

Personality and positive psychology: In social media and post-secondary education

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ABSTRACT

This study explores the relationship between personality type, academic background, and social media content. Ten participants from each of McMaster University's seven undergraduate faculties completed a Myers-Briggs Type Indicator (MBTI) assessment to determine their personality type. They submitted 10 personally-written status updates or comments from the social media platforms of Twitter or Facebook. The Content Analysis of Verbatim Explanation (CAVE) method was used to analyze 630 social media content to determine overall positive or negative explanatory style. Of the 630 submitted pieces social media content, 68.4% of them were found to describe positive events. 92.1% of the social media content contained an optimistic explanatory style. These findings suggest that social media is a largely positive medium for university students.

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This study examines the strength of the correlations between the dominant personality types and explanatory/attributional styles within undergraduate students from six different academic faculties as well as one degree program at McMaster University. Data was collected from two social media platforms: Facebook and Twitter. An individual's explanatory style, as determined by the Content Analysis of Verbal Explanation (CAVE), is used to analyze social media content to determine whether social media affects an individual's presentation of self, operating either as a panopticon, where anyone in the world including employers and clients are able to view individual social media content (Foucault, 1995), or as a self-fulfilling prophecy, where individuals will change their attitudes to what they post or see posted about themselves on social media (Merton, 1968).

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Social media arguably allows individuals to “put their best faces forward” and cultivate online personalities that differ from their real-world identities. For example, an introverted individual in the workforce or school may act significantly more extraverted on their Facebook or Twitter accounts. Furthermore, the public space of social media may encourage, either subconsciously or consciously, individuals to post more positive or socially ‘acceptable’ content on social media, regardless of their personal attributional styles.

Literature review

Personality, psychology, and academic backgrounds

A prevalent trend found in studies of personality and academic achievement was that the majority of studies used variations of McCrae and Costa’s Five Factor Model, which examines personality traits in domains of openness, conscientiousness, extraversion, agreeableness, and neuroticism. This trend was also the primary shortcoming of most existing studies examining personality in relation to academic achievement; the only moderately significant correlation between these two factors was conscientiousness. An encouraging trend found in the majority of the reviewed literature was that optimism and optimistic coping methods/explanatory styles were significantly positively correlated with academic background and achievement. Hence, this study would explore new ground in the field, as the majority of previous studies concerning personality, explanatory/attributional style, and post-secondary background have only relied on the Five Factor Model of personality.

McCrae and Costa (1989) compared the MBTI to their own personality inventory, the Five Factor Model, through a survey of 468 individuals. While their findings suggested that the MBTI personality inventory is not an adequate representation of Jung’s original typological theory, reviewers critical of the personality inventory nonetheless acknowledge its empirical effectiveness and popularity in personality research (McCrae & Costa, 1989). The authors found significant correlations between the MBTI and the Five Factor Model, concluding that the MBTI provides a narrower and more specific basis for interpreting four of the five general personality traits posited by the Five Factor Model. Communications professionals with knowledge of their MBTI personality inventory are able to understand their natural communication styles in

both business and personal settings. Understanding natural personality and communication preferences can also assist communications professionals in developing strategies to become more effective communicators (Dunning, 2009).

Table 1: Correlations between Five Factor Model and MBTI.

	E-I	S-N	T-F	J-P
<i>Extraversion</i>	-0.74	0.10	0.19	0.15
<i>Openness</i>	0.03	0.72	0.02	0.30
<i>Agreeableness</i>	-0.03	0.04	0.44	-0.06
<i>Conscientiousness</i>	0.08	-0.15	-0.15	-0.49
<i>Neuroticism</i>	0.16	-0.06	0.06	0.11

Positive psychology

Research in the relatively new field of positive psychology has supported the theory that explanatory style and optimism can predict achievement in a multitude of domains, including school and work. Schulman used the Attributional Style Questionnaire (ASQ) to determine the explanatory style and overall optimism levels of the subjects. The ASQ is significantly correlated with the CAVE. While the ASQ operates by testing hypothetical life events, the CAVE method tests real lived experiences, making it invaluable for longitudinal studies (Peterson & Seligman, 1984).

Adler, Kissel, and McAdams (2006) use approaches from the cognitive theories of depression and studies of personality traits through the CAVE method. CAVE correlations with neuroticism were conducted using the Five Factor Model. The results show that pessimistic attributional styles were significantly positively correlated with depression and significantly negatively correlated with subjective well-being. Additionally, pessimistic attribution styles were positively correlated with the personality trait of neuroticism. Adler et al.'s study provides promising data for communications professionals using the CAVE methodology on collecting and analyzing self-report data from social media sites regarding public attitudes towards the reputation of clients, products, and events.

Research design and psychometrics

Participants

Data was collected from a total of 70 undergraduate participants, ten students each of the seven academic faculties surveyed. Participation was limited to students in their third year and above to significantly limit the potential confounds in the overall personality type of students and academic faculty. For most faculties, first year is a general year, and students will begin choosing their academic major in their second year. Students registered in their third year or above in a specific academic faculty are more likely to have a stronger foundation in their area of study, to be less likely to change their major, and to have more stable personality types.

Participants were asked to complete a seven-question inventory consisting of nominal variables. Variables included age, gender, year of study, faculty, racial/ethnic background, and country of origin. After completing the demographic survey, participants completed an MBTI personality inventory. In the final stage, participants were asked to log into either their Facebook or Twitter accounts (their preference), copy their ten most recent status updates/comments or tweets and email them to the primary investigators within a secure document. Retweets from Twitter were not accepted, and photos were discouraged unless accompanied by a description or explanation provided by the participant.

Personality instrument: Myers-Briggs Type Indicator (MBTI), Self-Scorable College Edition Form M

Seventy copies of the six-page MBTI Self-Scorable College Edition personalities were purchased from the CPP through Psychometrics Canada for this study. Participants completed the 93 forced-choice questions of the MBTI which provides instant feedback on individual personality types and preferences. The MBTI personality inventory offers 16 different personality types from a combination of four dichotomies: extraversion/introversion, sensing/intuiting, thinking/feeling, and judging/perceiving. One of the largest potential confounds of administering the MBTI personality inventory is that it is a self-report inventory. Individuals may engage in social-desirability bias,

providing answers they believe they would be expected of them. In order to reduce social-desirability bias in the study, participants were encouraged to answer as honestly as possible in order to accurately determine their own personality type.

Social media analysis: Content Analysis of Verbatim Explanative (CAVE)

The Content Analysis of Verbatim Explanation (CAVE) method of quantitative text analysis is used to assess the causal attributions of participants' social media (Facebook and Twitter) updates and comments. The CAVE method and its training manual were obtained from the Positive Psychology Centre at the University of Pennsylvania¹. Sixty-three participants provided their ten most recent published social media content, resulting in a total analysis of 630 items. Social media content was analyzed following an explanatory style to discover individual predisposition towards posting optimistic or pessimistic content on social media. Explanatory style is defined as the "habitual pattern of explanations an individual makes for good and bad events" (Schulman, Castellon, & Seligman, 1989). To be properly analyzed, social media content must be able to have a causal relationship inferred from it. For example, "I got in a fight with a good friend [event] because I had a tough day and was in a bad mood [attribution]."

Each social media posting on either Facebook or Twitter is evaluated as either a positive or negative situation. Each explanation is assigned to one of four dimensions: internal/external, stable/unstable, global/specific, and controllable/uncontrollable. Each dimension is evaluated on a seven-point scale: ratings of seven represent the most internal, stable, global, and controllable explanations; ratings of one represent the most external, unstable, specific, and uncontrollable explanations. Ratings of four are given for events that are neutral or lack sufficient explanation for proper analysis. The highest possible positive total attribution score for the CAVE method is 28. The lowest possible negative total attribution score is one. A neutral attribution is identified by a total attribution score of 14. It is important to note that the majority of studies that utilize the CAVE only use the first three dimensions and omit the fourth

1. Mr. Dustin Manley and his research supervisor were given written permission (see Appendix D) to use the CAVE method by Dr. Martin Seligman, director of the University of Pennsylvania's Positive Psychology Centre, former APA President (1998) and founder of Positive Psychology.

dimension of controllable/uncontrollable.

One of the largest potential confounds of using the CAVE method on content from social media platforms is that the written material may lack both an explanation and an attribution. Fortunately, the positive or negative classifications of the content is unaffected by this. The CAVE method is also particularly useful for longitudinal research, allowing all of an individual's social media updates and comments to be analyzed in order to gain accurate information on participants' unique explanatory styles.

Correlations between personality and explanatory style

External/internal (personal) dimension

The optimistic internal explanatory style is the most prevalent among the personality types, with 52.4% of participants found using it. However, the pessimistic external explanatory style was found to be used almost as often. The following personality types are most significantly positively correlated with internal attributional styles: INFJ (75%), INTP (66.5%), and ISTJ (62.5%). Each of these personality types is dominated by introverted attitudes, so this finding is not unexpected. Conversely, the following personality types are most positively correlated with external attributional styles: ENTJ (75%), ISFJ (75%), and ENFP (60%). A possible explanation for ISFJ's external attributional style is that, while they are introverted, they focus on the requirements of the external world, culture, and people around them (Myers, McCauley, Quenk, & Hammer, 1998).

Stable/unstable (permanence) dimension

The unstable explanatory dimension is the most prevalent, and it is used by a moderately significant proportion of participants; 65.1% of all participants were found to use it consistently. The following personality types are most significantly correlated with the attributional style of stability: ISFJ (75%) and ENFJ (60%). Both ISFJs and ENFJs are also identified with the *Benevolent Administrator* FJ type. FJs focus on organization and working within a struc-

tured environment (Myers et al., 1998). The personality types most significantly correlated with the pessimistic attributional style of instability are: ENFP (100%), INTJ (100%), and INFJ (75%). ENFPs externalize their intuition, giving them a tendency to act and make decisions spontaneously, while INTJs are frustrated by the routine and casual (Myers et al., 1998).

Global/specific (pervasive) scale

The global attributional dimension is the most consistently used by a moderately significant 65.1% of participants. The ENFJ personality type is most significantly correlated with the attributional style of globality (80%). Although uncommon, when under stress ENFJs may become critical and fault-finding towards others (Myers et al., 1998, p. 100). The ENFP personality type is most significantly correlated with the attributional style of specificity (80%). When under stress, ENFPs are known to focus on insignificant or self-distorted details, letting them overwhelm and consume their focus and energy (Myers et al., 1998).

Controllable/uncontrollable scale

The Controllable/Uncontrollable explanatory style dimension is correlated with the sensing personality type, with a correlation of 0.306 (see Table 2); individuals who prefer sensing are more likely to use Controllable explanations. The Controllable/Uncontrollable attributional style is not significantly negatively correlated with any personality type.

The attributional dimension of controllability is the most prevalent among this study's participants (57.1%). The following personality types are most significantly correlated with the attributional style of controllability: ENTJ (75%), INTJ (75%), and INFJ (75%). All three of these personality types are described as being analytical, logical, clear, and assertive. They are said to take responsibility for their own actions and environments.

Table 2: Correlations between personality and explanatory style.

	Internal	Stable	Global	Controllable
Extravert	0.056	0.463	0.148	0.78
<i>Introvert</i>	-0.197	-0.050	-0.252	0.05
Sensing	0.348	-0.182	0.277	0.306
<i>Intuiting</i>	0.119	-0.061	-0.173	0.180
Thinking	-0.094	0.003	-0.211	-0.022
<i>Feeling</i>	0.083	0.020	0.012	-0.004
Judging	-0.251	-0.006	0.102	-0.021
<i>Perceiving</i>	0.180	0.245	0.102	0.120

Communications and public relations practitioners can utilize an understanding of MBTI personality preference and the practice of positive psychology, including the CAVE method, to become more effective in everyday business communications and persuasion (Dunning, 2009). While understanding individual personality preference is important to maximize strengths and improve upon weaknesses, understanding the personality type preferences of an audience can lead to effective persuasion. Understanding the role positive psychology dichotomies play in social media when clients, customers, or individuals post pessimistic comments towards organizations may be useful in proposing effective solutions to the issue.

The CAVE tool offers valuable potential for communications and public relations research. By analysing causal explanations in the communications of organizations or individuals during crises, public relations professionals can avoid common mistakes that may lead to issues and incorporate these effective explanations into their messaging. An optimistic explanatory style by an organization after a crisis may shorten the crisis’s fallout-length and assist in maintaining reputation. On the other hand, a pessimist explanatory style can increase a crisis and significantly damage reputation. While talking with the press, British Petroleum’s then CEO, Tony Hayward, said this during the Deepwater Horizon of 2010: “We’re sorry for the massive disruption it’s [external] caused their lives. There’s no one who wants this over more than I do [unstable]. I would like my life back [global]” (Reuters, 2010). This pessimistic explanatory style by Mr. Hayward regarding the Deepwater Horizon arguably remains evaluatively conditioned with British Petroleum as an organization (Baeyens, Eelen, & Van den Bergh, 1990); Mr. Hayward’s negative message will remain paired with the organization even after the crisis.

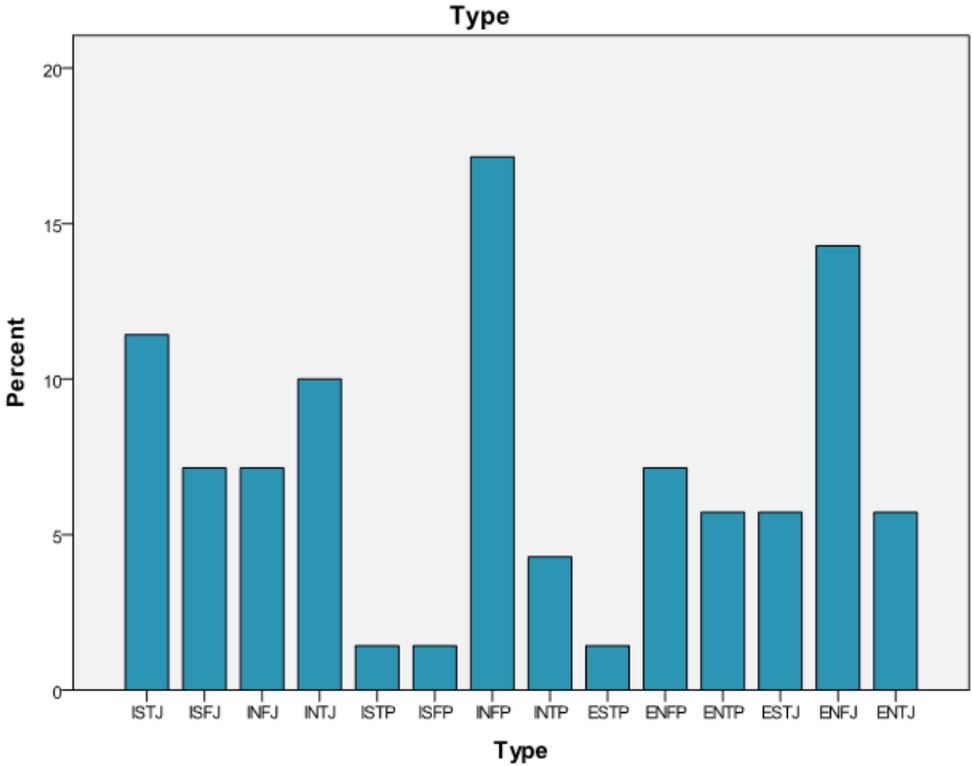
Personality and explanatory behaviour results

University

The seven academic faculties and programs surveyed in this study are Humanities, Science, Arts and Science, Social Science, Engineering, Health Science, and Commerce. Within these seven faculties, 31 different academic programs of study were represented. The dominant gender represented in this study were females, with 40 (57.1%) participants; males represented the remaining 30 (42.9%) of the sample size. A significant majority of the participants (85.9%) fell within the age bracket of 20-22 years of age; as a result, the personality types and attributional styles surveyed offer minimal confounds from age ranges. Academic years were represented fairly evenly; 37 (52.9%) participants reported being in their third year, and 30 (42.9%) of participants reported being in their fourth year.

The most prevalent personality types found throughout all 70 participants are as follows: INFP, ENFJ, and ISTJ, with 12 (17.1%), 10 (14.3%), and 8 (11.4%) participants respectively. The university's ISTJ population (11.4%) is strongly correlated with a previous study of Ontario universities, which found a sample of 10.3%; INFP and ENFJ populations were weakly correlated with the Ontario university findings of 9.3% and 6.7% respectively. Additionally, the study yielded no ESFP and ESFJ personality types, which represented 3.4% and 7.3% of the sample in the study of Ontario universities (CAPT-MBTI Atlas, 1986). Reasons for the variance in type populations can be attributed to the significant difference in sample sizes of the studies as well as the number of universities surveyed.

Chart 1: Distribution of university student personality types.



The MBTI included a preference clarity category, which is used to determine how consistently a participant prefers a type dichotomy over its opposite. Each of the 93 questions on the personality inventory is allocated as a raw point used to determine the valence of a personality dichotomy. Each dichotomy has four possible valences: slight, moderate, clear, and very clear. These raw points can also be used to determine the overall valence/clarity of an individual's complete personality type. The personality types with the strongest overall valence are as follows: ISTJ (80.2%), INTP (78.5%), and ISFP (78.5%). The total range for the university type valence is 65.6% to 80.2%, representing fairly significant personality clarity within the participant sample.

Student personality preferences

In the extraversion/introversion dichotomy, it was found that a significant number of participants, 42 (68.6%), held introverted attitudes. This finding is not surprising as many scholars, including type theorist Hans Eysenck, argue that compared to extraverts, more introverts are found in higher-education (Day, 2012). An even larger range was found between the sensing/intuition dichotomy, where 49 (70%) participants were intuiting types. This preference is not unexpected, as students in university are expected to engage in discussions and develop critical thinking skills. Intuition is popularly associated with right-brain intuitive and aesthetic processes and has also been associated with scientific innovation (Holton & Elkana, 1997).

The thinking/feeling dichotomy was more evenly distributed, being identified with 38 (54.3%) of the participants. This finding was expected given the diverse range of academic backgrounds recruited for the study. The judging/perceiving dichotomy yielded the second smallest range, with 43 (61.4%) of the participants identified as judging types. This preference is not unexpected, as the majority of students in university are taught to think critically, be skeptical, and innovate in their fields. The judging personality types may also engage in higher-self monitoring when communicating across social media platforms.

Explanatory/attributional style

Of the 630 social media content submitted, 431 (68.4%) were determined to be positive. An overwhelming 92.1% of the participants in this study demonstrated an explanatory style of internal/stable/global/controllable on the social media platforms of Facebook and Twitter. These results indicate that the majority of students actively use social media and produce primarily positive content, regardless of personality type or individual explanatory style. However, as social media content is public space, the significant positive explanatory style may be a result of the explicitly panoptical nature of social media. If this is the case, it would appear that individuals, regardless of their personality types, engage in high self-monitoring on social media.

Conclusion

In the field of professional communication and public relations, social media is a prominent tool. However, it can be argued that social media as a whole is becoming more of a professional space than a personal space. As active users of social media, post-secondary students are becoming increasingly aware that social media offers little-to-no privacy. As a result, senior level students who may soon be entering further education or careers are likely to post more positive information and cultivate a professional profile through social media. In line with this hypothesis, a moderately high 431 (68.4%) of the 630 analyzed pieces of social media content were found discussing positive information and events or using a positive explanation for less favourable events. This finding offers some evidence that there is a higher-than-baseline amount of self-monitoring occurring before students publish a negative comment towards an event. With evidence that university students engage in high self-monitoring on social media, it would be useful to see the self-monitoring level of working professionals.

The most positive explanatory styles were found in the Arts and Sciences Program (16.31), and while the least optimistic were found in the Humanities (15.15), the total range was still positive. In the majority of cases, personality type had a minor role, with feeling and judging types being the most likely to post negative content. A significant number of content published on social media (92.1%) use a positive explanatory style for both positive and negative described events in social media; personality type and preference play a minor role. It can be argued that the panoptical environment of social media, combined with a self-fulfilling prophecy to post positive, likeable, or followable material, has students filtering negative events through positive explanation. This is by no means a negative hypothesis, as it could lead to an increase of mindfulness and positive explanatory styles in all areas of life, including careers.

Given the variety of personality types, preferences, events described, and explanatory style data collected from this study, it can be concluded that social media content is published in generally the same way by students regardless of individual personality type and inherent attributional styles. It is important to note, however, that social media is not inherently positive given the data from this study. Arguably, Facebook only offers users a like button, because it is easy to imagine the misuse and passive-aggressive content that would come from a dislike button. On Twitter, users generally receive and maintain followers by posting positive and informative material. The medium

of social media is not inherently positive. However, it does play a significant role in bringing out the extraversion and positivity of its users.

For communications professionals, this study reinforces the notion that social media is a panoptical communications tool; even students with minimal professional experience understand the effects negative messages or posts can have on reputation. Tony Hayward's pessimistic explanatory style within an interview during the Deepwater Horizon crisis went viral on social media and continues to be associated with British Petroleum. While individual personality is not as prevalent on social media, possibly due to the panoptical design of the medium, understanding personality preferences is valuable for both internal and external communication – professional or personal.

Implications and recommendations for the practice

Social media and Web 2.0 offers the public relations function and practitioners greater opportunities and access for engagement with publics and stakeholders. Despite this, not all public relations and communications practitioners are digital natives or have received training in social media or public relations. In Canada, the first specialized degree program in public relations was established in 1977; the next two programs were established in 1996, and in 2014, there will be 14 degree programs which offer social media communication strategies in their curriculums. Between 1991 and 2011, employment in the field of public relations has nearly doubled in size, from 23,780 to 54,605 (Statistics Canada, 2013). Not all of these practitioners have specialized education (e.g. BPR, BPC); they are coming from various academic backgrounds, such as English, journalism, business, healthcare, and engineering. These programs, and most communication studies programs, did not offer formal training in two-way communication through social media or other digital platforms. Some individuals may pursue post-graduate college education in public relations to receive specialized training in this function, but more detailed census information on the academic backgrounds of practitioners is necessary. Understanding the role factors such as personality and explanatory style play in engaging publics in two-way communication on social media, as well as internal communication, is a necessary function of the contemporary communicator.

As demonstrated in this study, the majority of digital native undergraduate students, regardless of academic background or preferred personality type, use social media for both personal and professional purposes. In ad-

dition, most students demonstrated platform neutrality in utilizing multiple social media platforms, a competency that is valuable for public relations and communications practitioners. Regardless of personality preferences, academic backgrounds, and explanatory styles, most individuals surveyed use social media to discuss or explain situations in positive ways. The information provided through Facebook updates was generally positive, even when describing a negative situation. For many practitioners and organizations, the most effective public relations and communications activities result in measurable behaviour changes in the target audience (Lindenmann, 2002, p.16). Attitude change is arguably difficult to measure, as most information comes from self-report. However, attitude change can be measured in terms of how an organization is discussed on social media. If a customer experienced poor service from an organization, but their Twitter feed and Facebook updates are displaying positive coverage of that organization, they may be more likely to either contact the customer service privately. However, if they do post about the experience on social media, they may be likely to use a positive explanatory style (external, unstable, specific) when addressing the situation.

In Canada, it can be argued that the measurement of public relations and communications activities on social media and other forms of communication activity have not come significantly far since Piekos and Einsiedel found that Canadian practitioners were not yet ready to apply empirical measurement to their work (1990, p. 108). Although tools like Radian6, Hootsuite, Pulsar and Google analytics allow for quantification of mentions and reach, measuring the precise value of a single Facebook post or tweet by organization or consumer is difficult. Tools like the CAVE analysis are useful for providing insight into the explanatory style of social media content, which in turn provides useful insight into the behaviour of consumers and followers. However, quantifying the impact it has on organizational reputation or sales is difficult. Yet, in addition to measuring the explanatory style of social media content, the CAVE methodology also offers organizations opportunities to evaluate the explanatory styles of successful and unsuccessful public relations campaigns and crisis communications by either themselves or competitors.

Organizational investment in two-way communication and engagement through social media is important. Fortunately, based on the curriculum recommendation many associations have provided to post-secondary programs in public relations and applied communication, most new practitioners are entering the workforce with a proficient knowledge of social media and measurement (Canadian Public Relations Society, 2011). Social media should not just be left to novice and intermediate practitioners, however. Investing in

formal training for seasoned practitioners will encourage further innovation in social media measurement and evaluation. While personality type may not have influence the content publics are posting on social media, there is a demonstrated general use of positive explanatory styles by most university-educated digital natives. While more research will need to be conducted to corroborate this finding, proactive two-way engagement on the behalf of organizations may positively influence behaviour of publics on social media. Further research into the role of explanatory style on social media by both organizations and their publics may lead to increased return-on-investment through engagement activities in addition to serving as an effective way to minimize issues and potential crises.

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