

DOCSCALE:

A MOBILE PLATFORM FOR PARTICIPATORY EVALUATION AND COLLABORATIVE FILTERING TO MEASURE IMPACT OF DOCUMENTARY FILM

Brandie Nonnecke, PhD, CITRIS & the Banatao Institute, University of California, Berkeley
Kimberley Sevcik, Director of International Engagement, Independent Television Service



DocSCALE Beta testing, India

INTRODUCTION

A growing body of research indicates that media – including documentary films – can have transformative effects on raising awareness around critical issues and catalyzing social change [1A, 1B]. Yet impact measurement remains a challenge, with limited options for ready-made data collection tools that offer scale, qualitative insights and a participatory approach. Inspired by the DevCAFE system developed at CITRIS and the Banatao Institute at University of California, Berkeley, (see cafesystem.org), DocSCALE (Documentary Simple Collaboration Applied for Learning and Evaluation) is an interactive voice response survey deployed through feature phones that uses collaborative filtering to enable rapid, participatory evaluation of changes in people's knowledge, attitudes, and behaviors. In this article, we summarize digital data collection tools; detail a novel, participatory methodology to research local impacts; and describe the development and features of Independent Television Service's DocSCALE platform, sharing results from its Beta application in the evaluation of an India-based documentary-driven social change project, Women and Girls Lead Global. While more data is needed to understand the full potential of DocSCALE, our initial findings suggest it could be a valuable platform for conducting media impact evaluations in a wide range of contexts.



DevCAFE platform, Uganda

DIGITAL DATA COLLECTION TOOLS

Digital data collection tools enable rapid collection and analysis of survey data, increasing the scale and speed of assessments of social impact campaigns. One of the most commonly used digital data collection tools, the Open Data Kit (ODK), collects text, voice, image, and sensor data and features a variety of data export formats to enable in-depth analyses. Dimagi's CommCare platform runs on smartphones and feature phones to collect text, image, and video data. CommCare also analyzes quantitative data in real-time and presents results back to the evaluator, enabling rapid identification of insights that can lead to more informed strategies throughout a program intervention. Interactive voice response surveys (e.g., Viamo and ODK Voice) and SMS-based surveys (e.g., FrontlineSMS and RapidSMS) can increase widespread evaluation of interventions by enabling communities with limited internet connectivity to answer simple surveys.

There are also a handful of digital tools that have been developed specifically to evaluate the impact of media interventions. Media Cloud – a joint project of the MIT Center for Civic Media and the Berkman Center for Internet & Society at Harvard University – is an open-source tool used to identify patterns of influence. It monitors 50,000 social and journalistic platforms to assess which social issues are receiving the highest volume of coverage, and how those stories are framed. NewsLynx, which is hosted at Columbia University's Graduate School of Journalism, measures reach by enabling media organizations to map how stories spread online. Additionally, Participant Media's Participant Index evaluates the social impact of films and other media using a mixed-dataset method that compiles social media conversations, viewership information and audience opinion data; the system attempts to measure outcomes at the individual and community

level, assessing what audiences learn, how they think, and what they do in response to exposure to films and other media.

While digital data collection facilitates faster and more reliable analysis of social impact projects, most existing tools focus on insights on media's reach and influence, including quantitative data on knowledge, attitude and behavior change. Few existing data collection tools are optimized for unstructured qualitative (textual) data and peer-to-peer participant collaboration. The Development Collaborative Assessment and Feedback Engine (DevCAFE), developed by researchers at CITRIS and the Banatao Institute at UC Berkeley, as a customizable, multilingual digital data collection platform that collects and integrates demographic questions, quantitative evaluations, qualitative feedback, and peer-to-peer collaborative filtering of qualitative data. DevCAFE is built with HTML5, allowing participants to access it on smartphones, tablets, and computers. DevCAFE was one of the first digital data collection tools to incorporate "collaborative filtering" on qualitative responses for participant evaluation of the effectiveness of development interventions [2]. Since 2014, DevCAFE has been implemented in Uganda to facilitate bottom-up evaluation of the effectiveness of family planning trainings, in Mexico to crowdsource priority policy issues for the June 2015 midterm elections, and in the Philippines to identify more effective disaster risk reduction strategies. More info on DevCAFE is available at cafesystem.org.

We've compiled a list of additional digital data collection tools [here](#), describing their features and providing links to open source code, when available.

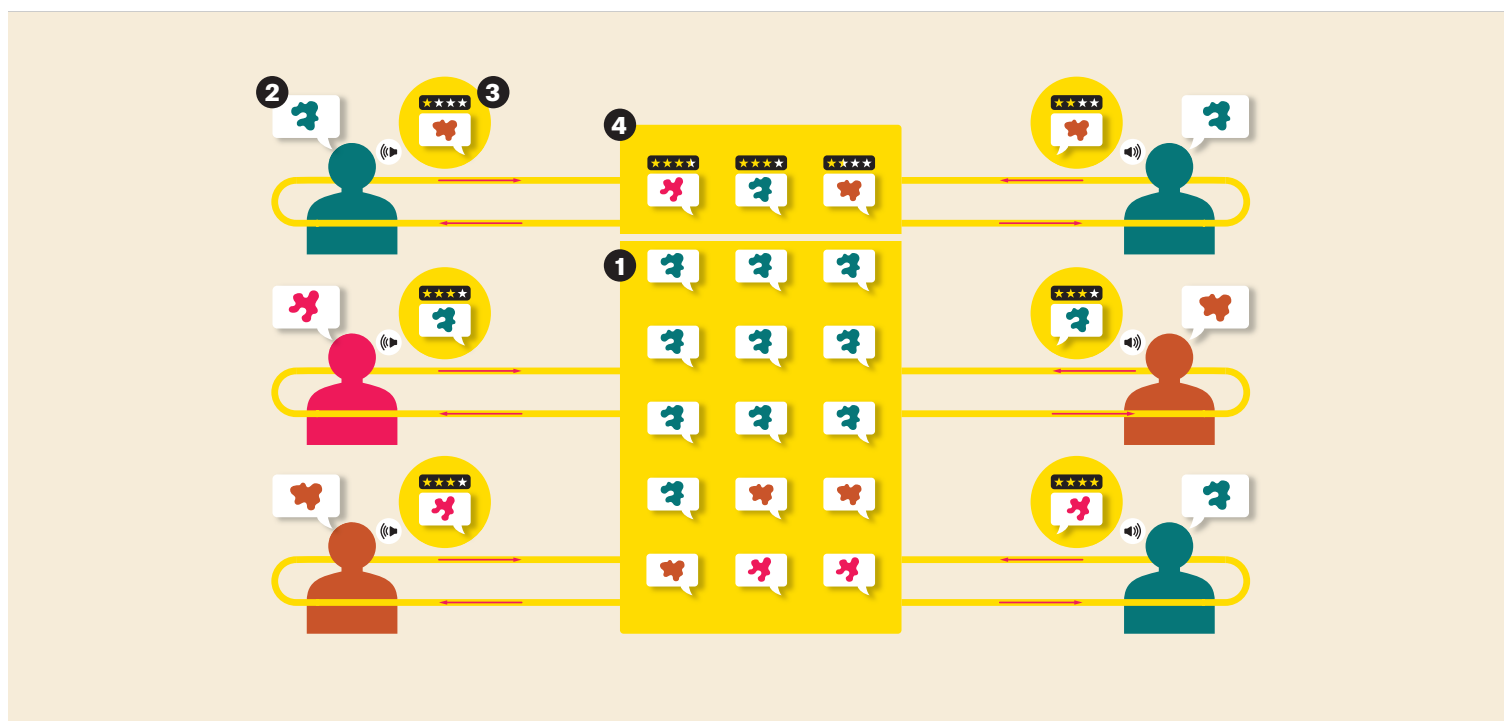
THE POWER OF COLLABORATIVE FILTERING

The case of DevCAFE highlights the need for tools that can quickly analyze insight-rich, qualitative data, a capability that can be particularly valuable to practitioners seeking to identify the impact of media on complex social issues.

To analyze qualitative data, impact evaluators commonly compile qualitative responses and search for emerging themes and repeating patterns, either manually or by utilizing natural language processing software. Research on DevCAFE indicates an alternative approach to identifying key insights can be achieved through a methodology called “collaborative filtering” (a process best known for its application in online recommendation and rating systems). Rather than relying on program evaluators to quantify themes and identify patterns in qualitative data to indicate key insights, DevCAFE instead enables community members to collaboratively evaluate (“filter”) qualitative responses. Participants are encouraged to evaluate their agreement with their peers’ responses, empowering each participant to collaboratively identify key insights from qualitative data. In contrast to traditional qualitative analysis, collaborative filtering may reveal unexpected insights other techniques would

miss. For example, by empowering participants to collaboratively evaluate the collective relevance of a qualitative statement, a statement that was presented by a minority of participants in a survey may be revealed as a critical issue faced by a majority.

Collaborative filtering is particularly useful to enable participatory evaluation, which engages participants as active collaborators in the evaluation process, empowering them to contribute to identification of key insights, interpretation of results, and identification of effective interventions [3, 4]. Engaging participants as co-evaluators, rather than passive contributors increases the validity of insights gleaned by obtaining the community’s collective understanding of local effects of social impact campaigns, which can lead to the development of sustained, community-driven development interventions [5]. The result is a bottom-up process that taps into the wisdom of the community and helps diminish evaluator bias and surface unanticipated insights (for example, an observation that many may agree with, but few would put forward). By employing collaborative filtering, DocSCALE seeks to enable participants to collectively identify and validate emerging insights and patterns.



1. A least-frequently rated algorithm circulates recorded statements to survey participants, ensuring that all statements are rated. Unique statements and ‘common’ statements have an equal chance of being validated.

2. Survey participants record a statement describing a change they have observed.

3. Survey participants validate or negate each others’ statements of change.

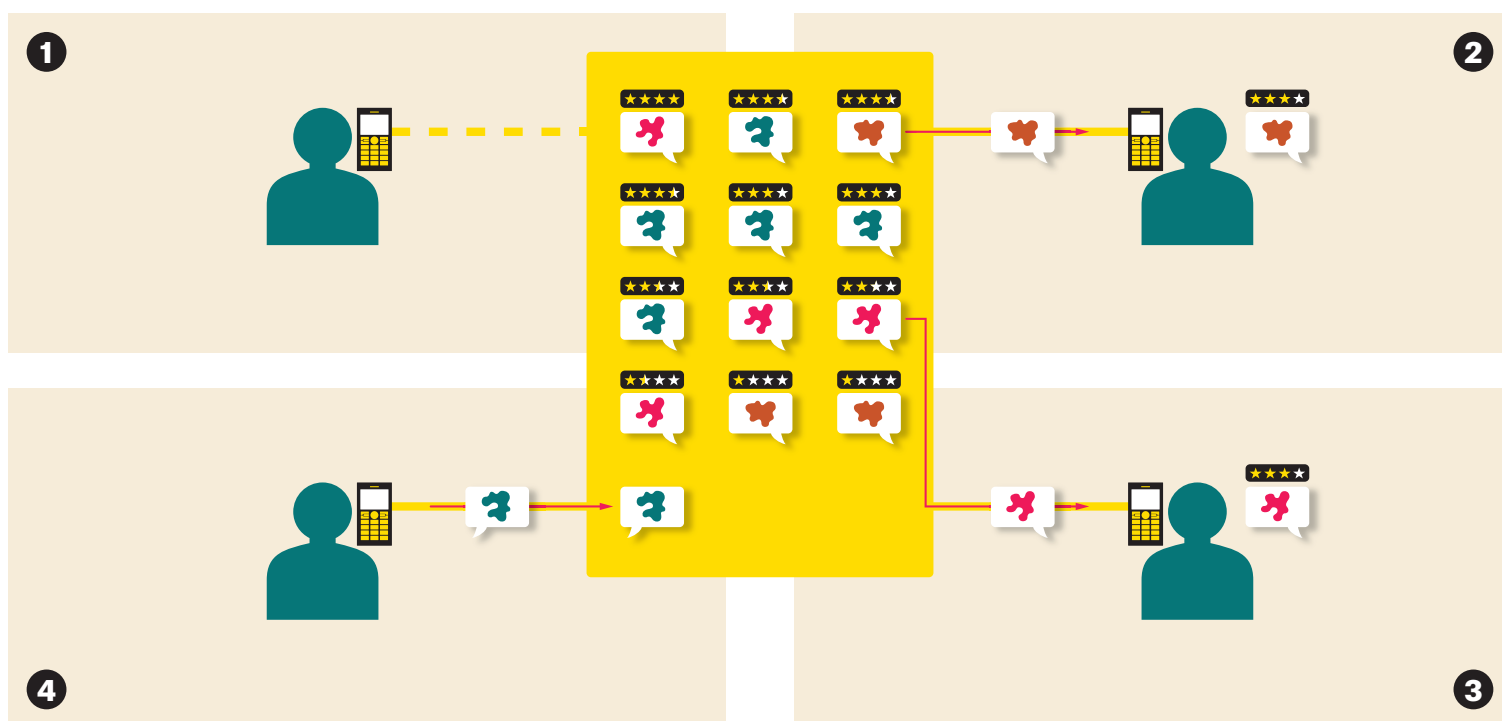
4. A ranking of validated statements emerges, revealing patterns of change. Evaluators learn which statements were singular, and which represent more widespread change.

DOCSCALE

DocSCALE is deployed as an interactive voice response survey administered through feature phones, a design choice that makes it accessible to populations with a range of literacy levels. All instructions, questions, and participant-provided responses are audio recorded in the local language(s). DocSCALE is built on the Viamo platform (previously known as Voto Mobile), enabling evaluators to architect and modify survey question type and structure through the Viamo Dashboard. To complete the survey, each respondent calls a predefined toll-free telephone number and enters an ID number, ensuring that each survey response is uniquely identifiable.

DocSCALE combines aspects of a traditional quantitative survey with collaborative filtering to create a focus group-style forum to gather and validate open-ended qualitative responses. DocSCALE features three stages: (1) collection of demographic information,

(2) quantitative evaluation questions to measure project impacts, and (3) collection of qualitative responses with peer-to-peer collaborative evaluation (i.e., filtering) of these responses. Since participant-generated qualitative responses are circulated and collaboratively evaluated by participants, the community of respondents facilitates identification of patterns and insights by ranking their agreement with others' qualitative statements. This allows for key insights to emerge directly from the participants and for participants to experience a direct sharing of insights with each other. To better ensure that all participant-generated statements are evaluated, an algorithm is employed to prioritize presentation of statements that have received fewer ratings. Each participant is presented with one statement from their peer that they must evaluate before they are allowed the option to audio record their own statement, which is then presented to other participants for evaluation.



1. STEP ONE: Participants call into DocSCALE

2-3. STEP TWO: Participants listen to answers recorded by other survey-takers and indicate whether or not they have seen similar changes, using the dial pad

4. STEP THREE: Participants are invited to record an answer to an open-ended question about changes they've observed in their community. The recorded answer enters the DocSCALE queue for rating

DOCSCALE BETA FIELD TEST: WOMEN AND GIRLS LEAD GLOBAL

Between 2012 and 2017, Women and Girls Lead Global (WGLG), an initiative of ITVS created in partnership with USAID and Ford Foundation, curated and produced documentary films to address challenges faced by women and girls in developing countries. WGLG partnered with local nonprofits to screen these films as part of larger social impact campaigns that facilitate in-depth discussion and formation of community-led intervention strategies to promote gender equality. WGLG social impact campaigns were launched in Bangladesh, India, Jordan, Kenya, and Peru to address a variety of issues, including child marriage, teen pregnancy, and gender-based violence (see womenandgirlslead.org). While these campaigns resulted in hundreds of community-led gender equality projects, measuring and understanding sustained local impacts remained a challenge.

With special evaluation support from the Bill and Melinda Gates Foundation and the Ford Foundation, and design expertise contributed by an advisory council of software engineers, design researchers, and user-experience designers¹, ITVS developed DocSCALE to enhance its WGLG measurement efforts and pilot collaborative filtering as a media impact measurement method for the first time. The Beta field tests of DocSCALE focused on WGLG efforts in India, where the project's "Hero Academy" used a film-based curriculum combined with facilitated discussion of gender equality issues and community engagement projects to empower young men to serve as change agents in mobilizing gender equality in their communities. Between April and September of 2017, the WGLG Hero Academy engaged three cohorts of 17–29-year-old men – a total of 476 participants – from rural villages and urban

slums in Delhi, Maharashtra, and Rajasthan. Over a period of nine weeks, participants were exposed to curriculum that consisted of six films that address gender stereotypes and engaged in in-depth discussion on the impact of gender inequality and patriarchal attitudes on men and women; gender discrimination in education, employment, and marriage; violence against women and girls in private and public spheres; and the role of boys and men in reducing discrimination and violence against women.

At the conclusion of Hero Academy, participants designed and implemented a community engagement project to promote awareness and action to support gender equality. Community engagement projects implemented prior to DocSCALE's field test included a street art project in Rafi Nagar, Mumbai where a team of Hero Academy participants utilized the [Map Your World](#) app to identify streets considered unsafe by school-aged girls. The team painted murals, including slogans and images encouraging the community to take notice of gender equality issues. Another Hero Academy team in Nainwa, Rajasthan worked to delay the marriage of underage girls by identifying households of underage girls, consulting their parents, and creating awareness campaigns on the negative impacts of child marriage during the month when most marriages are solemnized in the community.

¹ DocSCALE's advisory council included: Esther Ahn, UX Manager & Design Lead, YouTube; Stephanie Chen, Immersive Computing Research & Insights Lead, HP; Melissa Cliver, Design Strategist, Nordstrom Innovation; Todd Diemer, Designer and User Researcher, Khan Academy; Ari Lacenski, Mobile Engineer, Inkstone Inc.; and Sowmya Subramanian, Engineering Director, YouTube..

DocSCALE was piloted with five different groups:

1. Female Relatives of Hero Academy Participants (Cohort One). The "Alpha" deployment of the survey was administered to female relatives whose male family members had completed the Hero Academy. The goal was to identify whether participation of their male relatives had impacted the male participants' knowledge, attitude, and behavior toward gender equality. During the first pilot with female relatives of Cohort One participants, bugs and other problems were identified and used to inform the design of the next iteration.

2. Female Relatives (Cohort 2). The first "Beta" deployment, conducted one month after Cohort 2 male relatives completed the Hero Academy.

3. Female Relatives (Cohort 3). The second "Beta" deployment, conducted one month after Cohort 3 male relatives completed the Hero Academy.

4. Hero Academy Participants (Cohort 2). The third "Beta" deployment, aimed at assessing if participants' thought their own experience with the Hero Academy led them to change their own behavior in regard to GBV and/or discrimination. Conducted six months after completion of Hero Academy.

5. Hero Academy Participants (Cohort 3). The last "Beta" deployment. Conducted three months after completion of the Hero Academy.

Note: Survey deployment of all Hero Academy Participants was done at the same time, despite the fact that Cohort 2 ended three months before Cohort 3. This accounts for the difference between the elapsed time between completion of the Academy and the survey.

FEMALE RELATIVE SURVEYS

A total of 365 female relatives of Hero Academy participants completed a survey through DocSCALE. DocSCALE was provided in Hindi, Marathi, and Hadothi languages and consisted of three question phases: (1) demographic questions, including location; (2) quantitative evaluation questions to assess male relatives' behavior toward women and girls at the conclusion of participation in Hero Academy; and (3) collection and collaborative filtering of qualitative insights into female community members' perceived behavioral changes among their male relatives.

PHASE 1: COLLECTS DEMOGRAPHIC INFORMATION

DocSCALE enables the collection of demographic information (e.g., age, gender, location), which can then be used to identify patterns and insights in relation to quantitative and qualitative data collected.



Women and Girls Lead Global, India

PHASE 2: COLLECTS QUANTITATIVE DATA ON SURVEY QUESTIONS DESIGNED TO MEASURE THE PROJECT'S INTENDED IMPACT

DocSCALE consisted of five evaluation questions. For each question, participants were provided with a scale (e.g., "not at all" = 1, "a little" = 2, and "a lot" = 3) corresponding to 1, 2, or 3 on the phone keypad.

1. How much does your male relative help with household chores that are traditionally done by women – not at all, a little, or a lot?
2. Thinking about the answer you just gave, is this the usual amount of help he has typically provided, or have you noticed a change in the past few months – usual amount of help, helped more, or helped less?
3. Over the past few months, did your male relative become more understanding of the challenges that women and girls in your family experience – no, a little more, or a lot more?
4. How frequently would you say your male relative gets angry or irritated with you or other female family members – rarely, sometimes, or often?
5. Thinking about the answer you just gave, is this the usual frequency with which he has typically been angry or irritated, or have you noticed a change in the past few months in how often he gets angry – same, less, or more?

PHASE 3: COLLECTS QUALITATIVE RESPONSES TO AN OPEN-ENDED QUESTION AND ALLOWS PARTICIPANTS TO EVALUATE OTHERS' RESPONSES COLLABORATIVE FILTERING

Upon entering phase 3, an algorithm is used to select one statement from a pool of recorded statements, using a "Least Frequently Rated" rule, prioritizing the selection of statements that have been rated less frequently in order to better ensure all statements are rated. All participants are presented with a voice-recorded statement from another survey participant detailing a change she has observed in her male relative after completing Hero Academy. The participant must indicate whether they have also observed this change in their male relative before they can record their own statement describing a change they have witnessed in their male relative. Their statement is then entered into the pool of recorded statements and circulated among other participants for rating and validation.

FEMALE RELATIVES SURVEY DEPLOYMENT

Because the majority of female survey respondents in the DocSCALE Alpha and Beta tests did not own cell phones, feature phones were provided at community centers, and women were invited to visit the centers to complete the survey via DocSCALE over the course of one week. A facilitator trained to use DocSCALE provided a short orientation on the survey and answered questions as the women took the survey at each center.

The survey was deployed three times: in an Alpha test with female relatives of Cohort One of the Hero Academy; and in two Beta field tests with female relatives of Cohorts Two and Three. Challenges in the platform design were documented during the Cohort One Alpha test and the Cohort Two test, and improvements were made in each iteration.

For example, the Alpha design of DocSCALE asked participants to indicate whether they agreed or disagreed that their male relative had expressed a behavioral change after Hero Academy. Alpha results showed an overwhelming confirmation bias – participants tended to agree that their male relative had exhibited the same behavior. In order to get a more nuanced understanding of the change in male relatives' behavior as a result of Hero Academy, the DocSCALE Beta format was adapted to ask participants whether their male relative had exhibited this behavior prior to Hero Academy, and whether they had increased this behavior a little or a lot after completing Hero Academy.

Based on findings from the deployment of DevCAFE, the platform that inspired DocSCALE, we anticipated that approximately half of respondents would contribute a recorded statement. In fact, about 90 percent of women surveyed in the Alpha field test recorded a statement. Because we had such a large number of recorded statements to sample from, the majority of statements were only rated by one or two other respondents – not enough to gather quantitative validation.

To address this issue, two design changes were made in the Beta version. Because many of the recorded statements from the Alpha test touched on similar themes, for the Beta deployments we decided to group female relatives' qualitative statements into thematic categories. That not only enabled insight into common behavioral changes exhibited by Hero Academy participants, but could also be used to improve the algorithm utilized to present statements for collaborative filtering. While the algorithm was successful at presenting statements that had received fewer ratings, it did not take into account presentation of a diverse set of statements for rating. This resulted in similar statements being presented and rated. Thus, rather than sampling from the full pool of statements, sub-sampling from a selection of 10 statements – two statements from each of the five thematic categories – would better ensure that statements presented are reflective of a variety of perceived behavioral changes and that each perceived change would receive an appropriate number of peer evaluations for validation. The results of this methodology are detailed in the Data Insights section, below.

HERO ACADEMY PARTICIPANT DEPLOYMENT

Surveys were delivered to Hero Academy participants in the same way they were delivered to female relatives of participants: feature phones were provided at community centers, which were staffed by trained facilitators. Participants were invited to visit the centers to complete the survey over the course of one week. Responses from male participants in Cohorts 2 and 3 were collected at the same time, six and three months respectively after the end of the intervention. These final Beta surveys were delivered to 328 male participants of Hero Academy; a total of 279 men completed the survey – a response rate of 85 percent. All of the lessons of previous deployments were used, resulting in perhaps the best deployment and data collection.

First, survey takers listened to statements from other Hero Academy participants describing how their experience with the Hero Academy led them to behave differently than they had in the past. The survey taker was asked to indicate whether his experience with the Hero Academy led him to change his actions in a similar way, using a three-point rating system: did not influence in this way, influenced a little, or influenced a lot.

Next, each survey taker was asked if he wanted to record an example of how his behavior had changed that was *different* from changes he'd already heard in the survey. More than three-fourths of respondents opted to record a statement of change. To avoid the problem encountered with Alpha female relatives – too many recorded statements circulating to allow quantitative data to emerge – evaluators chose two statements in each of the two survey languages (Hindi and Marathi) to circulate to other survey takers, guaranteeing at least twice as many ratings as statements. To begin the survey process, two seed statements – culled from focus groups with Hero Academy participants earlier in the year – were circulated to survey-takers so that the first survey respondents had an opportunity to hear and rate a statement of change. The results of these surveys are discussed below.

HERO ACADEMY DOCSCALE DATA INSIGHTS: FEMALE RELATIVES

DocSCALE streamlined the collection and analysis of quantitative and qualitative data, revealing insights into the effects of the Hero Academy on male participants and their families. With female relatives of Hero Academy’s Cohort 2, analysis of the quantitative evaluation question data revealed that:

- Over 70% of participants believed their male relatives were taking on greater responsibility for household chores typically completed by women
- Over 90% of participants believed their male relatives had become more aware of the challenges women and girls face in their community.

For the qualitative question in the survey, which asked about changes that the women had observed in their male relative, 251 women contributed recorded statements about changes they had witnessed, out of 365 total respondents. These statements, while varied in exact detail and wording, coalesced around several

types of similar behavioral changes experienced by a majority of Hero Academy participants. However, because a much higher percentage of female relatives recorded statements than had been anticipated, each statement was circulated for rating to only 2-3 other survey respondents – not enough to provide quantitative insights on individual statements.

To enable further analysis of qualitative responses, each statement was grouped into five thematic categories: (1) Showing increased politeness and kindness, (2) Becoming less confrontational and aggressive, (3) Showing respect to women and girls in the household, (4) Moving beyond gender stereotypes, and (5) Creating a supportive environment by helping women and girls. Grouping peer-to-peer evaluation of qualitative responses allowed patterns of behavioral change observed by the community to emerge (see Table 1, which also includes examples of the type of statements contributed by individuals in each category).

TABLE 1. FIVE THEMES WITH EXAMPLES OF INDIVIDUAL STATEMENTS

THEME	RATINGS FOR ALL STATEMENTS IN THEMATIC CATEGORY	EXAMPLE INDIVIDUAL STATEMENT
(1). Showing increased politeness and kindness	23% – changed a lot 63% – changed a little 14% – same	"There is positive change in him, now he behaves well, speaks well. There is lot of good changes."
(2). Becoming less confrontational and aggressive	29% – changed a lot 60% – changed a little 11% – same	"Earlier he used to respond to us with irritation, now he doesn't."
(3). Showing respect to women and girls in the household	33% – changed a lot 56% – changed a little 11% – same	"Earlier he would not listen to me, but now he does."
(4). Moving beyond gender stereotypes	30% – changed a lot 57% – changed a little 13% – same	"There has been change because he did not allow the girls to visit the park. But now he lets the girls go to the park and takes part in the household chores and he says there is no difference between the girl and the boy."
(5). Creating a supportive environment by helping women and girls	23% – changed a lot 63% – changed a little 13% – same	"After getting associated with Hero Academy there has been a lot of change in my child. He used to tease girls, misbehave with them but now he does not do any such thing."

The overarching pattern across the five themes is that the majority of female relatives reported that they had observed similar changes to those described in the statements – although enough female relatives reported that they hadn’t observed changes (10-14%) to mitigate the possibility of positive bias. Indicators of behavior change appear around two indicators: showing more respect to women and girls in response to the Hero Academy (33.3 percent reported “a lot” of change on this indicator, and 60.2% reported “a little” change) and displaying less anger and aggression (28.9 percent reported “a lot” of change; 56% reported “a little”). Women also confirmed that they observed changes in

their male relatives’ politeness, support on household tasks, contribution to a supportive environment for women and girls, and ability to transcend gender stereotypes.

As an additional note, when comparing these qualitative findings back to the responses to the five quantitative questions of the survey, the results aligned closely. This provides tentative evidence that the collaborative filtering feature functioned effectively using its non-traditional open-ended methodology, when compared to the findings surfaced by the more traditional closed-ended questions.

HERO ACADEMY DOCSCALE DATA INSIGHTS: MALE PARTICIPANTS

In the final Beta iterations of DocSCALE, using all the lessons of previous deployments, the collaborative filtering section of the Hero Academy participants' IVR survey asked if participants' own experience with the Hero Academy led them to change their behavior in regard to GBV and/or discrimination. Of all the surveys, this deployment was the most aimed at measuring durability of effect. Responses from participants in Cohorts 2 and 3 were collected at the same time, six and three months respectively after the end of the respective interventions. The survey was delivered to 328 young men who attended the Hero Academy. A total of 279 men completed the survey – a response rate of 85 percent.

As described previously, evaluators chose two seed statements to begin the survey process (taken from focus groups) and then statements in each of the two survey languages (Hindi and Marathi) to circulate to other survey takers for collaborative evaluation.

As illustrated in Table 2, the prevailing pattern across all six statements (two seed statements and four user-contributed statements) is that nearly all respondents reported they had changed a little or a lot in the ways described – with the largest proportion saying they had changed a little.

TABLE 2. RESPONSES TO STATEMENTS IN THE COLLABORATIVE FILTERING SECTION

INDIVIDUAL STATEMENTS		DID NOT INFLUENCE IN THIS WAY	CHANGED A LITTLE	CHANGED A LOT	TOTAL
1. [Seed] Earlier I used to look for reasons to touch girls, for example pushing them in a crowded place. But after participating in the Hero Academy, I completely stopped doing that.	%	7%	59%	34%	100%
	n	7	63	36	106
2. [Seed] Earlier I used to question my sister when she wanted to go out, restricting her to stay in the house. But after participating in the Hero Academy, I started giving her full freedom to go outside and pursue her interests.	%	5%	63%	32%	100%
	n	5	67	34	106
3. (Hindi only) Earlier it was me and my dad who would take all the household decisions then I explained that it's not just us but also mother who can take decisions. Father understood and now even mother takes decisions sometimes.	%	11%	64%	26%	100%
	n	15	87	35	137
4. (Hindi only) Earlier I would comment on the college going girls but after getting associated with Hero academy I have stopped commenting.	%	7%	69%	25%	100%
	n	9	94	34	137
5. (Marathi only) Earlier I used to treat women as secondary to us, I used to consider them less than us, now my views about them have changed a lot.	%	0%	53%	47%	100%
	n	0	19	17	36
6. (Marathi only) I never obeyed female members of our family, but now I do obey them. I have realized my responsibilities.	%	6%	50%	44%	100%
	n	2	18	16	36

As statements were recorded, they were thematically coded. As with female relatives, coding enabled insight into the patterns of behavior change. As Table 3 shows, respondents most frequently recorded statements about how they began helping more with

household chores. The second most frequently cited change was respecting women and girls more followed by cessation of harassing or abusing women and girls.

TABLE 3. SAMPLE STATEMENTS, HERO ACADEMY PARTICIPANTS

CHANGES IN GENDER ROLES IN HOUSEHOLD	CHANGES IN TRANSCENDING GENDER STEREOTYPES	CHANGES IN HARASSMENT BEHAVIOR
"Earlier when I did household work I felt like I was becoming like a girl. But after joining Hero academy I have started all the household work, for instance to cook food, sweep, get water and etc."	"Earlier I used to fight with my sister when she would go out but now I do not do it. And after negotiating with father I have got her a mobile phone as well."	"Earlier I would tease girls along with my friends and used to enjoy a lot. But since I have joined Hero academy I have stopped them and said that other girls are like our sisters."
"Earlier I would not do any household work. After getting associated with Hero academy I help my mother. I cut vegetables at times, wipe the floor and lend my hands in household work."	"I used to scold my sister and whenever she would go to school I would ask her not to roam around as it's not her thing to do as its only boys who play. But after getting associated with Hero Academy I let her play and go outside."	"Earlier we guys would make a group in college and talk about girls and they would shy away. But since we joined Hero academy, I swear that out the twenty boys here none of us tease women. In fact we have started respecting women doubly. Whenever we see someone teasing women we take strict actions against them."

The pilots with both Hero Academy participants and female relatives suggest that one of the values of the collaborative filtering feature is its ability to function as an asynchronous focus group, surfacing nuanced qualitative data at scale. Rather than passively agreeing or disagreeing with an evaluator’s statement,

recording an original statement compels respondents to reflect on what they’ve seen and to share a lived experience. It could be argued that the uniqueness and specificity of the responses to the survey’s open-ended question about change, exemplified in Table 3 above, strengthens authenticity.

DOCSCALE AS MEDIA EVALUATION TOOL

DocSCALE holds great potential to enable more informed media evaluation. Through its participatory approach to measuring media's effect on individuals' knowledge, attitude and behaviors – as opposed to assessing environmental trends such as reach or influence – DocSCALE gathers insights directly from viewers, in their voices, and at scale. This can help to eliminate researcher bias and surface the kind of nuance responses demanded by the complexity of media impact evaluation.

Challenge – Unobserved changes:

The kind of changes that result from media are often invisible. A film may profoundly shift our understanding of an issue without motivating us to take immediate action.

DocSCALE surveys can be used to measure “invisible” changes in knowledge/attitude via a closed-ended question, with responses on the Likert scale. For example, the survey could pose the question:

- “Did your understanding of gender bias change?” (Possible answers: “A lot; a little; not at all.”)
 - For those who answer affirmatively, the survey could be designed to branch to an open-ended question in the collaborative filtering section of the survey to gather qualitative information on knowledge change.

For example, by posing the qualitative question “Please describe how your understanding of gender bias changed in response to the film,” the respondent would then describe how his/her perspective shifted, and his/her answer would be circulated to other respondents to “rate” whether their perspective had shifted in similar ways or not. Ultimately, this methodology would provide statistical insight on knowledge changes in gender bias among viewers, which could be of special value for sensitive topics where respondents might respond differently to a researcher’s question (if asked) than to an anonymous peer-provided insight (where a more honest response might occur).

Furthermore, if audience members do take action down the line, DocSCALE is well suited to capture that data, since mobile technology makes it simple to deliver a short follow-up survey directly to a respondent’s phone months after a media intervention.

In fact, the capacity to reach audience members to gather longitudinal data – whether on behavior or knowledge/attitudes – addresses another challenge often cited in discussions of measuring media impact: typically, the evaluation time-scale for media interventions is too short to capture media’s effects, which take time to emerge.

DocSCALE’s methodology of combining qualitative data (unanticipated, singular insights) and quantitative data (unanticipated, validated insights) is also a valuable complement to tools that measure reach, such as NewsLynx, or influence, such as Media Cloud. Its participatory approach and blending of qualitative and quantitative data collection has the potential to address some of the key challenges in media evaluation, including:

Challenge – Contribution versus attribution:

There are too many variables in play to identify and measure media’s impact.

- DocSCALE has the potential to ask an open-ended question to gather nuanced qualitative data on impact; to use collaborative filtering to identify change trends; and to ask a closed-ended follow-up question to discern whether media influenced that change.

For example:

- **Closed-ended question:** “Have you taken any type of action on climate change in the last three months?” (Note: time period is synced to film screening date for each audience group)
 - If the answer is ‘yes’, question branches to:
- **Open-ended question:** “Please describe the action you took.”

Recorded answers of actions are then circulated to other survey respondents to assess if they have taken similar action, and identify trends. This system has the benefit of capturing data both through an open-ended question and a response to an open-ended question. For example, a respondent might not share any action information in the open-ended question, but might acknowledge or deny action in response to a peer-provided example.

- **Closed-ended question:** “What prompted you to take action? Press all that apply. Press 1 for Film X; press 2 for a news report; press 3 for a conversation with a friend. Press 4 for other.”

CONCLUSION

DocSCALE streamlines and structures the collection of quantitative and qualitative data on the impacts of social issue films. Rather than passively providing answers to survey questions, DocSCALE empowers participants to serve as active collaborators in the data analysis process through a scalable, asynchronous focus group structure. This process enables collection of data from a significantly larger number of participants than a traditional face-to-face focus group, provides participants with the flexibility to participate when convenient, and enables validation of bottom-up insights on community-level impacts through peer-to-peer evaluations. Insights drawn from initial field-testing through the Women and Girls Lead Global program is enabling further refinement and testing of DocSCALE's application, including its application as a tool to enable rapid, bottom-up insights on the social impacts of media campaigns.

LIT CITED

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