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# Visual website aesthetics

*The relationship between dimensions of visual website aesthetics, website trust and consumers' intention to visit the website*

**Mie Birgitte Dalen**

**Supervisor: Professor, dr.oecon Herbjørn Nysveen**

Master of Science, Marketing and Brand Management

**NORWEGIAN SCHOOL OF ECONOMICS**

This thesis was written as a part of the Master of Science in Economics and Business Administration at NHH. Please note that neither the institution nor the examiners are responsible – through the approval of this thesis – for the theories and methods used, or results and conclusions drawn in this work.

## Abstract

A review of previous research about visual aesthetics revealed inconsistencies and contradicting views. Due to the important role of visual aesthetics in the online environment, a more thorough understanding of the construct was beneficial. Therefore, the first aim of this thesis was to develop a new structural framework of the dimensions of visual website aesthetics based on a review of previous research findings and theories. This conceptualisation process revealed that visual aesthetics can be explained by six dimensions, each of which are defined, named, pre-tested and studied.

The six dimensions were named affective appeal, appropriate appeal, functional appeal, harmonic appeal, original appeal and personal appeal. Affective appeal refers to consumers' emotions towards the website and their mood at the time of interaction. Appropriate appeal refers to how a website relates to other websites in the same category. A website has functional appeal when consumers easily can navigate and use the website, and harmonic appeal refers to the websites overall balance, attractiveness, clean design and symmetry. Original appeal relates to the novelty of a website and personal appeal refers to a website's degree of customisation and personalisation, as well as the level of two-way-communication and interaction.

The pre-test of the dimensions revealed a possibility for intercorrelation among them, likely caused by the use of different terminations in previous research. However, due to a small sample and a simple study design, the pre-test was not considered definite enough to overwrite previous validated research results. The dimensions were subject to further testing through an online survey. An analysis of the results using structural equation modelling (SEM) confirmed that some of the defined dimensions were highly correlated. Based on this intercorrelation, two of the categories, appropriate appeal and functional appeal, were removed from the sample. This does not necessarily imply that the composition of the dimensions should be moderated, as each are firmly grounded on findings from previous research. However, it does imply that there are other variables that could influence the importance of visual aesthetics, for instance the type of service the website provides or the amount of competitors the website has. Identifying these variables can provide further insight into visual website aesthetics.

Visual aesthetics was hypothesised to influence both the consumers' trust in the website and their intention to return to the website. In addition, trust was hypothesised to positively influence consumers' intentions to return, thereby suggesting that trust mediates the relationship between visual aesthetics and intention. The second aim of this thesis was therefore to explore these relationships, in an effort to highlight the effect that visual aesthetics has on the online environment.

The survey results revealed that visual aesthetics does have a positive effect on consumers' intention to revisit, as affective appeal was found to have an effect on intention. In addition, visual aesthetics was found to have an effect on trust, as both functional appeal and personal appeal had a significant effect on the trusting beliefs. However, no significant relationships were found between trust in the website and intention to revisit. Still, these findings confirm the impact visual aesthetics can have on vital aspects of the online environment, thereby highlighting it as an important focus area for managers and decision makers.

## Preface

This thesis is written as a part of my master's degree in Economics and Business Administration at the Norwegian School of Economics (NHH). The thesis is written within the field of Marketing and Brand Management.

This master thesis is one of a series of papers and reports published by the Centre for Service Innovation (CSI). Centre for Service Innovation (CSI) is a coordinated effort by NHH to focus on the innovation challenges facing the service sector and involves 20 business and academic partners. It aims to increase the quality, efficiency and commercial success of service innovations and to enhance the innovation capabilities of its business and academic partners. CSI is funded through a significant eight year grant from the Research Council of Norway and has recently obtained status as a Centre for Research-based Innovation (SFI).

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# 1. Introduction

The Internet is rapidly becoming an essential commodity in industrial countries (Livingstone & Helsper, 2007). As nearly everyone in Norway now has access to the internet (TNS Gallup, 2015), the number of available online services has increased (Niu & Chen, 2012). In order to use these services, consumers are often required to submit sensitive and private information (Narayanan & Shmatikov, 2009). Despite the fact that the number of crimes related to stolen identities or hacking have increased (Madden, 2014; Logan, 2015), consumers have embraced the new services. In fact, 3.5 million Norwegians were using online banking in 2014 (Finans Norge, 2014), and a record 3.4 million Norwegians submitted and received their tax return online in 2015 (Skatteetaten, 2015). This widespread adoption of online services, despite the increasing number of cyber related crimes, suggest that there is a fundamental trust in online services. Identifying the source of this trust, as well as what companies can do to facilitate it, is therefore a research topic of high interest.

The change in consumer behaviour, from offline to online, signals a shift in the market where technology-based interaction is a key criterion for a company's long-term success (Nysveen, Pedersen & Thorbjørnsen, 2005). A company's website is often the only place of consumer interaction, and their first impression of that website can therefore be vital. In fact, consumers rapidly adopt interactive behaviour when surfing online, and move quickly from one page to another (Guido, Prete & Summarco, 2010). Evaluations of online content are made almost instantaneously (Lazard & Mackert, 2014; Reinecke, Yeh, Miratrix, Mardiko, Zhao, Liu & Gajos, 2013), even within the first 500 milliseconds (Tractinsky, Cokhavi, Kirschenbaum & Sharfi, 2006). The only aspect of a website that a consumer can evaluate in milliseconds, is the website's visual aesthetics. Since consumers only stay on a website if they are pleased with its visual appearance (Guido, Prete & Summarco, 2010), this suggests that consumers must perceive a website as appealing in order to stay on the website. Thus, visual aesthetics is important in order to recruit consumers to use the service, a very important criterion for commercial success.

Since staying on a website is given in order for consumers to submit personal information, and since submitting personal information requires trust (Chang & Chen, 2009), visual aesthetics is considered to influence whether or not the website is trusted. This hypothesis is



supported by Reinecke et. al. (2013), who found that consumers are less likely to trust a website if it is deemed unappealing.

Visual website aesthetics was also found to be a good predictor of whether consumers intend to return to the website (Djamasbi Siegel, Skorinko & Tullis, 2011). Without an intention to return, no long lasting consumer relationship will develop and consumers will revert back to traditional offline services. Since visual website aesthetics can influence intentions, this further emphasised its importance in the online environment.

A lack of trustworthiness is a major reason why many potential consumers refrain from shopping online (Chang & Chen, 2009), and trust is known to influence consumer behaviour in uncertain environments (Pavlou, 2003). This fact highlights an interesting aspect of the role of visual aesthetics, as it suggests that an unappealing website will not only be subject to a lack of trust, but that such a lack of trust can result in a lack of intention to return. Thus, in addition to hypothesise a direct effect of visual aesthetics on both intention and trust, trust is expected to influence intentions.

In an attempt to identify how trust can be elicited through a website, the theory behind visual aesthetics will be explored. In addition, both the hypothesised importance of visual aesthetics and the hypothesised mediating role of trust will be discussed in order to define important elements of online success.

## 1.1 Purpose

The purpose of this study is twofold. The first purpose is to identify and conceptualise visual aesthetics, in order to provide managers and website designers with increased knowledge about the impact and effect of their interface design. This thesis will therefore aim to assemble and synthesize previous findings related to visual aesthetics, and categorise these findings. Although visual aesthetics is recognised as an essential component of the user experience (Djamasbi et. al., 2011), a number of diverse and somewhat conflicting definitions and approaches have been developed. This jungle of unstandardized terminology results in confusion, which reveals a need to define a standardised measure and scale. Thus, the first aim is to define the construct of visual aesthetics, and to identify and discuss the

construct's dimensions. This process can in itself provide new insights concerning the dimensions of visual aesthetics of a website (Lavie & Tractinsky, 2004).

*RQ<sub>1</sub>: Will assembling and synthesising previous findings related to visual aesthetics result in a conceptualisation of the constructs that can describe the perceived visual aesthetics of a website?*

The second purpose is to test the importance of visual aesthetics and trust in an online environment where consumers voluntarily share private information through multiple online services. In an effort to understand the role of trust in this environment, trust is hypothesised to mediate the relationship between visual aesthetics and consumers' intention to revisit a website. This purpose is defined based on a need to understand why consumers risk being victims of identity thefts and potential public embarrassment, in order to gain access to more efficient and convenient services.

*RQ<sub>2a</sub>: Does visual aesthetics influence consumers' intention to revisit the website?*

*RQ<sub>2b</sub>: Does visual aesthetics influence consumers' trust in the website?*

*RQ<sub>2c</sub>: Does trust in the website influence consumers' intention to revisit the website?*

*RQ<sub>3</sub>: Does trust mediate the relationship between the dimensions of visual aesthetics and online intention?*

## 1.2 Contribution

The results from the research questions can provide two types of contributions. The first relates to a theoretical constitution, as a summary of previous research can help future scholars understand the concept of visual aesthetics. The second relates to a managerial contribution, as the aspect of visual aesthetics and its relation to both trust and intention can provide managers with knowledge about how to best design their web interface.

### **1.2.1 Theoretical contribution**

The first contribution relates to the conceptualisation of visual aesthetics, as the discussion and categorisation of previous research can provide meaningful insight into the concept of visual aesthetics. The categorisation can also feature as a basis for future research on visual aesthetics, thereby simplifying a complex construct.

Previous research has identified trust as a mediator in relationship situations, but few in an online context (Bart, Shankar, Sultan & Urban, 2005). Ganguly, Dash & Cyr (2009) found trust to mediate the effect website aesthetics had on purchase intent in the Indian market, but no similar study has been conducted for the Norwegian or even European market. Bart et. al. (2005) found trust to mediate the effect website characteristic had on behavioural intent, and their research questions are therefore very similar to the hypothesis in this thesis. However, website characteristics, such as security and order fulfilment, are characters in which to describe the *role* of the website rather than its appearance. Thus, the second contribution relates to testing the mediating role of trust in a new market and in relation to a website's appearance.

### **1.2.2 Managerial contributions**

The categorisation of the dimensions of visual aesthetics can be utilized as a tool for managers to evaluate their current website. The categories can help emphasise the different aspects of a website, as well as provide insight into which elements is more important in order to elicit trust in their consumers.

In addition, insight into the construct of visual aesthetics can provide website designers and managers with guidelines in terms of how they can influence the website's perceived attractiveness. The thesis will also study whether increasing the website's perceived attractiveness, might also increase the consumers' intention to return. This knowledge can help managers realise the importance of the website's usability, interactivity, emotional inducing qualities etc., rather than simply viewing a website as a branding opportunity.

Similarly, based on the results from studying the mediating role of trust, managers can further understand the importance of being perceived as trustworthy in a competitive

environment, and thereby enable their staff and website designers to focus on facilitating trust in their online customers.

### 1.3 Assumptions

Although, the average consumer will access the internet from 2.4 different devices each day (TNS Gallup, 2015), the definition of the online environment will in this thesis be limited to the desktop platform. This limitation is necessary because design elements have a different degree of importance according to different platforms (Venkatesh & Ramesh, 2006). For example, personalisation is less important when using desktops, whilst the small screen of a smartphone or tablet require a more personalised design (Venkatesh & Ramesh, 2006). In order to limit the possibility of effects not explained by the included variables, only one platform – the desktop platform - will be included.

Previous research has found differences across cultures (Cyr, Head & Larios, 2010), and various design features are interpreted differently depending on culture (Cyr, Head, Larios & Pan, 2009). Although, Cyr, Head & Larios (2010) also identified areas of visual aesthetics that is not moderated by culture, the evidence of cultural differences can not be ignored. Thus, this thesis will focus on the Norwegian market in order to limit the possibility for cultural differences to wrongfully influence the results.

As the younger generation, generation Y, has grown up with technology, one could assume age to significantly influence internet preferences. However, Djamasbi et. al. (2011) studied the difference in online behaviour between generation Y and the baby boom generation, and the results revealed them to have an equal online behaviour. Thus, people of all age will be included in the study.

### 1.4 Outline

In chapter two, an initial conceptual model is illustrated, and theories related to visual aesthetics, trust and intention to revisit is presented. Relevant previous literature of visual

aesthetics is discussed chronologically, and based on the presented theories, visual aesthetics is conceptualised and pre-tested. Then, both the concept of trust and intention to revisit is discussed. In chapter three, the research model and theories on the relationship between the constructs is hypothesised. Following the discussion related to the relationships, the hypotheses are introduced. The methodology behind the study and a review of the items is presented in chapter four. The results from the study is presented in chapter five, and is more thoroughly discussed in chapter six. Finally, the thesis will enhance the managerial implications, limitations and suggestions for future research.

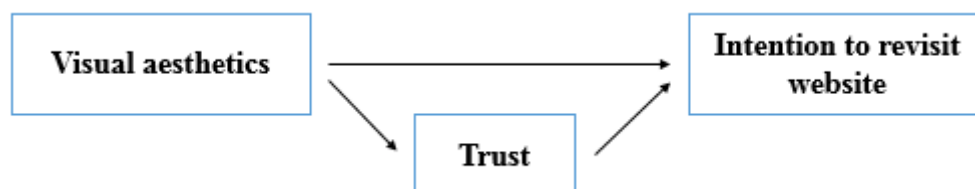
## 2. Literature Review

Establishing a general climate of trust online is important in order to make consumers feel more at ease in disclosing sensitive information (Wang & Emurian, 2005). This trustworthiness can be encouraged and facilitated through a website's appearance (Choi, 2013). There is therefore a hypothesised relationship between a website's perceived visual aesthetics and consumers trust in the website, where an attractive website interface is expected to be more prone to a consumers trust.

As consumers find trustworthiness essential in order to shop online (Chang & Chen, 2009), consumers will not adopt to an online service where trust is absent. In addition, consumers are less likely to revisit a website with an unappealing interface design (Guido, Prete & Summarco, 2010), thereby making visual aesthetics important in order to facilitate an intention to return. Thus, there is a hypothesised relationship between visual aesthetics and consumers' intention to revisit a website, where an attractive website interface is expected to be more likely revisited.

Finally, since information accuracy and usability is considered an important prerequisite to trust (Cyr, 2010) and trust is a crucial element of decision-making (Colquitt, Scott & LePine, 2007), trust is hypothesised to mediate the relationship between visual aesthetics and consumers' intention to revisit a website. This hypothesis corresponds with findings of Bart et. al. (2005) and Ganguly, Dash & Cyr (2009), although they studied different markets or different aspects of a website.

The relationships are illustrated in the conceptual model, figure 1.



**Figure 1:** The conceptual model.

In order to study the five research questions, the three constructs in the conceptual model is elaborated on in the following. As one of the research questions relates to conceptualising visual aesthetics, this construct will be discussed first, followed by trust and then intention to revisit.

## 2.1 Visual website aesthetics

The visual aesthetics of a website is defined as “the overall look of the site” (Papson, Goldman & Kersey, 2004, p. 1625), and aesthetics is in general defined as something “pleasing in appearance” (Aesthetic, 2015). Cyr, Head & Ivanov (2006) offer a more in-depth definition, and state that visual aesthetics refers to “the balance, emotional appeal, or aesthetic of a website and it may be expressed through colours, shapes, font type, music or animation”.

It is important to differentiate between the historical notion of visual aesthetics and digital visual aesthetics, as the introduction of computers broadened the field of design, and made design a technical endeavour where computer engineers were the designers. Digital designers were at first more interested in the technical functionalities and much overlooked the aesthetics. Benlian & Hess (2011) therefore noted the importance of shifting the focus of digital designers back to the visual representation of the website. Thus, the term visual aesthetics refers to the visual appearance of the website, rather than its technical features.

Previous research reveals important findings to consider when developing a new website. Among them is the fact that consumers prefer an image-oriented homepage, as the processing of visual information is quicker than verbal information (Yoo & Kim, 2014). The choice of colour influence how consumers perceive the website, as well as their likelihood to recommend the website to others (Gorn, Chattopadhyay, Sengupta & Tripathi, 2004), but structural factors have a greater impact on overall aesthetic perception than colour factors (Seckler, Opwis & Tuch, 2015). In retailing, simpler webpage backgrounds are in general more effective and appealing than more complex ones (Manganari, Siomkos & Vrechopoulos, 2009), and the use of graphics enhance the emotional effect the website will have on consumers (Li, Yeh & We, 2013). Thus, designers should use a graphics to texts ratio between 3:1 and 1:1 on websites (Li, Yeh & We, 2013).

Although these types of “guidelines” have been defined, previous research often reveal discrepancies among its findings, possibly due to the use of very specific definitions. Martin, Sherrard & Wentzel (2005) found that websites of medium complexity, hence a medium number of independent units in a stimulus, are more favourably evaluated than those of low or high complexity, whilst Rosen & Purinton (2004) found that a minimalistic homepage appeared to be more effective. However, other studies have shown that high design



complexity can positively influence viewers' perceptions of websites (Lazard & Mackert, 2014), and Martin et al. (2005) did in fact find how sensation seekers would prefer more complex websites.

These discrepancies can be due to consumers weighing design attributes of websites differently depending on what type of website it is (Seckler, Opwis & Tuch, 2015). Thus, addressing simplicity facets can be useful for online retailer selling convenience goods (Tractinsky & Lowengart, 2007), or online banks wishing to signal their competence (Seckler, Opwis & Tuch, 2015), but simplicity as a factor cannot be generalised across industries. It is therefore impossible to define a general rule about the ideal level of complexity, as it will differ from one website to another. This signals a need for a broader definition of visual aesthetics that can be generalised across industries

In addition, the inability to define an ideal level of complexity can be due to the consumers' ever-growing experience and skill-level. Hoffman & Novak (1996) found that there should be a balance between the website's challenges and the consumers' perception of their skills. Thus, as consumers grow more accustomed to online services, their preferences in terms of the website's complexity are likely to change. This signals a need for a framework from which interface designers can continuously evaluate the website's efficiency according to their users' skill-level.

Identifying this broader definition has been the aim of previous research, yet none has gained a consensus within the research fields. Thus, new and contradictory frameworks are continuously proposed. Only some of these, however, have focused on visual aesthetics as website design elements. In order to compare previous research results and theories, it is important that the included frameworks are centred around the same definition of website elements and visual aesthetics. Thus, the frameworks relating to website characteristics rather than website elements, such as Bart et. al. (2005), will not be included in the following discussion.

### **2.1.1 Previous frameworks**

Unlike the field of consumer behaviour, where established and tested theories, for example the theory of reasoned action (TORA), have been continuously expanded (Loken, 1983), no such organic progression is present for the perceived attractiveness of a website. This has resulted in a lack of common phraseology, such as website environment design (Lin & Lee, 2012), consumers' perception of interface quality (Chang & Chen, 2009), online store environment (Manganari, Siomkos & Vrechopoulos, 2008), users' perception (Lavie & Tractinsky, 2004) and aesthetic perception (Djamasbi et. al., 2011), and an inconsistency in the proposed dimensions. Thus, there is a need for standardized multiple-item scales for the assessment of visual aesthetics (Moshagen & Thielsch, 2010).

The difficulty to construct a complete framework may be due to the individual perceived differences of visual aesthetics, opening the construct up for individual interpretations and preferences. In addition, computer technology and websites is no longer limited to working environments, and this expansion of use is shifting the requirements (Fogarty, Forlizzi & Hudson, 2001). The difficulty relating to the task has however not kept the researcher from trying, with certain frameworks providing better coverage than others do. The proposed theories are presented chronologically, with some supplementary research result being added along the way.

Historically, visual aesthetics revolved around the renaissance idea of beauty, dominated by order and structure (Lavie & Tractinsky, 2004). From there, usability and ease of use emerged as the primary criterion when designing something aesthetically appealing (Cyr et. al., 2009), and the aesthetics of a website is found to have a significant impact on perceived usefulness, ease of use, customization and enjoyment (Cyr, Head & Ivanov, 2006; Van der Heijden, Verhagen & Creemers, 2003). Thus, usability is still considered an important element of aesthetic perception. Gait (1985) introduced a new aspect when he claimed that a more complex interface would increase users' arousal and sustain their interest and effectiveness. This introduction of aesthetic complexity widened the definition previously limited to the structural and useful elements. Visual complexity is defined by the amount of visual variation displayed (Lazard & Mackert, 2014), thus proposing an opposite view to the earlier organised appeal.

Based on these two views, Lavie & Tractinsky (2004) identified two dimensions of visual website aesthetics. *Classical aesthetics* relates to the design rules advocated by usability experts, such as symmetry, order and clean design. *Expressive aesthetic* on the other hand, refers to originality and creativity, and to the designers' ability to break design conventions. One of their main contributions was that they established the existence of aesthetics as a distinguishable, measurable construct in the field of human–computer interaction. They also found that perceived usability relates to classical aesthetics more than expressive aesthetics, confirming the link between the historical view and usability. This bipartite of the construct has been the starting point for later research.

However, Lavie & Tractinsky (2004) found that these two dimensions were insufficient in terms of describing “visual aesthetics” as a whole. Therefore, they defined and tested three additional dimensions, which is usability, pleasure and service quality. *Usability* refers to how easy the website is to use, and is very interesting due to the earlier established link between classical aesthetics and usability. This suggests there is more to classical aesthetics than usability, although it relates to rules advocated by usability experts. Even though ease of use can be linked to the functionality of a website, the aspect of structure and order is more related to an overall visual harmony. *Pleasure* refers to the feelings it can evoke with the consumer, suggesting that visual aesthetics also depends on an affective aspect. *Service quality* was measured with the items “can count on site”, “site contains no mistakes” and “site provides reliable information”, and refers to the websites credibility. These items seem concerning similar to the items used to measure trust, but are here included as measure of the sites functionality.

Cyr (2008) tested three constructs as dimensions of website trust and website satisfaction, and found that information design, navigation design and visual design offer an initial set of constructs for future investigations related to trust and satisfaction. *Visual design* refers to the balance, emotional appeal, aesthetics, and uniformity of the overall graphical look. Thus, this construct embodies both the classical aspect of balance and the expressive aspect of colours, photographs, shapes, or font. In addition, the inclusion of an “emotional appeal” suggest how this construct is linked to consumers' affective response. Thus, this definition seems very broad. *Information design* refers to website elements that convey accurate or inaccurate information about products or services to a user, and therefore relates to the functionality of the website. Similarly, *Navigation design* refers to the navigational scheme used to help or hinder users accessing different sections, and relates to the aspect of harmony

in classical aesthetics.

Cyr et. al. (2009) conducted a series of interviews regarding the look of a website, and an analysis of the answers resulted in a division into four different concepts. *Aesthetics* refer to visual qualities and visual design elements that evoke a sense of attractiveness in the consumer, and was encapsulated by words such as bright, colourful and beautiful. *Functional property* refers to the structured elements of a website, such as information design, navigation and layout. Participants would refer to design elements as though they had emotion inciting qualities, such as friendly, serious or fun, thereby prompting Cyr et. al. (2009) to also include *affective property* as a concept. The study also showed that participants extracted semantic or symbolic values from certain design elements, signalling an emotional interpretation of the element based on the users' experience and feelings. Thus, Cyr et. al. (2009) included *symbolism* as a concept.

Chang & Chen (2009) studied consumers' perception of interface quality, security, and loyalty in online shopping. They focused on the importance of atmosphere, and adopted four components of consumer interface quality. The first component was *convenience*, which relates to how easily consumers can navigate and use the website, similar to the earlier mentioned ease of use and usability. The more convenient the website is, the more likely a consumer is to complete the transaction. *Interactivity* measures the degree to which online retailers facilitates two-way communication and a high degree of interactivity positively influence the consumers to return. If an online store is able to offer tailored products and personalized offers, this high level of *customisation* makes the website more appealing. Lastly, the online store should convey *character*, an image or personality, through using fonts, colours and background patterns, as this can create a sense of confidence. An image requires consumers to be able to separate the website from its competitors, thereby signalling a need for creativity.

A website can be viewed as a part of a company's communication strategy, as it is a place where consumers can meet and interact with the brand. A website is therefore an essential part of the brand-consumer communication, and as such it should be perceived as creative in order to be effective (Shimp, 2010, p.209). Creativity is also a way to differentiate a website from competitors and creative advertisements are remembered easier. Shimp (2010) presents three features that should be present in order for a website to be considered creative; connectedness, appropriateness and novelty. A website is *connected* if it reflects an

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understanding of target audience members' motivations, thus being relevant to them. *Appropriateness* involves capturing the brand's relative strengths and weaknesses vis-à-vis competitive brands, and not to be perceived as confusing or contradictory. It should also be novel, thus differ from consumers' expectation and be unique, fresh, and unexpected. Originality would make the website different from the prototypical website in its category. Even though a website could be considered creative and yet still not be perceived as appealing, the three constructs are believed to propose additional dimensions which are important in terms of website design, as it will enable them to capture attention, which is crucial in a competitive environment.

Unsurprisingly, some of the concepts identified by Cyr et. al. (2009) reappears in the framework by Cyr, Head & Larios (2010). They developed five main concepts when researching website colour. Although the study's main focus in colour, the defined constructs are applicable to other areas. In addition to *aesthetics*, *functional* and *affective* concepts, they also identified *harmony* as a perceived dimension. Participants described the websites as "well balanced" and "good colour combination", and by doing so, they suggested that the combination of elements is also of importance. Thus, even though consumers perceive an image to be attractive, the website as a whole could be perceived as unattractive if the image is not considered to balance the rest of the website. Another interesting concept identified in the study was *appropriateness*. The results revealed how participants, in addition to judging the design of the website, were also judging how this specific design would relate to the purpose of the website. Comments such as "appropriate" and "bad colour for product presentation" reveal how respondents are able to defer from personal opinions in order to evaluate the usefulness of the website as a whole.

According to Moshagen & Thielsch (2010), the only the instrument developed specifically for targeting at visual aesthetics having undergone proper validation was the four constructs identified by Lavie and Tractinsky (2004). However, Moshagen & Thielsch (2010) found several issues with the scales used to measure the two proposed dimensions, for example how it is difficult to explain why the item "aesthetic" only loaded on classical aesthetic rather than both classic and expressive aesthetic. They also suggested that items and scales were too abstract from an applied, design-oriented perspective, as they fail to reveal how to actually change the layout to enhance classic aesthetics. In addition, none of the items refers to colour, although they found colour to have an important impact on the attractiveness of a website. Thus, Moshagen & Thielsch (2010) constructed the Visual Aesthetics of Websites

Inventory (VisAWI) with the intention to completely describe the domain of interest.

Moshagen & Thielsch (2010) conducted seven studies, which resulted in four facets of perceived visual aesthetics of websites. *Simplicity* refers to aspects that facilitates perception of a layout and is comprised of aspects related to unity, homogeneity, clarity, orderliness and balance. It is therefore reminiscent of classical aesthetics, and was in fact shown to correlate with the conceptually related classic aesthetics scale. In contrast to Cyr, Head & Larios (2010), Moshagen & Thielsch (2010) does not consider harmony to be a construct of its own, as it is included as a part of the simplicity. *Diversity* refers to visual richness, creativity and novelty, thereby being very similar expressive aesthetics. In fact, when comparing diversity and expressive aesthetics, the results revealed a high correlation. *Colourfulness* relates to the evaluation of individual colours, and propose a contradictory view to some of the previously describes frameworks. Cyr, Head & Larios (2010) studied the environment of colour exclusively, and found that the evaluation of website colour could be divided into five concepts. Thus, adding colourfulness as a construct of its own seems to be a too broad definition. However, when looking at the measurement items, the questions are mostly related to appropriate colour choice, composition and mismatching, thus being very similar to Cyr et. al. (2009) proposed concept of appropriateness. Another similarity between Moshagen & Thielsch (2010) and Cyr, Head & Larios (2010) was found when looking at the fourth concept. *Craftsmanship* is characterized as “the skilful and coherent integration of all relevant design dimensions”, a description that could also be used to describe the construct Cyr, Head & Larios (2010) labelled harmony. Moshagen & Thielsch (2010) actually states that a website needs to be harmoniously designed when arguing the importance of craftsmanship, which further strengthens this notion.

According to this discussion, two of the concepts proposed by Moshagen & Thielsch (2010) are both representing the perceived harmony of a website. However, in their study, simplicity and craftsmanship were not perceived to overlap and was therefore left to represent different constructs. Thus, these discrepancies need further exploring. An interesting observation is how, out of the four proposed concepts, simplicity and craftsmanship were both significantly related to perceived usability. Thus, some similarities between them are likely. Interestingly, when discussing the concept of craftsmanship more in-depth, Moshagen & Thielsch (2010) notes how aesthetic appreciation may depend on the websites membership to a certain style, an idea resembling the prototypicality dimension of aesthetic objects. This statement suggests how craftsmanship, in addition to represent

harmony, might also slightly overlap with appropriateness. In addition, the definition of craftsmanship includes the word *relevant*, further supporting the idea that the concept is linked to what is perceived as appropriate. Similarly, the orderliness and clarity in simplicity seems to refer both to the usability of the website and the balance, thereby overlapping with both harmony and the functional property of Cyr, Head & Larios (2010). Thus, Simplicity is thought to have elements of both balance and functionality, whilst craftsmanship is thought to consist of balance and appropriateness.

Guido, Prete & Summarco (2010) states that website attractiveness consists of two concepts; aesthetics and seduction. Similar to Cyr, Head & Larios (2010) and Cyr et. al. (2009), *aesthetics* refers to website design and visual representation of objects, including image quality, elegance and visual layout. Although the image quality and layout could arguably signal a link to usability, the included aspect of elegance is most commonly connected to the harmonic appeal of a site. The chosen measurement items support this argument, as one of them is “the use of appropriate colours”, very similar to the measurement items used by Cyr, Head & Larios (2010) to measure appropriateness. The second concept, *seduction*, refers to the websites ability to persuade consumers through graphical interfaces, interactivity and personalized elements. Although the ability to persuade implies effecting consumers’ emotions, both interactivity and personalised elements closely resemble the construct of customisation defined by Chang & Chen (2009).

Similar to Lavie & Tractinsky (2004), Choi (2013) found classical aesthetics and expressive aesthetics to be the dimensions of visual aesthetics. In addition, Choi (2013) agreed that these two were insufficient in terms of defining the construct as a whole. However, rather than supplementing the two with usability, pleasure and service quality, such as Lavie & Tractinsky (2004), Choi (2013) proposed personalisation to be the third construct. Thus, Choi (2013) support the idea proposed by Chang & Chen (2009) that customisation and interactivity is important for consumers’ perception of a websites visual aesthetics.

## 2.1.2 Categorisation

The results from the presented previous research is summarised in table 1. The articles are again presented chronologically, together with their defined construct and its definition. The results are difficult to compare, due to the difference in proposed theories and the lack of common terminology. Thus, in an effort to make the findings more comparable, key dimensions were drawn from this description and noted in an additional column. Bollen (1989) refer to dimensions as distinct aspects of a concept, and this description is used when deciding what the key dimensions of each construct were. If two or more dimensions were deemed equally dominant and non-complimentary, each of them would be noted. For example, Lavie & Tractinsky (2004) define classical aesthetics as “rules advocated by usability experts, such as symmetry, order and clean design”, from which “symmetry”, “clean design” and “order” all are considered key dimensions. This inclusion is an effort to ensure that as little as possible information about the original construct is lost during the translation and comparison.

**TABLE 1:** Comparison of previous research results and initial categorization

<i>Source</i>	<i>Constructs</i>	<i>Definition</i>	<i>Key dimension</i>
Lavie & Tractinsky (2004)	Classical aesthetics	Rules advocated by usability experts, such as symmetry, order and clean design	Symmetry
			Clean design
			Order
	Expressive aesthetic	Originality and creativity, and is linked to designers' ability to break design conventions	Originality
	Usability	How easy the website is to use	Ease of use
Pleasure	The feelings it can evoke with the consumer	Evokes feelings	
Service quality	The websites accuracy	Accurate	
Cyr (2008)	Information design	Website elements that convey accurate or inaccurate information about products or services to a user.	Accurate
	Navigation design	The navigational scheme used to help or hinder users accessing different sections	Orderly navigation scheme
	Visual design	The balance, emotional appeal, aesthetics, and uniformity of the overall graphical look. This includes colours, photographs, shapes, or font	Balance Emotional appeal Aesthetics Uniformity Overall graphic look
Cyr et. al. (2009)	Aesthetics	Visual qualities and visual design elements that evokes a sense of attractiveness	Attractiveness
	Functional property	The structured elements of a website, such as information design, navigation and layout	Layout
	Affective property	Referring to design elements as though they had emotion inciting qualities, such as friendly, serious or fun	Emotion inciting qualities



	Symbolism	An emotional interpretation of the element based on the users' experience and feelings	Experiences
Chang & Chen (2009)	Convenience	How easily consumers can navigate and use the website	Navigation
	Interactivity	The degree to which online retailers facilitates two-way communication	Facilitates communication
	Customisation	Tailored products and personalized offers	Personalised offers
	Character	An image or personality, through the use of fonts, colours and background patterns	Image
Shimp (2010)	Connectedness	Understanding the target audience motivations, thus being relevant to them	Relevance
	Appropriateness	Capturing the brand's relative strengths and weaknesses vis-à-vis competitive brands	Relative strength Appropriateness
	Novelty	Differ from consumers' expectation and be unique, fresh, and unexpected	Uniqueness
Cyr, Head & Larios (2010)	Aesthetics	Visual qualities and visual design elements that evokes a sense of attractiveness	Attractiveness
	Functional property	The structured elements of a website, such as information design, navigation and layout	Layout
	Affective property	Referring to design elements as though they had emotion inciting qualities, such as friendly, serious or fun	Emotion inciting qualities
	Harmony	The combination of elements	Combination of elements
	Appropriateness	How this specific design would relate to the purpose of the website	Appropriateness
Moshagen & Thielsch (2010)	Simplicity	Aspects that facilitates perception of a layout and aspects related to unity, homogeneity, clarity, orderliness and balance	Unity
			Homogeneity
			Orderliness
	Diversity	Visual richness, creativity and novelty	Balance
			Richness
	Colourfulness	The evaluation of individual colours	Creativity
Craftsmanship	The skilful and coherent integration of all relevant design dimensions	Novelty	
			Use of colours
			Coherent Integration
			Relevance
Guido, Prete & Summarco (2010)	Aesthetics	Website design and visual representation of objects, including image quality, elegance and visual layout	Image
			Elegance
Seduction	The websites ability to persuade consumers through graphical interfaces, interactivity and personalized elements	Visual layout	
		Graphical interfaces	
			Interactivity
Choi (2013)	Classical aesthetics	Rules advocated by usability experts, such as symmetry, order and clean design	Symmetry
			Order
	Expressive aesthetic	Originality and creativity, and is linked to designers' ability to break design conventions	Clean design
Personalisation	Degree of customisation	Originality	
		Creativity	
			Customisation

In an effort to find a common terminology, the key dimensions were compared. This comparison highlighted the similarities or dissimilarities between the construct and the discrepancies between the theories. In order to propose a standardised scale for the effect of visual aesthetics, the discussion about the previous theories was used as a vital guideline. Once the dimensions were categorised, it would be compared to the previous theories or additional sources in an effort to limit the risk of proposing categories consisting of dimensions that have previously been defined as contradictory constructs. Thus, this categorisation is a very challenging process, where every assumption made could potentially decrease the coefficient of determination of the proposed categorisation. Therefore, this categorisation process was continuous. The final categorisation is illustrated in table 2.

**TABLE 2:** Proposed categorisation of key findings

<i>Source</i>	<i>Key dimension</i>	<i>Category</i>
Cyr et. al. (2009); Cyr, Head & Larios (2010)	Emotion inciting qualities	A
Cyr (2008)	Emotional appeal	A
Lavie & Tractinsky (2004)	Evokes feelings	A
Cyr, Head & Larios (2010); Shimp (2010)	Appropriateness	B
Shimp (2010)	Relative strength	B
Shimp (2010); Moshagen & Thielsch (2010)	Relevance	B
Moshagen & Thielsch (2010)	Use of colours	B
Lavie & Tractinsky (2004); Cyr (2008)	Accurate	C
Lavie & Tractinsky (2004)	Ease of use	C
Moshagen & Thielsch (2010)	Homogeneity	C
Cyr et. al. (2009); Cyr, Head & Larios (2010)	Layout	C
Chang & Chen (2009)	Navigation	C
Moshagen & Thielsch (2010)	Orderliness	C
Cyr (2008)	Aesthetics	D
Cyr et. al. (2009); Cyr, Head & Larios (2010)	Attractiveness	D
Cyr (2008); Moshagen & Thielsch (2010)	Balance	D
Lavie & Tractinsky (2004); Choi (2013)	Clean design	D
Moshagen & Thielsch (2010)	Coherent integration	D
Cyr, Head & Larios (2010)	Combination of elements	D
Guido, Prete & Summarco (2010)	Elegance	D
Lavie & Tractinsky (2004); Choi (2013)	Order	D
Cyr (2008)	Orderly navigation scheme	D
Cyr (2008)	Overall graphic look	D
Lavie & Tractinsky (2004); Choi (2013)	Symmetry	D
Cyr (2008)	Uniformity	D

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Moshagen & Thielsch (2010)	Unity	D
Guido, Prete & Summarco (2010)	Visual layout	D
Lavie & Tractinsky (2004); Moshagen & Thielsch (2010); Choi (2013)	Creativity	E
Chang & Chen (2009); Guido, Prete & Summarco (2010)	Image	E
Moshagen & Thielsch (2010)	Novelty	E
Lavie & Tractinsky (2004); Choi (2013)	Originality	E
Moshagen & Thielsch (2010)	Richness	E
Shimp (2010)	Uniqueness	E
Choi (2013)	Customisation	F
Cyr et. al. (2009)	Experiences	F
Chang & Chen (2009)	Facilitates communication	F
Guido, Prete & Summarco (2010)	Graphical interfaces	F
Guido, Prete & Summarco (2010)	Interactivity	F
Chang & Chen (2009)	Personalised offers	F

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Some discrepancies between the new constructs and the theory they originated from is inevitable because of the broad definitions used in the original framework. For example, as *aesthetics* is described as “website design and visual representation of objects, including image quality, elegance and visual layout” (Guido, Prete & Summarco, 2010), it was believed to consist of three key dimensions with no obvious common reference (table 1). “Image”, “elegance” and “visual layout” would be placed in different categories had it not been for their grouping in the original framework. Due to this grouping, a split would undermine the researchers who originally defined the construct. Thus, the most distinctive element of the three, elegance, is chosen as the dominant key dimension, and the category relating to this dimension was found valid for all three key dimensions, resulting in them all being placed in the same category.

In other cases, however, splitting the original construct was deemed necessary due to a discrepancy between the proposed theories. In these instances, the split and the possible overlap were mentioned as part of the discussions about the theories. For example, the five key dimensions of “visual design” defined by Cyr (2008), “balance”, “emotional appeal”, “aesthetics”, “uniformity” and “overall graphical look”, embodies both the classical aspect of balance and the expressive aspect of colours, photographs, shapes, or font. Since this split found support in the construct as defined by Lavie & Tractinsky (2004), splitting them into two categories felt justified. Thus, the key dimensions of “visual aesthetics” were placed in two different categories.

A narrower definition results in the need for more dimensions of visual aesthetics than in any of the earlier frameworks. More categories increased the probability that one or more of the dimensions will be found to correlate. However, as issues with the previous findings were found within its lack of concreteness and vague dimensions, the benefit of accurateness is believed to outweigh this increased probability. The final number of categories is therefore six.

The process of categorising the previous findings is both challenging and difficult. In addition, since the process is subject to individual judgement and comparison, which limits the validity of the proposed categorisation. Thus, the previously proposed frameworks have been held as a strict guideline throughout, in order to limit the errors caused by individual judgements.

### **2.1.3 Defining the categories**

The current terminology is unideal due to its diffuseness and broadness. In addition, reusing the previous constructs names might result in future confusion between the original constructs and the new proposed categories. Thus, new terminology is proposed. These terms are chosen based on their proximity to the aspect they are thought to measure, and based on how specific they are. This is believed to provide users of the framework with a more intuitive understanding of the dimensions of visual aesthetics. The chosen definitions are affective appeal, appropriate appeal, functional appeal, harmonic appeal, original appeal and personal appeal, and they are explained in the following.

Lavie & Tractinsky (2004), Cyr (2008), Cyr et al. (2009) and Cyr, Head & Larios (2010) found that consumers referred to design elements as though they had emotion inciting qualities, such as friendly, serious or fun. Additional research has also found that visual atmospheric cues can influence shoppers' emotional responses (Karimov, Brengman & Van Hove, 2011), and that the use of graphics enhance the emotional effect the website will have on consumers (Li, Yeh & We, 2013). Based on this, *affective appeal* is defined as a category. It refers to consumers' emotions towards the website and their mood at the time of interaction. It includes the emotions that arise from visiting the website, for example a feeling of pleasure, fun or happiness.

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Cyr, Head & Larios (2010), Shimp (2010) and Moshagen & Thielsch (2010) noted how consumers compare a website to other websites within the same industry, and included the aspect of relevance and appropriateness in their constructs. Shimp (2010, p. 259) also noted how the nature of the product affects the appropriateness of using humour, thus signalling appropriateness is important for the consumer. Additional research also found how consumers weigh design attributes of websites differently depending on the website category (Seckler, Opwis & Tuch, 2015), and they are shown to have expectations of a website's appearance based on other websites they had seen (Roth, Tuch, Mekler, Bargas-Avila & Opwis, 2013). An interesting topic within visual website aesthetics is the research related to prototypicality, and Tuch, Presslauer, Stöcklin, Opwis & Bargas-Avila (2012) found that there is a positive relationship between prototypicality and aesthetics. Our prototypical preferences have also been identified within the field of consumer behaviour, even when it comes to facial attractiveness (Ariely, 2008, p. 15). Based on this, *appropriate appeal* is established as a category, and it refers to how a website relates to other websites in the same category. It also refers to the degree of which a consumer feels the website understands their need.

Lavie & Tractinsky (2004), Cyr (2008), Chang & Chen (2009) and Cyr, Head & Larios (2010) have all defined usability as a dimension of visual aesthetics. Although the overall terminology may differ, the principle of the ease of use and usability of a website remains a central similarity throughout. Thus, *functional appeal* is also included as a category in this study. In line with previous definitions, it refers to how usable the website is perceived by consumers on a functional level. A website is believed to have functional appeal when consumers easily can navigate and use the website, and when all the links work, the navigation structure is correct and if the information presented is usable and credible.

One challenge with functional appeal, is its relation to *harmonic appeal*, as harmonic appeal was also found to relate to the usability and ease of use of the website. However, when first introduced by Cyr, Head & Larios (2010), harmonic was included as a complimentary category to functionality. Thus, including both constructs is in line with the previous theories. In addition, although Lavie & Tractinsky (2004) did not label one of their two dimensions harmony, they did include "usability" as a dimension once they found their two original dimensions to be insufficient in describing visual aesthetics. Hence, the key dimensions of classical aesthetics (symmetry, clean design & order) and usability (ease of use) were found to belong to two separate dimensions (table 2). The concept of an "overall

balance” is also mentioned by Cyr (2008), Cyr et. al. (2009), Guido, Prete & Summarco (2010) and Moshagen & Thielsch (2010). Palmer, Schloss & Sammartino (2013) even suggested that the combination of colour will influence the overall aesthetics of the website. Harmonic appeal is therefore included in addition to functional appeal, and it refers to the websites overall balance, attractiveness, clean design and symmetry. It is *not* related to the accuracy of the information presented, but rather the colour scheme and images in combination with other elements. The information can be accurate, and the website can function, yet appear unattractive because of unappealing images, inelegant solutions or cold background colours.

Originality and creativity has been a theme in most theories since first introduced by Lavie & Tractinsky (2004). Since then, Chang & Chen (2009), Shimp (2010), Moshagen & Thielsch (2010) and Choi (2013) have also included this dimension. Although the terminology used to describe it have had some variations (“originality and creativity”, “novelty” and “expressive aesthetics”), this dimension is by far the most stable of the defined six. *Original appeal* refers to the uniqueness, novelty and creativity of the website, thus, how innovative the creators have been. Website creativity is further defined as “the subjective judgment of a web site to exhibit novelty and appropriateness that elicits arousal and pleasure and is compatible with the user’s preferences” (Zeng, Salvendy & Zhang, 2009). By its definition, original appeal is therefore closely linked to appropriate appeal. However, since appropriate relates to the websites degree of prototypicality and original appeal relates to the novelty of a website, the two categories is believed to be opposites. Since consumers were found to like novel website only as long as it was not too different from the industry prototype (Hekkert, Snelders & Van Wieringen, 2003), the best website seem to be those with a moderate level of both originality and appropriateness.

Cyr et. al. (2009), Chang & Chen (2009), Shimp (2010), Guido, Prete & Summarco (2010) and Choi (2013) included a customised and personalised aspect in their theories. Chang & Chen (2009) found that personalisation enables consumers to get the exact information and guidance they need, and that offering tailored products and personalized offers makes the website more appealing. Although there are similarities between the usability aspect of functional appeal and the notion that personalisation generates usability, the lack of interaction criteria in functional appeal suggests they measure different aspects. This is supported by the fact that Cyr et. al. (2009) found consumers personal experience (“symbolism”) and the layout of the website (“functional property”) to be to separate

dimensions. In addition, the construct of “Web site design” was by Zeithaml, Parasuraman & Malhotra (2002) found to involve attributes associated with personalisation as well as design. Thus, *personal appeal* is included as a dimension and refers to a website’s degree of customisation and personalisation, as well as the level of two-way-communication and interaction.

**TABLE 3:** Category names

<i>Category</i>	<i>Definition</i>
A	Affective appeal
B	Appropriate appeal
C	Functional appeal
D	Harmonic appeal
E	Original appeal
F	Personal appeal

These six categories, illustrated in table 3, are believed to explain a large part of the overall concept of visual aesthetics. Thus, in order to describe a websites visual aesthetics, the website’s affective, appropriate, functional, harmonic, original and personal appeal can be assessed. This categorisation makes it easier for companies to know which element of their website to change, should it be considered unattractive. For example, if the website is thought to be functional but not personal, including customised elements will be more beneficial than a new layout.

### 2.1.4 Pre-testing the categories

Since the previous theories and findings have been held as a strict guideline throughout, certain discrepancies were inevitably included in the categories. Due to the splitting of simplicity, a dimension defined by Moshagen & Thielsch (2010), the key dimension “orderliness” was categorised as functional appeal. However, the key dimension of “order”, as defined by Lavie & Tractinsky (2004), were categorised as harmonic appeal. Thus, testing the key dimensions’ affiliation to the categories in an effort to limit such discrepancies is beneficial. Therefore, a small pre-test was conducted. This pre-test will also further limit the errors caused by individual interpretations.

The pre-test had 16 respondents (N = 16), 13 of which were women and three were men. The sample is too small to find significant results, however, a pre-test does help seek a general opinion of the categorisation. The sample were between the age of 23 and 58, although most of the respondents were in their twenties. The mean age was a little over 28 years.

Each of the respondents were given a sheet of paper containing a table, where the categories were placed horizontally and the key dimensions were listed vertically in a randomised order (appendix 1). In addition to the six defined categories, there was also an extra column labelled *other*, thereby allowing participants to choose a category other than those identified. The respondents were asked to place an X in the cell that represented the relationships they felt were logical, for example *appropriateness* and *appropriate appeal*. As some of the key dimensions might fit more than one category, the respondents were allowed to check more than one of the boxes for each dimension. They were also allowed to exclude certain dimensions if they had trouble understanding them. If a respondent checked more than three boxes per row, the answers on that row were not included as they were believed to signal either a misunderstanding or a high uncertainty. Thus, only those rows with three or less checked cells was counted. They had no time limit to complete the task, but all answers were received within 24 hours of distribution.

The results from the pre-test is illustrated in table 4. The number within each cell represents the amount of crosses that relationship received. For example, if the cell representing *appropriateness* and *appropriate appeal* was checked by 10 different respondents, the number 10 would be noted in that cell. The cells were then formatted by colour, illustrating the category fit.



TABLE 4: Results from pre-testing the categories

<i>Key dimension</i>	<i>Affective appeal</i>	<i>Appropriate appeal</i>	<i>Functional appeal</i>	<i>Harmonic appeal</i>	<i>Original appeal</i>	<i>Personal appeal</i>	<i>Other</i>	
Emotional inciting qualities	8	0	0	4	1	4	0	17
Emotional appeal	9	0	0	3	0	5	0	17
Evokes feelings	9	1	0	1	1	4	1	17
Experiences	7	2	2	1	4	3	0	19
Image	6	1	2	2	1	3	1	16
Visual layout	7	1	4	4	0	1	1	18
Attractiveness	5	0	4	4	0	4	0	17
Appropriateness	3	10	2	0	1	0	0	16
Relevance	2	10	5	0	0	3	0	20
Accurate	2	1	14	1	0	1	0	19
Clean design	1	3	10	8	1	2	0	25
Coherent integration	2	2	10	5	0	0	0	19
Combination of elements	0	3	8	2	1	0	0	14
Ease of use	2	2	12	2	0	0	0	18
Facilitates communication	4	3	9	0	0	1	1	18
Homogeneity	0	2	8	2	1	1	2	16
Interactivity	0	1	11	0	0	1	0	13
Layout	3	4	8	4	0	1	0	20
Navigation	0	1	13	3	0	1	0	18
Orderliness	1	1	9	5	0	0	1	17
Order	1	2	11	3	0	0	0	17
Orderly navigation scheme	0	2	12	1	0	0	0	15
Uniformity	2	3	8	3	1	2	1	20
Graphical interfaces	1	3	7	5	1	1	0	18
Unity	1	0	6	5	1	0	3	16
Aesthetics	3	0	1	9	2	6	0	21
Balance	1	1	5	12	0	0	0	19
Elegance	2	1	1	13	0	3	0	20
Overall graphic look	1	2	0	10	3	3	1	20
Symmetry	2	0	6	12	0	2	0	22
Use of colours	3	1	2	8	2	3	1	20
Creativity	3	1	1	0	10	3	0	18
Novelty	1	0	2	1	11	0	1	16
Originality	0	1	0	0	15	5	1	22
Uniqueness	4	1	0	0	13	5	0	23
Customisation	1	1	6	0	2	9	0	19
Personalised offers	4	0	2	0	1	13	0	20
Relative strength	4	4	2	0	1	0	0	11
Richness	4	0	2	4	3	2	2	17
TOTAL	109	71	205	137	77	92	17	708

Although the respondents had little knowledge about website attractiveness before, and some of the dimensions were complicated and difficult to understand, there is a clear categorisation across the sample. Given a criterion of at least six matches, only two of the dimensions, *relative strength* and *richness*, does not naturally load on one of the categories. This criterion of at least six matches is based on a percentage of the respondents. If at least one third of the sample agreed, and there are no contradictory close matches, the dimension is deemed to belong to said category. The latter criterion however, does exclude *graphical interfaces* and *unity* as belonging to the functional category, as only two or one vote separates a fit with functional appeal and harmonic appeal. Thus, these are also excluded from the definition of functional appeal.

The results reveal a few discrepancies to the original definition of the categories. Although many of the dimensions were found to load on its expected category, a comparison reveals which ones did not. Table 5 illustrate the proposed original category and the categories decided through the pre-test. The key dimensions marked in blue are those where the sample agrees with the previously defined categories, whilst those marked in grey reveal discrepancies between the two. The four key dimensions that were not defined through the pre-test remain uncategorised in the comparison.

**TABLE 5:** Comparison of categories from previous research and those defined through pre-testing

<i>Key dimension</i>	<i>Category</i>	<i>Pre-test</i>
Emotion inciting qualities	Affective appeal	Affective appeal
Emotional appeal	Affective appeal	Affective appeal
Evokes feelings	Affective appeal	Affective appeal
Appropriateness	Appropriate appeal	Appropriate appeal
Relative strength	Appropriate appeal	N/A
Relevance	Appropriate appeal	Appropriate appeal
Use of colours	Appropriate appeal	Harmonic appeal
Accurate	Functional appeal	Functional appeal
Ease of use	Functional appeal	Functional appeal
Homogeneity	Functional appeal	Functional appeal
Layout	Functional appeal	Functional appeal
Navigation	Functional appeal	Functional appeal
Orderliness	Functional appeal	Functional appeal
Aesthetics	Harmonic appeal	Harmonic appeal

Attractiveness	Harmonic appeal	Affective appeal
Balance	Harmonic appeal	Harmonic appeal
Clean design	Harmonic appeal	Functional appeal
Coherent integration	Harmonic appeal	Functional appeal
Combination of elements	Harmonic appeal	Functional appeal
Elegance	Harmonic appeal	Harmonic appeal
Order	Harmonic appeal	Functional appeal
Orderly navigation scheme	Harmonic appeal	Functional appeal
Overall graphic look	Harmonic appeal	Harmonic appeal
Symmetry	Harmonic appeal	Harmonic appeal
Uniformity	Harmonic appeal	Functional appeal
Unity	Harmonic appeal	N/A
Visual layout	Harmonic appeal	Affective appeal
Creativity	Original appeal	Original appeal
Image	Original appeal	Affective appeal
Novelty	Original appeal	Original appeal
Originality	Original appeal	Original appeal
Richness	Original appeal	N/A
Uniqueness	Original appeal	Original appeal
Customisation	Personal appeal	Personal appeal
Experiences	Personal appeal	Affective appeal
Facilitates communication	Personal appeal	Functional appeal
Graphical interfaces	Personal appeal	N/A
Interactivity	Personal appeal	Functional appeal
Personalised offers	Personal appeal	Personal appeal

The biggest difference between the original categorisation and the results is between the earlier discussed *harmonic appeal* and *functional appeal*, as many of the dimensions previously defined as harmonious were deemed functional in the pre-test. This is in line with the previous discussion, where the two categories were noted to be challenging to separate. However, the suggested divide does suggest a logical new split and highlights the differences between the dimensions. Functional appeal refers to the functionality of the website – the website’s accurateness, the ease of use, layout and navigation. Harmonic appeal however, refers to the balance, elegance and symmetry of the website, thus focusing on the aesthetic appeal rather than functionality.

Similar to some of the key dimensions of harmonic appeal, “facilitates communication”, “interactivity” and “graphical interfaces” were also found to relate to the websites

functionality. In addition, “experience” was found to load on *affective appeal*, thereby leaving *personal appeal* with only two of its original six dimensions. However, personal appeal was not the only category left with just two key dimensions. *Appropriate appeal* was left with just “appropriateness” and “relevance” after losing one of its original four dimensions to harmonic appeal and the other was undecided. Two dimensions are definitely not ideal, and does hint that both personal appeal and appropriate appeal are possible surplus categories. However, based on the total number of key dimensions and categories, two are considered a satisfactory amount of dimensions. In addition, since the conflicting key dimensions does not naturally fall into another category, their relation to the original dimension is not completely overruled. Thus, both appropriate appeal and personal appeal are still considered categories.

The pre-test does imply a clear categorisation in line with the proposed categories. In fact, other than the clear overlap between *harmonic appeal* and *functional appeal*, little overlapping is visible. Given that respondents could check multiple boxes per row, an overlap was definitely possible. Thus, the distinctive separation signals that the categories are complimentary rather than synonymous.

This pre-test reveal differences between the original proposed categories and the sample categories, and suggest a slightly new division of functional appeal and harmonic appeal. However, the small sample and limited wording seems insufficient in order to discard the definition based on previous research. In addition, due to lack of time and available resources, the items nor the category names were described to the respondents, making it difficult for them to fully understand the dimensions. Thus, the original proposed definitions of the categories are the ones that will be used further in the study. However, the pre-test provides an emphasis on the categories, and help establish them as independent. Although two of the categories was weakened by the pre-test, the test does provide support the total number of categories.

## 2.2 Trust

As illustrated in the conceptual model, the visual aesthetics of a website is hypothesised to influence consumers' perceived level of trust (figure 1). The inclusion of trust in the conceptual model is due to how the online environment exposes consumers to new uncertainties and risks (Lin & Lee, 2012), and whenever uncertainty and interdependence exist, trust is crucial (Yousafzai, Pallister & Foxall, 2009). Since consumers have limited knowledge about the technological security features of the websites, they have to rely on other aspects of the website, such as symbols and the overall design, to evaluate its trustworthiness. This could explain why consumers continue to engage in online activities, even though the diffusion of online services exposes them to threats, such as identity theft and malware (Canfora & Visaggio, 2012). This tendency is supported by findings from Cyr (2010), who found that the presence of security symbols helps elicit trust in consumers. Also other scholars have found that trust can be evoked through the website's design (Djamasbi et. al., 2011; Benlian & Hess, 2011). Thus, trust is considered an important construct when discussing the categories of visual aesthetics in relation to online environment.

Although there are findings that do not support a relationship between trust and visual aesthetics (Tuch, Bargas-Avila & Opwis, 2010), there is an overwhelming agreement among researchers that the visual aesthetics of a website will positively influence consumers' perceived level of trust (Ranganathan & Ganapathy, 2002). Certain scholars have even found this relationship to be particularly strong (Choi, 2013), and others have suggested that online services should prioritise improving the appearance of their website in order to be assessed as trustworthy (Beldad, de Jong & Steehouder, 2010). However, similar to the concept of visual aesthetics, a number of diverse and somewhat contradicting definitions about the concept of trust has been developed (Mayer & Davis, 1999). Thus, the concept of trust is in need of further elaboration.

Cyr et. al. (2009) suggest that trust in the online environment refers to consumers' confidence in a website, as well as their "willingness to rely on the vendor in conditions where the consumer may be vulnerable". Similarly, Becerra & Korgaonkar (2011) defined trust in the online environment as the "willingness to be vulnerable to the actions of a trustee", and suggested trust is displayed when consumers engage in transactions despite the uncertainty of the online environment. However, both these definitions are centred on the

presence of risk. Thus, Mayer, Davis & Schoorman's (1995) conceptualisation is preferred, as they were among the first to differentiate trust from perceived risk. In this thesis, trust is therefore defined "willingness to be vulnerable to the actions of another party".

### **2.2.1 The antecedents of trust**

Cyr et al. (2009) argues that defining trust as a single construct is appropriate when the research goals does not rely on a detailed understanding of trust signals. In their study, trust was conceptualised as a single variable, and defined as the "general confidence in the website". Similarly, Boyle and Bonacich (1970) found that trusting behaviour affect trust directly. Hence, one could argue this paper could settle for a one-dimensional design. However, the construct of online trust has evolved over time, from a strictly security focus to viewing trust as a multidimensional, complex construct (Shankar, Urban & Sultan, 2002). Mayer, Davis & Schoorman (1995) argue that trusting behaviour will influence trust indirectly through the antecedents of trust. Their view has since been supported by multiple other scholars, for instance Gefen (2002), who defined integrity, ability, and benevolence as antecedents to overall trust. Thus, a one-dimensional understanding of trust is deemed to be insufficient due to its inability to explain how the construct of trust might be influenced (Mayer & Davis, 1999).

Mayer, Davis & Schoorman (1995) suggest that trustworthiness is comprised of three factors. *Ability* refers to a trustor's skillset, competence and characteristics that allow them to have the ability to influence within some domain (Mayer & Davis, 1999). Ability is firmly established as an important factor in the assessment of trustworthiness, and has become one of the more commonly discussed components of trustworthiness (Colquitt, Scott & LePine, 2007). Due to the focus on skillset and features, ability is believed to be mainly a cognitive process (Urbano, Rocha & Oliveira, 2013).

*Benevolence* is defined as "the extent to which a trustee is believed to want to do good to the trustor, aside from an egocentric profit motive" (Mayer & Davis, 1999). Thus, it is important that the trustor to perceive the trustee as genuinely goodhearted. Previous research reveal that it may take time for benevolence to affect trust (Jarvenpaa, Knoll, & Leidner, 1998), and the estimation of benevolence is found to be possible only when there are two or more past interactions between the trustor and the trustee (Urbano, Rocha & Oliveira, 2013). A first-

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time visit to a website will therefore rely on consumers' initial trust (McKnight, Choudhury & Kacmar, 2002). In this state, the trustee has no estimation of trust, and primary features, such as a website's perceived attractiveness, are therefore used to make trust inferences (McKnight, Choudhury & Kacmar, 1998). Once a relationship is built however, benevolence accounts for the emotional content of trust (Urbano, Rocha & Oliveira, 2013).

The third antecedent of trust, *Integrity*, relates to whether the trustee adheres to a set of principles that the trustor finds acceptable (Mayer & Davis, 1999). Integrity represents a very rational reason to trust someone (Colquitt, Scott & LePine, 2007), and websites perceived as having integrity are believed to perform better, provide good value and satisfy customers' expectations to a larger degree than those who do not (Clark & Fujimoto, 1990).

These three factors of trust are combined idiosyncratically (Mayer & Davis, 1999). Thus, their importance can vary, both from person to person, day to day and subject to subject. For example, if a trustee's ability is deemed most important in terms of network providers, a trustee's benevolence might be of most importance when it comes to websites. This emphasizes the importance of measuring all the underlying components of trustworthiness, as a one-dimensional measurement of trust would not reveal on which of the three factors relating to trustworthiness the website would need to improve (Mayer, Davis & Schoorman, 1995).

In contrast to Mayer, Davis & Schoorman's (1995) proposed tripartite of trust, Gabarro (1978) identified ability and character as the two bases of trust (p. 295). Character was a multifaceted construct, and was believed to consist of concepts like honesty, openness and intentions. Thus, there is a striking similarity between integrity and benevolence and the construct of character. Although the three antecedents of Mayer, Davis & Schoorman (1995) have gained large consensus over the years, Gabarro's (1978) dichotomy has found support in certain research results, as some studies using both variables have failed to uncover significant, unique effects for both integrity and benevolence (Mayer & Gavin, 2005). For instance, Colquitt, Scott & LePine's (2007) results suggest that the effects of benevolence and integrity are redundant with each other. Similarly, Urbano, Rocha & Oliveira (2013) only included benevolence and ability in their computational trust model, as they viewed the two antecedents as redundant. According to Mayer & Davis (1999), demonstrating caring and concern is a facet of benevolence, whereas a strong sense of justice is a facet of integrity (Mayer, Davis & Schoorman, 1995). In contrast, scholars in the organizational justice

literature view caring and concern as a facet of “interactional justice”, thus suggesting a blurring of the benevolence–integrity boundary (Colquitt, Scott & LePine, 2007).

Despite the arguments for using two antecedents rather than three, multiple other scholars have found support for Mayer, Davis & Schoorman’s (1995) tripartite. Since integrity represents a very rational reason to trust someone, and benevolence, in contrast, evolve around emotional attachments (Colquitt, Scott & LePine, 2007), the two are believed to represent different constructs. Thus, this thesis will include ability, integrity and benevolence as antecedents of trust.

### **2.2.2 Online trust**

Previous researchers have found dissimilarities between online trust and offline trust (Shankar, Urban & Sultan, 2002). Offline trust is centred around the offline activities of the firm (Shankar, Urban & Sultan, 2002), and in contrast to the trust evaluations consumers can make in offline situations, the online environment eliminates the possibility to make trust judgements based on personal experience and acquaintanceship (Ziegler & Lausen, 2005). Online trust on the other hand, involves the technological and electronic business activities of a firm (Shankar, Urban & Sultan, 2002), and is in many ways related to the technology behind the websites. In fact, some scholars argue that technology behind a website is the proper object of online trust (Beldad, de Jong & Steehouder, 2010). However, since very few consumers have the necessary knowledge to evaluate the feasibility and quality of the technology, the website’s interface will serve as the basis for their evaluations. Still, it is important to remember that consumers’ willingness to disclose credit card information also depends on their evaluation of the functionality and reliability of the electronic commerce system (Grabner-Kraeuter, 2002).

### **2.2.3 Trust in the website**

Some of the proposed definitions of online trust are significantly different to the definition of trust proposed by Mayer, Davis & Schoorman (1995). For instance, Corritore, Kracher, & Wiedenbeck (2003) define online trust as “an attitude of confident expectation in an online



situation of risk that one's vulnerabilities will not be exploited". Based on the distinction between online and offline trust, it is therefore important to review the antecedents of trust in relation to the online environment. Since a one-dimensional design of trust is insufficient, but limited research has been made on how the antecedents of offline trust are affected in an online environment, the antecedents of trust is hypothesised to also influence consumers trust in the website. However, both trust in the website and trusting beliefs (the three antecedents) will be included in the study, in order to uncover any distinctions between online trust and offline trust.

## 2.3 Intention to revisit

In the conceptual model (figure 1), the visual aesthetics of a website is hypothesised to influence consumers' intention to return to the website. Intention to return is included due to how consumers' perception of a website's visual appearance will determine whether they stay on that website (Guido, Prete & Summarco, 2010). Similarly, the website's appearance will therefore influence whether or not a consumer intends to return to the website. If a website is deemed unattractive, consumers are less likely to revisit it (Rosen & Purinton, 2004).

Multiple scholars have found visual aesthetics to have a direct effect on consumers' intention to revisit. Djamasbi et. al. (2011) found visual aesthetics to be a good predictor of whether consumers intend to return to a website, and Mohd Sam & Tahir (2009) found that the way information is presented influences consumers' processing experiences, thus affecting their intention to revisit (Mosteller, Donthu & Eroglu, 2014). Prior to making a decision about a behaviour, the consumer forms an intention. This intention is defined as consumers' "willingness to perform the behaviour" (Albarracín, Johnson, Fishbein & Muellerleile, 2001). Since intentions are a good predictor of actual behaviour (Pavlou, 2003), actual behaviour must also be a good indicator of consumer intentions.

### 2.3.1 The theory of reasoned action

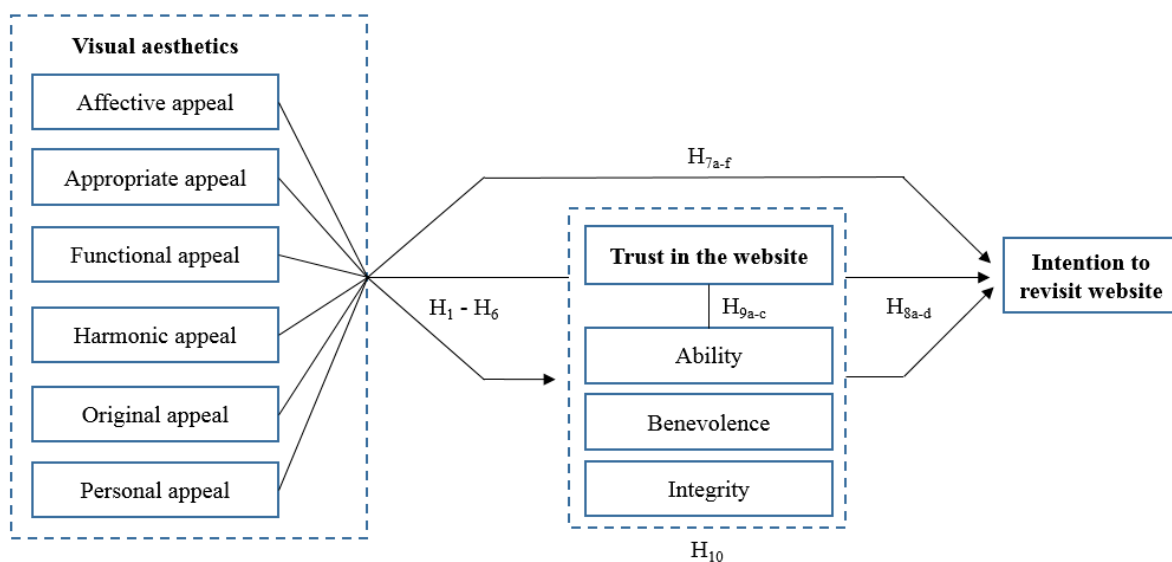
Literature on the field of consumer behaviour has defined many behavioural theories. One of these theories is the theory of reasoned action (the TORA), originally proposed by Ajzen & Fishbein (1973). The TORA is a model for attitudinal prediction of behaviour, and the theory assumes that in a given situation, a person forms an intention that influences their behaviour. These intentions are influenced by the consumer's beliefs and the subjective norm related to the behaviour (Ajzen & Fishbein, 1973). The consumers' forms beliefs based on the websites visual appearance and functionality. However, since the online environment differs from reality in that it offers an option of complete alienation from other people, the aspect of the social norm might be assumed to have less of an effect in an online environment. On the other hand, simultaneously as offering alienation, the online environment also offers the opportunity to firm virtual bonds with other people through forums, social media websites or

discussion boards. In addition, most online environments require a username or identification, thereby eliminating the opportunity for complete anonymity. Hence, the aspect of a social norm might still be considered to have an influence on intention in online environments.

### 3. The research model

Through the elaboration of the constructs in the literature review, the construct of trust and the construct of visual aesthetic have newly defined antecedents and dimensions. Thus, the original conceptual model (figure 1) is no longer sufficient in order to illustrate the research goals, as it has significantly expanded. In addition to the three original hypothesised relationship, the relationships between the dimensions of visual aesthetics and the antecedents of trust, as well as their relationship with intention to revisit, is also of interest.

A new and expanded research model is illustrated in figure 2. This model includes the six defined categories of visual aesthetics and the antecedents of trust. The inclusion of these dimensions and antecedents result in additional hypotheses, thereby increasing the total number of hypotheses to 38.



**Figure 2:** The research model.

Although there is an overall assumption that the dimensions of visual aesthetics, as with the main concept, will positively influence trust, it is beneficial for these relationships to be explored further. These relationships are therefore elaborated on in the following. Not all the 38 hypotheses will be discussed in detail, as many of the relationships are currently unexplored and therefore limited information is available. However, all the relationships are hypothesised and is included in the study.

### 3.1 The dimensions of visual aesthetics and their relationship with trust

Although previous research has found visual aesthetics to influence trust, this does not guarantee that every one of the dimensions will have the same affect. Thus, their relationship with the other constructs needs further inquiring. The defined dimensions of visual aesthetics, affective appeal, appropriate appeal, functional appeal, harmonic appeal, original appeal and personal appeal, and their expected relationship with trust and the trusting beliefs is therefore elaborated on in the following.

According to Karimov, Brengman & Van Hove (2011), emotional trust develops from an instinct, intuition or feeling. In an online perspective, a consumer's intuition is often based on the website's design, as this is the only aspect available for user evaluations prior to actual using the website. Thus, the antecedents of affect-based trust are defined as immediate reactions of attractiveness and signals of benevolence (Karimov, Brengman & Van Hove, 2011). This suggests that the affective appeal will influence consumers' trust in the website. As consumers are assumed to be more likely to trust websites they find attractive, affective appeal is hypothesised to positively influence trust.

As with human interactions, emotional appeal and emotional enticing qualities is believed to positively influence our perception of benevolence. In order for a website to be perceived as genuinely good hearted, a certain level of emotion is expected to be elicited in the consumer. Thus, although affective appeal is expected to positively influence all the three trusting beliefs, it is expected to have a slightly stronger influence on the perceived benevolence of a website than the other trusting beliefs.

**H<sub>1a</sub>**: Affective appeal has a positive influence on consumers' trust in the website

**H<sub>1b</sub>**: Affective appeal has a positive influence on the website's perceived ability

**H<sub>1c</sub>**: Affective appeal has a positive influence on the website's perceived benevolence

**H<sub>1d</sub>**: Affective appeal has a positive influence on the website's perceived integrity

When researching the antecedents of website trust, Kim & Moon (1998) found colour appeal to be one of the main determinants. This indicates that it is possible to induce trust by manipulating the appropriate appeal of the website. In fact, certain colours, such as blue, are more typically associated with trust (Cyr, Head & Larios, 2010). This suggests why so many

of the Norwegian online banks, for example Nordea or Danske Bank, have chosen a blue theme. Similarly, Wand & Emurian (2005) found that the tone of the interface colour should be cool, and be of low brightness, in order to appear trustworthy. Although no such rule can be generalised, it does support that colour has an influence on the website's perceived trust. Hence, since colour is one element of appropriate appeal, one could argue it is reasonable to believe that appropriate appeal will have a positive influence on trust and the trusting beliefs.

**H<sub>2a</sub>:** Appropriate appeal has a positive influence on consumers' trust in the website

**H<sub>2b</sub>:** Appropriate appeal has a positive influence on the website's perceived ability

**H<sub>2c</sub>:** Appropriate appeal has a positive influence on the website's perceived benevolence

**H<sub>2d</sub>:** Appropriate appeal has a positive influence on the website's perceived integrity

Djamasbi et. al. (2011) found a strong positive correlation between trust in the informational content of a page and in the visual appeal of the page. In fact, consumers are more likely to trust websites that contain accurate, current, and complete information (Kim, Song, Braynoy & Rao, 2005), and those that adhere to the rules of correct spelling, grammar, and syntax (Koehn, 2003). This suggests a strong argument for the effect functional appeal can have on trust, as accuracy is an important aspect of the category.

Accuracy requires precision, and in contrast to emotional trust or the use of colours, it is therefore believed to be strongly related to a website's perceived ability. Similar to how the precise wording or the correct use of grammar will make a person appear competent, a website's accuracy is believed to enhance its perceived ability. Thus, functional appeal is hypothesised to have an extra strong influence on the ability of the website.

A website's usability can significantly influence trust (Cyr, Head & Larios, 2010), and a lack of usability-enhancing features, such as these navigation cues, was found to decrease the consumers' trust (Benlian & Hess, 2011). In addition, effective navigation was found to be one of the best ways to communicate trustworthiness (Grabner-Kraeuter, 2002). In fact, ease of navigation was frequently mentioned as an element that signalled online trust (Wang & Emurian, 2005). Thus, multiple empirical evidence reveal how navigation design and usability results in trust (Yoon, 2002), thereby supporting the fact that the functional appeal of the website will positively influence the perceived trustworthiness of the website.

As previously discussed, consumers are forced to make initial evaluations of trust without ant in-depth knowledge about the technology behind the website. Thus, visual elements that

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efficiently communicates and signals security, such as security symbols, instils trust in the consumer (Cyr, 2008). In addition, despite claiming that privacy policies are important for establishing credibility, consumers referred to the surface elements rather than the policies when explaining how they evaluated the credibility of a website (Schlosser, White & Lloyd, 2006).

**H<sub>3a</sub>**: Functional appeal has a positive influence on consumers' trust in the website

**H<sub>3b</sub>**: Functional appeal has a positive influence on the website's perceived ability

**H<sub>3c</sub>**: Functional appeal has a positive influence on the website's perceived benevolence

**H<sub>3d</sub>**: Functional appeal has a positive influence on the website's perceived integrity

The overall visual aesthetics of a website has been found to influence consumers' perceived trust (Tractinsky, Cokhavi, Kirschenbaum & Sharfi, 2006). In addition, many consumers base their evaluation of a website's credibility on the overall visual appeal of the website (Wang & Emurian, 2005), and Ahrholdt (2011) refers to the general layout of a website as a trust-building indicator. This implies that the harmonic appeal of a website will positively increase the level of trust in the website.

In support of this, visual complexity is found to influence the website's visual appeal (Wang & Emurian, 2005). As previously discussed, consumers often prefer a clear design as this reduce the perceived risk of wasting time and deception (Wang & Emurian, 2005). However, there should be a balance between the website's challenges and the consumers' perception of their skills (Hoffman & Novak, 1996). As consumers' knowledge about interface design is expected to grow as they sign up to more and more online services, their preferred level of complexity is expected to increase as well. Thus, simplicity and order might not always be the preferred harmonic balance. Although a large part of the younger population might have reached a more advanced level of internet usage, consumers are still expected to require a clear and elegant interface design, thereby making an orderly navigation scheme an important factor that can influence a website's perceived trust.

Similar to accuracy, an overall attractiveness and balance is believed to have an especially strong influence on the perceived ability of the website. This is because simplicity and and elegance are believed to signal competence and a string character. Hence, an overall layout is hypothesised to help a website appear trustworthy.

**H<sub>4a</sub>**: Harmonic appeal has a positive influence on consumers' trust in the website

**H<sub>4b</sub>**: Harmonic appeal has a positive influence on the website's perceived ability

**H<sub>4c</sub>**: Harmonic appeal has a positive influence on the website's perceived benevolence

**H<sub>4d</sub>**: Harmonic appeal has a positive influence on the website's perceived integrity

Trust can also be induced through original appeal as images have the ability to enhance consumers' trust in an online service (Cyr et al, 2009). Although Riegelsberger Sasse & McCarthy (2003) did not find the presence of photos to have an effect on online trust, Riegelsberger & Sasse (2001) reported that a medium experienced user responded favourably to photographs as a trust inducing factor. This difference can be explained by the images relation to the content of the website. Consumers are expected to respond favourably to relevant and appropriate pictures, but not to pictures with no relation to the content or purpose of the website. Another reason for these different preference can be due to consumers' individual preferences. Some consumers find certain types of images to be attractive and cool, for example pictures of street art, whilst other consumers find the same pictures to be distasteful or bothersome. Still, the inclusion of relevant and neutral images is expected to positively influence a website's perceived trust.

One important aspect of original appeal is the previously discussed relationship between novelty and prototypicality. Consumers were found to only like novel website only as long as it was not too different from the industry prototype (Hekkert, Snelders & Van Wieringen, 2003). Therefore, an innovative website, with little or no similarities to the industry prototype, is expected to be perceived as less attractive, thereby signalling that original appeal does influence consumers' attitudes towards it. As novel and prototypical websites are expected to positively influence perceived attractiveness, original appeal is hypothesised to positively influence perceived trust in the website.

**H<sub>5a</sub>**: Original appeal has a positive influence on consumers' trust in the website

**H<sub>5b</sub>**: Original appeal has a positive influence on the website's perceived ability

**H<sub>5c</sub>**: Original appeal has a positive influence on the website's perceived benevolence

**H<sub>5d</sub>**: Original appeal has a positive influence on the website's perceived integrity

In order to establish trust, the online services must compensate for the lack of face-to-face interaction, and in an attempt to recreate the in-store atmosphere, companies are relying on technological features (Benlian & Hess, 2011). Consumers are expected to feel more at ease with trusting the online service, if their concerns or questions are answered immediately,



either through the provided information, a Q&A section or a live chat box. Including such a social presence have in fact been found to increase consumers' trust (Beldad, de Jong & Steehouder, 2010). Based on these findings, and findings that reveal that interactivity does influence the level consumer trust (Basso, Goldberg, Greenspan & Weimer 2001), personal appeal is expected to positively influence the level consumer trust.

Koufaris & Hampton-Sosa (2004) found that online services willing to offer customised products and services were more likely to be considered trustworthy. In fact, certain scholars have hypothesized that personalisation is a condition in order for online trust to develop (Briggs, Simpson, & De Angeli, 2004), and that to elicit trust, personalisation is key (Dayal, Landesberg & Zeisser, 2000). One of the perceived benefits of customisation is the opportunity to save time and effort in terms of research and navigation. In addition, it can help limit the available choices, which in an environment where everything is available, is believed to significantly improve the consumers' experience. Thirdly, customisation can help consumers find other items or experiences they otherwise wouldn't know about, for example through "suggested videos" on YouTube based on the videos you've already watched, or through recommended books on Amazon. Similar to how people appreciate recommendations and advice from our friends, this same apparent concern for our enjoyment is especially believed to elicit a feeling of benevolence. The website that offer customised offers, are expected to be perceived as slightly more concerned for our welfare, thereby personal appeal is expected to positively influence our trusting beliefs.

There is, however, also considerable risks related to offering customised online services. Zeithaml, Parasuraman & Malhotra (2002) argued that a websites' continuous request for consumers' preferences and personal information to base the recommendations on could feel invasive rather than efficient and helpful. In addition, consumers have recently become more aware of the amount their private information that is stored and sold, thereby making some consumers sceptical when an online service seems to know their preferences even on their first visit. This is supported by findings from Beldad, de Jong & Steehouder (2010), who found that although trust only had a relatively small impact on trust-creation, it could have a detrimental effect on trust formation. Thus, online services should still offer customisation, but should be aware of the way in which that customisation is perceived.

**H<sub>6a</sub>:** Personal appeal has a positive influence on consumers' trust in the website

**H<sub>6b</sub>:** Personal appeal has a positive influence on the website's perceived ability

**H<sub>6c</sub>**: Personal appeal has a positive influence on the website's perceived benevolence

**H<sub>6d</sub>**: Personal appeal has a positive influence on the website's perceived integrity

Based on this elaboration of the relationships, each of the six dimensions of visual aesthetics are expected to positively influence consumers' trust in the website.

### 3.2 The dimensions of visual aesthetics and their relationship with consumers' intention to revisit

Similar to how the defined dimensions of visual aesthetics are not guaranteed to influence trust even though the overall construct has been found to do so, nor are the dimensions of visual aesthetics guaranteed to influence consumers' intention to revisit a website. Thus, their relationship with intention to revisit is elaborated on in the following.

Nysveen, Pedersen & Thorbjørnsen (2005) found that experience and enjoyment, a type of emotional state, was crucial in order for consumers to form an intention to use a service. Hence, a similar relationship is hypothesised for enjoyment and intention to return, and it is assumed that consumers are more likely to intend to return to enjoyable services. However, as more public and necessary services are digitalised, consumers have an increasing amount of necessary online chores. For instance, an online bank or the Norwegian tax return website are likely not considered fun websites, but consumers still revisit these websites, primarily due to necessity. Still, as one could argue that completing any type of necessary task would evoke a feeling of satisfaction or pleasure, these websites can also evoke feeling in the consumers. Similarly, consumers can feel happy as a result of their accomplishments or conscientiousness, or they can feel immensely bored or serious. All the while, these are still types of emotional states. Allagui & Lemoine (2008) found affective responses to be strongly related to purchase intention, and Bonnin & Goudey (2012) found that emotional states evoked through music, colours etc. influenced consumers' willingness to purchase. Hence, the feel of the website, whether it's a serious bank or a fun gaming website, is an important influencer of the consumers' intentions. One could therefore argue that affective appeal will positively influence consumers' intention to revisit.

Literature within consumer behaviour reveal how our mood can be a bias for our likelihood to purchase (Garder, 1985). Thus, in addition to the feelings evoked by the website, the mood the consumer is in prior to or during the visit can influence their evaluation of the website. In addition, consumers with a negative self-image are prone to rate websites more negatively than consumers with a positive self-image. Hence, it can be beneficial for online services, especially those selling products or services related to self improvement, to signal a healthy image. These arguments further strengthen the hypothesised influence affective appeal has on intention to return.

**H<sub>7a</sub>**: Affective appeal has a positive influence on consumers' intention to return to the website

Consumers are believed to have a certain set of colours they find appropriate for each type of website, and similarly they are believed to prefer the websites with these colour schemes to others. This assumption is based on the effect of the industry prototype, as websites were only accepted by consumers when they remained within a certain set of boundaries (Hekkert, Snelders & Van Wieringen, 2003). For instance, if a new online bank would launch a pink application with purple letters, this would unlikely be accepted by consumers. This assumption is supported by previous research findings, as Tractinsky et. al. (2006) found that colour influenced consumers' purchase intention. The websites that are perceived as appropriate are hypothesised to positively influence consumers' intention to return to a website.

As the behavioural intention towards an object is mainly explained by the attitude towards the object (Ajzen & Fishbein, 1973), a consumer is believed to return to the website if they have a favourable attitude towards it. Since a consumer's attitude towards a website is expected to be influenced by how attractive they perceive the website to be, the consumers' perceived attractiveness is expected to influence their intention to return. This strengthens the argument that appropriate appeal is believed influence a consumer's intention to revisit the website.

**H<sub>7b</sub>**: Appropriate appeal has a positive influence on consumers' intention to return to the website

Pavlou (2003) found that perceived ease of use had a significant effect on transaction intentions, and Ranganathan & Ganapathy (2002) found that correct and accurate information generates purchase intention. Based on this, the visual elements related to the functional appeal of the website is also expected to influence consumers' intention to return. This is supported by Cyr, Head & Larios (2010), who found that the information content and navigation is important to a consumer's intent to return to the site. Thus, functional appeal is expected to influence consumers' intention to return to the website.

Perceived ease of use was hypothesised to be one of the most important variables in order for consumers to accept a new technology (Beldad, de Jong & Steehouder, 2010). In order to complete the adaption to the online environment, and to facilitate use of the services, consumers would need to return to the website. Hence, the usability and ease of use of online services is expected to positively influence consumers' trust in the website.

**H<sub>7c</sub>:** Functional appeal has a positive influence on consumers' intention to return to the website

The coherence and complexity of a website can be altered in order to create the right atmosphere for consumers, and the right atmosphere will make consumers feel more comfortable to return to the website (Rosen & Purinton, 2004). This implies that coherence and complexity, key dimensions of harmonic appeal, can influence consumers' behaviour. It further implies that it will influence a consumers' intention to return.

Similar to the relationship between harmonic appeal and trust, the relationship between harmonic appeal and intention is expected to be change. The preferred level of complexity is expected to increase as consumers' knowledge about interface design increases, thereby suggesting that the preferred level of complexity will continue to evolve. Hence, even even though consumers are hypothesised to prefer an overall attractive and balanced website, what constitutes as balanced will change. Nonetheless, the harmonic appeal is expected to positively influence intention to revisit.

**H<sub>7d</sub>:** Harmonic appeal has a positive influence on consumers' intention to return to the website

Intention to revisit a website can also be elicited through the use of creative elements, as these influence consumers' attitudes towards the site (Supphellen & Nysveen, 2001). Once an attitude is formed, this will influence consumers' intentions to revisit the website. Including creative elements on a website can therefore help ensure revisits. However, it is important to remember the importance of prototypicality and appropriateness. When using certain online services, for example more serious services such as online banks, consumers might be less positively influenced by extremely novel and creative elements. Thus, as long as the creative elements are considered appropriate, they are expected to positively influence consumers' intention to return.

Creativity and novelty has been proved to be key factors in shaping consumers' intention (Zeng, Salvendy & Zhang, 2009). This can be due to how inspirational and novel solutions often are shared with our family and friends, thereby generating online hype and buzz. As consumers are more easily influenced by recommendations, this buzz can generate an intention to use, even for those consumers who are not currently using the service. Potentially, this hype could overwrite any concerns related to a lack of relation to the industry prototype, as a service would have to be completely new in order to generate buzz. Hence, there is a possibility that creative and novel services could lead to the novelty could influence consumers' intentions to use even if the service is not similar to a prototype.

**H<sub>7e</sub>:** Original appeal has a positive influence on consumers' intention to return to the website

A high degree of interactivity will positively influence the consumers' intent to return to the website (Chang & Chen, 2009). The use of interactive elements, such as a conversational agent, would not only help the customers find products on the website, but it would also make the website more appealing and socially warm (Allagui & Lemoine, 2008). Thus, the personal appeal of the website is expected to positively influence consumer's intention to return to a website.

**H<sub>7f</sub>:** Personal appeal has a positive influence on consumers' intention to return to the website

Based on this elaboration of the relationships, each of the six dimensions of visual aesthetics are expected to positively influence consumers' intention to return to the website.

### 3.3 Trust and intention to revisit

Several scholars have found trust to influence consumers' purchase intentions (Yoon, 2002; Gefen et. al., 2003; Sultan et. al., 2002; Guido, Prete & Summarco, 2009), or their intention to transact (Pavlou, 2003). In fact, some scholars deem trust to be an essential antecedent of purchase behaviour (Benedicktus, 2011). Thus, an increase in customer trust is expected to increase the consumers' purchase intention (Ganguly, Dash & Cyr, 2009). Although consumers' intention to revisit are a slightly different aspect of intentional behaviour than purchase intentions, they are both in fact behavioural intentions. According to the TORA, all behavioural intentions are influenced through attitude and social norm, further strengthening their similarity. Thus, the effects of trust on purchase intention are therefore expected to also be valid for consumers' intention to return to the website.

In support of this hypothesis, online trust has been found to have a positive impact on website traffic and visits (Bart et al, 2005). In addition, Jarvenpaa & Tractinsky (1999) argued that trust would increase customers' willingness to engage in a website. Therefore, trust is expected to positively influence consumers' intention to return to the website.

**H<sub>8a</sub>:** Trust in the website has a positive influence on consumers' intention to return to the website

**H<sub>8b</sub>:** The website's perceived ability has a positive influence on consumers' intention to return to the website

**H<sub>8c</sub>:** The website's perceived benevolence has a positive influence on consumers' intention to return to the website

**H<sub>8d</sub>:** The website's perceived integrity has a positive influence on consumers' intention to return to the website

## 3.4 Trust

Ability, benevolence and integrity appear to explain a major portion of trustworthiness (Mayer, Davis & Schoorman, 1995). However, an important characteristic of trustworthiness is that it should be considered a continuum, and as a continuum there may be situations, where trust is present even though one of the antecedents of trustworthiness is relatively low. However, the relationship between trustworthiness and trust is strongly emphasised in previous literature, and thus the three trusting beliefs are hypothesised to positively influence consumers' trust in the website.

**H<sub>9a</sub>**: The website's perceived ability has a positive influence on consumers' trust in the website

**H<sub>9b</sub>**: The website's perceived benevolence has a positive influence on consumers' trust in the website

**H<sub>9c</sub>**: The website's perceived integrity has a positive influence on consumers' trust in the website

### 3.4.1 Trust as a mediating variable

As illustrated in the research model (figure 2), trust is hypothesised to mediate the relationship between the dimensions of visual aesthetics and intention to revisit the website. The exploration of the relationship between visual aesthetics and intention to revisit has provided a reason to believe visual aesthetics directly influence intention to revisit. In addition, the elaboration of the relationship between visual aesthetics and trust has provided a reason to believe that visual aesthetics influence trust and the trusting beliefs. However, less research has been made in terms of introducing trust as a mediating variable in environments where consumers are expected to disclose sensitive information.

Ganguly, Dash & Cyr (2009) found empirical evidence of the mediation role of trust in their study of the Indian market, and Chen & Barnes (2007) found empirical evidence that trust mediated the relationship between perception of the website and intention. Previous research reveal findings that correlates with this hypothesis, and have indirectly referred to the mediating role of trust. For instance, Yoon (2002) states that the design attributes of a website were found to influence the formation of online trust, and that online trust did in turn function as a facilitator for formulating positive purchase intention. Similarly, Shankar, Urban & Sultan (2002) found that website characteristics, such as navigation, user

friendliness, community, privacy, security and presentation, would influence online trust, which in turn influence intentions to act.

Bart, Shankar, Sultan & Urban (2005) also introduced trust as a mediating variable. However, their focus was on website characteristics and not only the websites appearance. Thus they included personality related elements that does not fit with the proposed categories of visual aesthetes, making a comparison of the mediating role difficult. Their research model, does however provide support for the theory that trust can be found to mediate relationships between two constructs. Trust is therefore included as a mediator in this study, although not exclusively. Visual aesthetics is believed to also have direct effect on intention to purchase.

**H<sub>10</sub>:** The positive influence of visual aesthetics dimensions on intention to return to the website is mediated by trusting beliefs and trust



## 4. Method

An online survey about the visual aesthetics of a website was conducted in order to test the hypotheses. In the following, the sample, the questionnaire and the applied measures are explained.

### 4.1 Procedure

The data needed for the study was gathered using a cross-sectional survey. A survey is a “systematic data collection of a sample drawn from a specified larger population” (Rabinowitz & Martin, 2001, p. 42), and a cross-sectional survey is descriptive research obtained at one point in time. The quality of a survey depends on the used measurements and its representation.

Bradburn, Sudman & Wansink (2004) states that a questionnaire should be developed through seven steps, and these have been used as a guideline during the development of the questionnaire. According to Bradburn, Sudman & Wansink (2004), the researcher should first decide what type of information is needed in order for the respondents to be eligible to response, and then the individual questions are phrased. This includes defining the type of response and specific wording for each question. The sequence of questions and the physical characteristics is then determined. The seventh, and final step is to pre-test the questionnaire prior to distribution. Although this process has been used as a guideline, the process of developing the questionnaire was not restricted, nor limited to, these steps. However, the steps provided a good overview over each of the elements that must be considered when designing a survey for respondents, and each of the steps were accounted for during the design process.

Although the categories were pre-tested (table 4), no additional pre-test was conducted on the questionnaire itself. Pre-testing the questions would have increased the validity of the results, though such a pre-test would have required additional time and resources to conduct that was not available. In order to compensate for this lack of pre-testing, the final questionnaire was presented to five subjects who had experience with survey design. These five subjects were asked to solicit feedback on the measurements items, as well as the overall design and wording of the survey. Alterations and considerations were made based on their

recommendations. In addition, knowing there would be no time to conduct a pre-test, the author strived to use measurements items from previous research that was already tested.

The target population for the survey was the Norwegian population. However, due to limited time and resources, the population elements that the author was allowed or able to access was significantly smaller. The sample frame was initially limited family, friends and acquaintances, and the main communication channels were email and Social Medias. However, these channels enabled the recipient to forward and share the survey with others. Thus, the questionnaire was also distributed through connections of friends and family, thereby widening the reach. The invitation stated that participation was voluntary, and the data was collected through Qualtrics.

Since the questionnaire was distributed through a personal network, the sample is not completely randomised. However, over 1 000 people were exposed to the questionnaire link, as it was shared with over 900 people on Facebook, and sent directly to over 100 email accounts. Although this distribution method does pose a risk of committing both sample error and coverage error, there is no way of knowing which of the 1 000 possible respondents actually participated since the responses were anonymised and participation was voluntary. In addition, since the link was also shared by friends and family, this limits the possibility for coverage error.

#### **4.1.1 The Questionnaire**

The main purpose of the study, that it was a part of a master thesis at the Norwegian School of Economics, was briefly explained at the beginning of the study in an effort to motivate respondents to complete the survey. The respondents were also informed that the study would revolve around their use of websites, but was not informed that their trusting beliefs or their trust in the website would be tested. The respondents were here also guaranteed their complete anonymity. Prior to continuing the questionnaire, the respondents had to agree to the listed information (appendix 2).

After questions related to demographics, the respondents were asked to think of the last website they have visited which required them to enter in personal information, and to keep this website in mind when completing the online questionnaire. This was included in order to

ensure the respondents were choosing a website where trust was of importance. Then they were provided with a list of website categories, and were asked to check the box corresponding to the category of their chosen website. In order to ensure they had in fact picked a website that required them to give personal information, the respondents were also asked to check one or more of the boxes corresponding to the type of sensitive information the website required. The different categories included email, address, full name, social security number, credit card details and personal passwords.

For the remaining questionnaire, respondents were asked to evaluate their chosen website through 45 measures relating to the six categories, trust beliefs, trust in the website and intention to revisit. The respondents were not given the name of the category, nor the name of the trusting beliefs, but were asked to rate the website according to the statements on a 7-point Likert scale (1 'strongly disagree', 7 'strongly agree'). The questionnaire took about 5 – 10 minutes to complete, and a progress bar illustrated how much was left of the survey. Prior to completing the questionnaire, they were also given the opportunity to leave a comment, and this was the only non-mandatory element of the questionnaire.

## 4.2 Preparation of the data

Prior to analysing the results, the data was reviewed for careless respondents, mistakes or misunderstandings.

The respondents had the opportunity to leave a comment at the end of the survey, and some of these comments were cause for deletion. One of the respondents commented it was "hard to answer the questions. Didn't fit with the website I was thinking about". This response was deleted. Another commented "More emphasis on the importance of remember exactly the website. Didn't even know what this survey was about". This response was also deleted. One respondent set his type of website as "porn", and mentioned "penis" as website information. Thus, this respondent was considered insincere and was deleted.

Not every response was complete, and 12 respondents had only answered the first questions relating to demography, website category and type of personal information. These were therefore deleted from the sample. One respondent did not fill out the last 26 questions, and

another had five unanswered questions remaining. These two were therefore subsequently deleted from the sample.

After reviewing the data, 179 responses remained and there were no missing values.

### 4.3 Sample

The sample consist of 179 people (N = 179), where 51.4% were female (N = 92) and 48.6% were male (N = 87). The participants were between the age of 15 and up to over 65, with the largest portion, 55.9%, of them being between the age of 25 and 34.

**TABLE 6:** Sample demographics

	Frequency	%
<b>Gender</b>		
Male	87	48.6
Female	92	51.4
<b>Age</b>		
15 to 24 years	31	17.3
25 to 34 years	100	55.9
35 to 44 years	6	3.4
45 to 54 years	19	10.6
55 to 64 years	21	11.7
65 years and over	2	1.1

Since the survey was not distributed through Norstat, or any other data collective agency who can ensure a representative sample, the characteristics illustrated in table 6 indicate a slight difference between the sample and the population characteristics based on age. Over 50 percent of the sample are between the age of 25 and 34, which is higher than the national average. The gender spread on the other hand, is representative for the population, as it consists of a nearly even division of men and women. In order to improve the control for representativeness, the respondent's education, household income and other consumer-related variables are necessary. However, in order to ensure complete anonymity, these were

considered too personal questions when the survey was distributed through a private network. Thus, a complete representativeness cannot be guaranteed.

## 4.4 Measurements & items

Scale development is a longitudinal process, which involves the construction of a basic set of measurement items (Lavie & Tractinsky, 2004). Since concepts often are latent, unobservable variables, they must be measured using observable variables. In order to ensure that these observable variables are in fact measuring the intended concept, multiple measures will be used, thereby purifying the relationship of interest (Wegener & Fabrigar, 2004).

The items used to measure trusting beliefs, trust in the website and intention to revisit the website are derived directly from previous research. Thus, these measures have already been proven reliable and valid in previous studies. The six categories of visual aesthetics however, consist of a combination of previous research. In order to create as accurate items as possible, the measurements will also consist of a combination of previous findings, similar to the combinations of the categories. Thus, items from more than one source are used to measure each construct. For example, as the four dimensions defined by Moshagen & Thielsch (2010) are different from the new categories, the items that measured them have been distributed among the categories based on the affiliation of their key dimensions. Certain items have also been formulated by rewriting the key dimension's definition. These additional items are therefore not previously reliable or validated, but are necessary in order to cover the complete content of the category definition. Based on this development process, the face validity of the survey should be satisfactory.

### 4.4.1 Initial measurements

The scale measuring *affective* appeal is a six-item measure assessing the consumers' mood and their emotions. The three items measuring consumers' mood are derived from Allagui & Lemoine (2008). The remaining three items are derived from the study by Cyr, Head & Larios (2010), in which the affective dimension was based on participants describing a website as "friendly", "serious" and "fun".

Participant in a study by Cyr, Head & Larios (2010) described a website with comments such as “appropriate”, “trying too hard”, “bad colour for product presentation”, and “the colour of products should be the same as site”, and the first measure items used to measure *appropriate* appeal are therefore derived from these consumer statements. In addition, one item used by Moshagen & Thielsch (2010) to measure colourfulness is included, as their dimension of “colourfulness” corresponds to appropriate appeal. Moshagen & Thielsch (2010) drew their inspiration for the measures from the 10-item measure of classic and expressive visual aesthetics used by Lavie and Tractinsky (2004). The third item related to prototypicality is derived from Tuch et. al. (2012), who again drew inspiration from Roth et al. (2010). Two additional items were included in order to ensure the inclusion of relative strengths and an understanding of needs. As Shimp (2010) does not refer to any measures, the last two items were based on his definition of “appropriateness” and “connectedness”.

One item used to measure *functional* appeal is derived from Choi (2013), who again drew inspiration from Lavie and Tractinsky (2004). The second item is drawn from Li & Yeh (2010), who again adapted their survey items from previously validated studies on design aesthetics. In order to cover the aspects of accurateness and navigation, the definition for “information design” (Cyr, 2008) and “convenience” (Chang & Chen, 2009) were rewritten and included as two additional items.

Participants in the study by Cyr, Head & Larios (2010) described a website with comments such as “well balanced” and “coherent integration”, and the two first items to measure *harmonic* appeal are derived from these descriptions. The third item is derived from Moshagen & Thielsch (2010) and the 10-item measure they used. In order to include the aspects of clean design, attractiveness and the overall graphic look, the definition for respectively “classical aesthetics” (Lavie & Tractinsky, 2004), “attractiveness” (Cyr, Head & Larios, 2010) and “visual design” (Cyr, 2008) were rewritten and included as measures.

Apart from a slight change to the second item, the two first items used to measure *original* appeal are directly derived from Choi (2013). The thirist item is a rewritten definition of “uniqueness” (Shimp, 2010), whilst the fourth item is based on rewriting the definition of “diversity” (Moshagen & Thielsch, 2010).

The two first items to measure *personal* appeal are derived from Li & Yeh (2010), and the third item was derived from Choi (2013). The fourth item is a rewritten definition of

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“interactivity”, and it was included in an aim to cover the aspect of two-way communication. The last item is based on the inclusion of graphical interface, and is a rewritten definition of “seduction” (Guido, Prete & Summarco, 2010).

Nine items are used to measure the ability, benevolence and integrity of the website. All nine are derived from the survey measures used by Mayer & Davis (1999). They propose more than three measures per antecedent, but in an effort to minimize the size of the survey and thereby the non-active respondents, including only three or four was deemed sufficient. In addition, three items are used to measure trust in the website, and these are all based on a rewritten definition of “trust” (Mayer, Davis & Schoorman, 1995).

Moshagen & Thielsch (2010) used four items to assess participants’ intention to revisit the website, whilst Nysveen, Pedersen & Thorbjørnsen (2005) used two. Since these six items were very similar, it felt too excessive to include all of them. Especially since, single scale measures were found to be sufficient in large-scale survey research (Mittal, Ross, & Baldasare, 1998). Thus, only two of the items are included, one from each article.

The complete overview over items is illustrated in appendix 3.

#### **4.4.2 Reliability and validity of the measures**

Due to the unobservable nature of the concepts it is important to assess the measurements accuracy. In order to evaluate the precision of the measurement and the influence of systematic errors, the reliability and validity of the study is discussed.

The descriptive statistics of the items gives a brief overview of the sample (appendix 4). Since all the items were measured on a 7-point Likert scale (1 ‘strongly disagree’, 7 ‘strongly agree’), the expected mean value is 4. Although this is in fact true for many of the items, certain measurements suggest there is a slight challenge with measuring some of the constructs. For instance, the mean values for the trust measurements (TRUST1, TRUST2 & TRUST3) are very low, with the mean for TRUST3 at a very low 2.58. Similarly, the mean values for the measurements related to intention (INT1 & INT2) are all very high, with the mean of INT1 being a staggering 6.5. However, as these were two of the items to be completely derived from previous research, where their accuracy has been established, the

high and low values are expected to reveal something other than their unsuitability in terms of measuring the intended construct.

The overall fit of the model can be measured through multiple methods. One of these is the Chi-square test of model fit ( $\chi^2/df$ ) that compares the fit of the model to a model with no restrictions. A low chi-square value indicates a better fit. Another model is the comparative Fit Index (CFI), and it provides a score on a range from 0 to 1. In contrast to the  $\chi^2/df$ , a high score indicates a better fit. The root mean square error of approximation (RMSEA) can also be used, and lower values indicate a good fit. As these measure different aspect of the model, a combination of multiple methods is used. Although there are many other methods than the tree listed above, these three are the most common when conducting the analysis using structural equation modelling.

A confirmatory factor analysis of the measurement model using Mplus 7, revealed an overall low fit ( $\chi^2/df = 1\,948$ , CFI = 0.797 and RMSEA = 0.081). Although all the loadings are statistically significant, the individual standardised factor loadings raised some initial concerns (appendix 5). In order to ensure that the items are in fact measuring the intended construct, one would often require a standardised loading higher than 0.7 (Hair, Black, Babin, Anderson & Tatham, 2006, p. 777). “I find this website to be serious” had the lowest loading at only 0.259. However, as serious can be considered contradicting to both fun and friendliness, it is unsurprising that this item scores a low fit in relation to the other items measuring affective appeal. The second lowest loading was also an item measuring the affective appeal, as “surfing the website does not make me depressed” had a factor loading of 0.314.

If every item with a lower loading than 0.7 were eliminated from the sample, only 27 items of the original 45 would remain. Since reducing the amount of items for each construct will affect the measurement accuracy, removing 18 items could influence the quality of the result. For example, if only two items measure one of the categories of visual aesthetics, not every aspect of that category is represented. Thus, the applicability of the results is weakened. Hence, accepting some of the loadings below the 0.7 criteria is beneficial. This is supported by Hair et. al. (2006, p. 777), as they state that although the loadings should ideally be over 0.7, a good rule of thumb is to accept standardized loadings over 0.5. Rather than accepting loadings as low as 0.5, and due to the loadings in the sample, a criterion is set



at 0.68. After removing the items with loadings higher than this, the sample consists of 33 items.

After removing the 12 items with factor loadings lower than 0.68, a second confirmatory factor analysis reveals that the fit of the model has improved ( $\chi^2/df = 864.815$ , CFI = 0.893 and RMSEA = 0.073). Although the model fit is improved, three of the items, ORIG1, FUNC3 and INT2, have now dropped below the 0.68 criteria. However, they remain firmly within the rule of thumb set by Hair et al. (2006), as the lowest of the three is 0.629. Thus, the criterion is lowered and the three items are accepted.

The most common approach for assessing the reliability is to examine the interrelatedness among the constructs. Ideally there should be little or no correlation between the constructs in order to establish their independence from one another. The second confirmatory factor analysis reveal both affective appeal and original appeal to be independent categories of visual aesthetics, with their highest correlation being 0.424 and 0.502 respectively. Their highest correlation value is with harmonic appeal for both categories.

The other four categories are more debatable, with the highest correlation among them being between functional and harmonic appeal. This overlapping was hypothesised and problematized in the pre-test, although those results were from a very sample and with no indication of exactly how correlated the two constructs are. This is however revealed in the factor analysis, and it reveals a correlation of 0.970. Thus, the two constructs are almost completely correlated. Table 7 reveal an overview over the correlations in a correlation matrix.

**Table 7:** Correlation matrix second factor analysis

	Affective appeal	Appropriate appeal	Functional appeal	Harmonic appeal	Original appeal	Personal appeal	Ability	Benevolence	Integrity	Trust	Intention
Affective appeal	1										
Appropriate appeal	0.420	1									
Functional appeal	0.325	0.986	1								
Harmonic appeal	0.424	1.023	0.971	1							
Original appeal	0.369	0.495	0.339	0.508	1						
Personal appeal	0.387	0.841	0.738	0.831	0.519	1					
Ability	0.303	0.571	0.644	0.641	0.421	0.635	1				
Benevolence	0.317	0.723	0.498	0.602	0.240	0.728	0.666	1			
Integrity	0.277	0.585	0.402	0.544	0.245	0.570	0.511	0.885	1		
Trust	0.221	0.332	0.194	0.294	0.209	0.361	0.376	0.615	0.561	1	
Intention	0.283	0.224	0.350	0.323	0.205	0.328	0.322	0.181	0.110	0.066	1

The high intercorrelation between functional and harmonic appeal is not the only one. Appropriate appeal is also highly correlated the both functional appeal (0.986), harmonic appeal (1.023) and personal appeal (0.841). In addition, personal appeal correlates with both functional appeal (0.738) and harmonic appeal (0.831). Berry & Feldman (1985) suggested that the cut-off value for multicollinearity should be set at 0.80, thus proposing to eliminate three of the four remaining categories. Thus, the high correlations are deemed unacceptable, and the model will benefit from eliminating some of the categories.

The intercorrelation also influence which of the four categories should remain in the sample. The only two categories that can coexist, given the criterion set by Berry & Feldman (1985), is functional appeal and personal appeal with a correlation of 0.738. Any other combination of categories would result in an unwanted overlap. As previous research result accumulated in six categories, having as many of the categories is most beneficial. Thus, appropriate appeal and harmonic appeal is eliminated from the sample.

The confirmatory factor analysis also reveals high interrelatedness among the trusting beliefs (table 7), and benevolence and integrity has a correlation value of 0.885. Thus, their

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correlation is higher than Berry & Feldman's (1985) criterion, and the reliability of the sample would benefit from removing one of them. This result is in line with Gabarro's (1978) suggested dichotomy, and other studies using both variables, for example Colquitt, Scott & LePine (2007), who have failed to uncover significant, unique effects for both integrity and benevolence (Mayer & Gavin, 2005). Although Mayer, Davis & Schoorman (1995) provided compelling conceptual evidence for the distinctions among the three trustworthiness factors, it may be that those distinctions are more difficult in an online environment. When deciding which of the two to keep in the sample, their correlation to the other constructs is of importance. Since benevolence is more highly correlated with ability (0.666) than integrity is correlated with ability (0.511) (table 7), benevolence is excluded from the sample. In support of this removal, benevolence is also quite highly correlated with personal appeal, at 0.728.

#### **4.4.3 The final measurements**

After excluding appropriate appeal, harmonic appeal and benevolence, 23 items remain in the sample. 11 of these are describing the four categories of visual aesthetics, six of them are describing two of the trust beliefs, three of them describing trust in the website and two describing intention to return.

A third confirmatory analysis reveals that the overall model fit is better ( $\chi^2/df = 314.327$ , CFI = 0.936 and RMSEA = 0.064). Thus, the changes have in fact contributed to an improved model. The final items are again assessed in order to determine their reliability. The most used method to measure interrelatedness is Cronbach's alpha (Raykov, 1997). However, other measures of reliability can be better suited depending on the type of measurement. In fact, Raykov (1997) finds  $\alpha$  to underestimate the composite reliability (CR) for measures of the same latent dimension. In addition, Hair et. al. (2006) point out that the CR measure is the most commonly used method in conjunction with SEM models. Therefore, both Cronbach's alpha and the construct reliability (CR), in addition to the average variance extracted (AVE), is included in the analysis. The CR is computed from the squared sum of the factor loadings ( $\lambda_i$ ) for each construct, and the sum of the error variance term for each construct ( $\delta_i$ ). The final CR, as well as the constructs' Cronbach's alpha and AVE scores, are illustrated in table 8.

Similar to the rule for intercorrelation, the rule of thumb for all reliability measures is that 0.7 or higher suggest good reliability (Hair et. al., 2006). All the final measurements have CR values over the 0.7 criterion (table 8), thus, the reliability of the final sample is considered satisfactory.

**TABLE 8:** Item and standardised factor loading, construct reliability (CA) and average variance extracted (AVE)

<i>Dimension</i>	<i>Item</i>	<i>Loadings</i>	$\alpha$	<i>CR</i>	<i>AVE</i>
			0.892	0.894	0.808
Affective appeal	AFF1	0.879			
	AFF2	0.918			
			0.812	0.82	0.603
Functional appeal	FUNC1	0.701			
	FUNC3	0.815			
	FUNC4	0.809			
			0.782	0.879	0.709
Original appeal	ORIG1	0.638			
	ORIG2	0.751			
	ORIG3	0.848			
			0.84	0.852	0.658
Personal appeal	PERS3	0.797			
	PERS4	0.755			
	PERS5	0.826			
			0.868	0.846	0.649
Ability	ABIL1	0.693			
	ABIL2	0.836			
	ABIL3	0.877			
			0.89	0.891	0.731
Integrity	INTEG1	0.878			
	INTEG2	0.842			
	INTEG3	0.844			
			0.816	0.814	0.594
Trust in the website	TRUST1	0.804			
	TRUST2	0.819			
	TRUST3	0.682			
			0.716	0.753	0.606
Intention to revisit	INT1	0.841			
	INT2	0.71			

## 4.5 Descriptives

The final statistical values of the sample are illustrated in the table 9. Similar to the descriptive statistic prior to removing some of the constructs and items, intention still has a very high mean (6.1788), and trust has a low mean (2.7896). The strongest skewness is found for intention (-2.036), whilst the second largest is for functional appeal (-1.248). Thus, this indicates a fairly good normalcy for the constructs. The strongest kurtosis is for the same construct that has the highest skewness, intention (3.865), and the second highest is again for functional appeal (1.713). Thus, the items are collectively considered to be normally distributed.

**Table 9:** Descriptive Statistics

	<i>N</i>	<i>Min</i>	<i>Max</i>	<i>Mean</i>		<i>Std. Deviation</i>		<i>Skewness</i>		<i>Kurtosis</i>	
	<i>Stat</i>	<i>Stat</i>	<i>Stat</i>	<i>Stat</i>	<i>S.E.</i>	<i>Stat</i>	<i>S.E.</i>	<i>Stat</i>	<i>S.E.</i>	<i>Stat</i>	<i>S.E.</i>
AFF	179	1	7	4.2263	0.10392	1.39035	0.182	-0.057	0.182	-0.404	0.361
FUNC	179	1	7	5.6387	0.09175	1.22748	0.183	-1.248	0.183	1.713	0.362
ORIG	179	1	6,67	3.5829	0.09540	1.27633	0.184	0.092	0.184	-0.657	0.363
PERS	179	1	7	4.9088	0.10190	1.36333	0.185	-0.652	0.185	0.272	0.364
ABIL	179	1	7	5.4655	0.09513	1.27269	0.186	-1.022	0.186	1.093	0.365
INTEG	179	1	7	4.2291	0.10495	1.40413	0.187	-0.090	0.187	-0.164	0.366
TRUST	179	1	7	2.7896	0.11254	1.50564	0.188	0.460	0.188	-0.569	0.367
INT	179	1	7	6.1788	0.10685	1.42958	0.189	-2.036	0.189	3.865	0.368

## 5. Results

Eliminating appropriate appeal, harmonic appeal and benevolence from the sample has reduced the amount of hypotheses. Out the initial 38 hypotheses, 21 remain to be tested with structural equations modelling using Mplus 7. Table 10 illustrates which of the presented hypotheses were excluded after preparing the data, and which are found significant.

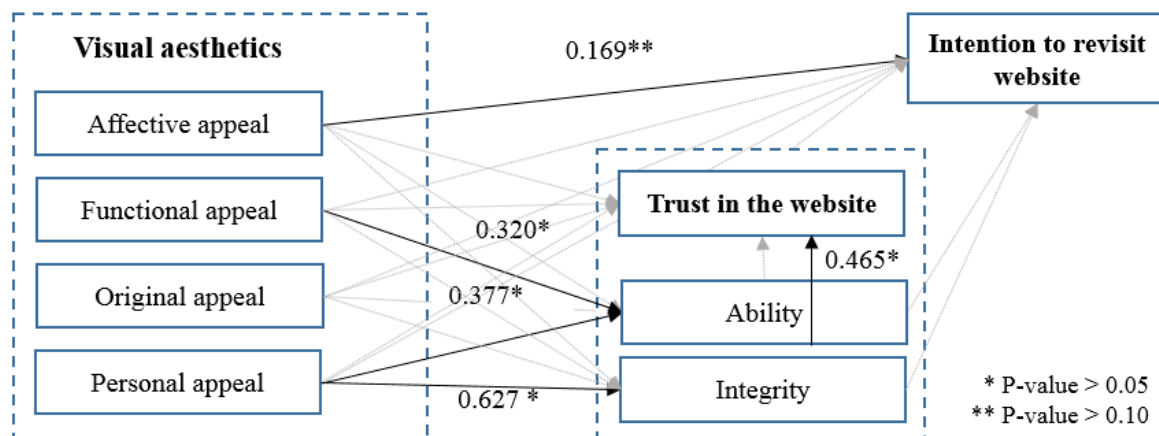
Hypothesis	H <sub>1</sub> <sub>a</sub>	H <sub>1</sub> <sub>b</sub>	H <sub>1</sub> <sub>c</sub>	H <sub>1</sub> <sub>d</sub>	H <sub>2</sub> <sub>a</sub>	H <sub>2</sub> <sub>b</sub>	H <sub>2</sub> <sub>c</sub>	H <sub>2</sub> <sub>d</sub>	H <sub>3</sub> <sub>a</sub>	H <sub>3</sub> <sub>b</sub>	H <sub>3</sub> <sub>c</sub>	H <sub>3</sub> <sub>d</sub>	H <sub>4</sub> <sub>a</sub>	H <sub>4</sub> <sub>b</sub>	H <sub>4</sub> <sub>c</sub>	H <sub>4</sub> <sub>d</sub>	H <sub>5</sub> <sub>a</sub>	H <sub>5</sub> <sub>b</sub>	H <sub>5</sub> <sub>c</sub>	H <sub>5</sub> <sub>d</sub>
Tested	X	X	X	X					X	X	X	X					X	X	X	X
Significant									X											

Hypothesis	H <sub>6</sub> <sub>a</sub>	H <sub>6</sub> <sub>b</sub>	H <sub>6</sub> <sub>c</sub>	H <sub>6</sub> <sub>d</sub>	H <sub>7</sub> <sub>a</sub>	H <sub>7</sub> <sub>b</sub>	H <sub>7</sub> <sub>c</sub>	H <sub>7</sub> <sub>d</sub>	H <sub>7</sub> <sub>e</sub>	H <sub>7f</sub>	H <sub>8</sub> <sub>a</sub>	H <sub>8</sub> <sub>b</sub>	H <sub>8</sub> <sub>c</sub>	H <sub>8</sub> <sub>d</sub>	H <sub>9</sub> <sub>a</sub>	H <sub>9</sub> <sub>b</sub>	H <sub>9</sub> <sub>c</sub>
Tested	X	X	X	X	X		X		X	X	X	X		X	X		X
Significant		X		X	X												X

**Table 10:** Overview over hypothesis included in the final confirmatory analysis and which are significant.

The structural model investigated the relationship between the four categories of visual aesthetics and trust, as well as their relationship with intention to revisit. The model also included the relationship between the trusting beliefs, trust and intention to revisit. Figure 3 shows the result of this analysis.



**Figure 3:** Empirical results

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A fourth confirmatory analysis that included the remaining hypothesised relationships, reveal an overall good model fit ( $\chi^2/df = 322.112$ , CFI = 0.933 and RMSEA = 0.066). The explained variance for the dependent variables (ability = 0.504, integrity = 0.347, trust = 0.340 and intention to revisit = 0.213) support the hypothesised relationships in the model, as all of the four dependent variables are better explained by the function that predicts its value than by using a mean of the dependent variable. The variances are however very small, especially intention, signalling that the model can still be improved through future analysis.

As can be seen from the model, only five of the remaining 21 hypotheses are significant at a significant level of 0.10. Four of these are related to the categories of visual aesthetics. Affective appeal was found to have an effect, although moderately, on consumers' intention to revisit a website, thereby confirming hypothesis 7<sub>b</sub>. Although none of the other hypotheses relating to the relationship between visual aesthetics and intention are significant, this result does confirm that this relationship is in fact existing. Thus, visual aesthetics does have an effect on intention to revisit a website, and this signals the importance of focusing on a website's visual aesthetics.

Visual aesthetics was also found to have an effect on ability and integrity, as personal appeal had a significant effect on both. This confirms two of the hypotheses related to visual aesthetics, H<sub>6b</sub> and H<sub>6c</sub>, and the results reveal that the effect on integrity is stronger than the effect on ability. This confirms the importance of customise and personalise a website using visual elements in order to facilitate consumers' trust. In addition, functional appeal is found to influence the website's perceived ability, although this effect is moderate. Thus, hypothesis H<sub>3b</sub> is also supported.

Of the defined and tested antecedents of trust, only integrity is found to have an effect on trust in the website, thereby supporting hypothesis H<sub>8d</sub>. This is not in line with previous research, as ability was early defined as an antecedent of trust and its influence on trust has been established through multiple studies. One possible explanation for this result is the inclusion of multiple types of websites in the study. According to Beldad, de Jong & Steehouder (2010), previous studies made on trust imply that the effects of online trustworthiness cues are relative. Therefore, the importance of website design could vary from the different website categories the online services are in. Another explanation is how the trusting beliefs might not always relate to trust in an online environment. In fact, Jarvenpaa, Knoll, & Leidner (1998) found that although online team-building exercises had a

positive effect on the perceptions of other members' integrity, ability, and benevolence, they did not have a direct effect on trust.

Although there is a link between visual aesthetics and the trusting beliefs, and between two of the categories and trust, no significant link was found to verify the last relationship in the sequence. Since the model did not reveal a significant relationship between trust and intention to revisit, the hypothesised mediating effect of trust remains unproven.



## **6. Discussion & Conclusion**

Six categories of visual aesthetics were revealed during the process of conceptualising the construct. These six categories were subject to a pre-test and a survey, and the results from these provides new insight into the construct of visual aesthetics, reveals important focus areas for website managers, and highlights areas that can be interesting topic in future research. This will be presented in the following.

### **6.1 Discussion**

The purpose of this thesis was to provide new insight into five defined research questions. In the following, the results from the conceptualisation and the study will be discussed in relation to the five research questions.

#### **6.1.1 Conceptualisation of visual aesthetics**

The first aim of this thesis was to provide a new and structured overview over the construct of visual aesthetics. The first research question (RQ<sub>1</sub>) was based on whether assembling and synthesising previous findings related to visual aesthetics would result in a conceptualisation of the constructs. This thesis has shown that such a conceptualisation is possible, as discussing previous research findings and theories have resulted in six independent categories of visual aesthetics, each describing one aspect of the construct as a whole.

The discussion around the categorisation highlighted the complexity of the construct. There were found inconsistencies among the previous research results and the pre-test revealed a possible intercorrelation between certain categories. However, due to the categories' root in previous research results, there were still arguments and evidence in favour of their independence from one another. The conceptualisation is therefor an important contribution, as it proves the need for future research on the concepts, as well as provides a new starting-point for future scholars from which to continue the conceptualisation.

The pre-test revealed possible overlapping of the defined categories, and this overlay were since supported by results from the study. The high correlations among the categories resulted in the removal of appropriate appeal and harmonic appeal from the sample. This suggest that it might be beneficial to continue to work with the remaining four categories, rather than the original six. However, as the following discussions will reveal, it may be possible that the consumers' evaluations of the visual aesthetics of a website is depended on what type of website they are visiting, or the purpose behind the visits. Thus, prior to excluding appropriate appeal and harmonic appeal, the model can benefit from being tested in different research environments and on different types of websites.

### **6.1.2 Does visual aesthetics influence consumers' intention to revisit the website?**

The first part of the second research question (RQ<sub>2a</sub>) relates to the relationship between visual aesthetics and consumer intention. The results revealed that the question statement is true, as affective appeal has a positive, although moderate, influence on consumers' intention to revisit. This finding implies that the visual elements that elicit emotional responses are among the most important elements on a website, as these are the ones help consumers form an intention to return. It is therefore important to identify which these are, as removing or changing them might prove destructive for the adoption of online services.

None of the other categories of visual aesthetics had a significant effect on consumers' intention to revisit a website. Although such a relationship was hypothesised and supported in previous finding, there is a lack of support from this sample of respondents. One possible explanation is that many of the visited online services that were evaluated, are more or less mandatory at this day in age. For instance, as submitting your tax return online is considerably easier than the traditional filing of papers, consumers are likely to prefer this option. Since there is only one website that offers this service, consumers are expected to revisit it, even if they consider it to be unappealing.

Another explanation for the lack of other significant relationships is the lack of competitors in certain service segments. Many of the public online services are the only ones available within that field, which is understandable considering the role they have. For instance, there is only one company running the trains in Norway. Thus, if consumers wish to book a train

ticked online, they have to use the website belonging to this company. If consumers are unsatisfied with the appearance of such a website, they often will still have to use it as there is no other option. Future testing should be made on these different types of services in order to test if these possible explanations are true.

### **6.1.3 Does visual aesthetics influence consumers' trust in the website?**

The second part of the second research question (RQ<sub>2b</sub>) relates to the relationship between visual aesthetics and trust in the website. The results show that both personal appeal and functional appeal are significantly influencing the trusting beliefs. Personal appeal actually influences both ability and integrity. This confirms the strongly anticipated connection between visual aesthetics and trust, and highlights the importance of visual aesthetics in an environment characterized by uncertainty.

The effect of personal appeal on trust reveals that online services should use visual elements to customise and personalise their website, as this will elicit trust in their consumers. Since this was the only category of visual aesthetics to have a significant influence on both trusting beliefs, the importance of customisation is further emphasised. Websites should therefore include interaction elements and increase the social presence on their website.

The results reveal that personal appeal has a stronger effect on integrity especially. The skewness between ability and integrity might be due to the impersonal nature of websites. Since online communications is yet to fully replace consumer-company interactions, online interaction is more impersonal and task focused. Hence, one would expect trust in a virtual context to be more strongly related to ability than integrity. Such a difference was in fact found by Jarvenpaa, Knoll, & Leidner (1998). A stronger influence on integrity might therefore be explained by the affective element of integrity, as personalisation and interaction elements have a tendency to appeal to the emotions rather than objective cognitive processing.

Functional appeal is found, although moderately, to influence the website's perceived ability. This suggests that the previously found effects of including security symbols on websites, are also found in this research model. This effect can be due to the difficulty for an average

consumer to evaluate the technology behind the website. In a lack of other options, the consumers search for more comprehensible evaluation elements, such as symbols of the website's security, usability and navigation forms. Therefore, website designers should consider including such elements on their websites, and they should make sure their digital interface is comprehensible and easy to navigate.

In addition, consumers' inability to verify the actual security level of the technology might have larger implications. In one survey by Lauer & Deng (2007), the introduction of stronger privacy policies on a company's website resulted in a higher perception of the company's trustworthiness. Hence, there are other ways to elicit trust than through visual aesthetics. However, a number of studies (Arcand, Nantel, Arles-Dufour & Vincent, 2007; Jensen, Potts & Jensen, 2005) found that most Internet users do not even bother to consult or read online organizations' privacy statements before disclosing their personal data for different online transactions (Beldad, de Jong & Steehouder, 2010). Thus, simply stating that the policies have been ungraded through visual elements might result in a higher level of trust.

Interestingly, there are no significant relationships between the dimensions of visual aesthetics and trust in the website. Although visual aesthetics has significant influences on the trusting beliefs, the same is not found for trust. One explanation for this can be the nature of an online service, as it is based on enabling the consumers to complete the services themselves. Consumers can therefore likely feel that they are in complete control over the situation, and when asked if they were willing to be vulnerable to the website they might instinctively say "no", whilst not realising that they are in fact trusting the website with their personal information. Thus, it would be interesting to further explore consumers' perception of their power of control in an online purchase transaction.

#### **6.1.4 Does trust in the website influence consumers' intention to revisit the website?**

The third part of the second research question (RQ<sub>2c</sub>) related to the relationship between visual aesthetics and consumer intention. Although this relationship was argued for and supported by previous research, no significant relationships are found in the results. One reason for this could be the maturity of the diffusion of technology. Consumers are using an increasing amount of online services, despite an increasing amount of cyber related crimes.

This signals a certain fundamental trust in the technology, which can make consumers naive in terms of which website they submit personal information to. This is supported by findings from Carrascal, Riederer, Erramilli, Cherubini & de Oliveira (2011), who found that users are overwhelmingly in favour of exchanging their personal information in return for improved online services. Consumers are therefore seemingly, not aware of the dangers of using internet services, thereby decreasing the importance of trust in the online environment.

This is further supported by the fact that only 21% of Internet users report never trusting information from online retailers (Benedicktus, 2011). Since the respondents included in this study already have interacted with a website, and have provided the required personal information, the results might have been skewed. However, given the high number of adoption of the online services, the Norwegian population might differ from that of other countries, and the number of untrusting consumers might be a lot lower.

### **6.1.5 The mediating role of trust**

The third research question (RQ<sub>3</sub>) was related to the mediating role of trust. Previous research has also hypothesised trust as having a mediating role in an online environment, but have failed to find a significant influence. For instance, Bart, Shankar, Sultan & Urban (2005) found that online trust only partially mediates the relationships between website and consumer characteristics and behavioural intent. They hypothesised that the mediating relationship, if it exists, may be stronger for some website categories than for others. Hence, one possible explanation for the result is the inclusion of different types of websites. Especially since most of the respondents in the survey evaluated online banks, and Bart et. al (2005) found that the mediation is weakest for website that are frequently used, such as online banking.

## 6.2 Implications

### 6.2.1 Theoretical implications

Although the categorisation was reduced to four categories, thereby questioning the proposed categorisation, the review of the empirical studies on visual aesthetics expose contradiction results in previous research. In addition, the defined dimensions form a new basis for future research within the field of visual aesthetics.

### 6.2.2 Managerial implications

The theme of this thesis was visual website aesthetics and its importance in the new online environment. The results from both the conceptualisation of visual aesthetics and the survey, reveals that visual aesthetics is in fact very important for consumers' perception of a website, and that it is found to influence both trust and intentions. Therefore, managers are encouraged to make their website's design a priority, and to continue to adopt its complexity in accordance with the hypothesised evolvement of internet users. In addition, managers should be especially aware of elements related to functional and personal appeal, such as an easy navigation, accurate information and elements facilitating interaction. They should also include elements that will contribute to the website's affective appeal, such as funny videos or images advertising a special sale as this can evoke a feeling of happiness in the consumer.

## 6.3 Future research

### 6.3.1 Conceptualising visual aesthetics

The previous research that is presented in this thesis, illustrates that visual aesthetics has been an interesting topic among scholars. Therefore, further adopting the defined dimensions is expected to be of interest, and this is therefor an important area for future research. Any future research would benefit from not excluding appropriate appeal or personal appeal, but to further analyse the relationship between the proposed six dimensions in different environments. This will ensure a stronger and better model.

### **6.3.2 Experimental design**

The study presented in this thesis was designed as a questionnaire. This form of research has certain restrictions related to the internal validity of the study, as the environment in which it is conducted is out of the researchers' control. A survey also limits the researcher's opportunity to control which website the respondents are asked to evaluate. Therefore, future research should test the research model by using an experimental design, where respondents are confined to a laboratory. This way, they can be subject to testing certain websites and thereby make the evaluations on equal terms. In addition, such a design would limit any possible effects of timing, as the evaluations could be made directly after visiting and browsing a website. Thus, a more in-depth experimental study design could provide additional insights into the role of visual aesthetics in the online environment.

### **6.3.3 Improving the external validity**

Although previous research has failed to find a difference in website preferences for different generations, there might be other individual traits that can influence consumers' perceived trust or their intentions. In addition to personality traits, such as controlling or information seeking, other examples of potential mediators are internet experience and knowledge, service categories and brand image. Including these variables can help distinguish for which services and for which consumer segments the proposed model is applicable. In addition, it can test the importance of trust in relation to the importance of brand image.

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## 8. Appendix

### 8.1 Appendix 1

Figure 4: Pre-categorisation questionnaire.

#### VISUAL APPEAL OF A WEBSITE

We want to know how the key dimensions contribute to the attractiveness of a website. Please indicate which type of appeal you feel each of the dimensions are a part of. For example, if you feel accurateness will contribute to affective appeal of a website, set an "X" in that column.

<i>Key dimension</i>	<i>Affective appeal</i>	<i>Appropriate appeal</i>	<i>Functional appeal</i>	<i>Harmonic appeal</i>	<i>Original appeal</i>	<i>Personal appeal</i>	<i>Other</i>
Accurate							
Aesthetics							
Appropriateness							
Attractiveness							
Balanced							
Clean design							
Coherent integration							
Combination of elements							
Creativity							
Customisation							
Ease of use							
Elegance							
Emotion inciting qualities							
Emotional appeal							
Evokes feelings							
Experiences							
Facilitates communication							
Graphical interfaces							
Homogeneity							
Image							
Interactivity							
Layout							
Navigation							
Novelty							
Orderliness							
Order							
Orderly navigation scheme							
Originality							
Overall graphic look							
Personalised offers							
Relative strength							
Relevance							
Richness							
Symmetry							
Uniformity							
Uniqueness							
Unity							
Use of colours							
Visual layout							

## 8.2 Appendix 2

**Figure 5:** Image of the Survey.

NHH

Welcome to this study.

We are interested in how you use the Internet and will therefore ask you to answer a few questions about a website and how you use it.

The results from this survey will be used as part of a master thesis from NHH, and participation is voluntary. The answers are completely anonymous and the survey will take 5-10 minutes to complete.

Thank you for your participation.

I understand that participation is voluntary and would like to contribute to the survey.

0%  100%

>>

## 8.3 Appendix 3

**TABLE 11:** Dimension, item wording and source

<i>Dimension</i>	<i>Measure</i>	<i>Source</i>
Affective appeal	Surfing the website puts me in a good mood	Allagui & Lemoine (2008)
	While surfing the website, I feel pleased	Allagui & Lemoine (2008)
	Surfing the website does not make me depressed	Allagui & Lemoine (2008)
	I find the website to be friendly	Cyr, Head & Larios (2010)
	I find the website to be serious	Cyr, Head & Larios (2010)
	I find the website to be fun	Cyr, Head & Larios (2010)
Appropriate appeal	The website is appropriate for its purpose	Cyr, Head & Larios (2010)
	The colour composition on the website is attractive	Moshagen & Thielsch (2010)
	The website looks like a typical website within its category	Tuch et. al., 2012
	The website communicates its strengths compared to competitive websites*	Shimp (2010)
	The website reflects an understanding of my needs and motivations*	Shimp (2010)

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Functional appeal	The website has a clear design	Choi (2013)
	Few steps was required to accomplish what I wanted to do on the website	Li & Yeh (2010)
	The website conveys accurate information*	Cyr (2008)
	It is easy to navigate the website*	Chang & Chen (2009)
Harmonic appeal	The website appears to be well balanced	Cyr, Head & Larios (2010)
	The website is orderly and has a clean design*	Choi (2013); Lavie & Tractinsky (2004)
	The website evokes a sense of attractiveness*	Cyr, Head & Larios (2010)
	All the relevant design dimensions are coherently integrated	Cyr, Head & Larios (2010)
	I like the overall graphic look of the website*	Cyr (2008)
Original appeal	Everything goes together on the website	Moshagen & Thielsch (2010)
	The website is unique*	Shimp (2010)
	The website offers diverse design*	Moshagen & Thielsch (2010)
	The website is more creatively designed than competitive websites	Choi (2013)
Personal appeal	The website has fascinating images*	Choi (2013)
	I can adapt the website to fit my need*	Choi (2013)
	The website facilitates two-way communication*	Chang & Chen (2009)
	I feel that my personal need can be met when using the website	Li & Yeh (2010)
Ability	The site provides me with information according to my preferences	Li & Yeh (2010)
	The graphical interface on the website appeals to me*	Guido, Prete & Summarco (2010)
	The website appears to be very successful	Mayer & Davis (1999)
	The website stands for high quality	Mayer & Davis (1999)
Benevolence	I feel very confident about the websites' skills	Mayer & Davis (1999)
	The website really looks out for what is important to me	Mayer & Davis (1999)
	I think the website treats me with respect	Mayer & Davis (1999)
Integrity	The website is concerned about my welfare	Mayer & Davis (1999)
	The website has a strong sense of justice	Mayer & Davis (1999)
	The website tries hard to be fair when dealing with me	Mayer & Davis (1999)
	I like the websites' values	Mayer & Davis (1999)
Trust in the website	The website does not try to pretend to be something it is not	Mayer & Davis (1999)
	I would be willing to let the website have complete control over my future relationship with it	Shoorman & Ballinger (2006)
	Increasing my vulnerability to the website would not be a problem	Shoorman & Ballinger (2006)
Intention to revisit	It would not be a problem to let the website have influence over decisions that are important to me	Shoorman & Ballinger (2006)
	I intend to visit the website within the next 6 months	Nysveen, Pedersen & Thorbjørnsen (2005)
	I will visit the website on a regular basis	Moshagen & Thielsch (2010)

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Note. 1: *Strongly disagree*; 7: *Strongly agree*, unless otherwise noted.

\* New item, rewritten from a definition

## 8.4 Appendix 4

**TABLE 12:** Descriptive statistics for all the initial items

	N	Min	Max	Mean	Std. Deviation	Variance	Skewness	Kurtosis			
<i>Item</i>	<i>Stat</i>	<i>Stat</i>	<i>Stat</i>	<i>Stat</i>	<i>Std. Error</i>	<i>Stat</i>	<i>Stat</i>	<i>Stat</i>	<i>Std. Error</i>	<i>Stat</i>	<i>Std. Error</i>
AFF1	179	1	7	4.240	0.105	1.411	1.992	-0.167	0.182	-0.157	0.361
AFF2	179	1	7	4.212	0.113	1.513	2.291	-0.041	0.182	-0.658	0.361
AFF3	179	1	7	5.301	0.125	1.685	2.841	-0.847	0.182	-0.086	0.361
AFF4	179	1	7	5.011	0.102	1.373	1.887	-0.467	0.182	-0.139	0.361
AFF5	179	1	7	5.525	0.125	1.683	2.835	-1.115	0.182	0.301	0.361
AFF6	179	1	7	3.620	0.131	1.761	3.102	0.207	0.182	-0.941	0.361
APP1	179	1	7	6.027	0.099	1.325	1.757	-1.690	0.182	2.826	0.361
APP2	179	1	7	5.184	0.109	1.459	2.128	-0.665	0.182	-0.143	0.361
APP3	179	2	7	5.648	0.095	1.273	1.622	-0.764	0.182	-0.054	0.361
APP4	179	1	7	4.720	0.118	1.590	2.528	-0.414	0.182	-0.501	0.361
APP5	179	1	7	5.022	0.121	1.628	2.651	-0.731	0.182	-0.299	0.361
FUNC1	179	1	7	6.620	0.099	1.336	1.787	-0.988	0.182	0.850	0.361
FUNC2	179	1	7	5.558	0.101	1.349	1.820	-1.096	0.182	1.112	0.361
FUNC3	179	1	7	5.625	0.117	1.568	2.460	-1.321	0.182	1.229	0.361
FUNC4	179	1	7	5.670	0.105	1.405	1.975	-1.25	0.182	1.230	0.361
HARM1	179	1	7	5.145	0.102	1.366	1.866	-0.586	0.182	-0.024	0.361
HARM2	179	1	7	5.335	0.098	1.319	1.740	-0.713	0.182	0.195	0.361
HARM3	179	1	7	4.698	0.101	1.356	1.841	-0.433	0.182	-0.223	0.361
HARM4	179	1	7	4.944	0.096	1.288	1.659	-0.436	0.182	0.015	0.361
HARM5	179	1	7	5.005	0.109	1.459	2.129	-0.613	0.182	-0.079	0.361
HARM6	179	1	7	4.994	0.103	1.388	1.926	-0.461	0.182	-0.212	0.361
ORIG1	179	1	7	3.698	0.129	1.734	3.009	0.226	0.182	-0.8	0.361
ORIG2	179	1	7	3.430	0.102	1.365	1.864	0.067	0.182	-0.627	0.361
ORIG3	179	1	7	3.620	0.109	1.465	2.147	0.193	0.182	-0.408	0.361
ORIG4	179	1	7	3.111	0.112	1.509	2.279	0.372	0.182	-0.42	0.361
PERS1	179	1	7	4.307	0.131	1.764	3.112	-0.272	0.182	-0.84	0.361
PERS2	179	1	7	4.396	0.144	1.935	3.746	-0.245	0.182	-1.11	0.361
PERS3	179	1	7	5.044	0.120	1.606	2.582	-0.804	0.182	0.081	0.361
PERS4	179	1	7	5.044	0.118	1.589	2.526	-0.778	0.182	0.1203	0.361
PERS5	179	1	7	4.636	0.112	1.501	2.255	-0.337	0.182	-0.263	0.361
ABIL1	179	1	7	5.782	0.105	1.407	1.980	-1.135	0.182	0.829	0.361
ABIL2	179	1	7	5.296	0.108	1.452	2.108	-0.729	0.182	0.161	0.361
ABIL3	179	1	7	5.318	0.107	1.431	2.049	-0.784	0.182	0.339	0.361
BENEV1	179	1	7	4.648	0.124	1.661	2.757	-0.467	0.182	-0.539	0.361
BENEV2	179	1	7	4.687	0.126	1.696	2.879	-0.476	0.182	-0.559	0.361
BENEV3	179	1	7	3.664	0.131	1.764	3.111	0.055	0.182	-0.851	0.361
INTEG1	179	1	7	4.145	0.117	1.576	2.484	-0.051	0.182	-0.36	0.361
INTEG2	179	1	7	4.312	0.115	1.544	2.384	-0.184	0.182	-0.397	0.361
INTEG3	179	1	7	4.229	0.114	1.531	2.346	-0.050	0.182	-0.301	0.361
INTEG4	179	1	7	5.083	0.127	1.705	2.908	-0.661	0.182	-0.541	0.361
TRUST1	179	1	7	2.793	0.133	1.788	3.198	0.613	0.182	-0.771	0.361
TRUST2	179	1	7	2.994	0.132	1.768	3.129	0.451	0.182	-0.849	0.361
TRUST3	179	1	7	2.581	0.128	1.724	2.975	0.987	0.182	0.134	0.361
INT1	179	1	7	6.497	0.097	1.304	1.700	-3.198	0.182	10.001	0.361
INT2	179	1	7	5.860	0.141	1.883	3.547	-1.540	0.182	1.050	0.361

## 8.5 Appendix 5

**TABLE 13:** Initial items' standardised factor loading

<i>Dimension</i>	<i>Measure</i>	<i>Item</i>	<i>Loadings</i>
Affective appeal	Surfing the website puts me in a good mood	AFF1	0.899
	While surfing the website, I feel pleased	AFF2	0.881
	Surfing the website does not make me depressed	AFF3	0.314
	I find the website to be friendly	AFF4	0.550
	I find the website to be serious	AFF5	0.259
	I find the website to be fun	AFF6	0.598
Appropriate appeal	The website is appropriate for its purpose	APP1	0.627
	The colour composition on the website is attractive	APP2	0.722
	The website looks like a typical website within its category	APP3	0.472
	The website communicates its strengths compared to competitive websites*	APP4	0.614
	The website reflects an understanding of my needs and motivations*	APP5	0.781
Functional appeal	The website has a clear design	FUNC1	0.844
	The website conveys accurate information*	FUNC2	0.629
	Few steps was required to accomplish what I wanted to do on the website	FUNC3	0.680
	It is easy to navigate the website*	FUNC4	0.704
Harmonic appeal	The website appears to be well balanced	HARM1	0.813
	The website is orderly and has a clean design*	HARM2	0.825
	The website evokes a sense of attractiveness*	HARM3	0.748
	All the relevant design dimensions are coherently integrated	HARM4	0.782
	I like the overall graphic look of the website*	HARM5	0.869
	Everything goes together on the website	HARM6	0.825
Original appeal	The website is unique*	ORIG1	0.678
	The website offers diverse design*	ORIG2	0.738
	The website is more creatively designed than competitive websites	ORIG3	0.803
	The website has fascinating images*	ORIG4	0.587
Personal appeal	I can adapt the website to fit my need*	PERS1	0.531
	The website facilitates two-way communication*	PERS2	0.477
	I feel that my personal need can be met when using the website	PERS3	0.797
	The site provides me with information according to my preferences	PERS4	0.734
	The graphical interface on the website appeals to me*	PERS5	0.853
Ability	The website appears to be very successful	ABIL1	0.681
	The website stands for high quality	ABIL2	0.936
	I feel very confident about the websites' skills	ABIL3	0.883
Benevolence	The website really looks out for what is important to me	BENEV1	0.719
	I think the website treats me with respect	BENEV2	0.811
	The website is concerned about my welfare	BENEV3	0.770

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Integrity	The website has a strong sense of justice	INTEG1	0.853
	The website tries hard to be fair when dealing with me	INTEG2	0.810
	I like the websites' values	INTEG3	0.880
	The website does not try to pretend to be something it is not	INTEG4	0.647
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Trust in the website	I would be willing to let the website have complete control over my future relationship with it	TRUST1	0.798
	Increasing my vulnerability to the website would not be a problem	TRUST2	0.831
	It would not be a problem to let the website have influence over decisions that are important to me	TRUST3	0.684
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Intention to revisit	I intend to visit the website within the next 6 months	INT1	0.866
	I will visit the website on a regular basis	INT2	0.688

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