

Investigating the Effect of Social Media on Trust Building in Customer-Supplier Relationships

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Abstract: Trust is a concept that has been widely studied in e-commerce since it represents a key issue in building successful customer-supplier relationships. In this sense, social software represents a powerful channel for establishing a direct communication with customers. As a consequence, companies are now investing in social media for building their social digital brand and strengthening relationships with their customers. In this paper we investigate the role of social media in the process of trust building, with particular attention to the case of small companies. Our findings show that social media contribute to build affective trust more than traditional websites, by fostering the affective commitment of customers.

1 INTRODUCTION

Nowadays, interpersonal communication is increasingly affected by the wide diffusion of social software. Most people and companies daily manage their digital identity on multiple online social networks. As an evidence of this, for example, the current number of monthly active users of Facebook has recently reached 1 billion, of which 655 million are active on a daily basis.

Social software also holds great potential for business as it represents a powerful marketing channel for establishing a direct communication with the customers (Blanchard, 2011). Several companies are now investing in social media for building their social digital brand and strengthening trust-based relationships with their customers. The reason for success of social media originates from the possibility to manage relationships with customers in a ‘people to people’ fashion. In fact, trust building is a crucial issue in commerce (Büttner and Göritz, 2008) and it is established with the salesperson, rather than with respect to a brand (Doney and Cannon, 1995). The sales forces play a key role in interfacing with customers if they are able to appeal to the peripheral route to persuasion based on emotional appraisal (Petty and Cacioppo, 1986) Compared to traditional websites, social media allow suppliers to realize this behavior in a virtual environment and provide customers with the

possibility of perceiving a company as closer, more reachable and concerned about their needs (Blanchard, 2011). Aiming at enhancing trust building, a company should consider exploiting affective appraisal as a strategy. In this sense, social media offer the possibility to surrogate the affective channel of face-to-face traditional interaction with customers and enhance their perception of a company’s trustworthiness and benevolence (Blanchard, 2011). This holds not only for large enterprises but also for small companies, which can benefit from the popularity of social networks as a modern version of traditional word of mouth (Tvesovat and Kouznetsov, 2011).

In this paper, we investigate the role of social media on trust building in the very early stage of a customer-supplier relationship, i.e., based on the first impression provided by a company’s online image. The study described in this paper extends a previous pilot experiment performed with 19 students with background on computer science (Calefato et al., 2013). The pilot study provided insights on how to improve the design of the experiment, with particular focus on the clear distinction between the information elements involved in the two web conditions (i.e. social media vs. traditional websites). The remainder of the paper is structured as follows. We first review the existing theories on trust and provide explanation on how the different information elements available in the two web modalities (i.e., social media vs. traditional

websites) relate to trust antecedents. Then, we present our research hypothesis, the design and the findings of our experiment. Hence, we discuss the threats to validity. Finally, we conclude by providing the discussion and directions for future work.

2 BACKGROUND AND MOTIVATION

2.1 Definition of Trust and Trust Build

Trust is a concept that has been widely studied in several research domains (Rusman et al., 2010), from cognitive science (Castelfranchi and Falcone, 2000) to economy (Doney and Cannon, 1995), and more recently also in software engineering (Al-Ani and Redmiles, 2009; Schumann et al., 2013). According to Hung et al. (2004), trust may be defined as the belief that the trustee will behave according to our expectation. As far as marketing is concerned, several other definitions of trust have been provided. We consider a good starting point the one provided by Doney and Cannon (1995) who define trust as “the perceived credibility and benevolence of a target of trust”. Both definitions involve the propensity of the trustor to take the risk of trusting the trustee. The trustor’s decision is based on both a cognitive and affective appraisal of existing information about the trustee, either statically available or dynamically derived from the observation of the trustee’s behavior in a medium- or long-term interaction.

2.2 Trust Modeling

The literature proposes several approaches for fostering trust (Blanchard, 2001; Hacker et al., 2013) and examines the nature of trust between persons and in organizations (Doney and Cannon, 1995; Mayer et al., 1995; Schoorman et al., 2007). The underlying idea of these studies is that the process of trust building mainly develops along several dimensions that can be identified as trust antecedents (Rusman, 2010), i.e., the properties of the trustee that trigger the trustor’s cognitive appraisal when assessing the trustworthiness of the others. With respect to the commercial domain, the envisaged model to adopt in this study is an extension of the ‘tripod’ model defined by Mayer et al. (1995), which is highly consistent with the point of view of researchers in this domain (Büttner and Göritz, 2008; Doney and Cannon, 1995). According to the tripod model, the trustworthiness of a person or

organization is assessed in terms of ability, benevolence, and integrity.

Ability is the capability of the trustee to complete a task, meet an obligation, and provide the answer to a request. It relates to the trustee’s professional skills, knowledge and the competence. It may be assessed by a trustor through the evaluation of available professional information (e.g., the description of the business as provided on a website or the curriculum vitae of a person applying for a job). *Benevolence* relates to the trustee level of courtesy, positive attitude, availability, intention to share information or resources, willingness to help, kindness and receptivity. A trustee that meets this requirement is usually perceived as caring about the trustor’s needs and goals. *Integrity* relates to a set of moral norms and trustee’s characteristics usually considered as good as, for example, integrity, honesty, fairness, loyalty, and discretion.

Regarding the commercial domain, McKnight et al. (1998) extended this model with a fourth dimension, that is, the predictability of the trustee’s behavior. *Predictability* is related to the concept of accountability by Rusman et al. (2010), i.e., the degree to which a person (i.e., the supplier) meets the expectations of the trustor (i.e., the purchaser) in terms of reliability and consistence of behavior.

All the mentioned antecedents are critical in the customer-supplier relationship. The customer (trustor) will base evaluation of the perceived trustworthiness and, hence, the decision to purchase from a given supplier (the trustee) on the appraisal of the available information in terms of his ability, benevolence, integrity, and predictability.

2.3 Cognitive and Affective Trust

The process of trust building has been also analyzed and defined by highlighting the difference between cognitive and affective trust (McAllister, 1995). Cognition-based trust involves deliberate appraisal of the trustee characteristics combined with the process of weighting the benefits of trusting over risks (Hung et al., 2004; Wilson et al., 2006). On the contrary, affective-based trust involves “one’s emotional bonds and sincere concern for the well-being of the others” (Hung et al., 2004). Consistently with our previous research (Calefato et al., 2013), in this study we maintain the mapping of the four antecedents into the cognitive and affective appraisal mechanism, as suggested in (Schumann et al., 2012). Specifically, the ability and predictability dimensions are assessed by means of cognitive elaboration of personal and professional

information. At the same time, affective-based appraisal leads to trust building along the dimensions of benevolence and integrity. Compared to traditional websites, social media provide customers with the possibility of assessing the dynamic behavior of the company owners, that is, their commitment in updating and sharing of information and news and in responding to the customers' feedback.

3 RESEARCH GOAL

3.1 Study Domain

The focus of this work is to provide an insight on the way social media affect trust building based on first impression. The scenario is the one in which customers, who don't know the companies, need to purchase a product by just relying on the information on the Web. We selected two small companies operating both in the food domain because: (i) quality is assessed according to common-sense based criteria; (ii) the evaluation process does not require any particular skill or knowledge. Company A is an organic restaurant whereas company B is a manufacturer of cake and bakery products. Both companies started their activity about one year ago and developed marketing strategies that involve strong web presence.

3.2 Research Hypothesis

In our model, we assume that cognition-based trust building is triggered by appraisal of professional information that can be usually acquired through a traditional website. On the other hand, social web can help to provide a more informal, closer interaction style between a company or a salesperson and their customers (e.g., answering to positive and negative comments on social media platforms). Therefore, social media may be exploited to enhance trust building by enforcing the affective route to persuasion. Previous research mainly focuses on trust towards traditional websites but does not include online companies. An investigation of the potential contribution of social media on affective trust building would extend the body of knowledge about trust building in e-commerce.

We hypothesize that being able to monitor a company's behavior on social networks could affect trust building along the benevolence and integrity dimensions more than traditional websites. In other words, we argue that traditional websites (content-

oriented) and social media (interaction-oriented) may have a different effect on trust building in customer-supplier relationships.

Accordingly, our main hypotheses, the context of in customer-supplier relationships, are the followings:

H_{aff} – Social media foster *affective trust* more than traditional websites.

H_{cog} - Traditional websites foster *cognitive trust* more than social media.

4 EXPERIMENTAL DESIGN

The study followed a 2 x 2 design (see Table 1). The Web mode (Traditional Website vs. Social Media) is the independent variable, while the company (Company A and Company B) is a blocking factor. In fact, according to the research question, in this study we want to investigate the effect of websites and social media on trust.

Table 1: Study design

	Company A	Company B
Traditional Website	Group 1	Group 2
Social Media	Group 2	Group 1

We recruited 44 participants from the Computer Science master courses and the undergraduate degree in Physics (66% male, 24 as average age). Each subject evaluated the perceived trustworthiness of both companies, following one of the two possible combinations reported in Table 1. In addition, for each group the order of web mode visualization was also randomized and equally distributed among subjects, to avoid any bias due to the sequence of information presentation.

Trust is evaluated by measuring the perceived trustworthiness of the company, according to three antecedents: ability, predictability, and benevolence. Consistently with literature on trust building based on first impression (Schumann et al. 2012), we do not assess the company's integrity because integrity is peculiar of long-term relationships. In our study, instead, the subjects did not know the companies before and it could be impossible for them to guess a company's integrity based on the analysis of the website or the fan page.

The evaluation along the three dimensions is mapped into the broader concept of affective and cognitive trust using both questionnaires and

interviews. For each trust antecedent, a set of questions was defined, by integrating guidelines and items included in questionnaires from studies about trust elicitation and perception based on first impression (Büttner and Göritz, 2008; Rusman, 2011; Rusman et al. 2010). In our questionnaire (Calefato et al., 2013), we included 21 questions overall: 7 for ability and 3 for predictability (cognitive trust); 11 for benevolence (affective trust). The subjects were requested to evaluate the perceived trustworthiness of a given company by filling out the questionnaire based on Likert scale from 1 to 5.

According to previous research (Mayer, 1995), it is reasonable to assume that trust building might be influenced by personal propensity to trust. In our scenario, two factors may play a role in the individual propensity to trust, that is, their familiarity with Facebook and e-commerce, respectively. To avoid any bias, we treat these two variables as covariates. Therefore, subjects were requested to indicate, on a 4-point Likert scale, how often they use Facebook and make online purchases.

4.1 Procedure

The experiment took place in two rounds, in a controlled environment, involving half of the subjects in the lab at the same time. An experimenter performed an introduction to the subjects, by illustrating the scenario and providing detailed instructions on the procedure for task execution. The experimenter remained in the room to ensure that the participants could not interact nor exchange opinions about the two companies and to answer subjects' questions during the experiment. Each subject worked independently and accessed the experimental procedure through the web.

At the beginning of the experiment, the subjects answered a short questionnaire aimed at assessing how familiar they are with web technologies, social networking and e-commerce in order to assess their actual propensity to evaluate trustworthiness of companies based on their web presence. Then, the subjects learned about the experimental task, related to the choice of one company for a catering service. The scenario of the catering was selected to mitigate the high propensity to risk taking behavior that could derive from the perception of a low inherent risk associated to the food and restaurant retail class. Hence, rather than asking where they would have lunch, we requested subjects to express their preference with respect to a purchase involving a considerable amount of money and having also

social implications (i.e., offering a buffet is associated also to self-image in social context).

Once the scenario was presented, participants were requested to visualize and rate two company profiles (either the company's website or its Facebook profile), according to the random presentation order described before. Subjects were explicitly requested to explore the company profile no longer than 5 minutes. As a consequence, each of the two phases lasted at most 15 minutes, including both the visualization of the webpage of the company and answering the questionnaire for the trustworthiness evaluation. A pre-condition for the participation was that the subject did not know any of the two companies and had never browsed any of the two company websites.

At the end of the experiment, a second questionnaire based on self-report was provided to verify the subjects' preference between the two companies with respect to the catering scenario as well as the motivation for their choice. Moreover, at the end of the web-based part of the experiment, an experimenter interviewed the participants to clarify the reasons for the preference towards one of the two companies as expressed in the questionnaires. The subjects provided their opinions and perceptions about the role of both traditional websites and social media in web marketing. These informal, unstructured interviews gave us a better insight on which characteristics of both web modes affect the trust building along the affective and cognitive dimensions.

5 RESULTS

5.1 Analysis of the Questionnaires

Figure 1 summarizes the answers provided by the subjects to the question related to cognitive and affective trust, grouped according to the web condition. We observe that, on average, the level of the perceived cognitive trust (mean = 3.8) stays unvaried in the two experimental settings. As for the traditional website condition, we observe that on average the level of perceived cognitive trusts is slightly higher than the level of affective trust (3.53). With respect to social media condition, subjects perceived almost the same level of cognitive and affective trust (3.8 vs. 3.79, respectively) due to the increased perception of trustworthiness along the affective dimension.

On a 4-point Likert scale, all the participants except for three were Facebook users on a daily

basis (mean = 3.41, std = 1.01). Besides, they declared to have quite different habits regarding the use of the Internet for their purchases (mean = 1.82, std = .75). In particular, subjects with a background in computer science declared they often make purchases on the Web (mean = 2.58) in contrast with students with background in Physics who declared to be not as familiar with e-commerce (1.07). As a consequence, while subjects' present a quite homogeneous familiarity with the Web and Facebook, they appear to be not equally familiar with the appraisal mechanism to assess a company trustworthiness based on its online image, which is necessary when buying on the Internet. Therefore, to test our hypotheses, we performed an analysis of covariance (ANCOVA) on the two dependent variables, i.e., the levels of cognitive and affective trustworthiness of companies, as perceived by subjects. The SME is treated as a blocking factor while the use of Facebook and frequency of online purchases are the covariates. The ANCOVA, in fact, increases the statistical validity of the analysis of variance by adjusting differences due to existing factors. In our case, the propensity to trust, expressed in terms of familiarity with social media and e-commerce, may determine initial differences that are not due to the independent variable of our study design (i.e., the web condition).

Results are reported in Table 2, with statistically significant values in bold italic ($\alpha = .05$). The test shows that propensity to trust does not have any significant correlation with the established level of initial trust (neither affective nor cognitive). On the contrary, we observe a significant effect of the Web mode on affective trust ($F = 7.263, p = .009$), but not on cognitive trust ($F = .003, p = .954$). The test also revealed that the role of the Company as a blocking factor is negligible.

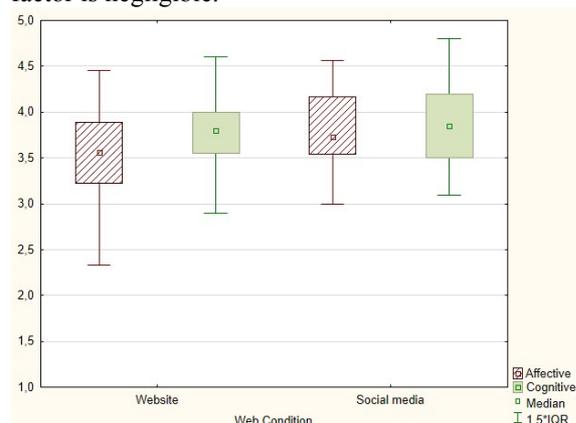


Figure 1. Levels of perceived trust, grouped by experimental condition (traditional website vs. social media)

5.2 Analysis of Self-report Questionnaires and Interviews

5.2.1 The impact of social media on affective trust

When explicitly requested to state which company they perceived as more interested in the customers' needs and preferences ("Which company seems to be more concerned about the wellbeing and needs of its customers? Why?"), 61% of subjects expressed in favor of the company for which they examined the Facebook page. The analysis of variance, performed on the data collected through the final questionnaire based on self-report, confirms a statistically significant correlation between the social media condition and the company indicated as more benevolent and concerned about its customers' wellbeing and satisfaction ($F = 15.53, p = .000$). The subjects interpreted as signs of benevolence the company intention to share professional knowledge (i.e., through cooking courses open to customers), the daily updates of the fanpage with pictures and news, and the public exposure to customers' feedback and personalization requests.

5.2.2 Impact of social media impacts on cognitive trust

When reporting about the perceived competence and predictability of a company ("Which company do you perceive as the more reliable? Why?", "Which company seems more competent to you? Why?"), 45% of the participants refer to information elements that are peculiar of social media.

In particular, they declared to have been positively impressed by direct exposure to customers' feedback and the high frequency of the updates on the Facebook page with pictures about food and staff. Yet, according to the analysis of variance described in the previous section, no statistical significance is observed for the relationship between web mode and cognitive trust.

5.2.3 Personal preference vs. perceived trustworthiness

We observed an unexpected behavior of subjects when explicitly requested to state which company they would select for their meal and which one for the catering scenario. This discrepancy occurred in 70% of cases (31 over 44 subjects). In three cases, the subjects motivated this discrepancy stating that they felt to not have enough information to put their

complete trust in one of the two companies for the catering task, even if they expressed a preference for their own meal. In three cases, subjects indicated the company they perceived as more reliable as suitable for the catering service; instead, they choose the restaurant with the warmer and friendlier atmosphere, as perceived from the pictures on the social media, for their meal. In the remaining of cases (43%), subjects chose for the catering the company they perceived as more competent and reliable, as reported in their answers, which not necessarily corresponds to the one meeting their personal preferences about food. In general, in all these cases, the subjects explicitly declared they evaluated the benevolence of the company based on the pictures of the staff and the positive ‘atmosphere’ conveyed by the social media.

Table 2. Analysis of covariance and effect of the web mode on affective trust

	Dependent Variable (TRUST)	F	p
Use of Facebook	Cognitive	0	0,991
	Affective	0,345	0,558
Frequency of Online Purchase	Cognitive	0,863	0,356
	Affective	0	0,982
Web Mode	Cognitive	0,003	0,954
	Affective	7,263	0,009
Company	Cognitive	1,52	0,221
	Affective	0,287	0,594
Web Mode * Company	Cognitive	0,982	0,325
	Affective	2,797	0,098

5.2.4 The importance of accessing multiple sources of information

In the final interview with one of the experimenters and in the last item of the self-report questionnaire, subjects were left free to express their impression and general comments about the experiment. Four subjects declared that they either did not express any preference with respect to the catering scenario or struggled in finding an answer. They justified their lack of trust by claiming that having both websites and social media available for both companies would have been the best option in such a critical context. The discussion that originated from this

claim helped us to identify a recurring schema adopted by the subjects for gathering information about unknown companies. This approach involves gathering professional information from the traditional website and impression of the benevolence and availability towards customers through the community on social media. In particular, this kind of participants tend to first search for customers’ feedback on social media; then, in case of satisfying and positive comments, they visit the website to access more business related information, such as prices, delivery times, location of the store, and contact information.

6 DISCUSSION

We tested two hypotheses, namely H_{aff} (social media foster affective trust more than as traditional websites) and H_{cog} (traditional websites foster cognitive trust more than social media). As for the first hypothesis H_{aff} , the findings from the experiment show that social media have an impact on affective trust in a first impression setting. Being able to access the company information through a Facebook fan page provides the possibility to evaluate information that that trigger affective appraisal. In particular, the subjects involved in this experiment had the occasion for assessing the perceived vendors’ benevolence, that is, their open and positive disposition towards the customers’ needs and satisfaction, which is consistent with our assumption of social media reflecting interpersonal dynamics such as peer-to-peer relationships and word-of-mouth (Blanchard, 2011). This result is confirmed by the analysis of the answers to the self-report questionnaire, where subjects indicated as more benevolent the company in the social media condition. Moreover, this is consistent with the findings of previous research on trust building based on first impression (Schumann et al. 2012).

Conversely, our findings did not support the second hypothesis H_{cog} that websites foster cognitive trust more than social media. Instead, from the analysis of questionnaires and follow-up interviews, we observed that social media might foster trust growth also along the cognitive dimension. As declared by the subjects involved in the experiment, companies directly exposing themselves to customers’ feedback and personalization requests on social media are more credible and self-confident about the higher quality of goods and services they provide. Moreover, 45% of subjects reported that they perceived as more competent and reliable the

company for which a wide range of pictures was available about staff and products, which is peculiar of the social media condition. This is consistent with literature on the relationship between online photos and trust (Fogg, 2002; Olson et al., 2002; Riegelsberger et al., 2003; Steinbrueck et al., 2002). No statistical significance is observed about the impact of social media on cognitive trust. Still, it is interesting to observe how these subjects explicitly associate the company presence on social media *per se* to the perception of its ability and predictability. In other words, being exposed to customers' feedback on social networks is perceived as an implicit statement of quality in the goods and services provided by a company. In particular, the direct involvement of the owner in the social media management is perceived as a cue of his ability in managing the company business. These findings are consistent with the results of the study by Schumann et al. (2012), highlighting how the access to information elements associated to the affective dimension may enhance also cognitive trust.

We also observed that some of the participants explicitly declared to have troubles in choosing among the two companies, with respect to the catering scenario and complained that it would have been necessary for them to have access to both the website and the Facebook page in order to form a valid opinion about the SME's trustworthiness. For these subjects, social media constitute a source of information used for a preliminary assessment of the trustworthiness of an unknown company. Further details are investigated using traditional websites only in case of perceived friendliness and attention to the customers' needs or in case of explicit positive feedback of the community. This is consistent with the findings of the study by de Ruyter et al. (2001) about the role of affective commitment in the trust building process.

Another interesting behavior was observed, that is the discrepancy between the company chosen for the catering task and the one selected for an informal and occasional meal, occurring in the 70% of cases. As far as the catering scenario is concerned, subjects tended to prefer the company perceived as the more competent and reliable, regardless of the web condition. On the contrary, most subjects declared they would have a meal at the company that either matches their personal preferences about food or is perceived as more friendly and open to welcome customers in an informal atmosphere. They associate this benevolent attitude to the frequent update of food and staff pictures, mainly on the social networks. This is consistent with previous research

on the perception of risk and deliberation in choice of the retailer (Büttner et al., 2006), demonstrating how the perceived trustworthiness depend also on the perceived risk of a purchase. In fact, according to research on persuasion (Petty and Cacioppo, 1986), when the perceived risk is high (as for the catering scenario), people process more content-related features of a website, while they prefer more peripheral cues, such as pictures, if the perceived risk is lower (as for the situation of a lunch with a friend).

As far as validity is concerned, the current study presents some limitations. Most participants involved were people declaring a high level of familiarity with web technologies and social media, also due to their age (average 24). Moreover, the study described in this paper was performed with a limited pool of 44 participants and most of them are male (66%). To generalize and validate the findings of this on-going research, it would be useful to repeat the study with a larger number of subjects. Moreover, it could be of great importance to involve, in future replications, people with more varied background and age, as well as to balance the gender distribution, to test the role of these factors on the propensity to trust in web-based scenarios.

7 CONCLUSIONS

We have studied the role of social media in the process of trust building in the scenario of a small company that wants to improve its online presence and build a trustworthy online image of its brand. With respect to first impression, we found that social media foster affective trust more than traditional websites, by enhancing the perception of a vendor's benevolence and openness towards the consumers. These findings suggest that companies would benefit from investing their time in establishing enjoyable 'peer-to-peer' relationships with their customers.

As a future work, we plan to repeat the study involving people with different background, age and level of familiarity with the Internet, in order to test the role of these factors on the propensity to trust in web-based scenarios. Furthermore, since this study is based on a relatively low risk retail category, it could be useful to compare these results with analogous studies in other retail categories, such as pharmacy or expensive technology, where the customer's tendency to trust is reduced by the higher perceived inherent risk of the purchase.

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