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The Role of Social Media in Affective Trust Building in Customer-Supplier Relationships

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Abstract— Trust represents a key issue in building successful customer-supplier relationships. In this sense, social software represents a powerful means for fostering trust by establishing a direct, more personal communication channel with customers. Therefore, companies are now investing in social media for building their social digital brand and strengthening relationships with their customers. In this paper, we presented two experiments by means of which we investigated the role of traditional websites and social media in trust building along the cognitive and affective dimensions. We hypothesize that traditional websites (content-oriented) and social media (interaction-oriented) may have a different effect on trust building in customer-supplier relationships, based on the first impression provided to potential customers. Although additional research is still needed, our findings add to the existing body of evidence that both cognitive and affective trust can be successfully fostered through online presence. Specifically, social media provide companies with tools to communicate benevolence to potential customer and, therefore, foster the affective commitment of customers. Traditional websites, instead, are more appropriate for communicating the competence and reliability of a company, by fostering trust building along the cognitive dimension. The results of our studies provide implications for researchers and practitioners, by highlighting the importance of combining the two media for effectively building a trustworthy online company image.

Keywords—Human factors, Affective Computing, Controlled Experiment, Social Media, Trust Building

1 Introduction

Nowadays several companies are investing in social media for building their social digital brand and strengthening trust-based relationships with their customers. The reason for the success of social media in business originates from the possibility to manage relationships with customers in a 'people to people' fashion. In fact, trust, a key issue in commerce [4], is established with a salesperson rather than with a brand. The sale forces play a key

role in interfacing with customers [13] if they are able to appeal to 'peripheral routes' to persuasion based on emotional appraisal [31]. 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 and concerned about their needs; or, according to Blanchard [3], simply more *trustworthy*.

Trust is a concept that has been widely studied in several research domains [34], from cognitive science [8] to economy [4, 13] and more recently also in software engineering [1, 36]. According to Hung *et al.* [21], 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 & Cannon [13] 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 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-long term interaction.

In the e-commerce domain, in order to enhance trust building, a company should consider exploiting affective appraisal as a key strategy too. In fact, Liu & Hung [25] have demonstrated that, by enhancing the perception of integrity and benevolence, companies can improve customers' trust towards their online stores. Furthermore, as noted by Blanchard [3], 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. 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 [37, 39]. In this sense, social media have shown to act not only as an instrument for facilitating online interaction but also as powerful aggregators of virtual communities.

In this paper, we describe a couple of studies, one controlled experiment and its replication, aimed at investigating the role of social media on trust building in the very early stage of a customer-supplier relationship, i.e., based on first impression provided by a company's online image. The scenario is the one in which customers, who do not know the companies, need to purchase a product/service by just relying on the information available on the Web.

The remainder of the paper is structured as follows. In Section 2, we first review the existing theories on trust and provide explanation on how the different information available in the two web modalities (i.e., social media vs. traditional websites) relates to trust antecedents; then, we present our research hypotheses. In Section 3 and 4, respectively, we report the design and the results of our first experiment. In section 5 and 6, respectively, we present the replication of the first experiment and the results. A discussion of the overall findings from the two controlled experiments is provided in Section 7, along with their implications and the identified threats to validity. A comparison of our findings against related work is presented in Section 8. Finally, we draw conclusions in Section 9.

2 Theoretical Framework and Experimental Hypotheses

In this section, we review existing literature to build the theoretical framework that we use to derive our research hypotheses.

2.1 Trust Definition and Trust Modeling: Cognitive and Affective Trust

Existing literature proposes several approaches for fostering trust [1, 18] and examines the nature of trust between persons and in organizations [12, 26, 35]. The underlying idea of these studies is that the process of trust building mainly develops along several dimensions that Rusman *et al.* [34] call 'trust antecedents', 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 our experiments is an extension of the 'tripod' model defined by Mayer *et al.* [26], which is highly consistent with previous research in the same domain [4, 6, 13]. 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 the trustor through the evaluation of available information (e.g., the description of the business provided on a company's 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 a person or company that cares about the trustor's needs and goals. *Integrity* relates to a set of

moral norms and trustee's characteristic usually considered as good as, for example, integrity, honesty, fairness, loyalty, and discretion.

McKnight *et al.* [28] extend this model with a fourth dimension, that is, the predictability of the trustee's behavior. *Predictability*, a concept related to the notion of accountability introduced by Rusman *et al.* [34], that is, the degree to which a person (the supplier, in commercial domain) meets the expectations of the trustor (i.e., the purchaser) in terms of reliability and consistence of behavior.

All the mentioned antecedents play a fundamental role in the customer-supplier relationship. The customer (trustor) will base the decision to purchase from a given supplier (the trustee) on the appraisal of available information that will enable the evaluation of the perceived trustworthiness in terms of ability, benevolence, integrity, and predictability. As shown by previous research by Rusman *et al.* [34], people assess trustworthiness by collecting and evaluating signs of the trustee's characteristics and behavior, i.e., the so called 'information elements.' Besides, different information elements about the trustee may have a different impact on trust building, by directly referring to specific trust antecedents. For example, professional information may be used to evaluate the trustee's ability and predictability, whereas personal information may enhance trust in terms of perceived benevolence, as suggested by Schumann *et al.* [36].

The process of trust building has been also analyzed and defined by McAllister [27] who highlights the difference between cognitive and affective trust. Accordingly, cognition-based trust involves the deliberate appraisal of the trustee characteristics combined with the process of weighting the benefits of trusting over risks, as also confirmed by the research of Hung *et al.* [21] and Wilson *et al.* [40]. On the contrary, affective-based trust involves "*one's emotional bonds and sincere concern for the well-being of the others*" and might be seen as more related to the "*intentionality process*" [21].

In Fig. 1, we illustrate the resulting framework used in this paper, obtained by extending the tripod model by Mayer *et al.* [26] with the predictability dimension as defined by McKnight *et al.* [28]. As such, the resulting model involves four antecedents, which are mapped into the cognitive and affective appraisal mechanisms, as suggested by Schumann *et al* [36]. Specifically, according to the model, 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. Finally, the model in Fig. 1 is used to drive the definition of two hypotheses presented next.

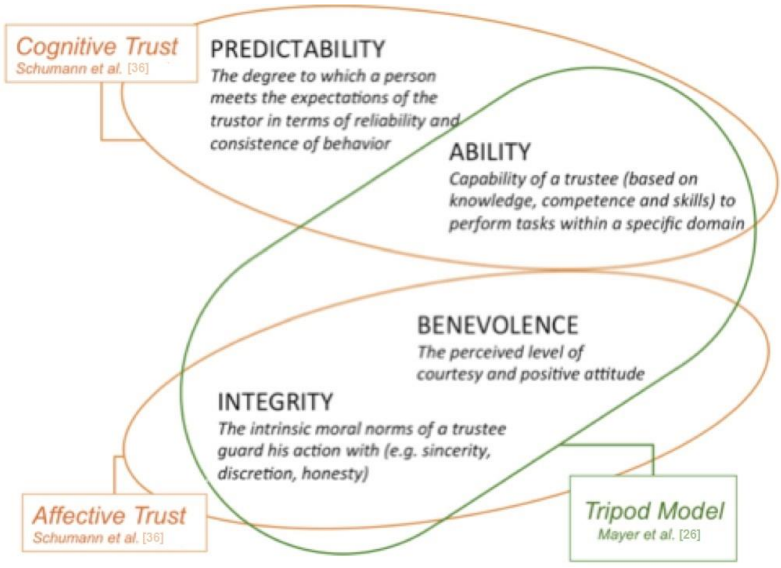

Figure 1. Mapping multidimensional models of trust antecedents into the Affective and Cognitive dimensions.

2.3 Research Hypotheses

In all interaction contexts, from our everyday life to the work environment, human relationships require trust to be established as soon as possible. The fastest way to foster trust building is by providing information on the other party. According to the discussion provided so far, we formulate our hypotheses about the different roles of social media and traditional websites in the trust building process occurring between a supplier and its customers.

According to Doney & Cannon [13], trustworthiness is assessed by the trustor evaluating the available information using different appraisal processes. The 'capability process' involves the evaluation of information about the ability of the trustee to meet obligations. This process relies on the cognitive elaboration of personal and professional information that can be exhaustively presented on a traditional website (see Table of Information Elements in Appendix I).

At the same time, affective-based appraisal leads to trust building along the dimensions of benevolence and integrity. In other words, evaluating the trustee ability to perform a task means that the trustor is purely rational, although emotions influence this process. Instead, assessing the others' moral norms or benevolence is a process that is triggered by affective appraisal, based on commonalty and on the perception of the others' attention to our needs. This 'intentionality process' (see Doney & Cannon [13]) is used by the trustor to interpret

words and behavior of the trustee in order to infer her values and norms and, as a consequence, her goals. While this can be better achieved in traditional marketing paradigms, traditional websites do not offer the possibility of exploiting the human factors typically involved in face-to-face interactions. On the contrary, social media offer the possibility of managing the relationships with customers in a 'people to people' fashion, which is among the key factors of success of social media marketing. Moreover, online social networks act as a 'force multiplier' of a supplier's social presence by exploiting weak ties in the graph of connections of each user and influencing the way a business is perceived by people (see Blanchard [3]). Furthermore, in social media, customers' feedback is publicly available for all potential buyers, who can also assess how fast and how carefully a supplier replies to others' positive and negative comments or requests (see Appendix I). This is relevant also for the 'transference process' (see Doney & Cannon [13]), which exploits third parties' opinions to assess the trustee's benevolence and competence. Therefore, social media may be exploited to enhance trust building by enforcing the affective route to persuasion.

According to the theoretical framework presented and to the discussion provided so far, we relate the process of trust building to both the direct evaluation of the available information of the trustee and the evaluation of third parties' opinions. In this study, we focus specifically on information appraisal by considering the effect of different media on information provision, i.e., the impact of traditional websites and social media on trust in a first impression setting. In particular, we refer to the traditional website as a content-oriented paradigm of information presentation. Instead, social media allow simulating the observation of a company's behavior while interacting with its customers. According to Blanchard [3], social media give companies the possibility of establishing peer-to-peer relationships over the Web by providing tools for implementing a social behavior online, hence affecting the perception of social presence and benevolence of an online vendor. In fact, by using social web, a company can reply to critiques or negative comments, proactively take care of the relationship with customers, and enhance the customers' perception of its openness and reachability by increasing its web presence. As further highlighted by Blanchard [3], social media may be used to successfully simulate a one-to-one relationship and amplify the perception of these dynamics of personal, dedicated care that was typical of old markets. Furthermore, previous evidence has been provided by research in Human-Computer Interaction about the impact of a vendor's social presence, as perceived through the web interface, on customers' behavior in e-commerce (see Hassanein & Head [19]), where the concept of social presence refer to the "*warmth, feeling of*

human contact, sociability, and sensitivity" expressed by the medium. In particular, Hassanein & Head [19] investigate the impact of socially rich websites on the customer perception of the vendor's social presence, showing how e-commerce vendors may enhance consumers' trust by boosting the perception of their social presence through the inclusion of socially rich texts and pictures in the design of their websites. In our study, we share this vision of social presence being perceived as a "*sense of human warmth and sociability*," which can be expressed through socially rich information elements typically provided by social media as tools for simulating actual interaction with other humans (i.e., status updates about the company's daily activities and plans, pictures and video of staff and customers, prompt replies to customers' comments and feedback – see Appendix I). When included in a user interface, these information elements are able to enhance social presence by simulating interaction with humans (see Hassanein & Head [19], Gefen & Straub [15], and Riegelsberger *et al.* [32]).

To summarize, we argue that, on one hand, cognition-based trust building is triggered by appraisal of professional information that can be usually acquired through a traditional website. Therefore, it is reasonable to expect that information conveyed through traditional websites (content-oriented) triggers appraisal mechanisms on the cognitive dimension. On the other hand, the web can also help to provide a more informal, closer interaction style between a company or a salesperson and their customers through social media platforms. Therefore, it is reasonable to expect that information conveyed through social media (interaction-oriented) triggers appraisal mechanisms on the affective dimension.

Accordingly, in the context of customer-supplier relationships in electronic commerce, our hypotheses are defined as follows:

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

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

3 First Controlled Experiment

In this section, we describe the experimental design and the procedure of the first controlled experiment (*experiment 1*, hereinafter) [7].

Overall, we recruited 44 participants from the Computer Science master courses and the undergraduate degree in Physics (66% male, 24 as average age). These students were requested to evaluate the perceived trust-

worthiness of companies along the cognitive and affective dimensions, based on first impression. More specifically, according to the experimental task, they were asked to access either the website or the Facebook page of a couple of companies and select one for the catering service for their own graduation party.

In selecting the two companies, we performed a thorough analysis of the information available on their websites and Facebook profiles, by referring to the set of information elements reported in Appendix I and defined according to the findings of previous research by Rusman *et al.* [34]. For example, the *Description of experience and awards* element is typically available in companies' websites whereas the *Pictures of customers in the restaurant* element is present on their Facebook pages. Such analysis was necessary to ensure that the selected companies made an equivalent use of the two web modes by including the same information elements in their communication strategy.

3.1 Experimental Design

The experiment followed a randomized complete block design (see Table 1). The design involves:

- One independent variable: ***Web mode***, with two levels, *Traditional Website* vs. *Social Media*;
- One blocking factor ***Company***, with two levels for each experiment (*Company A1* and *B1*);
- Two dependent variables: ***Cognitive Trust*** and ***Affective Trust***.

We selected two small companies, both operating in the food domain because (i) quality is assessed according to common sense based criteria and (ii) the evaluation process does not require any particular skill or knowledge. In particular, Company A1 is an organic restaurant whereas company B1 is a manufacturer of cake and bakery products. Besides, both companies started their activity at the same time (about one year before the experiment) and developed similar marketing strategies that involve strong web presence. The companies *per se* are not of primary interest for our experiment and, as such, we treat them as two levels of a blocking factor in order to control their variability and, and thus, achieve greater accuracy.

Finally, according to Mayer *et al.* [26], it is reasonable to assume that trust building might be influenced by personal propensity to trust. In our scenario, in particular, two variables may play a role in the individual propensity to trust, that is, their familiarity with Facebook and e-commerce, respectively. Therefore, in order to

measures them, we assessed on a 4-point Likert scale (1=never, 4=daily) how often participants use Facebook and make online purchases. To exclude any bias, in our analyses we treated these two variables as covariates.

Table 1. Experimental design of experiment 1

Company / Web mode	**Company A1**	**Company B1**
Traditional Website	Group 1	Group 2
Social Media	Group 2	Group 1

3.2 Experimental Process

The experiment took place in a controlled environment and in two rounds, involving half of the subjects per round. An experimenter performed an introduction to the subjects by illustrating the scenario and providing detailed instructions on the procedure for task execution. During the experiment, at least two researchers remained in the room to answer their questions and ensure that the participants could neither interact nor exchange opinions about the two companies. Each subject worked independently and evaluated the perceived trustworthiness for 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, in order to avoid any bias due to the sequence of information presentation.

At the beginning of the experiment, the subjects answered a short questionnaire (further described in Section 3.4) aimed at assessing their familiarity with web technologies, social networking and e-commerce, and consequently measuring their individual propensity to trust companies on the web. Then, the subjects learned about the experimental task, i.e., the choice of one company for the catering service for their graduation party. The scenario of the catering was selected to mitigate the possibility of high propensity to risk taking behavior if subjects perceived the experimental task to have a low inherent risk associated. 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 because offering a buffet is associated also to self-image in social contexts.

Once the scenario was presented, participants were requested to visualize and rate the two companies' profiles (i.e., one company's website and the other company's Facebook profile), according to the random presentation order described before. All participants had individual access to the web to explore the companies' profile page and website on their own, for no longer than five minutes. After that, within 10 minutes, they filled out a first questionnaire (Q1) for the trustworthiness evaluation (see Fig. 2). Consequently, each of the two phases lasted at most 15 minutes. 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 profiles. Upon completing these two visualization phases, a second debriefing questionnaire (Q2) was administered. Finally, an experimenter interviewed the participants.

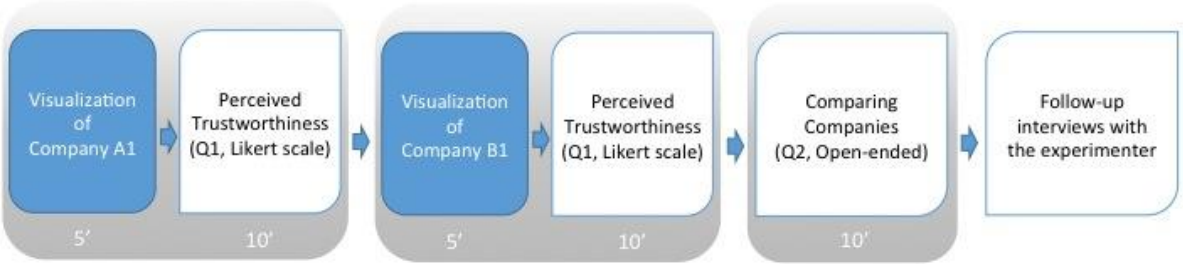

Figure 2. Experiment procedure

3.3 Data collection

The data sources available for the experiment are two questionnaires, plus the interviews. Specifically, trust was evaluated by measuring the perceived trustworthiness of a company with respect to the antecedents in our model.

The first questionnaire Q1 was administered twice, after the visualization of each of the two companies. The questionnaire was obtained by integrating guidelines and items included in questionnaires from studies about trust elicitation and perception based on first impression. In particular, we considered the TWAN schema proposed by Rusman [33, 34] and the experiment by Büttner & Göritz [4] on the perception of trustworthiness in e-commerce. Our questionnaire contains 26 closed questions, divided in four subsets, one for each trust antecedent dimension: 7 for *ability* and 3 for *predictability* (cognitive trust); 5 for *integrity* and 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 5-point Likert (1=totally disagree, 5=totally agree). The second debriefing

questionnaire Q2, instead, was administered at the end of the experiment. It contains only open-ended questions intended to verify the subjects' preference between the two companies with respect to the catering scenario as well as the motivation for their choice. Both questionnaires are fully available in Appendix II and III and are discussed in further detail later.

Finally, as per the interviews conducted at the end of the experiment, they were intended to clarify the reasons for the preference towards one of the two companies, as expressed in Q2. The interviews were conducted by one experimenter who wrote down subjects' opinions and their perceptions about the role of both traditional websites and social media in web marketing.

4 Results from Experiment 1

In this section, we report the results of the statistical analysis performed on the data collected from our first experiment, in order to test our hypotheses that websites and social media have a different impact on cognitive and affective trust. We first describe the results from the analysis of the closed-ended questions in questionnaire Q1. Then, we report the results from the open-ended questions in questionnaire Q2 and the final interviews.

4.1 Assessing the Appropriateness of Questionnaire Q1

In order to be sure that the questions actually captured the distinction between cognitive- and affective-based trust, we first performed a confirmatory factor analysis. Principal component analysis is a procedure that discards poorly correlated questions and retains only those that account for a large amount of the total variance in the components data set, thus confirming the existence of the hypothesized components [23]. Specifically, we run a principal component analysis with varimax rotation on the 26 items of the Q1 questionnaire with two fixed factors, i.e., cognitive and affective trust.

A construct is deemed valid when items load mainly on their related factor, while showing lower loadings on other unrelated factors. The results show that the questions about the *Ability* and *Predictability* antecedents load as expected on the cognitive trust factor (see the coefficients reported in Appendix II). Analogously, the items used for assessing *Benevolence* load on the affective trust factor, except for question qB1, which was consequently removed. Finally, we found the items aimed at assessing *Integrity* to load on the cognitive dimen-

sion instead of the affective one as intended. Our speculation on this unexpected result is that the five *Integrity*-related questions were probably misperceived as an evaluation of companies' skills and expertise. In fact, according to the model designed by Rusman *et al.* [34], *Integrity* belongs to the *Internalized norms* antecedent, which rather refers to long-term relationship because the assessment of others' ethical norms and morality is developed over time. Instead, as our study focuses on trust building based on first impression, the subjects had no previous knowledge of the companies. Hence, our speculation is that they ended up confounding companies' integrity with their competence. Anyway, as *Integrity* could not be evaluated properly in our context based on first impression, we decided to drop the *Integrity* antecedent from the model as well as the related items qI1- qI5 from the analysis. This result is consistent with the approach adopted by previous research on fostering trust in first impression settings (see Schumann *et al.* [36]), where the internalized norms were deliberately excluded from the analysis.

Finally, we also performed scale reliability analysis to further determine the internal construct validity by assessing the extent to which a set of questions measures a single latent variable. We used the Cronbach's alpha coefficient [11], the most-widely used index of internal consistency in social sciences. The two Cronbach alpha indexes computed on the affective and cognitive components are, respectively, 82 and .89, both above the recommended threshold of 0.7 to affirm internal consistency. Hence, eventually, in the final version of questionnaire Q1 we retained 21 items (see Appendix III).

4.2 Analysis of Questionnaire Q1

We administered Q1 to the participants in order to indirectly measure their perceived level of trust based on the first impression they had about companies A1 and B1. In Fig. 3, we show, respectively, the perceived levels of cognitive and affective trust (i.e., the estimated marginal means) for the two web modes. As per cognitive trust, we observe that, on average, the levels of trust perceived by subjects stay unvaried in the two web modes, albeit slightly higher for Company A1 (3.87 and 3.88 for social media and traditional website, respectively) than for Company B1 (3.73 and 3.74 for social media and traditional website, respectively). Instead, in the case of affective trust, we can observe slight differences between the average levels perceived by subject in the two web modes. In particular, for both companies, the levels of affective trust perceived in the social media mode (3.77 for Company A1, 3.82 for Company B1) are higher than those in traditional website mode (3.50 for Company

A1, 3.55 for Company B1). Therefore, these results are consistent with our hypothesis H_{aff}, but not with H_{cog}.

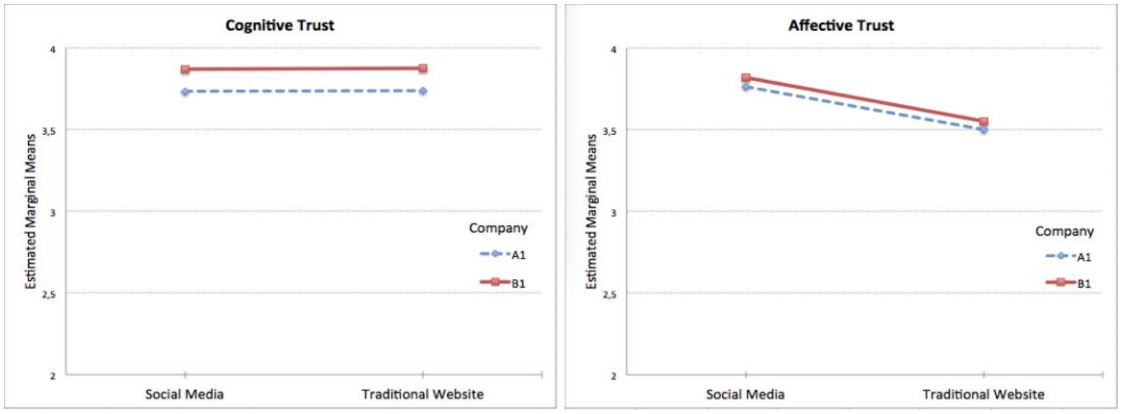

Figure 3. Experiment 1 – Estimated marginal means for Cognitive and Affective Trust adjusted for covariates

We note that the marginal means shown in Fig. 3 are adjusted for two covariates, that is, the *use of Facebook* and the *frequency of online purchases.* Specifically, we verified on a 4-point Likert scale that all the participants use Facebook on a daily basis (mean = 3.36, St. dev. = 1.01), whereas they have different habits regarding familiarity with e-commerce. In particular, the participants with a background in computer science make purchases on the Web (mean 2.58) more often than those with background in Physics (mean 1.76). As such, overall, the subjects are not equally acquainted with the appraisal mechanism to assess a company trustworthiness based on its online image, which is necessary when buying on the Internet.

Accordingly, to test our hypotheses, we performed an analysis of co-variance (ANCOVA) on the two dependent variables, i.e., the levels of cognitive and affective trustworthiness of companies, by treating both *use of Facebook* and *frequency of online purchases* as covariates. The ANCOVA, in fact, increases statistical validity of the analysis of variance by adjusting differences due to existing factors that are not part of the experiment design. 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 experiment design (i.e., the web mode).

Finally, in accordance with the design described in Section 3, we performed the analysis of variance by including *Company* as a blocking factor. The results are reported in Table 2. We observe that the effect of the

Web mode on affective trust is significant at the 5% level (F = 7.309, p = .010). Instead, Web mode had no effect on cognitive trust (F = .005, p = .946). The test also revealed that the role of the *Company* as a blocking factor is negligible. As such, these results show statistical support for hypothesis H_{aff} but not for H_{cog}.

Table 2. Experiment 1 - Analysis of variance (significant results in bold, α = .05)

Source	**Dep. Variable**	**F**	**Sig.**
Web Mode	Cognitive	.005	.946
	Affective	**7.309**	**.010**
Company	Cognitive	2.138	.151
	Affective	.289	.594

4.3 Analysis of Questionnaire Q2 and Interviews

In this section, we report the results from the analysis of the open-ended questions in questionnaire Q2.

First, we analyze the answers to the item 2 ("Which company would you choose for your meal? Why?") and 3 ("Which company would you choose for the catering service? Why?") of the questionnaire. We observed that, answering the questions, the majority subjects (31 out of 44, 78%) did not select the same company. Specifically, for the catering question the subjects chose the company that they perceived as more reliable and suitable for the service, according to *"the direct description of the company experience and awards provided online.*" Conversely, they motivated the choice of the company for their meal with a friend by indicating the restaurant with the warmer and friendlier atmosphere, as perceived from the pictures on the social media.

Furthermore, with respect to 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 (item 5 "Which company seems to be more concerned about the wellbeing and needs of its customers? Why?" of Q2), 61% of subjects expressed in favor of the company for which they examined the Facebook page. The subjects declared that they interpreted as signs of benevolence the company's intention to share professional knowledge, the daily updates of the fan page with pictures and news, and the public exposure to customers' feedback and personalization requests.

Instead, with respect to the impact of the two web modes on cognitive trust, when reporting about the

perceived competence and predictability of a company (item 1 “Which company do you perceive as the more reliable? Why?” and item 4 “Which company seems more competent to you? Why?” of Q2, respectively), the majority of subjects mentioned the company for which they accessed the traditional website (55% and 60% for item 1 and 4, respectively). The rest of participants, instead, 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, two information elements available under the social media condition.

Finally, when left free to express their impression and general comments about the experiment, the subjects stressed the importance of accessing multiple sources of information. Specifically, they claimed that for the catering scenario “*having both the website and the Facebook profile available for both companies would be the best option in such a critical context*”. In addition, the follow-up interviews uncovered a recurring schema adopted in real life for gathering information about unknown companies: first, they search for customers’ feedback on social media and then, only in case of satisfying and positive comments, they go to the website to access more business related information (e.g., prices, delivery times, location of the store, contact information).

5 Second Controlled Experiment

The results from experiment 1 partially supported our hypotheses. In particular, we found support only for our second hypothesis (H_{aff}) that social media foster affective trust more than traditional websites. On the contrary, we found no evidence supporting our hypothesis (H_{cog}) that traditional websites foster cognitive trust more than social media (see Table 2).

One possible rival explanation for the lack of support for H_{cog} is the absence of control over participants during the visualization of the companies’ profiles. In fact, according to the experimental process, each participant had individual access to the web and was granted five minutes to freely explore the two companies’ profiles, either on Facebook or on a traditional website. One may argue that not all subjects were equally exposed to the same information elements. In other words, being free to navigate a company’s profile, participants may have unconsciously browsed longer and consequently appraised mostly those information elements that are more akin to their individual inclinations. Hence, the appraisal of information elements that reflect personal preferences might have especially fostered trust building along the affective dimension rather than the cognitive one.

Therefore, to cope with this limitation in experiment 1, we organized a replication of the former experiment, changing the experimental setting to ensure that all participants were exposed to the same information elements for the same amount of time. This replication (*experiment 2*, hereinafter) followed the same experimental design of experiment 1, as described in Section 3.1. Yet, some differences exist between the former experiment and its replication. They involve the (i) participants in the experiment, (ii) the companies, and (iii) the process execution (see Table 3).

Specifically, for the replication, we recruited 159 undergraduate students in Computer Science only (90% male, 21 as average age). Unlike experiment 1, for this experiment we wanted all the participants to have the same background, to avoid any bias due to the subjective individual preferences of participants. Besides, in experiment 2 we almost triplicated the number of subjects to increase the reliability of our results.

As for the companies, we selected two new companies. In particular, Company A2 and B2 are both organic restaurants equipped for social events and catering. Furthermore, the restaurants were selected among those not based in the local area to minimize the risk of excluding subjects who knew or had visited their profiles already.

Finally, with respect to the general process and unlike the first experiment, in experiment 2 the exploration of both the traditional website and the profile page on social media for the two companies was guided by an experimenter. As in the first experiment, subjects were presented the two companies for five minutes. The experimenter showed in random order the two restaurants to the group of subjects, by presenting the information elements that are considered relevant with respect to the *Web mode* condition at hand (see Appendix I). Unlike the former experiment, there was no chance to interview the subjects at the end of the experiment.

Table 3. Differences between the two experiments

	Experiment 1	**Experiment 2**
Subjects	44 students (CS grad, Physics undergrad)	159 students (CS undergrad)
Companies	Company A1: organic restaurant Company B1: bakery	Company A2: organic restaurant Company B2: organic restaurant
Process	- Explored sites on their own - Interviews after questionnaires	- Exploration of sites was guided - No interviews after questionnaires

6 Results from Experiment 2

In this section, we report the results of the statistical analysis performed for the second experiment, grouped by questionnaire.

6.1 Analysis of Questionnaire Q1

To analyze the results of the replication of the former experiment we followed the same procedure described in Section 4.1. In fact, consistently with experiment 1, also in experiment 2 we treated as covariates the two variables describing the subjects' frequency of using of social media and purchasing online. All the participants resulted to be highly familiar with the use of Facebook, (mean = 3.44, St. dev. = .79) and somewhat familiar with online purchases (mean = 2.34, std. dev. = .73).

In Fig. 4, we shows the effect of the two web modes on cognitive and affective trust factors, adjusted for the covariates. We observe that, consistently with our hypotheses H_{cog}, the level of perceived cognitive trust for both companies is higher in the traditional website condition (3.86 for Company A1, 3.62 for Company B1) than in the social media condition (3.49 for Company A1, 3.25 for Company B1). Likewise, as for affective trust, the results are consistent with H_{aff}. In fact, we can observe that, the level of perceived trusts (3.65 for Company A1, 3.37 for Company B1) is slightly higher in the social media condition than in the traditional website condition (3.59 for Company A1, 3.31 for Company B1).

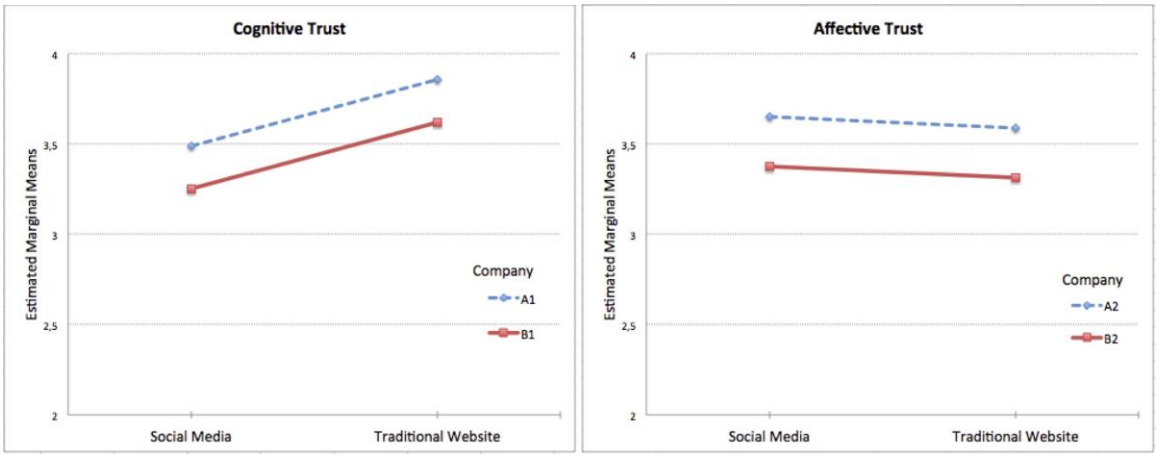

Figure 4. Experiment 2 - Estimated marginal means for Cognitive and Affective Trust, adjusted for covariates

Afterwards, we performed an analysis of co-variance on the two dependent variables (i.e., cognitive and affective trust), considering *Company* as a blocking factor. From the results shown in Table 4, we observe that *Web mode* has a statistically significant effect only on cognitive trust at the 1% level (F = 24.686, p = .000). Therefore, the results show statistical support only in favor of our hypothesis H_{cog}. Furthermore, the test also revealed that the blocking factor has a statistically significant effect. In fact, *Company* is significant at the 5% level with respect to both dependent variables (F = 9.822 and p = .002 for cognitive trust; F = 15.488 and p = .000 for affective trust).

Table 4. Experiment 2 - Analysis of variance (significant results in bold, α = .05)

Source	**Dep. Variable**	**F**	**Sig.**
Web Mode	Cognitive	**24.686**	**.000**
	Affective	.807	.371
Company	Cognitive	**9.822**	**.002**
	Affective	**15.488**	**.000**

6.2 Analysis of Questionnaire Q2

In this section, we report the findings from the data of the open-ended questionnaire Q2 for the second experiment.

First, we analyze the answers to the item 2 ("Which company would you choose for your meal? Why?") and 3 ("Which company would you choose for the catering service? Why?") of the questionnaire. Consistently with experiment 1, we observed that the majority of subjects (75%) made inconsistent choices in selecting the preferred company. Specifically, to answer the question about catering, the subjects tended to choose the company that they perceived as more competent, benevolent or friendlier, regardless of the web mode condition. Instead, for the question about individual meal, personal preferences rather than perceived trustworthiness was the main driver.

Furthermore, with respect to the impact of social media on affective trust, in item 5 of Q2 we explicitly requested participants to state which company they perceived as more benevolent toward customers and to provide explanations for their choice ("Which company seems to be more concerned about the wellbeing and needs of its customers? Why?"). Almost half of the subjects (44%) pointed to the company for which they examined the Facebook page, explicitly indicating those information elements that are peculiar of social media, as a cue of

openness and benevolence towards customers. In particular, they appreciated the direct exposure to feedback, the possibility to assess how quickly a company replies to customers' comments and to establish a peer-to-peer interaction with the owners and the staff, the daily updates with information about events, and pictures of the staff and of the restaurant. Besides, about 40% of the subjects selected the company with a wider variety of food served in the restaurant. In justifying their choice, they report to consider a form of interest towards customers the availability of vegetarian and organic food as well as the possibility to choose among different possibilities, from catering to take away, including traditional restaurant service. The remaining subjects, instead, did not explicitly refer to the web mode as a key factor, but rather chose based on personal preferences, regardless of the information accessed during the experiment.

Instead, with respect to the impact of the two web modes on cognitive trust, when reporting about the perceived ability of a company (item 4 "Which company seems more competent to you? Why?" and item 1 "Which company do you perceive as the more reliable? Why?" of Q2), most of the subjects (61% and 64%, respectively) selected the company for which they browsed the traditional website. All these subjects explicitly referred to the website as the most professional and effective way for building a transparent and reliable online image, implying that the structure of a traditional websites facilitates the retrieval of information crucial for the assessment of a company's skills. Specifically, being able to access official press reviews, information about pricing and ingredients used in the menus is considered fundamental for verifying whether a company meets the quality standards and expectations of a customer.

Finally, when left free to express their impressions and general comments about the experiment, subjects underlined how both the richness and the clarity of the provided information are perceived as cues of transparency and ability, regardless of the web mode, with particular focus on the availability of pictures of the kitchen area.

7 Discussion

The main contribution of this paper is the empirical evidence from a couple of experiments (one former experiment and its replication) that furthered our understanding of the effect of traditional websites and social media on trust building, based on first impression, in customer-supplier relationships.

We formulated two hypotheses, namely H_{aff} (*social media foster **affective trust** more than traditional websites*) and H_{cog} (*traditional websites foster **cognitive trust** more than social media*). To test our hypotheses, we developed a theoretical framework based on previous literature. In particular, trustworthiness in the commercial domain is assessed in terms of *Ability*, *Benevolence*, *Integrity* (see Büttner & Göritz [4], Doney & Cannon [13], Mayer *et al.* [26]) and *Predictability/Accountability* (see McKnight *et al.* [28] and Rusman *et al.* [34]). Besides, we extended this multidimensional model with the consideration of the affective and cognitive dimensions, by mapping the trust antecedents into the affective and cognitive dimensions as proposed by Schumann *et al* [36].

Our findings, summarized in Table 5 and discussed in the remainder of this section, provide some guidance to researchers and practitioners (as further described in Section 7.4) and add to the existing body of evidence about the trust building (as further described in Section 8).

7.1 Cognitive Trust

As for the first hypothesis H_{cog} (*traditional websites foster **cognitive trust** more than social media*), the statistical analysis on the results from the first questionnaire provided partial supportive evidence. In fact, unlike the first experiment that provided no supporting evidence in favor of H_{cog} (see Table 2), experiment 2 did provide support for our hypothesis on cognitive trust, instead (see Table 4).

Yet, despite the lack of statistical evidence, the analysis of the results of open-ended questionnaire Q2 collected from both studies consistently show that subjects perceived that accessing a traditional website fosters trust building along the cognitive dimension. In their answers, participants suggest that the traditional website is the most appropriate web mode for communicating ability and competence of a company. In particular, 60% of the 44 participants in experiment 1 and 61% of the 159 participants in experiment 2 selected the company for which they had browsed the traditional website. Likewise, 55% and 64% of the participants in experiment 1 and 2, respectively, perceived as more reliable the company for which they accessed the profile on the traditional website.

Table 5. A summary of predictions by literature on trust building based on first impression, compared to the findings in our studies

<table>
<tr><th rowspan="2">Finding category</th><th rowspan="2">Prediction by literature</th><th colspan="2">Finding support</th></tr>
<tr><th>1st experiment</th><th>2nd experiment</th></tr>
<tr><td rowspan="2">Cognitive trust</td><td>Cognitive trust involves deliberate appraisal of the trustee characteristics combined with the process of weighting the benefits of trusting over risks [21, 27, 40].</td><td>× Not supported</td><td>✓Supported</td></tr>
<tr><td>Positive correlation between showing an author's picture and the perceived credibility of online article [14].
Including photos in online shops influences trust building positively [32].
Showing photos of employees increases customers' trust towards online-bank website [38].
Social presence cues important also in traditional websites [15].</td><td>✓ Supported</td><td>✓ Supported
Information elements typical of social media able to foster not only affective- but also cognitive-trust building,</td></tr>
<tr><td>Affective trust</td><td>Affective trust involves emotional bonds and sincere concern for the well-being of the others and might be seen as more related to the intentionality process [21, 27].</td><td>✓ Supported</td><td>× Not supported</td></tr>
<tr><td>Other (perception of social presence in e-commerce websites)</td><td>Perceived trustworthiness also depends on perceived risk of purchase [5].
People process more content-related feature of a website for a high-risk purchase, more peripheral cues such as picture for low-risk ones [31].</td><td>✓ Supported</td><td>✓ Supported
In case of high-risk purchase, subjects preferred perceived competence to personal preference and taste.</td></tr>
</table>

One possible explanation for the lack of support to H_{cog} in experiment 1 relates to the experimental settings that we adopted in the first controlled experiment, specifically, the lack of control over participants during the visualization of the companies' profiles. As such, we are not able to state that in experiment 1 all participants visualized the same content for each company for exactly 5 minutes as instructed. Instead, thanks to the experimental process variation adopted in experiment 2, the guidance provided by one the experimenter during the visualization of companies' profiles ensured that all the participants were equally exposed to the same information elements for the exact same amount of time. In conclusion, we do acknowledge that, unlike experiment 2, the first experiment setting was not ideal to investigate H_{cog}.

The analysis of the open-ended questionnaires of both studies, as well as the follow-up interviews performed in experiment 1, reveals another interesting result. In fact, we found that information elements typical of social media are able to foster trust growth also along the cognitive dimension. Specifically, 45% of participants in experiment 1 and 32% in experiment 2 declared that companies directly exposing themselves to customers'

feedback and personalization requests on social media are perceived as more reliable because they demonstrate self-confidence about the quality of goods and services they provide. Moreover, being directly reachable by customers on social networks and, hence, engaged in a personal direct relationship with them is seen as cue of predictability. Subjects also reported that they perceived as more reliable the company for which a wide range of pictures about staff and products was available, regardless of the web mode (45% and 40% subjects in experiment 1 and 2, respectively). This is consistent with literature on the relationship between online photos and trust in various domain. Fogg [14] reports about the relationship between the author's picture and the perceived credibility of online articles. Riegelsbeirger *et al.* [32] showed that including photos in online shops might positively affect trust building, as far the pictures match the overall site's design and the vendor's brand. Steinbrueck *et al.* [38] observed that showing the photos of employees might increase customers' trust towards an online-bank website.

7.2 Affective Trust

As for the second hypothesis H_{aff} (*social media foster **affective trust** more than traditional websites*), again, the results from the first questionnaire provide partial supportive evidence. In fact, the analysis of variance provides statistical support to H_{aff} in the case of the former experiment (see Table 2), but not in the case of its replication (see Table 4).

Despite the partial evidence gathered from Q1, also in the case of H_{aff} the analysis of the open-ended questionnaire Q2 for both studies provides findings consistent with our expectation. In fact, the analysis shows that over 60% of the subjects in experiment 1 and almost half of the subjects in experiment 2 (44%) indicated as more benevolent the company in the social media condition, thus supporting our hypothesis that being able to access a company's profile through social media allows to evaluate information elements that trigger affective appraisal. In particular, the subjects mentioned the information elements typical of social media (e.g., status updates about the company's activity and plan, presence on social media – see Appendix I) to motivate their perception of vendors' benevolence, openness, and positive disposition towards the customers' needs and satisfaction. These results are consistent with the findings from previous research on trust building in distributed teams (e.g., see Schumann *et al.* [36]) and with our assumption of social media reflecting interpersonal dynamics such as peer-to-peer relationships and word-of-mouth (spontaneous) advertising mechanism (e.g., see Blanchard [3]).

One possible explanation for the lack of support to H_{aff} in experiment 2 is related to the experimental setting too. In fact, while the different visualization setting adopted in experiment 2 resulted ideal for testing the H_{cog} hypothesis, on the contrary, it turned out to be not suitable for testing H_{aff}. In fact, accessing companies' profiles in a mediated setting, on the one hand, ensured equality of exposure to the same information elements; on the other hand, however, it likely prevented participants in experiment 2 to develop any sense of empathy towards the company owners and staff. Instead, the setting adopted in experiment 1 granted subjects the possibility of getting in touch with companies' online profile in a more personal way, thus correctly fostering the development of trust along the affective dimension.

Therefore, *a posteriori*, we have to acknowledge that the different settings adopted in the two experiments were only ideal for either hypothesis, but not for both at the same time.

7.3 Other Findings

The follow-up interviews with participants in experiment 1 provide interesting insights about the importance of combining various media when a company aims at building a trustworthy online image. From the analysis of the questionnaires, in fact, we observed that some of the participants (10% and 6% in experiment 1 and 2, respectively) explicitly declared to have trouble in choosing between the two companies for the catering service during the experimental task. They complained that it would be necessary for them to access both the website and the Facebook page media in order to form an opinion about the company's trustworthiness. In addition, all subjects involved in the interviews agreed on the importance of using the social media for a preliminary assessment of the trustworthiness of an unknown company; then, further details would be investigated using traditional websites only in case of perceived friendliness and attention to the customers' need or in case of explicit positive feedback of the community. This result is consistent with the findings from the experiment by de Royster *et al.* [12] about the role of affective commitment in the trust building process.

As for the catering question (item 3 of Q2), subjects tended to prefer the company perceived as the more competent and reliable, regardless of the web condition. In the majority of cases, in both studies they chose the company based on cognitive trust, by preferring the restaurant they perceive as more competent and reliable. As for the question about the informal meal with a friend (item 2 of Q2), most subjects chose the company that either matched their personal preferences about food or was perceived as more friendly and open to welcome

customers in an informal atmosphere. They associated this benevolent attitude to the frequent update of food and staff pictures, mainly on the social network. However, perceived benevolence is not enough to select a company for a buffet. In fact, we observed an interesting behavior occurring in both experiments, that is, the discrepancy between the company chosen for the catering task and the one selected for an informal and occasional meal. Specifically, in 78% of cases, the subjects in experiment 1 expressed a different preference for the informal meal with a friend and the catering, for which they indicated the company they perceived as the more competent event if it did not match their personal preferences. Likewise, in experiment 2 the subjects provided inconsistent answers in the 45% of cases, providing the same justification for their choice as in experiment 1. This is consistent with previous research by Büttner *et al.* [5] on the perception of risk and deliberation in retailer choice, demonstrating that the perceived trustworthiness depends also on the perceived risk in a purchase. Finally, this result is also consistent with previous findings on the perception social presence cues in e-commerce websites reported by Gefen & Straub [15].

7.4 Practical Implications

The results of our studies suggest practical implications for practitioners. We provide guidelines for companies who may be interested in improving communication strategies to enhance their online image and foster trust since the very beginning of their interaction with potential customers. First, companies should carefully plan their online communication strategies by tailoring the interaction style to the expected needs and goals of their potential customers. In fact, the results from our studies demonstrate that young people with certain familiarity with both web technologies and online purchases value the characteristics of a company differently. In particular, when social factors are involved and the perceived risk is higher (e.g., in the catering scenario), individuals tend to prefer companies who communicate ability and predictability better, regardless of their personal preference. On the contrary, in a more informal scenario (i.e., a meal with a friend), individuals prefer companies with a friendlier atmosphere or the ones that match their personal preference.

Moreover, the fact that a company manages a profile on social media and, thus, is exposed to customer feedback is perceived as an implicit statement of elevated quality *per se* and is envisioned as a demonstration of consistent behavior and responsibility, thus producing a positive impact on trust along the cognitive dimension. Nonetheless, companies should be aware that social media offer a rich set of tools for effectively enhance the potential

customer perception of the company benevolence. For example, posting pictures of the staff as well as daily updates with news and suggestions in the domain in which they operate (e.g., in the food domain, recipes or dietary suggestions) are perceived as a sign of companies' intention to share professional knowledge with customers. Furthermore, a company that wants to be perceived as open and benevolent should consider managing a public profile on social media to communicate directly with customers and be prompt in replying to both positive and negative feedback.

However, even if social media offer a wider range of tools for communicating with customers when compared to traditional websites, companies must be aware of the importance of combining the different information elements in defining an effective communication strategy online. In fact, according to our results, traditional websites are still seen as the equivalent of business cards, hence conveying a successful professional image when properly designed. Finally, our research allowed us to identify a habitual schema adopted by potential customers in real life for gathering information about unknown companies. Specifically, customers first assess other customers' feedback on social media and then, only in case of satisfying and positive comments, they visit the website to gather more business-related information.

7.5 Theoretical Implications

Other than practical implications, the results of our studies also suggest theoretical insights for researchers. In particular, our analysis was informed by a theoretical framework that we built by merging evidence from both e-commerce and social science research domains.

Our findings highlight the need for improvement of our theoretical framework by considering the role of the perceived risk in purchase. In fact, consistently with previous research by Büttner *et al.* [5] about consumers' perception of risk in purchase, our results suggest that it also plays a role in the perception of a company's trustworthiness. As such, the perception of risk will have to be included in the theoretical framework before running future replications of our studies. Indeed, according to research on persuasion by Petty & Cacioppo [31], when the perceived risk is high (as for the catering question), people process more content-related features of a website, while preferring more peripheral cues, such as pictures, if the perceived risk is lower (as for the question about having lunch with a friend).

Finally, the analysis of the questionnaires responses and follow-up interviews suggest that an interac-

tion occurs between cognitive and affective trust. In fact, our findings show that information elements that typically trigger affective trust might be responsible of fostering trust also along the cognitive dimension. As such, we need to extend our framework in order to deal with the interplay between cognitive and affective trust during the appraisal of information elements, a phenomenon that has been only acknowledged in this work and in Schumann *et al.* [36].

7.6 Threats to validity

One of the key issues in empirical studies is the evaluation of the validity of results [41].

Construct validity relates to the relationship between theory and observation, that is, to the accuracy in measuring both independent and dependent variables. Trust cannot be objectively measured as it is only sensed by individuals. Therefore, collecting self-reported data (e.g., through a questionnaire, as in our case) is the only means to measure trust. Although one might argue about the arbitrariness of the questions we used for the assessment of cognitive and affective trust, we note that our questionnaire was built by combining the questions already used in different studies on trust antecedents and evaluation [4, 33, 34]. Furthermore, we assessed the validity of our questionnaires through a confirmatory factor analysis in order to verify that the questions actually captured the distinction between cognitive- and affective-based trust by correctly loading on the corresponding factor. Additionally, we performed a scale reliability analysis to further determine the internal construct validity using the Cronbach's alpha coefficient [11], which is widely employed for checking the internal consistency of constructs in social sciences.

Internal validity concerns the possibility of existing rival explanations when unable to completely control the factors involved in the treatment. We identified and controlled a couple of such threats. First, any potential bias deriving from the presentation order of the websites/pages was controlled by randomizing and equally distributing the four-presentation order conditions within the groups of subjects. Furthermore, to reduce the problem due to different experimental conditions, we run all the evaluations simultaneously and in a controlled environment. Second, for each experiment we selected a couple of companies each having their websites and Facebook pages. Then, for each company we performed an analysis of information elements available in the two web modes and their relationship to the trust antecedents in the research model. Such analysis allowed us to control a potential instrumentation effect and ensure that the two Facebook pages, as well as the two websites, alt-

hough different, were comparable in terms of content available and interaction style. Consequently, we are able to ensure that any difference measured in the perceived levels of trust is not due toany lack of content in either company's web mode.

External validity relates to the possibility to generalize findings. We identified a few threats of such kind. First, in both studies we selected participants among graduate and undergraduate students familiar with web technologies. Moreover, the subjects involved in these studies are mainly male (85% in the first experiment, 90% in the second one). We acknowledge that the sampling in our studies is a limitation that affects the generalizability of the obtained results. In other words, we are not able to discuss whether the obtained results would be similar, had we worked with less technically educated or older people. Future replications of the experiment must ensure that study participants are more equally distributed by age and gender. Nonetheless, we note that the opportunistic sampling was done consistently with the experimental scenario and, as such, it is perfectly representative of the target market, i.e., the choice of a restaurant for the graduation party. Second, with respect to the first experiment only, participants had different backgrounds. In particular, as compared to the students in Physics, those with a background in computer science showed a higher level of familiarity with web technologies and e-commerce. Accordingly, they could probably have a higher tendency to trust vendors based on their online presence because they are familiar with the web-based interaction style and communication dynamics. To mitigate this threat, in both studies we measured the subjects' confidence with the use of Facebook and with online purchases and treat these two variables as covariates in our analysis. To further limit the confounding effect of different levels of propensity to trust, in the second study we replicated the experiment involving only students in computer science, that is, with a homogeneous background and age. Finally, these experiments are based on a low risk retail category (i.e., food purchase). Future replications should conduct analogous experiments in other retail categories, such as pharmacy or expensive technology, where customers' tendency to trust vendors is reduced by the higher perceived inherent risk of purchase, which has been demonstrated to be crucial in trust building by the work of Büttner *et al.* [4].

8 Related work

Previous research on trust in online customer-supplier relationship has highlighted the importance of trust in determining the consumer behavior towards online shops (e.g., see Andrés-Martínez *et al.* [2] and Büttner *et al.* [4])

and the perceived trustworthiness has been found to be fundamental in the evaluation of the online image of stores (e.g., see van der Heijden. & Verhagen [20]). Before social media became popular and reached worldwide diffusion, traditional websites have been the only web channel that vendors could exploit for self-promoting and building the online image of a competent company. One of the findings from our studies is that companies should manage both traditional websites and social media profiles, possibly treating them as two component of a joint communication strategy. However, not all the target markets might be suitable for communication through social media, as also suggested by previous research in this domain [24]. Still, previous research has shown, consistently with our findings, how cues of a vendor's social presence are able to foster trust even when included in traditional websites. In fact, Gefen & Straub [15] demonstrated the importance of communicating cues of social presence also in traditional websites, that is, cues of interpersonal interaction and presence of a sociable and benevolent human behind the communication medium. Therefore, our work confirms that companies should also consider embedding social media elements in the websites to support social presence in traditional web sites too (e.g., news feed from Twitter or Facebook).

A common limitation in previous studies on trust towards online companies is that experiments mainly address trust building by focusing on traditional websites. In fact, the practice of including the use of social media into online marketing strategies is quite new, as attested by the average experience of the company in social media (about 3 years, as reported in Owyang *et al.* [30]). Research on how to use social media for online image formation flourished only in recent years and mainly focuses on how to include social media into online communication strategies (see Kuvykaite & Piligrimiene [24], Gilpin [16], and Zailskaite-Jakste & Kuvykaite [42]). Conversely, a key and novel contribution of this research is that we explicitly evaluated the impact of the web mode on trust by distinguishing between the cognitive and affective dimensions. Specifically, we analyzed the impact of traditional websites on the assessment of *Ability* and *Predictability*, which are the trust antecedents related to cognitive trust. As for affective trust, our research provides new insights of the potential of social media to enhance trust in terms of perceived benevolence of a company. Moreover, unlike previous studies, we specifically focus on the very early stage of the process of trust building, that is, based on 'first impression' built upon information available online. One of the major issues in trust building, in fact, is the perceived trustworthiness based on the very early evaluation of signs and signals available of the trustee characteristics and behavior, as demonstrated also by the research of Schumann *et al.* [36] on collaboration in virtual project teams.

9 Conclusions

In this paper, we presented two experiments by means of which we investigated the role of traditional websites and social media in trust building along the cognitive and affective dimensions. Specifically, we investigated the different impact of these two web modes on trust building, based on the first impression. In particular, we tested two complementary hypotheses, according to which: (i) traditional websites are better suited to communicate competence and ability of a company and, hence, foster cognitive trust; (ii) social media have a better potential to communicate benevolence and openness towards customers, thus fostering affective trust.

We found statistical evidence in support of our hypotheses, with one caveat. In the two experiments, we could only find support for one hypothesis at a time. A retrospective analysis of the experiments allowed us to argue that the lack of complete evidence is possibly due to the specifically experimental settings, which turned out to be ideal to test either hypothesis but not both at the same time.

As far as implications for researchers and practitioners are involved, the results of our studies suggest the importance of combining the different information elements in defining an effective communication strategy online. Although additional research is still needed, our experiments provide initial evidence that both cognitive and affective trust can be successfully fostered through online presence. Indeed, online social networking platforms provide tools for companies to communicate benevolence to potential customer: the daily management of a social media profile is perceived as a cue of openness. In addition, replying to both positive and negative customers' feedback is perceived as a cue of benevolence since it indicates availability, receptivity to customers' feedback and commitment to the company mission. Yet, we observed also how social media might positively affect the assessment of a company's predictability and ability: being exposed to customer feedback is perceived as an implicit statement of quality and intended as a demonstration of consistent behavior and responsibility.

Finally, we observed that benevolence is not enough if ability and competence cannot be assessed properly. In this sense, traditional website is still seen as a '*business card*' that conveys *per se* the image of a more professional company, as opposed to a fan page on Facebook, no matter how detailed the information provided are. A clear description of the company experience, an official press review, and the description of awards are all considered strong clues of ability. Being able to access pictures of the restaurant is seen as a cue of predictability and transparency: pictures of the restaurant give customers' an idea of the company ability in terms of

work organization and competence of the staff. Besides, pictures and detailed information about the products give customers the possibility to make a preliminary assessment of the company's quality standards.

Future research might add to this initial evidence by replicating the controlled experiments, thus overcoming the limitations acknowledged in our studies.

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Appendix I – Information Elements

Available in	Information element	Relation with Trust Antecedents	Explanation
Traditional Website	Description of experience and awards.	Ability	A direct description of the company experience and awards.
Traditional Website and Social Media	Statements and mission.	Ability	The type of statements and the mission description, as well as the way they are formulated, provide cues on the company's ability based on its previous experience and awards in the domain.
Traditional Website and Social Media	Personal pictures of owner/staff	Benevolence Ability	The type of photo can reveal personal attitudes and how open a person is to share information about his daily activities. The style of the picture itself may reveal how formal/informal a person is or give cues on his kindness. Pictures can gives a hint on the person ability if portaited while working (e.g. while cooking, in the case of restaurants) or as an inference based on the estimate age of the owner/staff
Traditional Website and Social Media	Pictures of food and restaurant (e.g. kitchen, bakery lab)	Ability Predictability	Pictures of the restaurant may provide a clues of the company ability in terms of work organization, cleaness of the reasturant, competence of the staff. Pictures of food may provide hints on the quality of the ingredient used and of the food served and may be seen also as a statement of self-confidence about a company standards.
Traditional Website and Social Media	News and Post on topics relevant to the domain	Ability Benevolence	Sharing lists of updates about food or ingredient may be seen as a cue of both professionality (the owner and the staff keep updated) and openess (the company shares his knowledge with its customers to engage them in its mission).
Social Media	Pictures of customers in the restaurant	Benevolence Ability Predictability	If portraied with the staff/owner, pictures of customers may provide hints on the formal/informal atmosphere of the restaurant, as well as the level of engagement and kindnees demonstrated by the staff towards the customers. By accepting to have their pictures shared on social media, customers implicitely provide a positive quality assessment of the food and the service.
Social Media	Presence on social media	Benevolence	Being expressed to customer feedback and personalization requests gives information on the general attitude of the company towards the customers and on how much he is open, reachable, kind, available and committed to pursue the customers' satisfaction.
Social Media	Status updates about the company's activity and plans	Benevolence	Sharing ideas and plans may be seen as an cue of openess and faith in intentions.
Social Media	Average response to the customers' feedback	Benevolence Predictability	Taking care of customers' feedback and promptly reacting to comments (both positive and negative) may be seen as a cue of both Benevolence (in terms of availability, receptivity and commitment) and Predictability (intended as a demonstration of consistency of behavior and responsibility)

Appendix II – Questionnaire Q1 – Principal Components Analysis results

Item	Factor 1 – Cognitive trust	Factor 2 -Affective trust	Trust Antecedent
qA1	**0,822**	0,165	Ability
qA2	**0,715**	0,073	
qA3	**0,437**	0,407	
qA4	**0,518**	0,345	
qA5	**0,609**	0,269	
qA6	**0,743**	0,31	
qA7	**0,463**	0,236	
qP1	**0,625**	0,39	Predictability
qP2	**0,727**	0,404	
qP3	**0,781**	0,156	
qB1	*0,37*	*0,244*	Benevolence
qB2	0,31	**0,684**	
qB3	0,212	**0,625**	
qB4	-0,08	**0,403**	
qB5	0,423	**0,454**	
qB6	*0,647*	*0,037*	
qB7	0,217	**0,612**	
qB8	-0,019	**0,53**	
qB9	0,082	**0,556**	
qB10	0,315	**0,699**	
qB11	0,154	**0,796**	
qI1	***0,639***	*-0,356*	Integrity (internalized norms)
qI2	***0,755***	*0,104*	
qI3	***0,618***	*0,023*	
qI4	***0,667***	*0,187*	
qI5	*-0,165*	*-0,33*	

*For each row, value in **bold** indicates the loaded factor*

Appendix III – Final Questionnaires

Q1 - Assessing Perceived Trustworthiness
AFFECTIVE TRUST
Benevolence
B1. This company puts customers' interests first
B2. This company is genuinely interested in its customers' welbeing
B3. If problems arise, one can expect to be treated fairly by this company
B4. If I got into difficulties with the goods/services provided or I required help, this company would do its best to help me
B5. I feel like it could be hard for me to get in touch with this company
B6. I am confident this company would be available when I need more information/have problems with goods/services provided
B7. I feel like I could contact this company readily when it is required
B8. This company makes an effort to understand what customers have to say
B9. The people working for this company are friendly and approachable
B10. This company keeps customers updated about what is in its plans
B11. The company owners share their thoughts with me/with customers
COGNITIVE TRUST
Ability
A1. This company is very competent
A2. This company is able to fully satisfy its customers
A3. One can expect good advice from this provider
A4. In its job this company seems to work efficiently
A5. I have full confidence in the skills of people working for this company
A6. This company does not provides its services/produces with skills
A7. This company does things competently/in a capable manner
Predictability
P1. This company's methods of operantion are unclear
P2. I would rely on advice from this company
P3. This company does things that promises to do for me
Q2 – Self-report about Perceived Trustworthiness
1. Which company do you perceive as the more reliable? Why?
2. Which company would you choose for your meal? Why?
3. Which company would you choose for the catering service? Why?
4. Which company seems more competent to you? Why?
5. Which company seems to be more concerned about the wellbeing and needs of its customers? Why?
6. Please leave any comment or suggestion about the experiment.