

Old wine in new bottles? The impact of information on the acceptance of innovative wine packaging

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Abstract:

Purpose: This paper suggests that consumer education in the form of information can effectively overcome adoption barriers to new and innovative wine packagings. This effectiveness depends both on the degree in packaging innovation and the level of consumer involvement.

Design/methodology/approach: We conducted an online experiment with a sample of German consumers to analyse the perception of consumers for innovative packagings. The experiment featured three different packaging options: bottles with screw cap closures, bag-in-box, and StackWine. For each packaging form, there was a treatment group with additional information about the packaging and a reference group without this information. To test our hypothesis, we applied ANOVAs and t-tests. We carried out a moderated regression analysis to examine the effect of involvement in combination with information on intention to buy.

Findings: The results revealed that low involvement consumers react positively to additional information about the benefits of a new packaging. For highly involved consumers, however, the effect of information is not significant. Furthermore, the analysis showed that consumers with low involvement mainly buy wine in supermarkets.

Practical implications: Information about new packaging forms should be presented in places where consumers with low involvement buy wine, such as supermarkets. These customers can be influenced by the additional information about the innovative packaging.

Keywords: Packaging, innovation, consumer behaviour, involvement, customer education

1. INTRODUCTION

Are bottles outdated? Nowadays, wine comes in many different shapes and sizes: Bottles with corks, screw caps or stoppers, larger containers like bag-in-box and Tetra Pak[®], and the single serving packagings like StackWine or cans. The wine market is changing in terms of packaging. Producers break with traditions and introduce new packaging forms (Barber and Almanza, 2006). Bag-in-box sales have steadily increased over the last few years (Santini et al., 2007) and the International Organisation of Vine and Wine (2013) has proposed to the World Customs Organisation to change the custom identification of containers between 2 and 10 litres, which demonstrates the importance of this type of packaging.

However, innovative packagings face the same barriers as every other innovation (Atkin et al., 2006). Despite this fact, the adoption of innovative packaging attracted little attention in previous research. Especially radically innovative packaging forms like StackWine have not been addressed in the realm of customer acceptance of innovations. Therefore, the aim of this paper is to shed light on the acceptance of radical packaging innovations in the wine market. In particular, we examine the effect of customer education as well as the level of product involvement on the acceptance of new packaging forms.

2. LITERATURE REVIEW

Packaging is one of the last chances to persuade a customer to choose one item over another (McDaniel and Baker, 1977). Therefore, it can significantly influence customers' purchase decisions. Rigaux-Bricmont (1982) shows that packaging is a powerful way to differentiate products from competitors. Especially food packaging greatly influences the purchase decisions. In addition to the important role of protecting and keeping perishable goods fresh and consumable, packaging helps customers find the right product (Wells et al., 2007). Orth & Malkewitz (2008) define five holistic packaging design prototypes, each of which consists of a specific set of design elements and factors that trigger certain design impressions in customers' minds. Since wine is a very complex product whose quality cannot be adequately assessed prior to its purchase or consumption, customers rely on extrinsic cues such as the packaging and the information displayed on the packaging (Atkin and Newton, 2012; Sherman and Tuten, 2011). First, there is empirical evidence that shows that extrinsic cues like label design, type of closure, region of origin, and price can influence the purchase decision and even the post-purchase evaluation of quality significantly (Atkin and Newton, 2012; Atkin et al., 2006; Barber and Almanza, 2006; Celhay and Passebois, 2011; Sherman and Tuten, 2011; Veale, 2008). One part of the packaging is particularly interesting for the wine marketing research: the closure (e.g. Murray and Lockshin, 1997). Research shows that customer education, such as information about an innovation, can alter the preference of different types of closure. Customers showed higher preferences for synthetic cork closures after reading an informative article about this new type of closure (Murray and Lockshin, 1997).

Second, besides information about an innovation, several other factors influence the adoption process of innovations. For example, extrinsic cues that reduce the risks associated with the innovation (e.g. warranties) can also foster adoption of innovations (Bearden and Shimp, 1982). Additionally, the timing of marketing activities is crucial for their efficacy (Delre et

al., 2007), and especially during the launch phase, traditional advertising activities can highly impact the adoption (Narayanan et al., 2005). Ram & Sheth (1989) show that innovation resistance occurs in every product category and solely depends on the degree of discontinuity. Therefore, products with a high level of discontinuity face stronger adoption barriers than those with lower levels of discontinuity. However, these low innovative products can face strong resistance, particularly if a conflict with the customers' belief structure occurs (Ram and Sheth, 1989). Atkin et al. (2006) use the concept of resistant innovation to analyse the adoption of screw cap closures for wine bottles in New Zealand, the United States, and Australia. The authors define the screw cap closure as a low-tech discontinuous innovation.

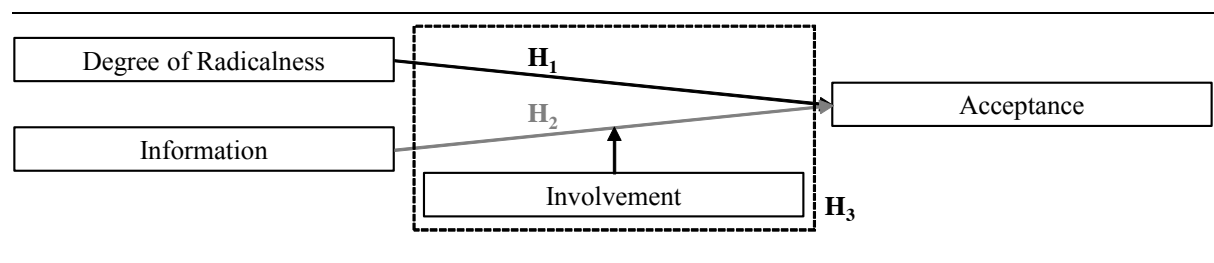
Lastly, research also shows that the concept of involvement has a major influence on consumer behaviour in innovation adoption. Zaichkowsky (1988) introduces product involvement as the individual's perceived relevance of a product or product category. High involvement consumers evaluate extrinsic product cues differently than low involvement consumers. Involvement also leads to different consideration of extrinsic cues like country of origin of the brand; low involvement consumers tend to pay more attention to this cue than highly involved consumers (Prendergast et al., 2010). There is a multitude of research about wine and involvement showing that the level of involvement has a significant influence on the consideration and understanding of different extrinsic and intrinsic cues (e.g. Hollebeek and Brodie, 2009; Madureira and Nunes, 2013; Spielmann, 2012).

In conclusion, the degree of radicalness of an innovation, the available information about an innovation, and the customers' involvement in the product category influence the acceptance of an innovations. Thus, the relationships among these constructs is of crucial importance for the development of new packagings and the presumed adoption of such innovations.

3. HYPOTHESIS DEVELOPMENT

The degree of radicalness reflects the degree of discontinuity of an innovation. A more radical innovation deviates more from the reference product. Information, in this case, is an unbiased list of facts about the benefits of the packaging innovation, which is specific to each packaging innovation. The involvement stands for the customer's perceived relevance of wine. Acceptance represents the customers' willingness to buy wine in this specific packaging form. Figure 7 visualises the presumed relationships between the four constructs.

Figure 7: Visualisation of the Hypotheses



Based on these definitions and the assumptions derived from the literature review, more radical packagings face stronger customer acceptance barriers. Thus, we propose the following hypothesis:

H₁: The customer acceptance of the packaging innovation is inversely related to the degree of radicalness of package design.

Moreover, customer education in form of information about the beneficial features of the packaging is expected to be positive for every packaging variant. Thus, we propose the following hypothesis:




H₂: Information about the innovative packaging's beneficial features enhances customer acceptance of the packaging.

Lastly, customer involvement also has an impact on the acceptance of the packaging innovation. Because customer involvement implies that customers have knowledge about wine, the impact of information about the packaging might be different for different levels of customer involvement. Due to the lower level of knowledge, low involvement customers might be more open to information about new packaging forms. Thus, we propose the following:

H₃: The positive effect of information about the packaging on the customer acceptance is greater for customers with low involvement than for those with high involvement.

4. METHOD

Figure 8: Packaging Variants

Packaging	Bottle with Screw Cap (SC)	Bag-in-box (BiB)	StackWine (SW)
Visualisation			
Description	0.75 litre bottle with screw cap closure	3 litre bag-in-box	Four single serving plastic glasses (total 0.75 litre)
Degree of Radicalness	Low	Medium	High

As setup for this study, we use a 3 (degree of radicalness) x 2 (information presentation) factorial between-subjects design in an online experiment. The degree of radicalness is reflected by the three different wine packing variants that differ in the way customers consume the wine (see Figure 8). Hence, they refer to different degrees of radicalness and imply different consequences for the adoption process. Since the bottle with cork closure is the best known wine packaging in Germany, we use it as reference. Therefore, the bottle with a screw cap closure (SC) represents the least radical innovation. The process of consuming wine is mainly identical, the only difference is the opening of the bottle referring

to the definition of Atkin et al. (2006). In line with this definition, for bag-in-box wines (BiB), the consumption process is rather different: There is no glass bottle and the container is significantly larger. The wine is still consumed out of a usual glass. Therefore, it can be argued that the degree of radicalness is on a medium level. StackWine (SW) represents the highest degree of radicalness, because the form of the container is completely different and no glasses are necessary to consume the wine. The presentation of the packaging form was integrated in the online experiment in the form of a series of pictures or a video (StackWine).

Table 1: Wine Product Involvement by Hirche & Bruwer (2014)

– I have good general knowledge about wine.	– Every now and then I visit a wine seminar.
– Other people often ask me advice regarding wine.	– Sometimes, when drinking wine, I like the intellectual challenge of complex tastes.
– Wine offers me relaxation and fun when life's pressures build up.	– I am or would consider getting a member in a wine club.
– I take particular pleasure from wine.	– I regularly attend wine events / festivals.
– I very much enjoy spending time in a wine shop.	– Every now and then I participate at a wine tasting.

The information texts about the benefits of the packaging forms included features like the possibility to open the bottle or container without a tool, to close the bottle again, or to prevent oxidation. The intention to buy was used as measurement of acceptance of the packaging ("I would buy wine in this packaging", 7-point Likert scale). Involvement was measured using the ten items wine product involvement construct (7-point Likert scale) developed by Hirche & Bruwer (2014), see Table 1. Furthermore, participants' demographic data and the place of purchase (supermarket, wine shop, online wine shop, vineyard cellar door, vineyard online) were obtained.

5. DATA ANALYSIS AND RESULTS

First, we conducted a pilot study with 15 participants to test our manipulations and the wording of the items in translation. In the main online experiment, a total of 427 participants were randomly assigned to the six conditions of a 3 (packaging: SC, BiB, SW) x 2 (information about benefits: yes vs. no) factorial between-subjects design. The resulting cell sizes ranged from 63 to 75. The participants were incentivized with a prize to take part in the online experiment; we approached most of the participants in wine related Facebook groups. The participants' mean age is 30 years, 49.9% of the participants are male and 48.7% are female. Overall, 51.5% of the respondents stated to be students. The distribution of these demographic characteristics among the six groups is even as an ANOVA for age, gender and job showed no significant differences (age: $df = 5$; $F = 1.450$; $p = 0.205$; gender: $df = 5$; $F = 0.357$; $p = 0.877$; and job: $df = 5$; $F = 0.376$; $p = 0.865$).

To test the reliability and unidimensionality of the construct 'wine product involvement', we carried out an exploratory factor analysis, which extracted one factor, and calculated the Cronbach's α which is 0.931.

To analyse H_1 , we carried out a one-way ANOVA in combination with planned contrasts. The ANOVA shows a significant effect of the packaging on the intention to buy, $F(2.424) = 173.24$; $p < 0.05$; $\omega = 0.67$. The three planned contrasts, see Table 2, show that the participants' acceptance of screw caps is significantly higher than for bag-in-box and

StackWine. The difference of the acceptance between bag-in-box and StackWine is not significant.

Table 2: Planned Contrasts

<i>Contrast</i>	<i>Mean Difference</i>	<i>Std. Error</i>	<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>	<i>r</i>
SC > BiB	3.22	0.202	15.92	261.336	0.000	0.70
SC > SW	3.51	0.198	17.79	248.805	0.000	0.75
BiB > SW	0.29	0.230	1.28	279.984	0.201	0.08

Overall, the results of the contrast tests show that only SC > BiB and SC > SW. Because BiB = SW, H₁ is only partly supported. There are statistically significant differences among the three packagings regarding the respondents' intention to buy. The assumed order with a decreasing acceptance from screw cap to StackWine, however, cannot be identified. The acceptances for bag-in-box and StackWine are on the same level, the acceptance for screw cap closures is significantly higher.

Table 3: T-Tests of the Effect of Information on Acceptance

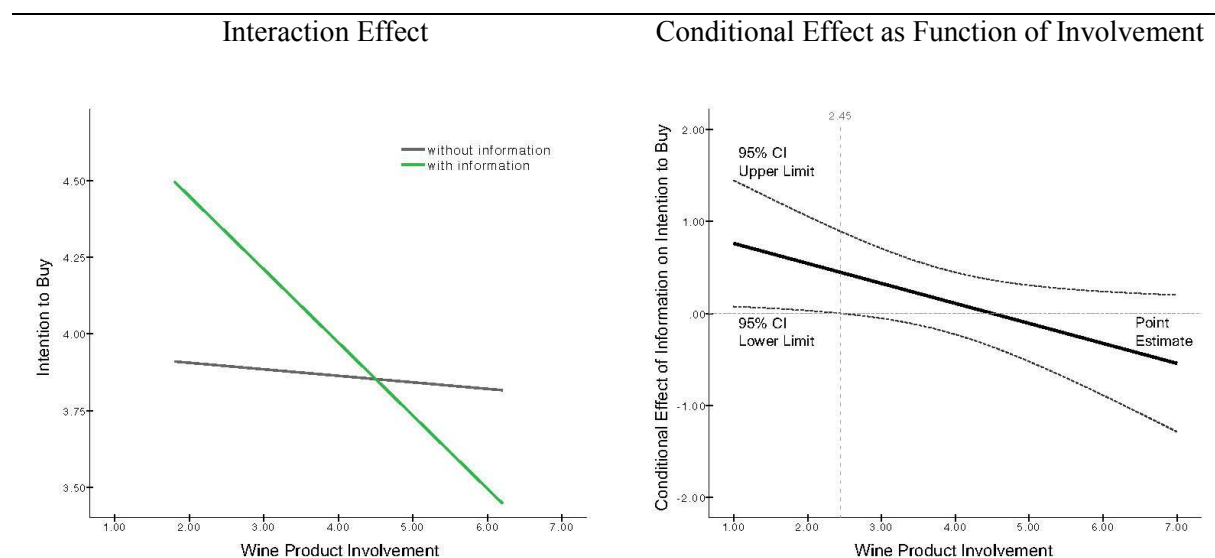
<i>Test</i>	<i>Levene's Test</i>		<i>t-test</i>			
	<i>F</i>	<i>Sig.</i>	<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>	<i>r</i>
SC ₁ > SC ₀	0.031	0.859	0.328	143	0.372	0.03
BiB ₁ > BiB ₀	2.088	0.151	0.731	145	0.233	0.06
SW ₁ > SW ₀	0.002	0.967	0.173	133	0.432	0.01

Next, to examine the positive effects of information about the packaging on the customer acceptance of the packaging proposed in H₂, we carried out three individual independent sample t-tests. Each t-test compares the means of the two different groups within one packaging: with information (SC₁, BiB₁, SW₁) and without information (SC₀, BiB₀, SW₀). Table 3 shows the results of the three t-tests and the corresponding Levene's tests. These results state that there is no significant difference ($\alpha = 0.05$) between the groups with information about the features of the packaging and the groups without that information. Therefore, there is no mere effect of information on intention to buy. Hence, H₂ is not supported by the data.

Table 4: Results of the Moderated Regression Analysis

<i>Predictor</i>		<i>B</i>	<i>Std. Error</i>	<i>t</i>	<i>Sig.</i>
Constant	b_0	2.816	0.310	9.808	0.000
Information (X)	b_1	0.978	0.445	2.196	0.029
Involvement (M)	b_2	-0.021	0.074	-0.289	0.773
Interaction (XM)	b_3	-0.217	0.107	-2.031	0.043
Packaging (C)	b_4	3.334	0.180	18.521	0.000
r of the model: 0.678		r change due to interaction: 0.073		Significance of r change: 0.043	
Equation: $Y = 2.816 + 0.978X - 0.021M - 0.217XM + 3.334C$					

To analyse the moderating effect of involvement in H₃, we performed a moderated regression analysis using the data of all 427 respondents. The binary variable X represents whether there was information about the features (1) or not (0). Because the respondents do not differentiate between the intentions to buy wine in the packaging bag-in-box or StackWine, these two types of packaging were summarized in one cluster ('more radical packaging'). The screw cap closure stands for the 'less radical packaging'. The bivariate covariate C represents these clusters (0 = 'more radical'; 1 = 'less radical'). The moderator M shows the involvement (range: 1 to 7). The intention to buy is the dependent variable Y (range: 1 to 7).

Figure 9: Visual Representation of the Moderated Regression Analysis

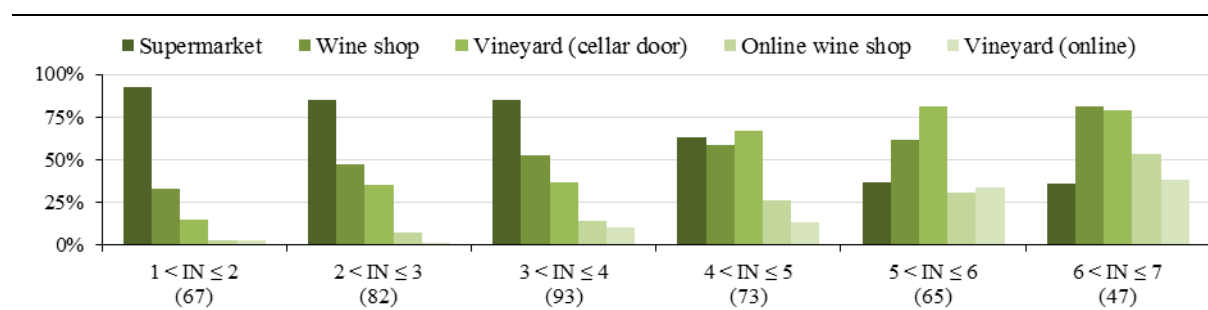
Notes: The covariate C is set to its sample mean 0.340.

Using IBM SPSS 22 and Hayes' plug-in PROCESS, the floodlight analysis shows that information has an effect on intention to buy for customers with low levels of involvement.

Table 4 shows the results of the moderated regression analysis. The r of the model is 0.678 and 0.073 can be assigned to the inclusion of the interaction effect. The results of the floodlight analysis in Figure 9 show that the effect of information on the intention to buy is significant ($\alpha = 0.05$) for respondents with involvement levels lower than 2.45. Within the sample, 22.5% of the respondents have an involvement score lower than 2.45. Since the interaction effect of information and involvement is only significant for low levels of involvement, hypothesis H_3 is supported.

Additionally, we examined the different shopping places of customers with the different levels of wine product involvement. The results in Figure 10 show that low involvement customers prefer to buy wine in supermarkets. Customers with an involvement level of 4 or higher mostly buy wine at the vineyards or in wine shops and also use online shops more often.

Figure 10: Place of Purchase by Level of Wine Product Involvement



Percentage of positive answers per level of wine product involvement. Multiple answers possible. Numbers '(67)' represent the number of respondents in this class of involvement.

6. DISCUSSION AND CONCLUSIONS

Sparse research on the acceptance of innovative packagings exists. In this study we focus on innovative wine packaging and the influence of customer education and involvement. To begin with, we find that the differences in the acceptance of the packaging forms indicate that the respondents differentiate between two levels of radicalness. The respondents show the same level of acceptance for StackWine and bag-in-box, but a significantly higher acceptance for the bottle with screw cap closure. Therefore, the general assumption that a lower degree of radicalness correlates with a higher acceptance of the packaging can be supported. Testing hypothesis H_2 revealed that the information about the beneficial features of a packaging does not enhance the acceptance among customers in general. The results of testing hypothesis H_3 show why information does not influence the acceptance in general: The acceptance is moderated by the level of wine product involvement. The data shows that low involvement customers react positively on information about the beneficial features of the packaging. For customers with higher levels of involvement, the information has no significant influence on the acceptance.

The analysis of the purchase places shows that low involvement wine customers prefer to buy wine in supermarkets. Since information about the packaging affects this group of customers the most, the information should be present in supermarkets. These customers with lower

levels of involvement can be convinced of the benefits a new packaging can offer. Highly and medium involved customers prefer the direct contact, consulting and the product range a dedicated wine shop or a shop on the premises of a winery can provide. These customers might be open to new packagings if the sales personnel can describe the benefits directly. This, however, would need further experiments with this specific question.

Marketing activities regarding the new packaging form combined with a higher availability of the specific packaging would boost the acceptance. In particular, a well-known brand which represents high quality wines could be very successful by introducing entry level wines in the bag-in-box packaging. The brand name creates trust and the availability of a variety of wines in bag-in-boxes could have mere-exposure effect on customers. As soon as the packaging is not perceived as risky either through the brand, the familiarity or the combination of those, customers will buy wine in these packagings as well.

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