Web-Image Signifier Congruency Theory (WISC): Conceptualization and Examination in an Online Donation Context

Completed Research

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ABSTRACT

The paper extends web-image signifier theory (WIS) (Zahedi and Bansal 2011) to suggest a new theory – Web-Image Signifier Congruency Theory (WISC). WISC suggests that web-image signifiers form the cultural schemas; which, when aligned with appropriate individual’s identity, lead to identity congruency and image-appeal. The study uses three website homepage screenshots depicting three different images each varying in cultural dimensions –masculinity/femininity, individualism/collectivism, and power distance. The study shows that the “fit” between user’s cultural dimensions and the depicted web-image signifiers (WIS) leads to cultural congruency and appeal; which then impact attitude and behavioral intentions towards the website. We examine the WISC theory in the context of online donations. The study makes several important contributions: it proposes a new WISC theory; and suggests that its one’s cultural identity “fit” with the dominant web-image signifier that impacts cultural congruency and image appeal. Implications and future research directions are discussed.

Keywords

Cultural congruency, trust, images, WISC theory, appeal, online donations

INTRODUCTION

The average online gift amounts generated by Giving Tuesday have exceeded $134, and overall revenue from online fundraising grew by 14% in 2016 (Nonprofitsource.com 2018). Given the magnitude of online donation transactions, and the critical role charitable giving plays in enhancing overall organizational goodwill and societal wellbeing (Grant and Potoski 2015; Heiser 2006), the donation decision process has drawn tremendous attention in business academia. There are many aspects associated with online donations, and donations in general, e.g., consumers’ concern regarding utilization of their donations, the role of gender and moral identities on donation behavior (Gazley and Abner 2014; Koschate-Fischer et al. 2012; Strahilevitz and Myers 1998). The risk associated with information asymmetry present between the donor and the charitable organization only gets enhanced in an online environment, where the distance between the two is further enhanced (Bansal et al. 2015; Gefen et al. 2003). Research has supported identity congruency as one of the main drivers of donation intentions and behaviors (Shang et al. 2008). In summary, extant research has focused primarily on effects of the collective-identity esteem on donation decisions by manipulating the behavior of other donors (Shang et al. 2008). While culture-related identity beliefs go beyond collectivism and individualism according to Hofstede's Cultural Dimensions Theory (Hofstede 1980); little has been done to examine the cultural dimensions besides collectivism (e.g., power distance and masculinity). Furthermore, there has been a dearth of research examining the impact of web-image signifier cultural congruency on trust (e.g., the extent to which cultural themes elicited by web-image signifiers match with the donors' cultural beliefs); and similarly, little research took place in the context of online donations. This research aims to fill the gap by examining how web-image signifier cultural congruency may affect donors' perception towards the website image appeal and their overall trust towards the website, which in turn could affect their intentions to donate. In this vein, our main research question includes the following two components: a). Does web-image signifier cultural congruency lead to higher donor trust towards the website, b) does cultural congruency impact image appeal, and through trust, impact donation decisions. In exploring our research question, we use the lens of

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identity congruency framework (Shang et al. 2008), in combination with web-image signifier theory (Zahedi and Bansal 2011) and cultural schema framework (Torelli and Ahluwalia 2011); and propose a new theory – Web-Image Signifier Congruency Theory (WISC). The identity congruency framework is based upon the concept of social identity and argues that one’s behavior is positively motivated when identity is established between the external environment and his/her internal self (Shang et al. 2008). Based on our proposed WISC theory we argue that identity congruency between the target donor’s cultural beliefs and the online charity donation website will, lower the risk beliefs, enhance trust attitude towards the website, and thus lead to higher donation intentions. The paper is structured as follows: 1). We will first build the research model based on our newly proposed WISC theory and explain the hypotheses of interest; 2). Research methodology and results are presented subsequently; 3). The paper concludes by discussing the findings, theoretical and practical contributions, future research directions, as well as limitations.

THEORETICAL BACKGROUND AND RESEARCH MODEL

As mentioned previously, our newly proposed theory builds upon three other theories from the business literature, namely the web-image signifier theory (a.k.a, WIS) (Zahedi and Bansal 2011), the cultural schema framework (Torelli and Ahluwalia 2011) and the identity congruency framework (Shang et al. 2008). WIS theory suggests that cultural dimensions in web-images are signified through image signifiers. Through cultural schema framework (Torelli and Ahluwalia 2011) we argue that such signifiers are equivalent to cultural schemas (e.g., a central cultural theme that belongs to a broader network of shared knowledge about a human group) (Torelli and Ahluwalia 2011). For instance, focusing on one individual amidst multiple individuals is a cultural schema for individualism (Zahedi and Bansal 2011), similar to McDonalds or Pizza Hut being a cultural schema for Americans (Torelli and Ahluwalia 2011). We propose a new theory based on (Shang et al. 2008; Torelli and Ahluwalia 2011; Zahedi and Bansal 2011) and name it the Web-Image Signifier Congruency Theory (WISC). The WISC theory suggests that web-image signifiers (WIS) (Zahedi and Bansal 2011) can form the cultural schemas (Torelli and Ahluwalia 2011; Zahedi and Bansal 2011); and these cultural schemas, when aligned with appropriate individual’s identity, lead to identity congruency (Shang et al. 2008).

WISC => Web-image signifiers >> Cultural Schemas >> Identity >> Identity Congruency

Under WISC theory, we argue that congruency between one’s cultural traits and the web-image signifiers (e.g., cultural congruency) would enable the target user to categorize him- or herself with the website (Shang et al. 2008). The cultural congruency between an information object (e.g., a web-image) and a user increases familiarity and lowers cognitive effort required to assimilate the information (Ko et al. 2015). Cultural congruency is known to be processed at a subconscious level and is considered effortless (Torelli and Ahluwalia 2011) and critical (Feldman and Lynch 1988; Shang et al. 2008) in influencing attitude, intentions, and decision-making judgments. Website design that lowers cognitive dissonance results in higher trusting tendencies (Bansal et al. 2015; Cyr et al. 2009). Additionally, web-images are a critical component of website design (Zahedi and Bansal 2011) and are known to carry diverse elements that may enhance or dampen the consumer’s attitude towards the website (Cyr et al. 2009; Fisher et al. 2012). We argue that congruency with one’s cultural identity would lead to the perceived warmth and social presence, thus enhancing the emotional appeal of the web-image, and thus the website (Cyr et al. 2009). Thus, we argue that cultural congruency (marked as congruence in our model), and appeal would lead to higher trust. Hence,

H1: There is a positive relationship between cultural congruency and trust.

H2: There is a positive relationship between image appeal and trust.

H3: There is a positive relationship between cultural congruency and appeal.

According to the Hofstede's cultural dimensions theory, cultural dimensions conveniently divide people into sub-cultural groups based on the extent to which they 1). value personal/group goals (e.g., individualism vs. collectivism); 2). Perceive rank, title, and seniority (e.g., level of power distance); and 3). Carry tough or tender traits (e.g., masculinity vs. femininity) (Hofstede 1980). In combination with the overall reasoning of the previous three hypotheses, we hypothesize the following:

H4(a): The degree to which the image shown “fits” with the individuals’ cultural trait of collectivism positively enhances the perceived cultural congruency of the image.

H4(b): The degree to which the image shown “fits” with the individuals’ cultural trait of collectivism positively enhances the image appeal.
H5(a): The degree to which the image shown “fits” with the individuals’ cultural trait of power distance positively enhances the perceived cultural congruency of the image.

H5(b): The degree to which the image shown “fits” with the individuals’ cultural trait of power distance positively enhances the image appeal.

H6(a): The degree to which the image shown “fits” with the individuals’ cultural trait of masculinity/femininity positively enhances the perceived cultural congruency of the image.

H6(b): The degree to which the image shown “fits” with the individuals’ cultural trait of masculinity/femininity positively enhances the image appeal.

Research Methodology

We created three different screenshots depicting three different stimuli (e.g., pictures used in website design), everything else on the home page screen remains the same. We modeled the website design after a food charity organization. Participants were students recruited from a Midwestern university. We designed the research experiment using Qualtrics. Participants were asked to agree to the consent form and then were randomly assigned to view one of the three website screenshots. We then measured reputation, cultural congruency, and image appeal. Participants were then asked to evaluate their trust towards the website and their intention to donate. We also measured the participants’ cultural traits – collectivism/individualism, power distance, and masculinity/femininity. We randomized the cultural trait questionnaire to avoid sequence effect. We also measured individual traits such as trust propensity, helper’s high and personal impulsiveness, along with demographics.
Data Collection process: 416 people completed the survey. Out of that only 385 passed the attention check questions. We had two attention check questions: The website was about which company? 2) the website specialized in which of the following. The three pictures were selected to differ on the three cultural dimensions based on the arguments presented in Zahedi and Bansal (2011) as shown in Table 1 below. Two raters examined the prominence of web-image signifiers (WIS) and categorized as primary effect and secondary effect.

<table>
<thead>
<tr>
<th>Picture #</th>
<th>Primary Effect</th>
<th>Secondary Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pic1</td>
<td>Collectivism</td>
<td>Power distance and Masculinity</td>
</tr>
<tr>
<td>Pic2</td>
<td>Masculinity and Collectivism</td>
<td>Femininity</td>
</tr>
<tr>
<td>Pic3</td>
<td>Power distance</td>
<td>Masculinity and Individualism</td>
</tr>
</tbody>
</table>

Table 1. Qualitative Judgement of Cultural Dimensions of the Website Images

**Data analysis**

Data analysis was carried out using Smart PLS 3.0 (Ringle et al. 2015). We first measured reliability and examined discriminant and convergent validity. As shown in Table 2 both composite reliability (CR) and Cronbach alpha (α) values for all constructs except financial status were higher than 0.7 demonstrating adequate reliability for the hypothesized constructs. Control variable financial status had slightly low Cronbach alpha values, but we retained the construct as its CR values met the required thresholds in two of out of three picture groups. AVE values for all constructs were higher than 0.5 demonstrating convergent validity. We also compared the latent construct correlations with the square root of AVE values and found no issues violating discriminant validity. We used items from existing scales wherever possible. We adapted espoused cultural trait items from Srite and Karahanna (2006) – who argued that “at the individual level of analysis national culture manifests through an individual's espoused national cultural values” (p. 681); helper's high and impulsiveness items from (Bennett 2009); intention to donate items were adapted from intetion to disclose items from Bansal et al. (2010), cultural congruency from (Badrinarayanan et al. 2012) and appeal items from (Cyr et al. 2009). We carried out t-tests to check if the respondents in the three picture groups differed regarding their cultural traits and did not find any significant differences.

<table>
<thead>
<tr>
<th></th>
<th>Pic 1</th>
<th></th>
<th>Pic 2</th>
<th></th>
<th>Pic 3</th>
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<tbody>
<tr>
<td></td>
<td>Alpha</td>
<td>CR</td>
<td>AVE</td>
<td>Alpha</td>
<td>CR</td>
<td>AVE</td>
</tr>
<tr>
<td>Col</td>
<td>0.821</td>
<td>0.915</td>
<td>0.844</td>
<td>0.895</td>
<td>0.950</td>
<td>0.905</td>
</tr>
<tr>
<td>Congruence</td>
<td>0.850</td>
<td>0.930</td>
<td>0.870</td>
<td>0.770</td>
<td>0.895</td>
<td>0.810</td>
</tr>
<tr>
<td>Fin Status</td>
<td>0.600</td>
<td>0.833</td>
<td>0.714</td>
<td>0.559</td>
<td>0.630</td>
<td>0.530</td>
</tr>
<tr>
<td>Helpers High</td>
<td>0.928</td>
<td>0.945</td>
<td>0.773</td>
<td>0.907</td>
<td>0.925</td>
<td>0.710</td>
</tr>
<tr>
<td>Impulse</td>
<td>0.562</td>
<td>0.819</td>
<td>0.693</td>
<td>0.892</td>
<td>0.949</td>
<td>0.902</td>
</tr>
<tr>
<td>Intention</td>
<td>0.968</td>
<td>0.977</td>
<td>0.913</td>
<td>0.976</td>
<td>0.983</td>
<td>0.934</td>
</tr>
<tr>
<td>Mas</td>
<td>0.867</td>
<td>0.933</td>
<td>0.875</td>
<td>0.887</td>
<td>0.946</td>
<td>0.898</td>
</tr>
<tr>
<td>PD</td>
<td>0.854</td>
<td>0.911</td>
<td>0.773</td>
<td>0.883</td>
<td>0.928</td>
<td>0.812</td>
</tr>
<tr>
<td>Rep</td>
<td>0.906</td>
<td>0.933</td>
<td>0.779</td>
<td>0.875</td>
<td>0.915</td>
<td>0.731</td>
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<tr>
<td>Trust Propensity</td>
<td>0.884</td>
<td>0.945</td>
<td>0.896</td>
<td>0.801</td>
<td>0.907</td>
<td>0.831</td>
</tr>
<tr>
<td>Trust</td>
<td>0.962</td>
<td>0.973</td>
<td>0.898</td>
<td>0.976</td>
<td>0.983</td>
<td>0.934</td>
</tr>
<tr>
<td>Appeal</td>
<td>0.925</td>
<td>0.953</td>
<td>0.870</td>
<td>0.918</td>
<td>0.948</td>
<td>0.859</td>
</tr>
</tbody>
</table>

Table 2. Reliability
Results

We present the results in figures 3–5 and also discuss them below. The model explains 33.4% of the variation in intention to donate for the first picture; 47.8% of the variation for the second picture; and 27.3% of the variation for the third picture. In all the pictures we find that appeal impacts trust at p<.05 or less, thus providing strong support for H1. However, the impact of cultural congruency on trust was observed only in pic2 and pic3 at p<.01; and impact of cultural congruency on appeal was observed in pic1 and pic3 at p<.001. Thus, providing partial support for both H2 and H3. The path between cultural congruency and appeal (H3) has moderate to strong effect sizes (Hair et al. 2017) in these two pictures (pic1 and pic3) as shown in figure 6. Collectivism has a high association with power distance (Zahedi and Bansal 2011), and that is evident from the results for all three pictures as collectivism is impacting power distance in all three pictures.

Picture 1: Pic1 has collectivism signifier represented by multiple individuals all focusing in one direction; power distance signifier represented by one person depicted in an authoritative position; and masculinity signifier represented by having a male in authority, and office attire along with gray color (Zahedi and Bansal 2011). Table 2 shows that raters believe that the overarching cultural dimension in pic1 is collectivism, with power distance and masculinity being secondary dimensions. We found that pic1 resonated only with collectivism cultural dimension, and not with masculinity/femininity and power distance, showing that the collectivism signifier in this picture was indeed predominant. Pic1 had a significant relationship between collectivism and cultural congruency. Cultural congruency, in turn, was significantly related to the appeal, which in turn was related to trust. Finally, trust was significantly related to intention to donate. Regarding control variables, trust propensity was found to impact trust, and impulsiveness nature was strongly associated with intention to donate as well. The relationship between cultural congruency and appeal is significant at p<.001 and has a strong effect size of .499. For control variables, only trust propensity and impulsiveness play a significant role.

Picture 2: There are elements of different cultural dimensions in pic2: femininity/masculinity, collectivism, and power distance (Table 2). Female focus and smiling individuals signify femininity; the presence of multiple individuals (looking in the same direction) shows collectivism; the presence of multiple men, depicting individuals in official attire and gray suits signifies masculinity (Zahedi and Bansal 2011). The prominent cultural signifiers according to the raters was argued to be collectivism and masculinity (Table 2). Results show that pic2 has two primary themes – masculinity as well as femininity (Zahedi and Bansal 2011). It seems that both these cultural dimensions impact both cultural congruency as well as image-appeal. Results show that masculinity impacts image appeal at p<.01 level, and femininity leads to cultural congruency at p<.001. Interestingly, the relationship between the dominant cultural dimension and appeal is not mediated by cultural congruency, unlike pic1. Moreover, the results show that appeal and cultural congruency both have a powerful impact on trust. Figure 6 shows that the effect sizes for both these paths (cultural congruency to trust and appeal to trust) have moderate effect sizes (higher than 0.15) (Hair et al. 2017). All control variables except for trust propensity and financial status are significant. The model explains 60.9 percent variance in trust, and 47.8 percent variation in intention to donate.

Picture 3: Table 2 shows that there are elements of power distance, masculinity and collectivism/individualism contained in this picture. Focusing on a person in authority signifies power distance; gray color and suit attire show masculinity; and the focus on one individual when multiple individuals are present signify individualism (Zahedi and Bansal 2011). However, the prominent signifier according to the raters was argued to be high power distance (Table 2). The results show that high power-distance impacts image appeal. High power distance was not found to impact cultural congruency at all in this picture. Both appeal and cultural congruency are related to trust. The picture shows that the secondary cultural dimension of masculinity negatively impacts both appeal and cultural congruency. Other than financial status and helper’s high all other control variables are significant. The model explains 52% variance in trust, and 27.3% variance in intention to donate.

Result summary

Both pic1 and pic2 were argued to be high in collectivism (Table2). Collectivism is associated with cultural congruency only in pic1 – thus, providing partial support for H4a. Collectivism was not related to appeal – neither in pic1 nor pic2, thus, H4b was not supported. Pic3 was argued to be high in power distance (Table 2). High power distance, in pic3, is associated with the appeal but not with cultural congruency, which provides support for H5b, but not for H5a. Pic2 was argued to be high in masculinity (Table 2). Masculinity leads to appeal thus supporting H6b. It is not clear if femininity is positively associated, or masculinity is negatively associated to cultural congruency in pic2.
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Figure 3. Results for Picture 1

Figure 4. Results for Picture 2
LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

This study helps answer some questions, but also raises some exciting and new questions which the future research could attempt to answer. First, are there pecking orders in WISC such that certain cultural dimensions when present as secondary dimensions get associated with cultural congruency and image appeal more prominently, for instance, femininity in pic2. Second, why specific dimensions attach to appeal or congruency and not both. For instance, in pic3 high power distance was associated with appeal and not with cultural congruency; and in pic1 collectivism is associated with cultural congruency and not with the appeal. Third, can a cultural dimension have a negative impact on cultural congruency or appeal – for instance, in pic2, is femininity positively impacting cultural congruency, or is masculinity negatively associated with cultural congruency. Fourth, why certain pictures are associated with higher R square for trust. Fifth, we have three questions for the relationship
among appeal, cultural congruency, and trust - why does appeal lead to trust in some pictures and not all; why does cultural congruency lead to trust in some pictures and not all; and why does cultural congruency lead to appeal in some pictures and not all. Sixth is there a priming effect - we measured espoused cultural dimensions after showing the stimuli (website screenshots), could showing the pictures first prime the individuals about their own espoused cultural values.

**DISCUSSION**

This research lays out the theoretical foundation and provides empirical evidence that cultural congruency plays a crucial role in an online donation context. The findings show that the web-image congruence with the web-image signifiers could help in enhancing trust and eliciting online donations. Besides, like cultural congruency, the web-image appeal also plays a critical role in the online donors’ decision-making process.

The paper makes several contributions. Theoretically, it offers an interdisciplinary theoretical advancement built upon the consumer behavior and management information systems literature. Specifically, it proposes the **Web-Image Signifier Congruency Theory (WISC)**, which furthers our understanding of the relationship between web-image signifiers (Zahedi and Bansal 2011) and cultural congruency. The critical conception of the theory suggests that web-image signifiers would lead to higher identity congruency when matched with the appropriate espoused cultural dimension. It extends (Zahedi and Bansal 2011) in several ways. This research shows that although multiple cultural themes can coexist in one web-image signifier, it is usually the most salient cultural signifier (reflected in the web-image or picture) that influences cultural congruency and appeal. Besides, cultural congruency and appeal subsequently affect consumer decision making by impacting trust and intentions.

To the best of our knowledge, this is the first study to examine the theoretical relationship between web-image signifier and identity congruency. The proposed theory of WISC purports that web-image signifiers can create cultural schemas that could resonate with consumers’ intrinsic cultural identity. The stronger the resonation, the more likely that the consumer will be able to experience an identity congruency. Besides, through empirical studies based on theoretical reasoning, we provide further evidence that one web-image signifier can carry multiple cultural themes, among which one dominant core theme can coexist with peripheral and weaker themes. In summary, WISC complements extant theory and offers a new paradigm for business researchers.

Practically, our research could inform the e-commerce and online fundraising managers in particular and help them become more efficient in achieving their goals. First, through our research, business practitioners will be able to understand the importance of website design not just from a mechanical standpoint, but also from a cultural standpoint. Our world is becoming increasingly complex, and consumers' needs and wants are becoming more sophisticated in the sense that mental and psychological needs, by and large, exceed utilitarian needs in many contexts. Our research shows that using concepts built around WISC theory; effective website designs can be created to satisfy users’ culture-prompted self-identity. Second, culture is complex, and individual consumer differences lead to different behavioral intentions to website designs for nonprofit organizations (e.g., online donation companies). Business practitioners should pay more considerable attention to the customization of web-images in website designs by placing more focus on the most appropriate cultural theme that goes into a web-image.

Despite the significant contribution this research makes, it does not come without limitations. First, although the stimuli we used in this research carry dominant cultural themes, due to the limitation that other cultural themes coexist at a much weaker level within each stimulus, there could be some compounding effects resulted by the limited power of the stimuli we used. Also, the respondents are recruited from the United States only it is unknown to what extent our research results can be further generalized to greater populations around the world. Further research could undoubtedly help reduce effects brought up by these limitations. Additional experiments that utilize a more diverse range of and further refined stimuli could help reduce the compounding effects and bring about greater internal validity to the research. By extending the usage of the WISC theory to contexts beyond online donation and populations beyond U.S. audiences, it will significantly advance the external validity of the theory and make more powerful impacts in both theoretical and practical senses.
REFERENCES


### APPENDIX A

**Construct** | **Definition** | **Items were 11-point scale (1-11)**
--- | --- | ---
**Intention to donate:** one’s degree of willingness to donate to a charity website | The extent to which I intend to donate to the Website is | unlikely…very likely
| | The extent to which I intend to donate to the Website is | not probable…probable
| | The extent to which I intend to donate to the Website is: | not at all…very much
| | The extent to which I intend to donate to the Website is: | unwilling…willing

**Collectivism:** reflects the degree of emphasis one places on collective initiatives instead of individual ones | Being accepted as a member of the group is more important than having autonomy and independence | strongly agree…disagree
| | Being accepted as a member of the group is more important than being independent | strongly agree…disagree
| **Power distance:** reflects the degree to which individuals with high espoused power distance cultural values will be more concerned about complying with their superiors' opinions and will fear to disagree with them | Managers should make most decisions without consulting subordinate | strongly agree…disagree
| | Managers should not ask subordinates for advice because they might appear less powerful | strongly agree…disagree
| | Decision-making power should stay with top management and not be delegated to lower level employees | strongly agree…disagree

**Masculinity:** reflects emphasis on work goals, assertiveness, and material values which focus on quality of life goals, nurturing and modesty | It is more important for men to have a professional career than it is for women to have a professional career | strongly agree…disagree
| | Women do not value recognition and promotion in their work as much as men do | strongly agree…disagree

**Congruence:** degree of perceived match between attributes of an object and the relevant schema | When it comes to the similarity between my basic values and the one on the dominant image on the website’s home page, I believe that there is hardly any similarity at all…very high level of similarity | strongly agree…disagree

**Appeal:** Image appeal refers to the extent to which images on the website are perceived as appropriate and aligned to user expectations, satisfying, or interesting | The images used in the website are | very discouraging…very exciting
| | The images used in the website are | not interesting at all…very exciting
| | The images used in the website are | not satisfying at all…very satisfying

**Reputation:** degree of one’s belief in the website’s social presence | The degree to which the website is well-known is | very low…very high
| | Its ratings are | very low…very high
| | Its reputation is | very bad…excellent
| | In general, I believe that the reputation of the website is | very bad…excellent

**Trust Propensity:** degree of one’s personality disposition to trust others’ | I feel that people are generally | not reliable at all…very reliable
| | I feel that people are generally | not honest at all…very honest

**Trust:** degree of one’s belief that the website will behave in a dependable, ethical, and socially appropriate manner | I believe that the website is | not honest at all…very honest
| | I believe that the website is | opportunistic…dependable
| | I believe that the website is | not reliable at all…very reliable
| | In general, the level of my trust for the website is | very low…very high

**Table A. Instrument**