

Perceived impacts of social enterprises in scaling effective refractive error coverage in Kenya

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Abstract

Purpose – Effective refractive error (RE) coverage in a resource-constrained country such as Kenya could possibly be achievable if the current dominant commercial entrepreneurship is supplemented with alternative avenues such as social entrepreneurship. This study aims to explore the perceived impact of social enterprises (SEs) in scaling effective RE coverage in Kenya.

Design/methodology/approach – This was an exploratory study with data collected from representatives of SEs ($n = 29$), trainees of SEs ($n = 112$) and beneficiaries of eye care services provided by SEs ($n = 674$). Participants were recruited purposively with data collected through telephonic calls. Thematic analysis was carried out by categorizing the codes into categories and themes based on the semantic meaning of the codes.

Findings – The perceived impact of SEs from the representative perspective included entrepreneurship and livelihood ($n = 3$; 10.3%), skills development ($n = 20$; 69%), technology development ($n = 7$; 24.1%), access to specialized services ($n = 7$; 24.1%) and affordability, accessibility and availability of RE services ($n = 27$; 93.1%). From the perspective of trainees, the themes included economic empowerment ($n = 99$; 88.4%), improved quality of life ($n = 84$; 75.0%), sensitizing locals to RE during screening events ($n = 112$; 100.0%) and enhancing accessibility, availability and affordability ($n = 107$; 95.5%).

Originality/value – The perceived impact of SEs highlighted in this paper showcases that they are useful for integration into the eye health ecosystem in a resource-constrained country such as Kenya. Integration of SEs into the eye health ecosystem could potentially address the human resource challenge, scale RE service delivery, enhance awareness creation and address the cost barriers to current RE service delivery coverage.

Keywords Perceived impact, Social enterprise, Refractive error

Paper type Research paper

Background

A social enterprise (SE) is an organization that participates in business ventures through a commercial approach to fulfill a social purpose (Luke and Chu, 2013). Social enterprises (SEs) therefore primarily concentrate on the social good with the aim of solving societal needs by creating a suitable environment, encouraging equity and improving the standards of living in the community. For a social purpose to be created in a society, SEs are desirable. Hence, SEs are driven by the burden a society experiences from a particular problem with the aim of creating a societal social value differently. Since the late 1990s, the concept of social entrepreneurship has been used as a viable tool in delivering social goals, with different countries all over the world developing policies to recognize social entrepreneurship as a means of providing public services to meet the changing needs of a



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society (Teasdale, 2011). The social entrepreneurship concept focuses on the social impact that is achieved through business approaches. The existence of SEs is attributed to market failure and a social value for the public good (Austin *et al.*, 2012). In developed countries (Roy *et al.*, 2015), the concept of social entrepreneurship has been promoted in different sectors, such as health and the eradication of poverty among the population at the base of the pyramid. However, the concept remains unexhausted when it comes to addressing refractive error (RE).

The population of Sub-Saharan Africa is projected to reach 2.1 billion by 2050, creating additional demographic challenges for governments to sustain and improve the access and quality of basic services for their constituents (Gordon *et al.*, 2015). Eye health, including RE services, should be prioritized as it remains the leading cause of visual impairment globally and impacts negatively on quality of life (Kandel *et al.*, 2017). In Sub-Saharan Africa, the eye health ecosystem is marred with challenges such as inadequate human resources, financial constraints and a weak governance structure that hinder the availability, accessibility and affordability of eye health services (Courtright *et al.*, 2010). Given the significant unmet health-care needs among poor people living in remote areas (Jung, 2021), the adoption of cost-effective and sustainable approaches to supplement the challenges that the government experiences in addressing eye health, such as uncorrected RE (URE) across the economic pyramid, is desirable. In tangent with this, the SE concept, whose mission is to create and sustain social benefits across the economic pyramid (Lokman and Chahine, 2021; Pangriya, 2019), is desirable in resource-constrained countries such as Kenya. SEs have the potential to enhance the health and well-being of vulnerable groups through the provision of affordable health-care products and services, increasing health conditions and capabilities (Jung, 2021). In developed countries, the social entrepreneurship concept has been shown as a cause-driven business intended to generate value that will benefit the population at the base of the economic pyramid, including accessibility and affordability of health-care services (Cicinelli *et al.*, 2020). In high-income countries such as Scotland, SEs have been shown to improve health outcomes through the direct delivery of primary health-care and community development programs addressing social vulnerability (Lokman and Chahine, 2021). Notwithstanding, in England, SEs have been shown to increase productivity, innovation and responsiveness to underserved populations (Macassa, 2021). However, in developing countries such as Kenya, commercial entrepreneurship still dominates the health-care sector, limiting the base of the pyramid from accessing and affording the available services, including RE services (Austin *et al.*, 2012). Therefore, with a higher percentage of URE cases recorded in developing countries (Hashemi *et al.*, 2018), more attention should be directed toward the role of social entrepreneurship in addressing this challenge. However, currently, minimal information exists in this area, including on the impact of social entrepreneurship on eye care service delivery in developing countries. Thus, this study will act as a baseline to showcase the potential of SEs when it comes to eye care service delivery. At the same time, this study will highlight the need for the government and other sectors to recognize SE and integrate them into their activities so as to achieve the Universal Eye Health Global Action Plan recommended by the World Health Organization (Ramke *et al.*, 2018).

In Kenya, the social entrepreneurship concept is slowly taking shape in different sectors (Hanley, 2015); however, within the eye care sector in Kenya, exploration of this concept remains weak because of the dominance of the commercial entrepreneurship approach. For instance, the Eye Rafiki program in Kenya, similar to the EyeMitra program in India, undertakes the skills development of competitively recruited community members so as to engage in basic RE service delivery (Bagrodia and Maini, 2015). The EyeMitra in India entails a skills development approach for community members destined to establish refraction points

within the communities with the aim of scaling access to RE services to the population living at the base of economic pyramid (Bagrodia and Maini, 2015). This approach scales human resources in a cost-effective way, which is relevant for resource-constrained countries such as Kenya with limited human resources to attend to the growing population in need of eye care services. While exploring the perceived impact of trainees with skills development and the beneficiaries who seek eye care services from SE is desirable to influence policy and facilitate their recognition in the eye health ecosystem, such perceived impacts remain unknown. Therefore, this paper is intended to highlight the perceived impact of different SEs when it comes to scaling effective RE coverage from the perspective of providers, trainees and beneficiaries, with the aim of influencing the dominant commercial entrepreneurship on the worth of integrating SEs into the eye health ecosystem.

The World Health Organization, through the Universal Eye Health Global Action Plan 2014–2019 initiative, advocated for multisectoral engagement and effective partnerships with the aim of strengthening eye health (Ramke *et al.*, 2018). Combining this with the World Health Assembly recommendation for member states on the integration of eye care services within primary care would potentially ensure effective and efficient RE service delivery (Du Toit *et al.*, 2013). However, with the increasing prevalence of URE globally, with developing countries bearing the greatest burden, adoption of the recommendation is desirable in combination with approaches such as social entrepreneurship so as to scale service delivery. Given that SEs deliver low-cost health-care services to the base of the pyramid and subsistence consumers through government-partnered collaborative efforts (Jenssen, 2019; Makhoul, 2011), the approach would address the prevalence of URE projected to rise by 2050, where almost half of the world population will suffer from myopia (Holden *et al.*, 2016), 1.3 billion people will suffer from presbyopia and 0.8 billion people will suffer from hyperopia (Fricke *et al.*, 2018). Therefore, highlighting the potential of the social entrepreneurship concept is desirable to showcase the need for integration across the eye health ecosystem so as to scale eye care services in an attempt to curtail the projected prevalence by 2050. Given that developed countries denote the significance of SE in health-care delivery (Donaldson *et al.*, 2012; Roy *et al.*, 2013), developing countries should understand the impact of SE when it comes to eye care service delivery and embrace the integration of SEs into their current public sector delivery approach. This is intended to showcase the potential of SEs when it comes to eye care service delivery and allow for recognition as an alternative approach to delivering eye care services. As the public sector delivery approach is marred with various challenges, the private sector is considered as the alternate provider of such services. However, the latter still remains too expensive to serve as a feasible alternative to meet the required service delivery needs, necessitating the exploration of other options. Thus, to facilitate the integration of social entrepreneurship into eye care delivery systems, developing countries should consider the impact of SEs when it comes to eye care service delivery and recognize the concept should it have a positive impact.

Social entrepreneurship theory

This study was grounded in the social entrepreneurship theory, which is based on three propositions, viz. the initial motive for embarking on social entrepreneurship, the course of action and the resultant outcome, which generates more social entrepreneurial motives.

Motives for embarking on social entrepreneurship

The motivation for social entrepreneurship is derived from the social entrepreneur's recognition of existing social gaps. The WHO estimates that 90% of the world's vision-impaired people live in developing countries (Resnikoff *et al.*, 2008). This implies that the majority of people who fall

into this category live at the base of the pyramid, where they cannot access and afford eye care and remain unaware of their RE status. In the recent World Report on Vision [World Health Organization (WHO), 2019], the WHO called for the routine measurement of effective coverage of RE in which anyone who needs RE services can access and afford the available RE services and effective coverage of cataract surgery as means to monitor eye health service coverage and quality within Universal Health Coverage (Richard *et al.*, 2020).

The burden of URE is huge, and it has been shown that URE reduces mobility, increases depression, reduces quality of life and impairs workplace productivity (Naidoo *et al.*, 2010). Furthermore, lost productivity among adults who need spectacles is estimated to cost US \$272bn annually, hence creating a huge gap that requires business-driven models to access the underserved population at the base of the pyramid (Naidoo *et al.*, 2019). In developing countries, the state's provision of services to the public, such as RE services, remains weak, underserved and inefficient because of human resource challenges. Similarly, private clinics are less likely to operate in rural areas even if they are supported by social franchising programs that target poor people (Wright *et al.*, 2017). Therefore, to address the eye health challenge, engaging the community members and making them part of the delivery team is desirable. Again, it is the collective responsibility of private, governmental and nongovernmental organizations to embrace partnerships with the aim of addressing eye health, including URE. The mission of SEs is to provide care for the underserved population, which is core to their success, differentiating them from other for-profit organizations. Hence, overcoming the barriers to the delivery of RE services could motivate SEs to engage in the delivery of eye care services.

Course of action

The motivation arising from the burden of URE drives the social entrepreneur toward innovative action by creating opportunities to address social gaps. Globally, around 2.5 billion people need, but cannot access, a pair of spectacles to see clearly (Haemmerli *et al.*, 2018; Yasmin *et al.*, 2017). Therefore, comprehensive eye care that is integrated into existing health-care plans is desirable to address this gap. However, for the underserved population, the government is unable to cope with meeting their needs. Hence, SEs could potentially create access to affordable RE services. Furthermore, the role of SE in terms of eye care delivery has not been clearly defined in the Kenyan context.

Resultant outcome

The government of Kenya provides limited funding to SEs (Kinoti, 2020); hence, a weak relationship currently exists between the government and the private sector that could support SEs operating in Kenya. Considering the impact of URE, where one out of three people live at the base of the pyramid in the developing world (Angeli and Jaiswal, 2016), the demand for RE services is significantly high. In Kenya, for instance, an initiative by the OneSight EssilorLuxottica Foundation has undertaken skills development for competitively recruited community members who establish community vision centers and undertake refraction for the underserved. Therefore, the impact created by SEs and nongovernmental organizations needs to be clearly defined so as to facilitate the integration of SEs into the eye health ecosystem with the aim of scaling eye care services.

Methodology

Study design, sample and sampling and data collection

Perceptions on the impact of SE in scaling effective RE coverage were ascertained, using an exploratory cross-sectional study design, from three categories of subjects, viz. representatives from SE ($n = 29$), trainees of SE ($n = 112$) and beneficiaries ($n = 674$) of RE services provided

by the SE. Purposive sampling was used to identify the representatives from SE, and snowball sampling was used to identify the list of additional SEs. The study was undertaken in three phases.

During Phase 1, a list of SEs engaged in RE service delivery in Kenya was purposively obtained from the ophthalmic service unit Kenya, which is the Ministry of Health representative on eye health. Through a snowball sampling, the identified SEs from the ophthalmic service unit in Kenya were contacted through a telephonic call with the aim of identifying the additional SEs not known to the Ministry of Health. The key question during the telephonic call was: could you name some of the SEs delivering eye care services in Kenya? A total of 29 organizations were identified as operating as SE in Kenya. Thereafter, we contacted all 29 SEs identified and requested contact details of the coordinator of RE services within the SEs so as to act as the representative to participate in the study. This was intended to ensure that the participants selected for the study comprised individuals who undertake RE services within the organization on a daily basis and would understand the impact. To ensure that all representatives agreed to participate in the study, an email was sent, followed by a phone call and a text message at an interval of three days. Finally, the representatives identified were contacted through telephonic calls to confirm participation and obtain consent. An interview design guided by probe questions was thereafter conducted through telephonic calls with these individuals. Areas enquired on during the interviews included activities undertaken by the SE and the perceived impacts, including their method of measurement, when it comes to RE service delivery. The telephonic calls were conducted for a period of two weeks, with four individuals contacted daily for approximately 25 min. The telephone calls were recorded for every respondent.

During Phase 2, lists of trainees were obtained from those SEs who offer skill development. All those listed were contacted through telephonic calls with the aim of narrowing the list to those with functional clinical points to be invited to participate in the study. This was intended to ensure that the SE did not influence the trainees' outcome in this study as the list of trainees was in their custody. An assumption was made that the trainees with functional refraction points undertake their activities practically and would thus provide the actual impact as opposed to those without functional refraction points, who would probably report impact based on theory learnt during skill development. The details of the study were provided to the trainees, and consent for participation was obtained. Semi-structured interviews were conducted through telephonic calls with the trainees selected and consisted of questions on how the skills development has impacted their lives and the population within the remote areas socially and economically. The semi-structured interviews also consisted of the perceived impacts reported in Phase 1. The inclusion of the items derived from Phase 1 was intended to ensure that the trainees validated the information provided by the SEs. A total of five trainees were contacted daily for a period of one month. The telephonic calls were recorded for all the respondents.

Finally, during Phase 3, the list of all beneficiaries who sought eye care services from SE was obtained from the selected trainees. The beneficiaries were contacted telephonically, with the consent form sent to those who had active emails and verbal consent sought through telephonic calls for those who had active phone numbers. We made the assumption that trainees with functional refraction points should have records detailing the contact information of patients who attend their refraction points. Therefore, the trainees were requested to provide a list of all beneficiaries who had benefited from their activities in the past six months from their records. This approach was intended to ensure that the trainees did not influence the information that the beneficiaries would provide. After the list was

gathered from the trainees, we made various assumptions. First, we made the assumption that beneficiaries who sought eye care services from SE in the past three months would ideally provide inaccurate information just to suit the trainee and keep them safe in case anything happened to the spectacles provided by the trainees. Second, we made the assumption that beneficiaries who sought eye care services from SE five to six months ago would provide more accurate information about SE as the duration is sufficient to denote an impact, making it ideal for inclusion to provide information about the impacts of SE. Finally, we made the assumption that, with the location of refraction points within the rural areas, the number of community members who would seek services from the refraction points would ideally be lower given that awareness remains low and the population density within a particular rural area in Kenya would ideally be low because of rural urban migration. As a result, we purposively included the beneficiaries who sought eye care services between five and six months ago. From the list provided by the trainees, an average of ten beneficiaries had sought eye care services from the trainees with refraction points within the rural areas in the past five to six months. The final beneficiaries who participated in this study included those who responded during the initial telephonic call and those who responded through email and agreed to participate. Semi-structured interviews were conducted through a telephone call which entailed questions on the impacts of using eye care services from SE and how SE services have impacted their eye health-seeking behaviors. A total of six beneficiaries were contacted on a daily basis for a period of two months. The semi-structured interviews also consisted of constructs derived from Phases 1 and 2 of the study.

The researchers looked into the content and face validity of the research instrument. Content validity was intended to show whether the questions and statements fully represented every element of the research questions and objectives of this study. To further ensure face validity, the researchers shared the details and structure of the research instruments with eye health experts for analysis and to cross-check and affirm that, indeed, the research instruments captured the full concept of the study. Notwithstanding, this study adopted a transferability approach in which other enterprises that were not included in the study will make a connection between this study output and their own view.

During the interviews with all the participants, information was collected until data saturation was attained. Data saturation was considered attained when items were repeated in the responses from the interviewees with no new information forthcoming. Notwithstanding, all interviews were audio recorded using an electronic recording device, and the recording files were securely saved, de-identified, transcribed and coded. To increase the data reliability and address issues around biases and limitations for this study, the researchers adopted a participant validation approach in which the findings were shared with participants to confirm the accuracy of the data and the researchers' interpretation of the results.

Data analysis strategy

The statistical data analysis for quantitative data was conducted in the Statistical Package for the Social Sciences (version 29). The descriptive statistics of the categorical variables were described as counts and percentage frequencies, and tables were used to visually display the categorical variables. A Chi-square test was used to determine the association between categorical variables. For the qualitative data, thematic analysis was carried out by categorizing the codes into categories using NVivo Software, Version 11 (QSR International Pty Ltd.) and themes based on the semantic meaning of the codes. It was an iterative process consisting of both deductive and inductive processes (Fereday and Muir-Cochrane, 2014). Initial codes and categories were generated from the interview guides (deductive process).

New categories that consist of similar codes were added as required to capture the participants' comments in detail (inductive process). During this inductive process, the themes were identified by repetitions (the more the concept appears in the text, the more likely it is to be a theme), similarities and differences (Ryan and Bernard, 2003). The researchers adopted reflexive thematic analysis, in which personal experience and values were the primary tools used to interpret the data.

Findings

Demographics of the participants

Table 1 details the demographics in terms of age, gender and education of the participants. Almost half of the representatives ($n = 11$; 37.9%) from the SE were female. The trainees consisted of 43.8% ($n = 49$) females and 56.2% ($n = 63$) males, with an overall mean age of 26 (SD = 2.50) years. The majority of the trainees were younger than 44 years, with a statistically significant difference between the ages of males ($n = 59$; 52.7%) and females ($n = 47$; 42.1%) for those below 44 years of age ($p < 0.001$). All representatives were noted to have tertiary education and all trainees had at least secondary education.

Beneficiaries' reasons for seeking refractive error services from social enterprises

In this group of beneficiaries (the receivers), more females ($n = 181$; 26.8%) than males ($n = 150$; 22.3%) sought eye care services from SE because of affordability. Based on level of education, just over a third of the receivers ($n = 258$; 38.3%), all with primary level education, sought RE services from SE as a result of affordability. There was no statistically significant association between gender and reason for seeking RE services from SE ($\chi^2 = 39.3$; $df = 673$; $p = 0.053$). The same trend was observed for age ($\chi^2 = 47.9$; $df = 673$; $p = 0.072$) and level of education ($\chi^2 = 41.5$; $df = 673$; $p = 0.069$) when correlated to the reason for using RE services from SE. Results are detailed further in Table 2.

Methods used by social enterprises for the measurement of social impact

Three-quarters ($n = 22$; 75.9%) of the representatives indicated that their organization was measuring their social impact using a social accounting approach, which entails building a

	Representatives		Trainees		Beneficiaries	
	Females	Males	Females	Males	Females	Males
<i>Age (in years)</i>						
18–24	0 (0.0%)	0 (0.0%)	2 (1.8%)	1 (0.9%)	18 (2.7%)	1 (0.1%)
25–29	0 (0.0%)	0 (0.0%)	21 (18.8%)	29 (25.9%)	21 (3.1%)	9 (1.3%)
30–34	0 (0.0%)	0 (0.0%)	17 (15.2%)	13 (11.6%)	29 (4.3%)	12 (1.8%)
35–39	1 (9.1%)	0 (0.0%)	5 (4.5%)	9 (8.0%)	45 (6.7%)	20 (3.0%)
40–44	3 (27.3%)	3 (16.7%)	2 (1.8%)	7 (6.3%)	102 (15.1%)	89 (13.2%)
45–49	4 (36.4%)	7 (38.9%)	1 (0.9%)	4 (3.6%)	50 (7.4%)	63 (9.3%)
50–54	2 (18.2%)	5 (27.8%)	1 (0.9%)	0 (0.0%)	70 (10.4%)	49 (7.3%)
55–59	1 (9.1%)	3 (16.7%)	0 (0.0%)	0 (0.0%)	60 (8.9%)	36 (5.3%)
<i>Education</i>						
Primary	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	201 (29.8%)	170 (25.2%)
Secondary	0 (0.0%)	0 (0.0%)	76 (67.9%)	23 (20.5%)	117 (17.4%)	97 (14.4%)
Tertiary	11 (37.9%)	18 (62.1%)	9 (8.0%)	4 (3.6%)	77 (11.4%)	12 (1.8%)

Table 1.
Demographics of
representatives,
trainees and
beneficiaries

Source: Authors' own work

Table 2.
Beneficiaries' reasons
for seeking refractive
error services from
social enterprises
stratified according
to gender, age and
level of education

Demographics	Accessibility	Reason Availability	Affordability
<i>Gender</i>			
Female	130 (19.3%)	84 (12.5%)	181 (26.9%)
Male	93 (13.8%)	36 (5.3%)	150 (22.3%)
<i>Age (in years)</i>			
18–24	5 (0.7%)	1 (0.1%)	13 (1.9%)
25–29	7 (1.0%)	10 (1.5%)	13 (1.9%)
30–34	12 (1.8%)	9 (1.3%)	20 (3.0%)
35–39	7 (1.0%)	12 (1.8%)	46 (6.8%)
40–44	50 (7.4%)	20 (3.0%)	121 (18.0%)
45–49	5 (0.7%)	6 (0.9%)	102 (15.1%)
50–54	16 (2.4%)	11 (1.6%)	92 (13.6%)
55–59	30 (4.5%)	21 (3.1%)	45 (6.7%)
<i>Education</i>			
Primary	67 (9.9%)	46 (6.8%)	258 (38.3%)
Secondary	72 (10.7%)	44 (6.5%)	98 (14.5%)
Tertiary	10 (1.5%)	8 (1.2%)	71 (10.5%)

Source: Authors' own work

system to report social performance and devising action plans to improve on the performance. The remaining 24.1% ($n = 8$) reported the use of a social benefit analysis, which is more inclined toward ventures that benefit society.

Perceived impact of social enterprises

Representatives

The representatives reported various impacts that they believed the SE that they were affiliated with had created among the base of the pyramid population. Five themes were generated from their responses. The themes included entrepreneurship and livelihood, skills development, technology development, access to specialized services, accessibility, affordability and availability, as shown in [Table 3](#).

Table 3.
Perceived impacts of
social enterprises
from representative
perspectives

Theme no.	Major themes	No. of coded segments
Theme 1	Entrepreneurship and livelihood are impacts created by social enterprises to enhance refractive error service delivery	1
Theme 2	Skills development is an impact created by social enterprises to enhance refractive error service delivery	9
Theme 3	Technology development is an impact created by social enterprises to enhance refractive error service delivery	4
Theme 4	Access to specialized services is an impact created by social enterprises to enhance refractive error service delivery	5
Theme 5	Affordability, availability and accessibility of refractive error services are impacts created by social enterprises	7

Source: Authors' own work

Theme 1: entrepreneurship and livelihood

A section of the representatives ($n = 3$; 10.3%) reported that entrepreneurship and livelihood are impacts that they have created among the local communities in Kenya (Quote #1). This entailed empowering the locals to be part of RE service delivery by training them to conduct visual acuity testing, a basic subjective refraction and subsequently selling appropriate reading glasses among community members. This is intended to ensure that the local community members generate income and maintain continuity in the delivery of eye care services:

#1. Creation of entrepreneurship culture and livelihood among the local population in Kenya with an aim of delivering refractive error services to the underserved.

Theme 2: skills development

The majority of the representatives ($n = 20$; 69%) reported that skills development is an impact that they have undertaken among the local population in Kenya (Quotes #2 to #5):

#2. We educate community members to provide some services. We support optometry schools.

#3. Training community members to be ambassadors.

#4. Educating community on how to assess common eye conditions they might be suffering from.

#5. Training on basic assessment of visual acuity.

Theme 3: technology development

A quarter ($n = 7$; 24.1%) of the representatives reported technology development as an impact that they have created to aid in eye care service delivery in Kenya (Quote #6):

#6. Designing a self-assessment tool for taking visual acuity.

Theme 4: specialized eye care services

A section of the representatives ($n = 7$; 24.1%) also reported the provision of specialized eye care services to the underserved population as an impact they are creating (Quotes #7 and #8):

#7. Performing operations like laser which remains expensive and unaffordable to the underserved population.

#8. Doing refractive surgery at affordable prices as compared to other sectors being accompanied by eye specialist from other countries who maybe in Kenya but very few hence limited access modern technology which may not be present in most eye hospitals in Kenya.

Theme 5: availability, affordability and accessibility

Almost all the representatives ($n = 27$; 93.1%) reported initiatives to improve accessibility, availability and affordability of RE services (Quotes #9 to #12):

#9. Opening shops in different areas which make it easier for the community members to access the services.

#10. Increasing the coverage of refractive error screening in different communities.

#11. Strong partnership where equipment are available in some public hospitals for access and affordability.

#12. Partnership to distribute reading glasses to nearby government facilities.

Trainees

All the trainees ($n = 112$) acknowledged that RE services from SE have impacted positively on their lives. The impacts reported by the trainees were categorized into themes, as outlined in Table 4. The themes are described with supporting quotes extracted from the interviews.

Theme 1: economic empowerment

Most trainees ($n = 99$; 88.4%) reported that their economic status had improved because of the training they had received from SE. They argued that the services offered by SE are aimed at elevating them from poverty as they enable them to generate an income. The trainees also stated that the training by the SE has empowered them, and they are able to undertake a basic subjective refraction and thereby provide reading glasses to the community members while earning an income from it (Quotes #13 to #15):

#13. I was jobless for a long time and when I was trained by one of the social enterprises so that I can be part of eye care delivery, my life has changed and I can now earn a living.

#14. All my life I did not have a business and I had given up in life, but when a social enterprise assisted me to open a shop, I have been able to earn some money as I assist community members too.

#15. Nowadays I am selling reading glasses and I can make a profit of ksh. 100 per sale and this help me with my family to survive.

Theme 2: improved quality of life

Three-quarters of the trainees ($n = 84$; 75.0%) reported that their quality of life has improved significantly. They confirmed that they are able to generate revenue from their activities, which not only benefits the locals but also enables them to pay their bills (Quotes #16 to #18):

#16. Since I got trained by a social enterprise to deliver refractive error services, I am able to generate some income which not only helps me to survive but I am also able to assist other people.

#17. Nowadays I am able to raise some capital from my activities which I use to pay college fees for my daughter and at least I can also afford food for my children.

Table 4.
Perceived impact of
social enterprises
reported by trainees

Theme no.	Themes	No. of coded segments
Theme 1	Economic empowerment	48
Theme 2	Improved quality of life	100
Theme 3	Sensitizing locals to RE during vision screenings	72
Theme 4	Enhancing the accessibility, availability and affordability of RE	85

Source: Authors' own work

#18. From the saving I have accrued from my activities, I bought materials for constructing my house and currently I live in a better house as opposed to what I used to have before I got trained by a social enterprise.

Theme 3: sensitizing locals to refractive error during screening events

All of the trainees ($n = 112$; 100.0%) reported that they are sensitizing the local community on RE. They argued that the level of awareness of RE among the community members remains low, and with the training they have obtained, they are educating the community members on eye health and providing services to them (Quotes #19 to #21):

#19. I can confidently say that the level of awareness on refractive error among the local community population is low and with the training I got from Eye Rafiki, I am trying my best to educate the community members so that they can know when to seek refractive error services.

#20. What I realized is that most eye care professionals in Kenya are more in urban areas and this has made me to engage the community members on the importance of eye health as majority cannot access the services in urban areas.

#21. From my activities in the community, many have refractive error and they do not know their refractive error status, as a result, I am always conducting vision screening within the community and telling the community members about refractive error and how it should be addressed.

Theme 4: enhancing accessibility, availability and affordability

The majority of the trainees ($n = 107$; 95.5%) reported that through the establishment of refraction points within rural areas, they are enhancing the accessibility and availability of RE services to the community. They also reported that they charge the community members fair prices that the majority can afford (Quotes #22 to #24):

#22. I am seeing the local populations are able to afford my services and many people with refractive error currently have spectacles which I have provided to them.

#23. Most people used to complain that refractive error services were not available and since I established vision points within the community, spectacles are available and many can access them.

#24. Refraction points are too far away for the local population but since I have a vision point around, I see many people are coming as it is closer to them and at the same time I am happy I serve people who had lost hope in life.

Beneficiaries

All the beneficiaries ($n = 674$) acknowledged that RE services from SE have impacted positively on their lives. The impacts for the beneficiaries were categorized into three themes, as outlined in Table 5. The themes are described with supporting quotes extracted from the interviews thereafter.

Theme 1: improved quality of life

Just under one-fifth of the beneficiaries who had received RE services from SE ($n = 129$; 19.1%) reported that they were unable to conduct daily activities because of challenges they had with their vision, and after acquiring a pair of spectacles from SE, they were back to

their daily activities. These beneficiaries also reported that they were able to proceed with their activities without depending on others (Quotes #25 to #29):

#25. I have had problems with my eyes for a long period of time and thanks to a social enterprise that screened me and provided me with spectacles and currently I can do my daily activities without difficulties.

#26. Being a driver, I was not able to see well and my boss wanted to relieve me of my duties but since I got a pair of spectacle from a social enterprise who screened us, I can see very well and I enjoy driving.

#27. I run a shop at the local centre but it reached a point that I couldn't differentiate my products and since I attended a screening conducted within the shopping centre I am back and can do my sales without difficulties.

#28. Life was very hard during the time. I didn't know what was wrong with my eyes and immediately I was given a pair of glasses. I regained hope and now I am okay.

Theme 2: enhancement of availability, affordability and accessibility to refractive error services

Almost half of the beneficiaries acknowledged that SE has enhanced accessibility, affordability and availability of eye care services for them (Quotes #29 to #31):

#29. When I was young it was difficult to access eye hospitals due to distance, but SEs in my area always conduct vision screening activities hence I can access and be assessed.

#30. My mother and I can now do our daily chores since we got affordable glasses from a social enterprise which screened us and told us we had problems which required spectacles.

#31. Nowadays there are some eye units around established by social enterprises and it is easy for me to access reading glasses whenever they are broken.

Theme 3: awareness of refractive error

Many of the beneficiaries ($n = 412$; 61.1%) reported that awareness of eye health was an impact they had accrued following the initiatives by SE. They denoted that SE educated them on the burden of URE, and it has impacted heavily on their perception of RE (Quotes #32 to #34):

#32. Through social enterprises, I have learnt more on the consequences of uncorrected refractive error and this has made me be aware of this eye disease.

Table 5.
Perceived impact of social enterprises reported by the beneficiaries

Theme no.	Themes	No. of coded segments
Theme 1	Improved quality of life	112
Theme 2	Accessibility, availability and affordability of RE from SEs	347
Theme 3	Awareness of RE	47

Source: Authors' own work

#33. Initially, I used to put herbal medicine in my eye whenever I could not read, but through a social enterprise that did an eye screening in my area, I was told herbal medicine doesn't treat inability to read near things and reading glasses addresses this.

#34. Nowadays, I know that not being able to see far can be addressed through glasses, long time ago I used to fear glasses as I heard they destroy the eye more.

Discussion

In Africa today, only 10%–20% of those in need of RE services have access to currently available RE services at all levels (primary, secondary or tertiary), while the remaining 80%–90% cannot access the available RE services (Courtright *et al.*, 2016). This suggests that the dominant commercial entrepreneurship approach concentrates on a specific group of individuals within the economic pyramid, making it hard for the base of the pyramid to access RE services. While SEs provides various programs, products and services to populations that are more likely to suffer from health inequalities (Caló *et al.*, 2019), integration of the concept remains weak. Although each and every person should be able to access and afford the available RE services to achieve the 2030 IN SIGHT initiative (Blanchet *et al.*, 2014; Ntsoane and Oa, 2010; IAPB, 2021), discrepancies around accessibility, affordability and availability of RE services between developed and developing countries exist, warranting the adoption of approaches that would address these discrepancies. While the challenges around accessibility, availability and affordability could be attributed to the overdependence on the dominant commercial entrepreneurship approach (Austin *et al.*, 2012), the potential of emerging concepts such as social entrepreneurship in scaling effective RE coverage is worthy of attention to showcase the relevancy of embracing different approaches within the eye health ecosystem. Our study has shown that representatives from SE, trainees from SE and beneficiaries of SE services report accessibility, affordability and availability of RE across the economic pyramid as a perceived impact of SE when it comes to RE service delivery. This could be attributed to the innovative nature of SE when it comes to service delivery, including the adoption of technological approaches such as telemedicine to address URE within remote areas in a cost-effective way (Angeli and Jaiswal, 2016; Ecologia Desarrollo, 2016; John, 2007; Qureshi *et al.*, 2012). Furthermore, the facility-based RE service delivery approach remains the dominant delivery approach in Kenya, which limits the underserved population within remote areas from accessing the available RE services. Hence, social entrepreneurship is ideal as it addresses the inequality challenge linked to access to RE services across the economic pyramid in developing countries and scales effective RE coverage through the creation of remote access points.

With the endorsement of Universal Health Coverage by the WHO member states to enhance equity in access to eye care services (Zhang *et al.*, 2022), approaches such as integration of eye care services within the primary health-care facilities have been proposed. However, the initiatives undertaken by the public health-care sectors in developing countries to achieve the UHC remain challenging because of the limited resources available to scale human resources to attend to the growing population as state provision of public services remains marred with corruption (Kimathi, 2017; Bechange *et al.*, 2020). Hence, our study finding has noted, from the representatives of SE, report of skills development of competitively recruited community members as a key perceived impact of SE when it comes to scaling human resources to cost-effectively address URE in resource-constrained countries such as Kenya. This was corroborated by the trainees in this study, who acknowledged that the skills development has had a positive impact on their lives. The

study findings are similar to those of [Henderson *et al.* \(2020\)](#), who reported that SEs are essential for employment creation, alleviate poverty, strengthen education and facilitate job creation in informal socioeconomic conditions. While SEs are cause-driven businesses intended to generate value that benefits the population at the base of the economic pyramid with the aim of enhancing affordability and accessibility of RE services ([Lokman and Chahine, 2021](#); [Thompson, 2014](#)), human resources remain a critical aspect that should be prioritized to scale effective eye care coverage. Notwithstanding, with most public health sectors in developing countries such as Kenya having limited human resources to attend to the growing population, embracing and integrating the skills development approach by SE is desirable for scaling human resources to serve all sectors in developing countries such as Kenya.

According to [Du Toit *et al.* \(2013\)](#), the contributor to the access gap where only 10% have access to RE services is as a result of the limited human resources, which confine services to those facilities with the human resources. This demands that cost-effective technological approaches be adopted to ensure that the population across the economic pyramid can access RE services as human resources remain limited and incapacitated by the growing population. Our study finding has shown that apart from general access to RE services, representatives from SEs denote access to specialized eye care services through collaboration with hospitals offering specialized RE services and cross-subsidizing for the base of the pyramid as a perceived impact of SEs when it comes to RE service delivery in developing countries such as Kenya. The trainees also acknowledged that this is achieved through their community vision screening and access to specialized eye care services for patients referred to specialized facilities at subsidized rates. This study's results concur with the dire need for SEs to address the unsolved social problem of URE and enhance human development to scale the quality of life ([Henderson *et al.*, 2020](#)). With around 2.5 billion people globally in need of RE services to enhance their daily functions, the majority at the base of the economic pyramid are unable to access even the most basic RE services ([Yasmin *et al.*, 2017](#); [Haemmerli *et al.*, 2018](#)). As a result, access to specialized RE services can only be achieved by the population at the apex of the economic pyramid. This deters the achievement of the UHC initiative, hence warranting SE to advocate for the integration of technological approaches such as telemedicine across the eye health ecosystem to allow the base of the pyramid population to access a range of RE services without difficulties.

Good vision contributes to the achievement of some sustainable development goals ([Lazuka-nicoulaud *et al.*, 2022](#); [Ramke *et al.*, 2018](#)). As a result, more efforts should be directed toward addressing URE, as its correction, in many cases, only requires a simple pair of spectacles ([Yang *et al.*, 2021](#)). Our study findings have shown that beneficiaries, representatives and trainees denoted quality of life improvement as a perceived impact of SE when it comes to RE service delivery. The study results are consistent with existing evidence that SEs address inequalities more broadly by acting on the social, economic and environmental circumstances of the most vulnerable members of society ([Dey and Teasdale, 2013](#)). Notwithstanding, SEs can help respond to societal challenges through social innovation, making sure that solutions are accessible based on a viable business model ([Jenssen, 2019](#)). SEs are working toward ensuring that the population across the economic pyramid, particularly those at the base of the pyramid, enjoys a good quality life and remains productive to society ([Hunter, 2009](#); [Noya and Clarence, 2013](#)). Currently, in developing countries such as Kenya, the dominant commercial entrepreneurship concentrates on profit generation with minimal focus on achieving the social mission ([Popoviciu and Popoviciu, 2011](#); [Suchowerska *et al.*, 2020](#)). However, with the burden of

URE, prioritizing both the social mission and profit generation would be ideal for resource-constrained countries such as Kenya. This implies that the base of the pyramid population, who also need RE services, can access and afford the available RE services, improving their quality of life and contributing to the economy (Robertson, 2012). Therefore, SE acknowledges the social mission gap within commercial enterprises and tends to direct more efforts toward showcasing the need for a social mission. Hence, quality of life and economic productivity may only be achieved if the dominant commercial entrepreneurship approach integrates social entrepreneurship concepts and targets the population across the economic pyramid, regardless of their geographical locations.

Although in developing countries, lack of RE services remains the major reason for the millions of people across the globe suffering from URE (Keel *et al.*, 2020), recognizing the potential of social entrepreneurship is worthy of attention. According to Makhoulouf (2011), SEs are agents for social change and are well placed to advocate for public health policy changes to improve equitable health. Our study findings have shown that trainees and beneficiaries acknowledge awareness creation/education as a perceived impact of SEs when it comes to RE service delivery in a resource-constrained country such as Kenya. While the 2030 IN SIGHT acknowledges that awareness/education of the general population on URE are key to scaling effective RE coverage, the initiative can only be achieved if all sectors within the eye health ecosystem combine efforts toward scaling awareness/education among the general population. Notwithstanding, enhancing awareness creation is a key mission prioritized in the World Report on Vision, and through the integration of spectacles within the public health sector by SEs, the availability challenge will be addressed (WHO, 2019). The public health sectors in developing countries lack RE services; hence, integrating RE services would be ideal to aid in the achievement of the WHO Global Action Plan (Ramke *et al.*, 2018). However, with challenges around resources, embracing the SEs and integrating them within the public health sector would be holistic and cost-effective in scaling effective RE coverage. Therefore, integrated people-centered eye care would be achieved if SE were integrated within the public health sector with the adoption of public health approaches to scale awareness of URE so as to seek RE services.

With the extreme poverty in Africa, where almost half of the population lives at the base of the economic pyramid (Jaggernath *et al.*, 2014; Naidoo, 2007), the provision of RE services should be designed in a way that allows the underserved to be included in the delivery channel and thereby earn a livelihood. While inequality in health still remains a challenge in low- and middle-income countries because of the unequal distribution of social, economic and environmental risks, the involvement of SEs in improving health and well-being represents a potential role for business in improving health beyond business (Bhat, 2020). Social accounting, which involves building a system that reports social performance with the aim of making an action plan to improve (Scott, 2003), is the predominant social impact measuring approach in Kenya. The probable reason why some SEs use this approach is that it allows them to understand the areas of concern and devise innovative ways to address them. Although the mission of an SE is to create and sustain social benefits (Andrew and Kelley, 2016), social accounting is more prospective and destined toward growth. In tangent with the social impact measuring approach used by SE in Kenya, our study findings show that representatives from SE and trainees acknowledge entrepreneurship and livelihood as a perceived impact of SE when it comes to RE service delivery in Kenya. SEs attempt to address social needs not addressed by the government sector (Ranjan, 2022). The economic status of the underserved population

has not improved with the current approaches, as they are not targeted to also engage in the supply of RE services. Therefore, the social entrepreneurship approach identifies this gap and adopts approaches ensuring that the population across the economic pyramid in need of RE services is integrated within the supply–demand relationship and earns a livelihood from it (Terziev *et al.*, 2019). As a result, SE initiatives such as skills development followed by the establishment of refraction points within rural areas allow the skilled community members to deliver RE services based on their scope of training and generate some income, enabling them to remain sustainable and earn a livelihood from their activities. Therefore, the public health sectors using the commercial entrepreneurship approach should collaborate with the SE so as to scale quality effective RE coverage through engagement of the personnel’s with skills development in rural areas supported by qualified eye care professionals’ via technology.

In conclusion, the perceptions elicited provide empirical evidence to showcase to stakeholders in eye health, including the government, the potential of SE when it comes to scaling effective RE coverage across the economic pyramid, particularly in partly addressing challenges in human resource availability, RE service delivery, awareness creation and affordability. Even though the results from this study cannot be generalized to other countries, this study has explored the impacts not only from the SE but also from the immediate beneficiaries and the subsequent beneficiaries.

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