Role Models in Developing Countries*

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1 Introduction

Important decisions in life, such as those regarding education, employment and family planning, are determined by expected costs and benefits, available resources, and preferences. Contrary to the assumptions of standard economic theory, a growing number of studies within the field of economics have highlighted that, by dictating which actions are socially acceptable or desirable, one’s social environment affects the costs and rewards associated with a given action (see, e.g., Bénabou and Tirole, 2006; Fischer and Huddart, 2008) and/or shapes preferences over a set of actions (e.g., Bowles, 1998; Postlewaite, 2011). Individual experiences and social interactions inside and outside the family are important, as they transmit, reinforce or challenge the prevailing social norms.1 Other recent work has focused on aspirations, i.e., long-term goals that act as reference points in one’s utility function (Dalton et al., 2015; La Ferrara, 2019; Ray, 2006). The study of aspiration failures, in particular, has become increasingly important in the modeling and analysis of poverty traps, i.e., situations whereby internal or external constraints, or both, prevent the poor from escaping a poverty equilibrium. Crucially, as shown in Genicot and Ray (2020), aspirations are also endogenous to one’s social environment, and are likely to change in response to social comparisons and personal experiences.2 Hence, one’s social network – ranging from family, to teachers, to peers and acquaintances – is likely to play an important role in the formation and evolution of individual preferences, expectations and aspirations, which, in turn, are important determinants of individual decision-making.

In addition to people within one’s immediate social network, inspiring yet relatable figures, e.g., media personalities, movie characters or politicians in the public domain, may also be important by acting as role models.3 The literature on role model effects in economics is recent, yet fast growing. Role models are thought of as individuals that can both inform and inspire others, and by doing so, they can challenge social norms and stir individuals toward different life paths, for instance by affecting aspirations, or expanding decision sets, or influencing perceptions of the costs and benefits associated with different actions.

1See also Bisin and Verdier (2005) for a review of theoretical and empirical studies on the role that vertical and horizontal socialization play in the development of preference traits.
2For a review of the empirical literature on the determinants and the impacts of aspirations see Fruttero et al. (2021).
3Family members and teachers can also act as role models. This is discussed in Section 2 of this chapter.
In this chapter, I review the recent literature on the impact of role models on individuals’ preferences and behaviors. The focus is primarily on studies conducted in developing countries.\footnote{For the purpose of this chapter, I categorize countries as ’developing’ based on the United Nations 2022 World Economic Situation and Prospects (WESP) report.}

In defining and conceptualizing the characteristics and possible channels of influence of role models, I adopt the framework introduced by Morgenroth et al. (2015), whereby role models have three primary functions. First, they are a representation of the possible, i.e., they are a living example that a goal that may have been perceived as unattainable, is instead attainable. For this to be the case, role models need to be relatable, i.e., they need to be perceived by the “role aspirant” as similar to them, so that their success could be seen as an indication of the role aspirant’s chances of success if pursuing the same goal or path. Second, role models are behavioral models, i.e., they share information that allows role aspirants to model their behavior, e.g., by making same or similar decisions, or by adopting similar strategies to overcome challenges. Third, role models are inspirations: by exciting admiration, they give role aspirants the motivation to aspire to a new goal.

In what follows, I first review the evidence on the impact of role models found inside and outside the family, based on the insights generated by non-experimental studies. I then discuss the advantages of the experimental method for the identification of role model effects, and discuss the status of the literature on the effectiveness of role model interventions in developing countries.

2 Family, teachers, media and politicians as role models

One could argue that the three fundamental functions of role models could be assumed by family members, e.g., parents and siblings. A number of studies have, for instance, shown (using data from developed countries) that mothers act as role models for both daughters and sons (see, e.g., Fernández et al., 2004; Olivetti et al., 2020).\footnote{In Chile, Celhay and Gallegos (2015) documents the impact of grandmothers on women’s education, and of both grandparents’ on son’s education.} Others have suggested that older sisters can act as role models. For instance, Qureshi (2018) finds that in Pakistan the education of older daughters has a significant and positive impact on the human development of younger brothers. The challenge in these studies lies in isolating the role model effect from other important channels of influence, for instance tutoring and
Importantly, the potential for family members to act as role models for the achievement of new goals – for instance high school or college enrollment – is low among the poor, due to the internal and external barriers that older generations have faced in the formation and achievement of their own goals. For the poor, especially in developing country contexts, role models outside the family are especially important. School teachers, for instance, could play an important role in inspiring, representing the possible and acting as behavioral models. However, studies that establish a link between teachers’ observable characteristics – for instance gender – and students’ education choices, aspirations and achievements face similar identification challenges as studies focusing on the impact of family members on individual choices and outcomes. For instance, Muralidharan and Sheth (2016) provides evidence that female teachers reduce the gender gap in student achievement in the Indian state of Andhra Pradesh, by positively affecting the performance of girls. However, besides role model effects, the observed impact could be due to unobservable characteristics of female teachers, for instance, different teaching styles, or more encouraging (or less biased) attitudes toward girls.

Impactful role models could also be found in the media and the public sphere. In Brazil, La Ferrara et al. (2012) and Chong and Ferrara (2009) exploit the variation in the times at which different municipalities started airing new novelas portraying a large percentage (above 70 percent) of female characters without children or with only one child, and/or without a partner, and find significant effects of exposure to the novelas on both separation rates (which increased) and female fertility (which decreased). This suggests that the women protagonists acted as role models for the viewers and, over time, contributed to changing norms and preferences regarding marriage and family planning. Similarly, Jensen and Oster (2009) exploits the staggered introduction of cable television in Indian villages.
in the early 2000s and find large effects of access to cable TV on attitudes toward fertility, domestic violence, women autonomy and son preference. There is also evidence that being exposed to female leaders, for instance in politics, affects parents’ aspirations for girls (Beaman et al., 2012) and reduces son preference and sex-selective abortions in rural India (Kalsi, 2017), possibly due to role model effects.8

The studies discussed in this section suggest that individuals who find, seek or are (randomly or quasi-randomly) exposed to individuals that may act as role models, inside and/or outside the family, are likely impacted by them. However, the data and the empirical strategies employed, albeit successful in identifying the causal relationships of interest, provide only indirect evidence of role model effects. Experimental methods, by relying on the random selection of individuals who are or are not exposed to role models, allow for the clear and clean identification of pure role model effects.

3 Role Model Experiments

Role model experiments evaluate initiatives or programs that do not allow for differentiated or individualized interactions between role models and role aspirants. In other words, contrary to mentoring, tutoring or training programs, they rely on the diffusion of exactly the same information, provided by the role model (e.g., on his or her background, decisions and achievements) to all role aspirants. This could be achieved through the randomization of individuals who are invited to view a short video or a movie showcasing one or more (potential) role models, or through the randomization of individuals into meetings where role models give a brief talk or presentation. The primary advantages of these programs is that they are easy to implement, relatively inexpensive and easily scalable.

In contexts where individuals are unlikely to come across role models who can motivate them to challenge the prevailing social norms and/or to aspire to new goals – by representing what is possible, by modeling behaviors and by being sources of inspiration – role model interventions could play an important role in re-shaping preferences and shifting behaviors. But are they effective? In what follows, I review the empirical evidence on the impact of role model interventions conducted through experiments (randomized controlled trials, or RCTs) in developing countries. I distinguish between studies that have employed

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8Both Beaman et al. (2012) and Kalsi (2017) exploit the variation in the timing the implementation of state-level reservations of political seats to female candidates.
videos or movies showcasing potential role models, and studies that have relied on in-person interactions by bringing potential role models to the target population during workshops, meetings or events.

3.1 Exposure to role models through videos

Most of the existing role model interventions use videos or movies displaying individuals that are relatable to the audience, e.g., have similar background or demographics, and who talk about their life stories or some specific experiences, e.g., education or work choices and outcomes. The majority of the existing studies have employed self-produced videos or documentaries, showcasing multiple role models.

Table 1 provides a summary of published, forthcoming or working papers that employ randomized controlled trials in developing countries to specifically identify the impact of video-based role model interventions on a variety of outcomes and study populations. The top half of the table summarizes studies that target non-student populations, ranging from rural households in Ethiopia (Bernard et al., 2019; Leight et al., 2021), to urban retailers in Indonesia (Dalton et al., 2021), to HIV-positive women in Uganda (Lubega et al., 2021) and primary school female teachers in Pakistan (Mehmood et al., 2022). For each study, Table 1 reports details of the setting, content of the video, the outcome variables of interest and whether the intervention had a significant positive or negative impact on each outcome.

The first study, to the best of my knowledge, to employ a randomized controlled trial to identify role model effects through videos was conducted by Bernard et al. (2019) in Ethiopia. The authors randomly selected households in 64 rural villages and invited the household heads and spouses to attend the screening of a documentary centered around the life stories and experiences of four individuals of similar background - two men and two women - who overcame challenges and escaped poverty by making non-traditional choices (such expanding their businesses or changing farming practices) and through perseverance and goal setting. The video intervention increased parents’ aspirations for their children’s education. Six months later, this was reflected in larger education investments and higher school attendance for the children of the treated households. However, the effect is driven exclusively by boys, suggesting that the role models portrayed in the video were unable

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9 Each story featured in the documentary video lasted 15 minutes, for a total of 60 minutes, and was produced by the authors as part of the research design.
to lift the constraints at the roots of the gender gap in education that is observed in the sampled villages.

The studies by Leight et al. (2021) in Ethiopia and Dalton et al. (2021) in Indonesia adopt a similar design and comparable role model videos. Leight et al. (2021), in particular, attempts to replicate the Bernard et al. (2019)’s study in two Ethiopian regions, employing the same documentary and targeting a similar, albeit more vulnerable population, i.e., poor rural households who are beneficiaries of cash and food transfers as part of the primary country-level safety-net program (PSNP). In this ultra-poor population, the authors find no evidence of a positive impact of the video intervention on any of the outcomes that had been significantly impacted in Bernard et al. (2019). Dalton et al. (2021) also employs a documentary video showcasing inspiring success stories, but it targets urban retailers in Indonesia. As in Bernard et al. (2019) and Leight et al. (2021), randomly selected individuals are invited to a screening of the 25-minute documentary video, which focused on five successful peers, i.e., small business owners from the same areas who were chosen by the authors for their good business practices, e.g., organized record keeping. While exposure to role models through the documentary did not affect business expenditures, sales and profits, it did improve business practices, e.g., record keeping, 6 and 18 months after the intervention.

The studies by Banerjee et al. (2019), Lubega et al. (2021) and Mehmood et al. (2022) differ from the above investigations in terms of target population, medium of diffusion of the role models’ messages, and content and context of the interventions. Both Banerjee et al. (2019) and Lubega et al. (2021) employ role models who are HIV-positive with the aim of either changing attitudes toward HIV and promote testing in Nigeria (Banerjee et al., 2019) or motivating and inspiring HIV-positive women to better their lives through successful entrepreneurship in Uganda (Lubega et al., 2021). The latter study shares with Bernard et al. (2019), Leight et al. (2021) and Dalton et al. (2021) the hypothesized channel of role model impact through inspiration and behavioral modeling. It differs in that it relies on much shorter videos (3 minute long) each featuring an interview with an inspiring HIV-positive woman, and on the screening of each video separately every two to three months, coupled with group discussions, over a period of ten months. The screenings and discussions - which happened in health clinics and targeted HIV positive women -

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10 The role model video intervention appears in two treatments as an add-on to an intervention aimed at fostering the retailers businesses primarily through the distribution of a handbook of best business practices.
significantly impacted the women’s work paths, by increasing their likelihood of operating a business and positively affecting their non-wage income, but not their total income.

Banerjee et al. (2019) departs from other role model experiments and centers the intervention around the screening of four episodes of an existing MTV television show (Shuga) set in Lagos and casting predominantly Nigerian actors, and featuring plots aimed at raising awareness on HIV stigma, testing and prevention. The intervention targeted 18 to 25 year old urban household members (randomly selected, at the household level, to be invited to the screening). The primary objective, in this case, was not to impact behavior and decision-making by lifting internal constraints. Instead, the objective was to spread awareness about HIV among young people, change attitudes towards the disease and promote preventative behavior.\footnote{11} The intervention proved effective in all its goals. Similarly, Mehmood et al. (2022) found that exposing randomly selected female elementary school teachers in Pakistan to a short video featuring a female university professor from an elite local university sharing her own experience with the COVID-19 vaccine, and urging them to get vaccinated, was effective in increasing vaccine take-up in the target population.

The bottom half of Table 1 summarizes the features and findings of role model video interventions that focus on student populations and education outcomes. These studies are usually conducted in schools, and consist in the screening of videos to randomly selected groups of students.\footnote{12} The existing interventions share the goal of showing students - and in particular female students in environments characterized by gender gaps in education - examples of former students (often from the same or similar schools) who followed possibly non-traditional or non-stereotypical education and career paths, and succeeded in bettering their lives by overcoming challenges and persevering. This is true for the studies conducted by Ahmed et al. (2022) in Pakistan, Bhan (2020) in India and Riley (2019) in Uganda. Ahmed et al. (2022) produced, and showed to randomly selected female university students, a 10 minute video featuring the stories and testimonials of five female college graduates successfully employed in various jobs.\footnote{13}

\footnote{11}The production and screening of television shows or movies aimed at educating the public, e.g., on public health topics, is also referred to edutainment.

\footnote{12}The randomization is often implemented at the class level.

\footnote{13}The role models were identified by the authors from a list of recent graduates from public universities in Lahore. They were employed as: lawyer, curator at a library, lecturer at a public university, assistant curator at an art gallery and police officer.
<table>
<thead>
<tr>
<th>Study Population</th>
<th>RCT: Content</th>
<th>Outcome Variables</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target Population: Non-Students</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Banerjee, La Ferrara, Orozco-Olvera (2020)*</td>
<td>Nigeria 18-25 year old people</td>
<td>MTV show: young people in Lagos – info on HIV</td>
<td>Yes+</td>
</tr>
<tr>
<td>Bernard, Dercon, Orkin, Tafesse (2019)*</td>
<td>Ethiopia Rural households</td>
<td>Video: successful peers working in agriculture and small trade</td>
<td>Yes+</td>
</tr>
<tr>
<td>Dalton Rueschenpohler, Uras, Zia (2021)*</td>
<td>Indonesia Urban retailers</td>
<td>Video: successful peers (plus handbook)</td>
<td>Yes+</td>
</tr>
<tr>
<td>Leight, Gilligan, Mulford, Tafesse, Tambet (2020)</td>
<td>Uganda Poor rural households</td>
<td>Video: successful peers working in agriculture and small trade</td>
<td>No</td>
</tr>
<tr>
<td>Lubega, Nakakawa, Narciso, Newman, Kaaya, Kityo, Tumuhimbise (2021)*</td>
<td>Uganda Women living with HIV</td>
<td>Video: HIV-positive women who are successful entrepreneurs</td>
<td>Yes+</td>
</tr>
<tr>
<td>Mehmood, Naseer, Chen (2022)</td>
<td>Pakistan Primary school teachers (all women)</td>
<td>Video: a female professor at an elite private university in Pakistan – info on vaccine safety, personal experience.</td>
<td>Yes+</td>
</tr>
</tbody>
</table>

| **Target Population: Students** | | | |
| Ahmed, Mahmud, Said, Tirmaze (2022)* | Pakistan Female university students | Video: Working women of similar background | No |
| Bahn (2020) | India Elementary school students | Video: children overcoming challenges and achieving their dreams | No (LR) |
| Bjorvatn, Cappelen, Sekei, Sørensen, Tungodden (2020)* | Tanzania High school students | TV show: 6 young entrepreneurs competing for a prize | Yes+ |
| Riley (2019)* | Uganda High school students | Movie: Queen of Katwe | Yes+ |

Note: * indicates published or forthcoming paper. “Yes+” indicates a statistically significant positive impact. “Yes−” indicates a statistically significant negative impact. “(F)” and “(M)” indicate that the impact is only significant for women or men, respectively. “No (LR)” indicates no Long Run impact. “Yes/No” indicates that the impact is significant for some outcomes within the same category.
The data show evidence of no significant impact on the likelihood of post-graduate employment 15 months post intervention, although there is a positive impact 18 months post intervention, at the onset of the COVID-19 pandemic. Bhan (2020) targeted elementary school children and adopted a different approach. Instead of identifying former successful students and featuring them in a video documentary, the author produced a 30 minute movie which told the stories of three (fictitious) children, two girls and a boy, who had different life dreams and faced various challenges - primarily financial constraints - but managed to overcome these challenges and fulfill their aspirations. Riley (2019) also employed a movie, but was able to use an existing Disney movie, which was shot in Uganda and portrays the true story of a girl who grew up in a slum in Kampala (Katwe) and went on to become a chess champion. Both Bhan (2020) and Riley (2019) show that exposing youths to role models through videos could have a long-lasting impact on a number of important education outcomes, including exam performance and enrollment in further schooling. This is especially true in Uganda for girls, whose performance in math, likelihood to fail the secondary school exit exam and applications/admissions to college are significantly reduced and increased, respectively, by the screening of the Queen of Katwa movie.

Finally, the study by Bjorvatn et al. (2019) on high school students in Tanzania adopts yet a different approach. The authors do not expose students to the screening of a video or movie. Instead, they incentivize randomly selected high school students to watch (outside school hours) a reality television show where six young small business owners - three men and three women - compete, during a total of 11 episodes, for a large monetary prize. The primary goal was to educate young people regarding successful entrepreneurial activities and business practices, and possibly motivate them to follow the path of the (potential) role models in the show. Unexpectedly, the intervention, while increasing business aspirations, it also lowered school performance and reduced school retention two years later.

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14 The dreams of becoming a professional badminton player, an air pilot, and of pursuing higher education.  
15 This is Ugandan chess champion Phiona Mutesi.  
16 Bhan (2020) also measures hope and optimism. The latter is significantly increased by the role model intervention.  
17 Randomly selected students who agree to participate in the study sign a contract where they agree to watch the show (or a placebo show) and receive a financial incentive to be in the sample, and are told of the possibility of receiving more at a later stage, after watching the show episodes.  
18 A possible explanation for these findings, discussed by the authors, is that the show may have led students to believe that they could achieve professional success through entrepreneurship without formal schooling, hence reducing their investment in education.
3.2 Exposure to role models through in-person meetings

Only a handful of studies have implemented role model interventions that rely on in-person presentations or meetings between potential role models and role aspirants. Table 2 summarizes these studies. Three of them have targeted student populations by sending role models to schools. Nguyen (2008) was the first to test whether exposing elementary school students and their parents to successful educated individuals who grew up in the same area could affect perceived returns to education and schooling outcomes. The author identified 72 role models19 (with the help of local leaders) and randomized elementary schools to receive one in-person visit and a 20 minute speech (during parent-teacher school meetings) from either i) a role model from a poor background who was moderately successful in his or her business, or ii) a role model from a poor background who was highly successful, iii) a role model from a rich background who was highly successful. While the role model intervention had no significant impact overall, it did improve test performance of poor students who received school visits from a role model from a poor background, suggesting that relatability and shared background are important features of effective role models.

In Somalia, Kipchumba et al. (2021) randomly selected elementary schools, and classes within treated schools, to receive a visit from a college student who grew up in the same area as the students, identified with the help of teachers and school principals. Contrary to all previous role model interventions, which either featured only female role models, or both male and female role models in the same video or in-person visit, Kipchumba et al. (2021) randomized the gender of the role model who visited a given treatment class. This allows investigating whether the outcomes of interest are differentially affected by the gender of the role model, conditional on the gender of the student. The visits lasted approximately one hour and the college students spoke freely about their background, their past and current challenges, their college major and desired career path. In an environment characterized by severe gender gaps in education and labor force participation, the primary outcomes of interest in Kipchumba et al. (2021) are student attitudes toward gender equality and aspirations to pursue higher education. The authors found that the school visits by female (but not male) role models significantly affected the gender attitudes of both boys and girls 6 months after the intervention – most likely by showing that women can go to

19 A total of 15 role models were women, but the gender of the role model was not experimentally varied across schools.
college and pursue a professional career – but neither male nor female college students impacted students’ education aspirations.

Table 2: Role Model In-Person Interventions

<table>
<thead>
<tr>
<th>Country</th>
<th>Study Population</th>
<th>RCT: Content</th>
<th>Outcome Variables</th>
<th>Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agurto, Bazan, Hari, Sarangi (2022)</td>
<td>Peru High school students</td>
<td>Female college students majoring in engineering visit schools</td>
<td>- Interest in engineering major</td>
<td>Yes(^+) (on high ability in math F)</td>
</tr>
<tr>
<td>Kipchumba, Porter, Sulaiman, Porter (2021)</td>
<td>Somalia Elementary school students</td>
<td>Male and female college students from similar background visit schools</td>
<td>- Gender attitudes</td>
<td>Yes(^+) (FRM) No</td>
</tr>
<tr>
<td>LaFortune, Riutord, Tessada (2018)*</td>
<td>Chile Micro-entrepreneurs</td>
<td>During a training program, a successful alumnus gives a talk (1hr)</td>
<td>- Income (1 yr later)</td>
<td>Yes(^+)</td>
</tr>
<tr>
<td>Nguyen (2008)</td>
<td>Madagascar Parents and students in 4(^{th}) grade</td>
<td>Successful alumni from same school district visit PT meetings</td>
<td>- Parents’ perceived returns to education</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- School attendance</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Test scores</td>
<td>Yes(^+) (poor RM)</td>
</tr>
</tbody>
</table>

Note: * indicates published paper. “Yes\(^+\)” indicates a statistically significant positive impact. “No” indicates no statistically significant impact. “(F)” indicates that the impact is only significant for women. “Poor RM” refers to the impact of the Female Role Model.

Agurto et al. (2021) adopts a similar design in high schools in Peru, but employs female role models (female college students or recent graduates) only, and focuses on the impact of role models on the gender gap in student interest in the field of engineering. The classroom visits in this case lasted 20 minutes and were less about personal experiences, goals and challenges, and more centered around information aimed at dismantling gender stereotypes regarding who can or cannot be successful in the field of engineering, and why.\(^{20}\) The intervention proved successful in positively impacting self-reported intentions to study engineering, but only for female students who were high performing in math.

\(^{20}\)In this case, the role models used slides during their presentation.
Lastly, Lafortune et al. (2018) employs an in-person role model intervention as an add-on to a 12- or 14-week training program\textsuperscript{21} for (primarily women) micro-entrepreneurs in Chile. Similarly to the role models featured in the in-person interventions discussed above, the role models in Lafortune et al. (2018) are relatable and successful micro-entrepreneurs who were selected among previous training participants. Each role model visited a treatment class for 1 hour to talk about their experiences and how the training helped them with their business.\textsuperscript{22} The role model intervention led to increased sales, profits and per capita income one year later, and proved more cost effective than a technical assistance intervention that was implemented as a different treatment arm of the study.

4 Conclusion

This chapter reviewed studies that have scientifically tested the impact of role models, either through videos or through in-person meetings, on a variety of outcomes and populations in developing countries. Contrary to programs providing mentoring, tutoring or technical assistance, role model interventions rely on exposure to a relatively short message – usually the role model’s life story or an account of meaningful experiences – that is delivered in the same way (same video or same speech) to all treated individuals. The aim is to inform and motivate message recipients to engage in new behaviors and/or to aspire to new goals, and/or to persevere as they face challenges in their (often non-traditional or non-stereotypical) education or career paths. Role model interventions are relatively inexpensive and easily scalable, and can be added to existing programs being implemented in developing countries. The review of the empirical evidence provided in this chapter suggests that, while not ubiquitously so, role models can significant impact individual attitudes, behaviors and aspirations.

In sum, the literature on the extent to which role models could facilitate the pursuit of a path out of poverty is recent yet fast growing. There is great scope to augment and enrich the current evidence on role model effects in developing countries by providing insights on what makes a good role model and what a good role aspirant. In particular, which fundamental features of a potential role model, e.g., representing the possible, being inspiring or modelling behavior, are especially important? Which medium of role model

\textsuperscript{21} The program involved weekly 4-hour classes and focused on finances and management.

\textsuperscript{22} A total of 22 role models visited classes.
exposure is most effective? And which characteristics of and constraints faced by role aspirants are crucial for the exposure to role models to have a significant and meaningful impact on individual preferences and behaviors, and ultimately their life paths? These remain largely unanswered questions, which are left to future research.

References


