

Exploring self-reported wine reviews as a means to measure the effectiveness of wine education?

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Purpose: To understand if self-reported wine reviews can be used as an indicator of the effectiveness of wine education on novice wine drinkers.

Design/methodology/approach: Chinese international students participating in a wine education research project were given the opportunity to self-report reviews of the wines tasted during each session. Blind tastings were administered before and after education and to the two tested education groups and the control (no education) group. Various descriptive statistics on the size and complexity of the reviews are reported. Leximancer software is used to content analyse the reviews and further statistical analyses are applied.

Findings: Self-reported wine reviews are useful in understanding the effectiveness of wine education on novice wine drinkers.

Practical implications: Wine education is an effective tool in equipping wine drinkers with the conceptual knowledge to describe wine.

Key words: Wine reviews, wine education, novice drinkers, China

1. Introduction and literature review

The Chinese wine market is a major opportunity for the global wine sector. Certain wine producing countries have the added benefit of having a large number of Chinese visitors to their countries. For example, the French are the 3rd most popular tourism destination for the Chinese. There is evidence of targeted programs to reach Chinese tourists with designer, culture-specific wine experiences (Drinksbusiness, 2013). Australia is also a popular tourist destination for China. However, more interesting, it is a major provider of tertiary education for the future Chinese leaders of tomorrow (News.com.au, 2014). These Chinese students are the genesis of this research.

There is evidence (Bowe et al., 2013) that just visiting a country has a positive impact on a person's appreciation of food products. This is fortuitous for any country that has a large influx of Chinese visitors. However, an international student cohort is potentially more valuable in that they will pass a significant amount of time in the country and have the opportunity to acculturate. This presents an opportunity at a strategic level to engage the wine buyers of tomorrow and shape their preferences. Upon returning to China, these young potential oenophiles will hopefully act as 'influencers' and continue to shape the preferences of their friends and family.

The data for this research was collected as part of a Grape and Wine Research Development Corporation (GWRDC) grant issued to investigate the optimal approach to educate millennial international Chinese students living in Australia. A peculiarity of this cohort is their usage of social media and the Internet. The explosion of review websites on the Internet and other forms of digital media for brand and product information have helped online WOM and user generated content become prevalent themes in the marketing literature in recent years (Chevalier and Mayzlin 2006; Chen and Xie, 2008; Kamakura and Moon, 2012). These communication media have made the 'product review' much more prevalent and available to just about anyone rather than just the serious 'wine lover' who might be the only one willing to buy a 500 page wine guide. Product reviews are even more important for an experiential product such as wine as they are difficult to sample before consumption/purchase (Kamakura et al., 2006; Sennecal and Nantel, 2004). There is growing evidence that young people in China not only participate in social media at a higher rate than other countries, but also engage more often and pay more attention to product reviews (Chiu et al., 2012).

Kamakura and Moon (2012) put forth a methodology for drawing online wine reviews from the Internet, content analysing them and creating perceptual maps of the particular reviewer. Their study provides a major contribution into techniques for the future analysis of online reviews. An important distinction between their research and this study is that they are analysing description preferences within reviewers, where this research looks for patterns across reviewers. We take a further divergent approach in this study and look to deconstruct the reviews of novice wine drinkers. However, a limitation of our research could be the inability for these novices to externalise their perceptions of the tasted products (Alba and Hutchinson, 1987). An added concern for this investigation could be the limited language capabilities of the respondents as English is a second and relatively new language.

This research is a pilot study to begin the process of deconstructing the impact of wine reviews on product choice for Chinese consumers. During one wave of this funded research program on wine education, participants were encouraged to write wine reviews of the wines tasted. The basic question of this presented study is whether self-reported wine reviews can be used to measure the effectiveness of wine education using pre- and post-education blind tastings. It is important to note that the cohort investigated should be considered as a convenience sample. They were accessible due to funding provided for a broader wine

research program. The method and results are exploratory. There is certainly value in replication across other markets trying to gain access to the Chinese consumer. This sample is not representative of China as a whole, but they do represent an emerging young cohort of highly educate and future higher income earners with western leaning tendencies and from a commercial perspective are of value to comprehend the most effective tools to form their preferences for wine as is the goal of the broader research grant that this study is a part of.

2. Data collection

The respondents were recruited through Facebook and various international student organisations across three universities in South Australia. They received compensation in the form of a gift voucher from a major retail group in Australia. All data were transcribed from pencil and paper surveys into excel spreadsheets.

Three groups of students were recruited for this study: one control group and two experimental groups. All groups of respondents were asked to participate in a blind tasting of six wines, 20 days apart and asked to do a number of tasks related to rating their preferences, identifying the various generic and specific taste terms they could notice and writing a wine review (this was not forced) of each wine tasted. The two experimental groups attended three one-hour wine education classes and tastings between the blind tastings. There were functional differences in the method of education. However, the nuances of this are left for discussion in other research manuscripts. The control group received no wine education. The data analysed in this paper was drawn from the before and after blind tasting sessions by comparing the control group to the two experimental groups. A total of 103 students took part in the research, with the majority of them taking part in all sessions of their particular group. There were 35 participants in the control group (drop-out rate=5%), 36 participants in group 2 (drop-out rate=10%) and 32 participants in group 3 (drop-out rate=35%).

3. Method and analysis

Descriptive analysis was conducted initially on the reviews. The total number of reviews submitted for all the times tried in both sessions was counted, followed by the average number of words used per review. Upon completion of this analysis, the data was cleaned and placed into a suitable format for analysis using Leximancer (Version 2.23). Leximancer is a text analytics tool. The software is deigned to investigate the content of groups of text or documents and to present the information visually. Leximancer conducts conceptual and relational content analysis and determines core concepts using seed words and an inbuilt thesaurus without the bias of human intervention. Using word frequency and co-occurrence, Leximancer presents a concept map displaying the key concepts and a frequency table of mentions and relations with other concepts (Leximancer Manual, 2007). The pictorial representations of these concepts are not reported due to Campbell, Pitt, Parent and Berthon's (2011) conclusions of the limitation of subjective interpretation of meaning of the graphical outputs. For the purpose of this study, it was used to generate frequency counts of concepts discussed in the reviews for interpretation. The frequency counts of the usage of each specific concept in each wine session are calculated, and the results are compared between sessions for each group and between groups for each session using an independent sample t-test.

4. Results

The results (see Table 1) show that all three groups increased the number of reviews given to the six wines between the two sessions. The control group (G1) increased from 73% to 86% of reviews written per wine tasted, the group who received an education using one particular educational priming (G2) increased from 80% to 100%, while the group who received an

alternate educational priming (G3) increased from 59% to 96% of reviews written per wine tasted. When looking at the average number of words used per review, one can see a decrease of 6% from 8.9 to 8.4 words for the control, compared to G2 and G3 where the number of words went up by 40% (from 9.2 to 12.8 words) and 54% (from 9.4 to 14.4 words). The slight drop in word count for the control group is unexplainable. The increased magnitude, however, in both groups that received education is notable.

Table 1: Summary statistics for the three groups

	G1 Before	G1 After	Diff (%)	G2 Before	G2 After	Diff (%)	G3 Before	G3 After	Diff (%)
No. of participants	37	35		40	36		35	32	
No. of potential reviews	222	210		240	216		210	192	
Total no. of reviews written	161	181		192	216		123	185	
Reviews (%)	73	86		80	100		59	96	
Total no. of words used	1448	1525		1762	2755		1151	2659	
Avg. no. of words (excluding blank reviews)	8.9	8.4	-6	9.2	12.8	40	9.4	14.4	54

A qualitative analysis of the concepts elicited by the participants demonstrates that there are a few concepts - taste, strong, wine, smell, and light - mentioned across all groups and sessions. There is variability among the other concepts listed.

In the control group, the words alcohol, aroma, flavours, mild, nice, rich and time are not mentioned in the 'after' session, while colour, dark, heavy, left, sour and spicy appear. The participants have had no exposure during any aspect of their participation to any form of wine education. Their only interaction was with the tasting and survey instrument. It is possible that exposure to the survey instrument could be the cause of the variation.

In group 2, the terms aroma, bold, cherry, deep, feeling, food, oaky, staying, tongue, weird, and woody are not mentioned in the 'after' session, while the terms alcohol, colour, fruity, mouth, purple, red, rough, smooth spicy and sweet emerge. In group 3, there is no mention of bitter, dark, dry, feel, sour and time in the 'after' session, but the terms alcohol, anise, dates, long, mouth, smooth and star appear. There is a notable aspect in this shift in conceptual elicitation. It is apparent that the key words related to how to taste wines that are presented to the cohort during their three wine education sessions appear in high frequency. (see Table 2)

Table 2: Comparison of frequencies of mentions between sessions - By group

GROUP 1			GROUP 2			GROUP 3		
CONCEPTS	BEFORE	AFTER	CONCEPTS	BEFORE	AFTER	CONCEPTS	BEFORE	AFTER
Alcohol	11	0	Alcohol	0	23	Alcohol	0	20
Aroma	4	0	Bold	3	0	Bitter	11	0
Colour	0	8	Dark	0	36	Dark	4	0
Dark	0	7	Drinking	10	0	Dates	0	10
Drink	24	11	Feeling	2	0	Drink	7	21
Flavours	4	10	Food	4	0	Dry	5	0
Grape	5	0	Fruity	0	24	Fruity	13	33
Heavy	0	9	Light	0	35	Light	12	20
Left	0	5	Mouth	0	17	Long	0	17

Light	10	0	Oaky	4	0	Mouth	0	21
Mild	3	0	Purple	0	11	Smell	16	28
Smell	0	13	Rough	0	23	Sour	9	0
Sour	0	7	Smell	0	28	Spicy	9	38
Strong	13	0	Smooth	0	22	Star	0	8
Sweet	15	0	Spicy	0	46	Strong	23	21
Taste	24	31	Strong	0	17	Sweet	16	25
Time	3	0	Taste	49	63	Taste	15	82
Wine	26	26	Wine	25	39	Wine	21	36

Finally, the number of times each concept emerged in each of three groups and each of the two sessions was analysed (see Table 3). The results were compared for each pair of before-after conditions, and across each of the three pairs of groups before and after the education sessions. The results show that the number of concepts identified in each of three sessions is fairly similar, but the number of times each concept was mentioned in the reviews significantly increases only for the groups that received educational sessions (p-value=0.715 for the control group before vs. after, p-value=0.001 for group 2, and p-value=0.002 for group 3).

In the control group, there is stability across the total frequency of mentions across all reported concepts (147 mentions before and 163 mentions after) showing no statistical significant difference (p-value=0.715). However, there are significant differences in both groups who received education (with different priming) between sessions. In group 2, the number of conceptual mentions increases from a frequency of 97 to 355 (+265% - p-value=0.001), and from 121 to 376 (+210% - p-value=0.002) for group 3.

It is also interesting to note that no significant difference was reported between groups in the first session (p-value=0.252, p-value=0.482, and p-value=0.541 respectively), a result which signals that the three groups are suitable for comparison. Conversely, the results are significantly different in the second session (p-value=0.005 and p-value=0.011 respectively) between the control group and the two groups who received a form of wine education. This result illustrates that education has a positive effect on the respondents' ability to craft a wine review. However, the differences in the educational delivery to each group does not have a significant impact on the frequency of concepts reported (p-value=0.815). This indicates that education has an effect, however our education programs may not have been robust enough to cause a measurable difference.

Table 3: Concept counts and comparisons between groups and sessions

	No. of Concepts	Count of no. of concepts		No. of Concepts	Count of no. of concepts	T-test sig.
Group 1 - Before	16	147	Group 1 - After	15	163	0.715
Group 2 - Before	16	97	Group 2 - After	16	355	0.001
Group 3 - Before	15	121	Group 3 - After	16	376	0.002
Group 1 - Before	16	147	Group 2 - Before	16	97	0.252
Group 1 - Before	16	147	Group 3 - Before	15	121	0.482
Group 2 - Before	16	97	Group 3 - Before	15	121	0.541

Before			Before			
Group 1 - After	15	163	Group 2 - After	16	355	0.005
Group 1 - After	15	163	Group 3 - After	16	376	0.011
Group 2 - After	16	355	Group 3 - After	16	376	0.815

5. Discussion and conclusions

Despite the exploratory nature of this research, the findings are both academically and managerially useful. Academically, this study extends the work of Kamakura and Moon (2012) in three notable areas: 1) demonstrating the applicability of the analysis from within reviewers to between reviewers; 2) proving that it is possible to content analyse novice wine reviews; and 3) illustrating that the impact of education can be measured through the evolution of wine reviews. Managerially, it can be expected that new/novice wine drinkers who are formally educated will be able to communicate more effectively about their wine experiences. The increased breadth in conceptual description will be useful as these people not only communicate with their friends and family, but through social media and review websites where strangers will have the ability to access their opinions (Chiu et al. 2012). This pilot study serves to inform and will assist in scoping future research on self-reported reviews and evolving wine preferences. The collected reviews themselves will be utilised in a future experiment looking at the impact of novice versus expert reviews on wine choice.

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7. References

- Alba, J. W., and Hutchinson, W. J. (1987), "Dimensions of Consumer Expertise," *Journal of Consumer Research*, Vol. 13 No. 4, pp. 411-454.
- Bowe, J., Lockshin, L., Lee, R., and Rungie, C. (2013), "Old dogs, new tricks – Rethinking country-image studies", *Journal of Consumer Behaviour*, Vol. 12 No. 6, pp. 460–471.
- Campbell, C., Leyland, P., Parent, M., and Berthon, P. (2011), "Tracking back-talk in consumer generated advertising: an analysis of two interpretative approaches", *Journal of Advertising Research*, Vol. 51 No. 1, pp. 224-238.
- Chen, Y., and Xie, J. (2008), "Online consumer review: word-of-mouth as a new element of marketing communication mix", *Management Science*, Vol. 54 No. 3, pp. 477–491.
- Chevalier, J. A., and Mayzlin, D. (2006), "The Effect of Word of Mouth on Sales: Online Book Reviews", *Journal of Marketing Research*, Vol. 43 No. August, pp. 345–354.
- Chiu, C., Ip, C., and Silverman, A. (2012), "Understanding social media in China", *McKinsey Quarterly*, April. (accessed online at: http://www.mckinsey.com/insights/marketing_sales/understanding_social_media_in_china)
- Corsi, A. M., Cohen, J., and Lockshin, L. (2013), "Developing a Chinese lexicon for wine", *Wine and Viticulture Journal*, Vol. 28 No. 6, pp. 66-68.

Drinksbusiness (2013), "France raises a glass to Chinese tourists", available at <http://www.thedrinksbusiness.com/2013/12/france-raises-a-glass-to-chinese-tourists/>

Kamakura, W. A., and Sangkil, M. (2012), "How to speak 'winese': Learning the language of wine reviews", available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2162016

Kamakura, W. A., Basuroy, S., Boatwright, P. (2006), "Is silence golden? An inquiry into the meaning of silence in professional product evaluations", *Quantitative Marketing and Economics*, Vol. 4 No. 2, pp. 119-141.

Leximancer (2007), Leximancer Manual v. 2.23, available at https://www.leximancer.com/wiki/images/archive/7/77/20080826071142!Leximancer_V2_Manual.pdf

News.com.au (2014), "Chinese students come back to Australia", available at <http://www.news.com.au/national/chinese-students-come-back-to-australia/story-fncynjr2-1226801777835>

Senecal, S., and Nantel, J. (2004), "The influence of online product recommendations on consumers' online choices", *Journal of Retailing*, Vol. 80 No. 2, Vol. 159-169.