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Qualitative insights into a scholarship scheme designed to optimise test scores and expedite SDG-4 actualisation in Nigeria

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Despite huge commitments, education quality and achievement gaps have remained low in developing countries, posing threats to the actualisation of the SDG-4 goals. A recent quantitative study found that a scholarship scheme that engages communities adopts hybrid selection criteria, and seeks en-masse motivation towards high test scores might be effective at improving education quality. Case Study interviews of 15 beneficiaries of the IFOMSSA Senior Scholarship, a scheme established in 2017 for high schools in Southeast Nigeria. Respondents confirmed that the Scheme's hybrid (needs and merit-based) selection criteria, along with its en-masse motivation strategies and community involvement, all contributed to improved test scores and exam enrolments. Non-scholarship recipients were motivated as much as eventual recipients, affirming "mass motivation". Community groups (family, friends, teachers, community leaders and government staff) had positive influences, while media publicity inspired confidence and trust. Scholarship schemes that integrate the advocated principles might hold the key to sustainably optimising test scores in developing countries. This expands options for improving education quality and enrolments.

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Introduction and background literature

This paper covers the qualitative component of a large, mixed methods study designed to analyse a prototype of scholarship schemes that seek to maximise the effects of limited financial resources used as incentives to enhance learning outcomes in developing African countries. That scholarship scheme, the Ifedioramma Okafor Memorial Secondary School Academic (IFOMSSA) Awards, began in 2017 in parts of South-eastern Nigeria, where students from educationally disadvantaged communities (i.e., those at risk of not realising their full potential due to limitations in educational outcomes) benefit annually from the scheme (Kellaghan, 2001; Weir et al., 2005). Findings from this paper may improve the quality of educational outcomes and fortify relevant policies in such communities.

It should be noted that this work included publications over the preceding 30 years (from 1995 onwards), given the many decades of evolution of education in the developing world, represented by Nigeria, where this work was focused. This means a shorter cut-off in date, even though ideal in other circumstances, might significantly exclude relevant academic papers that would otherwise provide vital depth and scope to this work. This reality meant that older publications were included alongside more recent ones in this work.

The IFOMSSA Scheme has three underlying principles, and this work argues that these should be integrated into the design of scholarship schemes (new and existing) in educationally disadvantaged regions of the world, particularly those affected by limited financial resources. Those principles are:

1. That the proposed schemes should combine a mix of needs and merit-based eligibility criteria in selecting recipients, with the merit component having a fair and transparent process.
2. That the schemes must have the ability to concurrently motivate large numbers of students (en-masse motivation) towards the attainment of higher test scores.
3. That communities should be involved in the implementation of such schemes. “Community”, in this context, includes the families and friends of the benefiting students, their school teachers and principals, government stakeholders, leaders of their associated communities, and the media.

To ensure a full grasp of this work, a detailed understanding of these three principles is crucial. The first stems from the fact that the unique situation in most of the concerned communities requires that scholarship schemes in such areas need to select winners through a “hybrid” of needs and merit-based criteria (not one or the other). One reason for this is that potential beneficiaries in the concerned communities come from poor backgrounds, necessitating their prioritisation since those from richer backgrounds can afford relatively good schools and, therefore, have better opportunities (Pickering and Byrne, 2014; Spaul, 2015, p. 38). This rationalises the needs-based component of this work. In addition, however, those with decent academic potential need to be identified from those poor students. If this is not done, unfortunately, scarce incentives might go to waste (UNESCO Institute of Statistics, 2019). This consideration warrants that scholarship schemes in the targeted communities, in addition to their “needs” considerations, should have a “merit” component. It has been argued that merit selections, particularly if associated with transparency, tend to trigger higher impacts from incentives, an outcome of desire in this work (De Janvry et al., 2006, p. 4).

The second underlying principle arises due to the minimal financial resources available for a large number of potential beneficiaries in disadvantaged communities (Gakusi, 2010, pp. 219–220). This work, therefore, argues that scholarship schemes

should be designed to inspire many students concurrently (i.e., en masse motivation) toward higher test scores. This way, even if all targeted beneficiaries did not receive the incentive, their average test scores will be raised to levels higher than they would have otherwise been without the inspiration. The potential for “mass motivation” is supported by observations from a study in Bogota, Colombia, where increased school attendance among associates of incentive beneficiaries was at about the same level as that of the actual beneficiaries (Attanasio et al., 2005; Barrera-Osorio et al., 2008). The Colombian study was not deliberately designed to identify “mass effects”, as that observation was incidental. This current work appears to be the first to deliberately evaluate this potential for a “mass effect” with scholarship incentive schemes, and it does so with test scores, not school attendance (as was the case in the Colombian study).

The third principle promotes “community influence” on scholarship schemes, a measure supported by the “Theory of Change Typology (TCT)”. “Community”, as it relates to this work, includes families and teachers or school principals of the benefiting students, as well as the media, government stakeholders, and community leaders. The TCT provides the theoretical framework for this study and argues that financial interventions are only likely to enhance test scores if two of three factors are combined, at the very least (Masino and Niño-Zarazúa, 2016, p. 54). The first of those factors is the “supply-side interventions,” which include learning materials as well as human and physical resources (like school buildings and pieces of educational equipment). The second is the use of “incentives to shift preferences and behaviours of students, teachers and families”, while the third aims to “decentralise reforms and encourage community participation” in the management of education systems. Alongside the stipulations of the TCT, additional rationale for community integration came from observations that the availability of financial incentives can trigger the reallocation of responsibilities within families in ways that lead to positive educational outcomes among children in those households (Barrera-Osorio et al. 2008). The authors behind that work noted that relative to families with non-scholarship recipients, siblings of scholarship-receiving families do adjust in different ways (like doing more chores or even dropping out of education to earn more money) that allow the actual recipients to excel in their education,

Unfortunately, no study identified in the literature has covered scholarship schemes that combine the three stated principles of this work, creating knowledge gaps that this study aims to address. One of those gaps arises from the fact that no consistently positive relationship between financial incentives and increased test scores has been established (Gibbs et al., 2009; Kremer and Holla, 2009; Slavin, 2010). It is hoped that the principles underlying this work may hold the key to achieving this in a sustainable way.

In addition, “mass motivation” has never been deliberately explored as part of scholarship schemes. In addition, no identified evaluation of scholarship incentives have been carried out in Nigeria (the location of this work) before now. In fact, the only Nigerian study found to focus on scholarships explored schemes in broad perspectives, and surveyed students in tertiary institutions, not senior secondary schools (Omeje and Abugu, 2015). This work aims to address all these.

There is also little in the literature to promote “hybrid selection criteria” or the “integration of communities” in scholarship incentive schemes. The need to address these gaps influenced the design of this work. If these measures are effective, the advocated principles may translate into policies that can sustainably bridge the economic and educational gaps in developing communities.

Box 1: Summary of the Quantitative Study Outcomes

The quantitative arm was a 6-year “Controlled-Before-and-after (CBA)” study of the IFOMSSA scholarship scheme established in 2017 for high schools in Southeast Nigeria. A total of 5727 participants were involved, of which 1215 were exposed to the intervention. The outcome measures were “test scores” and “exam enrolments” in 4 subjects of the West African Senior School Certificate Examination.

Lateral comparisons (between the intervention and control) revealed that test scores within the intervention cluster of the “after-intervention” years (2017–2019) were significantly higher than levels in the controls (English: OR –1.58; CI 1.33–1.88; Mathematics: OR –3.57; CI 2.74–4.66; Biology: OR –1.84; CI 1.48–2.30 and Civic Education: OR –2.07; CI 1.69–2.54), a pattern not observed in the “before-intervention” years (2014–2016). Differences in improvements among “high-to-moderate” vs “low” performers were found to be statistically non-different.

Aside from Biology, a longitudinal analysis of the intervention-only arm (between the before-intervention and the after-intervention groups) showed statistically lower scores in English Language (OR –0.45), Mathematics (OR –0.11), and Civic Education (OR –0.34) in the “before-intervention (2014–2016)” years relative to the “after-intervention years (2017–2019)”, indicating that the scores recorded after the intervention were better than those before the intervention was made.

Exam enrolments (the second outcome measure) in the “after-intervention years” of the intervention cluster were largely increased relative to the “before-intervention years”, an observation also not replicated in the control-only group.

The paper concluded that the proposed scheme improved exam enrolments and statistically increased test scores across the board (en masse), not just among high-ability recipients.

As argued by experts, such outcomes have the potential to expedite the actualisation of “Item 4” of the Sustainable Development Goals (SDG-4), which borders on education and is designed to ensure inclusive and equitable quality education that will promote lifelong learning opportunities (The Global Goals, 2024; UNESCO Institute of Statistics, 2019).

The already-completed quantitative arm of that mixed methods study was a 6-year Controlled Before-and-after (CBA) quasi-experimental study that revealed statistically significant improvements in test scores between the intervention and control groups, and also between the post-intervention pre-intervention years (Ifediora, 2024). Those outcomes, summarised in Text Box 1, revealed improvements that cut across whole student groups, not just the high-ability scholarship recipients, indicating that there might have been an en-masse effect as desired in this study. Even though those outcomes are unlikely to be due to chance (as the CBA methodology minimises that possibility), it remained unclear what roles the three underlying principles of this work might have played in achieving them. A need exists, therefore, to confirm all these.

Given the foregoing, the fundamental research question (RQ) can be summarised thus:

What are the perceptions and experiences of participants involved in a scholarship scheme that encourages community participation and adopts a hybrid (mixed needs and merits-based) selection criteria as key measures to simultaneously encourage large numbers of students towards improved test scores?

The scholarship scheme. The “Ifedioramma Okafor Memorial Secondary School Academic (IFOMSSA) Scholarship Scheme (or Award)” is the scholarship scheme of interest in this study, having adopted all the three advocated principles since it was introduced in 2017. A detailed description of the IFOMSSA Award and the IFOMSSA Challenge (the selection exam for the IFOMSSA Scholarship), along with a description of its Mass Motivation and Hybrid components and how they were actualised, are attached as Text Box 2.

In summary, the IFOMSSA Scheme was introduced by an Australian–Nigerian non-governmental organisation (referred hereinafter as “the Foundation”) in 2016 but had its first beneficiaries in 2017. It is an annual incentive scheme that is functional in Anambra State of Nigeria and was named after the late father of the Foundation’s Founder. It includes the “IFOMSSA Junior” and “IFOMSSA Senior” scholarship awards,

of which the former (not covered in this work) is an exclusively needs-based award available to eligible Junior Secondary School (JSS) students preparing for the Junior Secondary School Certificate Examination (JSSCE).

The IFOMSSA Senior Award, on the other hand, covers the full examination registration fees of its beneficiaries for the two senior secondary school certificate examinations (SSCEs) in Nigeria. Final (third) year students at Senior Secondary Schools (SSS III, equivalent to Year 12 in Australia) in selected schools are eligible. Of the two certificate examinations, this study focuses on outcomes from the West African Senior Secondary School Certificate Examination (WASSCE), an exam administered by the West African Examinations Council (WAEC), and, therefore, sometimes referred to, as the WAEC Exam. WASSCE is available to all high schools in West Africa, not just Nigeria.

Methods

The quantitative arm of this work had already explored “changes in test scores from WASSCE” as its primary outcome measure, with “changes in exam enrolment patterns” as the secondary outcome measure (Ifediora, 2024). These two “changes” are the phenomena of interest in this current study.

Of the three Mixed Methods designs available, this work conformed with the Sequential Explanatory approach that requires a qualitative approach to follow an earlier quantitative study in order to provide insights that will help understand findings from that quantitative work (Harvard Catalyst, 2024; Venkatesh et al., 2016). The other two alternatives, the Exploratory Sequential Design (which starts with a qualitative study and ends with a quantitative one) and the Concurrent/Convergent Design (where both the qualitative and quantitative studies are conducted at the same time), were not used in this work.

This qualitative arm attempted to evaluate the underlying influencers of those quantitatively observed phenomena by qualitatively engaging the participants of the IFOMSSA Scheme through case study interviews. Using the case study research method, therefore, this study was designed to explore, seek, understand, describe, interpret, and explain the experiences of the concerned participants (students and others).

Case studies are empirical inquiries that investigate contemporary phenomena within their real-life contexts (Hancock and Algozzine, 2011, p. 15; Yazan, 2015, p. 138; Yin, 2014, p. 13). They are particularly suitable for programme evaluation when there is a need to garner in-depth details (Crowe et al., 2011; Yazan, 2015). This is the case with this work, making it the qualitative method of choice.

Box 2: The Intervention—hybrid selection, mass motivation, and community participation (Ifediora, 2024)

The annual IFOMSSA Challenge allows a competitive and fair process of selection for candidates aiming to win the IFOMSSA Senior Award. It is a component of the IFOMSSA Scholarship Scheme that provides a merit-based angle to the process. This competitive and merit-based nature means that all students in the designated class of the 10 eligible schools are motivated as a whole to work hard, in the hope that the overall academic performances of a greater number of students in the benefitting schools will improve, even though only a few of them will actually get the scholarships.

The design of the selection process is what provides the “mass motivation” dimension of this study, as it stimulates all the students in the final class (SSS III) of each of the 10 intervention schools, not just the academically outstanding ones or the eventual winners. This mass motivation is achieved in the lead-up to the exam (around September of the previous award year) when the respective school principals and their teachers are advised to repeatedly inform students about the availability of the IFOMSSA Senior Award. They are also encouraged to notify them that all the SSS III students are eligible for the award, and it is dependent on academic performances of the term before the selections are made, not past performances. The students are told about this daily during the compulsory morning assembly, in an effort to motivate all the students in each particular exam class to study hard and aim for good test scores. This is a key component of this study's design and uniqueness, as it allows for “mass motivation” of as many students as possible towards higher academic performances, using as little available funds as possible. The interviews in this work assess if these were done, and if all student categories involved were exposed to this.

Each school is expected to submit the names of three of their best students (academically) from each eligible class. The three from each school are selected based on their scores in four selected subjects (see below) following the term exams held immediately before the end of that year. As such, the selections are purely on academic merit. To further ensure that the respective schools uphold merit, each school principal is made to understand that his/her students are competing against brilliant students from other schools who would also be chosen on merit. This ensures that each school does its best to inspire its own students, and also to pick the best three that will give them a chance at the IFOMSSA Challenge involving all 10 schools.

Each school nominates three participants for the Challenge, making a total of at least 30 students. However, one school, located in the hometown of the Foundation's Founder, is allowed to nominate five additional participants in view of their relative backwardness. These measures help inspire a higher sense of fairness in the communities, thereby increasing community involvement. With this format, there were 35 IFOMSSA Challenge participants in 2017 and 2018, with 10 and 12 winning the awards, respectively. In 2019, an extra three were allowed to be included for the Challenge from other schools, as part of the preparation for the expansion of the scheme from 2020. As such, there were 38 participants in 2019, with 12 eventually winning the award.

The IFOMSSA Challenge is usually held in January or February of every year. Questions for the exam are set by the teachers responsible for the chosen subjects in the Educational Zone and are designed to be at the same standard as those for the two senior school certificate examinations that the students are preparing for (WASSCE and NECO). Four subjects are undertaken, and these are English Language, Mathematics, Biology and Civic Education. Each subject is scored out of 100%, and the students are ranked according to their total aggregate scores. Marking of the papers from the IFOMSSA Challenge is usually done on the same day as the exam by the supervising teachers. The results are subsequently tabulated on the same day, and given for processing to representatives of the Foundation present at the exam. The results are made public within a few weeks of the IFOMSSA Challenge, and the financial awards handed out at the annual IFOMSSA Award Ceremony (see below).

Around 10–15 of the participants in the IFOMSSA Challenge will get the IFOMSSA Senior Award. The top seven performers get the IFOMSSA Award on merit, while the remaining winners are selected based on a catchment system that guarantees that students from all the communities in Anambra East LGA of the Otuocha Educational Zone, get the award. This measure was entrenched to enhance maximum community involvement, a key component of this study's design. This is just one way of addressing the community and psycho-social component of this study. Apart from the catchment and the fact that each school is allowed up to three nominations, other measures in this regard include the fact that an award ceremony is staged, wherein community leaders, family members, stakeholders and others are in attendance. That ceremony is also covered and reported in both print and electronic media, ensuring that the winners are known and celebrated, while the communities are kept constantly well informed and motivated for the subsequent years. These are all designed to increase the mass effect and community involvement in the scheme, and account for the third principle advocated in this study.

Setting. This study involves 15 participants affiliated with 10 public-owned senior secondary schools located in Anambra East Local Government Area (LGA) of Anambra State, South-eastern Nigeria. Anambra East is one of the three LGAs within the Otuocha Post Primary Schools Service Commission (PPSSC) of Anambra State, Nigeria. The Otuocha PPSSC or Educational Zone, in turn, is one of the six in the State, with each headed by a Zonal Director of Education (ZDE) that works with zonal officers (government staff) and school staff (principals and teachers) to administer educational activities to the secondary schools under their respective zones. At the time of the study, there were a total of 26 public secondary schools in the Zone (with 10 being in Anambra East, as stated). Anambra State, one of Nigeria's 36 states, had an estimated population of 5,527,800 (National Population Commission of Nigeria, 2017) at the time of this work. The Otuocha Zone, whose inhabitants are predominantly rural farmers, is Anambra State's “food basket” (Enibe et al., 2019). It is, therefore, a low socio-economic area with education significantly affected negatively by farming (Enibe et al., 2019; Ikeogu et al., 2020). This is the key reason why the IFOMSSA scholarship scheme was introduced in this Zone (OCI Foundation, 2016).

Participant selection, inclusion criteria and sample size. The “Typical-case Sampling Technique (TST)” a form of “Purposive

Sampling”, was used as it allows for participant selection based on one's knowledge of the phenomenon under study (Cohen et al., 2018; Etikan et al., 2016). The TST ensures that no information obtained will come from uninformed participants, avoiding responses from deviant cases.

To be eligible for inclusion, a participant must have been a student or family member of a student eligible for the IFOMSSA Senior Scholarship Award between 2017 and 2022. Other interviewees (see Table 1) included teachers or principals in the 10 eligible schools, as well as community leaders and government staff in communities within the Otuocha educational zone. Overall, there were seven groups of interviewees, three of which were students (participant winners, participant non-winners, and non-participant non-winners). The other four were parents, teachers, government staff and community leaders. Details are all shown in Table 1.

Based on how they participated in the IFOMSSA Scheme, the student participants were grouped into three categories low, moderate and high performers. The low performers (also known as the “non-participant non-winners”) are those who, even though were eligible for the IFOMSSA Award (by virtue of their attendance to one of the 10 eligible schools), did not qualify for the IFOMSSA scholarship selection exam (the IFOMSSA Challenge), and, therefore, did not receive the scholarship. The moderate performers qualified for the Challenge and participated

Table 1 Ifomssa scheme interviews—groups of participants/interviewees.

Group	Participants/interviewees for the study (interview category)	Numbers
1	IFOMSSA (Exam) challenge participants—scholarship recipients (participant recipients or recipients) Category 1A	3
2	IFOMSSA (Exam) challenge participants—non-scholarship recipients (participant non-recipients) Category 1B	2
3	IFOMSSA (Exam) challenges non-participants/non-scholarship recipients (non-participants non-recipients) Category 1C	2
4	Parents/guardians of recipients/scholarship winners Category 2	2
5	School teachers/principals Category 3	2
6	Government staff Category 4	2
7	Community/traditional leaders Category 5	2
Total participants for case study in-depth interview		15

IFOMSSA: Ifedioramma Okafor Memorial Secondary School Academic (Award).

in it but failed to win the scholarship (and are therefore known as the participant non-winners), while the high performers were those who won the Scholarship after participating in the IFOMSSA Challenge.

Experts advise that, for case studies, interviewing two to 15 participants over a 30–60 min period would ensure saturation, with “saturation” being the point at which no new themes or information can be garnered (Boyd, 2001; Creswell and Poth, 2016; Speziale et al., 2011). Given this, the TST was used to select a minimum of two interviewees for each of the seven groups of participants, with only the high-performing student group having three participants. There was, therefore, a total of 15 participants (Table 1). These numbers (two each for the groups, and 15 in total) satisfied the required conditions.

Data collection and consent. Two interviewers (specifically trained for the purpose) were involved in the data collection. To minimise bias, the lead researcher, who is also the Founder of the Foundation behind the IFOMSSA Scheme, was not part of the interview team. In-depth interviews using open-ended, semi-structured questions were conducted virtually (via Zoom) and separately for each of the 15 participants. The interviews averaged ~38 min (Tables 2 and 3) and were held over the four weekends from October 23 to November 19, 2022. In line with the established protocol (Yazan, 2015, p. 142), two participants not involved in the study were used to pilot the questions prior to the actual interviews, and feedback from them was used to update them. The final set of questions, developed after the piloting, is included as Appendix 1. A summary of the structure and details of the questionnaires, including the question groups and themes, are summarised in Text Box 3.

Signed consents [Appendix 2] were obtained from all the 15 participants ahead of each interview. All the recorded interviews were transcribed, and the full versions are available online (Ifediora et al., 2023a). “Respondent-validation” of the transcripts,

as advocated by experts, was carried out by inviting the interviewees to check the final transcripts (Yazan, 2015, p. 142).

To ensure anonymity, participants are represented by their name initials and have assigned codes that were used to identify them throughout this study. These, along with other details and the respective relationships or roles of the participants to the IFOMSSA Scheme, are captured in Tables 2 and 3.

Data analysis. The analysis was designed to help explore the three stated principles of this study and address the RQ. These were reflected in the structure of the questionnaire, as it had three sections (A to C) that covered the underlying principles (Text Box 3 and Appendix 1). This structure also justified the study’s adoption of the Framework Approach (FA). The FA allows for a transparent audit trail and the entrenchment of rigour in data exploration (Crowe et al., 2011; Iliffe et al., 2015, pp. 583–584; Parkinson et al., 2016, pp. 10–22; Ward et al., 2013, pp. 2426–2428). It is considered a better fit than an alternative like the grounded theory (and other inductive methods), given that the latter is not pre-defined but is rather developed based on obtained data (Crowe et al., 2011; Smith and Firth, 2011).

It is important to note that student “motivations” from the IFOMSSA Scholarship Scheme were explored with respect to (a) preparations and (b) performances at the WASSCE. En mass motivation was assessed based on the combined experiences of all the student participants (two low, two moderate, and three high performers) on these two parameters. Views of the seven non-student participants on these were also explored as well.

Data credibility and trustworthiness. Several approaches were used to ensure that the data obtained from this work were accurate and reliable. Firstly, as already stated, two participants not involved in the study assisted with the piloting. Secondly, a professional transcription company based in the United States of America was engaged in transcription, with the confidentiality of the participants maintained at all times. This ensured that the transcriptions were done with minimal errors. A third measure was that the authors re-checked the transcribed interview files for accuracy. The fourth involved respondent validation, wherein the interviewed participants were invited to review the transcripts and ensure that the captured texts reflected their expressed views (Torrance, 2012).

Authors’ positionality statement. It needs to be acknowledged that the Foundation responsible for the IFOMSSA Scholarship Awards was established by the lead researcher of this study. Despite this, the perceived conflict of interest that would ordinarily come with this was mitigated through multiple measures that entrenched “Reflexivity”. Two of these measures will be highlighted. One was that, as explained earlier under “Data Collection and Consent”, the lead researcher was not directly involved in the interviews. The second was that a reflective diary (reflective journal) was kept. This diary, maintained throughout the study, allowed the lead researcher to document his emotions during the work, a measure that constantly raised awareness of any potential conflicts and helped address them appropriately.

Results

The results are presented along the lines of the themes defined above. The full transcripts of the interviews, along with links to the audio recordings, are attached as online data files (Ifediora et al., 2023a, 2023b). Due to the poor audio quality of 1A-3 (one of the student participant winners), transcription was not feasible, and the interview was discarded. As such, 14 interviews were used, made up of two interviews from each of the seven groups.

Table 2 Student participants' details and summary of demographics (all interviews were held over the weekends from October 23 to November 19, 2022).

S/N	Initials ^a and gender ^b	Age (yr)	SSCE ^c exam year/ IFOMSSA ^d	School and town	Code	Relationship or participation status in IFOMSSA	Interview duration (h/min/s)
<i>High-performing students (A)—Interview Category 1A</i>							
1	C.M. (M)	19	2020 2022	CHS ^e , Igbariam	1A-1	Participant winner	0.22.53
2	T.G. (F)	18		CHS, Nsugbe	1A-2	Participant winner	0.29.20
3	S.K. (M)	21	2019	CSS ^f , Omor	1A-3	Participant winner	0.28.46 (discarded) ^g
<i>Moderate-performing students (B)—Interview Category 1B</i>							
4	P.A. (F)	20	2019	CHS, Nsugbe	1B-1	Participant non-winner	0.33.22
5	J.I. (F)	20	2019	CSS, Umuoba Anam	1B-2	Participant non-winner	0.21.46
<i>Low-performing students (C)—Interview Category 1C</i>							
6	E.O. (M)	22	2021	CHS, Nsugbe	1C-1	Non-participant non-winner	0.44.13
7	J.O. (F)	21	2018	CHS, Nsugbe	1C-2	Non-participant non-winner	0.31.26
<i>Interview times</i>							
Total duration of interviews							3.51.46
Average duration of interviews							0.33.40

^aInitials: The initials of the participants were used instead of the real names. This maintains anonymity.
^bGender: F = Female; M = Male.
^cSSCE: Senior Secondary School Certificate Examination.
^dIFOMSSA: Ifedioramma Okafor Memorial Secondary School Academic (Award).
^eCHS: Community High School.
^fCSS: Community Secondary School.
^gDiscarded due to very poor audio quality of the recorded interview.

Table 3 Non-student participants' details (all interviews were held over the weekends from October 23 to November 19, 2022).

S/N	Initials and gender	Code	Relationship with benefitting students/ participation status	Interview duration (h/min/s)
<i>Parent (P) or guardian—Interview Category 2</i>				
1	P.G. (Female; F)	2A-P	● Parent 1	0.26.33
2	E.O. (Male; M)	2B-P	● Parent 2 (A Guardian)	0.39.16
<i>School teacher (T)—Interview Category 3</i>				
3	J.O. (M)	3A-T	● Teacher 1	0.40.22
4	S.E. (M)	3B-T	● Teacher 2	0.51.45
<i>Government staff (S)—Interview Category 4</i>				
5	V.U. (F)	4A-S	● Government Staff 1	0.45.32
6	V.O. (F)	4B-S	● Government Staff 2	0.47.45
<i>Community (C) Leader—Interview Category 5</i>				
7	J.E. (M)	5A-C	● Community Leader 1	0.50.22
8	I.E. (F)	5B-C	● Community Leader 2	0.44.24
<i>Interview times</i>				
Total duration				4.12.02
Average duration				0.43.05

The initials of the participants were used instead of the real names. This maintains anonymity.

Needs and merits (hybrid) components. On “Needs”, all the interviewed participants (students and non-students alike) held a unanimous view that the targeted beneficiaries of the IFOMSSA Scheme were of low socio-economic status. 1C-2 (a non-participant non-winner) has this to say:

“The truth is that when it comes to my set,...almost 90% of us struggled to pay our school fees. I can remember when the WAEC fee was announced, a lot of people, in fact, half of the class, stopped coming to school because they start(ed) going about trying to...look for something doing in order to help them pay their WAEC fee....We really

don't have rich students among us....All of us, we manage. We were just managing”.

1A-1, a winner, had a similar narrative, saying:

“Actually, you know, Igbariam is a village, a community. Some students, some of them...their parents were not really financially stable....Some didn't even write exams because of school fees. As of then, some of them brought their parents to the principal and begged them to allow their kids write the exam, that they will pay in due time”.

1C-1, another non-participant, non-winner, added:

“...my set back then in school, I can tell you that they are not that financially stable enough to afford education. But with the help of the...Foundation then..., when we are about to pay for our WAEC, some of them wrote WAEC under the scholarship of the...Foundation”.

1A-2, a recipient, broadened the perspective, saying that:

“...anybody that goes to Community High School, Nsugbe..., as the name implies, ‘Community’,... it's a poor, public school. It's not a private school. So, anybody that goes to a public school is not rich...they also need financial support”.

The sad reality of all the foregoing was captured by 1C-2, who said:

“Well, my family...are not that financially buoyant...By now, I should have been in school,...but due to financial issues...I can't afford...school. So, I have to drop[out] after taking our WAEC.... We have to stop there and start hustling for life...”.

1A-1 provided more insight by adding:

“When I won the scholarship,...my dad was overwhelmed, because,...to pay my WAEC fee that time was very hard, and the moment he heard that I won the award..., he was very happy...”.

Box 3: Interview questions design

Codes were assigned to the participants using Roman numerals, from 1 to 5. The participants included students (coded 1), parents (2), teachers/principals (3), government staff (4) and community leaders (5). Tables 2 and 3 show the codes and the details for all 15 participants.

Each questionnaire had “pre-interview questions”, which allowed for introductions, clarification of consent, and confirmation of the other relevant details as needed (like gender, age, and involvement in the IFOMSSA Scheme). These questions also helped “break the ice” and ease tensions by allowing the interviewees to relax before the main questions were asked.

Before the main interviews, each participant was also assured that there were no right or wrong responses. They were encouraged to respond exactly as they felt.

The main questionnaire had three parts (A–C), in line with the three principles of this study. These parts also represented the “themes” used for the data analysis. Each part had questions designed to explore each of the three principles.

Group A questions addressed the “hybrid (mixed needs and merit)” selection component, while those in groups B and C covered “mass motivation” and “community involvement”, respectively. For the teachers, questions on “enrolment patterns” into the certificate exams were also included as Part D. Only the “what”, “how”, and “why” open-ended questions were used at the onset of the interviews. Probing follow-up questions were then asked where necessary, so as to get more in-depth clarifications.

To ensure that nothing was missed, each questionnaire ended with an invitation to make a general comment, observation or recommendation regarding the IFOMSSA Scheme.

All the responses from the non-student participants also align with the views expressed by the students, with 5B-C, a community leader, saying that “...those of them that won the scholarship are really the people that need it”. A much deeper insight came from 4B-S, a government staff, who explained that:

“Otuocha zone is...known mainly in Anambra State for farming. That’s why you sometimes see them having the name ‘food basket of the State’...When it comes to education, they are disadvantaged...even some of them whose parents...love education, you see that along the line, some...may not be able to cater for their school fees. There was a time I was still in the classroom...just to pay 3000 Naira school fees [approximately US\$4], a student can come and give you 800 Naira. He’ll tell you that, ‘...My mom or my parents said they’ll pay the balance later.’ They might come up tomorrow and give you 500 Naira, for you to be recording. He’ll continue paying in instalments, till he completes the 3000 Naira. So you can see the type of... students we have in that area. These are the student that we expect to sit for WAEC...paying something like 10,000, 14,000 Naira”?

The views on “Merit” were similar to that for “Needs”, with 13 of the 14 interviews being of the opinion that the entire IFOMSSA Scheme was fair, transparent, and merit-based. The exception came from 1C-1, one of the students that, though eligible, neither won the award nor was selected to participate in the IFOMSSA Challenge (i.e., a non-participant non-winner). He had this to say.

“...it has been happening right from my JSS 3 (Junior Secondary School 3). That was when I started hearing about the...scholarship....They [the organisers] will just come to class,...pick this person, go to another class, pick this person. When you check all these students they picked, all of them are from Nsugbe. Believe me, majority of them are from Nsugbe. You can barely find outsiders from them. It’s...maybe when they don’t see enough people that could represent the school well, then they’ll start looking for others. It’s not only me. Believe me, we had a group then in school, that, anytime they start doing that kind of selection, we separated ourselves. We separated ourselves from them....I have a lot of people that went to participate the exam,... our performance in the class, when you check, I’m far more above them. But then, when it comes to the exam, they were picked. Personally, I was not pleased by that....It’s not based on our results. It was more based on human selection. They select. Yes, that’s what it was. They

select, they picked. And most of them are indigenes. They are people from Nsugbe if you check very well”.

This viewpoint, though isolated, is fully explored in the “Discussion” of this work. As stated, the other interviewees, both students and non-students, were unanimous in their positive view of merit in the scheme. When asked if those who deserved the awards were getting it, for instance, 1C-2, who (like 1C-1) was a non-participant non-winner, said, “Yes, of course. Yes”. She went on to add that:

“...in our school, before we moved for the [IFOMSSA] exam, they gave us something like exam in the school first, to test the students. So, I think they chose those people that are better... that are brilliant...more than others... So I don’t think they’re selecting based on friend[ship], ...their favourite students. I don’t think they selected it that way”.

Speaking further on the selection process, 5A-C, a community leader, has this to say:

“In every class, we choose first and second, or third students. Then you collect such, in the number of schools from [the] Zone, about 28 secondary schools”.

On the possibility of manipulation, 5A-C added:

“No, no, no, no. No. We have a seasoned staff that monitor the affairs of those competitions. We are not looking at the face of who you know,...it’s based on merit. If you merit it, you own it”.

5B-C, another community leader, agreed, stating that:

“It’s based on merit. It’s based purely on merit, purely on merit. Although, you can get one or two...that can come in after we must have chosen the ones that came in merit. But it’s purely on merit....The exams are done there. The exams are marked there...nobody takes the exam home that you can see any falsification or any fraudulent practice. Everybody sees their result before going home, so there’s no way it will be falsified. So, it’s purely on merit”.

1B-2, a student who participated in the IFOMSSA challenge but failed to win, holds a similar view:

“It’s fair. Everything it’s fair. There was no partiality, everything went well...the selection is okay, everything they did is okay. Everything’s fair”.

1A-2, a winner, also agreed:

“We have to write...100 questions, I can remember, from... different subjects. So, we were told to read our books and prepare for the exam. So, it’s not because anybody is the principal’s brother or that you know someone. Even our teachers weren’t allowed to enter the exam hall that day. We wrote on our own. It’s only the...organisers that were there, so the teachers didn’t enter. So, I think it’s by merit. Those that made it,...they deserved it”.

3A-T, a teacher, provided additional insight:

“There is nothing like bias....At the...spot, they mark the exam script....from there, they will pick merit....They will pick you based on your score. If you did not meet the merit cut-off mark, even under that Catchment, they will still pick based on what you score. So, it’s treated fair, there is no issue of being biased”.

4A-S, a government staff, also agrees, saying, “...the whole thing is just clean and clear to everybody....You don’t even know how the papers are marked”. Another staff, 4B-S, added:

“The exams, the questions are normally set by experts, specialists in those areas. They set the questions,...at the end of the questions, we normally invite, not just one expert to set, but two people,...then we collate. We collate through an expert again in the field. Then bringing out the final questions...We have an examination committee that takes care of the exams. Finally the committee comes up with these questions on Biology, Chemistry, English and Mathematics. That is how we do it”.

On the possibility of partiality, 4B-S was emphatic:

“No, because...in my office we have about five people in the IFOMSSA award team. It’s this team that will come up with the questions that will be used on the examination day. So, there is nothing like partiality”.

Mass motivation for student beneficiaries

The two non-winner non-participants (low performers) agreed to be motivated, despite not being among those eventually selected for the IFOMSSA Challenge. 1C-1, for example, had this to say on the effect of his preparation:

“...the preparation is quite all right, because they announced [it] to the participants on time, and the teachers do encourage them to study very well ahead of the exam so they could at least come up with something better...I can remember then, there’s this friend I have, Emeka by name. He’s a guy. He is actually among those that went for the exam....When it was announced, he practically changed. He practically changed. You’ll always find him in the library, reading and solving some equations because he’s preparing for the exam”.

Regarding the impact on the eventual performances, 1C-1 said:

“Yes. Yes. Actually, it really, really reflects it because, at the time,...they started telling us that...we should go ahead and study well in order to make it....So, some of us don’t have any choice than to grab our notes and textbook and started studying ahead of the WAEC. I think when our result came out, it was quite surprising. We made it. We did well in our results”.

Prodded further on how exactly it helped, 1C-1 added:

“I think, is because, on my mind was, ‘Wow, if you pass this exam now, your WAEC fee will be paid by them’. Because,

then, it was so tough. It was very tough for us, the... financial issue and other things...with the help of IFOMSSA,...if you pass the exam, they’ll pay for you....So everybody had to, you know, prepare and read ahead so that he or she would be the one to get the scholarship. So it helped us a lot...even though...we did not even go for the exam,...we did not participate, at least it helped us in [our] exam, for [our] own benefit also. So it’s really helpful”.

1C-2, another non-participant non-winner, shared the same view, stating that:

“It helped a lot, because once we heard about the exam, the teacher will urge you to read your book ahead because you go for scholarship, they’re about to pay your WAEC fee. So, it helps students to prepare ahead more better than they’re doing before, so that they can get the scholarship. So even if at last they did not, but at least it helps students to prepare ahead for their upcoming exam and other things....Yes, it helped me a lot....I’m not a participant, but then they told us that time of this... coming up, so we should prepare....we were all prepared for the exam”.

The foregoing views, which lend credence to a possible en-masse impact, were also shared by a number of the moderate-to-high performers, reflecting individual motivations. 1A-2, an award recipient, said:

“It helped. It helped, because IFOMSSA came first before WAEC...I used to read my book always. I like reading. I love reading. So even before IFOMSSA, I have been preparing for my WAEC. I have been reading....So, when the IFOMSSA came, I just had to double my reading. With the IFOMSSA date approaching fast, I had to double everything that I am doing to meet up. When I won, I continued reading for my WAEC too, ...so I continued reading”.

1B-1, a participant non-recipient, also agreed:

“...It did affect in a positive way...First, I discovered that I was playing, and I need[ed] to be more serious with my studies if I want to win this, if I don’t want to repeat the exam again, I had to be focused, take things serious, and stop playing around”.

Not all the moderate-to-high performers felt that the IFOMSSA Scheme was impactful. According to 1A-1, an award recipient, neither his preparations nor his eventual WAEC performance, was boosted:

“The IFOMSSA scholarship award does not have any effect on the preparation of WAEC...because it’s an exam, and normally, the student’s [are] supposed to be expecting exam any moment. For me winning the award that time...was one of the best achievements that I ever made....That time...my family was not too financially stable to pay my fees. I passed it so things would get easier for me to be able to pay my WAEC that year, but it did not affect my WAEC”.

Even though 1B-2, a participant non-recipient, also did not think that her preparation was affected, she believed that she was motivated to do better performance. In her words:

“I don’t think there is much difference [in preparation] because...the same way [we] prepare for our WAEC,...[is] the same way we prepare for the OCI [scholarship]..., you just have to read your book, ... nothing else”.

On whether an impact was made on her eventual performance in WAEC, 1B-2 added:

“Yes. I think it’s so, because we prepared for the IFOMSSA before our WAEC, so we got to understand some things. So it really helped...it helped”.

Interestingly, all the staff, teachers, and community leaders that were interviewed, along with the parent and guardian of winners, agreed to a positive impact on both preparations and performances. In their respective responses, the two teachers, 3B-T and 3A-T, strongly held that, since 2017, the results of the scholarship recipients “are always better” and “have been amazing”, further supporting individual motivations. Also in support, 2B-P, a guardian of a recipient, has this to say:

“IFOMSSA help[ed] her to read harder, to the extent that even some of her friends are coming to her place in order for them to read with her. So, she made a very good, excellent result in all her WAEC...”.

4A-S, a government staff, also agree:

“I followed their WAEC for two years, and I stopped because the WAEC was okay for two years. I pick those... students that were given the scholarship...their results were okay....We have never had a situation where anybody that excel in IFOMSSA exam failed...the WAEC exam. That preparation for the IFOMSSA actually help them”.

3B-T, a teacher, believes that the en masse motivation may also be attributed to the fact that the required “schemes of work” for the subjects get covered under inspiration from the IFOMSSA Scheme. He said that “One thing is that...it is helping us to even cover our schemes”, and then added:

“Honestly, it gives them that...all round preparation that even take them to WAEC, because when you read [the] first term, second term [and] third term...scheme[s] of work, it means you’ve covered for WAEC”.

4B-S also has this to say, in support of the en masse impact:

“They do help them perform better in WAEC. Example..., there are some schools that in the past, in that our area,...that did not even register for WAEC...you find out that during WAEC registration, no student will come for WAEC to register because they have no money....But...with this exam, they then know that if they pass, that somebody will pay for their exam, all they need to do is to sit down and read....So the reading, they must do, and reading they have been doing. So from 2017 now, the students till date, there have been changes in the result of the students in their performances from 2017, 2018, 2019 to this day. From the results so far we have seen, it do[es] help them”.

Community involvement and influences

This research also tried to establish if there were community-level awareness, engagements, and coordinated efforts to ensure that the goals of the IFOMSSA Scheme were actualised. As already stated, “communities”, in this context, include family, friends, teachers, government staff, community leaders, and the media. Findings on the potential impact of each of these will now be presented.

Family. All the interviewed students, including the non-participant non-winners, unanimously stated that their parents or guardians were “pleased with their eligibility” for the

IFOMSSA Scheme. There were interesting differences in the “level of support and adjustments” provided by the families, though. For instance, all four moderate-to-high-performers (IFOMSSA Challenge participants) acknowledged that there were family adjustments to facilitate their preparations for the exams, while this was not the case for the low-performers (non-participant, non-winners). 1A-1, a winner, has this to say:

“Yeah, ...that time, my dad would say I should just go and read so that I would be able to pass the exam.... They helped me to prepare for the IFOMSSA challenge”.

1A-2, another winner, said:

“...I did less chores then...my parents would do everything to allow me focus on reading. My mom also helped me. She helped me a lot,... finding out things that I don’t know, and also for more [extra-curricular] lesson”.

Both 1B-1 and 1B-2, the participant non-winners, also agreed that their parents supported them, gave them time to rehearse, and excluded them from house chores so as to “pay more attention” to the exam. 1B-1 added that her parents even went further to boost her confidence in the process. She said:

“Well, to be honest, I tell them that I’m not sure if this is going to work and they were like, ‘Baby girl, any opportunity, even if it’s not going to work, that you have in this life, first of all, grab it, forget about [if] it is going to work or not, just go for it and then see what the end or the outcome of the whole thing, that in this life you always take risks. So, if you want to succeed in life you have to take risks’. That was the exact word they told me. My mom and dad”.

Conversely, the two non-participants non-winners both stated that their families made no adjustments for them, even though they knew about their eligibility for the scholarship and were happy about them. 1C-1, whose parents were late and was under the guardianship of his older ones, stated:

“Well, personally, my siblings are not the type that...follow up in my school...I could remember, even PTA meetings, ... if I tell them, they always tell me they don’t have time to go.... I end up paying, because they’ll tell us that if your guardians or parents didn’t come for the meeting, you will pay.... I can remember paying for their absence for some series of time. They don’t give me listening ear when it comes to the happening in my school. But all I know is that they put eye on my results to make sure. I can remember every term they ask me to show my results, and after showing, they do make a lot of comments on it.... But they don’t follow up to know everything that goes on in my school”.

1C-2, on her part, stated:

“They were so happy,... they were very excited ... when I told them. And all their prayer was for me to pass the exam and go for it, so that, at least, in one way or the other, I can help them. But unfortunately, I did not go for the exam”.

On if any family adjustments were made, 1C-2 added:

“I don’t think so...you have to schedule your own time. So if you know what to do, do it on time and go for your book”.

On if more time would have been helpful, 1C-1 said:

“Yes, I think so. It would have helped me if I do have some time, like, more time attached to the one I did”.

The family adjustments made by the winners were corroborated by the interviewed parent and guardian. 2A-P, a parent, has this to say:

“I shifted the house chores to some of them, so she’s not doing anything. She will always...read, read, read, read, read...she read and read and read and she became thin as if she’s a dry fish. Yes, I encouraged her to read because I know God will bless us through that her effort. Among all ...my children, she’s highly intelligent”.

In addition to adjustment in chores, other forms of support were provided. 2B-P, a guardian, said this:

“During the time...all of us were praying for her and giving her...advice that, ‘When you get there, behave well’....So, she got there and made us proud as usual....Before she left that day, we gave her some advice...we give her transportation fare in order for her to get there. I myself, personally, guided her...to the educational zone...they boarded a car...a government car...to that place”.

Responses from all the remaining non-student participants, including teachers, government staff, and community leaders, aligned with the foregoing.

Friends. All four students who took part in the IFOMSSA Challenge (including the eventual winners and non-winners) indicated support from their friends, either by being happy for the opportunity presented by the IFOMSSA scheme or outrightly encouraging them to take the opportunity seriously. In cases where the friends were co-participants in the IFOMSSA Challenge, there appeared to be a healthy rivalry.

1A-1, a winner, recalled that:

“They were very happy...the day I went for the exam, I was even somehow afraid. They said I should not be afraid that I will make [it]. And they were very happy with me when they heard that I won the award”.

On her own, 1B-1, a participant non-winner, felt inspired by her friends. In her words:

“Their reaction was positive....During the time of preparation for the exam, if they spot any of us that was playing or discussing irrelevant things, they will be like, ‘I think you have exam, you will not go and prepare. You are here talking and playing’”.

Comments from most of the IFOMSSA Challenge participants revealed healthy and stimulating rivalries, with 1B-2 saying:

“I have a crew that I normally read with, and we prepare...we were the team that went for the examination, and when we heard about the examination, they were like, ‘Let’s prepare for this. Let’s know whether there is something that’s actually going to come out of this.’ So we started reading...they supported me too”.

Teachers. All the students agreed that their teachers, and/or school principals repeatedly informed them of the IFOMSSA scheme, though to varying degrees and with different strategies. 1A-1 has this to say:

“They made the announcement about three months before the exam. They made it during the morning assembly...Even our principal used to call us to his office to make sure that we were preparing for the exams. They explained...that

there was a non-government organisation that is organising an exam for...SS 3 students, that when you pass the exam, that they sponsor your WAEC fee”.

1A-2 provided additional perspectives:

“They explained it well to us...We were told about the exam and the benefits we will have...if we were to read hard...they encouraged us. In fact, that was the main topic. They always encouraged us about those. Yes, they encouraged us and told us to read harder....They say it at the assembly. Also, at the classroom. Then most of my teachers, they tell me one-on-one....Also, they told us about students that won the scholarship before us...told us the benefits and everything”.

1B-1, a participant, non-winner, agrees:

“They announced it often. She [the school principal] even had to go to extra mile by giving one of our masters...feared the most, the job to handle”.

Another participant non-winner, 1B-2, held a similar view but added:

“...When I didn’t win, they were bitterly angry with me....That shows they supported.... They were angry with me when I didn’t win. I cried. I felt bad. I really cried because I wasn’t expecting that”.

1C-2, the other non-participant non-winner, gave a lot of credit to both the school principal and the teacher. She said:

“...our principal then, she always talk about it, every day...then in school. She used to give us guidelines for the people that will go for exam, and the people that are back in school. She used to give us guidelines, and she used to say many things about IFOMSSA exam. So, for the people that went for the exams, she prepared them very very well. The teacher that was taking care of the students, that were taking the students for the exam, they also helped very well by advising us, and telling us to do read ahead, well, who knows the one that will go for the exam. So they do advise us...”.

Additional insights that agree with the foregoing came from the non-students, with 3A-T, a teacher, saying:

“The teachers and principals...have a lot of influence....There was a year only one of our students was able to make it to the merit list, just one student. And the principal then reacted bitterly about it,...that we should be doing better,...she goes into the SS3 class...tries to encourage them about coming out best in the scholarship, that it will go a long way to help them”.

Community leaders. Among the students interviewed, the roles of community leaders were not always clear, as they did not all remember their involvements. However, when acknowledged, it appeared that they made some inspiring impressions on the students. 1B-1 has this to say:

“They were always present...wherever they want to give out the award. They are always present there to encourage the students more, give them words of advice and the rest of things...Most at times, most of them don’t have time. [So], for them to leave what they were doing and then come to the school to address students,...is a different thing...I see it as something important, for them to leave something that they’re doing and then take all stress of coming to the

school to address the students...so...I should take serious[ly]”.

1A-1, one of the winners, also recalled that:

“The traditional ruler of Igbariam then, Igwe Dr N. N. Kelly,...before we participated in the exam, we went to his palace and told him that we were embarking on such exam. He gave us his blessings that day. And he also gave us transport fare before we went for the exam”.

However, two of the students 1B-2 (participant, non-winner) 1C-1 (a non-participant, non-winner) knew nothing about community leaders’ involvement, even though their teachers helped. The non-student participants all agreed that the traditional rulers did play some positive roles.

Government staff. Government contribution is mainly on the fact that they approved the IFOMSSA Scheme, and allowed their staff, including school principals and teachers, to participate in it without restrictions. As 5B-C said

“... they can stop any exam from going on in their schools because they own the schools and the students are under their care....That is their own contribution, allowing you to take their students away from the school to give them a set exam and to mark and give them award. The government... is very, very happy about...IFOMSSA....They encourage IFOMSSA by encouraging the teachers”. The government is encouraging IFOMSSA by leaving IFOMSSA to continue with the exam since 2017. We have never had a hitch at all”.

3B-T, a teacher, added that,

“On the area of the State,...PPSSC...have done their part as well because if you...look at IFOMSSA in Anambra state, IFOMSSA has become part of it. And that’s because the Commission in charge of education allowed it...It’s not easy for something to just come in and is allowed, and I tell you, and it’s creating waves.

The government staff (4A-S and 4B-S) get involved by enlightening the principals, schools, communities and the government. Through school visits and official supervision, they create opportunities to explain the IFOMSSA Scheme and its importance. The PTA meetings offer another platform for promoting the scholarship programme and ensuring parental involvement on a wide scale.

An example of engagements with the traditional rulers (called the Igwe’s) and their communities was captured by 4A-S when she recalled that:

“...two of those Igwe’s ... invited me for the community meeting. Then they will now tell you, ‘...just tell the indigenes about this IFOMSSA, tell them the beneficial aspect of it, tell them that it’s their children that will benefit, not the man....I went there on the day they were having their meetings, and I talked to them openly about IFOMSSA, asked them that they should not hold their child from not coming out, even if it means that the exam is done on a Sunday”.

The overall effect of community engagements is heightened awareness, and therefore support, across the educational zone. 4B-S, a government staff, summarised it thus:

“IFOMSSA scholarship award is not a name that you mention in Otuocha Zone and one will tell you, ‘No, we have not heard of this before.’ No. It’s a name that most of the schools are familiar with” .

The Media. The participants that engaged with the media, did that most through social media, particularly Facebook. There was much less engagement with electronic and print media, and only one or two interviewees denied any engagements with no media in any form, like 1B-2, a student.

Conversely, 1A-1 follows the Foundation and the IFOMSSA programme on Facebook, while 1A-2 had also seen it in a magazine, alongside the internet/social media, but not on the radio or television. 1B-1 had come across it on both television and Facebook, while 1C-1 and 1C-2 have only seen it on social media, specifically on the Facebook page of their school or that of the Foundation.

Apart from 1A-1, who stated that the media publicity did not influence his approach or views of the scheme, all the others with media exposure admitted to various positive effects. A1-2, for instance, acknowledged that such publicity inspired her:

“...to read, so that I’ll be one of those people that my pictures will be in the magazine or posted on the internet”.

For 1B-1, the media contents on IFOMSSA was “more proof that this (IFOMSSA) is not scam”, while it made her see it “as an opportunity” to attend “any school of my choice”, admitting that it also made him “ready to work hard or do anything possible” to merit the award. The impact on 1C-2 was equally positive but in a different way. She stated that such publicity leaves her glad and “amazed” to know that the initiators were still delivering on a project that was commenced even before their time in school.

Most of the eight non-students interviewed confirmed media exposures in one form or the other. 2B-P, a guardian, has “heard about that on radio”, while 3A-T, a teacher, have seen it on the “the nation’s newspaper,...through the radio, [and] also on the ABS, Anambra State Broadcasting Service TV”. 4A-S, a government staff, added that, “I know there was a time I saw it somewhere....IFOMSSA is everywhere”, while 5B-C, a community leader, stated: “Newspaper, yes...and then...social media, yes. On Facebook, they’re always there. In short, on Facebook, we thrive so much”.

Just like with the students, the non-students admitted that the media exposures influenced them positively. 2B-P, a guardian, said:

“The way we heard about it on radio make us to have... motivation for us to enrol our child in it....So, it affect[ed] us positively”.

4A-S, a government staff, noted that, with the media broadcasts, “...people are asking a lot of questions. How will they get this IFOMSSA in their own area”?, while it made 2A-P, a parent, see “...it as a great opportunity” that should not be missed.

5B-C, a community leader, added an interesting perspective, noting that:

“There was a time they saw the vehicle for OCI. You know it has vehicles for running around? They saw it and they were so excited, they continued to copy the website and everything about it. Seeing it there, it encourages them. It encourages them. It makes them to sit up and see if they can get in into the exam and get the award. It made an impact, a positive impact on them.

Enrolment patterns

A key goal of this study was to explore the impact of the IFOMSSA Scheme on exam enrolments. 3A-T, a teacher, provided the required insight. In his words:

“I came to the school in 2014 and it took WAEC and NECO. In 2015, they registered around thirty something. 2016, the population dropped because, [at] the school in 2015, most of them didn’t make their WAEC results. So, in 2016, the school registered just 18 students. Now since 2017 till date, we’ve been having increase in the number of students who register for WAEC, mostly...indigenes of Nsugbe. In 2017, we had 34 students, in 2018, we had 43. In 2019, we had 53, in 2020, we have 63. In 2021, we have 68, in 2022, we had 77. So everybody wants to come back to the school. Even in our junior category of the scholarship, last year, we registered 121 candidates in the junior secondary, the highest we have registered so far”.

The teacher had no doubt that the increased enrolments were attributable to the IFOMSSA Scheme. He pointed out that two other private schools in the same Nsugbe town did not record such increases, and that students from neighbouring towns are now enrolling into their school, “so that they can benefit from the [IFOMSSA] programme”.

Discussion

Overall, the “hybrid selection process”, a key principle proposed on which the IFOMSSA Scheme supposedly rests, appear confirmed to a large extent, with all 14 participants stating that the benefitting schools of the IFOMSSA Scheme were of poor socio-economic status, while 13 of the 14 agreed to a transparent merit system. Transparency in the identification and selection of incentive beneficiaries has been linked to a higher impact of incentives (De Janvry et al. 2006), making its confirmation in this study, important. However, the view expressed by one of the students, which suggested possible selection bias, cannot be totally ignored. As shown in *Appendix 3*, which contains the list of all IFOMSSA Challenge participants from 2017 to 2021, the interviewee’s assertions that representatives of his school (Community High School, Nsugbe) almost exclusively favoured the host town appear to be largely incorrect. Of the eight yearly representatives of his school, indigenes of the hometown were four in 2017 (50.0%), five in 2018 (62.5%), four in 2019 (50.0%), with a Ghanaian, even included in the eight, five in 2020 (62.5%), and three in 2021 (37.5%). Going by this, the indigenes made up 21 of the 40 participants (52.5%) over the five years, which roughly mirrors the proportions in the school’s overall student population. It might well be the case that the interviewee was referring to the selection process of the IFOMSSA Junior (not Senior) Awards, which is entirely a needs-based project reserved exclusively for the indigenes. The IFOMSSA Junior Scheme was not covered in this work.

“Motivation”, particularly the need to do it en masse (i.e., benefitting the scholarship non-recipients that would not ordinarily be motivated by the scholarship scheme), is the second principle evaluated in this study. Just like the hybrid selection principle, a large majority of the respondents agreed that the IFOMSSA Scheme motivated and inspired the students. All the non-students, along with six of the eight students (mostly the low-to-moderate, scholarship non-recipients), admitted to the Scheme’s positive impact on the preparations and the performances at the certificate exams. One of the notable exceptions is a high-performing student (scholarship recipient), who stated that, though the financial support was a big relief for his family, neither his preparation nor his ultimate performance was influenced, as he was already putting his best into them before the Scheme came about. The other exception was a moderate performing student (participant non-winner), who, even though she admitted that the IFOMSSA Challenge helped her ultimate performance in the certificate exam since it exposed her to questions similar to the

ones used, did not think that her preparation for the certificate exam was influenced, as she was already giving her best. This minority view from some moderate-to-high performers, though a little surprising, seems to agree broadly with stipulations of the Phenomenological Variant of Ecological Systems Theory (PVEST), which argues that financial incentives can only promote academic achievements among students of low socio-economic backgrounds who are already high-achieving students, given that, in most cases, they already function at high levels (Spencer et al., 2005, p. 204).

The foregoing observations would appear to indicate that the “mass motivation” principle of this work was upheld, as the low-performers (non-award recipients), along with some of the moderate-to-high achievers (at least), were inspired to work towards a better exam in terms of preparation and performance. Interestingly, this qualitatively observed mass motivation corroborates with the findings from the quantitative arm of this work, which largely found statistically significant increases in test scores among students (be they low, moderate or high performing) exposed to the principles of the IFOMSSA Scheme (Ifediora, 2024). It is worth pointing out that this en-masse motivation, observed independently by both the qualitative and quantitative arms of this work, aligns well with the provisions of the “falsification or rival logic”, a principle that seeks to disprove, not uphold, existing theories (Teegavarapu et al., 2008, p. 6; Yin, 2014, pp. 37–38). As such, it comes as little surprise that it disagrees with the PVEST and other similar theories (Bourguignon et al., 2003; Carneiro and Lee, 2011; Heckman et al., 2006; Slavin, 2010). This is considered a strength of this paper, as the falsification logic helps minimise subjectivity.

Unfortunately, very little exists in the literature regarding mass motivation, as previous studies have not deliberately explored this. The Colombian study mentioned earlier in the Introduction made an incidental observation of a “mass effect”, wherein friends and associates of those that received incentives got motivated to attend schools at rates as high as those observed among the primary beneficiaries (Attanasio et al., 2005; Barrera-Osorio et al., 2008). The authors of that work proposed that such “spill over” strategies could help reach many potential beneficiaries in environments where local, national or international donors are financially constrained (Barrera-Osorio et al., 2008). The IFOMSSA Scheme can be considered a direct response to that call, with its combined principles seemingly effective at “mass motivating” students in disadvantaged schools. The potential implication in real life can be huge, as it makes a strong case for providers of educational incentives to inspire entire cohorts, not just those likely to obtain the scholarships.

Findings on the third principle underlying the IFOMSSA Scheme, “community participation”, were equally interesting, with ample evidence from interviewees apparently indicating positive, widespread support and influences from families, friends, teachers, media, government staff and community leaders. The input from the media and families warrants further mention. Publicity from the media (dominated by social media like Facebook) reportedly boosted the credibility and trust of the IFOMSSA programme. These, according to some of the participants, inspired students to work harder, while parents were motivated to enrol their students in the certificate examinations. On their part, families of the moderate-to-high performers made adjustments that boosted their ward’s chances. Only the two low-performing students (non-participant non-winners) reported otherwise. This difference in family support between the different student groups is very important, as it appears to indicate that family involvements were associated with some degree of success with the IFOMSSA Scholarship Scheme, given that those that achieved success all had family support, an observation

independently corroborated by the parents of the actual award recipients. These observations align with the findings from a randomised controlled experiment that explored aspects of Colombia's "Conditional Subsidies for School Attendance" programme (Barrera-Osorio et al., 2008). That evaluation concluded that family dynamics and peer influences can affect decisions on education by parents and their children and that financial incentives can trigger a reallocation of responsibilities within households. The findings also appear to agree with the conclusions from the study of a financial incentive programme in Bangladesh, which found that parents do respond positively to incentives and that such responses remain, even if the amounts involved were small or not large enough to eliminate poverty (Arends-Kuening and Amin, 2004).

Of further interest is that these positive impacts from the community are supported by the "Theory of Change Typology (TCT)", which posits that, for interventions to be effective at improving learning and education quality, they must, among other things, combine at least two of three determinants (Masino and Niño-Zarazúa, 2016). Those determinants were the "supply-side interventions" (provision of learning materials, physical resources and human resources), the use of incentives to influence the behaviour of teachers, families and students, and the "bottom-up and top-down" approach (which encourages community participation). The proponents argued that isolated interventions (like the provision of physical resources or financial incentives) would not be very effective unless complemented by incentives that shift preferences and behaviours, or those that allow community participation. They found that, in situations where the demand for educational services is constrained by societal and economic factors (a situation prevalent in most developing African countries), the supply of physical and human resources alone can often result in a waste of limited resources. This theory was informative in the design of the IFOMSSA Scheme, which included two of the three determinants (financial incentives and community participation). Leveraging community influences possibly explains the Scheme's apparent success at improving test scores, as noted from the quantitative study (Ifediora, 2024). A number of other studies that have arguments similar to the TCT also align well with this study (Glewwe et al., 2009; Kremer and Vermeersch, 2005; Muralidharan and Sundararaman, 2010).

The final evaluation of this work focused on "enrolments into the senior school certificate examination". The quantitative arm of this study had already reported increased enrolments in the intervention group relative to the control, as well as in the post-intervention years relative to the pre-intervention ones (Ifediora, 2024). Interestingly, this qualitative work independently confirmed that, since the IFOMSSA Scheme was introduced in 2017, there have been increased enrolments in the exams, after an initial pre-intervention decline (between 2015 and 2016). This success, according to an interviewed teacher, is attributable to the IFOMSSA Scheme, as he explained that IFOMSSA-ineligible schools in the neighbouring communities to his school did not witness such increases. Not surprisingly, this observation is consistent with arguments that beneficiaries who receive incentives for specified behaviours would be very likely to engage in such behaviours (Bettinger, 2012). It also aligns with findings from the evaluation of the Bolsa Escola Conditional Cash Transfer (CCT), a scheme found to have a strong impact in reducing dropout rates (De Janvry et al., 2006). Other studies also reported that incentives were associated with improved enrolments and/or school attendance (Attanasio et al., 2012; Dubois et al., 2012; Filmer and Schady, 2014; Gibbs et al., 2009).

Strengths and potential weaknesses/limitations. One strength is the ability of this study to obtain views from different groups of participants, as this broadened the viewpoints factored into the analyses, allowing a deeper understanding of the findings from the quantitative study that preceded this work. Other strengths came from the use of measures that enhanced rigour, including the "piloting" of the interview questions before use and the "respondent-validation" that allowed the interviewees to clarify that the transcribed information reflected their expressed views. The use of purposive sampling to eliminate deviant cases is another strength, as all those who participated in the interview had first-hand experience with the IFOMSSA Scheme. In addition, ensuring that the number of participants interviewed for each of the sub-groups as well as overall was in line with the recommendations of experts is equally considered a strength, as it ensured that "saturation" with the required information might have been reached, implying that the data collected was most likely reflective of the experiences being explored. One last strength was that this work came after a quantitative study, as this allowed unanswered aspects of the underlying principles of the IFOMSSA Scheme to be fully addressed. Alongside all the foregoing, it is worth pointing out that all the other strengths associated with case studies (mentioned in the "Methods" section) also apply to this work.

Despite the aforementioned strengths, a number of potential limitations exist in this work and are now acknowledged. One is the challenge of generalisability, applicable to case studies because of their reliance on single cases (Cohen et al., 2018; Teegavarapu et al., 2008, p. 6). Measures exist to overcome this, and some were adopted by this work (Flyvbjerg, 2006, pp. 8–9; Teegavarapu et al., 2008, p. 6). One relates to the principle of "wise selection", which allows the selection of a case that has all the principles that need evaluation. Credence to this principle arises from the groundbreaking works of Galileo (like the gravity experiment) and Newton, which were products of generalised theories that came from replications of a few experiments. The other measure was the prior use of a quantitative study ahead of this qualitative component, allowing the latter to only provide in-depth insights into the already-generalisable findings from the former.

A second potential limitation is that which can arise due to the inherent bias associated with case studies (Teegavarapu et al., 2008). For this work, this is particularly so, given that the lead author is also the founder of the Foundation behind the IFOMSSA Scholarship Scheme. The principle of "reflexivity", an important tool for tackling potential observer bias in case studies, was adopted. In addition, to minimise the undue influence of the participants, the lead author recused himself from the interviews, while the two interviewers engaged were unknown to the participants, having never been involved with the IFOMSSA Scheme before this study. The final bias-reducing measure was the use of "falsification logic", which, as already been explained in the main text, aimed to disprove (not uphold) the theoretical basis of the work.

Conclusion, implications and recommendations

This study concludes that the IFOMSSA Scholarship Scheme, which aims to inspire better outcomes in educationally disadvantaged communities by motivating large groups of students concurrently, picking its recipients through a hybrid (mixed merit and needs-based) selection model, and integrating the community into its implementation, is effective at improving test scores and enhancing exam enrolments.

One practical implication of the foregoing conclusions is that they make a case that the principles behind the IFOMSSA Scheme if fully integrated into new and/or existing policies, might assist

with achieving the long-elusive goal of ensuring that scholarship schemes can consistently improve test scores. As explained earlier in this work, evaluations of past scholarship models have yet to establish this relationship.

A second implication is that, given the proven relationship between improved test scores with enhanced quality of education and economic growth (Hanushek et al., 2016; Hanushek and Woessmann, 2008, 2012; Jamison et al., 2007; Laurini and de Carvalho Andrade, 2012; Masino and Niño-Zarazúa, 2016; Psacharopoulos and Patrinos, 2004). Adopting the principles from this work may help countries like Nigeria as they aim to boost their economies. If replicated in more extensive studies, affected developing countries in Africa and educationally disadvantaged communities in other regions of the world as seen in indigenous populations of Australia (Ford, 2013; Gutierrez et al., 2021) and Canada (CFS-FCÉE, 2021; Deonandan et al., 2019; Genge and Day, 2021) may also find these outcomes beneficial.

A third implication relates to the positive role of the media in building credibility and trust in the IFOMSSA Scheme. Scholarship programmes in concerned parts of the world, therefore, should aim to embrace and actively promote media publicity. This may be particularly effective if the cheap and easily available social media options are utilised in places where traditional print and electronic media are not affordable. This measure may help drive uptake and trust in scholarship schemes geared towards improving educational outcomes.

A fourth implication is that communities with low school enrolments and/or high dropout rates can inculcate the principles advocated in the IFOMSSA model in order to improve parameters on both aspects in a country like Nigeria with poor enrolments abound (Sasu, 2022). This may also help the country move away from holding the unenviable record as Africa's number-one country with the highest out-of-school youths and children (The Cable, 2023). It will also be a highly welcomed policy directive for the Otuocha Educational Zone, where this study was focused, as it is an area known for high dropout rates among students in tertiary education (Amaonye and Anaekee, 2020; Anambra Broadcasting Service, 2022; FRCN HQ, 2022).

Findings from this work also make a case that countries like Nigeria, where (as explained in the early part of this work) quests to attain the SDG-4 are stalling (UNESCO Institute of Statistics, 2019). They may wish to consider evaluating their existing incentive schemes in ways that might allow the adoption of some or all of the principles promoted in this work. Outcomes from such evaluations may offer new directions that can help expedite, to some extent at least, the stated goals of SDG-4 (United Nations, 2023, 2024).

Finally, this study makes a strong case for providers of educational incentives to work towards inspiring entire cohorts (not just those likely to obtain the scholarships) in disadvantaged communities. This, as this study has found, can encourage students across multiple performance or achievement categories (not just high or moderate performers) to attain higher than usual test scores.

Gibbs et al. (2009) noted that the actual amounts to individual recipients are less important than the recognition for accomplishment offered by those incentives. As such, the foregoing recommendations can also be achieved with existing funds (without the need to increase them) in communities, countries and regions where they are needed, making it cost-efficient and sustainable. This study, therefore, recommends that policymakers and education funders consider adopting all of the three principles underlying the IFOMSSA Scholarship Scheme into new or existing programmes.

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Author contributions

All the authors contributed significantly to the project conception, development, data collection, analysis, and writing up.

Competing interests

The founder of the Foundation behind the scholarship scheme being proposed in this work is also the lead author of this work. There are no financial gains available to the author, and measures are in place to reduce competing interests, potential reputational benefits, and risks or perceptions of coercion.

Ethical consideration

Ethical approval for the full study was obtained from the Human Research Ethics Team of the University of Southern Queensland (ID: H22REA-17). We confirm that all the research was performed following all relevant guidelines and regulations.

Informed consent

Signed consents (see Appendix 2 in the Supplementary file) were obtained from all 15 participants ahead of each interview. No participant was under the age of 18 years. So, they all provided their consent directly.

Additional information

Supplementary information The online version contains supplementary material available at <https://doi.org/10.1057/s41599-024-03884-8>.

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