Is It Still Worth to Be Credible? a Meta-Analysis of Temporal Patterns of Source Credibility Effects in Marketing

Martin Eisend, Freie Universität Berlin

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ABSTRACT

The purpose of this study is the examination of the development of the impact of source credibility in marketing communication over the years. A meta-analysis was applied to 167 relevant effect sizes. The results indicate that the effect of source credibility increased over the years. The rise was stronger especially for sources communicating personally with the consumers than for other sources, and for communication about services compared to communication about goods. Also, the rise of the effect sizes was stronger for cognitive and attitudinal effects than for other effects.

1 INTRODUCTION

Credibility is a concept rich in tradition. Scholarly examination of source credibility and its impact is as old as the discussion of rhetoric itself, having originated with the ancient Greeks. First empirical studies referring to the impact of source credibility can be backdated to research projects dealing with the concept of prestige in the 1930s (Arnett et al. 1931; Wegrocki 1934). Indeed, Hovland and his colleagues who worked on the Attitude Change and Communication Research Project at Yale University in the 1940s and 1950s are claimed to be the founders of modern source credibility research (Hovland et al. 1953; Hovland et al. 1949; Hovland and Weiss 1951). Their research interest in persuasion and in particular in the effects of source credibility rose from the worry about the efficiency of Nazi propaganda during World War II and the desire to find out means to improve the propaganda of the Allies. Since this time, a lot of research has been undertaken to examine the impact of source credibility. Also marketing researchers have detected the concept of source credibility as a powerful facility for influencing consumers. If a consumer perceives a source as having higher credibility than other sources, the consumer is more receptive to messages from the source and is more likely to be persuaded. However, whereas the idea and the concept of source credibility haven’t changed in the course of time, consumers and consumption behavior have changed during the last decades. This has probably also led to a change of the impact of source credibility. The main research question of the study deals with the development of source credibility effects in marketing in the course of time. It will be answered by applying a meta-analysis of the effects of source credibility in marketing communication. Beforehand, a brief explanation of the concept of credibility and its effects in marketing communication as well as a rationale for the changes in consumer behavior over the years are required.

2 RESEARCH BACKGROUND AND RATIONALE FOR THE RESEARCH QUESTION

Credibility refers to a person’s perception of the truth of a piece of information. It serves as a means for the receiver of the information to rate the source or transmitter of the communication in relation to the information. This rating correlates with the willingness of the receiver to attribute truth and substance to the information (Hovland et al. 1953, p. 21). Credibility is tied to information, and can thus be described as a communication phenomenon. Communication takes place between at least two parties. Any kind of communication between a supplier and a consumer that occurs with the intention of influencing economic transfers can be defined as marketing communication. A company or its representatives (e.g. salespersons) are the sources, whereas the consumer is the receiver of the message.

Research on the impact of source credibility belongs to the domain of persuasion research. Persuasion research deals with characteristics of the source, the message or the transmitter as independent variables whereas attitude formation or attitude change form the main dependent variables (see O’Keefe 1990; Perloff 1993). Beyond attitudes, other dependent variables are studied as well. The majority of the results indicate a positive effect of credibility on attitudes, cognitions, intentions and also subsequent behavior. However, some other variables (e.g. involvement, commitment) moderate the impact of source credibility, and some of those moderators can even reverse the effect so that a source having only moderate credibility can be more persuasive than a highly credible source (Sternthal et al. 1978).

Time can also be assumed to be such a moderating variable. Using a perspective of historical development (see Gronmo 1989), time represents a variety of occurrences and environmental changes and can be considered an all-embracing socio-temporal context variable. As this socio-temporal context has changed over the years, consumers and the way how they deal with communication from marketers will most likely have changed as well.

The assumption of changes over time is broadly supported by the idea of postmodernism. Postmodernism denotes and provides not only a philosophical framework or epistemological positions, but also marks an epochal phenomenon that is accompanied amongst other things by the rapid growth of new technologies, the rise of globalism and multiculturalism, and the waning of modern ideologies (Costa and Bamossy 1995; Firat and Venkatesh 1995, 1993). The transition from the modern to the postmodern period is a gradual shift and not a schism (van Raaij 1993). This transition has started in the 1960s and reaches different domains of society at a different pace. Main characteristics which describe conditions of postmodernism are pluralism and fragmentation which both lead to a liberalism of choices and a creation of insecurity in the context of consumption (Bouchet 1994; Firat and Venkatesh 1995). Pluralism leads to conditions where single ideologies have lost their dominance and consumers adopt a variety of values and lifestyles and at the same time refuse to obey authorities of modernity: skepticism is replacing dogmatism (van Raaij 1993). As a consequence, postmodern consumers seem to be more experienced as well as critical and skeptical about influences from marketers (Elliot et al. 1993). However, pluralism also leads to uncertainty since postmodern consumers now face a whole set of values, lifestyles, and symbols from which they have to choose (Bouchet 1994). In the context of communication, consumers also face an increasing information load.

These postulated changes attributed to the transition from modernism towards postmodernism can thus result in changes of attitudes and behavior towards influence techniques from marketers and particularly source credibility over the course of time. However, there are other reasons for expecting changes in source credibility effects over time. Kayande and Bhargava (1994) mention the improvement of data collection methods and analytical methods that may result in stronger relationships over time. Presumably also marketers have learned to use better credibility enhancers. These alternative explanations have to be considered when investigating the changes in source credibility effects over time. In the following section, we will formulate the hypotheses resulting from this delineation.
3 HYPOTHESES

Aforementioned postmodern consumers face a variety of small sets of ideologies, they increasingly refuse to obey any authorities and are claimed to be more experienced and critical. As a result, they have probably become more resistant to established influence techniques from marketers and are able to make out the usual credibility enhancing techniques used by marketers. Therefore, we suggest the following hypothesis:

\[ H_{1a} \] The impact of source credibility has decreased over the years.

However, another argumentation stands to reason. Pluralism of beliefs entails a challenge to the consumer who now has to choose from a huge variety of values, norms and lifestyles. As a consequence, consumers increasingly face uncertainty. Also in the context of communication, consumers face an increasing information load. Source credibility serves as a central factor in order to judge the veracity and quality of a message that can be easily and objectively assessed and trusted. It eases the evaluation of information, precludes extensive information research and thus reduces uncertainty. Therefore, consumers are likely to rely increasingly on source credibility. Therefore, we also assume the following hypothesis, which stands in contrast to the first:

\[ H_{1b} \] The impact of source credibility has increased over the years.

Both hypotheses suggest a significant correlation between time and source credibility effect sizes whereas the direction of the correlation pinpoints only one of both hypotheses. However, the magnitude of the correlation is supposed to differ with regard to various subsets which are important to marketers. Since personal communication is considered to be more persuasive than communication via media (Fill 2002), the credibility of sources with face-to-face contact to the consumer (e.g. salespersons) should increase or decrease more than the credibility of other sources (e.g. spokesperson in advertising).

\[ H_{2a} \] The magnitude of the correlation between time and source credibility effect sizes is greater for sources communicating face-to-face with the consumers than for other sources.

Another classification to be considered is the difference between services and goods. As services have a higher amount of experience and credence qualities than goods (Gabbott and Hogg 1994), the uncertainty of the consumer should be higher for services than for goods. Consequently, also the magnitude of the correlation between time and source credibility effect sizes should be higher for services than for goods. Again, the sign of the effect depends on an increasing resistance towards influencing strategies or an increasing use of source credibility as a reliable evaluation criterion by the consumers.

\[ H_{2b} \] The magnitude of the correlation between time and source credibility effect sizes is greater for services than for goods.

Furthermore, the strength of the effect patterns can also depend on the kind of variables affected by source credibility. Since credibility is often considered a cognitive phenomenon in information processing theories that influences mainly cognitions and attitudes (Perloff 1993), we expect a higher magnitude of the correlation between time and source credibility effects for cognitions and attitudes compared to the magnitude of the correlation for all other dependent variables (e.g. behavior, emotions).

\[ H_{2c} \] The magnitude of the correlation between time and source credibility effect sizes is greater for cognitions and attitudes compared to other dependent variables.

4 METHODOLOGY

In order to synthesize the results of past studies, a meta-analysis was conducted. The methodological approach is described in this section.

4.1 Literature review

To identify relevant studies, a series of bibliographic searches was first carried out. A computerized bibliographic search using Business Source Elite, ABI/Inform (for business publications), PsycINFO and PSYINDEX (for psychology literature), the Social Science Citation Index and Dissertation Abstracts (for defended doctoral dissertations) was conducted. Additionally, an issue-by-issue examination of papers published in several important marketing journals since 1950 was conducted. Then, quotations of studies found were examined in order to identify further studies and unpublished manuscripts. The approach is consistent with recommendations made by several authors (e.g. Cooper 1982; Hunter and Schmidt 1990). However, the approach does not guarantee the constitution of a complete census of all relevant studies so that only a sample of relevant studies can be taken into account. All identified manuscripts were then inspected and selected in case they dealt with marketing communication as defined above and in case source credibility was explicitly under investigation as an independent variable and this independence was formulated in the hypotheses of the study. Results that dealt with separate dimensions of credibility were not considered if they couldn’t be combined to credibility on the basis of theoretical assumptions of the study. As well, those results were excluded where credibility was used as an indicator for other constructs considered in the hypotheses. Based on these conditions and after excluding manuscripts using the same data as already included manuscripts, 46 manuscripts were found suitable for the purpose of the meta-analysis and provided enough data to calculate necessary effect sizes.

4.2 Analysis

The effect size metric selected for the analysis was the Pearson product-moment correlation coefficient \( r \) between credibility and the dependent variables. The coefficient was chosen because it is an easily interpretable and scale-free measure. For studies that did not report correlations but other measures (e.g. Student’s \( t \), \( F \)-Ratios), those measures were converted to correlation coefficients by means of formula given by Hunter and Schmidt (1990, p. 272). In order to examine the variability of the correlations, a homogeneity test statistic \( Q \) based on Fisher’s \( Z \)-transformation was applied (see Hedges and Olkin 1985, p. 235). In case of heterogeneity, a grand mean of the correlation coefficient has to be considered as an average rather than a common correlation value and the variability in the correlations may be due to other moderating variables. As a result, we can proceed to apply the time variable as a possible explanation for the variability of the correlation coefficients. The following regression model was estimated:

\[
|r| = \beta_0 + \sum \beta_i X_i + u_i
\]

where \( \beta_0 \) is the intercept and \( \beta_i \) are the regression coefficients to be estimated. The Fisher’s \( Z \)-transformations of the \( r \)’s serve as values of the dependent variable in the model. Absolute values for the \( Z \)’s are used since it is consistent with the focus on the strength of temporal dependence of credibility effects, regardless of the sign.


X_t are the predictor variables. The critical predictor is the year of publication of the study which is used as indicator for the year of the effect measured. However, the effect of year which serves as a proxy for a variety of socio-temporal variables may be confounded with other possible third variables that might also have changed over the years and therefore further moderators were included. In particular these variables are:

- type of survey: field study vs. experimental research
- kind of dependent variable: behavioral intention measures vs. other variables
- measurement of dependent variable: number of scale items
- stimulus presentation: text only vs. combination with picture or audio-visual

Since the sample sizes were unequal across studies, a variance weighted analysis was performed (see Hedges 1994). The overall fit of the regression model can be tested by the variability accounted by the regression model which follows a chi-square distribution with five degrees of freedom (for five predictor variables) and therefore should exceed a value of 11.07 in order to be significant for p<.05. The effect of each predictor variable is tested by the unstandardised regression coefficients (see Lipsey and Wilson 2001).

5 RESULTS

Altogether, k=167 effects from 53 independent studies with n=12341 subjects were collected from the 46 manuscripts. The grand mean of the absolute values of the correlation coefficients indicates the highly significant value .293 (unweighted average r's) respectively .320 (unweighted average Z's) and .267 (weighted average Z's). The correlations range from .00 to .88 and indicate heterogeneity of the effects which is approved by the test statistic (Q=1673.697, p<.001). Heterogeneous effect sizes are consistent with the notion that moderating variables of the effect measured may lead to different findings and explain the variability of the effect sizes. The regression model specified above was estimated to uncover the influence of the moderator variables on the strength of the effect sizes (Table 1). The analysis was performed for all correlations as well as for the subsets resulting from the hypothesis. There were no serious indications for autocorrelation or multicollinearity.

All effects of time on credibility effects are significant and directionally consistent with hypothesis 1b. Also other moderating variables showed significant effects but not consistently for all subsets. In order to test the hypotheses for the subsets, the correlations between time and source credibility effects (displayed by the weighted average Z's) were compared for the corresponding subsets and tested (see Table 2).

The differences found were also consistent with our expectations. The impact of time for personal communication, for services and for cognitions and attitudes was stronger than for impersonal communication, for goods and for other dependent variables under investigation. The results are discussed in the following section.

6 DISCUSSION AND CONCLUSIONS

The results provide evidence that the credibility of sources in marketing communication is an effective variable in order to influence consumers. Furthermore, the results support the assumption that the impact of source credibility has even increased over the years and lead us to conclude that it is still valuable for marketers to be credible. The results lead to a number of interesting contributions for marketing practice as well as for future research efforts. The main advice for practitioners is to be aware of the powerful technique of source credibility. Above all, service providers can profit by source credibility when using highly credible sources for personal encounters with customers or by teaching their service employees credibility enhancing techniques. Also marketing researchers should be aware of the increasing impact of source credibility in marketing communication. Our results are consistent with the notion of the increasing uncertainty and skepticism of consumers caused by postmodern phenomena such as pluralism and fragmentation. This epochal phenomenon is likely to explain the increasing role of source credibility as a factor that can be easily assessed and trusted. However, the results do not prove this rationale as well as the accurate reasons for the differential rise of the impact of source credibility for the subsets under investigation. Time serves as a proxy variable for a variety of phenomena. Therefore, some other explanations about changes in source credibility effects are conceivable. To a great extent, these alternative explanations were considered by including moderating variables extracted from the studies. However, further research is needed to filter out the reasons for the described patterns besides the rationale mentioned above. Nevertheless, the context of the transition from modernism to postmodernism can be a vantage point to elicit those factors. Another question is the importance shift caused by the increasing impact of source credibility for other factors of persuasion, e.g. the style of a message: did those factors lose their impact over the years or not?

The data of the meta-analysis are used to explain time effects. However, the meta-analytic data can not substitute a longitudinal study involving the same sets of respondents over an extended period of time. Longitudinal studies provide the potential for more accurate inferences about the development of source credibility effects. They can explore the temporal patterns in more detail and investigate concrete reasons for temporal changes by integrating additional variables (e.g. economic or political conditions). Additional cross-sectional studies can ensure variability of source credibility effects within subgroups that could not be examined in this meta-analysis (e.g. different countries). In this sense, this meta-analysis can only provide first hints for further studies and is not considered a substitute for new primary research. However, it can provide guidance to upcoming surveys and to researchers interested in the concept of credibility in marketing communication.

REFERENCES

* (asterisks denote studies used in meta-analysis)


TABLE 1
WLS regression results of the impact of time on source credibility effects

<table>
<thead>
<tr>
<th>Subset</th>
<th>$k$</th>
<th>Variability Explained by model</th>
<th>Predictor</th>
<th>Unstandardized coefficient</th>
<th>Standard error</th>
<th>z-test</th>
<th>p</th>
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</table>

a kind of d.v. is omitted since it is a constant for the subset


TABLE 2

Comparison of the correlation between time and source credibility effects for the subsets

| Subset                                      | weighted average Z’s | k  | vs. |  |  |
|---------------------------------------------|----------------------|----|-----|  |  |
| Personal vs. impersonal communication       | .354                 | 34 | .131*** a |
| Services vs. goods                          | .275                 | 20 | .051*** |
| Cognitions /attitudes vs. all other dependent variables | .179               | 96 | .136** b |

a difference is significant for p<.001
b difference is significant for p<.01

*Herbig, Paul and John Milewicz (1995), “To be or not to be ... Credible that is: A Model of Reputation and Credibility Among Competing Firms,” Marketing Intelligence & Planning, 13 (6), 24-33.
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