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Buy Online, Trust Local – The Use of Regional Imagery on Web Interfaces and its Effect on User Behavior

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Abstract. While regional cues are omnipresent in offline consumer life, the use of regional imagery is a still emerging trend in online retail. Applying a multi-method approach, we investigate the use of regional imagery on web interfaces and its effects on consumer behavior. We find that social, nature, and regional imagery is frequently used on energy provider websites and identify cityscapes and monuments as primary regional motives. Further, we outline an experiment to assess whether regional imagery promotes trust within online retail and how the presence of regionality interacts with the concepts of Social Presence and Nature Presence. Our contribution is twofold: First, we propose the psychological construct of Regional Presence to the IS literature, link it to theory, and describe its application in online retail. Second, we sketch out an experimental design to systematically study the effects of regional imagery on web interfaces.

Keywords: Social Presence, Nature Presence, Regional Presence, Trust, Online Retail

1 Introduction

References to people’s home region have become a common practice in offline retail – think of ads promoting fruits “from the region”. Such references are supposed to indicate quality [1], sustainability [2], local business support [3], and appeal to patriotism [4]. More recently, we observe an expansion of this practice to online retail – in particular in the form of regional imagery (e.g. of an identity-establishing building, landmark, or place). This study aims to increase understanding of a) the use of regional imagery on web interfaces and b) its effects on consumer behavior.

Since there is very little research on this phenomenon in the online retail context, our first research objective is of exploratory nature aiming to systematically capture a new phenomenon in IS research [5]. By means of content analysis of 318 energy provider websites, we set out to better understand the use of regional imagery on existing web interfaces. This qualitative method is well-established [6] and will increase the proposed study’s practical applicability down the line [7]. To isolate the behavioral effects of perceived regionality, we focus on the electricity retail market for mainly two reasons: First, analyzing a homogenous *credence good* eliminates potential confounding effects based on product quality (e.g. freshness of a fruit produced in close

geographic proximity may indeed be higher compared to other fruit and consumers can distinguish this product property either at the point of purchase or at least after having consumed the fruit. In contrast, electricity generated in closer proximity is physically identical with that generated further away). Second, it is supplied through networks. This eliminates the transportation cost effect since network fees are charged to consumers regardless of electricity’s geographic origin. Hence, any effects can be fully attributed to the very idea of regionality. Our first research question reads:

RQ1: *To what extent do energy providers apply regional imagery on their websites? What types of regional imagery are used?*

The use of imagery to affect consumer behavior is well established in the fields of Marketing and Information Systems (IS; e.g. [8], [9]). Primarily, IS research has focused on social cues to generate consumer trust and trigger purchases. Gefen and Straub [8] have transferred Social Presence (SP) Theory to IS research to explain these effects. More recently, Schmuck et al. [10] have attested similar impact to nature imagery. Expressing the similarities to the SP construct, we use an analogous phrasing for Regional Presence (RP) and explore whether perceived regionality triggers similar effects as SP (i.e. trust, purchase intentions). Further, the interaction of the three concepts is of interest. Accordingly, our second research question asks:

RQ2: *Does Regional Presence promote trust (and ultimately purchase intentions) in online retail? How does it interact with Social and Nature Presence?*

To address these questions, we sketch out the design for an online experiment. Figure 1 provides an example (icons highlight the three concepts).

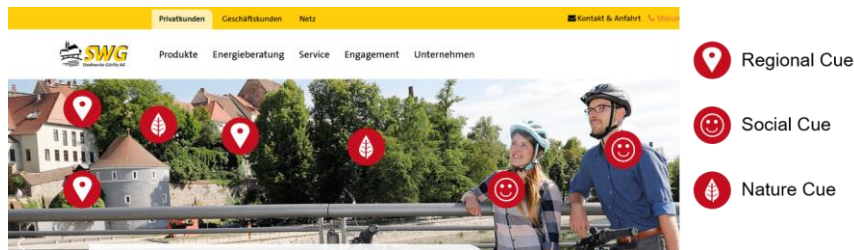


Figure 1. Website Example with Regional, Social, and Nature Cues

2 Theoretical Background

To explain the behavioral effects of social, nature, and regional cues, several theories can be readily applied, including Social Presence Theory [11], the Biophilia Hypothesis [12], and Consumer Ethnocentrism [13]. Ultimately, all theories build on evolutionarily patterns which we exploit to develop the RP construct.

Social Presence (SP). Social Presence Theory originates in the field of psychology, describing communication media’s ability to transmit social cues [11]. Gefen and Straub [8] have transferred this concept to IS research and shown that social imagery on web interfaces generates perceived “personal, sociable, and sensitive human

contact” (p. 410) despite the fact that online retail is characterized by a lack of such. The sensation of interpersonal contact decreases consumer anxiety towards online transactions which improves trust in the website and purchase intentions [9]. Ultimately, this is driven by the evolutionary pattern that humans increased chances of survival when interacting with other human beings [14, 15].

Nature Presence (NP). Similar to the above, natural imagery generates a virtual nature experience in the absence of real nature which provokes positive brand attitude and purchase intentions [10]. The Biophilia Hypothesis explains such effects by “the urge to affiliate with nature” (p. 85) [12]. Other evolutionary psychologists invoke restoration of attention [16] and stress reduction [17]. This is ultimately driven by the critical relevance of nature to human survival through provision of water, nutrition, and defense advantages [17].

Regional Presence (RP). In a similar fashion, evolutionary biology lends itself well to rationalize human preferences for regionality as well. For centuries, cohesion and solidarity of social groups like tribes and families have been essential to survival [18] which, today, translates into ethnocentric consumer behavior on a regional or national level [19]. This means is buying from the *in-group* (defined as the set of people with “which an individual identifies”, p. 280) is preferred over buying from the *out-group* [13]. Practically speaking, Consumer Ethnocentrism suggests that consumers prefer regional products and services as purchasing otherwise “is wrong because [...] it hurts the domestic economy, causes loss of jobs, and is plainly unpatriotic” (p. 280) [13]. We hypothesize that – similar to social and nature cues – the use of regional cues can influence users’ psychology, subconsciously promoting trusting beliefs and, in turn, purchase intentions. RP can therefore be defined as the *sensation of regionality in a set-up characterized by geographic independence*.

3 Study 1: Content Analysis of *Stadtwerke* Websites

Methodology. Examining **RQ1**, we shortlisted 318 regional energy providers from an online resource [20], selecting corporations (AG or GmbH) referring to themselves as regional utilities (“*Stadtwerke*”). Next, we devised a web-scraper to take screenshots of all 318 landing webpages. These screenshots were coded for regional, social, and nature cues by two researchers individually. With Cohen’s kappa [21] of 0.74 for regional, 0.75 for social, and 0.68 for nature cues, inter-rater reliability indicates substantial agreement [22]. Conflicting cases were resolved by a third researcher. Further, we classified regional imagery with regard to its content (e.g. cityscapes).

Results. As displayed in Figure 2, the majority of the evaluated energy providers (215 out of 318) employ at least one of the three concepts. Social imagery is the dominant cue (125) but regional (78) and nature (69) imagery are often used as well. The most frequent combination is between regional and nature cues (27) while only three websites combine all three types. Figure 3 provides a breakdown of regional cues: In more than half of all cases (44 out of 78), the images show cityscapes. Other motives are buildings (15), monuments (13), and cultural events (6).

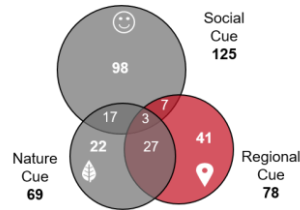


Figure 2. Coding Results

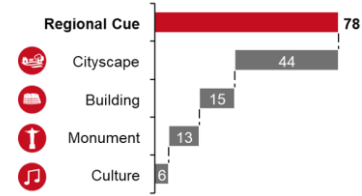


Figure 3. Classification of Regional Cues

4 Study 2 (in progress): Design of an Online Experiment

Research Model and Hypothesis Development. Addressing RQ2, we seek to experimentally evaluate whether RP promotes trust (and purchase intentions) and how it interacts with SP and NP (see Figure 4). We build on Gefen and Straub [8] and expand their model for RP, NP, and potential interaction effects. The relationship of SP on trust (e.g. [8], [9]) and, in turn, purchase intentions (e.g. [23]) is commonly accepted. Similar results have been found for NP (e.g. [10]). Hence, our hypotheses focus on 1) whether RP similarly promotes trust and 2) the interaction effects of RP, SP, and NP. We control for standard demographic variables, individual trusting disposition [24], environmental concern [25], and attitude towards home region [26].

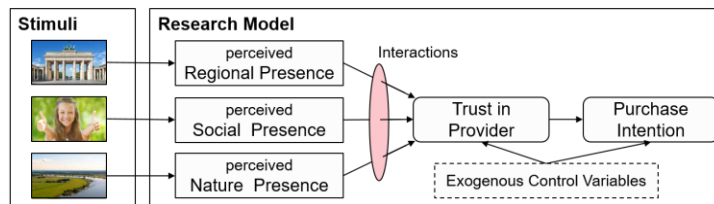


Figure 4. Research Model

Experiment Design. We plan to engage Prolific.ac [27] to recruit a German sample of around 350 participants (ensuring sufficient payment and attention checks). We will apply a full-factorial $2 \times 2 \times 2$ between-subjects design with regional, social, and nature cues as binary treatment variables (either present or not). Participants engage on a mock-up website with randomly assigned stimulus combinations. Social and nature imagery is drawn from provider websites while regional imagery will be participant specific. Therefore, participants will be asked to state their home region and the survey tool will build on this answer to draw stimulus material from a database of ~500 landmark images. We use validated 7-point Likert scales [28, 29]. For Social Presence, we draw on Gefen and Straub [28] and derive the NP and RP instruments from that.

5 Discussion & Concluding Remarks

Findings. Two out of three regional energy providers use regional, social, or nature imagery on their landing webpages. The frequent use of regional imagery (>20%)

suggests that providers intentionally employ it to influence consumer behavior. When regional imagery is used, we observe a variety of different motives – with a tendency towards cityscapes (in particular aerial perspectives).

Theoretical Contributions. By addressing the “surprisingly understudied topic of regionality” (p. 44) [30], our (proposed) study promises contributions to IS research in multiple ways. First, while the usage and benefits of SP (and NP) cues are widely accepted in research on human-computer interaction, the proposed study could provide arguments to also include regional cues in future research projects. Second, we introduce a new theoretical concept that is potentially capable of capturing an important aspect of user perceptions when dealing or interacting with online interfaces. Motivated by the rich literature on the SP phenomenon, we propose a tangible measure for perceptions of regionality or one’s home region. This alone provides a tool for shedding further light on the concept of (Consumer) Ethnocentrism which hypothesizes favorable consumer attitudes towards products based on their and the products’ origin [13]. We extend this view in the sense that origin-match may not always be clear, let alone a dichotomous matter. In order to capture this, the proposed scale of RP allows to assess consumers’ perspective. Third, with regard to tangible IS solutions such as load management [31] or peer-to-peer energy markets [32], we offer a new mean to generate trust in the energy provider that goes beyond the trust building letters to consumers proposed by Stenner et al. [31].

Practical Implications. For practitioners, our study yields new insights for the improvement of web interfaces in the energy sector. This sector has been subject to numerous calls for Green IS research to counter climate change [e.g. 33–35]. In particular, IS solutions to “support decision making for more sustainable practices” (p.527) are needed [36]. Our findings could inform the design of web interfaces to support consumers in their decision making in favor of more renewable and regional (i.e., decentral) products and hence drive the sector’s transition towards the triangular objective of *digitalization*, *decentralization*, and *decarbonization* [37]. Against this background, the design of websites is particularly relevant for regional energy providers as their websites are one of their major digital sales channels [38]. Also, insights gained in this study can be applied to other interface designs in the energy sector. With the rise of the platform economy in the energy sector, trust-infusing platform interfaces will be critical for the sectors’ platformization and sustainabilization [39].

Limitations & Future Work. First, we have focused on imagery in this study. While this may be the most obvious cue type, we plan to expand our study to other elements such as textual keys (e.g. “Your partner from the region”). Second, our work focuses on energy providers as trust target, as suggested by [40]. Future work should also consider additional trust targets (e.g. the website itself). Third, the presented findings could be misused by non-regional providers and lead to a situation in which “consumers may intentionally be deceived” (p. 43) [30]. Further work should analyze this phenomenon of *regional washing* and assess discrepancies between perceived regionality and geographic proximity. Fourth, study 2 is drawing on a variance-based approach. Future work could methodically triangulate and apply additional analytical angles such as qualitative comparative analysis [41].

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