

ARE CULTURALLY CONGRUENT WEBSITES MORE EFFECTIVE? AN OVERVIEW OF A DECADE OF EMPIRICAL EVIDENCE

Femke Vyncke¹

Vrije Universiteit Brussel, Department of Business Economics and Strategic Management
Pleinlaan 2 1050 Brussels
Femke.Vyncke@vub.ac.be

Malaika Brengman

Vrije Universiteit Brussel, Department of Business Economics and Strategic Management
Pleinlaan 2 1050 Brussels
Malaika.Brengman@vub.ac.be

ABSTRACT

The current paper reviews all high quality studies investigating the impact of the cultural congruency of websites on measures of website effectiveness. In order to be able to present a comprehensive overview of the findings, the various performance measures included in the different studies are integrated within the WEBQUAL framework [Loiacono et al. 2007]. Hypotheses are formulated and subsequently tested for the different effectiveness variables. Results are summarized using vote count and descriptive summary. The purpose is to generate robust conclusions, since the results of the individual studies are very scattered. The main conclusion is that the literature provides sound empirical support for the positive impact of cultural congruency on the performance measures “usefulness”, “ease of use”, “positive attitudes”, “positive intentions”, and “overall effectiveness”. For some performance measures, however, support for the positive effect of cultural congruity is weak or missing. Based on this comprehensive, in-depth overview, research gaps are identified and suggestions for further research are provided.

Keywords: website design, cultural adaptation, website effectiveness, website performance, literature review

1. The internet: A culturally sensitive marketing medium after all

The Internet has been anticipated to trigger a substantial globalization process [Angelides 1997]. As a global communication and transaction medium [Kogut 2004], the Internet should technically be capable of enabling providers and consumers worldwide to communicate or to conduct transactions through a single channel, a website [Steenkamp and Geyskens 2006]. In this view, one central website should suffice for an organization to reach all consumers, everywhere, 24/7. However, looking at online reality, a different picture emerges. Many internationally active organizations operate not one, but several websites, each aimed at a different target country or group of countries. To illustrate this, as of June 11, 2009 Swatch operated websites for 39 different countries, Unicef operated 110 websites, and Coca-Cola even as many as 125. A brief look at these different websites per company reveals that these sites are dissimilar, not only in language and products provided but also in navigation modes, colors, etc.

As a matter of fact, an important stream of literature in marketing science has investigated whether websites aimed at different target countries do actually differ from one another [e.g., Becker and Eastman 2002; Cyr and Trevor-Smith 2004; Okazaki and Rivas 2002; Robbins and Stylianou 2003; Singh and Matuso 2004; Sinkovics et al. 2007]. The majority of these studies, which are predominantly based on rigorous content analyses, conclude that websites targeted at different countries are indeed dissimilar. These dissimilarities appear to run deep and involve culturally rooted customs such as color associations, tone of text, and type of pictures. The observation that websites reflect a target country’s culture is called “cultural congruency” [Singh et al. 2006a], “cultural congruity” [Steenkamp and Geyskens 2006], “cultural similarity” [Dou et al. 2003], or “cultural familiarity” [Dou et al. 2003].

While many researchers have reached a consensus on the fact that websites targeted at a specific country reflect that target country’s culture, an interesting, related, and even more important question arises: What is the reason behind the cultural congruency of websites? Are websites culturally congruent because they are designed by

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someone of the local culture, who (consciously or unconsciously) translates his own culture into the contents of the site? Or do online organizations presume that Internet users from different countries have different website interface requirements and are they consequently deliberately designing their websites to be culturally congruent? The process of designing a website to be intentionally coherent with the culture of the target country is called “cultural adaptation” [Sinkovics et al. 2007], “local adaptation” [Taylor 2000], or “localization” [Becker and Eastman 2002]. Because this process can be quite cost and time consuming, the current study focuses on the pertinent research question: whether companies need to localize websites in order to effectively reach different target countries.

2. Research question: Are culturally congruent websites more effective?

General hypothesis: Culturally congruent websites are more effective than culturally incongruent websites.

This paper aims to present a comprehensive answer to the question of whether culturally congruent websites outperform culturally incongruent ones. Although different researchers have already addressed this particularly relevant research question in the past, they seem to have obtained mixed results. Thoroughly examining a decade of research on this subject reveals a very scattered picture. Studies differ in a variety of research parameters, including the countries studied, the observed effectiveness measures, and the way in which the cultural congruity of the observed websites is verified. It is the aim of the current paper to provide a comprehensive overview of the findings established thus far. In order to be able to do so, the hypothesis will need to be refined.

If we want to investigate whether culturally congruent websites are more effective, we must first take a closer look at the term **cultural congruency**. According to a social-scientific approach, culture can be defined as a predisposition in attitude and behavior that is kept in place and transmitted through social upbringing and social interaction. It is a collective phenomenon of which the core is formed by positive and negative values which, according to Hall [1976] and Hofstede [1980, 1994, 2001], can be summarized into a limited number of underlying cultural dimensions: *power distance, individualism vs. collectivism, masculinity, uncertainty avoidance, and high-context vs. low-context cultures*. Singh and his colleagues [Singh and Baack 2004; Singh and Matsuo 2004; Singh and Pereira 2005; Singh et al. 2003, 2005a, 2005b] translated each of these cultural dimensions into a list of website design elements. This list of website design elements provides a coding scheme (an essential tool to perform a content analysis), which makes it possible to register in a quantitative way the degree to which Hofstede’s and Hall’s cultural dimensions are being displayed in the websites. This coding scheme forms the best scientific, operational definition of cultural congruency to date.

A second issue concerns the definition of the term **website effectiveness**. The most encompassing and most recent study capturing website effectiveness is by Loiacono and her colleagues [2007]. According to this study the perceived quality of a website (named WEBQUAL) encompasses several dimensions: its “*usefulness*” (including aspects regarding the informational fit-to-task, availability of tailored information, trust in the website and the website’s response time), its “*ease of use*” (covering aspects regarding the ease of understanding of the labels and displays in the website and the intuitiveness of operations), its “*entertainment value*” (reflecting on the website’s visual appeal, its innovativeness, and its emotional appeal), and the “*complementary relationship*” of the website with the sponsoring company (pertaining to image consistency, online completeness, and the relative advantage of the website in comparison to other communication and transaction media). These dimensions of perceived quality affect “*attitudes*”, which in turn affect “*intentions*”, which finally affect “*behavior*” and “*use*”. Using the WEBQUAL instrument the general research hypothesis stated above can be refined as follows:

- H1: Culturally congruent websites outperform culturally incongruent websites what “usefulness” is concerned.*
- H2: Culturally congruent websites outperform culturally incongruent websites what “ease of use” is concerned.*
- H3: Culturally congruent websites outperform culturally incongruent websites what “entertainment value” is concerned.*
- H4: Culturally congruent websites outperform culturally incongruent websites what the “complementary relationship” of the website with the sponsoring company is concerned.*
- H5: Culturally congruent websites generate more “positive attitudes” towards the website than culturally incongruent websites.*
- H6: Culturally congruent websites generate more “positive intentions” towards the website than culturally incongruent websites.*
- H7: Culturally congruent websites generate more “positive behavior” towards the website than culturally incongruent websites.*

The studies investigated in the current paper capture some, but not all of the performance indicators mentioned by Loiacono et al. [2007]. Therefore this literature research will not be able to verify all of the formulated

hypotheses. Additionally, some studies capture the website's effectiveness with an "overall effectiveness" indicator. This leads to an additional hypothesis:

H8: Culturally congruent websites outperform culturally incongruent websites what "overall effectiveness" of the website is concerned.

It will be interesting to find out which of the above hypotheses will be confirmed and which will be rejected. Additionally, further research should include the performance measures mentioned above that were not yet covered by the studies investigated. Integrating all the different inquiries on the subject and placing their results into the overarching framework of Loiacono et al. [2007] enables to draw reliable conclusions and offers new insights.

3. Methodology

3.1. Selection of studies

This literature review encompasses all high quality studies relevant to the research hypothesis. The article selection process screened 12 years of research, starting at the beginning of 1998 and ending at the end of 2009 (collection finalized in October 2009). The screening horizon for this review was set at 12 years because one of the first articles studying cultural reflections in websites based on content analysis was published in 1998 by Barber and Badre. It could be expected that studies investigating the relationship between the cultural congruity of websites and website effectiveness would follow quickly after this seminal publication.

The collection of articles started with a snowball sampling procedure (*phase 1*). All relevant articles found during this phase were retained, regardless of the ranking of the publishing journal. Subsequently, in *phase 2*, all relevant journals in the domains of General Management, International Business and Area Studies, Information Systems and Management, Marketing, Social Sciences and Strategic Management that have been awarded a score of 2 stars or higher in the Academic Journal Quality Guide by the Association of Business Schools (ABS) of March 2008 (this concerns 168 journals), were systematically screened for the last 12 years. For the systematic screening of journals in phase 2 we used search engines, made available by the website of the journal or database. Search terms applied were: web+culture, internet+culture, site+culture, e-commerce+culture, and ecommerce+culture. We ensured that search actions were performed on full text, minimizing the risk of excluding relevant articles. Sometimes this process generated a lot of hits. These hits were afterwards reviewed for relevancy. The two-phased-method for article selection described above, ensures that (1) the quality of the selected work is of a high standard (by using the ABS standards for journal quality) and that (2) the larger part of the relevant literature is covered (by also including, via the snowball sampling method, journals that received lower ratings or were not included in the ABS standards).

In total 27 relevant studies were retained, published within 16 different journals². The earliest study in the sample traces back to 2000, and the most recent one to 2009. It implies that this literature overview covers a decade of research on the effectiveness of culturally congruent websites.

3.2. Classification of studies according to website congruency research set-up

Two different approaches can be distinguished to test the impact of cultural familiarity on website performance. A "*first approach*" (17 studies) focuses on how the impact of specific website features on website effectiveness measures may vary across countries. This can mean two things: (1) the presence of a website feature can have a positive impact on a performance measure in one type of culture (country) but not in another (e.g., the presence of a secure lock logo may impact website effectiveness in high-uncertainty-avoidant cultures but not in low-uncertainty-avoidant cultures) or (2) a website feature might need a different fill-in across different cultures (countries) to have a positive impact on a website performance measure (e.g., visuals of people may impact effectiveness in both collectivistic and individualistic cultures, however in collectivistic cultures visuals of groups of people may be valued more, whereas in individualistic cultures visuals of one single person may be valued more). The results indicating that the importance or fill-in of website features varies across cultures in terms of their impact on website performance actually give a first indication of confirmation of our assumption that culturally congruent websites outperform culturally incongruent ones (= our general research hypothesis). Studies of this nature might also provide useful information on how to create culturally congruent websites (how to fill in the different website features and what website features to include) in order to create better performing websites for a specific culture.

² Behaviour and Information Technology, Communications of the ACM, Ergonomics, European Journal of Information Systems, International Journal of Human-Computer Studies, International Marketing Review, Internet Research, Journal of Advertising Research, Journal of Business Research, Journal of Consumer Behaviour, Journal of Engineering and Technology Management, Journal of Global Information Management, Journal of Management Information Systems, Journal of Marketing, MIS Quarterly, Multinational Business Review

The actual investigation of our research question is covered by the studies of the “*second approach*” (14 studies, some of which are also classified under the first approach as they provide multiple results). In the “second approach” researchers actually investigated whether culturally congruent websites outperform culturally incongruent ones. Within the second approach different research designs can be distinguished.

Method 1: First of all, it is possible to study the impact of the cultural congruity of a website by looking at the differences in the evaluation by natives of a specific country (= national culture) of *existing* websites targeted at that specific country (= “*country websites*”) versus *existing* websites targeted at other countries (= “*foreign websites*”). By existing websites we mean websites plucked from the internet and by consequence not created specifically for the study. Accepting the hypothesis that websites indeed reflect the culture of the country they are directed at, as confirmed in numerous studies [e.g., Cyr and Trevor-Smith 2004; Robbins and Stylianou 2003; Singh and Matuso 2004; Sinkovics et al. 2007], the proposed design is one way to examine the impact of the cultural familiarity of a website on website performance. However, notice that in this type of research the cultural reflections in the websites used are not explicitly verified. Cautiousness should be applied when extrapolating the results of these studies.

Method 2: A second method within the second approach is to test the difference in the evaluation of websites by people of a specific country, between websites highly congruent with that particular country’s culture (=“*culturally congruent websites*”) and websites not or less congruent with that particular country’s culture (=“*culturally incongruent websites*”). In contrast to the previously mentioned type of studies (Method 1), the presence or absence of cultural familiarity in the *existing* websites used in this type of research is verified in one of two different ways: the cultural similarity can be judged by either the respondents (*method 2a*) or by the researchers (*method 2b*). A verification of the cultural congruity by the researchers is presumed to be more reliable than a verification by the respondents. Researchers base their judgment on rigorous theory. Also, we believe that cultural familiarity manifests itself on a subconscious level in the consumer.

Method 3: A third method involves that researchers build experimental websites themselves, systematically manipulating the cultural reflection in the websites, actually bringing them in accordance to the theoretical definition of cultural congruity stated above. This last design should be the most reliable (if well executed). In an existing website the degree of cultural congruity can be verified by researchers but is not under their control. In an experimental website the researchers have ultimate control over the website features that are manipulated and they can fully bring this website in line with theory with respect to what a culturally congruent website should look like.

3.3. Summarizing results: Descriptive analysis and vote-counting method

In the previous section, different approaches have been identified to study the impact of cultural congruity on website effectiveness. In the results section that comes next, the goal is to put the results of all the selected studies together for each approach applied. In order to summarize results across studies, we will use two types of methods.

For the studies classified under approach 1, the results will be discussed in a descriptive way as these studies were too diverse in research set-up and design. For the studies classified under approach 2, the results are summarized using a vote-counting method [Cooper 1989]. A vote count is one of the simplest methods for combining independent statistical tests and it has often been used in literature reviews [Cooper 1989]. As the studies classified under approach 2 investigate the actual research question, H1-H8 constitute the hypotheses to be verified. For each hypothesis the findings of all the studies are considered. Each finding can be classified as either supporting the hypothesis (cultural congruity has a significant positive impact on the performance measure in question) or not supporting the hypothesis (cultural congruity has a significant negative impact or no significant impact on the performance measure in question). These two groups are also called positive and negative findings. According to the vote-counting method, when *more than 33%* of the findings point towards significant positive results (i.e., less than two thirds of the findings point towards insignificant or significant negative results), a general acceptance of the hypothesis can be inferred [Cooper 1989]. Acceptance of the hypothesis means that the cultural congruity of a website indeed positively impacts the website effectiveness measure in question. (Remark: A “finding” is defined as a “result, for a certain effectiveness measure, for a certain country sample, within a specific study”. Consequently, one study can provide more than one finding when, for example, the researchers investigated a certain performance measure within different country samples.)

4. Results

In this section the results of the selected studies are discussed. Results are presented per approach applied and using the methodology described above (description for approach 1 and vote count for approach 2).

4.1. Approach 1

A first approach focuses on how the impact of specific website features on website effectiveness measures may vary across cultures or countries. As mentioned earlier, this might mean two things: (1) a website feature may need a different fill-in in different cultures or countries to resort a positive impact on a certain performance measure or (2)

the presence of a website feature might have a positive impact on a certain performance measure in one culture or country but not in another. Table 1 below gives a summary of all the studies using the first approach. Results are ordered per cultural dimension and per performance measure. The “cultural dimensions” column indicates which cultural characteristics by Hall [1976] or Hofstede [1980] apply. Sometimes this link was already implied in the studies themselves and sometimes we had to search for our own cultural explanation (these results are in cursive text). Also, sometimes several cultural dimensions might explain the results. These results were entered several times in the table below. Concerning the performance measures, each measure was brought back to the framework of Loiacono et al. [2007] or the “overall effectiveness measure” concept.

Looking at the overview in Table 1 it can be noted that a lot of results, indicating that the importance or fill-in of website features varies across countries in terms of their impact on website performance, link to the cultural dimensions of “individualism” vs. “collectivism” and “uncertainty avoidance”. Also, a reasonable amount of results are culturally explained by the dimensions of “high-context” vs. “low-context”. Only a few results link back to the dimensions of “masculinity” and “power distance”. This points to a gap in the research. Further inquiries should focus on these two rather neglected cultural dimensions. Looking at the impact on effectiveness of, amongst others, company hierarchy information and appropriate titles (elements linked to power distance [e.g., Singh and Baack 2004]) or separate pages for men and women and clear gender roles (elements linked to masculinity [e.g., Singh and Baack 2004]) across countries, constitutes a research gap that still has to be explored.

A second important conclusion, which can be drawn from Table 1, is that a considerable amount of results can’t be explained by culture. For some of these results an explanation is found outside the cultural context, namely in the maturity of the internet market. However, many results remain unexplained. Consequently, a second research gap involves looking for other local factors besides culture, such as economic, political and legal context [Muthitacharoen and Palvia 2002], which should be taken into account in the website localization process.

A third matter of interest is the fact that for a considerable amount of website elements no difference in terms of their impact on website effectiveness is found between different cultures. These results are classified in the row “universal”. From these results it may be concluded that indeed not all website features need to be involved in a website localization process. These results are therefore important for website designers in international companies. Indeed, being able to discern between important and irrelevant website features in the context of a cultural adaptation process is very important to optimize the website design process and to save costs and time.

In terms of the kind of performance measures investigated by the reviewed studies, it should be noted that a lot of studies investigated the impact on “usefulness” (H1), “intentions” (H6), “behavior” (H7), and “overall effectiveness” (H8). However, only a few studies studied the effect on “entertainment” and “attitudes” and none of them studied the effect on “ease of use” and “complementary relationship”. Again this constitutes a research gap.

A lot of studies are situated in the “trust” research domain (“trust” is part of the concept “usefulness”). From these studies it can be deduced that in different cultures different website elements are required to induce trust [Greenberg et al. 2008; Kim 2008; Sia et al. 2009]. Members from low-uncertainty-avoidant/individualistic countries require self-perception based trust elements to induce trust (e.g., reduction in privacy concerns) whereas high-uncertainty-avoidant/collectivistic countries need transference-based trust elements to gain trust in a website (e.g., third party assurance seals). Still, within the transference-based trust elements, an additional distinction can be made based on the type of object the trust is transferred from: within-group vs. out-group. For example, Sia et al. [2009] found that portal (out-group) affiliation works better in individualistic countries, whereas peer (within-group) endorsement works better in collectivistic countries.

Finally, Lynch et al. [2001] point out that website localization should be seen in relation to the type of products sold on the website. In this study the relationship between a certain website feature and a certain performance measure differed, within observed countries, depending on the product sold (a T-shirt vs. a CD-player).

4.2. Approach 2

The actual investigation of our research question is addressed by the studies of the second approach. In the second approach researchers actually investigated whether culturally congruent websites outperform culturally incongruent ones. In other words, by putting the results of the studies of the second approach together, we seek to provide a conclusive answer to H1-H8. For this goal, we classified all the results of the different studies according to the investigated performance measures. Each performance measure was brought back to the framework of Loiacono et al. [2007] or the “overall effectiveness measure” concept. Additionally, some studies performed a manipulation check (H0): they investigated whether culturally congruent sites actually score higher on the measure “perception of cultural adaptation” as compared to incongruent sites. The result of this classification is displayed in Table 2 below.

Table 1: Summary of studies using the first approach

Cultural dimension	Study	Product or service	Countries	Website element or property	Impact	Effectiveness items	H
Individualism (I) vs. collectivism (C)	O'Keefe et al. [2000] and Chau et al. [2002]	Cars	HK and US	Website focus or subject	Focus on information search in I vs. focus on social communication in C	Usefulness (informational fit-to-task and tailored information)	H1
	Dinev et al. [2006]	/	It, US	Risk	Less negative in I vs. more in C for elements of trust related to privacy	Usefulness (trust)	
	Dinev et al. [2006]	/	It, US	Risk	More negative in I vs. less in C for elements of trust not related to privacy		
	Greenberg et al. [2008]	/	HK, US	Third part assurance seal (transference-based trust item)	More positive in I vs. less in C		
	Kim [2008]	/	Ko, US	Third part assurance seal (transference-based trust item)	Less positive in I vs. more in C		
	Kim [2008]	/	Ko, US	Positive referral (transference-based trust item)	Less positive in I vs. more in C		
	Kim [2008]	/	Ko, US	Privacy concern (self-perception based trust item)	More negative in I vs. less in C		
	Sia et al. [2009]	Books	Au, HK	Peer endorsement (transference-based trust item)	Less positive in I vs. more in C		
	Sia et al. [2009]	Books	Au, HK	Portal affiliation (transference-based trust item)	Positive in I vs. no in C		
	Cyr [2008]	Consumer electronics	Ca, Ch, Ge	Visual design	No in I vs. positive in C		
	Steenkamp and Geyskens [2006]	Consumer packaged goods	Au, As, Be, Ca, Cr, De, Fr, Ge, Ir, It, Mac, Ne, NZ, Po, Ro, Ru, SM, SI, Sp, Swe, Swi, UK, US	Privacy and security protection	More positive in I vs. less in C	Usefulness	
	Steenkamp and Geyskens [2006]	Consumer packaged goods	Au, As, Be, Ca, Cr, De, Fr, Ge, Ir, It, Mac, Ne, NZ, Po, Ro, Ru, SM, SI, Sp, Swe, Swi, UK, US	Customization	More positive in I vs. less in C		
	Steenkamp and Geyskens [2006]	Consumer packaged goods	Au, As, Be, Ca, Cr, De, Fr, Ge, Ir, It, Mac, Ne, NZ, Po, Ro, Ru, SM, SI, Sp, Swe, Swi, UK, US	Emotional experience in terms of pleasure (not arousal)	More positive in I vs. less in C		
	O'Keefe et al. [2000] and Chau et al. [2002]	Cars	HK and US	Website focus or subject	Focus on information search in I vs. focus on social communication in C	Entertainment (emotional appeal)	H3
	Lynch et al. [2001]	CD-players	Latin America, North America, and Western Europe	Affect	No in I vs. positive in C	Intentions (purchase intentions)	H6
	Gefen and Heart [2006]	Books	Is, US	Trust antecedent familiarity of online seller	Less positive in I vs. more in C		
	Gefen and Heart [2006]	Books	Is, US	Trust antecedent predictability of online seller	Positive in I vs. no in C		
	Gefen and Heart [2006]	Books	Is, US	Trust antecedent familiarity of online seller	Less positive in I vs. more in C	Intentions (inquiry intentions)	

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	Gefen and Heart [2006]	Books	Is, US	Trust antecedent predictability of online seller	Positive in I vs. no in C	Behaviors (loyalty)	H7
	Lynch et al. [2001]	T-shirts	Latin America, North America, and Western Europe	Site quality	Positive in I vs. no in C		
	Lynch et al. [2001]	T-shirts	Latin America Latin America, North America, and Western Europe	Affect	No in I vs. positive in C		
	Lynch et al. [2001]	CD-players	Latin America, North America, and Western Europe	Affect	No in I vs. positive in C		
	Dinev et al. [2006]	/	It, US	Privacy concerns	More negative in I and less in C	Behaviors (site use)	
	Dinev et al. [2006]	/	It, US	Trust (excl. privacy related items)	More positive in I and less in C		
	Steenkamp and Geyskens [2006]	Consumer packaged goods	Au, As, Be, Ca, Cr, De, Fr, Ge, Ir, It, Mac, Ne, NZ, Po, Ro, Ru, SM, SI, Sp, Swe, Swi, UK, US	Privacy and security protection	More positive in I vs. less in C	Behaviors (site reuse and revisit)	
	Steenkamp and Geyskens [2006]	Consumer packaged goods	Au, As, Be, Ca, Cr, De, Fr, Ge, Ir, It, Mac, Ne, NZ, Po, Ro, Ru, SM, SI, Sp, Swe, Swi, UK, US	Customization	More positive in I vs. less in C		
	Steenkamp and Geyskens [2006]	Consumer packaged goods	Au, As, Be, Ca, Cr, De, Fr, Ge, Ir, It, Mac, Ne, NZ, Po, Ro, Ru, SM, SI, Sp, Swe, Swi, UK, US	Emotional experience in terms of pleasure (not arousal)	More positive in I vs. less in C		
	Fink and Laupase [2000]	Retailing and services	Au and Mal	News stories	Less positive in I vs. more in C	Overall effectiveness ¹	H8
High (HP) vs. low power distance (LP)	Davis et al. [2008]	CDs	Ch, US	High-task relevant cues	Less positive in I vs. more in C	Usefulness (trust)	H1
	Davis et al. [2008]	CDs	Ch, US	Low-task relevant cues	Less positive in I vs. more in C		
	Greenberg et al. [2008]	/	HK, US	Third part assurance seal (transference-based trust item)	Less positive in HP vs. more in LP		
	Lightner et al. [2002] and Hwang et al. [2006]	/	Ko, Tu, US	Transaction security	More positive in HP vs. less in LP		
High (HM) vs. low masculinity (LM)	Lightner et al. [2002] and Hwang et al. [2006]	/	Ko, Tu, US	Site speed due to site organization	More positive in HP vs. less in LP	Overall effectiveness ¹	H8
	Lightner et al. [2002] and Hwang et al. [2006]	/	Ko, Tu, US	Site navigation speed	More positive in HP vs. less in LP		
	Lynch et al. [2001]	CD-players	Latin America, North America, and Western Europe	Affect	No in HM vs. positive in LM		
	Lynch et al. [2001]	T-shirts	Latin America, North America, and Western Europe	Site quality	Positive in HM vs. no in LM		
High (HU) vs. low uncertainty	Lynch et al. [2001]	T-shirts	Latin America, North America, and Western Europe	Affect	No in HM vs. positive in LM	Intentions (purchase intentions)	H6
	Lynch et al. [2001]	CD-players	Latin America, North America, and Western Europe	Affect	No in HM vs. positive in LM		
	Lynch et al. [2001]	T-shirts	Latin America, North America, and Western Europe	Site quality	Positive in HM vs. no in LM	Behaviors (loyalty)	H7
	Lynch et al. [2001]	CD-players	Latin America, North America, and Western Europe	Affect	No in HM vs. positive in LM		
High (HU) vs. low uncertainty	Dinev et al. [2006]	/	It, US	Risk	Less negative in HU vs. more in LU for elements of trust not related to privacy	Usefulness (trust)	H1

avoidance (LU)	Dinev et al. [2006]	/	It, US	Risk	More negative in HU vs. less in LU for elements of trust related to privacy		
	Greenberg et al. [2008]	/	HK, US	Third party assurance seal (transference-based trust item)	More positive in HU vs. less in LU		
	Kim [2008]	/	Ko, US	Third party assurance seal (transference-based trust item)	More positive in HU vs. less in LU		
	Kim [2008]	/	Ko, US	Positive referral (transference-based trust item)	More positive in HU vs. less in LU		
	Kim [2008]	/	Ko, US	Privacy concern (self-perception based trust item)	Less negative in HU vs. more in LU		
	Cyr [2008]	Consumer electronics	Ca, Ch, Ge	Information design	No in HU vs. positive in LU		
	Cyr [2008]	Consumer electronics	Ca, Ch, Ge	Navigation design	No in HU vs. positive in LU	Intentions (purchase intentions)	H6
	Gefen and Heart [2006]	Books	Is, US	Trust belief ability of online seller	Positive in HU vs. no in LU		
	Gefen and Heart [2006]	Books	Is, US	Trust belief ability of online seller	More positive in HU vs. less in LU	Intentions (inquiry intentions)	
	Dinev et al. [2006]	/	It, US	Trust (excl. privacy related items)	Less positive in HU vs. more in LU	Behaviors (site use)	H7
	Dinev et al. [2006]	/	It, US	Privacy concerns	Less negative in HU vs. more in LU	Overall effectiveness ¹	H8
	Lightner et al. [2002] and Hwang et al. [2006]	/	Ko, Tu, US	Product-price comparisons	More positive in HU vs. less in LU		
High- (HC) vs. low-context culture (LC)	Lightner et al. [2002] and Hwang et al. [2006]	/	Ko, Tu, US	Information accuracy	More positive in HU vs. less in LU		
	Cyr [2008]	Consumer electronics	Ca, Ch, Ge	Visual design	Positive in HC vs. no in LC	Usefulness (trust)	H1
	Lynch et al. [2001]	T-shirts	Latin America, North America, and Western Europe	Affect	Positive in HC vs. no in LC	Behaviors (loyalty)	H7
	Lynch et al. [2001]	CD-players	Latin America, North America, and Western Europe	Affect	Positive in HC vs. no in LC	Overall effectiveness ¹	H8
	Fink and Laupase [2000]	Retailing and services	Au and Mal	Information about products and services	More positive in HC vs. less in LC		
	Davis et al. [2008]	CDs	Ch, US	High-task relevant cues	More positive in HC vs. less in LC		
No cultural explanation possible	Davis et al. [2008]	CDs	Ch, US	Low-task relevant cues	More positive in HC vs. less in LC		
	Lightner et al. [2002] and Hwang et al. [2006]	/	Ko, Tu, US	Transaction security	More positive immature e-commerce market vs. less in mature e-commerce market	Overall effectiveness ¹	H8
	Lightner et al. [2002] and Hwang et al. [2006]	/	Ko, Tu, US	Site speed due to site organization	More positive immature e-commerce market vs. less in mature e-commerce market		

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	Lightner et al. [2002] and Hwang et al. [2006]	/	Ko, Tu, US	Site navigation speed	More positive immature e-commerce market vs. less in mature e-commerce market		
No explanation possible	Lynch et al. [2001]	T-shirts	Latin America, North America, and Western Europe	Site quality	Positive in Latin and North America vs. no in Western Europe	Intentions (purchase intentions)	H6
	Lynch et al. [2001]	CD-players	Latin America, North America, and Western Europe	Trust	Positive in Latin and North America vs. no in Western Europe		
	Lynch et al. [2001]	CD-players	Latin America, North America, and Western Europe	Trust	No in Latin America vs. positive in North America and Western Europe	Behaviors (loyalty)	H7
	Fink and Laupase [2000]	Retailing and services	Au and Mal	Logo's	More positive in Au vs. less in Ma	Overall effectiveness ¹	H8
Universal	Liu et al. [2004]	Books	Ta, US	Privacy dimensions (notice, access, choice, assurance)	All four dimensions equal positive impact	Usefulness (trust)	H1
	Kim [2008]	/	Ko, US	Security protection (self-perception based trust item)	Equal positive impact		
	Kim [2008]	/	Ko, US	System reliability (self-perception based trust item)	Equal positive impact		
	Cyr et al. [2009]	Consumer electronics	Ca, Ge, Ja	Human images	No impact		
	Cyr et al. [Forthcoming]	Consumer electronics	Ca, Ge, Ja	Color appeal	Equal positive impact	Usefulness	
	Steenkamp and Geyskens [2006]	Consumer packaged goods	Au, As, Be, Ca, Cr, De, Fr, Ge, Ir, It, Mac, Ne, NZ, Po, Ro, Ru, SM, SI, Sp, Swe, Swi, UK, US	Emotional experience in terms of arousal (not pleasure)	Equal positive impact		
	Steenkamp and Geyskens [2006]	Consumer packaged goods	Au, As, Be, Ca, Cr, De, Fr, Ge, Ir, It, Mac, Ne, NZ, Po, Ro, Ru, SM, SI, Sp, Swe, Swi, UK, US	Utilitarian experience	Equal positive impact		
	Cyr et al. [2009]	Consumer electronics	Ca, Ge, Ja	Human images	Equal positive impact	Entertainment (visual appeal, emotional appeal)	H3
	Cyr [2008]	Consumer electronics	Ca, Ch, Ge	Information design	Equal positive impact	Attitudes (Satisfaction)	H5
	Cyr [2008]	Consumer electronics	Ca, Ch, Ge	Navigation design	Equal positive impact		
	Cyr [2008]	Consumer electronics	Ca, Ch, Ge	Visual design	Equal positive impact		
	Cyr et al. [Forthcoming]	Consumer electronics	Ca, Ge, Ja	Color appeal	Equal positive impact		
	Lynch et al. [2001]	T-shirts	Latin America, North America, and Western Europe	Affect	Equal positive impact	Intentions (purchase intentions)	H6
	Lynch et al. [2001]	T-shirts	Latin America, North America, and Western Europe	Trust	Equal positive impact		
	Lynch et al. [2001]	CD-players	Latin America, North America, and Western Europe	Site quality	No impact		
	Gefen and Heart [2006]	Books	Is, US	Trust belief benevolence of online seller	No impact		
	Gefen and Heart [2006]	Books	Is, US	Trust belief integrity of online seller	No impact		

	Kim [2008]	/	Ko, US	Trust	Equal positive impact	Intentions (inquiry intentions)	H7
	Gefen and Heart [2006]	Books	Is, US	Trust belief benevolence of online seller	No impact		
	Gefen and Heart [2006]	Books	Is, US	Trust belief integrity of online seller	Equal positive impact		
	Lynch et al. [2001]	T-shirts	Latin America, North America, and Western Europe	Trust	Equal positive impact	Behaviors (loyalty)	
	Lynch et al. [2001]	CD-players	Latin America, North America, and Western Europe	Site quality	No impact		
	Cyr [2008]	Consumer electronics	Ca, Ch, Ge	Trust	Equal positive impact		
	Cyr [2008]	Consumer electronics	Ca, Ch, Ge	Satisfaction	Equal positive impact	Behaviors (repurchase, revisit, recommend to others and positive remarks)	
	Liu et al. [2004]	Books	Ta, US	Trust	Equal positive impact		
	Dinev et al. [2006]	/	It, US	Risk	Equal negative impact		
	Steenkamp and Geyskens [2006]	Consumer packaged goods	Au, As, Be, Ca, Cr, De, Fr, Ge, Ir, It, Mac, Ne, NZ, Po, Ro, Ru, SM, SI, Sp, Swe, Swi, UK, US	Emotional experience in terms of arousal (not pleasure)	Equal positive impact	Behaviors (site reuse and revisit)	
	Steenkamp and Geyskens [2006]	Consumer packaged goods	Au, As, Be, Ca, Cr, De, Fr, Ge, Ir, It, Mac, Ne, NZ, Po, Ro, Ru, SM, SI, Sp, Swe, Swi, UK, US	Utilitarian experience	Equal positive impact		
	Fink and Laupase [2000]	Retailing and services	Au and Mal	Atmospherics	Equal positive impact	Overall effectiveness ¹	H8
	Sagi et al. [2004]	/	HK, US	Privacy	Equal positive impact		
	Lightner et al. [2002] and Hwang et al. [2006]	/	Ko, Tu, US	Shopping cart	Equal positive impact		

Au= Australia, As= Austria, Be= Belgium, Ca= Canada, Cr= Croatia, Ch= China, De= Denmark, Fr= France, Ge= Germany, HK= Hong Kong, Ir= Ireland, It= Italy, Is= Israel, Ja= Japan, Ko= Korea, Mac= Macedonia, Mal= Malaysia, Ne= the Netherlands, NZ= New Zealand, Po= Poland, Ro= Romania, Ru= Russia, SM= Serbia and Montenegro, SI= Slovenia, Sp= Spain, Swe= Sweden, Swi= Switzerland, Ta= Taiwan, Tu= Turkey, UK= United Kingdom, US= United States

¹Overall effectiveness is used when the effectiveness items, constructs, or categories are not clearly defined in the paper

Table 2: Summary of studies using the second approach

[illegible]

			Cyr et al. [2005]	Consumer electronics	2b	Whole website		Ca, Ge, Ja, US		
			Nantel and Glaser [2008] ²	Travel, insurance	1	Whole website		Ca(Fr), Ca(En)		
		Innovativeness	Nantel and Glaser [2008] ²	Travel, insurance	1	Whole website		Ca(Fr), Ca(En)	0% 0/2	
		Emotional appeal	O'Keefe et al. [2000] Chau et al. [2002]	Cars	1	Website focus	HK, US		100%* 2/2	
H4	Complementary relationship	/	/	/	/	/	/	/	/	/
H5	Attitudes	Attitude towards the site	Singh et al. [2004] (A) ¹	B2C shopping website	2a	Whole website	It, In, Ne, Swi, Sp		88%* 15/17	33-88%*
			Singh et al. [2004] (B) ¹	B2C shopping website	1	Whole website	It, In, Sp	Ne, Swi		
			Singh et al. [2006a]	Consumer electronics	2a	Whole website	Ge, Br, Ta			
			Singh et al. [2006b]	/	2a	Whole website	Ge, In, Ch			
			Baack and Singh [2007]	Pneumatic equipment	3	Whole website	Ta			
		Attitudes towards the products	Warden et al. [2002]	High differentiation products (watch and camera)	3	Website language	Ta		50%* 1/2	
			Warden et al. [2002]	Low differentiation products (computer and microwave)	3	Website language		Ta		
		Satisfaction	Fang and Rau [2003]	Portal sites	1	Whole website	US, Ta		33%* 2/6	
			Cyr et al. [2005]	Consumer electronics	2b	Whole website		Ca, Ge, Ja, US		
H6	Intentions	Purchase intentions	Cyr et al. [2005]	Consumer electronics	2b	Whole website	Ca, Ge, US	Ja	86%* 18/21	86%*
			Singh et al. [2004] (A) ¹	B2C shopping website	2a	Whole website	It, In, Swi, Sp	Ne		
			Singh et al. [2004] (B) ¹	B2C shopping website	1	Whole website	It, In, Swi, Sp	Ne		
			Singh et al. [2006a]	Consumer electronics	2a	Whole website	Ge, Br, Ta			
			Singh et al. [2006b]	/	2a	Whole website	Ge, In, Ch			
			Baack and Singh [2007]	Pneumatic equipment	3	Whole website	Ta			
H7	Behaviors	E-loyalty	Cyr et al. [2005]	Consumer electronics	2b	Whole website	US	Ca, Ge, Ja	25% 1/4	0-25%
		Visit frequency	Dou et al. [2003]	Portal sites	2a	Whole website		Ch	0% 0/1	
H8	Overall	Overall effectiveness	Fink and Laupase [2000]	Retailing and services	1	Whole website	Au, Mal		100%* 2/2	100%*

Au= Australia, Br= Brasilia, Ca= Canada, Ch= China, Ge= Germany, HK= Hong Kong, In= India, It =Italy, Ja= Japan, Ko= Korea, Mal= Malaysia, Ne= the Netherlands, Sp= Spain, Swi= Switzerland, Ta= Taiwan, US= United States

* Significant result at sub-measure level (vote count>33%) or at performance measure level (for all sub-measures of the performance measure in question applies: vote count >33%)

(*) Maybe significant result at performance measure level (for some sub-measures of the performance measure in question applies: vote count>33%, and for some applies: vote count ≤33%).

¹Singh et al. [2004] performed two studies.

²Nantel and Glaser [2008] investigated two sub-cultures, the Anglophone (En) and the Francophone (Fr) community in Canada.

The last column of Table 2 displays, for each website performance measure, the relative number of observations across studies confirming the significant positive impact of cultural congruity on the performance measure in question (support for H1 to H8), also called positive findings. Additionally, a vote count was performed for each of

the sub-measures from the Loiacono et al. [2007] framework, which is shown in the penultimate column. A vote count was also carried out for the manipulation check (H0) which is shown in the first row.

According to the vote-counting method, when the number of positive findings exceeds 33%, the hypothesis under consideration is accepted. The data in Table 2 show support for the manipulation check and for acceptance of hypotheses H1, H2, H5, H6, and H8. In other words, culturally congruent websites outperform culturally incongruent ones with respect to “*usefulness*”, “*ease of use*”, “*generated positive attitude*”, “*positive intentions*”, and “*overall effectiveness*”. As the number of studies that investigated these hypotheses (with the exception of H8) is quite large, these results can be considered reliable.

For H3, the impact of cultural congruency on “*entertainment*”, evidence is mixed. Looking at the sub-measures, culturally congruent websites outperform culturally incongruent ones on emotional appeal but not on visual appeal or innovativeness. Still, it should be noted that the number of studies investigating the impact of cultural congruency on the entertainment value of a website is limited. Only 5 studies investigated this particular performance measure, with a maximum of 3 studies per sub-performance measure. Additionally, only one of these studies uses a more robust research set-up. Cyr et al. [2005] uses method 2b, in which the cultural congruency of existing websites is checked by researchers, while all the other studies under consideration use method 1, in which the cultural congruency of the existing websites used in the study is not checked but assumed.

For H7, the impact of cultural congruency on “*actual behavior*”, none of the sub-measures point towards acceptance of the hypothesis. However, here the number of studies is even more limited (2 in total and only 1 per sub-measure).

For H4, the impact of cultural congruency on “*complementary relationship*”, no studies were found.

In summary, the reviewed studies mainly provide support for acceptance of our general research hypothesis that culturally congruent websites are more effective. They provide support for 5 of the 8 sub-hypotheses. Additionally, for one hypothesis no studies were found, so neither acceptance nor rejection of this hypothesis could be inferred. For the two hypotheses where evidence was mixed or pointed towards rejection of the hypothesis, cautiousness is needed since the number of studies investigating these hypotheses is limited. Additionally, a lot of studies investigating these hypotheses don’t use a robust research design.

Finally, in the margin we would like to emphasize that the study by Warden et al. [2002], applying the second research approach, also indicates that website localization should be seen in relation to the type of products sold on the website (cf., the study by Lynch et al. [2001] in the first research approach). Warden et al. [2002] found that website localization had a positive impact on attitudes towards the products when the products sold were highly differentiated (watch and camera), but not when the products were little differentiated (computer and microwave).

5. Conclusions, limitations, and suggestions for future research

The purpose of this literature review was to investigate the impact of cultural congruity on website effectiveness. From an academic point of view, it was important to incorporate the diverse studies examining this matter in one overview. Also, from a business point of view, it is essential for international companies, active online, to know whether localization of websites is worthwhile and which performance measures are particularly affected.

A limitation of the current research overview is that only 27 studies were found to have investigated the research question under consideration up until now. However, as these studies already span more than a decade and are very scattered in terms of research set-up and conclusions, the need for a literature overview was urgent.

First of all, the studies using the first research approach indicated that the importance or fill-in of certain website features indeed varies across cultures in terms of their impact on website performance. These studies actually gave a first indication that the assumption that cultural congruent websites outperform culturally incongruent ones (= our general research hypothesis) is worth investigating. In fact, the overview in Table 1 might serve as useful input for website designers in international companies on how to create culturally congruent websites. It indicates which website features are needed in which cultures and how this relates to website performance. It also helps to discern between important and irrelevant website features with regard to the localization process. Indeed, website elements for which no evidence is found that their importance or fill-in varies across cultures in terms of their impact on website performance should no longer be considered during the localization process. Using a more nuanced approach to localization, in order to reduce the effort to design websites for host countries, is appealing to companies in terms of cost and time savings. However, further research into this domain is required. In addition, we also noted that few results were linked back to the cultural dimensions of “*masculinity*” and “*power distance*”, which may provide an opportunity for future research. Moreover, for some findings, no cultural explanation seemed to be at hand. Looking into other possible cultural theories, besides the Hall [1976] and Hofstede [1980] dimensions, that could possibly explain differences between countries, may be needed. It may also be interesting to include country characteristics, other than cultural characteristics, to try to explain differences in effectiveness of certain

website features. With regard to the outcome variables, only a few studies investigated the impact of cultural congruity on “entertainment” and “attitudes”, whereas the effect on “ease of use” and “complementary relationship” was ignored completely by researchers thus far, which also points to interesting avenues for future research.

Secondly, from the overview in Table 2 (comprising the studies using the second research approach) it can be concluded that past research provides support for the hypotheses that cultural congruency improves website performance with regard to “usefulness”, “ease of use”, “positive attitudes”, and “positive intentions” (4 of the 7 effectiveness measures drawn from the WEBQUAL instrument by Loiacono et al. [2007]), as well as improving the “overall website effectiveness”. However, past literature does not provide sufficient support for a positive impact on the effectiveness measures “entertainment” and “positive behavior”. Additionally, none of the previous studies examined the impact of cultural congruent website design on “complementary relationship”, also an effectiveness measure within WEBQUAL. In summary, past research thus provides support for 5 out of 8 investigated hypotheses. It should also be mentioned that only two of the studies investigated used a true experimental design [Baack and Singh 2007; Warden et al. 2002] and only one encompassed a variety of website features [Baack and Singh 2007]. Therefore, future research should focus on creating experiments in which the cultural congruity of the websites involved is manipulated by the researchers. In order to be able to draw more reliable conclusions, future research should also include performance measures for which the positive impact of cultural congruity has received no or little support up until now, because this may be due to the limited amount of research available.

Finally, it should be noted that our overview also indicates that website localization cannot be seen as an isolated process. Lynch et al. [2001] and Warden et al. [2002] indicate that the type of products sold is an important factor to include in the decision process.

In summary, although this overview of previous research proves that cultural congruity at least impacts some website performance measures, further research into this domain is called for.

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