It would be useful in a future study to increase the sample size and to include other wine market segments.

5.4 RECOMMENDATIONS FOR FUTURE RESEARCH

The conclusions from this study open up many areas for future research. The current study was an initial investigation of the effect of the sensory competence construct on consumers' wine behaviour. The research answered a number of questions concerning the role that sensory competence plays in wine purchases and information search, the relationship with past experience, knowledge, and self-confidence regarding wine, but there is considerable room for further investigation. Although not exhaustive, a number of research directions for future studies are presented below.

The present dissertation has provided one initiative for developing a scale to measure consumers' sensory competence in wine. The construct was measured using six test questions, each assessing a single aspect of consumer sensory expertise in wine. In order for more different aspects to be examined, new studies are needed. Future research will therefore benefit from developing and validating a reflective scale that could help in investigating different consumers' wine behaviours. Moreover, the marketing practice will profit by getting a valuable tool for consumer segmentation. Future research should also look into adopting this scale for use in assessing the competences of wine experts as this is very important in the selection of panel members for wine evaluations.

This research focuses on the construct of sensory competence in wine. The results suggest it can be separated into two components: experiential and ability component. The second component is more general and not related only to wine. Previous research has investigated the nature of wine expertise, however to date no study has investigated whether wine experiential knowledge elicits other sensory competences in foods and whether an individual's sensory ability to recognise different sensory compounds instigates a certain relationship toward a product class of wine.

Given that respondents in this research study on average did not score high on subjective knowledge questions compared to self-confidence questions, it would be interesting to investigate what the reason for this high self-confidence is.

For further validation, the proposed model should be tested using different samples. It is fairly well known that consumers' information search behaviour varies across different product categories. Future research should therefore study the information search process of for instance beer or other alcoholic beverages.

The results also indicate several future research possibilities, including a qualitative analysis of reasons as to why young adults usually disregard impersonal sources in their wine decisions. This research study considered the influence of knowledge and self-confidence on the purchase decision of young adults. However, as discussed by Assael (1984), Bettman (1979) and Engel et al. (2000), the exposure and attention to a particular products' advertisement is also an important consideration in the purchase decision process. A retrospective study that would analyse the content of wine commercials within a period of time and compare this analysis to changes in consumer socio-demographics as well as purchasing and consumption patterns would greatly aid in the understanding of product advertisement. Furthermore, it is interesting to include in the comparison the external search activity of older consumers and draw conclusions about the evolution of information search with aging. Furthermore, it may be fruitful to perform this survey on international samples to ascertain the differences in attitudes and preferences of young adults in other countries. Finally, it could be illustrative to compare different groups of young consumers based on either state or country to ascertain whether there are differences in risk perception and information search depending on place of residence, in which regard the contrast between urban and rural populations could also be investigated.

6 SUMMARY (POVZETEK)

6.1 SUMMARY

The past decade has introduced significant changes into the world wine markets. Although global wine production has remained relatively stable, consumption in many traditional wine producing countries has declined (Weininstitut, 2014), introducing a new dynamic and a continuing search for new markets and consumers. One segment that has emerged as important in terms of balancing wine demand are young consumers. Previous studies of this consumer group have focused on their interaction with wine as well as wine preferences, consumption, and purchasing behaviour (Agnoli et al., 2011; Ritchie and Valentin, 2011; Marinelli et al., 2013); differences in wine behaviour from older consumers (Chrysochou et al., 2012; Fountain and Lamb, 2011; Garcia et al., 2013; Qenani-Petrela et al., 2007); lifestyle and attitudes regarding wine (Bruwer and Li, 2007; Charters et al., 2011). Although considered important, the theoretical concepts of information search (Barber et al., 2008; Teagle et al., 2010) and purchase self-confidence (Lockshin and Hall, 2003; Veale and Quester, 2007) have been poorly investigated for the segment of young consumers. Indeed, to make effective marketing strategies, there is a need of understanding the consumers' decision-making process, specifically the process of searching for information.

The consumer decision making literature distinguishes between internal and external information search activities (Fodness and Murray, 1999; Moore and Lehmann, 1980). While internal search refers to retrieving stored information, external search encompasses all other activities the consumers engage in to obtain relevant product information. Internal search has received less attention in the information search literature compared to external search. This is owed to the empirical difficulties of determining knowledge. However, it is commonly accepted that internal search occurs before external search and that it influences the external search of external search activity (Moore and Lehmann, 1980).

The consumer expertise for the product class of wine is well documented. It has been demonstrated to involve two discrete components which interact extensively during the deployment of the special skill for wine (Frøst and Noble, 2002). The first component is perceptual expertise. It is acquired passively with experience in wine (Melcher and Schooler, 1996). The second component is semantic knowledge, gained through active learning about the products (Solomon, 1990). The literature finds semantic knowledge significantly influencing the extent of information search, sources, and attributes used (Barber et al., 2009; Bishop and Barber, 2012; Dodd et al., 2005; Forbes et al., 2008; Veale, 2008; Vigar-Ellis et al., 2015; Viot, 2012). However, there is lack of research regarding perceptual knowledge and its influence on information search and attribute evaluation.

The present study investigates the wine behaviour and wine information search of young adults. It utilises a model which attempts to demonstrate the impact of prior experience, knowledge (subjective and objective), sensory competence, and self-confidence on external search for information about wine.
Based on the research objectives, the recruiting procedure for the quantitative study was set up to select respondents who were wine consumers between 25 and 35 years of age with a proven basic knowledge regarding wine. The first step in the recruitment process was based on a self-selected, non-probability judgment sample that included respondents participating at wine festivals and purchasing wine in specialised wine stores in Skopje and Bitola. Visitors to the events and wine store customers were given a short pre-questionnaire consisting of 12 questions. Two questions regarding the interviewees' age and experience in wine (a five-year minimum) were inclusion criteria, while fewer than three correct answers out of ten questions in the test for objective knowledge of wine were the criterion for exclusion. The knowledge test was used to clear the sample of respondents with a low knowledge of wine. Respondents who met both criteria, the inclusive and exclusive, were contacted by e-mail and provided with a URL link to the first questionnaire. The second questionnaire, including the test questions for objective knowledge and sensory competence, was provided to the respondents attending the event organised as a token of gratitude for participation in this research.

To collect the data, a quantitative approach based on the information obtained from a qualitative study was employed. A quantitative questionnaire was designed to assess the subjects' experience, knowledge (subjective and objective), sensory competence, self-confidence, and sources of information regarding wine. Also investigated were respondents' consumption and purchasing characteristics. The questionnaire was divided into two parts. The first comprised questions related to consumption and purchasing behaviour, preference for wine attributes and information sources, past experience, subjective knowledge, and self-confidence regarding wine, as well as socio–demographic characteristics. This part of the questionnaire was largely inspired by questions from Flynn and Goldsmith (1999), Dodd et al. (2005), Barber (2009) and Bearden et al. (2001). The second part of the questionnaire aims at evaluating objective knowledge and sensory competence regarding wine. The survey instrument incorporates seven objective knowledge and four sensory competence questions designed on the basis of questions from Dodd et al. (2005), Frøst and Noble (2002), and Hughson and Boakes (2001). These questions were validated in three steps: consultation with wine professionals, qualitative study, and pilot study.

As the primary data analysis method, Structural Equation Modelling (SEM) was used to find the relationship among latent constructs described in the theoretical framework. The SEM method is a confirmatory technique based on previous formulated theory. In this context, screening the data before conducting an analysis was necessary. The obtained data were screened for missing values, outliers, normality, and linearity using the Statistical Package for the Social Sciences (SPSS) version 21.0. Descriptive statistics such as frequencies, means, and standard deviations were employed to obtain an overall representation of the sample. The reliability of the scales was evaluated using Cronbach's alpha coefficient, while individual factor loadings, construct average variance extracted, and shared variance between the constructs were used to assess the validity. The factor analysis served to determine the underlying dimensions of the external search and sensory competence constructs. The latent cluster analysis was used to discover groups with similar characteristics. To evaluate the model and answer the research hypotheses, the Analysis of Moment Structures (AMOS) programme by IBM was employed.

The findings of this research study have provided confirmation for the previous studies indicating personal sources and product extrinsic characteristics as important factors influencing the wine purchase decisions of young consumers. The results agree with the considerable body of literature identifying labels as an important source of valuable information on wine (Atkin and Thach, 2012; Elliot and Barth, 2012). Among personal sources, the most important were wine experts (Chaney, 2001; Hristov and Kuhar, 2014a). However, the study has shown that the importance of information sources depends on subjects' prior experience, knowledge, and self-confidence regarding wine. In this regard, respondents with a high knowledge (objective and subjective), sensory competence, and self-confidence regarding wine assigned high importance to the information provided on front and back labels. Conversely, the wine decisions of consumers with a low knowledge (objective and subjective), sensory competence, and self-confidence regarding wine primarily depend on the recommendations of other people.

The relationship among prior experience, subjective and objective knowledge, sensory competence, self-confidence, extrinsic attributes of labels, and personal and impersonal information sources were explored in a structural model. As a result of the high correlations between the indicators of external information search constructs, the model proposed with the hypotheses shows inadequate fit to the data. The fit statistic was improved by removing the insignificant pathways from the model. Among them one with the highest impact on the model fit were pathways of impersonal information source construct. The new model that resulted from this modification was named the "modified hypothesised model".

The "modified hypothesised model" confirms a causal positive relationship between prior experience and objective knowledge, subjective knowledge, and sensory competence in wine. Next, subjective knowledge was shown to positively relate to self-confidence, and self-confidence positively relates to labels as a source of extrinsic wine attributes. The findings also show that self-confidence mediates the extent by which subjective knowledge influences the use of personal sources and label extrinsic attributes. Among other results, the study provides support to the findings of Frøst and Noble (2002) who detected no relationship between objective knowledge and sensory expertise in wine, and to the findings of Flynn and Goldsmith (1999) who identified a positive relationship between objective and subjective knowledge. Overall, the results of this study reinforce and expand previous work on information search regarding wine (Barber, 2009; Dodd et al., 2005; Philippe and Ngobo, 1999; Raju et al., 1995) by specifically identifying how sensory competence relates to different aspects of product knowledge.

This study contributes to a better understanding of consumer information search in the context of wine. The knowledge generated as a result of this research will be of great interest to behavioural scientists, marketing practitioners, and public policy makers. The first will benefit as the study has introduced new relationships that had not been studied before, specifically for the group of young consumers. The second will find the study useful as it provides information that could help improve the marketing and advertising strategies aiming at the important

segment of young adults. The third will gain invaluable information upon which policies that could improve the quality and accessibility of wine information can be formed.

6.2 POVZETEK

V zadnjih treh desetletjih so svetovni trg vina zaznamovale velike spremembe. Povečana proizvodnja v državah brez poprejšnje vinske tradicije in pospešena internacionalizacija trga sta povzročili povečano konkurenco na trgu. K slednji je prispeval še upad povpraševanja v tradicionalnih državah proizvajalkah ter premik od kvantitete h kvaliteti na novih vinskih trgih. Pred tridesetimi leti so Italija, Francija in Španija skupaj proizvedle nekaj več kot polovico vsega vina (Anderson in Nelgen, 2015), generirale pa so tudi večino svetovnega povpraševanja. Dandanes je drugače: poraba vina je v tradicionalnih državah proizvajalkah močno upadla, na 40 odstotkov v Italiji in Franciji ter na le 20 odstotkov v Španiji, česar posledica so presežki evropskega vina (Anderson in Nelgen, 2015; USDA, 2014; Weininstitut, 2017). V istem obdobju je poraba narasla v ZDA in na Kitajskem, ki nista veljali za tradicionalni vinski državi, hkrati pa so potrošniki v teh dveh državah začeli posegati po dražjih in kvalitetnejših vinih, kar je bilo poprej značilno le za evropske potrošnike vina (Kierath in Wang, 2013). Te spremembe na svetovnem trgu so hitro zaznale in izkoristile proizvajalke iz novega sveta - Avstralija, Nova Zelandija, Čile, ZDA, Južnoafriška Republika in Argentina, ki so v zadnjih dveh desetletjih močno povečale svoj izvoz, z dveh na 20 odstotkov, predvsem na račun proizvajalk iz starega sveta – Francije, Italije, Španije, Portugalske in Nemčije (Anderson in Nelgen, 2015; Kierath in Wang, 2013).

Tudi z vidika potrošnje se je svetovni trg vina spremenil, tako geografsko kot demografsko. Nekdaj je v uvozu vodila Nemčija po količini in Velika Britanija po vrednosti (Kierath in Wang, 2013; USDA, 2014; Weininstitut, 2017), zadnji podatki pa na vrh lestvice uvoza vina po vrednosti postavljajo ZDA. Od leta 2013 so ZDA tudi največji svetovni porabnik vina, kjer so s prvega mesta izrinile Francijo (Weininstitut, 2014). Z demografskega vidika se starejša generacija postopoma umika mlajšim potrošnikom, ki v državah vinskega novega sveta spijejo več vina kot katera koli generacija pred njimi, medtem ko se v tradicionalnih vinskih državah mlajši obnašajo podobno kot starejši in pijejo manj vina boljše kvalitete (Mueller in sod., 2011).

Spričo v svetovnem merilu naraščajoče priljubljenosti vina med mladimi potrošniki se je mnogo proizvajalcev vina znašlo pred vprašanjem, ali še naprej svoja vina tržiti tradicionalnim potrošnikom ali preusmeriti svojo trženjsko dejavnost k bodočim potrošnikom, na katere je laže vplivati. Po uspehu nekaterih poizvajalcev iz novega sveta bi se dalo sklepati, da je odgovor nekje vmes, kar se odraža tudi v povečanem zanimanju za raziskave segmenta mladih potrošnikov vina.

Obstoječa literatura obravnava predvsem izkušnje mladih potrošnikov z vinom, njihove preference, značilnosti nakupovanja in potrošnje (Agnoli in sod., 2011; Ritchie in Valentin, 2011; Marinelli in sod., 2013), razlike v odnosu do vina v primerjavi s starejšimi potrošniki (Chrysochou in sod., 2012; Fountain in Lamb, 2011; Garcia in sod., 2013; Qenani-Petrela in sod., 2007), življenjski slog in pogled na vino mladih potrošnikov (Bruwer in Li, 2007; Charters in sod., 2011) ter pomembnost, ki jo pripisujejo lastnostim vina in virom informacij (Atkin in Thach, 2012; Chrysochou in sod., 2012; Hammond in sod., 2013; Hristov in Kuhar, 2014a; Hristov in Kuhar, 2014b). O stopnji znanja in samozavesti pri mladih potrošnikih, čeprav sta

pomembna dejavnika, je znanega le malo, kakor tudi o vplivu znanja, predvsem senzoričnega, in samozavesti na izbiro vira informacij o vinu pri potrošnikih.

V današnjem naglo spreminjajočem se globalnem okolju je tako za tržnike kot za politične odločevalce zelo pomembno vedeti, kje si potrošniki priskrbujejo informacije o vinu in kaj vpliva na iskanje informacij (Srinivasan, 1990; Wilkie in Dickson, 1991). Tržniki morajo poznati dejavnike, ki odločilno vplivajo na iskanje, da lahko načrtujejo učinkovite marketinške strategije, političnim odločevalcem pa razumevanje procesa iskanja in uporabe informacij pri potrošnikih zagotavlja dodatne informacije, s pomočjo katerih lahko oblikujejo ukrepe za izboljšanje dostopnosti in kakovosti informacij o vinu.

Literatura o odločanju potrošnikov razlikuje med notranjim in zunanjim iskanjem informacij (Fodness in Murray, 1999; Moore in Lehmann, 1980). Medtem ko se notranje iskanje nanaša na priklicevanje v zavesti shranjenih podatkov, zunanje iskanje zajema vse druge načine, na katere potrošniki pridobivajo ustrezne informacije o izdelku. Notranje iskanje je bilo v primerjavi z zunanjim deležno manj pozornosti v raziskavah o iskanju informacij. Razlog za to je težavnost empiričnega vrednotenja znanja.

V literaturi se razlikuje dva načina, po katerih se da meriti znanje o nekem izdelku, in sicer s pomočjo objektivnih ali subjektivnih mer (Brucks, 1985). Objektivno znanje se običajno meri s takšnim ali drugačnim testiranjem, subjektivno pa s samoocenjevanjem. Medtem ko se z meritvami objektivnega znanja ugotavlja dejansko znanje potrošnikov, temelji stopnja subjektivnega znanja na posameznikovem lastnem mnenju o izkušenosti z nekim izdelkom in je kot taka v pomoč pri opredeljevanju nakupnih strategij potrošnikov (Park in sod., 1994). Raziskovalci so opisali tudi povezavo med obema merama (Flynn in Goldsmith, 1999). Nadalje je bilo ugotovljeno, da sta ločljivi na podlagi predhodnikov: objektivno znanje tako velja za pretežno odvisno od obstoječega znanja o neki vrsti izdelkov, subjektivno znanje pa naj bi temeljilo na izkušnjah z izdelkom (Park in sod., 1994). Literatura opisuje še eno vrsto znanja: senzorično znanje (Latour K.A. in Latour M.S., 2010). Park in sod. (1994) senzorično znanje povezujejo s pogostostjo uporabe izdelka; razlikujejo ga od splošnega znanja o vrsti izdelkov. Po ugotovitvah iste raziskave imajo izkušeni potrošniki visoko stopnjo obeh vrst znanja, neizvedeni potrošniki pa obratno nizko stopnjo obojega. Frøst and Noble (2002) sta v svoji študiji preučevala razmerje med konceptualnim in senzoričnim znanjem o vinu; odkrila nista nobene povezave, vendar pozivata k nadaljnjim raziskavam na vzorcih sodelujočih z različnimi izkušnjami in povezavo z vinom.

Raziskave zunanjega iskanja informacij deli vire informacij na pretežno medosebne (npr. priporočila prijateljev in sorodnikov), pretežno tržniške (npr. reklame, brošure, pogovori s prodajalci) in nevtralne (tj. objektivne informacije o trgu v časopisih in potrošniških publikacijah). Medtem ko tržniki nadzorujejo pretežno tržniške vire, imajo malo vpliva na pretežno potrošniške vire, pod čimer se razume medosebni pretok informacij. Na nevtralne vire ne vplivajo niti tržniki niti potrošniki (Olshavsky in Wymer, 1995).

Splošno je sprejeto, da ima potrošnik pred nakupom možnost iskanja informacij, velja pa tudi, da je obseg iskanja informacij iz okolja razmeroma omejen (Johnson in Bastian, 2007; Newman, 1977). Po Midgleyju (1983) se potrošniki »zanašajo na majhen izbor virov informacij izmed vseh, ki so jim na voljo (osebni, nevtralni in reklamni)«. Omejeni obseg iskanje informacij pri potrošnikih navaja k podrobnemu raziskovanju dejavnikov, ki odločilno vplivajo na zunanje iskanje (Mata in Nunes, 2010). V tem okviru pričujoča študija preiskuje vpliv predhodnih izkušenj, objektivnega znanja, subjektivnega znanja, senzorične kompetence in samozavesti na pomembnost, ki jo potrošniki pripisujejo trem vrstam virov informacij o vinu. Študija postavlja deset hipotez, ki se osredinjajo na dva posredovalna učinka in na razmerje med dvema latentnima spremenljivkama. Prvi posredovalni učinek se tiče močnega vpliva znanja (subjektivnega, objektivnega in senzoričnega) v primerjavi z vplivom predhodnih izkušenj na samozavesti v primerjavi z vplivom predhodnih izkušenj in znanja (subjektivnega, objektivnega in senzoričnega) na izbor virov informacij za odločanje o nakupu vina. Deseta hipoteza obravnava razmerje med objektivnim in senzoričnim znanjem o vinu.

V obstoječi literaturi je dokazan vpliv predhodnih izkušenj, znanja in samozavesti potrošnikov na odločanje o nakupu izdelka (Bettman in sod., 1998; Payne in sod., 1999), povezanost teh dejavnikov v okviru iskanja informacij pa ni podrobno preučena. Nekaj študij je opazovalo učinek znanja in samozavesti na izbor lastnosti izdelka in virov informacij pri potrošnikih (Mourali in sod., 2005), toda po Fisku in sod. (1994) so ugotovitve teh študij nekonsistentne, po eni strani kot posledica veliko različnih definicij potrošniškega iskanja informacij, po drugi strani pa zaradi različnih orodij za merjenje potrošniškega znanja in samozavesti. V pričujoči študiji sta tako pred analizo učinkov, ki se jih tičejo hipoteze, predstavljeni dve novi orodji. Prvo meri senzorično znanje potrošnikov o vinu, drugo pa potrošniško zunanje iskanje informacij o vinu. Pri oblikovanju prvega orodja je bila uporabljena nova metodologija, v okviru katere se na podlagi kvantitativne študije izbranih senzoričnih lastnosti najprej izbere vzorce vina, primerne za ocenjevanje senzorične kompetence potrošnikov, nato pa se za potrebe ocenjevanja sestavi vprašalnik. Elementi drugega orodja, ki se tiče zunanjega iskanja informacij, so bili izbrani na podlagi kvalitativne študije, merjeni pa s pomočjo aktualne inačice metode lestvičenja po načelu najboljši-najslabši.

Za zbiranje podatkov je bil uporabljen kvantitativni pristop, ki temelji na podatkih, pridobljenih s kvalitativno raziskavo. Za potrebe ocenjevanja izkušenj anketirancev, njihovega znanja (subjektivnega in objektivnega), senzoričnih sposobnosti, samozavesti in virov informacij o vinu je bil zasnovan kvantitativni vprašalnik, ki je poleg tega vrednotil tudi značilnosti potrošnje in nakupa. Vprašalnik je razdeljen na dva dela. Prvi vsebuje vprašanja, povezana s potrošnimi in nakupnimi navadami potrošnikov, njihovimi preferencami za lastnosti vina in vire informacij, predhodnimi vinskimi izkušnjami, subjektivnim znanjem o vinu in samozavestjo glede vina, kakor tudi socialno-demografskimi značilnostmi. Ta del vprašalnika je v veliki meri sestavljen po zgledu vprašanj Flynna in Goldsmitha (1999), Dodda in sod. (2005) in Barberja (2009). Drugi del vprašalnika je namenjen ocenjevanju objektivnega in senzoričnega znanja o vinu. Instrument ankete vključuje sedem vprašanj glede objektivnega znanja in štiri glede senzorične kompetence, zasnovana na podlagi vprašanja so bila preverjena v treh korakih: s posvetovanjem z vinskimi strokovnjaki, kvalitativno raziskavo in pilotno raziskavo.

Z ozirom na namen študije je bil izbor anketirancev za kvantitativno raziskavo pripravljen tako, da je zajel med 25 in 35 let stare vinske potrošnike z dokazanim osnovnim znanjem o vinu. Prvi korak rekrutiranja je temeljil na nenaključnem, namensko izbranem vzorecu, v katerega so bili zajeti udeleženci vinskih festivalov in kupci vina v specializiranih vinskih trgovinah v Skopju in Bitoli.

Obiskovalci prireditev in stranke vinskih trgovin so prejeli kratek predhodni vprašalnik z 12 vprašanji. Vključitvena kriterija sta bili vprašanji o starosti anketirancev in njihovih izkušnjah z vinom (najmanj pet let), medtem ko je bilo merilo za izključitev pravilen odgovor na manj kot tri od desetih vprašanj v zvezi z objektivnim znanjem o vinu. Namen preizkusa znanja je bil izključiti iz vzorca anketirance z majhnim znanjem o vinu. Anketiranci, ki so izpolnjevali tako vključitvene kot izključitvene kriterije, so po elektronski pošti prejeli spletno povezavo na prvi vprašalnik. Drugi vprašalnik, ki obsega vprašanja v povezavi z objektivnim in senzoričnim znanjem o vinu, je bil predložen udeležencem dogodka, organiziranega v zahvalo za sodelovanje v raziskavi.

Kot metoda za iskanje povezave med latentnimi konstrukti, opisanimi v teoretičnem okviru, je bil uporabljen model strukturnih enačb (MSE). MSE je potrditvena tehnika, ki temelji na predhodni teoriji. V tem kontekstu je bilo potrebno preverjanje podatkov pred izvedbo analize. Pridobljeni podatki so bili pregledani za manjkajoče vrednosti, osamelce, normalnost in linearnost z uporabo programskega orodja SPSS 21.0. Parametri opisne statistike – frekvence, povprečja, standardni odkloni – so bili uporabljeni za pridobitev pregleda nad vzorcem Zanesljivost lestvic je ocenjena s pomočjo cronbachovega koeficienta alfa, veljavnost pa s faktorjem obremenitve, povprečno ekstrahirano varianco in skupno varianco med konstrukti. Za določitev osnovne dimenzije zunanjega iskanja in konstrukta za senzorično kompetenco je bila uporabljena faktorska analiza. S pomočjo analize latentnih razredov so bile ugotovljene skupine s podobnimi lastnostmi. Ocenjevanje modela in preverjanje hipotez raziskave je potekalo v programu IBM Analysis of Moment Structures (AMOS).

Izsledki pričujoče študije potrjujejo ugotovitev predhodnih študij, da osebni viri informacij in ekstrinzične lastnosti izdelkov znazno vplivajo na odločitev potrošnikov o nakupu vina. Prav tako izsledki pričujoče študije soglašajo s spoznanjem obsežnega korpusa literature, da so etikete za potrošnike pomemben vir dragocenih informacij (Atkin in Thach, 2012; Elliot in Barth, 2012). Kot v predhodnih so bile tudi v pričujoči študiji referenčne skupine prepoznane kot pomemben dejavnik pri odločanju mladih potrošnikov za vino (Chaney, 2001; Hristov in Kuhar, 2014a), vendar je njihova pomembnost odvisna od posameznikovih predhodnih izkušenj, subjektivnega znanja in samozavesti glede vina. Kot so pokazali že Atkin in Thach (2012) ter Alba in Hutchinson (1987), se tudi po izsledkih pričujoče študije mladi potrošniki močno zanašajo na znanje drugih, predvsem vrstnikov in vinskih strokovnjakov. Razlog za to je verjetno dvosmernost takšne komunikacije in možnost dodatnih pojasnil, hkrati pa tudi objektivnost in nevtralnost, ki jo potrošniki pripisujejo takšnim virom informacij. Sodelujoči v anketi so nadalje visoko ocenili tudi sprednjo in zadnjo etiketo, ki jima očitno pripisujejo velik pomen pri odločitvi za nakup vina. Sprednja etiketa je bila pri tem ocenjena nekoliko više kot zadnja, na pomembnost obeh pa negativno vpliva posameznikovo subjektivno znanje in

samozavest glede vina. Čeprav obstoječe raziskave poudarjajo vlogo iz množičnih medijev pridobljenih informacij o vinu (Olsen in sod., 2006), se v tej študiji ni izkazala kot pomembna.

Z analizo latentnih razredov so bili subjektivno in objektivno znanje, senzorična kompetenca ter samozavest glede vina pri sodelujočih v anketi razvrščeni v štiri skupine po subjektivnem znanju in samozavesti ter dve po objektivnem znanju in senzorični kompetenci. Vsaka skupina ima določene značilnosti ter tako zagotavlja dragocene teoretične in praktične informacije o odnosu mladih odraslih do vina.

S stališča znanja o izdelku je pričujoča študija neobičajna, saj je izmerila in preučila štiri vidike znanja o vinu: predhodne izkušnje, objektivno znanje, subjektivno znanje in senzorično kompetenco. Ugotovitve o njihovih medsebojnih povezavah so znaten prispevek k teoriji potrošniškega znanja o vinu.

V pričujoči študiji je bil predstavljen in empirično preizkušen model potencialnih vplivov na potrošniške preference pri iskanju virov informacij o vinu. Z desetimi hipotezami se je preverjalo učinek predhodnih izkušenj, znanja (objektivnega, subjektivnega in senzoričnega) ter samozavesti na nakupne odločitve preko izbire virov informacij. Hipoteze 1, 2 in 3 predlagajo pozitivno vzročno razmerje med predhodnimi izkušnjami z vinom na eni strani ter objektivnim, subjektivnim in senzoričnim znanjem na drugi strani. Ugotovljena je bila izrazita vzročna povezanost, kar potrjuje te hipoteze. Najmočnejša je zveza med predhodnimi izkušnjami in subjektivnim znanjem, v skladu s čimer bi bilo pričakovati, da se pri več izkušnjah močno poveča subjektivno znanje in nekoliko manj poveča objektivno in senzorično znanje. V bistvu rezultati pričujoče študije kažejo, da je to, kar potrošniki mislijo, da vedo o vinu, bolj povezano z izkušnjami z vinom kot pa z dejanskim znanjem o vinu. Ta ugotovitev soglaša s predhodnimi raziskavami, po katerih je razmerje med objektivnim znanjem in izkušnjami šibkejše od razmerja med izkušnjami in subjektivnim znanjem (Dodd in sod., 2005; Part in sod., 1994; Barber, 2009). Na senzorično kompetenco je bil v tej študiji ugotovljen podoben učinek predhodnih izkušenj kot na objektivno znanje.

Med drugimi rezultati te raziskave je drugačno splošno objektivno znanje, kot ga navaja Barber (2009); pravilnost odgovorov sodelujočih na vprašanja v pričujoči je bila 47,6 odstotka, pri Barberjevem vzorcu pa 63,8 odstotka. Razliko gre verjetno pripisati različnim načinom zbiranja podatkov – pri Barberju (2009) je bil to spletni vprašalnik, v tej študiji pa fizični obrazec, izpolnjevan *in situ*. Obe študiji sta izmerili podobno stopnjo subjektivnega znanja, Barber (2009) 3,4/7 in ta študija 3,6/7.

Alba in Hutchinson (1987) ter Park in sod. (1994) trdijo, da izkušnje z nekim izdelkom gradijo znanje o tem izdelku in da lahko ne glede na morebitno nizko stopnjo dejanskega znanja povečajo samozavest glede znanja. Loibl in sod. (2009) nadalje trdijo, da povišana stopnja znanja lahko poviša nakupno samozavest. V tem okviru je pričujoča študija ugotovila, da 11-letne izkušnje z vinom bolj povečajo samozavest (5,1/7) kot subjektivno znanje (3,4/7).

Od hipotez 5, 6 in 7 je bila potrjena le 6., in sicer z izrazitim vzročnim razmerjem med subjektivnim znanjem in samozavestjo. Za povezavo med objektivnim znanjem in samozavestjo, ki jo ugotavlja Barber (2009), pričujoča študija ne prinaša potrditve. Je pa

subjektivno znanje močno povezano s samozavestjo, iz česar bi se dalo sklepati, da stopnja znanja o vinu, ki si jo pripisuje posameznik, vpliva na njegovo samozavest.

Park in Lessig (1981) priznavata ustreznost objektivnega in subjektivnega znanja kot mere za znanje o vrsti izdelka, vendar njune ugotovitve kažejo tudi, da subjektivne mere bolje opisujejo potrošniške strategije, ker temeljijo na dojemanju, torej na tem, kako potrošnik ocenjuje svojo stopnjo znanja o izdelku.

Rezultati pričujoče študije navajajo stopnjo samozavesti obravnavati kot morda dodatek, del stopnje samoocenjenega znanja. To je v skladu z ugotovitvami Parka in Lessiga (1981), po katerih lahko izmerjeno samoocenjeno znanje odraža tako samozavest kot objektivno znanje. Med drugimi izsledki pričujoče študije je nagnjenost potrošnikov z visoko stopnjo znanja k iskanju po lastnem spominu pri nakupnih odločitvah. Ker se subjektivno znanje dokazano poveča z vsako izkušnjo z idelkom, bi se potrošnike, ki menijo, da vedo o vinu veliko, verjetno lahko štelo za dolgoletne potrošnike vina. Obseg zunanjega iskanja pri takih stalnih strankah se morebiti da znižati z vzdrževanjem njihovega zadovoljstva.

Od naslednjih hipotez – 8, 9 in 10 – je bila potrjena le osma. Ugotovitev, da je med samozavestjo in upoštevanjem ekstrinzičnih lastnosti izdelka izrazito pozitivno razmerje, je bila pričakovana, saj visoka stopnja samozavesti napoveduje potrošnikovo večje zaupanje v informacije z etiket v primerjavi z zunanjimi viri informacij (npr. prijatelji, sorodniki) pri odločitvah za nakup vina.

Med nameni te raziskave je bilo med drugim opredeliti posredovalni učinek samozavesti na objektivno znanje, subjektivno znanje in senzorično kompetenco pri uporabi virov informacij o vinu. Predhodne študije ugotavljajo izrazit vpliv subjektivnega in objektivnega znanja na izbor med vrstami virov informacij, obravnavanih v tej raziskavi, česar pa tukajšnji izsledki ne potrjujejo. Vpliv senzorične kompetence na izbor virov informacij doslej ni bil preučen; pozitivno razmerje bi bilo pričakovati med senzorično kompetenco na eni strani in upoštevanjem ekstrizičnih lastnosti ter neosebnih virov na drugi strani, negativno razmerje pa med senzorično kompetence s katero od opazovanih dimenzij zunanjega iskanja infomacij. Delni posredovani model ni razkril nobenih značilnih neposrednih povezav. Poleg tega, v nasprotju z raziskavami Dodda in sod. (2005) ter Barberja (2009), ni bila odkrita nobena značilna neposredna povezava med subjektivnim znanjem na eni ter »ekstrinzične lastnosti na etiketi« in »osebni viri« na drugi strani. Kar se tiče objektivnega znanja, ta študija enako kot Barber (2009) ni odkrila nobene povezave z »osebni viri«, drugače kot Dodd in sod. (2005) pa tudi nobene povezave z »neosebni viri«.

Zabeležen je bil posreden pozitiven učinek subjektivnega znanja in posreden negativen učinek objektivnega znanja na »ekstrinzične lastnosti na etiketi« preko samozavesti. Le del neposrednega učinka subjektivnega in objektivnega znanja na samozavest se prenaša na »upoštevanje ekstrinzičnih lastnosti«, kar potrjuje posredovalni učinek samozavesti na subjektivno in objektivno znanje. Med drugim je bilo v tej študiji ugotovljeno še, da več predhodnih izkušenj posredno vpliva na samozavest potrošnikov, zmanjšuje zanašanje na osebne vire informacij in povečuje pomen ekstrinzičnih lastnosti izdelka. Izsledki pričujoče raziskave potrjujejo pomembno vlogo predhodnih izkušenj v potrošniškem odločanju za vino. Konstrukt predhodnih izkušenj se je izkazal kot najboljši pokazatelj stopnje potrošnikove senzorične kompetence, pa tudi subjektivnega in objektivnega znanja. V študiji je opisana tudi razlika med samoocenjeno in dejansko stopnjo znanja potrošnikov. Nadalje je bila prikazana zveza med visoko stopnjo samoocenjenega znanja in visoko stopnjo samozavesti. Slednja povzroča večjo nagnjenost potrošnika k zanašanju nase in na lastno opažanje ekstrinzičnih informacij o vinu kot na druge vire informacij. Manjša je pri tem vloga objektivnega znanja in senzorične kompetence.

Izsledki te raziskave soglašajo s tistimi Frøsta and Nobla (2002), da med objektivnim in senzoričnim znanjem o vinu ni povezave. Avtorici pozivata k ločeni obravnavi vsakega od obeh elementov znanja o vinu in k ločeni preučitvi njunih učinkov na vedenje potrošnikov. Med njunimi drugimi ugotovitvami je pozitivno razmerje med objektivnim in subjektivnim znanjem, o čemer pišejo tudi Goldsmith in d'Hauteville (1998), Philippe in Ngobo (1999) ter Goldsmith (2000).

Glavni namen te študije je bil ugotoviti veljavnost in zanesljivost modela vedenja potrošnikov, ki združuje več vidikov znanja o izdelku. Preizkušeni model prispeva k obstoječemu korpusu znanja o odnosu potrošnikov do vina z dognanjem, da so vsi štirje vidiki znanja o vinu pomembni konstrukti teorije potrošniškega odločanja in da so nemara ključni za boljše razumevanje odnosa potrošnikov do vina.

Pričujoče raziskave sem se lotil z željo po novih odkritjih na področju raziskav vedenja potrošnikov v okviru vinarstva in s prepričanjem, da zavedanje in upoštevanje vloge kognitivnih in senzoričnih vidikov znanja v teoriji potrošniškega odločanja ni zanemarjena tema, marveč nova paradigma trženjskih raziskav. Podjetja morajo za uspešno poslovanje slediti produktnim inovacijam ter razumeti in upoštevati potrošnike. S tega stališča vsebuje pričujoča študija ekskluzivno znanje o poskusu oblikovanja mere za senzorično kompetenco potrošnikov za vino. Čeprav sem upošteval uveljavljene postopke oblikovanja latentnih lestvic (Clark in Watson, 1995; Hinkin in sod., 1997), me izbrana pot ni privedla do pričakovanega rezultata. Z drugimi besedami, moje orodje za merjenje senzorične kompetence mladih potrošnikov za vino ni dalo reflektivnega latentnega konstrukta. Z uporabo glavnih komponent pa mi je vseeno uspelo razviti formativni konstrukt. Razlog za neuspeh je težavnost določevanja vzročnosti v zvezi kazalec-latentni konstrukt, na kar opozarja literatura in kar sem imel pri oblikovanju mere za senzorično kompetenco za vino tudi v mislih. Parr in sod. (2002; 2004) trdijo, da je višja senzorična kompetenca, in ne morda boljši semantični spomin ali boljše prepoznavanje vonjev, razlog za boljše dosežke vinskih izvedencev. Po drugi strani pa Ballester in sod. (2008) ter Hughson in Boakes (2002) menijo, da je izvedenost v vinu posledica večje kognitivne, ne senzorične sposobnosti. Pričujoča študija prinaša podporo obema pogledoma: orodje za merjenje senzorične kompetence pri preučevanju obeh sposobnosti hkrati da formativni konstrukt, pri preučevanju le konceptualnega (izkustvenega) znanja pa reflektivni konstrukt.

Pričujoča raziskava ima več omejitev, ponuja pa tudi možnosti za nadaljnje raziskave. Glavna omejitev je majhnost vzorca – 165 sodelujočih je v celoti odgovorilo na vprašanja v zvezi z objektivnim znanjem in senzorično kompetenco. Čeprav je bil začetni vzorec teh, ki so izpolnili spletni vprašalnik, dovolj velik, je le malo sodelujočih pokazalo zanimanje za degustaciji vina, zaradi česar je bilo *in situ* izpolnjenih malo vprašalnikov. Druga omejitev je neverjetnostno (tipično) vzorčenje v le eni državi – Republiki Makedoniji. Povrhu študija preučuje le en segment vinskega trga, namreč mlade odrasle. V bodoče raziskave bi bilo koristno vključiti večji vzorec, sestavljen tudi iz drugih segmentov.

Pričujoče delo je začetna študija učinka konstrukta senzorične kompetence na odnos potrošnikov do vina. Odgovorila je na več vprašanj, povezanih z vlogo senzorične kompetence v nakupu vina in iskanju informacij o vinu ter z razmerjem med predhodnimi izkušnjami, znanjem in samozavestjo glede vina, vendar je za nadaljnje raziskave še več kot dovolj snovi. Spodnji napotki niso izčrpni, ponujajo pa nekaj iztočnic za bodoče študije.

Prihodnje raziskave naj vključijo večje število sodelujočih in večje število vprašanj za ocenjevanje različnih podrobnih vidikov senzorične kompetence za vino. Formulacija vprašanj je pri tem pomembna. Instrument lahko navaja k preučevanju določenega vidika izkustvenega znanja ali pa zahteva prepoznavanje nespecifičnih senzoričnih senzoričnih sposobnosti v zvezi z vinom, recimo zaznavo stopnje sladkosti, v vsakem primeru pa njegova zasnova vpliva na smer vzročnosti in na zanesljivost konstrukta. V tej študiji uporabljeni instrument obsega šest delov, od katerih štirje preverjajo izkustveno znanje, dva pa sposobnost sodelujočih za prepoznavanje okusnih elementov, ki jih ne vsebuje le vino. Rezultati kažejo, da izbrana kombinacija vprašanj ni dala zanesljive reflektivne mere, kar pa je bilo pričakovano. Bodoče študije naj v senzoričnem delu vključijo več vprašanj, izmed katerih bo s filtracijo izbrano manjše število takšnih, na podlagih katerih se da dobiti zanesljivo reflektivno latentno mero.

Pričujoča disertacija vsebuje izhodišče za razvoj lestvice za merjenje senzoričnega znanja potrošnikov o vinu. Ta konstrukt je bil merjen s pomočjo šest vprašanj, vsako usmerjeno na en posamezen vidik senzorične kompetence potrošnikov za vino. Za preučitev drugih vidikov so potrebne nadaljnje študije. Prihodnjim raziskovalcem se v tem okviru svetuje razviti veljavno reflektivno lestvico za preučevanje odnosa različnih potrošnikov do vina. Tržnikom bi bilo tako orodje dragoceno za segmentacijo potrošnikov. Bodoče raziskave naj takšno lestvico poskusijo uporabiti tudi za ocenjevanje kompetence vinskih izvedencev, saj je to nadvse pomemben kriterij za izbor v komisije ocenjevalcev vin.

Ta raziskava se osredinja na konstrukt senzorične kompetence za vino, ki ga je v skladu z izsledki moč razdeliti na dve komponenti, izkustveno in sposobnostno. Slednja je splošnejša in ni omejena na vino. Predhodne raziskave so preučevale značilnosti izvedenstva v vinu, nobena pa se doslej ni ukvarjala z vprašanjem, ali izkustveno znanje o vinu vpliva na senzorično kompetenco za hrano in ali posameznikova senzorična sposobnost za prepoznavo določenih organoleptičnih spojin predvideva takšen ali drugačen odnos do določenih vrst vina.

Glede na dejstvo, da sodelujoči v tej raziskavi v povprečju niso dosegli visoke ocene pri subjektivnem znanju v primerjavi s samozavestjo, bi bilo zanimivo preučiti razloge za to samozavest.

Za izboljšanje veljavnosti modela bi ga bilo treba preveriti na različnih vzorcih. Znano je, da je potrošniško iskanje informacij različno pri različnih izdelkih, zato naj bodoče raziskave preučijo proces iskanja informacij o, denimo, pivu ali drugih alkoholnih pijačah. Izsledki te raziskave nakazujejo več možnih prihodnjih usmeritev. Med njimi je kvalitativna analiza razlogov, zakaj mladi odrasli običajno ne upoštevajo medosebnih virov pri odločitvah glede vina. Kakor pa trdijo Assael (1984), Bettman (1979) ter Engel in sod. (2000), je izpostavljenost oglasom za določen izdelek pomemben dejavnik v procesu odločitve o nakupu. Za razumevanje vpliva oglaševanja bi bila zelo koristna retrospektivna študija, ki bi preučila vsebino oglasov za vino znotraj določenega obdobja in rezultate primerjala s socialno-demografskimi trendi med potrošniki ter vzorci nakupovanja in potrošnje v istem obdobju. Poleg tega bi bilo zanimivo v primerjavo vključiti dejavnost zunanjega iskanja informacij med starejšimi potrošniki in odkriti razvoj iskanja informacij s staranjem. Takšna raziskava bi bila zlasti plodna na mednarodnih vzorcih, saj bi lahko pokazala razlike med pogledi in preferencami mladih odraslih iz različnih držav. Preučitev skupin mladih potrošnikov iz različnih držav ali regij, nenazadnje, bi utegnila osvetliti morebitne razlike v dojemanju tveganj in iskanju informacij med prebivalci različnih območij; v tem okviru bi se dalo primerjati tudi značilnosti prebivalcev mest in podeželja.

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ANNEXES

Annex 1:

WINE SCREENING SURVEY

1 How old are you?	_					
2 Do you consume alcoholi	c bevera	ges?	Yes	O N	0 0	
3 Which one of the following	ng alcoho	olic beverag	ge category y	ou consume	the most?	
O Spirits (raki, whisky,	votka et	c,)				
O Wine and sparkling v	vines					
O Beer						
O Sweet alcoholic drink	<s< td=""><td></td><td></td><td></td><td></td><td></td></s<>					
O Mix of alcoholic and	non-alco	oholic drink	KS .			
4 How many times in the w	eek on a	verage you	consume alc	oholic drinks	?	
5 Of that, how many times of	do you c	onsume wi	ne?			
6 How long have you been	a wine c	onsumer? N	No, year(s) (if	f less than 1 y	vear, use 1): _	
7 Which is the most prevale	ent white	grape vari	ety in Republ	lic of Macedo	onia?	
Riesling , Chardo	onnay 🗌	, Smec	lerevka 🗌,	Stanushina	a 🗌, 🛛 Doi	n't know 🗌
8 What style is the famous 1	Macedor	nian wine "	T'ga za jug"?	?		
Dry barrel aged wine ,		Sweet	barrel aged	wine 🗌,		
Semy-Dry wine ,	Don't k	now 🗌				
9 Tannins give to the wine:						
Bitter (astringent) taste ,	Sweet	taste 🗌,	Sour taste], Salty taste	e□, Don'	t know 🗌
10, Mark the characteristic	colour of	f the follow	ving wines?			
Rakaciteli	Sira	Merlot	Semion	Zilavka	Muscato	Kratoshia

	Rakaciteli	Sira	Merlot	Semion	Zilavka	Muscato	Kratoshia
Red							
White							
Don't							
know							

11 What is your gender?

Male , Female

12 Place write your e-mail address if you agree to cooperate further in our study?

13 In the case you don't you e-mail address frequently, please indicate your telephone number?

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ВИНСКИ ПРАШАЛНИК ЗА РЕГРУТАЦИЈА

1 Која е ваш	пата возрас	т?						
2 Дали консумирате алкохолни пијалаци? Да 🔿 Не 🔿								
 З Кои две од наведените категории на алкохолни пијалаци најмногу ги преферирате? Жестоки пијалаци (ракија, виски ") Вино и пенливи вина Пиво Ликери Мешани алкохолни со безалкохолни пијалаци (Микс) 								
3 Колку ден	на нелелно	во прос	ек консу	мирате алк	охол?			
4 Од бројот	денови од	говорен	и во прет	т гходното п	рашање, ко	лку дена в	онсумирате	вино?
6 Колку вре	еме конзум	ирате ві	ино? Број	ј на годин(и) (доколку	е помалк	у од 1, напи	пете 1)
7 Која од на	аведените с	орти на г	грозје е	најзастапе	на бела сор	га во Мак	едонија?	
Ризлинг	, Ш	Іардоне	, (, , , , , , , , , , , , , , , , , ,	Смедеревка	а 📋, Ст	анушина	, He	знам 🔄
8 Каков вид	(стил) е ві -	иното Т	′га за Југ	?	т	~	~	_
Суво вино (рез ароми о	д буре	, 		Іолу суво в	ино без ар	оми од буре	
Суво вино с	со интензив	зна аром	иа на даб	<u></u> , C	латко вино	∟,	Не знам _	
9 Ганините	на виното	му дава	ат?				— 11	
1 орчлив (тр	лкав) вкус	 , C	падок вку	/c <u></u> , Ki	исел вкус], Солен і	вкус ∐, Н	е знам 🔄
10 Означете	е ја традиці	ионална	та ооја н	а следните	вина?	M	TC ·	
I	кацители	Сира	мерло	Семијон	жилавка	мускат	кратошија	
црвена Бела								_
Не								_
знам								
1				I	I.			
11 Колку го	дини имат	e?						
12 Кој е вашиот пол?								
Маж 🗌,	Жен	a 🗌						
13 Која е ва	шата елект	ронска	пошта?					
14 Кој е вашиот телефонски број?								

Annex 2:

PILOT QUESTIONNAIRE

1 How long have you been a wine consumer? No, year(s) (if less than 1 year, use 1) _____

2 Approximately how many bottles of wine do you purchase per month (750 ml Equivalent)

3 I drink wine at home:

- \bigcirc Every day,
- Ο Most days,
- Ο Weekly,
- Ο Fortnightly,
- 0 0 Monthly,
- Up to six/year
- \bigcirc I don't drink wine at home

4 I drink wine outside of home?

- Ο Every day,
- Ο Most days,
- Ο Weekly,
- Fortnightly,
- Õ O Monthly,
- Ο Up to six/year
- Ο I don't drink wine in restaurant/bar

	Not Very Important	2	3	4	5	6	Very Important
Grape variety	O	0	0	0	0	0	О
Brand	0	0	0	0	0	0	О
Vintage	0	0	0	0	0	0	Ο

5 How important are the following wine attributes in your decision to purchase wine?

6 For each of the following tables, pick the ONE source of information that MOST influence your wine choice and one that LEAST

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1	THE LEAST	SOURCE OF WINE INFORMATION	THE MOST	-
		Information written on the front label		
- 😌		Information on the internet		
		Recommendation from family members		
2	THE LEAST	SOURCE OF WINE INFORMATION	THE MOST	
		Recommendation from friends and colleagues		~
<u>,</u>		Award stickers on the bottle		
		Information on the internet		
3	THE LEAST	SOURCE OF WINE INFORMATION	THE MOST	
		Information for wine from magazines and/or newspapers		<u> </u>
500		Award suckers on the body label		6
4	THE LEAST			-
4		Becommendation from friends and colleagues		
		Information written on the back label		<u>(18</u>)
(Jac	П	Recommendation from family members	H	<u> </u>
5	THE LEAST	SOURCE OF WINE INFORMATION	THE MOST	
_		Award stickers on the bottle		
- 😔		Expert opinion		<u> (</u>
20		Information written on the front label		
6	THE LEAST	SOURCE OF WINE INFORMATION	THE MOST	
		Information on the internet		~
- 😌		Information written on the back label		- (2 2)
		Expert opinion		
7	THE LEAST	SOURCE OF WINE INFORMATION	THE MOST	
		Expert opinion		<u> </u>
500		Information found on television		
8	THELEAST	SOUDCE OF WINE INFORMATION	THE MOST	
0		Information written on the front label		
		Recommendation from friends and colleagues	H	<u> (19</u>)
500		Information for wine from magazines and/or newspapers		<u> </u>
9	THE LEAST	SOURCE OF WINE INFORMATION	THE MOST	-
_		Information written on the front label		
- 😌		Information written on the back label		<u> (</u>
<i></i>		Information found on television		
10	THE LEAST	SOURCE OF WINE INFORMATION	THE MOST	
		Information found on television	Ц	1
500		Information for wine from magazines and/or newspapers		
11				-
11		Recommendation from family members		
- 😔	H	Expert opinion	H	<u>())</u>
24		Information for wine from magazines and/or newspapers		<u> </u>
12	THE LEAST	SOURCE OF WINE INFORMATION	THE MOST	
		Recommendation from family members		
- 😴		Award stickers on the bottle		<u>(</u>
<i>w</i> –		Information found on television		

No	Personal outcomes decision making wine	Strong	gly Di	sagre	e S	trong	ly Ag	ree
1	I often have doubts about the wine purchase decisions I make	1	2	3	4	5	6	7
2	I frequently agonize over which wine to buy	1	2	3	4	5	6	7
3	I often wonder if I made the right wine decision	1	2	3	4	5	6	7
4	I never seem to find the right wine for me	1	2	3	4	5	6	7
5	Too often the wine I buy is not satisfying	1	2	3	4	5	6	7

7 In making my purchase selection of wine:

8 Please select the appropriate column to indicate your response to the following statement below:

No		Not a	at all k	nowle	d,	Very knowledge					
1	Compared to others you know, how knowledgeable are you about different types of wine?	1	2	3	4	5	6	7			
						Very Much					
2	Compared to a wine expert, how much do you feel you know about wine?	1	2	3	4	5	6	7			
			Strongly Disagree Stron				ngly A	gree			
3	I know pretty much about wine	1	2	3	4	5	6	7			
4	I do not feel very knowledgeable about wine	1	2	3	4	5	6	7			
5	Among my friends I am the wine expert	1	2	3	4	5	6	7			
6	I know less about wine then others do	1	2	3	4	5	6	7			

DEMOGRAPHICS

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- O Skopje
- O Kavadarci
- O Negotino
- Other: _____

10 In what year were you born? _____

11 What is your gender?

- O Male
- O Female

12 What was the level of education you have completed?

- **O** Elementary
- O High school
- O Graduate
- **O** Postgraduate (Maters and PhD)

13 What is your employment status?

- O Employed
- **O** Unemployed
- **O** Volunteer
- **O** Student
- O Other _____

14 Describe your monthly disposable income:

- Very low
- O Low
- O Average
- O High
- **O** Very high

15 Please write your e-mail address as we needed to send you the invitation for the organized free wine tasting?

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WINE OBJECTIVE KNOWLEDGE

16 Which of the following is a red wine? Riesling , Chardonnay , Malbec , Rkaciteli , Don't know
17 Which of the following wines has more tannins and more astringent taste?
Red wine, Sparkling wine, White wine, Rose wine, Don't know
18 Which is not a famous French wine region?
Bordeaux , Champagne , Piedmont , Alsace , Don't know
19 Table wines have an alcohol content of:
1-3% , 4-7% , 8-14% , 15-24% , Don't know
20 Which of the following is not barrel-aged flavor?
Vanilla , Coffee , Mint , Coconut , Don't Know
21 Which of the following is the largest wine producer?
Portugal, China, France, Australia, Don't Know
22 Burgundy is the French term for which wine?
Cabernet Sauvignon , Merlot , Pinot Noir , Sauvignon Blank , Don't know
23 What is the main grape variety used in "T'ga za Jug"?
Cabernet Sauvignon , Merlot , Pinot Noir , Vranec , Don't know
24 What is the distinction between aroma and bouquet?
Bouquet is produced by red grapes and aroma by white grapes
Bouquet occurs only in sparkling wines and aroma occurs only in still wines
Aroma is based on climate, bouquet on soils
Bouquet comes from fermentation procedures whereas aroma has origins in the grape alone
Don't Know
SENSORY COMPETENCE IN WINE

25 Using your sensory skills, please classify the wine in one of the following categories: Dry stainless steel fermented and aged wine , Semidry wine , Sweet wine , Don't Know
26 In the wine you are going to taste one gustatory sensation stands out. Please identify which one it is Sweet taste, Bitter (Astringent), Sour, Don't Know
27 Using your sensory skills, please classify the wine in one of the following categories: Oak maturated, Young wine with intensive fruity aroma, Old vintage stainless-steel maturated wine, Don't Know
28 The wine has a wine fault, Using your wine sensory skills please identify it, Cork taint, Acetic acid, Oxidation, Don't Know
29 The wine has a wine fault. Using your wine sensory skills please identify which one it is. Cork taint
30 Which of the following wine vintages best describe the wine you are tasting?Young wine - 2013 vintage □,2009 vintage wine □,2002 vintage wine □,Don't Know □

ПИЛОТ ИСТРАЖУВАЊЕ ЗА НАВИКИТЕ И ОДНЕСУВАЊЕТО НА МЛАДИТЕ КОН ВИНОТО

Почитувани,

Прашалник кој го добивте е дел од истражување посветено на навиките и однесувањето на младите кон виното, За да се овозможи оваа студија љубезно Ве молиме да дадете одговор на сите поставени прашања, За целосно пополнување на анкетата планирано е да посветите 15 минути од Вашето слободно време,

Структура на прашалникот кој треба да го пополните е следната:

- првиот дел се состои од прашања поврзани со купувачките навиките и искуството со вино,
- вториот дел го испитува субјективното знаење и самодоверба во изборот на вино,
- третиот дел го проучува значењето на изворите на информации,
- четвртиот дел вклучува прашања од социо-демографски карактер

-петтион дел вклучува прашања поврзани со вашето објективно и сензорско познавање на виното

Доставените лични информации ќе бидат третирани со доверливост, Истите ќе бидат користени само за истражувачки цели,

Вашата помош и посветено време многу го цениме, Искрено сме Ви благодарни за соработката,

1 Колку долго консумирате вино? Наведете број на години (доколку консумирате помалку од една година напишете 1)_____

2 Колку шишиња вино, просечно, купувате месечно? (Количината да биде изразена во однос на шише од 750 мл,)

- О Помалку од 2,
- О Повеќе од 2 помалку од 5,
- О Повеќе од 5 помалку од 10,
- О Повеќе 10 помалку од 15,
- О Повеќе од 15,
- О Не купувам вино

3 Консумирам вино дома:

- О Секој ден,
- О Неколку пати неделно,
- О Еднаш неделно,
- О Еднаш на две недели,
- О Еднаш на месец,
- О До шест пати годишно,
- О Не консумирам вино дома

4 Консумирам вино во ресторан или кафуле:

- О Секој ден,
- О Неколку пати неделно,
- О Еднаш неделно,
- О Еднаш на две недели,
- О Еднаш на месец,
- О До шест пати годишно,
- О Не консумирам вино во ресторан или кафуле

5 Колку се значајни за Вас следните вински атрибути на Вашиот избор на вино?

	Најмалку важно	2	3	4	5	6	Најмногу важно
Сорта на грозјето	Ο	Ο	0	0	0	0	О
Вински бренд	0	О	0	О	О	0	О
Година на берба	0	О	0	О	О	0	О

6 Од подолу наведените извори на информации за вино, ве молам посочете ЕДЕН кој најмногу влијае и ЕДЕН кој најмалку влијае на вашиот избор при купување или нарачување на вино, Табелите дадени во продолжение пополнете ги како во прикажаниот пример,

ПРИМЕР:

	НАЈМАЛК У	ИЗВОР НА ИНФОРМАЦИЈА	[ΑJΜΗΟΓ Υ	
		Информации дадени на предната етикета Информации добиени од интернет		<u>(</u>
50		Препорака од член на фамилија	\square	

Во секоја од прикажаните табели се дадени различни КОМБИНАЦИИ од најчесто користените извори на информации за вино, За секоја табела означете ЕДЕН извор на информација кој најмногу влијае и ЕДЕН кој најмалку влијае на вашиот избор на вино,

1	НАЈМАЛКУ	ИЗВОР НА ИНФОРМАЦИЈА	НАЈМНОГУ	
-		Информации дадени на предната етикета		
- 😂		Информации добиени од интернет		- <mark>(2</mark> 2)
10		Препорака од член на фамилија		-
2	НАЈМАЛКУ	ИЗВОР НА ИНФОРМАЦИЈА	НАЈМНОГУ	
		Препорака од пријател и колега		~
- 😌		Реклама за награда за вино на етикета		- (2 2)
		Информации добиени од интернет		
3	НАЈМАЛКУ	ИЗВОР НА ИНФОРМАЦИЈА	НАЈМНОГУ	
		Информација за вино во списанија и весници		
, 22		Реклама за награда за вино на етикета		- (3 3)
-		Информации дадени на задната етикета		
4	НАЈМАЛКУ	ИЗВОР НА ИНФОРМАЦИЈА	НАЈМНОГУ	
		Препорака од пријател и колега		
, 2 2		Информации дадени на задната етикета		- (3 3)
		Препорака од член на фамилија		
5	НАЈМАЛКУ	ИЗВОР НА ИНФОРМАЦИЈА	НАЈМНОГУ	
		Реклама за награда за вино на етикета		- CO
62		Мислење добиено при комуникација со експерт		<u>.</u>
		Информации дадени на предната етикета		
6	НАЈМАЛКУ	ИЗВОР НА ИНФОРМАЦИЈА	НАЈМНОГУ	
6.0		Информации добиени од интернет		<i>i</i>
50		Информации дадени на задната етикета		60
		Мислење добиено при комуникација со експерт		
7	НАЈМАЛКУ	ИЗВОР НА ИНФОРМАЦИЈА	НАЈМНОГУ	
		Мислење добиено при комуникација со експерт		<u> </u>
Sp-		Информации добиени од телевизија		
		Препорака од пријател и колега		
8	НАЈМАЛКУ	ИЗВОР НА ИНФОРМАЦИЈА	НАЈМНОГУ	
				(1)
200				60
0				
9		издог па ипфогмација Информации далени на предната етикета		
		Информации дадени на залната етикета		<u>())</u>
So.		Информации добиени од телевизија		<u>v</u>
10	НАЈМАЛКУ	ИЗВОР НА ИНФОРМАЦИЛА	НАЈМНОГУ	

, 2		Информации добиени од телевизија Информација за вино во списанија и весници Информации добиени од интернет		٩
11	НАЈМАЛКУ	ИЗВОР НА ИНФОРМАЦИЈА	НАЈМНОГУ	
		Препорака од член на фамилија Мислење добиено при комуникација со експерт Информација за вино во списанија и весници		٢
12	НАЈМАЛКУ	ИЗВОР НА ИНФОРМАЦИЈА	НАЈМНОГУ	
		Препорака од член на фамилија Реклама за награда за вино на етикета Информации добиени од телевизија		٢

7 Со заокружување на бројката во соодветната колона ве молам, одговорете на наведените искази:

БРОЈ		Воопшто не се согласувам согласувам				Потполно се		
1	Често се сомневам во исправноста на моите одлуки за избор на вино	1	2	3	4	5	6	7
2	Често се двоумам кое вино да го купам	1	2	3	4	5	6	7
3	Често се прашувам дали ја направив вистинската одлука при купување на вино	1	2	3	4	5	6	7
4	Не можам да го изнајдам вистинското вино за мене	1	2	3	4	5	6	7
5	Многу често виното кое го купувам не ме задоволува	1	2	3	4	5	6	7
6	Ги импресионирам луѓето со мојот избор на вина	1	2	3	4	5	6	7
7	Знам да изберам добро вино за подарок	1	2	3	4	5	6	7
8	Добивам комплименти од другите за мојот избор на вина	1	2	3	4	5	6	7

БРОЈ		Мног	у малк	у		Многу повеќе		
1	Во споредба со другите што ги знаете, колку имате познавање за различните типови вино?	1	2	3	4	5	6	7
		Мног	Многу малку			Ν	Іногу п	ювеќе
2	Во споредба со еден експерт за вино, колку мислите дека добро го познавате виното?	1	2	3	4	5	6	7
		Воопшто				Потпол	тно се	
		не сес	согласу	вам			согла	сувам
3	Знам прилично многу за вино	1	2	3	4	5	6	7
4	Не се чувствувам доволно добар познавач на вино	1	2	3	4	5	6	7
5	Помеѓу моите пријатели сум исклучително добар познавач на вино	1	2	3	4	5	6	7
6	Знам за вино помалку од другите	1	2	3	4	5	6	7

8 Со заокружување на бројката во соодветната колона, ве молам одговорете на наведените искази:

СОЦИО-ДЕМОГРАФИЈА

9 Од каде сте?

- О Битола
- О Скопје
- О Кавадарци
- О Неготино

О Доколку живеете во друго место наведете:

10 Која година сте родени?

11 Пол?

- О Машки
- О Женски

12 Кој е степенот на Вашето завршено образование?

- О Основно
- О Средно
- О Додипломски студии
- О Постдипломски студии

13 Кој е Вашиот статус на вработување?

- О Вработен со свои примања
- О Невработен
- О Волонтер
- О Студент

О Друго_____

14 Како би го опишале вашиот расположлив месечен буџет?

- О Многу мал
- О Мал
- О Среден
- О Голем
- О Многу голем

15 Ве молиме напишете ја Вашата електронска пошта (email) за идентификација?

ОБЈЕКТИВНО ПОЗНАВАЊЕ НА ВИНА

16 Кое од следните вина е црвено вино? Ризлинг 🔲, Семијон 🔲, Теран 🔲, Ркацители 🔲, Не знам 🗌
17 Кој вид вино содржи најмногу танини? Црвено вино 🗌, Пенливо вино 🔲, Бело вино 🔲, Розе вино 🔲, Не знам 🗌
18 Кој од наведените вински региони не е француски вински регион? Bordeaux, Champagne, Piedmont, Alsace, Не знам
19 Трпезните вина имаат содржина на алкохол од: 1-3%, 4-7%, 8-14%, 15-24%, Не знам
20 Која од наведените ароми не е карактеристична арома за вино одлежано во буре? Ванила 🗌, Кафе 🔲, Ментол 🔲, Кокос 🔲, Не знам 🗌
21, Која од наведените држави е најголем производител на вино? Португалија, Кина, Франција, Австралија, Не знам
22 Burgundy е француски термин за едно од наведените вина? Cabernet Sauvignon , Merlot , Pinot Noir , Sauvignon Blank , Не знам
23 Која е главна сорта на грозје во виното T'га за југ? Cabernet Sauvignon _, Merlot _, Pinot Noir _, Vranec _, Не знам _
24 Која е разликата помеѓу винските термини арома и буке? Буке се добива со производство на црвено вино, а аромата со производство на бело 🗌
Буке се појавува само кај пенливи вина, а арома кај мирни суви вина 🗌
Аромата на вино е одредена од климата, а букето од регионот во кој е засадено грозјето 🗌
Буке се развива со ферментација, додека аромата доаѓа од сортата на грозје 🗌

Не знам 🗌

СЕНЗОРСКО (ДЕГУСТАЦИОНО) ПОЗНАЊАЊЕ НА ВИНА

25 Виното кое го дегустирате припаѓа во категоријата на: Суви вина, Полу суви вина, Слатки вина, Не знам
26 Од наведените вкусови Ве молам посочете го оној кој најмногу го чувствувате за време на дегустацијата на виното: Сладок, Горчлив (трпкав), Кисел вкус, Не знам
27 Виното кое го дегустирате има карактеристична арома за: Младо овошно вино, Старо вино одлежано во буре, Старо вино не одлежано во буре, Не знам
28 Виното што го дегустирате е: Младо , Старо , Старо вино зреено во буре , Не знам
29 Која од наведените вински грешки ја има виното кое го дегустирате: Мирис на тапа, Мирис на оцет, Оксидирано вино, Не знам
30 Која од наведените вински грешки ја има виното кое го дегустирате: Мирис на тапа _, Редуктивно вино _, Оксидирано вино _, Не знам _

Annex 3:

ONLINE SURVEY

Research for the wine behaviour of young consumers in Republic of Macedonia

I. INTRODUCTION TO THE SURVEY

Dear participant,

My name is Hristo Hristov, and I am a PhD student at the University of Ljubljana, at the interdisciplinary study program of Bioscience on the scientific field economics of natural resources.

I am currently working on my doctoral thesis, where the aim is to explore consumers' knowledge (objective and subjective), sensory competence and self-confidence in wine decision-making. Furthermore, the doctoral thesis is to obtain information about consumption and purchasing behaviour of the young wine consumers. Also the study will measure the preference for wine attributes and information sources.

The survey is a fundamental part of my research, and I would be very thankful if you would take your time and answer it.

The survey is divided in two parts. The first part includes questions about your wine consumption and purchasing, purchase self-confidence, subjective knowledge, and preference for wine attributes and information sources. The second part include wine sensory competence and objective knowledge test,

The sensory competence test we will expect from you to taste four red wines and provide answers on questions concerning wines' sensory characteristics. Objective knowledge test aims to test your actual knowledge in wine.

The time it takes to answer the questions from the first part is approximately 15 minutes. The sensory testing procedure and the objective knowledge test will be conducted at the wine tasting event on which you will be invited after you complete this survey. The second part of the research will take additional 15 minutes at the location, where the tasting will be organized.

If you have any question please feel free to contact me on my e-mail hristovhristo@outlook.com

The provided personal information will be treated with confidentiality. They will be used only for research purposes.

Thank you for your time and your willingness to participate the study!

Sincerely, Dipl, Ing, Hristo Hristov

II. WINE CONSUMPTION

1 How long have you been a wine consumer? No, year(s) (if less than 1 year, use 1):

2 Which type of wine do you prefer? (On the following question more answers are allowed)

- **D** Red wine
- □ White wine
- Rose wine
- □ Sparkling wine

3 How do you usually consume your wine?

- **O** With food
- **O** Without food

4 During the last year how often you consume wine at home:

- Every day
- O Most days
- O Weekly
- **O** Fortnightly
- O Monthly
- Up to six/year
- **O** I don't drink wine at home

5 During the last year how often you consume wine at restaurant/bar:

- Every day
- O Most days
- O Weekly
- **O** Fortnightly
- O Monthly
- Up to six/year
- **O** I don't drink wine at home

6 Do you consume homemade amateur wines?

- O Yes
- O No

7 If you answer on the previous question with Yes, than from the amount of wine you drink, please indicate what percentage belongs to homemade wines: (max=100%, all the wine I drink is produced at home; min=0%):

_____%

8 Where do you usually consume wine?

- □ In restaurant
- In bar
- □ In winery/on tastings
- At home
- □ At friends place
- On celebrations
- Other _____

9 For each of the following situations rate the level to witch these are important to you when you purchase a wine?

	Unused	Slightly important	2	3	4	5	6	Extremely important
Meal and drink with partner/spouse)	0	0	0	0	0	0	Ο	0
Meal and drink with friends	О	Ο	Ο	0	О	0	Ο	Ο
Meal and drink with family	О	Ο	Ο	0	О	0	0	Ο
Business related gift	О	Ο	Ο	0	О	0	0	Ο
Friend or family celebration	0	0	О	0	0	0	0	0

III. WINE PURCHASE

10 Approximately how many bottles of wine do you purchase per month (750 ml Equivalent)

- **O** Less than 2
- O More than 2 less than 5
- More than 5 less than 10
- **O** More than 10 less than 15
- O More than 15
- **O** I don't purchase wine

11 Which of the following is your primary source of wines purchased for home consumption? (Check only ONE)

- **O** Wine specialty shop
- O Corner shop
- **O** Winery/at wine producer
- **O** Supermarket store
- Other _____

12 When buying wine at a store, indicate the percentage purchase of: (total should = 100%)

- _____ 750 ml, (standard size)
- _____1 L (medium size)
- _____ 1.5 L (magnum)
- _____ Bag-in-Box
- _____ Plastic

13 When buying wine at a restaurant/bar, indicate the percentage purchase of : (total should = 100%)

(total should = 100%)

- ____ On-glass
- _____ 175 ml, (small size)
- _____750 ml, (standard size)
- _____1 L (medium size)
- _____ 1.5 L (magnum)

14 How important are the following motivations in your decision to purchase wine:

	Not Very Important	2	3	4	5	6	Very Important
For pleasure	0	0	0	0	0	0	0
For support of domestic wine industry	0	0	0	0	0	0	O
Goes well with food	0	0	0	0	О	0	0
Wine is sophisticate drink	0	0	0	0	0	0	0

15 How important are the following wine attributes in your decision to purchase wine?

	Not Very Important	2	3	4	5	6	Very Important
Price	0	0	0	0	0	0	0
Grape variety	0	0	0	0	0	0	0
Style (dry, semidry)	0	0	0	0	0	0	0
Brand	0	0	0	0	0	0	0
Vintage	0	0	0	0	0	0	0
Country of origin	0	0	0	0	0	0	0

16 Please select the appropriate column to indicate your response to the following statement below:

	Strongly Disagree	2	3	4	5	6	Strongly Agree
I often have doubts about the wine purchase decisions I make	0	0	0	0	0		О
I frequently agonize over which wine to buy	Ο	0	0	0	О		Ο
I often wonder if I made the right wine decision	0	0	0	0	0		Ο
I never seem to find the right wine for me	0	0	0	0	О		0
Too often the wine I buy is not satisfying	Ο	0	0	0	0		Ο

IV. WINE SUBJECTIVE KNOWLEDGE

17 With respect to your current knowledge in wine, how would you classified yourself?

- O Amateur
- **O** Somewhat knowledgeable
- **O** Wine enthusiast
- **O** Expert

18 Where does your wine knowledge come from?

(On the following question more answers are allowed)

- □ Friends/Family
- □ Wine course
- □ Winery visits
- □ Wine club membership
- Books and magazines for wine
- □ Information on the internet
- □ Other _____

19 Please select the appropriate column to indicate your response to the following statement below:

	Not at all knowledge,/Very little	2	3	4	5	6	Very knowledge,/ Very Much
Compared to others you know, how knowledgeable are you about different types of wine?	0	0	0	o	0	0	O
Compared to a wine expert, how much do you feel you know about wine?	0	\circ	0	0	0	0	О

20 Please select the appropriate column to indicate your response to the following statement below:

	Strongly Disagree	2	3	4	5	6	Strongly Agree
I know pretty much about wine	Ο	0	0	0	0	0	Ο
I do not feel very knowledgeable about wine	0	0	0	0	0	0	Ο
Among my friends I am the wine expert	0	0	0	0	0	0	0
I know less about wine then others do	0	0	0	0	0	0	0

V. WINE IMFORMATION SOURCES

For each of the following tables, pick the ONE source of information that MOST influence your wine choice and one that LEAST,

21 Combination 1

MOST IMPORTANT	LEAST IMPORTANT
Information written on the front label (brand, grape variety, vintage, country of origin)	Information written on the front label (brand, grape variety, vintage, country of origin)
Information on internet (social media, winery webs)	Information on internet (social media, winery webs)
Recommendation from family members	Recommendation from family members

22 Combination 2

MOST IMPORTANT	LEAST IMPORTANT						
Recommendation from friend and colleagues	Recommendation from friend and colleagues						
Award stickers on the bottle	Award stickers on the bottle						
Information on internet (social media, winery webs)	Information on internet (social media, winery webs)						

23 Combination 3

MOST IMPORTANT	LEAST IMPORTANT
Information for wine from magazines and/or newspapers	Information for wine from magazines and/or newspapers
Award stickers on the bottle	Award stickers on the bottle
Information for wine written on the back label (description of wine aroma and flavor, production method, combination with food)	Information for wine written on the back label (description of wine aroma and flavor, production method, combination with food)

24 Combination 4

MOST IMPORTANT	LEAST IMPORTANT						
Recommendation from friend and colleagues	Recommendation from friend and colleagues						
Information for wine written on the back label (description of wine aroma and flavor, production method, combination with food)	Information for wine written on the back label (description of wine aroma and flavor production method, combination with food)						
Recommendation from family members	Recommendation from family members						

25 Combination 5

MOST IMPORTANT	LEAST IMPORTANT						
Award stickers on the bottle	Award stickers on the bottle						
Expert opinion (winemakers, sommeliers, sales assistants)	Expert opinion (winemakers, sommeliers, sales assistants)						
Information written on the front label (brand, grape variety, vintage, country of origin)	Information written on the front label (brand, grape variety, vintage, country of origin)						

26 Combination 6

MOST IMPORTANT	LEAST IMPORTANT					
Information on internet (social media, winery webs)	Information on internet (social media, winery webs)					
Information for wine written on the back label (description of wine aroma and flavor, production method, combination with food)	Information for wine written on the back label (description of wine aroma and flavor production method, combination with food)					
Expert opinion (winemakers, sommeliers, sales assistants)	Expert opinion (winemakers, sommeliers, sales assistants)					

27 Combination 7

MOST IMPORTANT	LEAST IMPORTANT
Expert opinion (winemakers, sommeliers, sales assistants)	Expert opinion (winemakers, sommeliers, sales assistants)
Information on television (programme for wine)	Information on television (programme for wine)
Recommendation from friend and colleagues	Recommendation from friend and colleagues

28 Combination 8

MOST IMPORTANT	LEAST IMPORTANT					
Information written on the front label (brand, grape variety, vintage, country of origin)	Information written on the front label (brand, grape variety, vintage, country of origin)					
Recommendation from friend and colleagues	Recommendation from friend and colleagues					
Information for wine from magazines and/or newspapers	Information for wine from magazines and/or newspapers					

29 Combination 9

MOST IMPORTANT	LEAST IMPORTANT
Information written on the front label (brand, grape variety, vintage, country of origin)	Information written on the front label (brand, grape variety, vintage, country of origin)
Information for wine written on the back label (description of wine aroma and flavor, production method, combination with food)	Information for wine written on the back label (description of wine aroma and flavor, production method, combination with food)
Information on television (programme for wine)	Information on television (programme for wine)

30 Combination 10

MOST IMPORTANT	LEAST IMPORTANT
Information on television (programme for wine)	Information on television (programme for wine)
Information for wine from magazines and/or newspapers	Information for wine from magazines and/or newspapers
Information on internet (social media, winery webs)	Information on internet (social media, winery webs)

31 Combination 11

MOST IMPORTANT	LEAST IMPORTANT					
Recommendation from family members	Recommendation from family members					
Expert opinion (winemakers, sommeliers, sales assistants)	Expert opinion (winemakers, sommeliers, sales assistants)					
Information for wine from magazines and/or newspapers	Information for wine from magazines and/or newspapers					

32 Combination 12

MOST IMPORTANT	LEAST IMPORTANT
Recommendation from family members	Recommendation from family members
Award stickers on the bottle	Award stickers on the bottle
Information on television (programme for	Information on television (programme for
wine)	wine)

VI. DEMOGRAPHICS

- 33 Where you from?
- O Bitola
- O Skopje
- O Kavadarci
- O Negotino
- Other: _____

34 In what year were you born? _____

- 35 What is your gender?
- O Male
- O Female

36 What was the level of education you have completed?

- **O** Elementary
- High school
- O Graduate
- **O** Postgraduate (Maters and PhD)

37 What is your employment status?

- **O** Employed
- **O** Unemployed
- **O** Volunteer
- O Student
- Other _____

38 Describe your monthly disposable income:

- **O** Very low
- O Low
- O Average
- **O** High
- **O** Very high

39 Please write your e-mail address as we needed to send you the invitation for the organized free wine tasting?_____

Истражување за навиките и однесувањето на младите кон виното

І ВОВЕД

Почитувани,

Моето име е Христо Христов, и сум докторски студент на Универзитетот во Љубљана, на интердисциплинарните студии од Бионаука, насока економика на природни ресурси,

Во моментот работам на мојата докторска теза, во која го истражувам знаењето (субјективно и објективно), сензорските познавања и самодовербата на младите потрошувачите на вино при носење на одлуки за вино. Исто така истражувањето вклучува прашања за употребата на винските атрибути и изворите на информации при носењето на одлуки за купување на вино,

Прашалникот што го добивте е фундаментален дел од моето истражување, и би бил многу благодарен доколку издвоите дел од вашето драгоцено време да дадете одговор на поставените прашања. За целосно пополнување на анкетата планирано е да посветите 15 минути од Вашето слободно време.

Структура на прашалникот кој треба да го пополните е следната:

- првиот дел се состои од прашања поврзани со купувачките навиките и искуството со вино,
- вториот дел го испитува субјективното знаење и самодоверба во изборот на вино,
- третиот дел го проучува значењето на изворите на информации,
- четвртиот дел вклучува прашања од социо-демографски карактер

Доколку имате некои прашања и доколку сакате да Ве информираме за резултатите од Вашата анкета Ве молиме да не контактирате на <u>hristovhristo@outlook.com</u>

Доставените лични информации ќе бидат третирани со доверливост. Истите ќе бидат користени само за истражувачки цели.

Вашата помош и посветено време многу го ценам. Искрено сум Ви благодарен за соработката,

II ПОТРОШУВАЧКИ НАВИКИ ЗА ВИНО

1 Колку долго консумирате вино? Наведете број на години:

2 Кој тип на вино кој го преферирате? (На даденото прашање се дозволени повеќе одговори)

- П Црвено вино
- Бело вино
- Розе вино
- Пенливо вино

3 Каде вообичаено консумирате вино? (На даденото прашање се дозволени повеќе одговори)

- Во ресторан
- Во кафуле
- 🛛 Во винарија
- 🛛 Дома
- 🛛 Кај пријатели
- На прослави
- 🗅 Друго _____

4 Како вообичаено консумирате вино?

- О Со храна
- О Без храна

5 Колку често консумирате вино дома:

- О Секој ден
- О Неколку пати неделно
- О Еднаш неделно
- О Еднаш на две недели
- О Еднаш на месец
- О До шест пати годишно
- О Не консумирам вино дома

6 Дали консумирате вино произведено во домашни услови?

- О Да
- O He

7 Од количината на вино која ја консумирате, наведете колкав процент отпаѓа на вино произведено во домашни услови (домашно вино) %

II КУПУВАЧКИ НАВИКИ ЗА ВИНО

8 Во просек колку шишиња вино купувате месечно за домашна потрошувачка? (Количината да биде изразена во однос на шише од 750 мл,)

- О Помалку од 2
- О Повеќе од 2 помалку од 5
- О Повеќе од 5 помалку од 10
- О Повеќе 10 помалку од 15
- О Повеќе од 15
- О Не купувам вино за дома

9 Каде вообичаено купувате вино?

- О Продавница за вино (винотека)
- О Во винарија / производител на вино
- О Локална или маалска продавница
- О Супермаркет
- О Друго _____

10 Од вината кои ги купувате наведете колкав процент отпаѓа на:

(Вкупната сума од дадените одговори треба да е еднаква на 100%)

- ____ 750 мл, (стандардна големина)
- _____1 литар (средна големина)
- _____ 1.5 литри (магнум)
- _____ Вино во картонска амбалажа
- _____ Вино во пластична амбалажа

11 За секој од наведените настани рангирајте колку е важен за Вас при купување на вино:

	За тој настан не купувам вино	Малку важен	2	3	4	5	6	Многу важен
Уживање во вино во друштво на партнер(ка)/сопруг(а)	0	О	0	0	О	0	0	o
Уживање во вино во друштво на пријатели	0	0	0	0	О	0	0	o
Уживање во вино во друштво на фамилија	0	0	0	0	0	0	0	0
Подарок за слави и прослави	0	О	О	О	О	0	0	0
Подарок на вино по остварена соработка	0	0	О	0	О	0	О	О

12 Колку често консумирате вино во ресторан или кафуле:

- О Секој ден
- О Неколку пати неделно
- О Еднаш неделно
- О Еднаш на две недели
- О Еднаш на месец
- О До шест пати годишно
- О Не консумирам вино во ресторан или кафуле

13 Од вината кои ги нарачувате во ресторан и/или бар, наведете колкав процент отпаѓа на: (Вкупната сума од дадените одговори треба да е еднаква на 100%)

- Наливно вино (чаша/бокал)
- _____ 175 мл, (мало шише)
- _____ 750 мл, (стандардна големина)
- _____1 литар (средна големина)
- _____ 1.5 литри (магнум)

14 Колку се значајни за Вас следните причини за купување на вино:

	Најмалку важно	2	3	4	5	6	Најмногу Важно
За лично задоволство	Ο	0	0	0	Ο	Ο	0
За поддршка на домашната винска индустрија	0	o	o	0	0	0	0
Виното одговара со различна храна	Ο	0	0	0	0	0	Ο
Виното е софистициран пијалак	Ο	0	0	0	Ο	Ο	Ο

15 Колку се значајни за Вас следните вински атрибути на Вашиот избор на вино?

(Ве молам рангирајте ги наведените атрибути користејќи ја следната скала)

	Најмалку важно	2	3	4	5	6	Најмногу важно
Цена на виното	0	0	0	Ο	О	Ο	0
Сорта на грозјето	Ο	0	0	О	О	О	0
Стил на вино (суво, полусуво, полуслатко и слатко вино)	Ο	o	0	О	0	О	0
Вински бренд	Ο	0	0	О	О	О	0
Година на берба	Ο	0	0	О	О	О	0
Земјата на потекло	0	0	0	Ο	О	Ο	0

16 Со обележување на бројката во соодветната колона Ве молам, одговорете на наведените искази:

	Воопшто не се согласувам	2	3	4	5	6	Потполно се согласувам
Често се сомневам во исправноста на моите одлуки за избор на вино	0	0	0	0	0	0	0
Често се двоумам кое вино да го купам	0	0	0	0	0	0	0
Често се прашувам дали ја направив вистинската одлука при купување на вино	0	0	0	0	0	0	0
Не можам да го изнајдам вистинското вино за мене	0	0	0	0	0	0	0
Многу често виното кое го купувам не ме задоволува	0	0	0	0	0	0	0

IV СУБЈЕКТИВНО ЗНАЕЊЕ ЗА ВИНО

17 Во однос на Вашето моментално знаење за вино каде би се класифицирате:

- О Почетник
- О Средно знаење
- О Вински ентузијаст (љубител на вино)
- О Експерт за вино

18 Од каде доаѓа Вашето знаење за виното?

(На даденото прашање дозволени се повеќе одговори)

- Пријатели/Семејство
- Курс за познавање на вино
- Посета на винарија
- Членство во вински клуб
- Книги и списанија за вино
- Информации на интернет
- 🛛 Друго _

19 Со обележување на бројката во соодветната колона, Ве молам одговорете на наведените искази:

	Најмалку	2	3	4	5	6	Најмногу
Во споредба со другите што ги знаете, колку имате познавање за различните типови вино?	0	0	0	0	0	0	О
Во споредба со еден експерт за вино, колку мислите дека добро го познавате виното?	О	0	0	0	0	0	0

nekush.							
	Воопшто не се согласувам	2	3	4	5	6	Потполно се согласувам
Знам прилично многу за виното	0	0	0	0	0	0	0
Не се чувствувам доволно добар познавач на вино	0	0	0	0	0	0	0
Помеѓу моите пријатели сум исклучително добар познавач на вино	Ο	0	0	0	0	0	ο
Знам за вино помалку од останатите	0	0	0	0	0	0	0

20 Со обележување на бројката во соодветната колона, Ве молам одговорете на наведените искази:

V ИЗВОРИ НА ИНФОРМАЦИИ ЗА ВИНО

Во двете колони обележете по ЕДЕН извор на информација кој НАЈМНОГУ и НАЈМАЛКУ Ви помага во Вашиот избор на вино,

21 Комбинација 1

НАЈМНОГУ ЗНАЧАЕН	НАЈМАЛКУ ЗНАЧАЕН							
Информација на предна етикета на	Информација на предна етикета на							
вино (бренд, сорта на грозје, година на берба,	вино (бренд, сорта на грозје, година на берба,							
земја на потекло)	земја на потекло)							
Информација на интернет (социјални	Информација на интернет (социјални							
мрежи, интернет страници на винарии,	мрежи, интернет страници на винарии,							
форуми)	форуми)							
Препорака за вино од член на	Препорака за вино од член на							
семејство	семејство							

НАЈМНОГУ ЗНАЧАЕН	НАЈМАЛКУ ЗНАЧАЕН
Препорака за вино од пријател или	Препорака за вино од пријател или
колега	колега
Ознака за награда на вино- налепка на шише	Ознака за награда на вино- налепка на шише
Информација на интернет (социјални	Информација на интернет (социјални
мрежи, интернет страници на винарии,	мрежи, интернет страници на винарии,
форуми)	форуми)

23 Комбинација 3

НАЈМНОГУ ЗНАЧАЕН	НАЈМАЛКУ ЗНАЧАЕН
<u>Информација</u> добиена од печатени	<u>Информација</u> добиена од печатени
медиуми (списание за вино, дневен весник,	медиуми (списание за вино, дневен весник,
книга за вино)	книга за вино)
Ознака за награда на вино- налепка на шише	Ознака за награда на вино- налепка на шише
Информација на задна етикета на вино	Информација на задна етикета на вино
(опис на стилот на вино и методот на	(опис на стилот на вино и методот на
производство, информација за комбинација со	производство, информација за комбинација со
храна)	храна)

24 Комбинација 4

НАЈМНОГУ ЗНАЧАЕН	НАЈМАЛКУ ЗНАЧАЕН
Препорака за вино од пријател или колега	Препорака за вино од пријател или колега
Информација од задната етикета на виното (опис на стилот на вино и методот на производство, информација за комбинација со храна)	<u>Информација</u> од задната етикета на виното (опис на стилот на вино и методот на производство, информација за комбинација со храна)
Информација добиена од член на семејство	Информација добиена од член на семејство

НАЈМНОГУ ЗНАЧАЕН	НАЈМАЛКУ ЗНАЧАЕН
Ознака за награда на вино- налепка на шише	Ознака за награда на вино- налепка на шише
Мислење од експерт (енолог, вински критичар, сомелиер)	Мислење од експерт (енолог, вински критичар, сомелиер)
Информација од предната етикета на виното (бренд, сорта на грозје, година на берба, земја на потекло)	Информација од предната етикета на виното (бренд, сорта на грозје, година на берба, земја на потекло)

26 Комбинација 6

НАЈМНОГУ ЗНАЧАЕН	НАЈМАЛКУ ЗНАЧАЕН	
<u>Информација</u> од интернет (социјални	Информација од интернет (социјални	
мрежи, интернет страници на винарии,	мрежи, интернет страници на винарии,	
форуми)	форуми)	
<u>Информација</u> од задната етикета на	Информација од задната етикета на	
виното (опис на стилот на вино и методот на	виното (опис на стилот на вино и методот на	
производство, информација за комбинација со	производство, информација за комбинација со	
храна)	храна)	
Мислење од експерт (енолог, вински критичар, сомелиер)	Мислење од експерт (енолог, вински критичар, сомелиер)	

27 Комбинација 7

НАЈМНОГУ ЗНАЧАЕН	НАЈМАЛКУ ЗНАЧАЕН		
Мислење од експерт (енолог, вински критичар, сомелиер)	Мислење од експерт (енолог, специјализиран вински продавач, сомелиер)		
Информација на телевизија (програми за вино и храна, репортажи за вински региони)	Информација на телевизија (програми за вино и храна, репортажи за вински региони)		
Препорака за вино од пријател или колега	Препорака за вино од пријател или колега		

НАЈМНОГУ ЗНАЧАЕН	НАЈМАЛКУ ЗНАЧАЕН
<u>Информација</u> од предната етикета на	Информација од предната етикета на
виното (бренд, сорта на грозје, година на	виното (бренд, сорта на грозје, година на
берба, земја на потекло)	берба, земја на потекло)
Препорака за вино од пријател или колега	Информација за вино од пријател или колега
Информација од печатени медиуми	Информација од печатени медиуми
(списание за вино, дневен весник, книга за	(списание за вино, дневен весник, книга за
вино)	вино)

29 Комбинација 9

НАЈМНОГУ ЗНАЧАЕН	НАЈМАЛКУ ЗНАЧАЕН
Информација од предната етикета на	Информација од предната етикета на
виното (бренд, сорта на грозје, година на	виното (бренд, сорта на грозје, година на
берба, земја на потекло)	берба, земја на потекло)
Информација од задната етикета на	Информација од задната етикета на
виното (опис на стилот на вино и методот на	виното (опис на стилот на вино и методот на
производство, информација за комбинација со	производство, информација за комбинација со
храна)	храна)
Информација на телевизија (програми	Информација на телевизија (програми
за вино и храна, репортажи за вински региони)	за вино и храна, репортажи за вински региони)

30 Комбинација 10

НАЈМНОГУ ЗНАЧАЕН	НАЈМАЛКУ ЗНАЧАЕН
Информација на телевизија (програми	Информација на телевизија (програми
за вино и храна, репортажи за вински региони)	за вино и храна, репортажи за вински региони)
Информација од печатени медиуми	Информација од печатени медиуми
(списание за вино, дневен весник, книга за	(списание за вино, дневен весник, книга за
вино)	вино)
<u>Информација</u> од интернет (социјални мрежи, интернет страници на винарии, форуми)	Информација од интернет (социјални мрежи, интернет страници на винарии, форуми)

31 Комбинација 11

НАЈМНОГУ ЗНАЧАЕН	НАЈМАЛКУ ЗНАЧАЕН		
Препорака за вино од член на семејство	Препорака за вино од член на семејство		
Мислење од експерт (енолог, специјализиран вински продавач, сомелиер)	Мислење од експерт (енолог, специјализиран вински продавач, сомелиер)		
Информација од печатени медиуми (списание за вино, дневен весник, книга за вино)	Информација од печатени медиуми (списание за вино, дневен весник, книга за вино)		

НАЈМНОГУ ЗНАЧАЕН	НАЈМАЛКУ ЗНАЧАЕН		
Препорака за вино од член на семејство	Препорака за вино од член на семејство		
Ознака за награда на вино- налепка на шише	Ознака за награда на вино- налепка на шише		
Информација на телевизија (програми за вино и храна, репортажи за вински региони)	Информација на телевизија (програми за вино и храна, репортажи за вински региони)		

VI СОЦИОДЕМОГРАФИЈА

33 Од каде сте?

- О Битола
- О Скопје
- О Кавадарци
- О Неготино

О Доколку живеете во друго место наведете:

34 Која година сте родени?

35 Пол?

- О Машки
- О Женски

36 Кој е степенот на Вашето завршено образование?

- О Основно
- О Средно
- О Додипломски студии
- О Постдипломски студии

37 Кој е Вашиот статус на вработување?

- О Вработен со свои примања
- О Невработен
- О Волонтер
- О Студент
- О Друго_____

38 Опишете го вашиот месечен расположлив буџет:

- О Многу мал
- О Мал
- О Среден
- О Голем
- О Многу голем

39 Ве молиме напишете ја Вашата електронска пошта (email) за идентификација?

Annex 4:

ON-LOCATION TEST QUESTIONNAIRE

I OBJECTIVE KNOWLEDGE

The following questions are intended to determine what consumers really know about wine, Please answer as accurately as you can,

40 Which of the following is a red wine?
Riesling , Semion , Teran , Rkaciteli , Don't know
41 Which of the following wines has more tannins and more astringent taste? Red wine , Sparkling wine , White wine , Rose wine , Don't know
42 Which is not a famous French wine region? Bordeaux , Champagne , Piedmont , Alsace , Don't know
43 Table wines have an alcohol content of: 1-3% □, 4-7% □, 8-14% □, 15-24% □, Don't know □
44, Which of the following wine flavors is rarely found in barrel-aged wines? Vanilla , Coffee , Mint , Coconut , Don't Know
45 Burgundy is the French term for which wine?
Cabernet Sauvignon , Merlot , Pinot Noir , Sauvignon Blank , Don't know
46 Which grape variety is used for making the wine "T'ga za Jug"? Cabernet Sauvignon , Merlot , Pinot Noir , Vranec , Don't know
47 What is the distinction between aroma and bouquet?
Bouquet is produced by red grapes and aroma by white grapes
Bouquet occurs only in sparkling wines and aroma occurs only in still wines
Bouquet comes from fermentation procedures whereas aroma has origins in the grape alone
Aroma is based on climate, bouquet on soils
Don't Know

II SENSORY COMPETENCE

The following test questions investigates your practical (sensory) competence in wine, In this experiment you will be provided with four wines, and you will need to answer to four questions, one for each wine, The questions have one correct answer, Please answer as accurately as you can,

48 Using your	sensory skills, please cla	assify the wine in on	e of the following categories	::
Dry wine \Box ,	Semidry wine ,	Sweet wine \Box ,	Don't know	
49 In the wine you are going to taste one gustatory sensation stands out, Please identify it,				
Sweet 🗌,	Astringent (biter)	Sour 🗌,	Don't know	
50 II.:		· · · · · · · · · · · · · · · · · · ·	6 (1 6 . 11	

50 Using your sensory skills, please	classify the wine in	one of the following categories:
Young and fruity wine ,	Oak maturated wine	 ,
Old vintage stainless-steel maturate	d wine	Don't know

51 The wine has a	a wine fault, Using yo	our wine sensory ski	ills please identify it,
Cork taint,	Vinegar taint	Oxidation \Box ,	Don't know 🗌

III DEMOGRAPHICS

52 Where you from?

- O Bitola
- O Skopje
- O Kavadarci
- O Negotino
- Other: _____

53 In what year were you born?

54 What is your gender?

- O Male
- **O** Female

55 Please write your e-mail address for identification

І ОБЈЕКТИВНО ПОЗНАВАЊЕ НА ВИНА

40 Кое од следните вина е црвено вино? Ризлинг, Семијон Теран, Ркацители, Не знам		
41 Кој вид вино содржи најмногу танини? Црвено вино 🗌, Пенливо вино 🔲, Бело вино 🔲, Розе вино 🔲, Не знам 🗌		
42 Кој од наведените вински региони не е француски вински регион? Bordeaux , Champagne , Piedmont , Alsace , Не знам		
43 Трпезните вина имаат содржина на алкохол од: 1-3% 4-7%, 8-14%, 15-24%, Не знам		
44 Која од наведените ароми не е карактеристична арома за вино одлежано во буре? Ванила 🗌, Кафе 🔲, Ментол 🔲, Кокос 🗌, Не знам 🗌		
45 Burgundy е француски термин за едно од наведените вина? Cabernet Sauvignon, Merlot, Pinot Noir, Sauvignon Blank, Не знам		
46 Koja е главна сорта на грозје во виното Т'га за југ? Cabernet Sauvignon, Merlot, Pinot Noir, Vranec, Не знам		
47 Која е разликата помеѓу винските термини арома и буке? Буке се добива со производство на црвено вино, а аромата со производство на бело 🗌,		
Буке се појавува само кај пенливи вина, а арома кај мирни суви вина 🔲,		
Аромата на вино е одредена од климата, а буќето од регионот во кој е засадено грозјето 🗌,		
Буке се развива со ферментација, додека аромата доаѓа од сортата на грозје 🗌,		
Не знам		

II СЕНЗОРСКО (ДЕГУСТАЦИОНО) ПОЗНАЊАЊЕ НА ВИНА

48 Виното кое го дегустирате припаѓа во категоријата на: Суви вина, Полу суви вина, Слатки вина, Не знам
49 Од наведените вкусови Ве молам посочете го оној кој најмногу го чувствувате за време на дегустацијата на виното: Сладок, Горчлив (трпкав), Кисел вкус, Не знам
50 Виното кое го дегустирате има карактеристична арома за: Младо овошно вино, Старо вино одлежано во буре, Старо вино не одлежано во буре, Не знам
51 Која од наведените вински грешки ја има виното кое го дегустирате: Мирис на тапа, Мирис на оцет, Оксидирано вино, Не знам
III.СОЦИО-ДЕМОГРАФИЈА
52 Од каде сте? О Битола О Скопје О Кавадарци О Неготина О Друго место: 53 Кога сте родени? 54 Кој е вашиот пол? О Машки О Женски

55 Ве молиме напишете ја Вашата електронска пошта (email) за идентификација?



Scree plot from principal component analysis of sensory competence items