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Measuring social impact in documentaries: Development and initial validation of an impact assessment scale

Background and Rationale

Documentaries have the potential to shape public opinion, cultural values, and societal norms. Documentary filmmakers often aim to inspire such social impact by raising awareness and mobilizing audiences to take some form of action, such as supporting causes or engaging in advocacy efforts. Toward this end, they might target a variety of outcomes, including but not limited to influencing individual viewers' attitudes, beliefs, and behaviors, as well as influencing lawmakers and policy changes to shape the larger public discourse. Similarly, documentary funders and stakeholders associated with the film's production (e.g., activists who contribute their time, experts who appear on camera) often look for evidence of these outcomes to gauge whether the documentary has made a tangible difference and to ensure their resources are being used effectively. Measuring these social impact outcomes can help determine success in reaching a target audience, increasing awareness, and enhancing understanding. These measurements can also evaluate any change in these outcomes over time.

However, the construct of "social impact" is multifaceted and not directly observable. Rather, it is a combination of several outcomes that unfold over time, which makes measurement of social impact in the context of documentaries challenging. This necessitates identification of observable factors that can be directly measured (e.g., viewer perceptions and responses upon watching a documentary) and can serve as proxies for social impact. This approach is common in many fields and provides advantages including ease of use, applicability across a range of settings, and ability to assess change in behaviors or attitudes over time.

Aims

Accordingly, the purpose of this study is to design, develop, and evaluate a measurement tool based on audience-related outcomes that can act as indicators of social impact. We aimed to develop a self-report questionnaire that is easy to administer, can be used in different settings, and is applicable across a range of topics. For evaluation, we aimed to assess the factor structure and validity of the developed questionnaire through a confirmatory factor analysis (CFA).[1]

Methods

A visual overview of the methodological workflow including the tasks within each study phase is provided in Figure 1. We briefly describe the methodology in two phases: 1) Measure design and development, and 2) Measure validation and evaluation.

1) Design and development: We first conducted a literature review on previously reported methods for impact measurement and to identify relevant themes. Next, we analyzed a subset of documentary reviews on IMDB (N=2307 documents) using topic modeling[2,3] to identify emerging themes related to impact, as well as text polarity sentiment using sentiment analyses.[4] We conducted individual interviews with three documentary filmmakers to capture any additional themes and concepts related to impact. We repeated the same data analytic steps for topic modeling and sentiment analysis using the data from these interviews. Third, we relied on the tenets of research-based behavioral theories[5] to inform the questionnaire topics and our conceptual model for hypothesis testing. Some of their tenets include self-efficacy[6] (i.e., someone's belief in their ability to carry out a behavior), social influences, barriers and facilitators (e.g., factors that hinder or facilitate capacity to carry out the behavior). These theories are commonly used in research to assess and predict behavioral outcomes and factors that can influence

the behavioral outcomes.[5,7] Next, we collected feedback on the preliminary iteration of the questionnaire from a small group of test users who were not involved in the design process. We revised the questionnaire for wording, structure, and user experience to develop a working prototype, the Impact Assessment Scale (IAS). The IAS was made available at two film festivals in the United States as an optional feature. Those who volunteered and provided informed consent completed the IAS immediately after watching a documentary of their choice. Participation was anonymous and did not include provision of any personally identifiable information.

2) Measure evaluation and validation: Using the data from the attendee responses (N=284), we conducted a confirmatory factor analysis (CFA) to validate the factor structure and evaluate the individual items (i.e., questions) on the IAS. CFA involves testing a hypothesized model against observed data, and the conceptualized model is compared to a baseline null model.[8] The goodness of the model fit is determined via inspection of model fit indices and a test of significance,[9] where $p>0.05$ indicates adequate model fit. We investigated the following research questions via CFA: 1) What is the overall factor structure of the IAS (i.e., number of latent constructs)?, 2) How well do the collected data (i.e., the items on the IAS) measure the latent construct (i.e., social impact) as hypothesized?; 3) Are they related to the right underlying factors? And how strongly are they related?, 4) Which items are more informative vs redundant? In addition to the overall model fit indices, CFA provides item factor loadings, which quantify the strength of the relationships between the IAS items and the latent factor(s). These loadings range from -1 to 1, with values closer to 1 indicating a stronger relationship. The loadings also indicate whether there are any items that could be removed without losing information (item redundancy).

Results

1) Measure design: The initial pool of items included on the IAS are provided in Table 1. All items included statements or questions with Likert-type rating response options (0- Strongly disagree/unlikely to 4- Strongly agree/likely). Questions 10 and 11 were presented in a radio button matrix format with multiple sub-items, resulting in 20 items in total on the IAS for evaluation. 2) Measure Evaluation: The final path model used to fit the data is depicted in Figure 2. The best-fitting model indicated a 3-factor, second-order structure, based on the model fit measures of Chi-squared statistic (X^2= 23.09, df=29, p=0.77), comparative fit index (CFI=0.996), and Standardized Root Mean Square Residual (RMSR=0.042). Out of the 20 items evaluated, 10 were most informative and related to the higher-order latent factors, based on the item loadings. Two of the latent factors, “Perceptions” and “Intentions”, were first-order variables explained by six and four items, respectively (See Figure 2). These first-order factors then loaded onto a third, second-order latent variable (“Total IAS Score”).

Discussion

We herein describe the development and initial validation of the IAS, a self-report questionnaire for assessing immediate audience responses and attitudes as potential correlates of downstream social impact in the context of documentary evaluation. Our analyses indicate that a 10-item, two-factor structure provides the best fit for the data, suggesting that the IAS currently provides scores on two distinct, latent domains of viewer perceptions and their intentions related to the documentary subject matter. It is possible that the excluded items, which pertain to barriers and facilitators to further engagement in the subject matter, could comprise a separate domain, which will be assessed in future analyses. Our other next steps include validation against other proxies for social impact, assessment of known group differences, and further evaluation of the level-two factor structure using larger samples.

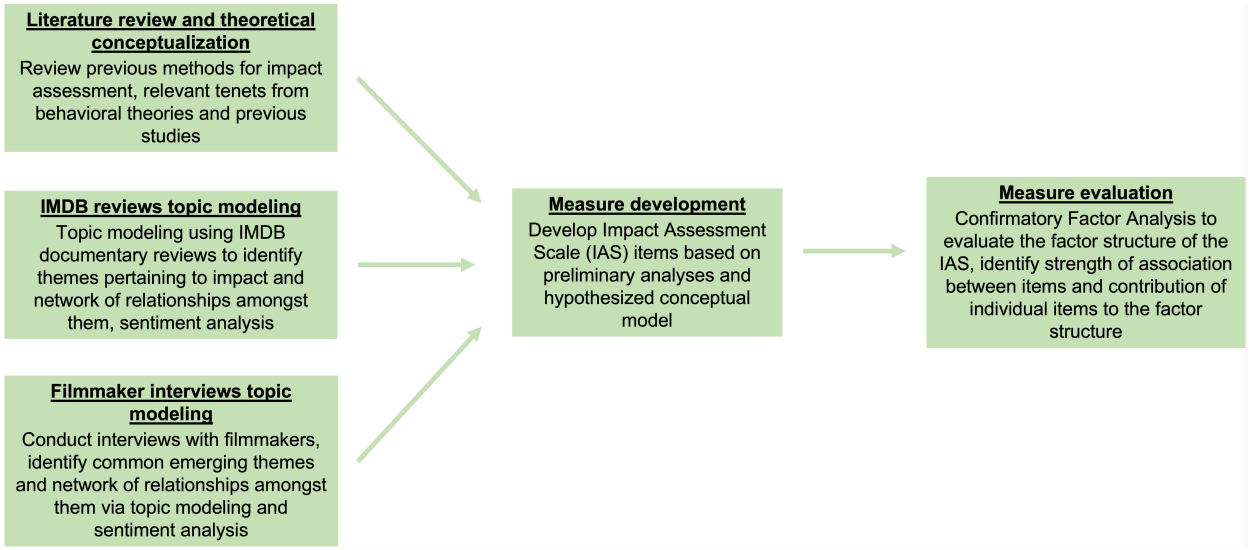

Figure 1. Methodological framework and study steps.

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Table 1. Initial pool of items on the IAS included for evaluation.

Item number

1. Learned new information about the presented subject matter
2. Think or feel differently about the presented subject matter
3. Motivated and able to share the new information I learned with others
4. The subject matter is a worthy cause for support
5. Film presents specific things viewers like myself can do to get involved OR contribute
6. Film presents credible/trustworthy sources of information
7. Subject matter is relevant to me or to my community
8. Film responds to interests and needs of the community being impacted/portrayed in the film
9. The film was entertaining or held my interest.
10. To what extent have your intentions to engage in the following behaviors changed after seeing this film?
    a. Learn more about the subject matter/cause
    b. Participate in volunteering activities about the cause
    c. Donate money to this cause OR participate in activities to raise funds
    d. Share/recommend this movie to my family/friends/community
    e. Share content on social media about the topic/cause
11. How much would the following factors hinder (i.e., limit) your ability or willingness to engage in those behaviors listed in the previous question?
    a. Lack of time
    b. Financial factors
    c. Personal skills or knowledge
    d. Lack of support from community
    e. Social/Societal Stigma
    f. Negative impact or reactions from my community

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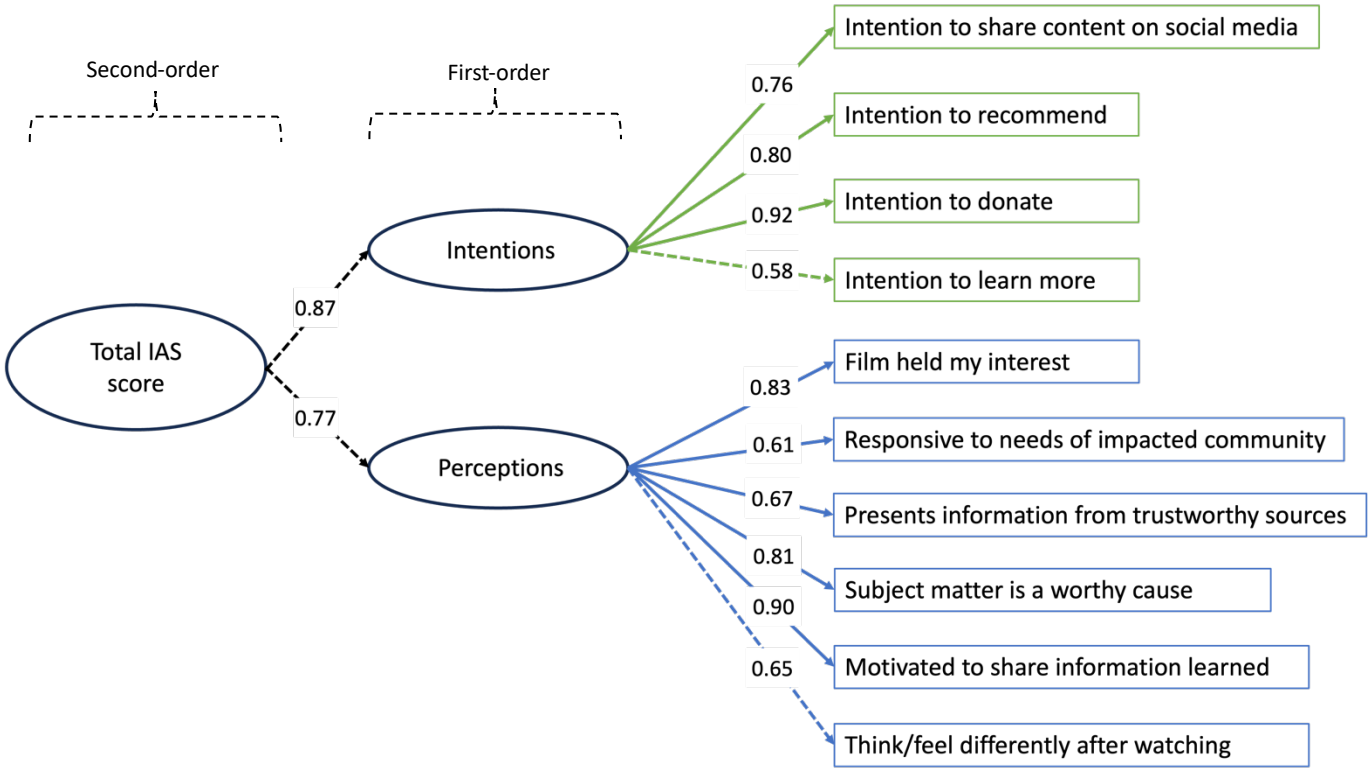

Figure 2. The path diagram of the three-factor, second-order model for the IAS data. Rectangles indicate the individual items on the IAS and they are observed variables. Circles indicate latent (unobserved) variables, which include Perceptions and Intentions (first-order) and Total IAS Score (second-order). Values on the arrows indicate item loadings, which is the strength of association between the observed and latent factors. Higher values indicate greater magnitude of strength.

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