The results of a meta-analysis provide empirical generalizations on antecedents and consequences of source credibility in marketing communication. Above all, salient characteristics turn out to be important information to consumers and are therefore meaningful antecedents of source credibility. The effect of antecedents on source credibility is also dependent on the consumer’s involvement, as are the effects of source credibility on its consequences. The effects on consequences further depend on the accessibility of information and are stronger for cognitions and attitudes as compared to emotions and behavior. The results concur with assumptions based on dual-process theories and attribution theory.

Keywords
Source credibility, marketing communication, dual-process theories, attribution theory, meta-analysis

1. Introduction

For several decades, marketing researchers have been interested in the concept of source credibility as a powerful means of influencing consumers. If a consumer perceives a certain source as having higher credibility than other sources, the consumer is more receptive to messages from that source and is therefore more likely to be persuaded. Several developments in the field of marketing even suggest an increasing relevance of source credibility. First, communication activities of marketers have increased remarkably over the years. Source credibility, which is always related to information and communication, has therefore gained importance. Second, since the dissemination of industrial manufacturing, the relation between consumers and marketers has become more and more anonymous. Consumers receive information from marketers (e.g., about the production processes of goods) that they can rarely prove through their own experience. Consumers must rely on information that may be self-evaluated by means of the credibility of a source. And third, products have become more and more complex — just think about the inner workings of a computer. Most consumers are not competent enough to evaluate the qualities of those products and need to rely on information from marketers, which in turn are likely to be evaluated by means of their credibility. With the increasing relevance of source credibility, the number of studies investigating antecedents and consequences of source credibility has substantially increased over the years as well.

Here, by applying meta-analysis, we will determine the most relevant antecedents and consequences of source credibility in marketing communication. This meta-analysis differs from a meta-analysis of source effects published more than a decade ago (Wilson/Sherrell 1993) for several reasons besides the fact that more recent studies are included. First, we concentrate on communication sources in marketing and on a particular characteristic of the source and not on all variables of communication sources in general. We can hence investigate the effects of source credibility on its consequences in more detail by differentiating between various persuasion effects (e.g., cognitions, attitudes, behavioral intentions) and various kinds of sources (spokespersons, salespersons, companies). In this way, we provide more detailed quantitative information in order to evaluate the effects of source credibility on its consequences in previous studies as well as in future studies. Second, whereas the previous meta-analysis investigated only the effects of source credibility on its consequences, we also add an analysis of the effect of antecedents on source credibility and generalize here on determinants of source credibility as well. Third, we broaden the theoretical perspective of the mechanisms underlying the antecedents and conse-
quences of source credibility in marketing communication by applying attribution theory in addition to dual-process theories. We also broaden the empirical basis; whereas the previous meta-analysis covered 114 studies dealing with source effects in general, the current meta-analysis covers 89 studies focusing on a source’s credibility in the context of marketing communication. Finally, we apply a regression approach, which explains the effects of substantive and methodological moderating variables. The analysis also considers the interplay between the predictor variables, disentangles the reasons for differences in effect sizes more precisely than simple mean comparisons, and helps to explain more variance within the effect sizes. The results of the meta-analysis also contribute to practitioners’ knowledge. Marketers receive important information on the design of successful communication strategies based on the effects of antecedents on source credibility as well as the appropriateness of these strategies based on the effects of source credibility on its consequences.

The structure of the paper is as follows. First, a definition is given and a categorization of antecedents and consequences of source credibility is developed. Then, based on attribution and dual-process theories, the processing of source credibility information is explained and hypotheses for moderating effects are developed. In the next chapter, the meta-analysis method is described. Finally, results of the effect size integration and moderator analysis are presented and discussed.

2. Definition, Antecedents and Consequences of Source Credibility

Credibility refers to a person’s perception of the truth concerning a particular 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. The rating is mainly based on two dimensions of source credibility, namely competence and trustworthiness, and this rating correlates with the willingness of the receiver to attribute truth and substance to the information (Hovland/Janis/Kelley 1953, p. 21). Because credibility is tied to information, it can be described as a communication phenomenon. In marketing communication, we can distinguish between three major sources: the company, salespeople, and spokespersons in advertising. Marketing communication provides a specific context for source credibility that differs from other communication contexts, especially because marketers are expected to have a strong vested interest in selling their products. Therefore, consumers challenge marketers’ credibility more fundamentally.

Three different research traditions have investigated antecedents of source credibility in general. First, lie detection research focuses on non-verbal and extra-linguistic behavior of a communication source (e.g., eye contact, gesture), which is used by an observer in order to evaluate the credibility of that particular source (Kraut 1980; Zuckermann/DePaulo/Rosenthal 1981; Zuckermann/Driver 1985). Second, forensic psychology pursues criteria to differentiate between true and false testimonies. In this research tradition, which is prevalent in continental Europe, the main focus is on the details of a testimony’s statement (e.g., depiction of details, conversations) (Bender 1987; Undeutsch 1982). Finally, the communication and persuasion research tradition investigates mainly characteristics of the source (e.g., competence, sex, age) and the communication context (e.g., forewarning information, environmental variables) as antecedents of source credibility (Hovland/Janis/Kelley 1953; Hovland/Lumsdaine/Sheffield 1949; Hovland/Mandell 1952; Hovland/Weiss 1951; Köhnken 1990).

This stream of research has also dedicated much effort to the investigation of the consequences of source credibility, in particular its impact on attitudes and cognitions of recipients (cf., Plax/Rosenfeld 1980; Sterntahl/Dholakia/Leavitt 1978). Only a few studies also suggest an impact on emotions and behavior (e.g., Bloom/Hautolouma 1987; Dholakia 1987). Indeed, source credibility studies in marketing communication belong almost exclusively to the third research tradition. However, a thorough review of the literature of the aforementioned research streams taken together allows for a comprehensive categorization scheme. We derive the following categories of antecedents of source credibility:

- **Behavioral correlates**, i.e. all nonverbal and non-linguistic behavior of a source. Above all, lie detection research has found that speech behavior (e.g., speech rate, pitch of the voice) is a meaningful indicator to evaluate the credibility of a source, whereas a source’s facial expression seems to be a misleading hint in finding out if someone is behaving truthfully. It is rather obvious that this antecedent category mostly applies to salespeople and spokespersons and not to companies in marketing communication.

- **Non-behavioral characteristics of the source**, i.e. more stable and permanent characteristics of a source such as demographic and psychographic traits. Previous research has mainly focused on developing source credibility factors and has identified competence and trustworthiness as main credibility components. Additional frequently identified antecedents are the similarity between source and recipient, the self-interest of a source, a source’s attraction, dynamism and sex. Only some of these characteristics also apply to companies as sources in marketing communication. However, some marketing-specific variables could be added to this category, such as the reputation of a firm or the celebrity status of a testimonial.

- **Message characteristics**, i.e. all variables that relate to message content, message structure, or message style. Previous research within this category has frequently investigated the use of humor, comparisons made in a message, the use of references, or the specification of
an argument. Marketing communication provides some additional variables for this antecedent category such as the adding of price information or the use of one- vs. two-sided advertising.

- **Characteristics of the medium**, i.e. all variables that describe the communication channel. A separate research stream on media credibility has frequently performed intra-media comparisons and investigated characteristics of media that contribute to media credibility such as precision or integrity of media coverage. Also in the context of marketing communication, the media used for transmitting a message provided by a marketing source can be an antecedent that impacts source credibility.

- **Characteristics of the recipient.** Only a few previous studies have been dedicated to receiver variables that make a person more or less suggestible to the credibility of a source, such as a person’s anxiety. In the context of marketing communication, also persuasion knowledge and experiences can be further antecedents in this category.

- **Characteristics of the communication context**, i.e. all information that is provided by the context of communication or the communication situation. Previous research has mostly investigated the impact of forewarnings of persuasion intent or the impact of additional negative information that is provided beyond the mere persuasive communication. Context information also plays a role in marketing communication, for instance, when a consumer receives additional information on disregarded business practices of a company.

We distinguish between the following categories of consequences of source credibility:

- **Attitudes**, i.e. the learned predisposition to respond in a consistent manner to objects such as sources, or messages. Source credibility research has mostly been concerned with this category and has consistently supported the positive effects of source credibility on opinion change. In marketing communication, attitudes are primarily related to brands, ads, or advertisers.

- **Cognitions**, such as negative or positive cognitive responses related to the message. Only a few source credibility studies outside the marketing domain have investigated the influence of source credibility on variables such as a receiver’s knowledge. Cognitions related to marketing communication are mainly cognitive responses related to brands or sources.

- **Emotions**, i.e. all affective states of a person. The impact of source credibility on emotions has been rather neglected. However, in marketing communication, emotions such as irritation can play a role when investigating the effects of source credibility on its consequences.

- **Behavioral intentions**, i.e. the subjective probability that a person will perform some behavior. Intentions have a rather motivational character and, hence, are linked to emotions as well as cognitions. Source credibility research dealing with intentions is almost exclusively performed in relation to purchase intentions in the context of marketing.

- **Behavior.** Source credibility research has conceived source credibility as having a mediating impact on behavior and has therefore mainly focused on its effects on cognitive and attitudinal variables. However, for marketers the impact on purchase behavior is of particular interest.

This categorization provides a primary structure for effect size integration in order to come up with empirical generalizations of antecedents and consequences of source credibility. We develop hypotheses that go beyond this categorization in the following section. With respect to the meta-analytic purpose of generalization, these hypotheses are based on substantive moderators which are derived from theory, which partially explains why studies reach different results. Explaining the heterogeneity of effects requires, on one hand, restating already tested hypotheses that can be further established due to gains in inferential power provided by a meta-analysis. On the other hand, the meta-analysis should also incorporate new hypotheses on the basis of data provided by the meta-analytic review or additional information (Miller/Pollock 1994, 1995). We derive hypotheses serving either or both purposes. It should be mentioned that hypothesis testing is restricted to information that can be derived from a meta-analytic review of existing research in marketing. Further possible specifications based on a theoretical delineation are in need of additional primary research.

## 3. Moderating Hypotheses

### 3.1. Moderating Effects for the Antecedents of Source Credibility

Attribution theory describes the process an individual goes through in assigning causes to events and, in doing so, provides explanations for the antecedents related to how recipients determine the credibility of a source. New approaches in attribution research assume observers to be cognitive misers; they infer causes with little cognitive effort and/or are biased by emotions or motives (Folkes 1988). This leads, for instance, to the fundamental attribution error that suggests that observers attribute events rather to persons than to situations and, in doing so, essentially overestimate the dispositional factors of a person (Ross/Amabile/Steinmetz 1977). The top-of-the-head phenomena provides a further example of attribution biases (Taylor/Fiske 1978). Eye-catching cues (e.g., dynamic or bright elements) are more salient to a person’s perception and catch the observer’s attention. Observers often use such salient information for their attribution and abandon unobtrusive information. Similarly, cognitive heuristics are related to attribution biases.
(Kahnemann/Tversky 1972; Tversky/Kahnemann 1973).
According to the heuristic of availability, observers use
information which is highly available. Obviously, salient
information is eye-catching and thus highly available.
Taking these insights together, we can conclude that
observers attribute observed events or behavior more
likely to personal dispositions than to situations; these
attributions are based on easily accessible and salient
information. Salient cues are dynamic elements and par-
ticularly behavioral characteristics of an actor, whereas
the elements of the message itself are less salient (as they
are not so quickly accessible).

H1a: Behavioral correlates of the source (e.g., speech
rate) lead to stronger effects (i.e., more positive or more
negative results) of the antecedents on source credibility
than message characteristics (e.g., mentioning price
comparisons).

Furthermore, not only the stimuli itself but also the pre-
sentation of the stimuli can lead to differences in
salience. A dynamic presentation (e.g., a radio or TV-
spot) is probably more salient than a static presentation
(e.g., print ads). A presentation using colors (e.g., col-
ored pictures) is expected to be more salient than non-
colored forms of presentation.

H1b: Dynamic presentation of stimuli (e.g., radio or
TV-spots) leads to stronger (i.e., more positive or more
effects of antecedents on source credibility
than static forms of presentation (e.g., print ads).

H1c: Colorful presentation of stimuli leads to stronger
(i.e., more positive or more negative) effects of antec-
cedents on source credibility than non-colored forms of
presentation (mere textual presentation).

Given that salience can increase when salient attributes
cumulate, salience of attributes should be especially
high when dynamic elements (behavioral correlates) are
presented in a dynamic way. This, in turn, should result
in even stronger effects of antecedents on source credi-
bility.

H1d (Interaction effect): A dynamic presentation of
behavioral correlates leads to stronger (i.e., more posi-
tive or more negative) effects of antecedents on source
credibility than non-behavioral correlates or behavioral
correlates that are presented in a static manner.

Attributions are often made without much cognitive
effort. In particular, salient attributions, i.e. attributions
that are based on salient information, seem to be self-
evident and are executed almost automatically (Smith/
Miller 1978, 1983). Whereas causal inferences require
more cognitive effort, the mere attribution of intentions
towards, the intention to tell the truth) or personality traits
are made without the attempt to understand the causes of
behavior (Gilbert 1991, 1989). For instance, if an
observer receives the salient information that the person
he is talking to is a professor with a high reputation, he or
she almost automatically attributes competence and cred-
ibility to that person. However, if situations are very
important to the observer and she/he has sufficient cog-
nitive resources, or when information deviates widely from
the memory stored schemas or prototypes, initial disposi-
tional inferences are corrected by taking situational con-
straints into account, and complex attributions take place
(Gilbert/Osborne 1989; Gilbert/Pelham/Krull 1988; Weiner
1985). If the professor in our example is a person
wearing punk clothes, piercing and tattoos, this informa-
tion deviates from most observers’ schemas of a profes-
sor with a high reputation and therefore the observer can
swap from automatically executing attributions to a more
effortful evaluation of the contextual information related
to the observed person and subsequently pass through a
process of complex attribution that corrects the initial
dispositional attribution. Those exceptional or important
situations which elicit situational correction of disposi-
tional attributions are often manipulated by distractions,
interruptions, or by enhancing cognitive busyness, but
can also be differentiated by the involvement of the
observer (e.g., Koslow/Beltramini 2002). Consumers
with high involvement invest more effort in information
processing, which leads to a lower probability of attribu-
tion biases. Therefore, the results for the antecedents of
source credibility should depend on the consumer’s
involvement. Since the fundamental attribution error
suggests that observers overestimate dispositional factors
of a person (Ross/Amabile/Steinmetz 1977), observers
with low involvement make salient attributions and
assume with higher probability that a person is honest (or
dishonest, depending on the valence of the salient infor-
mination) than in an evaluation situation where observers
undergo complex attributions and where evaluation is
based on more thorough information processing (consid-
ering also context information beyond characteristics
of the person). Therefore, we assume the following attribu-
tion hypothesis in order to explain differences in the
antecedents of source credibility:

H1e: Under low involvement, evaluations lead to stron-
ger (i.e., more positive or more negative) effects of antec-
cedents on source credibility than under high involve-
ment conditions.

3.2. Moderating Effects for the Consequences of
Source Credibility

Cognitive theories such as dual-process theories which
try to explain the effect of source credibility on its con-
sequences assume source credibility to be a cognitive phe-
nomenon which relates to information processing and
hence impacts particularly cognitive variables (Chaiken
1987, 1980; Petty/Cacioppo 1981, 1985). Contrarily, the
theories do not suggest that source credibility impacts on
emotional variables. Furthermore, the effect on behavior
is assumed to be mediated by cognitive variables and
therefore weaker than direct effects on cognitive vari-
ables. Hence, we assume a basic distinction for the
source credibility consequences based on the above cate-
gorization.
**H2a:** The effects of source credibility on its consequences are stronger (i.e., show more positive or more negative results) for attitudes and cognitions than for emotions and behavior.

The elaboration likelihood model (Petty/Cacioppo 1981, 1984, 1985) as well as the heuristic systematic model (Chaiken 1987, 1980) conceive source credibility as a simple peripheral cue, or a heuristic, which determines the attitude towards a particular topic. Source credibility serves as a cognitively releasing key stimulus for recipients who are not disposed to engage actively in dealing with the message topic. According to dual-process theories of information processing, source credibility plays more of a crucial role for consumers as an informational cue under conditions of low involvement than under high involvement, since low involved consumers are not motivated and/or able to process the message in an effortful manner and rather rely on simple heuristics.

**H2b:** Low involvement conditions lead to stronger (i.e., more positive or more negative) effects of source credibility on its consequences than high involvement conditions.

Source credibility is heuristic information or a peripheral cue that is more likely retrieved when it is easily accessible to recipients. These peripheral cues are easier to access when the source is presented by a picture (as opposed to sources only described within the message). With increasing ease of accessibility, these cues play more of a crucial role for the consequences of source credibility.

**H2c:** Easily accessible information provided by pictorial presentations leads to stronger (i.e., more positive or more negative) effects of source credibility on its consequences than information that is less accessible, such as when provided by verbal presentations.

Ease of accessibility is particularly important for low involved consumers according to dual-process theories. It plays a minor role for consumers who are high involved and who invest more time and effort when scrutinizing incoming information. Hence, source credibility effects should particularly emerge under low involvement conditions and when information is easily accessible.

**H2d** (Interaction effect): Easily accessible information provided by pictorial presentations under low involvement conditions leads to stronger (i.e., more positive or more negative) effects of source credibility on its consequences than easily accessible information provided by pictorial presentations under high involvement conditions or less accessible information as provided by verbal presentations.

Two further variables that have not yet been investigated by primary studies are available through a meta-analytic review and can be used to test further assumptions based on dual-process theories of information processing. First, today’s consumers face richer information environments than ever before (Lurie 2004). The offer of marketing communication has also increased over the years (Bogart 1986), whereas the information processing capacities of consumers have remained stable. With the advance of communication techniques (e.g., TV, multimedia), marketing communication is therefore offered more often as communication for low involvement conditions, using less text and more pictorial language. Hence, the relevance of source credibility as a peripheral information cue for low involvement situations should have also increased. Furthermore, Kayande/Bhargava (1994) mention the improvement of data collection methods and analytical methods that may also result in stronger relationships over time. Presumably, marketers have also learned to use better credibility enhancers. Altogether, source credibility effects are assumed to have increased over the years.

**H2e:** The effects of source credibility on its consequences have become stronger (i.e., show more positive or more negative results) over the years.

Secondly, the amount of consumer information varies in different regions of the world. In the U.S., the information load for consumers is higher than in other regions of the world (Kroeber-Riel/Esch 2000). For instance, the average number of minutes of advertising per hour in the U.S. is about twice as high as in European countries (Lowrey/Shrum/McCarty 2006). U.S. consumers with similar TV consumption habits as European consumers would have to process more advertising information at the same time; hence, the relevance of source credibility as peripheral information cue may differ for the U.S. as compared to other regions in the world. Regional effects are also supported by another aspect, in that large countries such as the U.S. are more culturally heterogeneous. Substantial within-country differences should result in more variation in the data, with tendencies towards stronger effects than would be found in smaller and more homogeneous countries (cf., Geyskens/Steenkamp/Kumar 1998). Finally, methodological aspects may also play a role: methodological advances in marketing are mainly driven by U.S. research and as such, the results of studies made with U.S. consumers may result in stronger relationships for this region. We assume therefore the following effect hypothesis:

**H2f:** The effects of source credibility on its consequences are stronger (i.e., show more positive or more negative results) in the U.S. as compared to other countries.

### 3.3. Exploratory Moderator Analysis

Besides hypotheses tests, a number of exploratory moderator analyses based on methodological considerations related to well-known problems of meta-analysis are performed. Since there is not always an a priori reason to believe that specific methodological characteristics would lead unambiguously to stronger or weaker relationships with source credibility, no directional hypotheses are offered for these moderators.

Reliability and validity of measurements strongly depend on the way the concept is measured and operationalised.
in terms of underlying components. The number of items and the number of underlying dimensions differ between the included studies. Hence, in order to consider varying measurements, the number of items used for the measurement of the dependent variable as well as the number of dimensions of the source credibility concept is included in the moderator analysis. A further concern in meta-analysis is the fact that effects from published and unpublished papers can differ systematically according to the assumption that non-significant results have a lower publication probability than significant results. To consider problems of publication bias, a moderator for publication type was included that indicated if the effects are from published or unpublished studies (e.g., working papers, unpublished dissertations). Also the methodological quality of the studies can lead to varying results and stronger or weaker effect sizes. In order to consider indicators of the methodological quality, a moderator for the study participants (students vs. non-students), the type of survey (laboratory vs. field study), and performance and results of manipulation checks (omitted or performed with either significant or insignificant results) was included. Figure 1 gives an overview of the conceptual model including the categories of antecedents and consequences of source credibility that will be described by the effect size integration; furthermore, the overview shows the hypothesized substantive moderators and the methodological moderators that will be investigated through application of a regression model.

4. Meta-Analysis Methodology and Data

4.1. Literature Review and Coding

To identify relevant studies, a series of bibliographic searches was undertaken. A computerized bibliographic search using Business Source Elite, ABI/Inform (for business publications), PsycINFO and PSYNDEX (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 marketing journals was conducted [1]. Citations of studies were then examined in order to identify further studies and non-published manuscripts. This approach is consistent with recommendations made by several authors of meta-analytic methods (Cooper 1982; Hunter/Schmidt 1990; Rosenthal 1994a) and provides a rather comprehensive literature review. All identified manuscripts were then inspected and selected to ensure that they fulfilled the following requirements:

Figure 1: Conceptual model of the descriptive categories and moderating effects for the antecedents and consequences of source credibility in marketing communication

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Eisend, Source Credibility in Marketing Communication

48 MARKETING·JRM·1/2006
The study deals with marketing communication.

Source credibility was explicitly under investigation as a dependent or an independent variable and the corresponding relationships are motivated in the study.

Results that deal with separate dimensions of credibility (e.g., expertise, trustworthiness) were only considered if they could be combined to assess source credibility (according to common conceptualizations of source credibility). Results were excluded where credibility was used as an indicator for other constructs considered in the hypotheses (e.g., general evaluations) so that the relationship of the particular indicator with other variables could not be disentangled.

Based on these conditions, 81 manuscripts were found suitable for the purpose of the meta-analysis that provided enough data to calculate necessary effect size [2]. 15 manuscripts (18.5 %) were unpublished. All manuscripts together reported 270 effect sizes from 89 independent studies, with an entire sample size of 18,094 subjects. 103 effect sizes relate to the antecedents of source credibility and 167 effect sizes relate to the consequences of source credibility.

The effect size metric selected for the analysis was the Pearson product-moment correlation coefficient $r$ between source credibility and its antecedents or consequences. The coefficient was chosen because it is an easily interpretable and scale-free measure (Rosenthal 1984). For studies that did not report correlations but used other measures (e.g., Student’s $t$, $F$-ratios), those measures were converted to correlation coefficients by means of formulae given by Glass/McGaw/Smith (1981, pp. 149–150) and Hunter/Schmidt (1990, p. 272).

Substantive and methodological moderator variables were coded by three coders according to the information

<table>
<thead>
<tr>
<th>Moderator variable (value)</th>
<th>Rationale for inclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Substantive moderators</strong></td>
<td></td>
</tr>
<tr>
<td>- Type of construct</td>
<td></td>
</tr>
<tr>
<td>M1</td>
<td>Attitudes (0 = no, 1 = yes)</td>
</tr>
<tr>
<td>M2</td>
<td>Cognitions (0 = no, 1 = yes)</td>
</tr>
<tr>
<td>M3</td>
<td>Emotions and behavior (0 = no, 1 = yes)</td>
</tr>
<tr>
<td>M4</td>
<td>Behavioral intentions (0 = no, 1 = yes)</td>
</tr>
<tr>
<td>M16</td>
<td>Behavioral correlates (0 = no, 1 = yes)</td>
</tr>
<tr>
<td>M17</td>
<td>Message characteristics (0 = no, 1 = yes)</td>
</tr>
<tr>
<td>- Other substantive moderators</td>
<td></td>
</tr>
<tr>
<td>M5 / M21</td>
<td>Involvement (0 = low, 1 = high)</td>
</tr>
<tr>
<td>M6</td>
<td>Ease of accessibility of information (0 = verbal presentation, 1 = pictorial presentation)</td>
</tr>
<tr>
<td>M7</td>
<td>Involvement and ease of accessibility of information – Interaction (0 = high involvement and/or only verbal presentation, 1 = low involvement and pictorial presentation)</td>
</tr>
<tr>
<td>M8</td>
<td>Temporal dimension (1964 to 2001)</td>
</tr>
<tr>
<td>M9</td>
<td>National setting (0 = outside of U.S., 1 = U.S.)</td>
</tr>
<tr>
<td>M18</td>
<td>Dynamic presentation of the stimuli (0 = no, 1 = yes)</td>
</tr>
<tr>
<td>M19</td>
<td>Colorful presentation of the stimuli (0 = no, 1 = yes)</td>
</tr>
<tr>
<td>M20</td>
<td>Behavioral correlates and dynamic presentation – Interaction (0 = non-behavioral variables and/or static presentation, 1 = behavioral correlates and dynamic presentation)</td>
</tr>
<tr>
<td><strong>Methodological moderators</strong></td>
<td></td>
</tr>
<tr>
<td>M10 / M22</td>
<td>Number of credibility dimensions (1 to n)</td>
</tr>
<tr>
<td>M11 / M23</td>
<td>Number of measurement items of dependent variable (1 to n)</td>
</tr>
<tr>
<td>M12 / M24</td>
<td>Publication type (0 = unpublished, 1 = published)</td>
</tr>
<tr>
<td>M13 / M25</td>
<td>Study participants (0 = students, 1 = predominantly non students)</td>
</tr>
<tr>
<td>M14 / M26</td>
<td>Type of survey (0 = laboratory, 1 = field study)</td>
</tr>
<tr>
<td>M15 / M27</td>
<td>Performance and results of manipulation checks (0 = omitted or non significant, 1 = significant)</td>
</tr>
</tbody>
</table>

Table 1: Moderator variables considered in the meta-analysis
given in Table 1. Emotions and behaviors were not investigated separately but collapsed to one moderator reflecting the assumption of hypothesis 2a due to the small number of effect sizes. Separation would have caused collinearity problems in the regression analysis. In addition, behavioral intentions were included as an additional construct type that has been measured most frequently in the included studies and serves as an additional baseline for the test of hypothesis 2a. The codings for the variables were almost consistent throughout. However, the moderator variable for involvement demands attention since it can be considered as a high inference coding; coding was derived by information on the product as well as by characteristics of the situation of the study. Most of the coding for this variable was consistent and Cohen’s Kappa indicated “good” to “excellent” results (Fleiss 1981; Orwin 1994). .791 for coder 1 and 2, .774 for coder 1 and 3, and .711 for coder 2 and 3. In cases of inconsistencies, the coding by the majority of the coders was used after careful consideration of the inconsistent coding.

4.2. Analytic Approach

Integration of effect sizes is performed based on variance weighted and attenuation corrected correlations that were Fisher-Z-transformed before integration. Variance weights are applied in order to consider varying sample sizes, and attenuation correction is applied in order to consider measurement errors. We used attenuation correction procedures as suggested by Hunter/Schmidt (1990, pp. 118–125). If no reliability coefficient was available, the value 1 was given as a conservative estimation that tends to lead to underestimation of the population value. Fisher’s transformations (cf., Fisher 1928) were used since the values are distributed according to a normal distribution and hence provide an unbiased integration of effect sizes. The variance of Fisher’s Z-transformations of the r is calculated according to common guidelines; a comprehensive overview of the relevant formula is provided by Rosenthal (1994b). In order to consider multiple measures per study and possible problems of dependence, a weighting procedure was applied for correlations between the same constructs from a single study such that they were averaged for the integration of effect sizes. Cumulative effect sizes are significant in cases where the confidence interval does not include zero. Alternatively, the significance can be tested by z-statistics so that for z > 1.96 the cumulative results shows significance for p < .05. For significant results, a fail-safe N was calculated. Rosenthal (1979; 1991) suggested this measure which notes the number of non-reported results that would be needed to nullify the reported findings. In other words, it is the number of non-significant results that must be added in order to prove the significance of the cumulative effect sizes as a random error.

Homogeneity tests were conducted to prove if the variation of the cumulative effect sizes was due to random sampling or due to systematic influences; they were performed for the effect sizes of each category as well as for the effect sizes altogether. The hypothesis of homogeneity of the correlations was tested by Hedges and Olkin’s chi-square test that is based on Fisher’s Z-transformation (cf., Hedges/Olkin 1985, p. 235). In case of heterogeneity, a grand mean of the correlation coefficient must be considered as an average rather than as a common correlation value. The variability in the correlations may be due to moderating variables.

In order to test the hypotheses as well as the impact of moderator variables based on methodological considerations, two regression models for the (1) effects of antecedents on source credibility and the (2) effects of source credibility on its consequences were applied to the effect sizes [3]. The following models were estimated:

\[
\begin{align*}
|Z_a| &= \beta_0 + \sum_{j=1}^{15} \beta_j M_j + u, \\
|Z_c| &= \beta_0 + \sum_{j=1}^{27} \beta_j M_j + u
\end{align*}
\]

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, as it is consistent with the focus on the strength of the relationship between credibility and antecedents or consequences, regardless of the direction of the effect. \(Z_a\) refers to the effect sizes of antecedents on source credibility, and \(Z_c\) refers to the effect sizes of source credibility on its consequences. \(\beta_0\) is the intercept, \(\beta_j\) is a regression parameter to be estimated, and \(M_j\) represents the moderator variables according to Table 1. Dummy variables were used for all moderators besides the temporal dimension, number of credibility dimensions and number of measurement items. Since the sample sizes were unequal across studies, a variance weighted analysis was performed (Hedges 1994). In addition, multiple measures were also considered using an independent weighted replications approach according to Bijmolt/Pieters (2001), where multiple effect sizes were weighted by the inverse of their occurrence per study. Note that for the regression models all antecedents and consequences were taken together and hence the weights differ from the integration approach where integration results were given for particular categories. We refrained from using approaches that consider dependent replications since they require additional information on correlations between constructs (e.g., between different antecedents in one study) that were mostly not available and would have to lead to a reduction of cases (effect sizes) in the analysis.

5. Results

5.1. Effect Size Integration

The results of the research synthesis are documented in Table 2 for the effects of antecedents on source credibility and in Table 3 for the effects of source credibility on its consequences. Results were given for all sources.
<table>
<thead>
<tr>
<th>Subgroups</th>
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<th>Cumulative effect size</th>
<th>Confidence interval (95%)</th>
<th>z-statistic</th>
<th>Homogeneity test $\chi^2$</th>
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</table>

Table 2: Integration of effect sizes of antecedents' effects on source credibility
Table 3: Integration of effect sizes of source credibility effects on its consequences

<table>
<thead>
<tr>
<th>Subgroups</th>
<th>k</th>
<th>Cumulative effect size</th>
<th>Confidence interval (95%)</th>
<th>Homogeneity test</th>
<th>fail-safe N</th>
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</table>

together as well as for the three sources in marketing communication separately. The integration of effect sizes was performed according to our classification of categories of antecedents and of consequences of source credibility. For the consequences, some correlations were found which could not be categorized according to our scheme. However, they are included in the overall integration and in the moderator model. The results show variance weighted and attenuation corrected results of integration, confidence intervals, significance tests, homogeneity tests, and the fail safe N in cases where the integration result yielded significance. Confidence intervals were calculated for cumulative results based on at least three effect sizes. Given the small number of correlations for particular categories, no strong conclusions will be drawn in these cases and interpretations are based on descriptive values rather than significance tests. Furthermore, given the lack of homogeneity of some of the cumulative effect sizes, comparisons should be made with caution, since differences in effects sizes may also result from differences in study characteristics. Strong evidence on differences can be obtained through testing, as it is performed in the moderator analysis based on weighted regression models.

The results for effects of antecedents on source credibility allude to a varying importance of several categories of variables that have an impact on source credibility in marketing communication. Especially relevant seem to be behavioral correlates, message style variables, and contextual variables (e.g., the communication situation) that achieve a cumulative correlation coefficient between .15 to .2. All other characteristics of the message, the medium, and the recipient show rather weak effects. These effects differ when looking at the sources separately. For spokespersons, source characteristics and the context show a stronger impact, while for companies the message style and message structure effects are stronger. For the salesperson credibility, strongest effect sizes emerge for context, message content, and behavioral correlates. The variables investigated in prior research so far indicate that antecedents have significantly more influ-
ence on the source credibility of a salesperson compared to the credibility of a company ($z = 2.929, p = .003$) or compared to the credibility of a spokesperson in advertising ($z = 3.128, p = .002$), which is an indicator of a lower credibility of companies and spokespersons in advertising as opposed to salespeople at large. While the cumulative effect sizes across the categories are mostly heterogeneous for the sources taken together, they yield more often homogeneity when differentiating between the sources, above all, for the message and source categories.

The results of the integration of the effects of source credibility on its consequences show positive effects for all consequences; all cumulative effect sizes except for behavior reveal significance. Attitudes and behavioral intentions seem to be influenced more by source credibility than emotions or cognitions. These differences are quite consistent over the three sources except for cognitions. Cognitions play an important role for salespersons’ source credibility but not for spokespersons’ credibility, which may be an indicator for different processing styles of recipients in advertising situations vs. personal selling encounters. When comparing the sources, advertising spokespersons’ credibility has the lowest values for the effects sizes indicated by a cumulative effect size of about .09. This effect does not significantly differ from the cumulative effect sizes of the company credibility of almost .11. However, the effect sizes of salespersons’ credibility achieve a higher impact compared to other sources: the cumulative correlation coefficient of about .14 is significantly higher than the cumulative effect size for spokesperson credibility ($z = 3.256, p = .001$) and also higher than the cumulative effect size for company credibility ($z = 2.120, p = .034$).

5.2. Moderator Analysis

The influence of the postulated moderators was tested by two regression models. The results are documented in Table 4 and Table 5. For the effects of antecedents on source credibility, the regression model was significant ($R^2 = .464, n = 103$). The residual sum of squares shows an unexplained variance, which indicates significant heterogeneity of the model and the actual model to be underspecified. The maximum variance inflation factor

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<th>$se_p$</th>
<th>z-test</th>
<th>$p$</th>
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<td>Type of survey (0 = laboratory, 1 = field)</td>
<td>.076</td>
<td>.039</td>
<td>1.937</td>
<td>.053</td>
</tr>
<tr>
<td>Performance and results of manipulation checks (0 = omitted or non significant, 1 = significant)</td>
<td>.048</td>
<td>.018</td>
<td>2.630</td>
<td>.009</td>
</tr>
<tr>
<td><strong>Model summary</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$R^2 = .464$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$F = 6.493; p &lt; .001$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$n = 103$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>maximum VIF = 4.027</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4: Impact of moderator variables on effect sizes of antecedents on source credibility
was less than 10, indicating no potential multi-collinearity problems (cf. Kätnner et al. 2004). All effects of the substantive variables showed the expected direction. However, no significant difference was found for the dynamic presentation (H1b) ($b_{1} = .059, z = 1.796, p = .073$). A comparison of the regression coefficients of behavioral correlates and message characteristics reveals a significant difference as assumed in H1a ($t = 3.833, p < .001$). Another significant effect emerged for the colorful presentation of the stimuli (H1c) that leads to stronger effects of antecedents on source credibility ($b_{1} = .047, z = 1.981, p = .048$), as well as for the interaction between behavioral correlates and dynamic presentation (H1d) ($b_{1} = .505, z = 8.259, p < .001$), such that behavioral correlates presented in a dynamic way yielded stronger effects of antecedents on source credibility.

Finally, involvement (H1e) has a significant impact ($b_{1} = -.119, z = 5.927, p < .001$) as well such that low involvement conditions lead to stronger effects of antecedents on source credibility. Thus, hypotheses 1a, 1c–1e are accepted, and 1b is rejected. Amongst the methodological moderators, the number of credibility dimensions, the number of items used for the measurement of the dependent variable, the publication type, the study participants and the type of survey showed no significant relationship to the effect sizes. A difference resulted from the performance and results of the manipulation checks ($b_{1} = .048, z = 2.630, p = .009$), such that significant results of a manipulation check resulted in stronger effects sizes.

For the effects of source credibility on its consequences, the regression model was also significant ($R^2 = .551,$

Table 5: Impact of moderator variables on effect sizes of source credibility on its consequences

<table>
<thead>
<tr>
<th>Moderator variables</th>
<th>$b_{1}$</th>
<th>$se_{b}$</th>
<th>z-test</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Substantive moderators</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Type of construct</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitudes (0 = no, 1 = yes)</td>
<td>.085</td>
<td>.055</td>
<td>4.115</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Cognitions (0 = no, 1 = yes)</td>
<td>.085</td>
<td>.020</td>
<td>4.271</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Emotions and behavior (0 = no, 1 = yes)</td>
<td>-.065</td>
<td>.036</td>
<td>1.803</td>
<td>.071</td>
</tr>
<tr>
<td>Behavioral intentions (0 = no, 1 = yes)</td>
<td>.163</td>
<td>.024</td>
<td>6.890</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>- Other substantive moderators</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Involvement (0 = low, 1 = high)</td>
<td>-.108</td>
<td>.020</td>
<td>5.426</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Ease of accessibility of information / pictorial presentation (0 = verbal presentation, 1 = pictorial presentation)</td>
<td>.105</td>
<td>.021</td>
<td>4.993</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Involvement and ease of accessibility of information / pictorial presentation – Interaction (0 = high involvement and/or only verbal presentation, 1 = low involvement and pictorial presentation)</td>
<td>.046</td>
<td>.029</td>
<td>1.570</td>
<td>.116</td>
</tr>
<tr>
<td>Temporal dimension (1964 to 2001)</td>
<td>.008</td>
<td>.001</td>
<td>10.652</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>National setting (0 = outside of U.S., 1 = U.S.)</td>
<td>.052</td>
<td>.022</td>
<td>2.387</td>
<td>.017</td>
</tr>
<tr>
<td><strong>Methodological moderators</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of credibility dimensions (1 to n)</td>
<td>.009</td>
<td>.009</td>
<td>11.115</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Number of measurement items of dependent variable (1 to n)</td>
<td>-.005</td>
<td>.002</td>
<td>2.663</td>
<td>.008</td>
</tr>
<tr>
<td>Publication type (0 = unpublished, 1 = published)</td>
<td>-.117</td>
<td>.016</td>
<td>7.246</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Study participants (0 = students, 1 = predominantly non-students)</td>
<td>.022</td>
<td>.018</td>
<td>1.196</td>
<td>.232</td>
</tr>
<tr>
<td>Type of survey (0 = laboratory, 1 = field)</td>
<td>-.033</td>
<td>.026</td>
<td>1.274</td>
<td>.203</td>
</tr>
<tr>
<td>Performance and results of manipulation checks (0 = omitted or non significant, 1 = significant)</td>
<td>-.113</td>
<td>.017</td>
<td>6.839</td>
<td>&lt;.001</td>
</tr>
<tr>
<td><strong>Model summary</strong></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>$R^2 = .551$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$F = 12.352; p &lt; .001$</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>$n = 167$</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>maximum VIF = 7.121</td>
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</tbody>
</table>
The residual sum of squares shows an unexplained variance, which indicates significant heterogeneity of the results. The maximum variance inflation factor was less than 10. All effects of the substantive variables showed the direction as expected by the hypothesis. A comparison of the regression coefficients of cognitions and attitudes with emotions and behavior reveals a significant difference between attitudes and emotions/behavior ($t = 2.839, p = .007$) as well as between cognitions and emotions/behavior ($t = 7.158, p < .001$) (H2a). Interestingly, the construct type “behavioral intentions” that has been defined as a motivational variable shows the highest impact; effect sizes for behavioral intentions are even significantly higher than effects on attitudes ($t = 3.522, p < .001$) and almost significantly different from cognitions ($t = 1.784, p = .078$). Furthermore, an effect was found for ease of accessibility of information (H2c) ($b = .105, z = 4.993, p < .001$), such that easily accessible information leads to stronger effect sizes for source credibility effects on its consequences. A significant main effect for involvement (H2b) appeared ($b = -.108, z = 5.426, p < .001$) such that high involvement leads to weaker effect sizes; however, the interaction effect for involvement and ease of accessibility (H2d) yielded no significance. Significant effects also emerged for the temporal dimension (H2e) ($b = .008, z = 10.652, p < .001$) and the national context (H2f) ($b = .052, z = 2.387, p = .017$). Effect sizes of source credibility effects on its consequences became stronger over the years and are stronger in the U.S. compared to other countries. Altogether, hypotheses 2a, 2b, 2c, 2e and 2f are accepted, whereas 2d is rejected.

Amongst the methodological moderators, study participants and type of survey showed no significant relationship to the effect sizes. A difference was found for the number of credibility dimensions ($b = .096, z = 11.115, p < .001$), such that effect sizes became stronger with the number of credibility dimensions (on which the concept was based). Differences also resulted from the number of measurement items of the dependent variable ($b = .005, z = 2.663, p = .008$). The somewhat surprising negative effect of the measurement items which means that more items resulted in weaker effect sizes can partly be explained by the varying concepts measured as dependent variables and their relationship with the strength of effects (e.g., purchase intention is always measured by a single item and yields stronger effects according to the results with respect to hypothesis 2a). Greater effects resulted from unpublished studies compared to published studies ($b = -.117, z = 7.246, p < .001$). A negative effect resulted from the performance of a manipulation check ($b = -.113, z = 6.829, p < .001$) that can be due to the fact that in cases of a clear conceptualization of the independent variable, which yielded strong effects, no manipulation check was performed.

### 6. Discussion and conclusions

The results of our meta-analysis provide empirical generalizations on antecedents and consequences of the credibility of different sources in marketing communication. They also substantiate previous results and reveal some new insights. The results show that salient characteristics presented as dynamic elements or presented in a dynamic manner are important antecedents of the credibility of a source. Effect sizes of antecedents on source credibility are dependent on the involvement of the consumer as are the results for the effects of source credibility on its consequences. Effect sizes of source credibility on its consequences are stronger for cognitions, attitudes, and behavioral intentions as compared to emotions or behavior.

This result proves the rather cognitive character of the concept of source credibility. Furthermore, the effects of source credibility on its consequences depend on developments in marketing communication techniques and implementations as well as on developments in methodology and measurement, which differ over the years as well as between regions, such that effects of source credibility on its consequences have increased over the years and are stronger in the U.S. compared to other regions.

This is also consistent with the results of the previous meta-analysis from Wilson/Sherrell (1993) who found in their study that source credibility accounted for 7.4% of the variance of persuasion effects. In this study, the average effect size for source credibility consequences in marketing communication is indicated by a cumulative correlation coefficient of about .1. This corresponds to a higher percentage of explained variance compared to the meta-analysis that was performed more than a decade ago.

Theoretically, dual process theories and attribution theory both provide an integrative theoretical framework in order to investigate source credibility and its antecedents and consequences in marketing communication. In particular, the distinction between complex processes of information processing and processes under low cognitive elaboration applies to the process underlying antecedents of source credibility as well as consequences of source credibility. The argumentation is not new with respect to dual-process theories, in which consumers rely more often on simple cues like the credibility of the source and are therefore more influenced by source credibility under low involvement conditions. This duality of processes, however, also applies to an attribution theory-based argumentation for source credibility evaluation where consumers seem to be less critical in low involvement situations; attributions are biased towards an overestimation of characteristics of the source and are primarily based on salient cues in order to determine a source’s credibility. Hence, credibility evaluations are more susceptible by salient information under low rather than under high involvement conditions.

For marketing practice, our results give further information on how to use source credibility efficiently – with its...
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possibilities as well as its restrictions – as a means of persuading consumers. Obviously, source credibility is mostly appropriate as a persuasion mechanism in the context of personal communication with a salesperson, whereas source credibility of a spokesperson in advertising is comparatively not as relevant, however not completely meaningless. Our meta-analysis provides information on important factors with which a salesperson can scrutinize certain salient characteristics, such as their nonverbal behavior, in order to influence consumer’s evaluation of the credibility of the salesperson. The effects of source credibility on its consequences relate mostly to cognitions, attitudes, and intentions. Communication including information or arguments should therefore be more appropriate for the use of source credibility techniques than mere emotional or mood-based communication, as we often found in advertising. Still, these results mostly apply to personal encounters with a salesperson whereas cognitions play a less important role for advertising spokesperson credibility. Furthermore, source credibility serves as a heuristic or information surrogate and is mostly relevant under low involvement conditions. Source credibility enhancing techniques in marketing should therefore be easily accessible to consumers and not delivered as a rationale sermon with a series of arguments. The efficient use of source credibility in advertising as a persuasion mechanism can be captured by the Rossiter/Percy-grid which differentiates between informative and transformative ads as well as low and high involvement conditions (Rossiter/Percy 1997). Hence, source credibility seems most appropriate in cases of informative ads under low involvement.

The meta-analysis shows that it is important to consider methodological characteristics in order to explain the variance of effect sizes more thoroughly. Interestingly, we found differing effects of methodological moderators for effects of the antecedents on source credibility and the effects of source credibility on its consequences, which is also in line with the non-directional assumption on the impact of those moderators. The results give some indication for further research topics. For instance, future research could focus on the conceptualization of source credibility that has been captured with varying numbers of dimensions which lead apparently to varying effect sizes for the consequences of source credibility. Given that the mere conceptualization impacts the results of a study, the generalization of concepts seems a crucial issue. We also found a significant result of publication bias for consequences of source credibility, where unpublished studies lead to higher effect sizes but not for the antecedents. There may be a relation to the percentage of unpublished studies that lead to more variation in the results, since for the antecedents only 11 % of the effect sizes resulted from unpublished studies, but for the consequences 28 % of the effect sizes resulted from unpublished work.

Methodologically, the analysis shows how meta-analysis can provide empirical generalizations and can also serve beyond the mere integration of results to test hypotheses which have not yet been tested in primary analysis. Meta-analysis is not only a backwards-oriented research method, but it is also able to add new knowledge to the groundworks of science and to stimulate further research. A further contribution could be provided by a formal test of the conceptual model of the antecedents and consequences of source credibility applying structural equation modeling. However, further correlations between each antecedent and each consequence would be needed. Those correlations could not be retrieved from the information in the studies at hand. Further research could try to use relevant correlations from other meta-analyses or additional studies.

Some critical aspects must be noted. Our meta-analysis still could not provide a total explanation of the heterogeneity of the results. In order to specify the regression models and to reduce heterogeneity, further moderator variables should be included. These moderators should be based on further theoretical considerations as well as on methodological details. Nevertheless, the variance explained in relation to the amount of effect sizes yielded results which are not uncommon in other meta-analyses in marketing research. Also, quite a majority of the cumulative results of the single categories of the meta-analysis yielded homogeneity.

Notes


[2] An additional seventeen empirical studies were uncovered which fulfilled the sampling requirements but were not included in the review because they failed to report necessary or distinct information. The following studies did not provide enough information to calculate effect sizes: Chawla/Davel/Burr 1994; Gotlieb et al. 1987; Hausknecht/Moore 1986; Olson 1974; Scott/Landry 1982; Seo 2002; Seward 1984. Some studies did not specify the source of credibility, which was necessary for the categorization scheme of the meta-analysis: Arora 2000; Everett 1989; Maile/Koijlash 1977; Mazursky/Scial 1988; Meyer-Hentschel 1984; Sandier 1987. One study was excluded since it was itself a meta-analysis (Grewal et al. 1997). Two studies were excluded because there was no way to impose a causal relation in accordance with the way the relationship was measured (Haynes 1983; Wilding/Bauer 1968).
A fixed effect model was applied. Since differences between studies which lead to differences in effects are not regarded as random but are regarded as consequences of study design decisions, the fixed effects method seems to be appropriate for the analysis (Hedges 1994).

References (asterisks denote studies used in meta-analysis)


*DeShields, O.W. (1992): The Relationship Between Spokesper
son Credibility and Purchase Intentions: A Proposed Theory and Experimental Evaluation, Dissertation, Florida Interna
tional University.


*Herbig, P./Milewicz, J. (1995): To be or not to be... Credible that is: A Model of Reputation and Credibility Among Competing Firms, in: Marketing Intelligence & Planning, Vol. 13, No. 6, pp. 24–33.


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