

A Study of Quality Appraisal's Explanatory Power on Retail Price in Korean Wine Market ¹

Youngsik Kwak¹, Yoonjung Nam² and Yoonsik Kwak³

Gyeongnam National University of Science and Technology (yskwak@gntech.ac.kr)

Corresponding Author, Hanyang University (jean@hanyang.ac.kr)

Korea National University of Transportation (yskwak@ut.ac.kr)

Corresponding Author

Abstract

As many web contents, many of on-line wine quality rating information have been generated and released by individual expert and grouped experts. The purpose of this study is to explore the influence of subjective wine quality appraisal types on retail prices in Korean on-premise market. The authors analyzed the explanatory power of two types of appraisal, conducted by individual expert and expert group on 900 listed wines produced in 3 different countries and sold in 7 hotel restaurants and wine bars in Korea. Collective appraisals on Bordeaux and Bourgogne wine samples had stronger influence on retail price than individual appraisal. On other hand, individual appraisal on Champagne, Tuscans, Piedmont, and Californian wine samples had stronger influence than collective appraisals.

Keywords: *On-line Wine Appraisal, Individual Appraisal, Collective Appraisal, Explanatory Power, Wine Retail Price, On-premise Market*

1. Introduction

Many studies have been conducted on the relationship between quality and price in the field of marketing. Using various expressions with appraisal, assessment, evaluation, and ratings, these studies tried to find the relationships between price and subjective quality appraisal and between price and objective quality appraisal.

Among these, most of studies on price-subjective quality have been conducted with various categories of products and services in cross-sectional and longitudinal studies using price as an indicator of quality [1, 2, 3, 4, 5]. In respect of quality evaluating, there are two types of players; individual consumers and experts. In most of studies on the relationship between price and subjective quality, individual consumers evaluated the quality. However, few studies on the relationship between price and experts' evaluation have been conducted.

On the other hand, studies on correlation of price-quality appraisal by expert group or appraisal agency have been performed with various subjects in various countries including Japan, Korea, US, and Canada [6, 7, 8]. At these studies, appraisal is performed by organizations, or agencies provide evaluation results on regular bases or on temporary bases.

Previous studies on price-quality relationship can be categorized into 4 types as Table 1 shows. The First one is about relationship between price and expert's subjective quality appraisal. The studies on this type can be divided into two sub-categories: individual based

¹ *This paper is a revised and expanded version of a paper entitled "On-line Individual Appraisal vs. Group Appraisal: A Comparison of Explanatory Power on Wine Retail Price in Korea" presented at AITS 2012, Daejun, February 29th.*

appraisal and group based appraisal. In the case of wine industry, the influence of Robert Parker's Score released on www.eRobertparker.com and affecting the retail and en-primeur price as individual expert's subjective quality appraisal can be categorized into this type of studies [9, 10]. On the other hand, the group based appraisal can be categorized into panel rating and collective rating according to the sample collection method.

Table1. Classification of Price-quality Appraisal

category of quality appraisal	main units for ratings		types of appraisal	wine industry
subjective quality	Experts	Individual	critic, online report, publicity (cf. Michelin guides)	Wine Advocate (eRobertParker.com)
		Group	Guide book, critic media	Decanter, Wines Spectator
			Competition result	Decanter world wine awards, International wine challenge
		Public individual consumers	posting reply, answering to survey, WOM	Wine blog, postings on personal SNS
objective quality		rating agency (regular basis)	Consumer Report, Consumer Times	Wine Consumer Report
		rating agency (temporary basis)	Biennale, International film festival, Competition	

The influence of individual wine expert's appraisal on retail price of Korean on-premise wine market was already reported. However, the influence of appraisal conducted by group in wine industry has not been reported in price-quality studies [11, 12, 13, 14]. In the wine industry, Wine Spectator's ratings can be considered as one of the case of wine quality appraisals conducted by grouped experts.

The purpose of this study is to explore the influence level of quality appraisals conducted by individual and group on wine retail prices in Korean wine market. This study will report the relative effect on retail price between the individual expert's appraisal released on a website by Robert Parker (www.erobertparker.com) and expert group's appraisal released on a website by Wine Spectator (www.winespectator.com).

This study, academically, will show that the difference in web contents generation methods can make the difference in web contents' value and influence on retail price. And this study also can provide consumers with a guideline to avoid overspending and to take a chance to secure consumer surplus. For marketers, this study can provide with insights to develop their pricing and communication strategy in Korean on-premise wine market.

2. Literature Review

Few studies have been conducted regarding wine quality appraisal. Most of previous studies on the relationship between price and quality appraisal are focused on the relationship between en-primeur price and Robert Parker's wine ratings [15, 16, 17].

Robert M. Parker Jr. is a leading U.S. wine critic with an international influence. His wine ratings on a 100-point scale and his newsletter, The Wine Advocate and website, eRobertparker.com, with his particular stylistic preferences and note taking vocabulary, have

become very influential in international wine buying and are therefore a major factor in setting the prices for newly released wines, especially Bordeaux wines. He continues to be the most widely-known and influential wine critic in the world today [20]. It is reported that Parker's rating scale has a dual effect on prices and sales, with claims from the wine industry that a Parker top score is valued at potentially £5 million [18].

Previous studies reported the influence of the wine quality appraisal conducted by a famous wine critic, Robert Parker on wine price. Hay (2007) reported that Parker had a significant impact on Bordeaux wine's en primeur price formation in appellations [9]. Dubois and Nauges (2007) found that Parker Score had made for 5 years (1994-1998) affected on price formation of Bordeaux wines from ten different appellations in estimating significance with structural equation modeling and OLS modeling [19].

Ali et al. (2008) estimated a Parker effect event at unusual situation in 2003 when the wine grades were published much later, in the autumn, after the determination of prices [3]. Hay (2010) examined the impact of the Parker Score on the process of price formation through a comparison of the 2005 and 2008 en primeur campaigns [15]. Nam and Kwak (2011) reported the influence of Parker's wine ratings on the retail price in Korea [10].

These previous studies give some implications for future study. First, previous studies focused on Bordeaux wines and certain vintages. Second, these studies discussed on wholesale prices in Bordeaux's en primeur market only while many studies in other product categories had price variables with retail price level. Third, the previous studies on the relationship between price and quality evaluation are limited at appraiser or evaluator. Most of the studies used the data from individual expert such as Robert Parker, but studies of the influence of the group experts' evaluation are relatively rare.

Wine Spectator is a lifestyle media that focuses on wine and wine culture. It publishes 15 issues per year with content that includes news, articles, profiles, and general entertainment pieces. Each issue also includes from 400 to more than 1,000 wine professional editors' reviews, which consist of wine ratings on a 50-100 scale and tasting notes. Also it is the world's leading authority on wine that reaches more than 3 million readers worldwide, exploring wine's role in contemporary culture [21, 22]. In 2008 the magazine was ranked by the Luxury Institute as the number one business and consumer publication among wealthy readers. In Korean market, Wine Spectator's wine ratings are generally considered as indicators of wine quality evaluated by experts group under the name of a famous wine review media because many wine importers and retailers used the ratings for marketing.

The researchers of this study assume that extending the appraisal agent from individual to group can be meaningful in pricing study.

Research question 1: Do the appraisal data of Robert Parker and Wine Spectator influence wine retail prices in Korean on-premise wine market?

Research question 2: Are there any differences in relative importance of the appraisal data of Robert Parker and Wine Spectator influence on retail prices of wines from 6 regions (cf. Champagne, Bordeaux, Bourgogne, Toscana, Pied Monte, and California) of 3 countries (France, Italy, and USA) in Korean on-premise market?

3. Research Methodology

3.1. Samples

The data analyzed in this study combines two sources of information: retail prices of 6 hotel restaurants and 1 wine restaurant located in Seoul and Robert Parker's Scores extracted

from Robert Parker's website, www.erobertparker.com as individual expert's wine quality appraisal data, and Wine Spectator's wine quality appraisal data extracted from www.winespectator.com as expert group's appraisal data on wines' quality.

In a prior statistical analysis, Hay (2007) suggests that Parker has a significant impact on the price of en primeur Bordeaux wines [9]. He publishes The Wine Advocate, a bimonthly wine guide newsletter that has over 50,000 subscribers, primarily in the United States, but with significant readership in over 37 other countries. And the wine rating scores are released on website (www.erobertparker.com) and the off-line newsletter, The Wine Advocate. For rating over 7,500 wines' quality rating per year, he has 5 other wine critics as a team [23]. However, it is generally considered that rating scores of The Wine Advocate or www.eRobertparker.com is Robert Parker's rating and the rating score is even called as Parker Score because it is widely known that the rating results show and focus on his particular stylistic preferences with the words show his character. Also in Korean market Parker's Score is generally considered as individual wine expert's rating score. Therefore, the researchers of this study use the Parker Score as individual expert's wine quality appraisal data.

In Korean market, Wine Spectator's wine ratings made by 9 expert panels are generally considered as indicators of wine quality evaluated by tasting experts group under the name of a famous wine review media because many wine importers and retailers have used its ratings for marketing [22]. Therefore, in this study, the researchers use Wine Spectator's ratings as collective appraisal data on wine quality.

The wine quality appraisal results of Robert Parker's the Wine Advocate and Wine Spectator are released not only on off-line magazines but on-line websites. Launched in 1996 (www.winespectator.com) and 2001 (www.erobertparker.com), the websites have provided subscribers with full access to their expert wine ratings, tasting reports, news and other original contents. For both of contents providers and readers, on-line site is very useful to update the ratings and get various wines' information accumulated over the years easily.

Wine appraisal data of this study is extracted from the two on-line websites as the marketer or wine managers in Korean market do for their wine selecting and marketing. The researchers of this study selected 1,089 wine items with different vintages that have Robert Parker's Score from 2,210 items of wines listed in 7 wine restaurants' wine lists. Among 1,089 items, 900 wine items have Wine Spectator's ratings. The 900 wine evaluation cases will be analyzed for research question 1. To make the purpose of this study for research question 2 and 3, the researchers chose three countries and six regions which have more than 30 samples in every sub-region.

3.2. Modeling

To study the research questions, the researchers conducted multiple regression analysis with 900 wine items' retail prices as a dependent variable and Robert Parker's scores and Wine Spectator's wine ratings as independent variables.

$$\text{price}_i = \beta_0 + \beta_1 * \text{RP}_i + \beta_2 * \text{WS}_i + \varepsilon_i$$

Where β_0 , β_1 , and β_2 are coefficients to be estimated

price_i = wine i's retail price

RP_i = Robert Parker's score for wine i

WS_i = Wine Spectator's score for wine i

4. Results

4.1. The Influence of Individual and Collective Wine Appraisal Data on Retail Prices Without Regard to Country of Origins

Research question 1 is to study whether the wine appraisal data of Robert Parker and Wine Spectator affect on retail prices in Korean on-premise wine market or not. For this, the researchers set the retail price on the wine list as the dependent variable and wine appraisal data of Robert Parker and Wine Spectator as the independent variables then conducted regression analysis.

As a result of the analysis, in case of total 900 samples, determinant coefficients was 0.132 and F-value was 68.22($p < .001$). As Table 2 shows, the appraisal data of Robert Parker and Wine Spectator is significant variables that impact on retail prices ($p < .001$). Wine Spectator's wine appraisal data show higher relative importance than that of Robert Parker's. The standardized coefficients were 0.249 and 0.161, respectively.

Table 2. Relative Importance of Wine Individual and Collective Wine Appraisal Data of on Retail Price

	Coefficient of RP	Coefficient of WS	R ²	Adjusted-R ²	n
Total sample	0.161***	0.249***	0.132	0.130	900

*** $p < 0.001$

This result shows that the collective wine appraisal data could affect more retail prices than individual critic's appraisal data does in Korean market.

4.2. The Influence of Individual and Collective Wine Appraisal Data on Retail Prices of Wines from 6 Regions

Research question 2 is to study whether wine appraisal data of Robert Parker and Wine Spectator affect on the retail prices of wines produced in 6 regions (Champagne, Bordeaux, Bourgogne, Toscana, Pied Monte, and California) of 3 countries. Research question 3 is to investigate relative importance of influence of wine appraisal data of Robert Parker and Wine Spectator that affect the retail prices in Korean on-premise wine market. To study these research questions, the researchers conducted regression analysis with 7 wine restaurants' retail prices as dependent variables and appraisal data of Robert Parker and Wine Spectator as independent variables.

With R²s and coefficients of wine appraisal data of Robert Parker and Wine Spectator, Table 3 shows that Champagne's adjusted R² is 0.515 which is the highest score among that of 3 sub-regions in France; Champagne, Bordeaux, and Bourgogne and the sub-region with lowest score is Bourgogne with the score 0.08.

Table 3. Relative Importance of Individual and Collective Wine Appraisal Data Affect Retail Prices of Wines from 6 Regions

	Coefficient of RP	Coefficient of WS	R ²	Adjusted-R ²	N
Champagne	0.720***	0.024	0.528	0.515	76
Bordeaux	0.186***	0.279***	0.181	0.175	285
Bourgogne	0.058	0.330***	0.125	0.08	42
Toscana	0.376***	0.128***	0.196	0.166	56
Pied Monte	0.810***	0.105	0.786	0.771	32
California	0.395***	0.202***	0.297	0.288	151

*** p<0.001

Adjusted R² of Champagne is 0.515 and F-value is 40.87(p<.001). This result shows that wine appraisal data of Robert Parker and Wine Spectator can be good references in choosing champagne in Korean market. It is assumed that as there are many of non vintage items in Champagne category of the wine lists, the two wine appraisal data resources or other factor such as brand image could more affect retail price rather than vintage.

In case of Champagne, the empirical result of this research shows that only Robert Parker's appraisal data affected the prices of wines produced in Champagne, significantly. However, Wine Spectator's appraisal data did not produce significant influence on retail price.

R² of Bordeaux wines is 0.175 and F-value is 31.08(p<.001). As Table 2 shows, appraisal data of Robert Parker and Wine Spectator are significant variables that affect retail price in significant level (p<.001). The result shows that Wine Spectator's appraisal data has higher relative importance than Robert Parker's appraisal data.

Bourgogne wines' adjusted R² is 0.08 and F-value is 2.79(p<0.1). This result shows that the two wine appraisal data resources cannot be a good reference in choosing Bourgogne's wine. The number of Bourgogne wine samples that have the appraisal data of two resources is relatively small and it is assumed that there are some other factors that affect the retail prices for Bourgogne's wines in Korean market.

In case of Bourgogne's wine, the empirical research result produces that only Wine Spectator's appraisal data affected significantly the price of wines produced in Bourgogne. However, Robert Parker's appraisal data did not produce significant effect on the retail price.

In Tuscan wine category, adjusted R² is 0.166 and F-value is 6.48(p<.01). It shows that the two resources of wine appraisal data are significant variables that affect retail price in significant level (p<.001). And the empirical research result produces that Robert Parker's wine appraisal data shows higher relative importance than Wine Spectator's appraisal data.

In case of Pied Monte wines, adjusted R² is 0.771 and F-value is 53.11(p<.001). This result shows that the two appraisal data resources can be the good references in choosing wines from Pied Monte in Korean market. The empirical research result produces that only Robert Parker's appraisal data affects significantly the price of wines produced in Pied Monte. However, Wine Spectator's appraisal data does not produce significant influence on retail price of Pie Monte wines in Korean on-premise market.

In Californian wine category, adjusted R² is 0.288 and F-value is 31.28(p<.001). Robert Parker's appraisal data's standardized regression estimate is 0.395(p<0.001) and coefficient of Wine Spectator's appraisal data is 0.202(p<0.001). The empirical research result produces

that Robert Parker's wine appraisal data has higher relative importance on the retail price than Wine Spectator's wine appraisal data.

4. Conclusion

This study is conducted to compare the influence of subjective wine quality appraisal methods that affect retail prices in Korean on-premise wine market; individual vs. collective appraisal data extracted from two internationally well-known on-line resources. The results of this study report the relative importance of influence on the retail prices between the individual expert's appraisal data, called Parker's Score and collective appraisal data of Wine Spectator. The researchers analyzed the explanatory power of individual and collective appraisal data for 900 wine items produced in 6 sub-regions of 3 different countries and listed in 7 wine restaurants in Korea.

One of the results of this study is that the collective appraisal data has stronger influence on retail prices than appraisal data that is generally considered as an individual expert's appraisal data in total sample group. Second research result is that Robert Parker's individual appraisal data shows more powerful influence on the retail prices of the wines from Champagne, Toscana, Pied Monte, and California while Wine Spectator's collective wine quality appraisal data shows more powerful influence on Bordeaux and Bourgogne wines' retail prices of on-premise market in Korea.

For the future studies, interaction or correlation between Robert Parker's individual appraisal data and Wine Spectator's collective appraisal data was not considered in this study. Therefore, the interaction between different types of wine quality appraisals need to be considered to expand this kind of studies results. Furthermore, as the market is growing, more various appraisal data resources can be used as the research samples. Besides, future researches that consider more diverse variables that influence on the retail prices would be meaningful.

Acknowledgements

This research was supported by Technology Development Program for 'Bio-Industry Technology Development', Ministry for Food, Agriculture, Forestry and Fisheries, Republic of Korea.

References

- [1] A. J. Goudie, H. G. Sumnall, M. Field, H. Clayton and J.C. Cole, "The effects of price and perceived quality on the behavioural economics of alcohol, amphetamine, cannabis, cocaine, and ecstasy purchases", *Drug and Alcohol Dependence*, vol. 89, (2007), pp. 2-3.
- [2] G. T. Tellis and B. Wernerfelt, "Competitive price and quality under asymmetric information", *Marketing Science*, vol. 6, no. 3, (1987), pp. 240-253.
- [3] H. H. Ali, S. Lecocq and M. Visser, "The impact of gurus: Parker grades and en primeur wine prices", *The Economic Journal*, vol. 118, no. 529, (2008), pp. F158-F173.
- [4] L. F. Heisey, "Perceived quality and predicted price: Use of the minimum information environment in evaluating apparel", *Clothing and Textiles Research Journal*, vol. 8, (1990), pp. 22-28.
- [5] L. S. Lockshin and W. T. Rhodus, "The effect of price and oak flavor on perceived wine quality", *International Journal of Wine Marketing*, vol. 5, no. 2-3, (1993), pp. 13.
- [6] R. W. Bodell, R. R. Kerton and R. W. Schuster, "Price as a signal of quality: Canada in the international context", *Journal of Consumer Policy*, vol. 9, (1986), pp. 431-444.
- [7] Y. Kim and E. Kim, "A study of the correlation between the objective quality and the prices in Korean markets", *Journal of Consumer Studies*, vol. 10, no. 3, (1999), pp. 85-100.
- [8] Y. Yamada and N. Akerman, "Price-quality correlation in the Japanese market", *Journal of Consumer Affairs*, vol. 18, (1984), pp. 215-265.

- [9] C. Hay, "Globalisation and the institutional re-embedding of markets: The political economy of price formation in the Bordeaux en primeur market", *New Political Economy*, vol. 12, no. 2, (2007).
- [10] Y. Nam and Y. Kwak, "The influence of wine expert's on-line ratings on retail price of on-premise market in Korea", *Communications in Computer and Information Science*, vol. 264, (2011), pp. 136-143.
- [11] A. Khan and M. N. Khan, "Internet content regulation framework", *International Journal of u- and e- Service, Science and Technology*, vol. 4, no. 3, (2011), pp. 19-31.
- [12] D. Cho, S. Kim and Y. Kwak, "A study of personalized contents recommendation method based on user preference learning", *The Journal of Korea Institute of Information Technology*, vol. 9, no. 9, (2011).
- [13] H. Kwon, M. Kim, J. Park and J. Lee, "A study on evaluation of social commerce quality: Focused on quality factors of the information system and individual characteristics", *The Journal of Korea Institute of Information Technology*, vol. 9, no. 8, (2011), pp. 229-237.
- [14] Y. Lee, W. Youn, J. Lim, Y. Nam and Y. Kwak, "OpenTide China's pricing decision-making support system 2.0 for digital industry in China", *International Journal of u- and e- Service, Science and Technology*, vol. 3, no. 1, (2010), pp. 11-20.
- [15] C. Hay, "The political economy of price and status formation in the Bordeaux en primeur market: the role of wine critics as rating agencies", *Socio-Economic Review*, vol. 8, (2010), pp. 685-707.
- [16] H. H. Ali and S. Lecocq, "The pricing of experience goods: The case of en primeur wine", *American Journal of Agricultural Economics*, (2006).
- [17] H. H. Ali, S. Lecocq and M. Visser, "The impact of gurus: Parker grades and en primeur wine prices", University of Toulouse, INRA working paper, (2005).
- [18] T. Bruce-Gardyne, *The Herald*. The world's leading wine critic, (2010) August 9.
- [19] P. Dubois and C. Nauges, "Identifying the effect of unobserved quality and expert reviews in the pricing of experience goods: Empirical application on Bordeaux wine", *American Association of Wine Economist*, working paper, (2007).
- [20] Wikipedia: Robert Parker.
- [21] Wikipedia: Wine Spectator.
- [22] [www.Wine Spectator.com](http://www.WineSpectator.com)
- [23] www.eRobertparker.com.

Authors



Youngsik Kwak

He received a B.B.A. degree from Sungkyunkwan University, Seoul, Korea, in 1990, an MBA. degree from Sungkyunkwan University, Seoul, Korea, in 1994, a M.S. degree from Texas Tech University, Lubbock, TX, in 1997, and a Ph. D. degree from Sungkyunkwan University, Seoul, Korea in 1999, in marketing. He had been a marketing consultant for Daewoo Economic Research Institutes from 1999 to 2002. Currently he is an associate professor in the Department of Venture and Business, Gyeongnam National University of Science and Technology, Jinju, Korea. His research interest includes pricing on- and off-line.



Yoonjung Nam

She received a B.B.A. degree from Sangmyung University, Korea in 1996, an MBA. Degree from Sungkyunkwan University, Korea in 1999, and now is a Ph.D. candidate in Hanyang University, Korea in tourism. She has been a marketer for 2 years in IT industry and 10 years for F&B industry from 1999 to 2012.



YoonSik Kwak

He received his B.S. degree in Electrical Engineering from the University of Cheongju in 1984, his M.S.E.E. degree from the University of Kyunghee in 1986 and his Ph.D. degree from the University of Kyunghee in 1994. He worked at Korea National University of Transportation in the Department of Computer Engineering and rose to the level of Full Professor. His research interests are in the areas of signal processing and image processing, Internet communication, microcomputer system , applications of these methods to mobile system.

