Corporate Sustainability Ratings Databases: Maximizing perceived content usefulness

Research-in-Progress

Stephanie Watts
Questrom School of Business at Boston University
595 Commonwealth Ave., Boston MA 02215
swatts@bu.edu

Abstract

This paper reports on a laboratory experiment conducted to investigate interactions between the design of two different corporate sustainability ratings databases, and users' perceptions of the usefulness of their content. Four heuristics were investigated: the for-profit status of the company that produced the database, the company's strategic ties, the perceived ease-of-use of the database itself, and its perceived credibility. A dual-process theoretical lens was applied. Findings support the importance of three of the four heuristic cues for influencing perceptions of content usefulness. Both credibility and For-profit status functioned as both heuristic cues and as argument factors, suggesting that their influence is systematic and enduring. Ease-of-use was the most influential overall, particularly in interaction with user expertise. Implications for the design of sustainability ratings databases are discussed, along with ongoing research efforts.

Keywords: Corporate sustainability reporting, socially responsible investment, sustainability ratings databases, database ease-of-use, usefulness, credibility

Introduction

The Socially Responsible Investing (SRI) movement is finally functioning as intended: 93% of companies do formal sustainability reporting, much of which is audited. Ratings companies use this content to produce sustainability ratings databases such as those investigated in this research. Sustainable investment companies (such as Domini, Calvert, Walden, etc.) use these ratings to create sustainable investment portfolios and other financial products. Companies with poor ratings are excluded from these financial products, so they have fewer investors, resulting in various negative financial repercussions, not the least of which is that they have to pay more to borrow money for expansion (e.g. to build new plants etc.) because their cost of capital goes up (El Ghoul et al., 2011). This limits the ability of unsustainable companies to expand, and also motivates them to clean up their act; companies that do bad things to the environment\(^1\) – such as polluting the air, land and water, using suppliers who do so, etc. – now have a financial incentive to stop doing so: they will no longer be financially punished for their unsustainable practices. In this way increasing numbers of companies work to clean up their acts and the world becomes a more sustainable place in response to market feedback. The scenario is particularly well suited to places where the government is unable, for whatever reason, to legislate and enforce environmental regulations. Since NAFTA, free-trade agreements between governments have given corporations the power to sue the local governments where they operate if they enact environmental or labor regulations that cut into the company's profits, and this ties the hands of the government to do so. Therefore, schemes such as SRI that rely on market mechanisms are increasingly important. SRI now comprises a significant portion of the financial industry: As of year-end 2011, 49% of all invested assets in the E.U. were invested along a responsible investment strategy, with Africa at 35.2%, Canada at 20.2%, Australia and Zealand at 18% and the U.S. at 11.2% (Scholtens, 2014). SRI provides companies with monetary incentive to behave responsibly toward the environment: to not to pollute the air, land, sea and inland waterways, to not destroy fragile ecosystems, etc. This movement has gained the momentum it has partly due to the rise of sustainability ratings databases. Companies with

\(^1\) Sustainability as practiced in the SRI field encompasses six dimensions, only one of which is environmental. It includes labor relations, human rights, corruption, etc. But this paper emphasizes the environmental aspect due to the nature of the Track.
high ratings in sustainability rating databases work to monitor and limit the resources they use. They choose not to pollute, and they minimize the use of toxins in their products and production processes. They operate with an understanding of their own externalities and chart a path to minimizing them.

This research investigates these sustainability ratings databases from the perspective of content adoption. Since SRI financial instruments are developed based on the content of these sustainability ratings databases, sustainability ratings databases are necessary for the success of the SRI movement. For those not familiar with them, corporate sustainability ratings databases such as Environmental, Social, Governance (ESG) Manager enable users to search the research reports of sustainability analysts. These analysts have been trained to collect data about the behavior of a corporation, analyze it, produce a sustainability report, and assign a “rating” to the company. The inputs they use to generate these reports consist of any and all information available about the company – the company’s own sustainability reports (which in many cases have been audited, in which case the audit results are also inputs), news articles, media releases, letters from the CEO, political lobbying and donations, fines and penalties, health and safety violations, etc. The topics covered in these databases span the breadth of categories in the Global Reporting Initiative’s framework – economic, environmental, and social. The research organizations that create these corporate sustainability ratings databases work hard to ensure that their content has been vetted and validated. Because of the deep research and expertise required to produce and maintain them, these databases are proprietary and typically cost $15K or more to subscribe to annually. While most research universities and some libraries subscribe to them, the biggest market for them are those in the SRI community.

Early adopters of SRI have demonstrated the efficacy of the approach, and the content delivered via sustainability ratings databases is credible to those within the SRI community. But to continue to grow the SRI movement, the laggards must be engaged as well. To this end, it is important that those outside the SRI community believe in the credibility and usefulness of the content in corporate sustainability ratings databases. Many investors are uninformed about these databases, mistrust their content, and don’t understand why they are included in investment analysis and decision-making. Yet it is these people, outside of the SRI community, that most need to be convinced of the validity and usefulness of this data if SRI is to continue to grow. This is the context for the questions that drive this research: As information and interface designers, what can we do to increase the likelihood that new users of these databases will find the content in them useful? Are there aspects of a database’s interface and information design that may spill over to users’ perceptions of the content that is delivered via that database? And are some of these aspects a function of the company that produces the database? This paper presents the results of an exploratory laboratory study that investigates two characteristics of the company producing the database – its For-profit status and its Strategic ties, and two perceived characteristics of the database itself – its Credibility and Ease-of-use. The experimental design manipulated the two company characteristics at two levels each. Participants were asked to look up three company rankings on each of two different sustainability ratings databases; ESG Manager and GMI Analytics. The interfaces and functionality of the two databases differed somewhat, engendering varied user perceptions of the Credibility and Ease-of-use of each. A moderator was included in the model – user expertise in the information topic – in order to invoke predicted effects of dual-process theory to shed further light on the research questions.

This research investigates how features of a database interface can affect the extent that its content is perceived as highly useful to its users. Since we want the content of our databases to be used, this issue of interaction effects between interface feature design and content usefulness is important for ICT researchers and practitioners, particularly in the context of the corporate sustainability ratings databases that are the focus of this investigation.

Theoretical Background

Information systems scholars have produced a plethora of research on the usefulness of information technologies themselves, primarily stemming from the Technology Acceptance Model and its derivatives (Davis, 1989). However, there has been very little work investigating how these technologies affect the usefulness of the content they make available in the form of databases and online repositories. However, content that isn’t useful undermines organizational knowledge management efforts (King, 2002; Zack, 1999), hence the need to understand this phenomenon more deeply. Early research in this area applied the term knowledge adoption to this problem (Sussman and Seigal, 2003). Nascent work in this area includes adoption of content from online community repositories (Zhang and Watts, 2008), adoption of online review information through the mediator of perceived information usefulness.

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2 https://www.globalreporting.org/Pages/default.aspx
3 GMI Analytics is a product name, not a known acronym.
(Cheung et al., 2008), and a stream of work investigating how the governance of information validation on a website influences individuals’ use of content from that website (Kayhan, 2015; Kayhan and Bhattacherjee, 2013; Kayhan et al., 2013). While space limitations preclude a thorough review of these studies, together they comprise a body of work exploring the interaction of content adoption and technology design. This research extends this stream to adoption of the content in sustainability ratings databases. All these studies apply the dual-process theoretical lens to their particular knowledge adoption context, as we do here.

**A Dual-process Approach to Information Assessment**

This research takes a dual-process cognitive approach to understanding exogenous influences on database content assessment. According to dual-process theories, individuals form immediate attitudinal responses to new information through two different mechanisms – one primarily analytical, and the other primarily intuitive through application of heuristic cues. According to the Heuristic-Systematic dual–process model (Chaiken, 1980), people are continuously informed by both rational arguments and simple cues, and these two types of cognitive processes play off each other in complex ways (Chaiken et al., 1989). This theory is well-suited to understanding how people assess new database content, since it is designed to model attitudes formation in validity-seeking contexts. Because heuristics function quickly and often sub-consciously, and systematic processing is effortful and takes time, anything that alters the cognitive capacity or effort of the person receiving the new information will alter the balance of the two processing modes and so tends to moderate the relationship between content, cues, and information assessment outcomes – usefulness in this case. A frequently-studied moderator in dual-process studies is the expertise of the person assessing the new information: high-expertise users are likely to have greater cognitive capacity for systematically assessing new content than are low-expertise users. Thus the higher the expertise of the user, the less likely they are to be influenced by heuristic cues. This study included user expertise as a moderator to investigate content assessment.

**Heuristics about the Company Producing the Database: For-profit Status and Strategic ties**

This research manipulated the For-profit status of the companies that produced the two databases studied, to see how this cue affects users’ perceptions of the database content delivered. Since For-profit companies have a profit-making agenda in addition to an information-provision one, this may weaken the credibility of the content they deliver, and hence its usefulness. Some evidence for this comes from marketing research; search engine users have been found to prefer to click on links that they believe are algorithmic results rather than advertisements (Jansen et al., 2007). Non-corporate sources are generally perceived as more credible than corporate sources because they are considered unbiased (Du and Vieira, 2012; Yoon et al., 2006). Hence:

H1: The information provided by For-profit database companies will be perceived as less useful than the information provided by not-for-profit database companies.

And since expertise tends to reduce a users' reliance on heuristic cues, we would expect that:

H1a: This effect will be more pronounced for users with low expertise in the topic of the data.

Another heuristic that might affect users’ perceptions sustainability database content is the reputation of the company that produced it. Reputation is what is generally said or believed about a person's or thing's character or standing (Jøsang et al., 2007). A company's reputation can moderate consumers' suspicion about advertising (Skard and Thorbjørnsen, 2014). Reputation derives from the credibility and respect that a broad set of constituents have about the company (Etterson and Knowles, 2008). Having a broad set of constituents is manifested in having a number of reputable organizations within ones strategic network, reflecting multiple strategic ties. Strategic alliance serve as signals that convey organizational reputation (Stuart, 2000), since organizations are not likely to enter into alliances that are not reputable (since their reputation also is reflected in their strategic ties. Hence:

H2: The information provided by databases companies with strong Strategic ties will be perceived as more useful than the information provided by database companies without strong strategic ties.

And as above, since the strength of a company's strategic ties serves as a heuristic cue, its influence will be higher for users with low expertise:

H2a: This effect will be more pronounced for users with low expertise in the topic of the data.

**Heuristics about the Database Itself: Credibility and Ease-of-use**

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Source credibility refers to an information recipient’s perception of the credibility of the information’s source, reflecting nothing about the information itself (Chaiken, 1980). In this research, source credibility refers to the database itself, not the content that it makes available. Early laboratory experiments on the role of credibility in informational influence found significantly more opinion change when the material was attributed to a high-credibility source (Hovland, 1951). Source credibility is an important predictor of attitude change in general, and is generally conceptualized as a heuristic cue that can bias message processing. But it has also been found to serve as an additional argument in favor of an advocated position (Chaiken and Maheswaran, 1994). Thus source credibility plays an important and complex role in informational influence, and:

H3: The information provided by databases with high Credibility will be perceived as more useful than the information provided by databases with low credibility.
H3a: This effect will be more pronounced for users with low expertise in the topic of the data.

The ease-of-use of an ICT has long been studied as a factor that contributes to future intention to use that system, under the Technology Adoption Model (TAM) (Davis, 1989) and its derivates. In the online context, perceived ease-of-use has been associated with increased trust in a website, and increased intention to use that website in the future (Gefen et al, 2003). Castaneda et al. (2007) investigated ease-of-use as a peripheral cue and found it to be significantly associated with perceived website usefulness. It has also long been studied in the information retrieval literature, where it has been found to positively contribute to assessment of these databases (Pajic, 2014). However, to our knowledge no research has investigated the role that the ease-of-use of a database plays in the assessment of the content delivered via that database. The following hypotheses explore this issue:

H4: The information provided by databases with high Ease-of-use will be perceived as more useful than the information provided by databases with low ease-of-use.
H4a: This effect will be more pronounced for users with low expertise in the topic of the data.

### Methods and Analysis

A laboratory experiment was conducted to investigate the theoretical hypotheses developed above, on two different sustainability ratings databases. All analyses were conducted separately on the two databases, with the goal being to test the model on both, rather than comparing the two. Over the course of four days, the experimental protocol was administered to 239 undergraduate university students in a computer laboratory used to conduct such experiments. Participants read the instructions and then completed the survey instrument on paper, which simplified the process since using an online survey would have required them to continuously switch back and forth between browser windows. The instructions introduced them to the concept of CSR ratings databases and then asked them to record their demographics. They were then asked to open one of two CSR Ratings databases online, either ESG Manager (by MSCI) or GMI Analytics. Both databases provide sustainability ratings of companies on their CSR performance, albeit in slightly different flavors. ESG Manager’s ratings of most public corporations range from A (best) to F (worst), and are around 23 pages long. GMI Analytics ratings range from AAA (best) to C (Worst), are about 10 pages long. ESG Manager and GMI Analytics were competing research companies at the time of the study, both producing analysis of their three traditional sustainability categories of environmental, social and governance factors. For information on these databases, please see websites [http://www3.gmiratings.com/](http://www3.gmiratings.com/) for GMI. Note that GMI Analytics has recently been acquired by MSCI, but this was not the case at the time that the research was conducted. Participants then used the search function of the database to look up the ratings of three well-known companies, one at a time – Campbell’s, Kraft, and Tyson. After each company lookup, they answered questions about their perceptions of that company and about the rating of it provided by the database. They were then asked to repeat the process using the other database. The order of the databases was randomized such that half the sample was exposed to ESG Manager first and the other half to GMI Analytics first.

Four versions of the survey were created to manipulate the theoretical constructs pertaining to characteristics of the database company: For-profit versus not-for-profit, and strong strategic ties versus weak strategic ties. Thus both databases presented to each participant were identified as either for-profit or not, and strongly-tied or not. The randomization of these four manipulations created sixteen versions of the survey. Before they opened each database, participants read a description of it that provided the manipulation. In addition to answering questions about the companies they looked up and their associated ratings, students also answered questions about each of the two databases, after they had completed the three company lookups. Included in these were questions were manipulation checks asking participants’ to indicate whether the database was for-profit or not, and strongly-tied or not.
Measures

The for-profit status of the company that produced each database was manipulated in the description of that database and the manipulation check was used in the analyses. The existence of strategic ties was also manipulated by including in the description, or not, the sentence “It is produced by a company that has strategic partnerships with the following organizations: Natural Resources Defense Council, the Nature Conservancy, the Union of Concerned Scientists, the Sierra Club, and the Environmental Defense Fund”. After the three assigned company lookups in each database, participants were asked the manipulation check: “To what extent do you consider the organization that produces this database to have strong strategic ties?”, and this manipulation check was used in the analyses.

Regarding the perceptual measures, since the two databases were analyzed separately, reliability assessments were also calculated separately, but all measures are identical across the two databases. The dependent measure of perceived information usefulness is from Bailey and Pearson (1983): After each company lookup, participants were asked to rate the content of the database as it pertained to that company rating on the following 7-point scales: Valuable–Worthless; Informative–Uninformative; Helpful–Harmful; and Believable–Unbelievable. These 4-item scales were combined into two factors, one for each database. Cronbach Alpha’s for these reliabilities are .973 for the ESG database and .964 for the GMI database. To measure database Ease-of-use, participants were asked three questions assessing their perceptions of how clear and understandable, and easy to use, each database was, and how much mental effort was required. Reliabilities of this measure are .914 for ESG Manager and .861 for GMI Analytics. A principal components factor analysis of credibility, ease-of-use, and usefulness resulted in extraction of three components, verifying discriminant validity between the model constructs.

Perceived Database Credibility was assessed at two points, first, immediately following the description of the database, and then again after they had used it for the company lookups. The second of these was used for the analysis. A number of authors have studied the underlying structure of source credibility (see Newell (1993) for a review). Two sub-dimensions originally identified by Hovland (1951) have consistently emerged—competence and trustworthiness (Wiener and Mowen, 1986). This sub-dimensional structure was used for the operationalization of source credibility: two seven-point Likert scale questions from Sussman and Siegal (2003) were used to measure the trustworthiness sub-dimension as trustworthy and reliable. To measure the competence sub-dimension of the credibility construct, two items pertaining to each lookup were used: data accuracy and data appropriateness, in the same format as for trustworthiness above, and combined into two factors, one for each database. These two sub-dimensions of database credibility were combined into a single factor consisting of trustworthiness, reliability, appropriateness, and accuracy, which was then used in the model. Reliabilities of this measure are .914 for ESG Manager and .918 for GMI Analytics. To investigate effects of Expertise, measures were adapted from Stamm and Dube (1994) to this context. Participants were asked how informed they are on the company whose rating they just looked up, and to what extent they are an expert on it. Cronbach alphas for these scales were .930 for the ESG database and .919 for the GMI database.

Analysis

Two of the surveys completed by the participants were unusable due to data omissions, leaving a sample size of 237. Of these, 118 used the ESG database first and the GMI database second; 120 participants used GMI first. The mean age of participants was 19.6. Female participants comprised 56.3 percent of the sample. 78.6 percent were sophomores, 10.5 percent were Freshmen, 8.4 percent were Juniors, and 2.5 percent were seniors. 91.6 percent were in the School of Management, with the rest distributed across other disciplines. In answer to the 7-point question “To what extent are you interested in Corporate Social Responsibility”, the mean response was 4.6 (s.d.=1.53). 42.4 percent of participants were more interested in Finance than CSR. Perceived Credibility and Ease-of-use were correlated at .30**, but exhibited sufficient discriminant validity. When asked “To what extent were you aware that non-financial company ratings databases like these are available”? 1.9% responded that they were.

Findings

Results indicated clear differences between the two databases, as follows. Both databases served up research documents in response to participants’ company searches. These documents were relatively similar: Both were primarily text but included charts and graphs, which were in color. An in-depth analysis of specific feature differences between the two databases is outside the scope of this paper and is the basis for on-going current research. The mean Ease-of-use of the ESG Manager database was 4.79, significantly higher (t=5.71, d.f.=.47, sig.=.000) than the mean of
3.96 for GMI Analytics. This was validated in response to a later bimodal question asking which they found easier: 67.5% replied ESG, while 32.1% replied GMI. ESG Manager was also rated significantly higher for \textit{Usefulness} (t=3.21, d.f.=.47, sig. =.001), and \textit{Credibility} (t=4.93, d.f.=.471, sig.=.000). Thus ESG Manager was perceived to be significantly easier, useful, and more credible, despite requiring an extra download step. Next, the hypotheses were analyzed separately for the two databases, first using full-factorial MANCOVA. Following this, split sample (at the median) analyses were conducted in order to make visible the direction of the hypothesized moderation effects.

\textbf{The ESG Manager database}

Results of a full-factorial MANCOVA are significant, with an adjusted R Squared of .34. Only the main effects of Credibility (H3, F=1.69*) and Ease-of-use (H4, F=1.59*) are significant; hypotheses H1 and H2 are not supported. Thus Credibility and Ease-of-use are associated with perceived information Usefulness for this database. The only significant interaction effect is between Credibility and Expertise (H3a, F=1.72*), thus H1a, H2a and H4a are not supported for this database. The two tables below present the split-sample analyses of the hypothesized moderation effects for the ESG database by \textit{Expertise}. All regressions are onto perceived Information Usefulness.

\begin{table}[h]
\centering
\begin{tabular}{|l|l|l|}
\hline
 & For below-median expertise (<2.5): & For above-median expertise (>2.5): \\
 & F=7.42***, Adjusted R\(^2\) = .183 (3, 113, 115) & F=15.07***, Adjusted R\(^2\) = .334 (3, 109, 112) \\
\hline
H1a For-Profit & -973 & -392 \\
H2a Strategic Ties & -792 & -.078 \\
H3a Credibility & 3.123 & 3.911 \\
H4a Ease-of-Use & 3.451 & 5.682 \\
\hline
\end{tabular}
\caption{Table 1. ESG under low Expertise}
\end{table}

The level of self-reported Expertise is quite low, but even below the median of 2.5 the model explains over 18% of the variance in perceived Usefulness of the content delivered by the ESG database. However, for those reporting expertise levels above 2.5, the model explains significantly more of the variance in perceived information Usefulness; 33%. The significant interaction effect between Credibility and Expertise found in the MANCOVA is illustrated here by the higher significance of credibility under higher levels of expertise, the opposite direction of that hypothesized (H3a). It seems that in this easier-to-use database, experts make use of the Credibility cue as an additional argument factor in a way that novices do not. While it plays an important role, credibility is not functioning as a typical heuristic cue here.

\textbf{The GMI Analytics database}

The same analyses as above were repeated, but for the GMI database. Results of a full-factorial MANCOVA are also significant, with an adjusted R Squared of .37. Only the main effects of Ease-of-use (H4, F=2.01**) and For-profit status (H1, F=4.61**) are significant; hypotheses H2 and H3 are not supported. Thus Ease-of-use and For-profit status are associated with perceived information Usefulness for this database. Two significant interaction effects were found: first, between Ease-of-use and Expertise (H4a, F=1.78*), and second, between For-profit status and Expertise (Hh1, F=2.93*). Thus H2a and H3a are not supported for this database. The two tables below present the split-sample analyses of the hypothesized moderation effects for the GMI Analytics database by \textit{Expertise}.

\begin{table}[h]
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We can see from the split-sample analysis that more of the variance in Usefulness is explained under higher levels of expertise, from 26% to 35%, although reported expertise levels are very low. Thus those above the median in expertise are more influenced by these heuristics than those below the median of expertise, primarily due to the increased reliance on For-profit status by “experts”: For-profit status is functioning as a heuristic cue as hypothesized, but not in the direction hypothesized. Whereas we expected that this cue would be more salient for non-experts, it appears that, as with the Credibility cue in the ESG Manager database, this heuristic is functioning as an additional argument factor. Note also that its influence is negative as hypothesized – being produced by a For-profit company makes the content in this database less useful, at least to experts. Ease-of-use is functioning as a standard heuristic as hypothesized, having been adapted from the Marketing literature. To the extent that it is generalizable to other validity-seeking contexts, it bears further research. It would be interesting to see compare its influence to other corporate governance structures such as B-Corporations. And we are left to wonder why For-profit status was influential in the GMI database, whereas Ease-of-use was influential in the ESG database but not the GMI Analytics one. Obviously the fact ESG Manager was rated significantly higher in perceived database Credibility as an additional argument factor, but they used For-profit status as an additional argument factor in the GMI Analytics database. Ease-of-use influenced perceptions of content usefulness, significantly in all models, except under high expertise for the GMI database; experts don’t seem to utilize this as a peripheral cue but novices do. Thus perceived Ease-of-use emerges as a very important construct that informs perceptions of content usefulness for all users, both as a main effect, and in interaction with expertise levels. Taken together, results point to a hierarchy of

Discussion and Conclusions

In this experiment, the For-profit status and the Strategic tie strength of the organizations that produced the two sustainability ratings databases studied were manipulated to investigate their impact on the perceived usefulness of the content of those databases. For-profit status was not influential in the ESG database, but was in the GMI database, where it negatively influenced users against content usefulness, particularly experts. This use of a cue as an additional argument factor is not uncommon in validity-seeking contexts such as this (Chaiken et al., 1989). Thus the For-profit status of the organizations producing these databases is potentially important for them to consider, since it influences the usefulness of their content, especially for experts. This heuristic has not been studied in validity seeking contexts, having been adapted from the Marketing literature. To the extent that it is generalizable to other validity-seeking contexts, it bears further research. It would be interesting to see compare its influence to other corporate governance structures such as B-Corporations. And we are left to wonder why For-profit status was influential in the GMI database, whereas Ease-of-use was influential in the ESG database but not the GMI Analytics one. Obviously the fact ESG Manager was rated significantly higher in credibility, ease-of-use, and usefulness plays a role in this. Perhaps the increased credibility perceptions made the For-profit status cue moot. Clearly this raises more questions than it resolves; further research should shed light on this issue. The second manipulation – Strategic ties – was non-significant in all analyses. More work is needed to design a better operationalization of it. This was a preliminary and exploratory operationalization of this construct, although the theory underlying it is more developed than that of For-profit status. It is unclear whether the number of companies listed as strategic partners is important, versus the nature of the companies listed, or a combination of both or other factors. Users need to understand the purpose and meaning of website symbols if they are to function as the cues they are intended to be (Lowry et al., 2012).

Perceived database Credibility was also hypothesized to influence perceptions of content usefulness, and significantly did so in the ESG database but not the GMI Analytics one. Credibility was not influential in the more difficult-to-use GMI database, whereas Ease-of-use was influential in both of them. For the ESG database, experts used database Credibility as an additional argument factor, but they used For-profit status as an additional argument factor in the GMI Analytics database. Ease-of-use influenced perceptions of content usefulness, significantly in all models, except under high expertise for the GMI database; experts don’t seem to utilize this as a peripheral cue but novices do. Thus perceived Ease-of-use emerges as a very important construct that informs perceptions of content usefulness for all users, both as a main effect, and in interaction with expertise levels. Taken together, results point to a hierarchy of
heuristic influence: Ease-of-use is a gateway cue; once its threshold has been cleared, credibility perceptions can come into play. Because ESG Manager was easier to use overall, this threshold was reached by more of the participants, who then applied credibility cues to their content assessment. Because GMI was harder to use, the Ease-of-use was not reached by many participants, so its influence was salient and credibility never came into play. This is a preliminary theory that is a component of this research-in-progress, but to the extent that it can be developed and validated, it puts a great deal of responsibility for content usefulness in the database designers hands, since low ease-of-use seems to prevent applications of other salient cues to the assessment process. It also contributes to dual-process theory by positing that not all heuristic cues are equal, which does have face validity. According to the HSM, we know that some cues are utilized to arrive at a sufficiency threshold which mitigates the need for further systematic processing, an effect consistent with the Elaboration Likelihood Model (Petty and Cacioppo, 1986). We also know, and have seen here, that some cues function as additional argument factors, operating in conjunction with systematic processing. It seems very plausible that there is mid-range cue application between these two extremes of pure heuristic processing below the sufficiency threshold, and pure systematic processing above the threshold in which cues function as arguments. At the mid-range, some cues could prevent the sufficiency threshold from being reached (i.e. low ease-of-use) such that others would never come into play, such as the For-profit status cue that was not utilized in content assessment in the ESG Manager database.

Ongoing research consists of replicating these exploratory findings, and analyzing responses collected to open-ended qualitative questions regarding what contributed to participants’ perceptions of Ease-of-use in this experiment. Findings need to be interpreted in light of the fact that participants were American business school undergraduates (although approximately 30% were International students), and research should investigate the generalizability of these findings to other demographic groups and databases. It is important to note that the Ease-of-use construct here is conceived of as a holistic heuristic that forms immediately as an impression-based attitudinal response to new online content, influencing perceptions of that content. It is a cognitive construct, and as such is not the same as the Ease-of-use construct much investigated in the technology acceptance literature. Here it affects content adoption, not technology acceptance, and it varies across users within each database. That is, some users perceived the ESG Manager as easier-to-use than others did. And this was also the case for the GMI Manager. More work needs to be done to understand this heuristic as it applies to content adoption, particularly what contributes to it and why and how it varies across users. It is important to note that as a heuristic, its immediate formation in response to new online information is largely subconscious, not analytical, as is its biasing effects on perceptions of content usefulness.

An obvious question is how this research contributes to sustainability. First, because this exploratory model has only been applied to sustainability ratings databases, we know nothing about its generalizability to other validity-seeking contexts. Therefore, while it conceivably could apply to a broad range of other contexts, at this time it enlarges our understanding of content assessment of sustainability ratings databases. However, this is a bit of an academic argument since there is no theoretical reason to believe that the model would not apply to other validity-seeking contexts. Certainly the For-profit status heuristic may play a more important role in this context than in others, since companies not seeking to make a profit may be less susceptible to corrupting market influences. This cue may be particularly relevant to assessment of sustainability content. And certainly it is a contribution to expose business school students to these databases as these subjects have been, since most of them were previously unaware of them. Similarly, to the extent that readers have been made aware of these databases is a contribution. We encourage both students and faculty to use these databases to inform themselves about the companies they purchase from, do research on, teach about, or invest in, since most University libraries subscribe to one of them (Bloomberg is now quite active in this area). But ultimately the contribution of this work lies in the effort to model how immediate impressions of sustainability content, as informed by technology features, influence the response of laypersons to that content. Those with knowledge of SRI, and the role of sustainability ratings databases within it, already find the content credible and useful. To expand SRI and hence its positive impact on sustainable enterprise, we need to ensure that such databases are designed in ways that make them useful and credible to those that lie outside the SRI community. It is to this end that this exploratory research-in-progress is aimed. Information surplus is rampant and here to stay; people are inundated with information as they work and play, and they are constantly filtering many different types of information stimuli. Unless the task is very important, individuals tend to process new information quickly, primarily on the basis of heuristics and cues. We need to insure that sustainability ratings databases are designed in ways that minimize the likelihood that newcomers to them will filter out their content on the basis of immediate-impression heuristics such as For-profit status, Ease-of-use, and Credibility. The financial industry is designed around short-term pressure to produce profits every three months, a design that undermines many of the sustainability efforts of those within organizations. The work of the SRI community and the Integrated Reporting movement counteracts this with a longer-term view which laypeople need to understand.
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