

Alternative Digital Packaging Design Strategies to gain visibility in E-tailing

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Purpose: Brand visibility is an ever increasing sensitive subject with the number of similar products on sale in e-tailing. This paper mainly focused on graphical and structural design opportunities of packaging that demonstrated tendency to amplify product and brand visibility in e-tailing. The study aspires to capture and retain browsers' attention through interactive packaging display in online environment while building on consumers' relationship with brands and products during browsing phase.

Methodology: The paper proposes a new design concept: *Attention Vehicle* addressing brand visibility. The concept was constructed following basic requirements that involved theories and principles of packaging design, website design, e-tailing context, sensory marketing and consumer emotional behaviour philosophy. Through mixed research methods, including observation, interviews, online chat and survey questionnaires, the concept and its design strategies were developed, evaluated and finalised.

Findings: The concept recommends three design strategy dimensions – (1) *Sensorial Labelling*, (2) *Brand Feel* and (3) *Elemental Traits* - as corresponding influential attributes for brand visibility in e-tailing to gain competitive edge. Findings highlighted the possibility to incorporate sensory expressions to packaging design intended for e-tailing.

Implications: This study allows insights for tailor-made packaging design features and digital marketing strategies contributing to improve online shopping experience, consequently expanding packaging design prospect, e-marketers' potential, e-tailers' business opportunities and emotional online shopping feel for customers.

Keywords: Digital packaging design, E-tailing visibility, Attention vehicle, Brand visibility, Online product presence

Introduction

The increase in online shopping activities is urging a need to adapt packaging design to e-tailing environment (Berner, 2017; Merrill, 2016; Church, 2013). Product packaging is being digitally displayed as thumbnail, nearly the size of a postage stamp (Cloverleaf Innovation LLC, 2015). Thus, affecting the effectiveness of packaging design as marketing tool. On the other hand, the intensified competition of e-tailing is continuously altering selling and consumption patterns (Phd Marketing Limited, 2017). This urges marketers to constantly seeking for innovative strategies to capture and retain browsers' interest to eventually influence their final purchase decision.

Accordingly, the present paper is putting forward alternative design strategies to digital packaging to address brand visibility during browsing phase of online shopping. The theoretical framework was founded on three main areas of study: (1) marketing features of packaging design, (2) emotional and sensory approach to design and (3) e-tailing environment.

In a general marketing context, it is established that awareness of brand and product existence is the first stage among the various stages prior to concluding a purchase (Sharp, 2010; Egan, 2007; Lavidge & Steiner, 1961). Brand visibility is a key objective in the field of Marketing. As Sharp (2010) highlighted, there are no purchases if a brand does not manifest its physical presence. Therefore, brand visibility in a highly cluttered and competitive environment is essential for any marketed tangible or intangible product.

Past research expanded on numerous marketing approach leading to customers' experiences and affective responses. In Hierarchy of effects model, affective response is translated as liking and preference stages (Egan, 2007; Lavidge & Steiner, 1961). While in sensory marketing theory (Hultén, 2011) and Kansei Engineering model (Dahlgaard et al., 2008), affective response is established to occur following sensory input to a context that consumers evaluate. Alternatively, for online retailing context, experiential marketing theory identified websites as pre-purchase stimuli and packaging design as purchase stimuli that produce consumers' brand experiences (Schmitt & Zarantonello, 2013).

Hence, this study firstly aimed at identifying graphic design prospects of packaging design to create brand awareness in e-tailing. Then, emotional and sensory opportunities where packaging design could uniquely contribute to capture and retain online shoppers' attention were explored. However, since there is scarceness of literature of packaging design performance in e-tailing (Church, 2013), opportunities explained for physical retailing context were evaluated for appropriateness in e-tailing context.

Methodology

Primary data was collected using mixed methods starting with an observational study of online retailing websites, followed by an introductory survey, verbatims collection and a main survey. Observational study was conducted to note the status and performance of packaging design in e-tailing. According to Karimov et al. (2011, p.274), 'there is no standardized way of evaluating website design' features. However, in order to systematically undertake this observation, a guide was elaborated following (1) Karimov et al. (2011) hypothetical visual design that induce trust on websites, (2) Demangeot & Broderick (2006) visual elements that capture browsers' attention, (3) Demangeot & Broderick (2006) and Huang (2003) websites' interactivity tools that enable product

presence and evoke tactile experience and (4) Hultén et al. (2009) sense expressions that offer sensory experience.

In parallel, an introductory survey was carried out to (1) identify appropriate audience for verbatim collection, (2) determine popularity of product categories that use packaging for screen display in e-tailing and (3) verify importance of packaging design for e-tailing among selected audience. Afterwards, online shoppers' verbatims involving online shopping experience and expectations were collected. Nagamachi (2008) stated that consumers should be encourage to express their psychological feelings and needs toward a product in order to assist in the proper design of consumer-oriented products. Barnes et al. (2008) further indicated that to ensure the right selection of emotional words for further investigations, consumers' verbal communication related to emotion and feelings towards a product can be collected by searching relevant literature, media, and design experts as well as talking to consumers. Subsequently, online shoppers were individually approached through social network and face to face unstructured conversation instruments to catch their views regarding their most recent online shopping experience and their sensory perceptions together with their needs and wants toward packaging visibility in e-tailing during browsing phases.

Data collected from observation, introductory survey and verbatims enabled the selection of features associated to brand visibility which were assessed in a main survey to evaluate their applicability for browsing phase in e-tailing. The questionnaire contained 9 questions evaluating 45 items. The context was limited to the product category selected for investigation which is organic beauty care product. It was essential to narrow down product category selection because each product category behaves differently and has dissimilar design requirements. The questions were evaluated on a 5-point Likert scale from 'strongly disagree' to 'disagree' to 'neutral' to 'agree' and to 'strongly agree' with an additional option 'not applicable' for some questions to enable rejection of inappropriate features.

The findings were tabulated and descriptive statistics were used to analyse and interpret results. Favoured variables were processed for reliability using Cronbach's Alpha which is 'the most widely used objective measure of reliability' (Tavakol & Dennick, 2011, p. 53). Then, Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was carried out on the retained variables to validate the population size used. In general, KMO value closer to number 1 reveals that patterns of correlation are objectively compact and consequently factor analysis should give clear-cut and reliable factors (Field, 2000). Subsequently, Factor Analysis (FA) using Principal Component Analysis (PCA) was conducted to measure the favoured indicators' validity that made up the concept and its design dimensions. Indicators having values above 0.5 were retained for further classification. Hierarchical Cluster Analysis (HCA) was then carried out to classify the retained variables and develop alternative design strategies for digital packaging design enabling brand visibility during browsing phase in e-tailing.

Results and strategy development

Findings from the observational study showed that out of the 14 product categories examined, only four were package dependent when displayed on digital shelf: (1) Cosmetic/beauty care product category, (2) DVDs/ video games/ movies product category, (3) Perfume/Fragrance product category and (3) Premium chocolate product category. Table 1 summarises the presence of packaging on e-tailing websites in regards to the product categories observed.

Table 1: Importance packaging design in the presentation of product category in e-tailing during browsing phase. Source: Observational study

Product category	Presentation on e-tailing website		
	Package dependent	Without package	Not package dependent
1. Apparel, Fashion accessories, shoes		✘	
2. Automotive parts and accessories			●
3. Baby products and accessories			●
4. Computer parts and accessories			●
5. Cosmetic/beauty care	♥		
6. DVDs/ video games/ movies	♥		
7. Electronics and appliances			●
8. Groceries			●
9. Hardware/tools			●
10. Home care products			●
11. Perfume/Fragrance	♥		
12. Premium chocolate	♥		
13. Toys			●
14. Sporting goods			●

Product category DVDs/ video games/ movies was eliminated for further study since its visual representation depends on its content and cannot be standardised. Premium chocolate category was also excluded for further exploration since the present study implicated only four senses where vision and sound were used as direct sensory stimuli while smell and touch as indirect stimuli. Following introductory survey's results, organic beauty care product category was trendier than cosmetics and fragrance. The choice was also supported by verbatims collected where findings showed that consumers tend to purchase online cosmetics and fragrance having brands that are familiar to them. Therefore, organic beauty care product category was selected to proceed further with the present study.

Data collected from the main survey were processed for reliability. KMO value 0.732 validated the population size of 36 participants. Bartlett's test of sphericity proved to be less than 0.05 which according to Field (2000) significant value (sig.) less than 0.05 reveal meaningful and highly significant variables appropriate for FA. Favoured variables that made up the concept were tested for trustworthiness using Cronbach's Alpha which is 'the most widely used objective measure of reliability' (Tavakol & Dennick, 2011, p. 53). Items having neutral or negative responses together with items having mean value lower than 3.00 were discarded because they indicated that

respondents did not considered them as major indicators for brand visibility in the present study context. All remaining items having mean value 3.00 or above were processed for reliability using Cronbach's Alpha. Table 2 below shows Alpha (α) values for retained indicators liable to contribute to brand visibility. As observed the values are within the acceptable range values of α , that is from 0.70 to 0.95 (Tavakol & Dennick, 2011, p. 54). Consequently, the variables were considered reliable.

Table 2: Reliability test result for Attention vehicle. Source: SPSS

Indicators for brand visibility in e-tailing	Cronbach's Alpha value
Colour as Attention Vehicle (7 items)	0.942
Imagery as Attention Vehicle (3 items)	0.931
Typography as Attention Vehicle (2 items)	0.905
Form as Attention Vehicle (2 items)	0.866
Delivery packaging as Attention Vehicle (2 items)	0.889
Presentation of packaging as Attention Vehicle (2 items)	0.897
Sound as Attention Vehicle (2 items)	0.915
Smell as Attention Vehicle (4 items)	0.952
Touch as Attention Vehicle (5 items)	0.947

Factor Analysis (FA) using Principal Component Analysis (PCA) was then conducted on the favoured variables for the concept to extract significant variables liable to represent Attention Vehicle concept. Variables having values above 0.5 were retained for further classification. Overall, 29 favoured variables were retained. Results showed 2 factors with eigenvalues higher than 1 were extracted by using the PCA extraction method. The factors were then rotated using Varimax with Kaiser Normalization rotation method to optimize the extracted factors' structure, resulting in equalizing as far as possible the two extracted factors. Both factors can explain 77.8% of the data analysed thus validating Attention vehicle as indicator for brand visibility. After rotation, component 1 has 42.36% in contribution to the data and component 2 has 35.46%. The following table shows the Rotated Component Matrix where the variables indicate their contribution to each component.

Table 3: Rotated Component Matrix for Attention vehicle. Source: SPSS

Variables	Component	
	1	2
Colour of packaging	.734	.560
Colour of product in transparent pack	.639	.627
Coloured imagery	.794	.314
Coloured typography	.774	.258
Colour on website	.694	.440
Colour related to brand identity	.374	.866
Colour related to product identity	.356	.839
Imagery on package	.617	.654
Imagery on webpage	.243	.898
Interactive imagery of packaging on webpage	.647	.640
Name of product in large sized Typography	.525	.636
Name of brand in large sized Typography	.691	.492
Cylindrical form	.583	.489
Customized form	.659	.419
Branded packaging	.522	.702
Customized packaging	.594	.709
Animated presentation of packaging	.624	.587
Interactive presentation of packaging	.724	.612
Webpage background sound related to the theme organic	.675	.506
Optional sound related product benefit explanation	.574	.618
Colour used as code for product's smell	.837	.374
Imagery used on package labelling evoking smell experience	.872	.387
Word evoking smell	.859	.327
Animated features of packaging evoking smell	.748	.427
Form of packaging design evoking touch experience	.697	.592
Material of packaging evoking touch experience	.621	.569
Imagery on labelling of packaging evoking touch experience	.668	.595
Navigability of webpage	.375	.821
Interactive presentation of packaging	.659	.651

As observed in the Rotated Component matrix table, there are 3 types of variables. One type, highlighted in light grey, satisfies both components but at different variance. A second type, emphasised in bold fonts, comply with factor 1 only and a third type, highlighted in pale grey, fulfil only factor 2. In consequence, 3 groups of variables were isolated for further design strategy development. Group representing component 1 contained variables mostly related to labelling, sensory experience and branding and thus was named “*Sensorial labelling*”. Group representing component 2 contained variables related to branding and webpage navigability, hence was labelled “*Brand feel*”. And finally group representing both factors was named “*Elemental traits*” since the variables explain both factors.

In order to interpret the data and develop better design strategy for *Attention vehicle* concept, further analysis was conducted using the Ward’s method in Hierarchical Cluster Analysis (HCA). This phase allowed to determine the variables similarities and subsequently to properly organise the variables for concept development. Initially, each variable was considered as a single cluster and then gradually combined to other variables to form clusters. In general, when the combination

is small and combined earliest, it indicates highest similarity. The following diagrams show the variables on dendrograms for “Sensorial labelling”, “Brand feel” and “Elemental traits”.

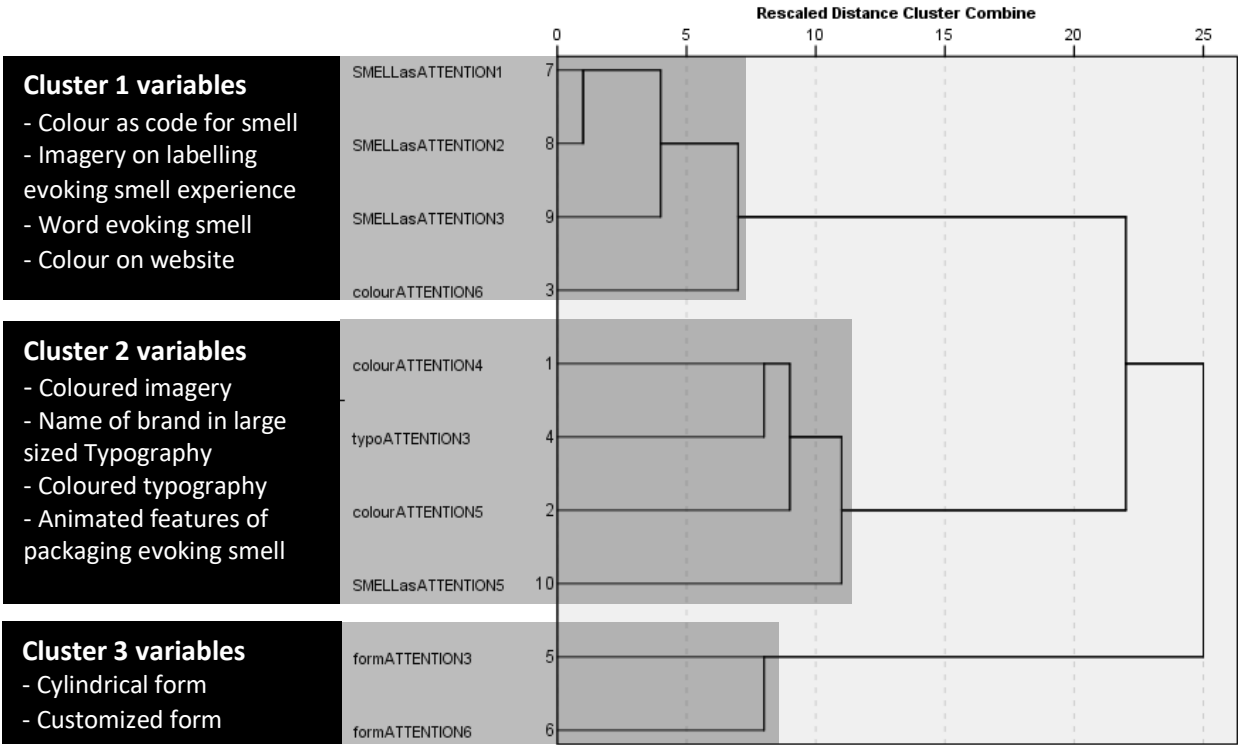


Figure 1: Dendrogram for Sensorial labelling variables related to component 1 of Attention vehicle. Source: SPSS

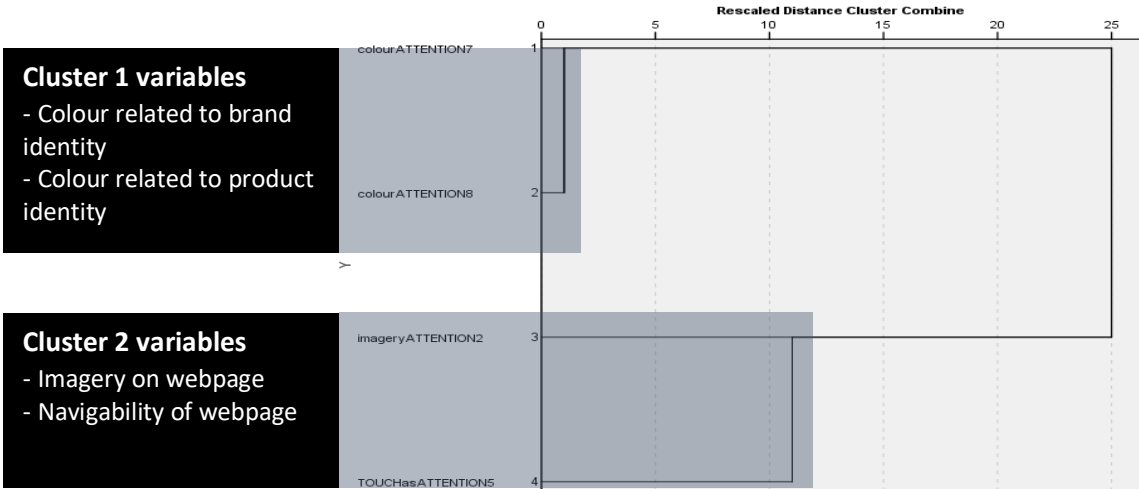


Figure 2: Dendrogram for Brand feel variables related to component 2 of Attention vehicle. Source: SPSS

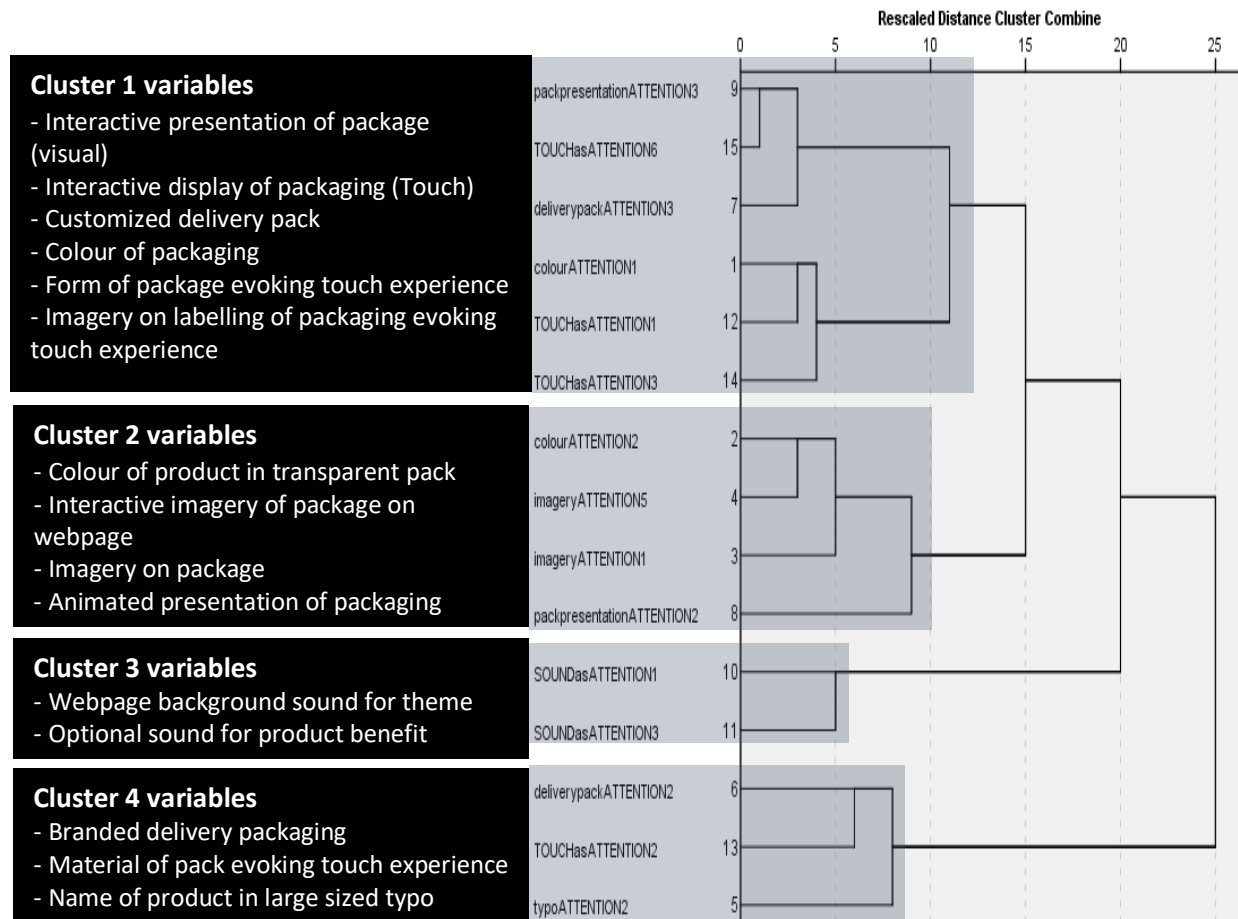


Figure 3: Dendrogram for Elemental Traits variables related to components 1 and 2 of Attention vehicle. Source: SPSS

Discussions and Conclusions

Brand Visibility through Digital Packaging Design in E-tailing

The present research mainly focused on variables related to packaging that demonstrated tendency to amplify product and brand visibility in online retailing. Following observational studies, it was clear that product display setting in e-tailing completely differ from physical retailing setting. Both retailing modes' display approaches have distinctive features that frame packaging design visual communicating power and emotional sensory influence. Thus, indicating that packaging design intended for physical retailing cannot be displayed in online retailing without considering online environment features.

Also, findings obviously showed that only selected product categories tend to use packaging design for screen display while many product categories stress more on the product visuals in e-tailing. This demonstrated how much online retailing differs from physical retailing where almost all products are displayed in packaging. Further, in physical retailing, packaging is the first element that talks to the potential customers while in e-tailing, results indicated that the first element to be in contact with the potential customer is the related visual in gallery view in search engine websites or in e-tailing websites.

Further, research participants evoked packaging design attributes and websites' design attributes as complementary to increase brand visibility in e-tailing. Therefore, validating variables of *Attention vehicle* concept that include interaction between packaging design elements and website design elements as significant strategic factors to increase brand visibility through the use of emotional and sensory marketing theory. These findings reported consistency with previous research where navigability and interactivity of online retailing stores were established as instruments providing tactile experience which subsequently gave possibilities to amplify product's presence (Demangeot & Broderick, 2006).

Data collected clearly showed the differences that exist between the two retailing modes but at the same time also revealed that there could be some similarities in end result especially in regards to shelf impact principles. Instead of displaying same product side by side to design counter animation on shelf, the animation could be translated to interactive features in web stores as evidenced in descriptive statistics and validation of indicators of the present study where interactive presentation of packaging that provides touch perception, interactive imagery of packaging on webpage, navigability of webpage, and animated presentation and features of packaging are considered as important variables susceptible to increase brand visibility in e-tailing. Further, in line with Farmer's (2012) indication which was related to shelf impact in physical retailing, the present research showed that in e-tailing colour, with the highest mean value, remains the first attribute of packaging that capture online shoppers' attention, thus an element to be considered when developing design strategies to increase brand visibility in e-tailing.

Nevertheless, in regards to the context under study, the present research also identified dissimilarities compared to physical retailing shelf impact theory. In physical retailing context, attributes like imagery, typography and packaging structure are among the primary factors capturing shoppers attention (Farmer, 2012; Silayoi & Speece, 2007; Underwood et al., 2001; Rettie & Brewer, 2000) whereas in the present study, according to the research sample, these attributes of packaging are not among the leading elements to be used on their own to capture online shoppers attention. It was observed that after colour, touch perceptions, smell perceptions, visual presentation and delivery packaging were among the leading features measured as inclined to increase brand visibility in the present research context.

Findings identified three design strategy dimensions as corresponding influential traits for brand visibility representing *Attention vehicle* concept. '*Sensorial Labelling*', '*Brand Feel*' and '*Elemental Traits*' were isolated as instruments for Attention vehicle concept, consequently establishing the concept to increase brand visibility in e-tailing. Favoured variables extracted from descriptive statistics and later validated, were classified following basic requirements that involved theories and principles of packaging design, website design, e-tailing context, sensory marketing and consumer emotional behaviour philosophy. Accordingly, the three design traits were named.

Design strategy dimension 1: Sensorial Labelling

In physical retailing context, labelling is an essential feature of packaging design (Klimchuk & Krasovec, 2012). Similarly, results of the present study indicated that labelling maintains its importance in online retailing environment. In consequence, ‘*Sensorial labelling*’ was established as an instrument to provide clear design guidance for packaging labels intended for e-tailing. It is expected that the use of this instrument leads to an increase in brand visibility while influencing online shoppers’ emotional and sensory feel. ‘*Sensorial Labelling*’ was segmented into three main guidelines.

A first section grouped packaging design elements that evoke sensory experience and, in the present research context, smell was the main sensory channel fulfilled through the use of sight sense. These findings are consistent with research related to physical retailing context where sensory marketing theory indicated that colour (Kim, 2013), imagery (Underwood, 2003), words (Spence & Gallace, 2011) and other visual factors (Hultén, 2011) are liable to facilitate the identification of scent and evoke olfactory experience.

A second section grouped the basic labelling principles integrating informative and aesthetic traits while using the website functional features, like animation, to evoke sensory experience. In regards to the present context, features evoking olfactory experience were recommended to be animated so as to put emphasis on the main sensory experience related to the product category under study. This is in line with Demangeot & Broderick (2006) and Huang (2003) who demonstrated that interactive features of websites tend to highlight product’s presence and enhance online shoppers’ positive shopping experiences.

Finally, the third section of ‘*Sensorial labelling*’ dimension consisted of guidelines related to structural design of packaging which, according to Klimchuk & Krasovec (2012) directs the design of the label in any circumstances. The following diagram summarises the design strategy for packaging design labelling for e-tailing.

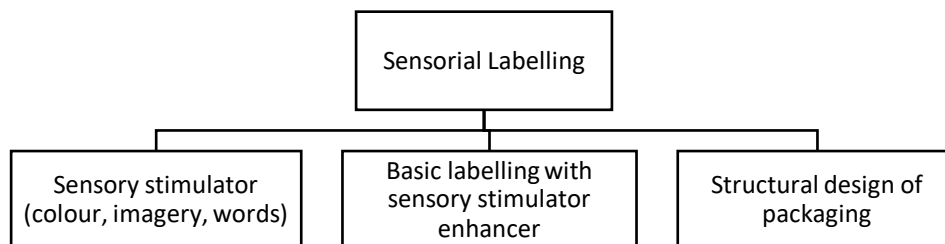


Figure 4: Representation of Sensorial Labelling design strategy dimension

Design strategy dimension 2: Brand Feel

The second design strategy dimension of *Attention vehicle* concept provides guidelines for sensorial brand experience in e-tailing and was thus titled ‘*Brand feel*’. This dimension was segmented in two where the first section is strictly related to brand and product uniqueness through colour and the second section is related to webpage experience through imagery and navigability. Again, colour proved to be a fundamental graphical elements of packaging design. In various

sector, colour literature has shown that colour is a visual differentiator for brands and products on the competitive marketplace while influencing consumers' choices and emotional responses in both physical environment (Funk & Ndubisi, 2006; Crozier, 1999) and online context (Cyr et al., 2010). Besides, findings again indicated that website functional and aesthetic features cannot be dissociated from packaging displayed in e-tailing and these were supported by respondents' verbatims declaring that image quality, visual presentation of product and website's aesthetics are among key factors that build their interest in a product during browsing phase in e-tailing. Once more, with the design dimension '*Brand feel*', the present study has demonstrated the importance of website experience combined to packaging visuals to create brand visibility. The diagram below is an overview of the design strategy dimension for '*Brand feel*'.

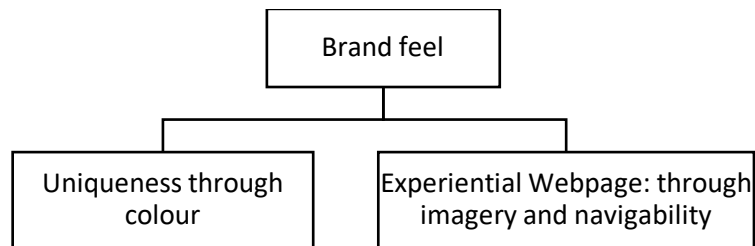


Figure 5: Representation of Brand Feel design strategy dimension

Design strategy dimension 3: Elemental Traits

The third design strategy dimension related to brand visibility was named '*Elemental traits*'. This was due to the fact that its variables provided additional guidelines for '*Sensorial labelling*' and '*Brand feel*' dimensions. '*Elemental traits*' was divided into three groups. The first group specified design parameters for product packaging implicating website features such as animation, interactivity. The second group provided guidance for sound experience. Optional sound related to product benefit explanation was viewed as important to support packaging labels. As for background music, it was recommended to be related to the product category theme. Following findings related to physical shopping ambiance, background music is a common sensory expression used to create consumers' emotional response during shopping activities (Hultén et al., 2009). Additionally, the third section of '*Elemental traits*' involved presence of delivery packaging in browsing phase and basic guides to transmit brand feel and sensory experience for the design of delivery packaging. Findings for '*Elemental traits*' support verbatims findings where participants emphasised on the needs of proper graphical and structural design for delivery packaging which certainly would capture their attention and retain their interest.

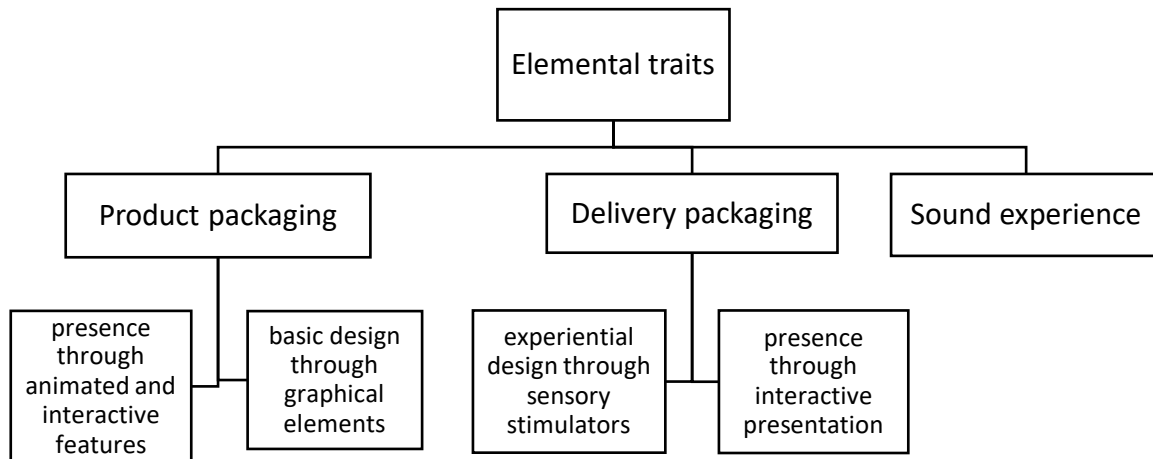


Figure 6: Representation of Elemental Traits design strategy dimension

Overall, in order to use the strategies presented in this paper, designers, online retailers and marketers should conduct appropriate studies to assess packaging and website features that are more inclined to fulfil aspect of *Sensorial labelling*, *Brand feel*, *Elemental traits* to attain optimum benefit of *Attention Vehicle* concept.

Research limitations and direction for further research

The research paper presented a set of findings that demonstrated acceptable reliability and validity. The first phase of the field research where observational studies, verbatims collection and introductory survey were conducted, product category status was broad and sample population consisted of frequent online users who have at least once purchase online. However, some limitations to the second phase of the research should be noted. Product category was narrowed down to organic beauty care for reasons mentioned earlier in Results and strategy development section. As a result, findings presented need to be tested before applying to multi-product categories.

Overall, the present research has broadened the understanding of functions of packaging in e-tailing context along with the ability of packaging design as marketing stimuli to enhance brand visibility during browsing phase of online shopping. It provides insights of online shoppers' needs and desires in regards to packaging designed for online shopping environment.

Subsequent to understanding the research fields involved in the present paper, the researcher recommends three directions for future research where (1) Emotional and sensory design strategies can be explored to trigger positive evaluation of product through packaging intended for e-tailing; (2) Effectiveness of emotional and sensory design is studied to understand how e-tailing website design shapes online shoppers' satisfaction and positive behaviour so as to improve online sales; (3) Emotional and sensory design for delivery packaging can be investigated to enhance delivery phase.

The following provides additional details related to the three research directions recommended.

In general, once brand awareness is established, shoppers seek for related additional information. In physical retailing, they will grab the packaged product to experience its feel, smell and sound depending on product category. This moment is the moment of truth and will either satisfy their expectations or weaken their perception. However, in online retailing, online shoppers do not have the possibility to physically grab the packaged product for further evaluation. As a result, the first proposed direction is an extension to the present research paper. It proposes to focus on emotional and sensory design approach using similar framework to stimulate positive evaluation of product once browsers are visually aware of a brand and its product.

The second proposed direction is related to website design. The present research identified that online shoppers' experience with the website is a fundamental feature that contribute to make or break the first impression related to online stores' offers and services. In that view, the researcher proposes to use emotional sensory design to create websites and to evaluate online shoppers' satisfaction, behaviour and intention. The scope of the proposed study is to identify practical factors that contribute to improve user experience and online sale.

The third proposed direction mainly involve delivery packaging which was identified as a strategical feature benefitting online shoppers as well as online retailers. It is suggested to use similar mixed research methods to investigate online shoppers' emotional state and expectations at the time they receive their online purchase. The scope of this recommendation is to improve delivery packaging design through design guidelines intended for online retailers so that they communicate their brand promise, values and story properly. Thus, may anticipate loyalty.

Overall future research directed here are related to online retailing, emotional and sensory design. Since e-commerce is continuously expanding, outcomes from the recommended future research are expected to contribute to the knowledge and understanding of online shoppers' needs and expectations while clarifying online retailers' duties in view to create a reliable, enjoying online shopping ambiance.

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Biographies

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