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Empowering parents and promoting school and teacher accountability and responsiveness: Case of Kyrgyzstan

Kanykey Jailobaeva [a,*], Temirlan Jailobaev [b], Gulsaadat Baialieva [b], Rakhat Ismanbaeva [c], Dilbara Kirbasheva [c], Marc-Antoine Adam [c]

[a] Queen Margaret University
[b] Empirica Research and Consultancy Institute
[c] Aga-Khan Foundation in Kyrgyzstan

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ABSTRACT

The Aga Khan Foundation in Kyrgyzstan implemented the Community Engagement for Better Schools project in Kyrgyzstan in 2017–2022. The project promoted three key mechanisms - performance and budget hearings, social contracts, and community scorecards – that were innovative for schools in the post-Soviet lower-middle-income country with multiple education reforms. This paper examines to what extent the project succeeded in improving the accountability and responsiveness of teachers and school management and empowering parents from the perspective of parents/caregivers. It draws on the survey with 1750 parents/caregivers from the project and comparison schools collected at the baseline and endline stages. The paper concludes that the project improved the accountability and responsiveness of teachers and school management to some extent from the perspective of parents/caregivers, especially women and those from low-income households. Most changes were observed in relation to making budget information available and reporting on school expenses. The project outcomes offer validated mechanisms for promoting accountability and responsiveness of schools that can be rolled out to other schools. However, a multi-actor commitment at the national and local levels is required for long-term sustainable results.

1. Introduction

Education remains a top priority for governments and international development agencies (UN, 2015). Much progress has been made across low and middle-income countries due to the Millennium Development Goal (MDGs), as more children are in schools and have access to free basic education (Beeharry, 2021). However, the quality of teaching and learning outcomes remains a challenge as governments and schools struggle to ensure the resources, infrastructure, facilities, and staff necessary to deliver quality education where children show adequate academic performance (Beeharry, 2021). Despite decades-long investments and improving rates of school enrolment of children, students' learning results are grim (Shields et al., 2021). For example, according to the World Bank statistics, nine in ten children in low-income countries cannot read with comprehension by their tenth birthday, indicating their illiteracy (Beeharry, 2021). For these reasons, governments and international development agencies made commitments to the Sustainable Development Goals (SDGs) to "ensure that all girls and boys complete free, equitable, and quality primary and secondary education leading to relevant and effective learning outcomes by 2030" (SDG Target 4.1) through "addressing the need for adequate physical infrastructure and safe, inclusive environments that nurture learning for all regardless of background or disability status" (SDG Target 4. a) (UN, 2015).

Since the 1990 s, community engagement has been considered instrumental in improving the delivery of school education since governments struggled to provide context and need-relevant resources and control for the operation of schools and the effective implementation of reforms (Shaeffer, 1992). Consequently, proponents of community participation have argued that the involvement of various stakeholders in education at the community level can "increase the relevance and quality of education, improve ownership, help to reach disadvantaged groups, mobilise additional resources, and build institutional capacity" (Barnett, 2013, p.498).

* Corresponding author.
E-mail addresses: KJailobaeva@qmu.ac.uk (K. Jailobaeva), temirlan.jailobaev@empirica.international (T. Jailobaev), gulsaadat@empirica.international (G. Baialieva), rismanbaeva@gmail.com (R. Ismanbaeva), dilbara.kirbasheva@akdn.org (D. Kirbasheva), ma_adam@hotmail.com (M.-A. Adam).

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A considerable body of research is available on community engagement in education (e.g., Abrefa Busia, 2021; Atuhurra, 2016; Barnett, 2013; Casely-Hayford and Hartwell, 2010; Delgado-Gaitan, 1991; Edwards, 2019; Hossain, 2021; Okitsu and Edwards, 2017; Razzaq, 2016; Shaeffer, 1992; Shibuya, 2020). Conclusions of the studies have been mixed. On the one hand, the participation of community members in school management has been regarded as key for raising local needs, overseeing teachers' work, and holding teachers accountable for improved school performance (Atuhurra, 2016; Shibuya, 2020). For example, Kozuka et al., 2016 found in Burkina Faso that interventions promoting community participation in school management increased student enrolments, decreased student repetition, and lowered teacher absence. In other words, the role of parents and members of the wider community representing different local social, cultural, and political institutions (e.g., village committees, district education authorities, school management committees) is increased in making decisions around school and education matters. In this democratic process, parents and community members are seen as an intrinsic part of the school community rather than outsiders (Edwards, 2019; Shaeffer, 1992). Their involvement in school management is expected to improve the schools' responsiveness to local priorities and strengthen teachers' accountability (Okitsu and Edwards, 2017). Parents and community members are important for mobilising local resources and developing school infrastructure (Shaeffer, 1992). As a result, increased responsiveness and accountability of teachers and school management and empowered parents/caregivers are expected to lead to better student learning outcomes (Kozuka et al., 2016; Okitsu and Edwards, 2017).

On the other hand, community engagement in school management not always have led to positive outcomes (Hossain, 2021). For example, Banerjee et al. (2010) in Kozuka et al., 2016) found no impact of training community members to record students' learning and enrolment on education outcomes. The same experience was observed in Indonesia, where providing school grants and training to school committee members has limited or no impact (Pradhan 2014 in Kozuka et al., 2016). Hossain (2021) found no significant relationship between community engagement and parent-teacher interaction in discussing children's progress.

Hence, as Kozuka et al., 2016 stated, there is still a need to collect evidence on the impact of community engagement on schools and their performance. There is a particular gap in the evidence on whether community engagement mechanisms increase the responsiveness and accountability of teachers and schools from the perspective of parents/caregivers. Geographically, studies have mainly concentrated on South Asia, Latin America, and Africa (Barnett, 2013; Hossain, 2021; Shields et al., 2021). Central Asian countries have received little attention from the researchers, notwithstanding that numerous educational interventions have been carried out.

This paper aims to reduce these two gaps in evidence and provide insights for practice and future research. It examines whether a model of community engagement through schools' Board of Trustees (BoTs) composed of parents/caregivers, wider community members, and teachers, implemented by the Aga Khan Foundation (AKF) in Kyrgyzstan (an international non-governmental organisation) increased responsiveness and accountability of teachers and school management and empowerment of parents/caregivers from the perspective of parents/caregivers whose children study at schools where the intervention was carried out. In other words, the paper seeks to answer two research questions: (i) Did the approach to community engagement used by AKF increase accountability and responsiveness of teachers and school management and parents'/caregivers' empowerment from the perspective of parents/caregivers? and (ii) what lessons can be learned from the AKF experience for future community engagement efforts?

The second section of the paper provides a context of general education in Kyrgyzstan. The third section discusses key principles of community engagement in education. The fourth section spells out the model of community engagement promoted by AKF. The fifth section explains the methodology of the study. In the sixth section, the findings of the study are presented. The implications of the findings and key conclusions are discussed in the seventh section.

2. Context of Kyrgyzstan

Kyrgyzstan has a population of about 6.6 million people. Economically, Kyrgyzstan is a lower-middle-income country with a GDP per capita of USD 1166.70. Its economy is dependent on remittances (25% of GDP), gold production (10% of GDP), and exports (40% of GDP) (World Bank, 2020a). In 2020, the poverty rate in Kyrgyzstan was 25.3% (National Statistical Committee of Kyrgyz Republic, 2021).

School education in Kyrgyzstan includes primary and secondary education (Mambetaliev and van Cappelle, 2012; Ministry of Education and Science of Kyrgyz Republic, 2017). Education up to the 9th grade, which encompasses primary and basic secondary education, is compulsory in Kyrgyzstan. After the 9th grade, young people can decide whether to continue their secondary education at school (grades 10–11) or in the vocational college, or enter the labour force (Abdulloev et al., 2020). As of April 2022, 2345 schools with 85,115 teachers were providing general education to 1333,210 students of 7 – 17 years old (Education Management Information System, 2022). Due to the widespread availability of schools and a strong emphasis on school education during the Soviet time (Deyoung, 2006), school enrollment rates for primary and secondary levels have traditionally been high in the country, resulting in high youth literacy rate – 99.75% in 2018 (World Bank, 2018b). The latest data indicates that the enrolment rate for primary education was 98.67% in 2018 (World Bank, 2018a), and for secondary education – 98% in 2020 (World Bank, 2020b).

However, education quality was questioned when Kyrgyzstan students came last in the Programme for International Student Assessment (PISA) among 57 countries in 2006 and 65 countries in 2009 (Kasymova, 2016). Table 1 compares the 2009 PISA outcomes of Kyrgyzstan to those of other countries in the OECD and post-Soviet regions. İt shows that Kyrgyzstan was significantly behind other countries. For example, 16.8% of students from Kyrgyzstan achieved the minimum threshold for reading. In contrast, a considerably higher percentage of students from other countries met this threshold, e.g., 81% of students from OECD countries and 72.6% from Russia. Even other countries from Central Asia and Causus had higher percentages, 41.3% for Kazakhstan and 27.2% for Azerbaijan (Ismailov and Apyshev, 2022).

Since gaining independence in 1991, the education sector in Kyrgyzstan has faced many challenges. Straight after the collapse of the Soviet Union, Kyrgyzstan, along with other countries, had a sharp decline in its spending on education. Resource deficit has meant low salaries for teachers, causing insufficient qualified teaching staff as skilled teachers were leaving the education system (Deyoung, 2006; de la Sablonnière et al., 2009). Teachers also started combining their teaching with trading to make additional income for living. A profession of a teacher lost its Soviet glory and status in society, resulting in many young people avoiding this profession because of low pay. Those young people who decided to be a teacher preferred to stay in the cities, leading to a significant shortage of teachers in the rural areas where schools had to let people with no proper qualifications teach (Niyozov and Shamatov, 2009).

Table 1
2009 PISA scores, data from Ismailov and Apishev, 2022.

Country	Assessment fields		
	Reading	Mathematics	Science
Kyrgyzstan	16.8%	13.4%	18%
OECD countries	81%	78.2	82.1%
Post-Soviet countries			
Russia	72.6%	71.4%	78%
Kazakhstan	41.3%	54.7%	44.6%
Azerbaijan	27.2%	40.9%	30%

To improve the situation, Kyrgyzstan has increased its spending on education, reaching a twofold increase between 2011 and 2016. In fact, in recent years, Kyrgyzstan has been spending 5.8% of its GNI on education, making it one of the highest rates in Central Asia and Eastern Europe. Around 20% of the national budget has been spent on education (Kasymova, 2016). However, most of the education budget has been spent on school staff salaries, leaving limited financial resources for quality improvements, including infrastructure, textbooks, learning materials, and utilities (Deyoung, 2006; de la Sablonnière, Taylor, and Sadykova, 2009).

In light of the grim outcomes of the 2006 and 2009 PISA results, the government also prioritised reforms in the education system. In the past decade, the Strategy for the Development of Education for 2012–2020 and its action plan were implemented. The emphasis was made on reforming education content to promote students' competencies. The new State Educational Standard for School Education (2014) and the Basic Curriculum and Subject Standards (2016) were adopted. New educational materials were developed, tested, and introduced (Tagaev et al., 2021). These reforms have been carried out with support from the donor community, notably the World Bank. A couple of years ago, the Kyrgyz government announced that Kyrgyzstan would participate in PISA in 2025 after a 16-year break since 2009 (Tagaev et al., 2021; Ismailov and Apyshev, 2022).

However, funding remains to be an issue for schools. Even with the increased government spending on education, this has not been enough for schools to meet their needs. Thus, most schools have requested parents/caregivers to make informal payments for different school needs (Sputnik Kyrgyzstan, 2015; Ramas, 2016). Parents/caregivers are one of the key stakeholders in ensuring education for children. According to the legislation, they have the right to participate in all school activities, choose the forms of education, and maintain constant cooperation with the school (Government of Kyrgyz Republic, 2012). However, in practice, parents have not been actively involved in school management activities or kept informed about any aspect of school governance (Sputnik Kyrgyzstan, 2015; Ramas, 2016).

Overall, schools have lacked the capacity to engage with various community actors (Deyoung, 2006) and mobilise resources for themselves, which is linked to its Soviet heritage, where education was centralised and unified with limited input from civil society (de la Sablonnière et al., 2009). Republics of the Soviet Union, including Kyrgyzstan, used to administer education programmes created and directed by the central body in Moscow (Deyoung, 2006).

To change this, reforms have been initiated. Matters related to school funding and infrastructure have been devolved to local authorities. To promote the engagement of communities, the law on the Board of Trustees (BoT) in education was adopted in May 2014 (Goverment of Kyrgyz Republic, 2014). BoTs' purpose is to improve the quality of services, transparency of the activities in the social institutions, efficient use of the mobilised funds, as well as stimulate an effective interaction of state and local self-government bodies with civil society organisations. In other words, its overarching objective is to serve as a bridge between parents/caregivers, community members, and the schools.

The baseline study in 2018 showed that the number of BoT members ranged from 3 to 11. The composition of BoT membership varies from school to school. In most cases, BoT members are elected from Parent Committee Leaders. These committees typically exist in each class. It is also a common practice for BoTs to have teachers and school staff as members. A few schools have students as active members of their BoTs. In some ethnically diverse regions, schools attempted to ensure ethnic balance in BoTs. BoT members are selected at the general parents meeting at the beginning of the academic year. These meetings are also used as a platform for BoTs to inform parents/caregivers about their plans and report on the implemented activities.

To summarise, schools in Kyrgyzstan need parents/caregivers and broader community members to support them in dealing with the challenges they face and improve the academic performance of children. There are efforts to involve parents/caregivers and community members by introducing BoTs and collecting funds from parents/caregivers. However, patchy evidence that exists indicates that these actors are not fully involved as there are no established mechanisms for this process to work well. As a result, parents/caregivers (i.e., community members) contribute funds but remain disengaged from and uninformed about other activities of the school. For this reason, the issues of accountability and responsiveness of teachers and schools and genuine empowerment and involvement of parents/caregivers become a pressing matter to have positive changes in schools.

3. Community-based management in school education

Community engagement seeks to facilitate a partnership between various actors at the community level (e.g., local authorities, schools, community-based organisations, informal self-help groups, and private sectors) to address challenges of schools such as resource deficit, monitor teaching and learning outcomes, ensure the relevance of school activities to local context and needs, and implement education standards and reforms (Atuhurra, 2016; Barnett, 2013; Shaeffer, 1992; Shibuya, 2020; Sharma, n.a.; UNESCO, 2022). This brings service and spending efficiency as school committees spend discretionary funds on what is needed (Edwards, 2019). In other words, the control of the workings of the school, particularly over resources and personnel management, is expanded to community members from school staff (Okitsu and Edwards, 2017), making schools more responsive and accountable (Shaeffer, 1992; Shibuya, 2020).

Community involvement potentially has triple effects at the individual, community, and societal levels. Individual engagement in education can transform individuals' knowledge, attitudes, and skills at the individual level. They become aware of schools. Their self-confidence, self-reliance, and self-efficacy are built. This leads to better practices for supporting schools. When parents are engaged, children become more motivated to study and, as a result, perform better (Niranjanaradhya, 2014). At the community level, community engagement can develop and strengthen local organisations and form alliances and networks between different actors, all of which can result in better management of local resources and gain greater control over information and technology (Shaeffer, 1992). In other words, communities can become more organised, strengthened, and empowered (Edwards, 2019). At the societal level, the aggregate benefits of community engagement are that development costs can be lower with greater equality of benefits, better utilisation, continuity, and sustainability of development programmes (Shaeffer, 1992). Further, community engagement has been found to emerge in contexts where communities wanted education in schools to be accessible, relevant, and of good quality. Community involvement has been shown to be relevant and beneficial, especially in the context of regular social and political changes (e.g., political institutions, significant turnover of civil servants, professionals, and policymakers, and a lack of consistent policy, supervision, and practice) (Shaeffer, 1992).

This multi-faceted role assigned to community participation has made this phrase all-encompassing, blurring what it may mean (Niranjanaradhya, 2014). Meanwhile, communities can have different characteristics. In the field of education, various types of communities have been discussed that have included a) geographical communities where people live in relatively small areas such as villages, districts, or suburbs, b) ethnic and racial groups, c) different religious groups, d) communities based on shared family concerns, e) communities based on shared philanthropy (UNESCO, 2000). To promote clarity in what community means, a set of common features of communities have been identified as a) a network of shared interests and concerns, b) a symbolic or physical base, c) an extension beyond the narrowly-defined household, and d) something that distinguishes it from other similar groups (UNESCO 2000). Such diversity of communities indicates that their social fabric may also be different. Some communities may be

homogenous or united, and others may be heterogeneous or conflictive (Uemura, 1999).

Further, there is no one form or model of community participation. Community involvement in education can take different forms, ranging from parenting to collaborating, as shown in Table 2. The relationship between community members and schools can be formal and informal (UNESCO, 2022). Community representation can be formalised through the establishment of such institutions as School Management Committees (SMC), Village Education Committees (VEC), School Development Committees (SDC), and/or Parent and Teachers Associations (PTA). Informally community members can informally participate on a voluntary basis in special activities and events.

As a result, the nature of the partnership between schools and communities can vary depending on the context and points of time. In some settings, communities can be a dominant partner, while they can be a subordinate partner in other settings (UNESCO, 2000). Stakeholders may have different visions for education in their community (Uemura, 1999). Not always partnerships allow both sides to ripe the same benefits as the power dynamics may be imbalanced, leading to the less powerful benefiting less from the partnership (UNESCO, 2000). Moreover, it has been implied that community participation represents all voices. However, this is not necessarily the case since the voices of the less privileged groups (e.g., ethnic, religious, and other minorities, women, young people, and people from low-income households) have not been heard (Uemura, 1999). For example, corruption, cultural barriers such as a caste system, and political pressures were among the key factors resulting in poor performance of school management committees in India (Sharma, n.a; Kumar, 2019). Thus, understanding the complexities and issues of power and conflict within the communities is crucial (Uemura, 1999).

It is also important to train school staff and other relevant actors to gain skills to work with the community structures. Procedures supporting the process of community engagement should also be put in place. These can be communities and councils with the role of involving parents and community members in schools (Shaeffer, 1992; Barnett, 2013; Edwards, 2019). Public forums are another important mechanism for different actors to share their views and discuss collaborative activities. These structures and processes should be underpinned with specific guidelines concerning their function and responsibilities for accountability and responsiveness (Shaeffer, 1992; Barnett, 2013). Raising awareness of parents and community members about the need to support the school paves the way to better community engagement. For sustained community engagement, there is a need for community members to learn new ways of analysing problems, designing possible solutions, and acting on them (Shaeffer, 1992) and to feel empowered to participate in decision-making and monitoring school performance.

Table 2
Forms of community involvement (Uemura, 1999).

Parenting	helping families establish home environments supporting children's learning at schools
Communicating	establishing effective mechanisms of school-to-home and home-to-school communication that enable parents/caregivers to learn about school programmes and their children's progress in schools and teachers to learn about how children do at home
Volunteering	recruiting and organising parents/caregivers' help and support for the management and administration of schools so that the resources could be utilised in the best possible manner
Learning at home	Sharing information and ideas to families about how to help students at home with homework and other curriculum-related activities, decisions, and planning
Decision-making	including families in school decisions and having parent/caregivers leaders and representatives in school meetings
Collaborating	identifying and integrating resources and services from the community to strengthen school programmes, family practices, and students learning

4. Intervention

The project was implemented between 2017 and 2022. The project aimed to improve the governance and performance of 354 target schools throughout the country by strengthening school-level platforms and capacities for community engagement, proactively sharing budget and performance information, introducing participatory processes of multi-stakeholder feedback and action-planning, and supporting the implementation of jointly agreed priority actions. It had three components. The project engaged communities in schools through 1) developing and strengthening BoTs and using them as a platform for citizen engagement, 2) building citizens' capacity to access, analyse, and use information in a timely, comparative, and user-friendly manner to work with school management effectively, and 3) promoting citizen-led accountability mechanisms (community scorecards) for ongoing engagement and joint action at the school level *(Component A)*. The project also provided micro-grants to support the implementation of priority needs identified through community scorecards and joint action planning *(Component B)*. Knowledge exchange events were also held to disseminate the learnings of the project *(Component C)* (Fig. 1).

The project implemented an array of key activities (Fig. 2). It mapped out BoT availability in the project schools as an initial step. As an outcome, existing BoTs were assessed and strengthened. In schools with no BoTs, they were formed. Guidelines were developed to support the project's work with BoTs. Around 40 educational videos were developed for BoTs (Empirica, 2022). Capacity-building training was provided to BoT members. Between May - September 2018, project facilitators conducted four-day training for 1796 BoT members and school (deputy) directors from 354 schools targeted by the project (5–6 people represented each school). Each training included 15–20 participants from three to four schools. As a result, 92 training were conducted in total. Four-day training was conducted in two phases and covered a range of topics, as shown in Table 3 (AKF, 2018).

Another initial step of the project included forming Community Engagement Facilitator (CEF) groups consisting of three students, three parents, and three teachers. The primary remit of CEFs was mobilising and engaging communities to improve schools. To do this, community facilitators received training from the project. Guidelines for community engagement and using community scorecards were developed within the project. Using these guidelines, CEFs run focus group discussions and meetings with students and parents/caregivers of different ages and gender, as well as teachers, to identify the priority needs of their schools based on around 20 criteria jointly developed by AKF and the Ministry of Education and Science (MoES) and drew up a Join Action Plan (JAP). The priority needs requiring external assistance were then presented to various community stakeholders (e.g., representatives of local authorities, community-based organisations, non-governmental organisations (NGOs), private sector organisations, youth organisations, women's organisations, and community members in general) at the inter-sectorial meeting where ways to address these needs were discussed. The contribution of each stakeholder to addressing school needs was formalised in the form of a social contract (Fig. 2). The project also offered an opportunity for schools to apply for a mini-grant (up to USD 3000) to address one of the priority needs. Communities had to contribute 50% of the overall cost (i.e., up to USD 3000). 284 of 354 schools received microgrants. The project also trained trainers who would be rolling out BoT training nationwide in all schools (Fig. 2).

The AKF project was highly innovative for Kyrgyzstan. At the start of the project in 2018, the baseline study showed that some schools (32 of 50) received support from different sources such as donors and international NGOs, local NGOs, private companies, foreign governments, individual politicians, and local universities. Support from these sources provided material and/or infrastructural support (e.g., renovation, school meals, furniture, books, etc.). None of the development projects worked directly with BoTs and their capacity building in 2018. In contrast to schools in urban areas, rural schools had fewer opportunities

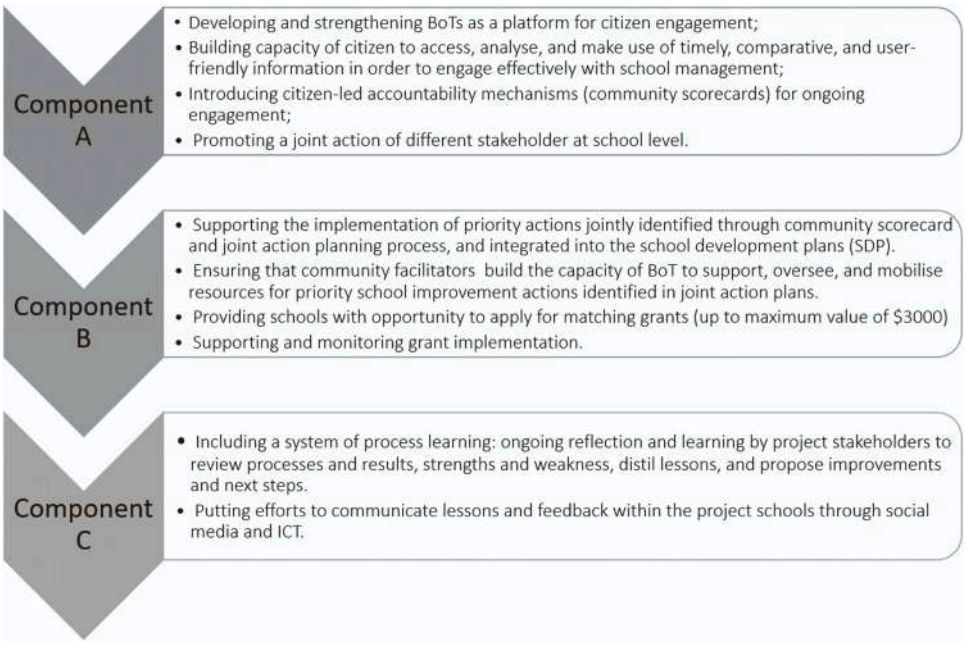

Fig. 1. Project components. Sources: Project documentation.

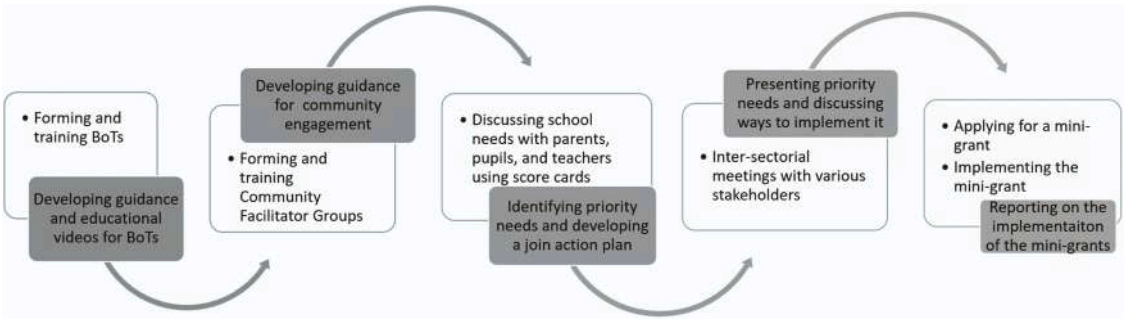

Fig. 2. Key activities conducted within the project. Sources: discussions with the project coordination team and interviews with field facilitators.

Table 3
BoT training programme.

Phase	No. of days	Topics
I	3	• Roles of Boards of Trustees: BOT's legal framework; • Legitimation of BOTs: Modification of/amendment to school charters; • School development strategy: School development planning; • Fundraising: Roles of BoTs in the mobilization of financial resources; • BoTs' activities planning: Functions of BoTs; • School budget: Development process; • Financial statements: Financial independence of schools; • Budgeting and execution: Accounting for and reporting on the use of extra-budgetary funds.
II	1	• Public hearings as an instrument for enhancing schools' transparency and openness.

to access support (Empirica, 2018). Therefore, the AKF project was the first to work with BoTs with a special focus on schools in rural areas.

The project also piloted new mechanisms for citizen voice and social accountability in schools. The project had its focus on sustainability as it piloted the establishment of an innovative system of institutionalized community engagement and social accountability in the Kyrgyz education system. Innovative aspects included: (i) an unprecedented citizen-led accountability in schools, for the first time in Kyrgyzstan, allowing citizens to assess how their school is performing in comparison to other schools in their district, across the country and according to state standards and norms; (ii) the introduction of "social contracts" into school communities, creating an unprecedented opportunity to enhanced mutual understanding and working relationships between service providers and service users; (iii) the first-ever implementation of "community scorecards" in schools, empowering parents, students and teachers to collectively assess school services and propose and implement actions to make improvements; (iv) a strong focus on coordinated, complementary and synchronized supply and demand-side action; and, (v) innovative techniques for educating and involving both (secondary school level) youth and (primary school level) children in civic engagement and social accountability approaches, with special attention to protecting their security and rights and meeting their special needs (AKF, 2016).

5. Methodology

5.1. Study objective and design

The study aimed to measure the project's progress against the project's key indicators on accountability and responsiveness of teachers and school management and empowerment of parents. The collected data was analysed through the prism of gender and economic status since these were important for projects' indicators.

The study used a quasi-experimental design by collecting data from parents/caregivers in the same project and comparison schools at the baseline in February - March 2018 (Time 1 – T1) and endline in November-December 2021 (Time 2 – T2) stages (i.e., the time gap between T1 and T2 was around 3 years). This design made two assumptions: 1) project schools would have followed the same pattern in school governance as comparison schools if no project intervention had been made, and 2) any external factors may have affected school governance in project and comparison schools similarly. For these assumptions to hold true, comparison regions were carefully selected at baseline to match project regions in terms of the cultural context, ethnic composition, socio-economic development, and population size.

The selected comparison districts and cities were located next to the intervention sites because the idea was that nearby districts would have a similar cultural context, ethnic composition, socio-economic development, and population size. National statistics was available for ethnic composition, socio-economic development, and other variables on the regional level (not the district level). For this reason, with reference to ethnographic observations and knowledge of the research team based on their previous research in these regions, it was considered that districts located close to each other had similar contexts than the ones situated far (Fig. 3). Consequently, for each intervention site, a control site next to it was selected, as demonstrated in the map and Table 4. The project schools were selected in consultation with the relevant government counterparts to include schools with poor performance in areas with high poverty levels.

At baseline, 25 schools from the project districts and cities and 25 schools from the comparison ones were sampled using a Probability Proportional to Size (PPS) method.[1] At the endline, data was collected in the same schools with a few exceptions. Consultations with the project team indicated that the endline data collection team might encounter difficulties gaining access to four schools in Bishkek and three in Osh. Subsequently, in close consultation with the project team, the research team selected seven replacement schools from the same cities with comparable student numbers using the PPS table used at baseline. The study used a mixed-method approach. A survey was conducted with parents/caregivers. An array of key informant interviews (KIIs) and focus group discussions (FGDs) were held with a range of stakeholders engaged in the project (described below).

5.2. Quantitative component

5.2.1. Measuring accountability of teachers and school management

This study defined accountability as "a social relation in which an actor feels an obligation to explain and justify his or her conduct to some significant other" (Bovens, 2003). This definition implies that there are two sides involved in the process of accountability: 1) account-giving actors and 2) account-holding actors. In the context of schools, practitioners have emphasised that highly accountable school management establishes a safe, welcoming, and rigorous school culture with a coherent and compelling vision for learning and growth, and highly accountable teachers help every student learn, not only self-motivated learners, motivate and engage students to learn using new creative ways, and teach students to ask for advice and accept critical feedback (Ed Post, 2018).

In the context of the AKF project, teachers and school management were identified as account-givers, and parents/caregivers were identified as account-holders. The study has aimed to measure to what extent school management and teachers in the selected schools inform, explain, and justify their actions to key stakeholders with regard to a) academic performance of children in school, b) teaching approaches, c) class funds, d) measures to control teaching standards, e) school budgets, f) information provision. Hence, accountability measurement items in Table 5 were developed in consultation with the AKF team at baseline.

5.2.2. Measuring responsiveness of teachers and school management

The review of the literature identified only a few studies on the responsiveness of schools and teachers. School responsiveness involves keeping or bringing practices and the character of the school in line with (a) the needs, preferences, requirements, beliefs, or values of stakeholder groups (parents, students, communities, etc.) to enable the school to survive in its environment; and (b) valued ideas and norms (professional, ethical, etc.) (Levačić and Woods, 2002). Teacher responsiveness is keeping an open mind about different ways students can show their knowledge through different forms and, thus, developing lessons and tasks that meet the learning needs of each student and allow each student to contribute to the class in the best way they can (Rose and Nicholl, 1997). Thus, this study defined the responsiveness of teachers and schools as actions taken by them to meet the needs, requirements, and preferences of parents/caregivers. Table 6 presents measurement items developed within this study in consultation with the AKF team to capture the responsivess of teachers and school.

5.2.3. Measuring parent/caregiver empowerment

A number of academic studies have shown that schools can achieve great results by empowering their key stakeholders (Delgado-Gaitan, 1991; Lightfoot, 2009; Short and James, 2016). For example, empowered parents better engage in their child's education (Delgado-Gaitan, 1991; Lightfoot, 2009). Empowerment can be defined as the opportunities for power, choice, autonomy, and responsibility. Empowerment is when individuals gain mastery or control over their own lives and become more active in democratic participation to influence community governance and social concerns. To empower, an organisation should provide enabling experiences that inculcate autonomy, choice, control, and responsibility, allowing the individual to display existing competencies and learn new competencies that support and strengthen functioning (Delgado-Gaitan, 1991; Lightfoot, 2009). This means that for empowering parents/caregivers, schools need to create an environment that would enable parents to experience autonomy, choice, control, and responsibility using their existing competencies/capacities but also learning new competencies/capacities to further improve their involvement. Considering that the project wanted to empower parents/caregivers involvement in decision-making and planning, especially in regard to the raised funds, measurements items in Table 7 were developed for the study.

5.2.4. Measuring poverty

A Poverty Probability Index (PPI) was used to determine the low and high-income households. It is a poverty measurement tool consisting of 10 questions about households' characteristics that are specific to each country's context. PPI for Kyrgyzstan was constructed, calibrated, and validated in 2012 using the 2012 Kyrgyz Integrated Household Survey

[1] A Probability Proportional to Size is "a sampling procedure under which the probability of a unit being selected is proportional to the size of the ultimate unit, giving larger clusters a greater probability of selection and smaller clusters a lower probability. In order to ensure that all units (ex. individuals) in the population have the same probability of selection irrespective of the size of their cluster, each of the hierarchical levels prior to the ultimate level has to be sampled according to the size of ultimate units it contains, but the same number of units has to be sampled from each cluster at the last hierarchical level" (WHO, n/a). In the context of this project, this sampling method implies that the probability under which each school was selected into the sample was proportional to the size of the school. Schools with a large number of students had a greater probability of being included in the sample and schools with a smaller number of students had a lower probability of being included in the sample. However, a fixed number of respondents from each of the selected schools was included in the sample to even out the chance of each student to be selected into the sample. In other words, selecting a fixed number of respondents from each of the sampled schools lowered the probability of students from large schools and increased the probability of students from small schools to be selected into the sample.

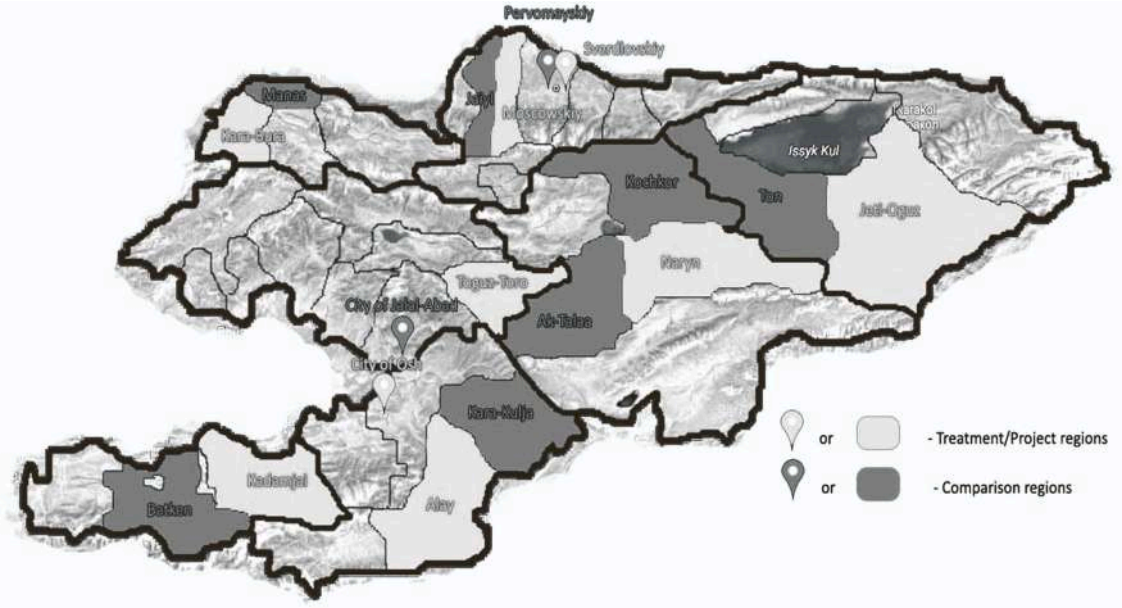

Fig. 3. Map of Kyrgyzstan with an indication of intervention and comparison districts.

Table 4
Intervention and comparison sites.

	Project regions	Type	Comparison regions	Type
1	Bishkek city, Sverdlovsk district	Urban	Bishkek city, Pervomai district	Urban
2	Chui region, Moscow district	Rural	Chui region, Jaiyl district	Rural
3	Issyk-Kul region, Jeti-Ogyz district	Rural	Issyk-Kul region, Ton district	Rural
4	Naryn region, Naryn district	Rural	Naryn region, Kochkor district	Rural
5	Talas region, Kara-Bura district	Rural	Talas region, Manas district	Rural
6	Osh city	Urban	Jalal-Abad city	Urban
7	Batken region, Kadamjai district	Rural	Batken region, Batken district	Rural
8	Osh region, Alai district	Rural	Osh region, Kara-Kyldja district	Rural
9	Jala-abad region, Toguz-Toro district	Rural	Narun region, Ak-Talaa district	Rural

Table 5
Accountability measurement items.

	Teacher accountability
1	Teacher regularly provides me with clear and user-friendly information on academic performance of my child.
2	Classes at our school never get cancelled.
3	I receive a clear explanation from the teacher about the teaching approaches and curriculum that are used in the class.
4	When funds (voluntary contribution) are collected from parents, teacher reports back to parents on how the collected funds were used and what outcomes were achieved.
	School management accountability
1	School management informs me about the quality control measures taken to ensure quality of teaching.
2	Information about school budget is readily available to parents through different public platforms (e.g. information stand, school meetings).
3	School sufficiently contacts and provides information to parents about school activities.

Table 6
Responsiveness measurement items.

	Teacher responsiveness
1	Teacher ensures that their teaching meets the needs of my child.
2	Teacher asks parents about their needs and concerns and welcomes their participation.
3	I am satisfied with the way teacher responds and acts upon my complaint or suggestions.
	School management responsiveness
1	School expenditures are aligned to school needs.
2	School is responsive to the priorities expressed by parents.
3	School welcomes participation of parents in school management.

Table 7
Empowerment measurement items.

	Items
1	Parents have the opportunity to contribute to decision-making and planning activities.
2	Parents are involved in school budget decisions.
3	I act as a volunteer at school or help school in any way on a voluntary basis.

Data from the National Statistics Committee (Poverty Probability Index). It was based on the national poverty line of 2012 (National Statistical Committee of Kyrgyz Republic, 2018). A particular score is given to each question. A total score of all ten questions is calculated, which ranges from 0 (most likely to be below a poverty line) to 100 (least likely to be below a poverty line). While high scores indicate less likelihood of being poor, the scores themselves have only relative units. For example, cutting the score in half increases the estimated likelihood of being poor but does not double it. To get into absolute units, scores are converted into poverty likelihoods using a "look-up table" that was specifically created for this purpose. The conversion table has three levels of a poverty line (100%, 150%, and 200%) which enables users of PPI to choose the level that is most appropriate to the project objectives. The poverty likelihoods are then used to subsume each household into the poor and nonpoor categories. For this purpose, this baseline used the 100% national poverty line in the given conversion table (www.povertyindex.org).

5.2.5. Survey sample

The endline sample size of parents/caregivers was determined by the baseline sample size. Like baseline, all effort was made to randomly sample 35 students from the 7th, 9th, and 11th grades using a systematic sampling approach. Parents/caregivers of the sampled children were

then surveyed. The total sample size was 1750 parents/caregivers (Table 8). Unlike the baseline, the endline sample in the project and comparison schools had more male respondents. There were slightly more male participants from the project schools (35%) than from the comparison schools (31%). Up to 94% of the respondents were parents (i.e., father or mother). The remaining respondents were mostly grandmothers and grandfathers (Table 8).

As noted above, the Poverty Probability Index was used to identify whether the household was low-income or not as at baseline to ensure consistency. As shown in Table 9, the number of low-income households has grown since baseline. This may be due to COVID-19, which had a detrimental effect on the country's economy. During the COVID-19 pandemic, vulnerable groups reported a loss of income or jobs due to lockdown and border closures, increased consumer and food prices, limited access to quality health care and other basic social services that involve paying out of pocket, reducing savings or other assets (Azhgaliyeva et al., 2022). The pandemic affected the low-income household the most. The rural poor have suffered from declining remittances and limited access to health and other social services that may not be available locally. During the lockdown, they lost most or all of their income (and savings), and there was no opportunity for subsistence agriculture in cities. Since the spring of 2020, a high inflation rate has been observed in Kyrgyzstan against the backdrop of the coronavirus pandemic, with food prices rising the most. In September 2021, compared to December of the previous year, food products in the country rose by 7.4% (Azattyk, 2021). According to the World Bank, the poverty rate increased by 11% and reached 31% at the end of 2020. Almost 2.2 million people live on 96 soms or 1.1 US dollars per day (at the rate of the National Bank of the Kyrgyz Republic) (Kudryatsova, 2021). The number of households resorting to "crisis" and "emergency" type strategies such as selling assets, cutting spending on essential non-food items, selling property, and applying for humanitarian assistance increased from 12% in 2020 to 36% in 2021. In about 13% of households, at least one migrant family member returned to the country, and 81% of returned migrants did not find work upon arrival; the rest found temporary work (National Statistical Committe of Kyrgyz Republic and WFP, 2021).

5.2.6. Analysis of quantitative data

To conduct the Dif-in-Dif analysis, survey data for parents/caregivers from the baseline and endline studies were consolidated into a single database. Composite mean scores for each construct (e.g., accountability, responsiveness, empowerment) were calculated for project and comparison schools. Using these mean scores, the Dif-in-Dif analysis was carried out in STATA to assess whether the project had a sustained impact by identifying differences in the differences of the mean scores of the project and comparison schools at T1 – T2 (Fredriksson and Oliveira, 2019). The above design made two assumptions: 1) project schools would have followed the same pattern in school governance as comparison schools if no project intervention had been made, and 2) any external factors may have affected school governance in project and comparison schools similarly. For these assumptions to hold true, comparison regions were carefully selected at baseline to match project regions in terms of the cultural context, ethnic composition, socio-economic development, and population size.

To ensure that results were interpreted meaningfully in the given context and design of the study, the significance level for interpreting results was raised to 0.1. Statistically significant differences were considered as the impact of the project. Further, Kruskal Wallis Test was used to identify statistically significant differences in the mean scores of individual measurement items of the project and comparison schools between T1 and T2.

Data preparation and checks were carried out, which included addressing issues of missing data, handling outliers, data verification, and validation. Survey data for parents/caregivers from the baseline and endline studies were consolidated into a single database. Composite mean scores for each construct (e.g., accountability, responsiveness, empowerment) were calculated for project and comparison schools. Using these mean scores, the Dif-in-Dif analysis was carried out in STATA to assess whether the project had a sustained impact by identifying differences in the differences of the mean scores of the project and comparison schools at T1 – T2 (Fredriksson and Oliveira, 2019). This was done for the whole sample and then for control variables such as gender and poverty that were important for the project. To ensure that results were interpreted meaningfully in the given context and design of the study, the significance level for interpreting results was raised to 0.1. Further, Kruskal Wallis Test was used to identify statistically significant differences in the mean scores of individual measurement items of the project and comparison schools between T1 and T2.

Finally, similar to baseline, aggregate percentages of positive responses ("agree," "strongly agree") for each concept were estimated to compare the aggregate percentages of the project and comparison schools at baseline and endline. To calculate the aggregate percentages, first, an average score for each respondent was calculated by taking an average of values across all questions measuring the construct. If a response was missing to at least one question, that respondent was not included in the estimation of the aggregate value. Second, a dummy variable was created. A cut-off point of "6" ("agree," "strongly agree") was used to categorise the average scores in two groups: 0 was given to scores below the determined cut-off point and 1 was given to scores equal to or above the determined cut-off point. Lastly, the percentage of respondents who had an average score above the cut-off point (coded as 1 in a dummy variable) was calculated.

Table 8
Sample characteristics of parents/caregivers.

Characteristic	Baseline		Endline	
	Project schools (n = 840)	Comparison schools (n = 840)	Project schools (n = 878)	Comparison schools (n = 872)
Gender				
Male	173 (21%)	193 (23%)	310 (35%)	274 (31%)
Female	667 (79%)	647 (77%)	568 (65%)	598 (69%)
Parents/ caregiver type				
I am a parent	-	-	824 (94%)	802 (92%)
I am a primary caregiver (mostly grandparents)	-	-	53 (6%)*	68 (8%)* *

Note: *Data for one respondent are missing. * * Data for two respondents are missing.

Table 9
Numbers of poor and non-poor households at baseline and endline.

Characteristic	Baseline		Endline	
	Project schools (n = 840)	Comparison schools (n = 840)	Project schools (n = 878)	Comparison schools (n = 872)
Poor	158	182	326	370
Non-poor	682	658	552	502

5.3. Qualitative component

Forty-two semi-structured KIIs were conducted in the project and comparison sites with parents/caregivers, school management, local authority representatives, MoES representatives at the regional level, BoTs, and project field facilitators (Table 10). KIIs were spread across various areas to ensure that interviewees represented different parts of the country, including urban and rural settings. Interviews lasted between 30 and 60 min. In the project sites, interviewees were selected

Table 10
Numbers of KIIs.

Key stakeholder	*Project schools/ sites*	*Comparison schools/ sites*
Parents/caregivers	4	
School management	11	4
Local Authority representatives	7	3
Ministry of Education and Science at the regional levels	4	1
Associations of BoTs	5	
Project field facilitators	3	
Total	34	8

using a purposive sampling method. In consultation with the project team members and other relevant actors such as school management, individuals with particular insights or characteristics (e.g., those who were actively involved in the project) were invited to the interviews for a detailed exploration of the central themes of the endline study (Ritchie and Lewis, 2003). In the comparison sites, individuals who held positions relevant to the purpose of the endline study were invited to the interviews. Among parents/caregivers, volunteers were invited to the interviews.

Seventeen GDs were held with parents/caregivers, students, BoT members, and CEFs. FGDs were also spread across various areas (Table 11). Due to the COVID-19 situation, around eight people were invited to each FGD in consultation with the project team and school management (where relevant). Each FGD lasted between 60 and 90 min. In the project sites, FGDs explored the experiences of the project participants project's impact on school management and community involvement. In the comparison schools, FGDs explored the situation with school management and parents' engagement in school life. 225 individuals were part of the KIIs and FGDs (175 in the project sites and 50 in the comparison sites), with 32% of the sample being men and 68% being women.

5.3.1. Analysis of qualitative data

All KIIs and FGDs were audio-recorded with the permission of respondents. The recordings were transcribed verbatim. Using a thematic approach, the transcripts were coded. Each code was reviewed to explore and compare experiences between and across participants and identify the recurrent themes. The qualitative analysis focused on the achievements and shortcomings of the project intervention. Quotes presented in this article were selected to contextualise the quantitative findings. Key critical points are also discussed in the relevant sections.

5.4. Ethics

The research team followed the fundamental ethical principles of social research: voluntary participation, informed consent, confidentiality/anonymity, and no harm (security and safety). A support letter from the MoES was acquired to access schools. The research team approached school management with this letter to gain their approval to conduct the study. Data collection started only when permission from school management was granted. Additionally, parents/caregivers of children were contacted to acquire consent for their child's participation in the study.

Table 11
Numbers of FGDs.

Key stakeholder	*Intervention schools/ sites*	*Comparison schools/ sites*
Parents/caregivers	4	2
BoT representatives	6	2
Community Engagement Facilitators	3	
Total	13	4

6. Findings

6.1. Teacher accountability

The DID analysis has identified a statistically significant difference (DID = 0.187, p = .003) between the project and comparison scores over time. The project mean score has increased between baseline and endline (5.657 at T1 – 5.881 at T2), while the comparison mean score has stayed in the same range (5.815 at T1 – 5.852 at T2) (Fig. 4, Fig. 5).

The over time difference between the project and comparison schools is further evident from the percentages of positive responses ("agree", "strongly agree") (Table 12). At baseline, the percentages of the project schools were consistently lower than those of the comparison schools. As the DID analysis showed, this difference at baseline was statistically significant. The aggregate percentage of the project schools has seen a significant 19% increase since baseline (51.80% at T1 – 70.80% at T2) (Table 12).

Regarding individual measurement items, the percentages of the comparison schools have stayed in the same range with insignificant increases at endline. The percentages of the project schools have increased significantly for most measurement items since baseline (Table 12). At endline, more parents/caregivers in the project school agreed that (i) their teacher reported back to parents/caregivers on how the collected voluntary contributions/fees of parents/caregivers were spent, (ii) they received a clear explanation from the teacher about the teaching curriculum, (iii) they received clear and user-friendly information from the teacher on the academic performance of their child.

Similar to the general trend, the DID analysis disaggregated by gender has shown statistically significant differences over time in the respective mean scores of the male (DID = 0.371, p = .004) and female (DID = 0.132, p = .061) participants from the project and comparison schools (Figs. 6–7). The mean scores of male and female participants from the project schools have increased between baseline and endline. The mean score of the male participants from the comparison schools has decreased slightly, while their female counterparts have had a slight increase in their mean score (Figs. 6–7).

Following the general trend, more male and female participants from the project school at endline agreed with the statements on teacher accountability, which can be seen from their respective aggregate percentages in Table 13. The largest increase for male parents/caregivers of the project schools has been for the statements *"I receive clear explanation from the teacher about the teaching curriculum that are used in the class"* and *"When funds (voluntary contributions/fees) are collected from parents, the teacher reports back to parents/caregivers on how the collected funds"*. The former statement has also seen the largest increase for female parents/caregivers of the project schools.

The over time difference in the mean scores of the poor (DID = 0.399, p = .000) and non-poor respondents (DID = 0.144, p = .063) from the

Timeline/school type	Mean score	P-value
Baseline (T1)		
Project	5.657	
Comparison	5.815	
Difference (P-C)	-0.158	.000***
Endline (T2)		
Project	5.881	
Comparison	5.852	
Difference (P-C)	0.029	.502
Diff-in-Diff	0.187	.003***

*** p<0.01; ** p<0.05; * p<0.1

Fig. 4. DID analysis for teacher accountability (all sample).

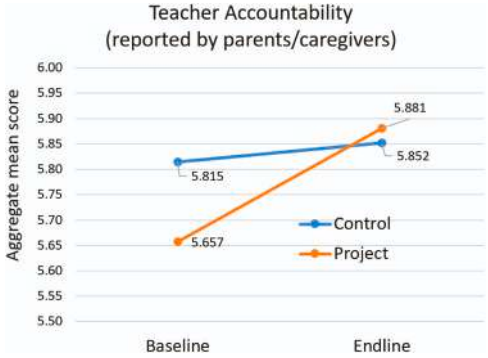

Fig. 5. Mean score of the project and comparison schools for teacher accountability at baseline and endline (all sample).

project and comparison schools have been identified significant (Figs. 8–9). The difference for the poor was driven by the increase in the mean score of the poor from the project schools and a decrease in the mean score of the poor from the comparison schools (Fig. 9). The non-poor from both project and comparison schools have seen an increase in their respective mean scores; nonetheless, the non-poor from the project schools has had a larger increase than those from the comparison schools (Fig. 8).

The analysis of the positive responses (agree, strongly agree) has revealed that both the poor and non-poor from the project schools had lower agreement levels at baseline than their counterparts from the comparison schools (Table 14). At endline, it is clear from the table that the poor and non-poor from the project schools agreed more with all the measurement items; while, those from the comparison schools expressed almost the same level of agreement as at baseline with the exception of item 3 (Table 14). Most importantly, the analysis of the aggregate percentage indicates that the poor from the project school have had a 24.40% (vs. 17.60% for the non-poor) increase since baseline (Table 14), suggesting that the efforts of the project to influence the poor appears to have worked.

At FGDs, parents/caregivers from the project schools said that they had been receiving more information in the past three years about their child's academic performance, study plans, teaching approaches, and different educational activities that happen at school:

> *"Teachers give us information: on which subjects our children do well and on which subjects they do not do well. The teacher asks us to help children with the subjects they are not doing well. They [teachers] also give us information about study plans. Teachers provide all this information." (FGD with parents/caregivers, Bishkek city)*

Parents/caregivers from the project schools also talked at FGDs about improved reporting of teachers on the collected voluntary contributions/fees. As the quotes below indicate, some parents did not pay attention before to how the collected funds were spent. They wondered if the funds had really been spent on the purpose. However, in the past three years, parents/caregivers started receiving reports from teachers on how the collected contributions/fees were spent, which made them more motivated to support the school:

> *"The collected contributions/fees in the class are normally spent on hand sanitisers, face masks, pails, and dust cloths for cleaning. They [teachers] take photos of whatever they buy like 1–2 packs of face masks, mobs, and*

Timeline/school type	Score	P-value
Baseline (T1)		
Project	5.513	
Comparison	5.789	
Difference (P-C)	-0.276	.007***
Endline (T2)		
Project	5.819	
Comparison	5.724	
Difference (P-C)	0.095	.240
Diff-in-Diff	0.371	.004***

*** p<0.01; ** p<0.05; * p<0.1

Fig. 6. DID analysis for teacher accountability (male participants).

Timeline/school type	Score	P-value
Baseline (T1)		
Project	5.695	
Comparison	5.822	
Difference (P-C)	-0.127	.008***
Endline (T2)		
Project	5.915	
Comparison	5.910	
Difference (P-C)	0.005	.928
Diff-in-Diff	0.132	.061*

*** p<0.01; ** p<0.05; * p<0.1

Fig. 7. DID analysis for teacher accountability (female participants).

Table 12
Percentages of positive responses (agree, strongly agree) for measurement items on teacher accountability ppend.

Teacher accountability reported by parents/caregivers	Baseline (T1) Project (N = 840)	Baseline (T1) Comparison (N=840)	Difference	Endline (T2) Project (N=878)	Endline (T2) Comparison (N=872)	Difference	Difference T2-T1 for project schools	Sig. (p-value)	Difference T2-T1 for comparison schools	Sig. (p-value)
Aggregate percentage of responses for all questions	51.80%	61.90%	-10.10%	70.80%	65.60%	5.20%	19.00%	***	3.70%	
By items										
1. Teacher regularly provides me with clear and user-friendly information on the academic performance of my child.	77.40%	82.40%	-5.00%	88.10%	88.20%	-0.10%	10.70%	***	5.80%	
2. Classes at our school never get cancelled (except due to weather conditions).	79.30%	80.40%	-1.10%	85.80%	80.70%	5.10%	6.50%		0.30%	
3. I receive clear explanation from the teacher about the teaching curriculum that are used in the class.	57.10%	65.30%	-8.20%	73.10%	73.10%	0.00%	16.00%	***	7.80%	
4. When funds (voluntary contributions/fees) are collected from parents/caregivers, the teacher reports back to parents/caregivers on how the collected funds	70.90%	74.70%	-3.80%	84.50%	77.00%	7.50%	13.60%	*	2.30%	

*** p<0.001; ** p<0.01; * p<0.05

Table 13
Percentages of positive responses (agree, strongly agree) for measurement items on teacher accountability, disaggregated by gender.

Teacher accountability reported by parents/caregivers	Baseline (T1) Project (male N = 173) (female N = 667)	Baseline (T1) Comparison (male N = 193) (female N = 647)	Difference	Endline (T2) Project (male N = 310) (female N = 568)	Endline (T2) Comparison (male N = 274) (male N = 598)	Difference	Difference T2-T1 for project schools	Sig. (p-value)	Difference T2-T1 for comparison schools	Sig. (p-value)
Aggregate percentage of responses for all questions										
Male	47.40%	61.10%	-13.70%	68.90%	67.30%	1.60%	21.50%	***	6.20%	
Female	52.90%	62.10%	-9.20%	71.90%	64.80%	7.10%	19.00%	***	2.70%	
1. Teacher regularly provides me with clear and user-friendly information on the academic performance of my child.										
Male	74.60%	82.40%	-7.80%	83.20%	88.30%	-5.10%	8.60%	**	5.90%	
Female	78.10%	82.40%	-4.30%	90.70%	88.10%	2.60%	12.60%	***	5.70%	
2. Classes at our school never get cancelled (except due to weather conditions).										
Male	78.60%	81.30%	-2.70%	88.10%	82.10%	6.00%	9.50%	*	0.80%	
Female	79.50%	80.20%	-0.70%	84.50%	80.10%	4.40%	5.00%		-0.10%	
3. I receive clear explanation from the teacher about the teaching curriculum that are used in the class.										
Male	52.00%	65.80%	-13.80%	65.50%	67.20%	-1.70%	13.50%	***	1.40%	
Female	58.50%	65.10%	-6.60%	77.30%	75.90%	1.40%	18.80%	***	10.80%	**
4. When funds (voluntary contributions/fees) are collected from parents/caregivers, the teacher reports back to parents/caregivers on how the collected funds										
Male	67.60%	70.50%	-2.90%	80.60%	74.10%	6.50%	13.00%	***	3.60%	
Female	71.70%	76.00%	-4.30%	86.60%	78.40%	8.20%	14.90%	***	2.40%	

*** p<0.001; ** p<0.01; * p<0.05

Timeline/school type	Score	P-value
Baseline (T1)		
Project	5.663	
Comparison	5.759	
Difference (P-C)	-0.096	.061**
Endline (T2)		
Project	5.865	
Comparison	5.817	
Difference (P-C)	0.048	.408
Diff-in-Diff	0.144	.063*

*** p<0.01; ** p<0.05; * p<0.1

Fig. 8. DID analysis for teacher accountability (participants falling under the category of the non-poor).

Timeline/school type	Score	P-value
Baseline (T1)		
Project	5.626	
Comparison	6.016	
Difference (P-C)	-0.39	.000***
Endline (T2)		
Project	5.908	
Comparison	5.899	
Difference (P-C)	0.009	.881
Diff-in-Diff	0.399	.000***

*** p<0.01; ** p<0.05; * p<0.1

Fig. 9. DID analysis for teacher accountability (participants falling under the category of the poor).

brooms and send them to us over WhatsApp". (FGD with parents/caregivers, Osh city)

"More information is provided than before. We did not pay attention before. We used to wonder if they [teachers] would do it or not [spend the funds on purpose]. Now there are more people who have become interested in contributing. They [teachers] provide information about the budget and school". (FGD with parents/caregivers, Naryn province)

6.2. Teacher responsiveness

A significant difference (DID = 0.193, p = .001) in the mean scores of the surveyed parents/caregivers from the project schools relative to comparison schools was observed over time (Fig. 10). The mean score of the project schools has increased from 5.630 at T1 to 5.988 at T2. The comparison schools have also seen an increase in the mean score but to a smaller extent (from 5.799 at T1 to 5.964 at T2) (Fig. 11).

Table 14 indicates that, at baseline, survey respondents from the project schools agreed less with all the measurement items on teacher responsiveness than their counterparts in the comparison schools. At endline, the situation has shifted since the project school's agreement percentages have exceeded those from the comparison schools. Notably, the aggregate percentage of the project schools has increased by 22.10% since baseline (from 53.40% to 75.50%). More respondents in the project schools agreed at endline that their teacher ensured their teaching met the needs of children and were satisfied with the way the teacher handled their complaints and suggestions (Table 15). The comparison schools also seem to have experienced significant changes but to a much lesser degree (Table 15).

Disaggregation by gender identified significant differences in the mean scores of the project and comparison schools between baseline and endline: DID = 0.257, p = .031 for male participants and DID = 0.173, p = .015 for female participants. These differences are evident despite the fact that the mean scores have also slightly increased in the comparison projects (Figs. 12–13).

Table 16 shows that the percentage of positive responses (agree, strongly agree) of male and female parents/caregivers from the project schools has significantly surged since baseline. Similar to the general trend, significant changes were reported both by men and women concerning items 1 and 3 in Table 17. In the comparison schools, the small changes are significant only for female respondents (Table 16).

The category of the poor from the project and comparison schools

Table 14
Percentages of positive responses (agree, strongly agree) for measurement items on teacher accountability, disaggregated by income level.

Teacher accountability reported by parents/caregivers	Baseline (T1) Project (poor N = 158) (non-poor N = 682)	Baseline (T1) Comparison (poor N = 182) (non-poor N = 658)	Difference	Endline (T2) Project (poor N = 326) (non-poor N =552)	Endline (T2) Comparison (poor N = 370) (non-poor N = 502)	Difference	Difference T2-T1 for project schools	Sig. (p-value)	Difference T2-T1 for comparison schools	Sig. (p-value)
Aggregate percentage of responses for all questions										
Poor	46.50%	76.40%	-29.90%	70.90%	67.60%	3.30%	24.40%	***	-8.80%	
Non-poor	53.20%	57.80%	-4.60%	70.80%	64.10%	6.70%	17.60%	***	6.30%	
1. Teacher regularly provides me with clear and user-friendly information on the academic performance of my child.										
Poor	78.00%	90.00%	-12.00%	86.20%	90.60%	-4.40%	8.20%	*	0.60%	
Non-poor	78.00%	80.00%	-2.00%	89.10%	86.40%	2.70%	11.10%	***	6.40%	
2. Classes at our school never get cancelled (except due to weather conditions).										
Poor	80.00%	88.00%	-8.00%	89.60%	85.20%	4.40%	9.60%	*	-2.80%	
Non-poor	79.00%	78.00%	1.00%	83.50%	77.40%	6.10%	4.50%		-0.60%	
3. I receive clear explanation from the teacher about the teaching curriculum that are used in the class.										
Poor	58.00%	78.00%	-20.00%	73.30%	70.70%	2.60%	15.30%	**	-7.30%	*
Non-poor	56.90%	62.00%	-5.10%	73.00%	75.00%	-2.00%	16.10%	***	13.00%	***
4. When funds (voluntary contributions/fees) are collected from parents/caregivers, the teacher reports back to parents/caregivers on how the collected funds										
Poor	69.00%	87.70%	-18.70%	80.40%	80.60%	-0.20%	11.40%	**	-7.10%	*
Non-poor	71.00%	73.40%	-2.40%	87.00%	74.40%	12.60%	16.00%	***	1.00%	

*** p<0.001; ** p<0.01; * p<0.05

Timeline/school type	Score	P-value
Baseline (T1)		
Project	5.630	
Comparison	5.799	
Difference (P-C)	-0.169	.000***
Endline (T2)		
Project	5.988	
Comparison	5.964	
Difference (P-C)	0.024	.572
Diff-in-Diff	0.193	.001***
*** p<0.01; ** p<0.05; * p<0.1		

Fig. 10. DID analysis for teacher responsiveness (all sample).

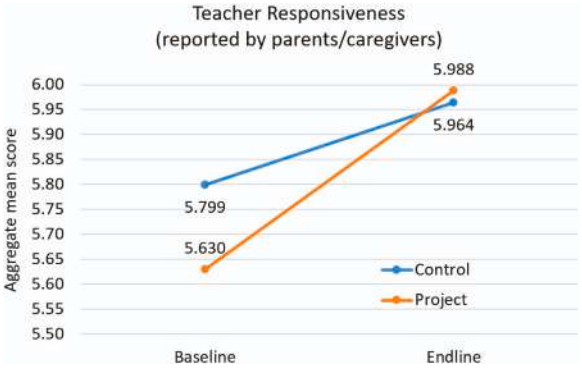

Fig. 11. Mean score of the project and comparison schools for teacher responsiveness at baseline and endline (all sample).

have had a significant difference in the mean scores over time (DID=0.438, p = .000) (Fig. 15), which has been driven by the increase in the mean score of the poor from the project schools (5.610 at T1 – 5.989 at T2) and decrease of the mean score of the poor from the comparison schools (6.035 at T1 – 5.976 at T2) (Fig. 15). An over time difference in the mean scores of the non-poor from the project and comparison schools has also been identified as significant (DID = 0.131, p = .078), driven by a more considerable increase in the mean score of the non-poor from the project schools than that of the non-poor from the comparison schools (Fig. 14).

The differences are further demonstrated in Table 17. The poor and non-poor from the project schools have seen significant increases in their aggregate percentages of positive responses (agree, strongly agree). Similar to the general trends, considerable changes have occurred in items 1 and 3 in Table 17. In comparison schools, only the non-poor seem to have had significant increases in their agreement levels for Items 1 and 3 (Table 17).

Parents/caregivers from the project schools at FGDs shared some positive observations about teaching approaches. For example, at FGD in Jeti-Oguz, parents/caregivers from the project schools said that some teachers spare additional time after lessons for children who need extra support with understanding the topics that they had been covering during the lessons or for preparing for the national tests:

> *"According to my observations, some teachers provide additional support to children after the classes. It is hard to ensure that 25–30 children understand the topic in 45 min. These teachers provide additional support to children after school. The national tests for the 11th-grade students are on Kyrgyz language and mathematics. Children receive additional support for the Kyrgyz language. They [teachers] provide additional teaching to them. This maybe 15-minute consultations" (FGD with parents/caregivers, Jeti-Oguz district, Issyk-Kul province)*

Some schools came up with a new approach to engaging children in studying. They organised a swap day where children had to teach their peers instead of teachers. Parents/caregivers noted that such an approach motivated children of different academic performances to engage and prepare for classes that they had to teach:

> *"There are changes [in teaching methods]. We did a swap day. Children of the 11th grade prepared and conducted lessons. … It was good. For example, children who study well always come prepared. But children who study average, their level of academic performance is not the same. So these children also had to engage with their studies to teach the lessons. So it improved the education level" (FGD with parents/caregivers, Jeti-Oguz district, Issyk-Kul province)*

Table 15
Percentages of positive responses (agree, strongly agree) for measurement items on teacher responsiveness.

Teacher responsiveness reported by parents/caregivers	Baseline (T1)			Endline (T2)			Difference T2-T1 for project schools	Sig. (p-value)	Difference T2-T1 for comparison schools	Sig. (p-value)
	Project (N = 840)	Comparison (N=840)	Difference	Project (N=878)	Comparison (N=872)	Difference				
Aggregate percentage of responses for all questions	53.40%	64.80%	-11.40%	75.50%	72.50%	3.00%	22.10%	***	7.70%	**
By items										
1. Teacher ensures that their teaching meets the needs of my child.	59.50%	64.90%	-5.40%	79.70%	75.10%	4.60%	20.20%	***	10.20%	**
2. Teacher welcomes participation of parents in school life.	80.20%	83.10%	-2.90%	85.10%	81.70%	3.40%	4.90%		-1.40%	
3. I am satisfied with the way the teacher responds and acts upon my complaint or suggestions.	61.80%	71.20%	-9.40%	82.70%	81.40%	1.30%	20.90%	***	10.20%	**

*** p<0.001; ** p<0.01; * p<0.05

Timeline/school type	Score	P-value
Baseline (T1)		
Project	5.644	
Comparison	5.844	
Difference (P-C)	-0.2	.032**
Endline (T2)		
Project	5.929	
Comparison	5.872	
Difference (P-C)	0.057	.442
Diff-in-Diff	0.257	.031**

*** p<0.01; ** p<0.05; * p<0.1

Fig. 12. DID analysis for teacher responsiveness (male participants).

Timeline/school type	Score	P-value
Baseline (T1)		
Project	5.627	
Comparison	5.786	
Difference (P-C)	-0.159	.001**
Endline (T2)		
Project	6.02	
Comparison	6.006	
Difference (P-C)	0.014	.790
Diff-in-Diff	0.173	.015**

*** p<0.01; ** p<0.05; * p<0.1

Fig. 13. DID analysis for teacher responsiveness (female participants).

6.3. School management accountability

A positive impact of the project on the school management accountability in the project schools was seen (DID = 0.176, p = .084). The mean score of the project schools has increased since baseline (5.377 at T1 – 5.752 at T2) (Fig. 16). The mean score of the comparison schools has also increased at the endline (5.531 at T1 – 5.730 t T2), but it is slightly lower than the mean score of the project schools (Fig. 17).

The number of parents/caregivers from the project schools positively assessing school management accountability has soared (47.1.% at T1 – 71.80% at T2) since baseline, showing an almost 24% increase (Table 18). The largest (significant) change has taken place with regard to item 1. Around 22% more respondents in the project schools at the endline than at baseline said that school management informed them about the quality control measures taken to ensure the quality of teaching (Table 18). The parents/caregivers from the comparison schools also seem to have experienced significant changes since baseline but to a lesser extent than those from the project schools (Table 18).

Differences have been identified in the mean scores of male and female survey participants from the project and comparison schools over time (Figs. 18–19). However, the difference is statistically significant only for female participants (DID = 0.165, p = .060), as women from the project schools have had a more considerable increase in their mean score than those from the comparison schools (Fig. 19). The difference for male participants is not significant because the difference in the mean scores of the project and comparison schools at the endline has not been large enough (Fig. 18).

The project schools have had a significant increase in the percentage of male and, particularly, female survey participants, who expressed agreement with all the measurement items on school management accountability. A notable change can be seen in item 1 in Table 19. At endline, much higher percentages of male (53.80% at T1 – 74.20% at T2) and female (58.20% at T1 – 81.70% at T2) respondents in the project schools reported that school management informed them about the quality control measures taken to ensure the quality of teaching (Table 19). The male and female parents/caregivers from the comparison schools also have had significant increases since baseline but to a lower extent (Table 19).

The over time difference in the mean scores of the poor from the project and comparison schools has been identified as significant (DID = 0.333, p = .025) (Fig. 21), driven by the increase in the mean score of the poor from the project schools (5.361 at T1 – 5.713 at T2) and decrease in the mean score of the poor from the comparison schools (5.759 at T1 – 5.778 at T2) (Fig. 21). The difference for the non-poor (DID = 0.079, p = .306) is not significant as the difference in the increases in the mean scores of the non-poor from the project and comparison schools has not been sufficient to meet the significance level (Fig. 20).

Table 20 shows the aggregate percentage of the poor from the project schools, who agreed with the measurement items on school management accountability, has risen by 22.50% since baseline. This value is 24% for the non-poor from the project schools. In the comparison schools, only the non-poor have seen a significant increase of 16.70% since baseline (Table 20). This explains why the difference between the non-poor of the project and comparison schools in the DID analysis was insignificant.

Parents/caregivers from the project schools said that their schools had put much effort into improving the quality of education in the past three years. They repeatedly talked about IT equipment that schools had acquired (mostly within the AKF supported grants, where 50% of the budget was experienced to be contributed by the communities) and how it contributed to the improvement of education:

> *"Efforts to improve the quality of education have intensified last year and this year. Efforts are being made to install interactive boards in each class*

Table 16
Percentages of positive responses (agree, strongly agree) for measurement items on teacher responsiveness, disaggregated by gender.

Teacher responsiveness reported by parents/caregivers	Baseline (T1) Project (male N = 173) (female N = 667)	Baseline (T1) Comparison (male N = 193) (female N = 647)	Difference	Endline (T2) Project (male N = 310) (female N = 568)	Endline (T2) Comparison (male N = 274) (male N = 598)	Difference	Difference T2-T1 for project schools	Sig. (p-value)	Difference T2-T1 for compariso n schools	Sig. (p-value)
Aggregate percentage of responses for all questions										
Male	52.90%	66.80%	-13.90%	73.90%	72.50%	1.40%	21.00%	***	5.70%	
Female	53.50%	64.10%	-10.60%	76.50%	72.50%	4.00%	23.00%	***	8.40%	**
By items										
1. Teacher ensures that their teaching meets the needs of my child.										
Male	56.10%	68.90%	-12.80%	76.10%	71.50%	4.60%	20.00%	***	2.60%	
Female	60.40%	63.70%	-3.30%	81.70%	76.80%	4.90%	21.30%	***	13.10%	***
2. Teacher welcomes participation of parents in school life.										
Male	82.70%	83.40%	-0.70%	84.80%	82.50%	2.30%	2.10%		-0.90%	
Female	79.60%	83.00%	-3.40%	85.20%	81.40%	3.80%	5.60%		-1.60%	
3. I am satisfied with the way the teacher responds and acts upon my complaint or suggestions.										
Male	56.60%	74.60%	-18.00%	78.40%	77.70%	0.70%	21.80%	***	3.10%	
Female	63.10%	70.20%	-7.10%	85.00%	83.10%	1.90%	21.90%	***	12.90%	**

*** p<0.001; ** p<0.01; * p<0.05

Table 17
Percentages of positive responses (agree, strongly agree) for measurement items on teacher responsiveness, disaggregated by income level.

Teacher responsiveness reported by parents/caregivers	Baseline (T1) Project (poor N = 158) (non-poor N = 682)	Baseline (T1) Comparison (poor N = 182) (non-poor N = 658)	Difference	Endline (T2) Project (poor N = 326) (non-poor N =552)	Endline (T2) Comparison (poor N = 370) (non-poor N = 502)	Difference	Difference T2-T1 for project schools	Sig. (p-value)	Difference T2-T1 for compariso n schools	Sig. (p-value)
Aggregate percentage of responses for all questions										
Poor	52.90%	78.60%	-25.70%	76.20%	74.70%	1.50%	23.30%	***	-3.90%	
Non-poor	53.50%	60.90%	-7.40%	75.20%	70.90%	4.30%	21.70%	***	10.00%	***
By items										
1. Teacher ensures that their teaching meets the needs of my child.										
Poor	61.00%	79.00%	-18.00%	79.80%	75.00%	4.80%	18.80%	***	-4.00%	
Non-poor	59.00%	61.00%	-2.00%	79.70%	75.20%	4.50%	20.70%	***	14.20%	***
2. Teacher welcomes participation of parents in school life.										
Poor	78.00%	88.00%	-10.00%	83.10%	83.90%	-0.80%	5.10%		-4.10%	
Non-poor	81.00%	81.00%	0.00%	86.20%	80.20%	6.00%	5.20%		-0.80%	
3. I am satisfied with the way the teacher responds and acts upon my complaint or suggestions.										
Poor	65.00%	86.00%	-21.00%	83.10%	84.10%	-1.00%	18.10%	***	-1.90%	
Non-poor	61.00%	67.00%	-6.00%	82.40%	79.40%	3.00%	21.40%	***	12.40%	***

*** p<0.001; ** p<0.01; * p<0.05

Timeline/school type	Score	P-value
Baseline (T1)		
Project	5.635	
Comparison	5.734	
Difference (P-C)	-0.099	.045**
Endline (T2)		
Project	5.987	
Comparison	5.955	
Difference (P-C)	0.032	.563
Diff-in-Diff	0.131	.078*

*** p<0.01; ** p<0.05; * p<0.1

Fig. 14. DID analysis for teacher responsiveness (participants falling under the category of the non-poor).

Timeline/school type	Score	P-value
Baseline (T1)		
Project	5.610	
Comparison	6.035	
Difference (P-C)	-0.425	.000***
Endline (T2)		
Project	5.989	
Comparison	5.976	
Difference (P-C)	0.013	.839
Diff-in-Diff	0.438	.000***

*** p<0.01; ** p<0.05; * p<0.1

Fig. 15. DID analysis for teacher responsiveness (participants falling under the category of the poor).

to enhance the quality of education. I think the school administration is doing well." (FGD with parents/caregivers, Alai district, Osh province)

Parents/caregivers from the project schools stated that information about the budget and funds was now provided, mostly, at the school meetings. They particularly appreciated that schools report on each expenditure by showing receipts (FGD parents, Bishkek city and Alai district, Osh province). This appears not to have happened before the project.

Timeline/school type	Score	P-value
Baseline (T1)		
Project	5.377	
Comparison	5.531	
Difference (P-C)	-0.154	.005***
Endline (T2)		
Project	5.752	
Comparison	5.730	
Difference (P-C)	0.022	.681
Diff-in-Diff	0.176	.084*

*** p<0.01; ** p<0.05; * p<0.1

Fig. 16. DID analysis for school management accountability (all sample).

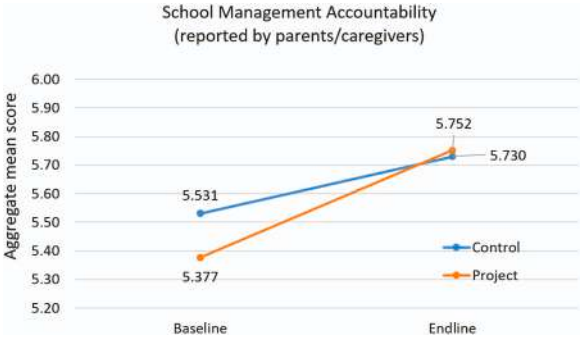

Fig. 17. Mean score of the project and comparison schools for school management accountability at baseline and endline (all sample).

6.4. School management responsiveness

The over time difference in the mean scores of the project and comparison schools on school management responsiveness has been found statistically insignificant (DID = 0.079, p = .273) (Fig. 22). This is because the mean scores of the project and comparison schools were close at baseline and, notably, have increased at endline almost to the same extent (Fig. 23).

Nonetheless, the analysis of the positive responses (agree, strongly agree) to school management responsiveness items has revealed a 27.30% increase in the aggregate percentage of the project schools. The aggregate percentage of the project schools has increased from 46.30% at T1 to 73.60% at T2 (Table 21). Especially, the percentage of parents/caregivers from the project schools agreeing that school expenditures are aligned with school needs has increased by 29.40% since baseline (Table 21). The percentage of respondents from the project schools reporting that the school was responsive to the priorities expressed by parents/caregivers has also increased significantly at the endline. Table 21 also demonstrates that the increase in the aggregate score of the comparison schools is driven by the increase in the percentages of respondents agreeing more at the endline with item 1.

Similar to the above, the outcomes of the DID analysis disaggregated by gender have not been found statistically significant, even though it can be observed that the mean scores of both male and female participants from the project schools have increased since baseline (Figs. 24–25).

The aggregate percentage of the positive responses of female respondents from the project schools has increased by 28.40% at endline. The aggregate percentage of the male participants has also seen an increase of 21.80%. Slightly more female participants in the project schools (30.90%) than male participants (28.30%) tended to agree that school expenditures were aligned with school needs. Slightly more male participants (22.80%) than female participants (21.60%) agreed that school was responsive to the priorities expressed by parents (Table 22).

The over time difference in the mean scores of the poor and non-poor from the project and comparison schools has been found statistically insignificant (Figs. 30–31), though it is clear that both categories from the project schools have seen an increase in their respective mean scores since baseline. However, the poor and non-poor from the comparison schools also seem to have had an increase in their mean scores between baseline and endline (Figs. 26–27).

Since baseline there have been significant increases in the poor and non-poor from the project school agreeing with all items measuring school management responsiveness (Table 23). The non-poor in the project schools seem to have higher percentages across the measurement items (especially items 2 and 3) than the poor (Table 23). This is interesting since it was noted during interviews that schools and BoTs tried to involve parents/caregivers who could act as sponsors and fund

Timeline/school type	Score	P-value
Baseline (T1)		
Project	5.260	
Comparison	5.447	
Difference (P-C)	-0.187	.130
Endline (T2)		
Project	5.571	
Comparison	5.647	
Difference (P-C)	-0.076	.441
Diff-in-Diff	0.111	.481

*** p<0.01; ** p<0.05; * p<0.1

Fig. 18. DID for school management accountability (male participants).

Table 18
Percentages of positive responses (agree, strongly agree) for measurement items on school management accountability.

School management accountability reported by parents/caregivers	Baseline (T1) Project (N = 840)	Baseline (T1) Comparison (N=840)	Difference	Endline (T2) Project (N=878)	Endline (T2) Comparison (N=872)	Difference	Difference T2-T1 for project schools	Sig. (p-value)	Difference T2-T1 for comparison schools	Sig. (p-value)
Aggregate percentage of responses for all questions	47.10%	52.30%	-5.20%	71.00%	66.90%	4.10%	23.90%	***	14.60%	***
By items										
1. School management informs me about the quality control measures taken to ensure the quality of teaching.	57.30%	63.60%	-6.30%	79.00%	77.10%	1.90%	21.70%	***	13.50%	***
2. Information about the school budget is readily available to parents through different public platforms (e.g., information stand, school meetings).	59.40%	63.60%	-4.20%	70.20%	67.50%	2.70%	10.80%	***	3.90%	
3. School sufficiently contacts and provides information to parents about school activities.	63.50%	70.20%	-6.70%	78.60%	78.80%	-0.20%	15.10%	***	8.60%	**

*** p<0.001; ** p<0.01; * p<0.05

Timeline/school type	Score	P-value
Baseline (T1)		
Project	5.407	
Comparison	5.555	
Difference (P-C)	-0.148	.013**
Endline (T2)		
Project	5.817	
Comparison	5.800	
Difference (P-C)	0.017	.800
Diff-in-Diff	0.165	.060*

*** p<0.01; ** p<0.05; * p<0.1

Fig. 19. DID analysis for school management accountability (female participants).

initiatives (interviews with field facilitators and FGDs with parents/caregivers, Alai district, Osh province). In the comparison sites, the non-poor appear to have experienced significant changes, mostly driven by more respondents agreeing with item 1 at endline (Table 23).

Parents/caregivers from the project school at FGDs mainly discussed how schools now welcomed the participation of parents in school life. As can be seen from the quote below, school management welcomes the participation of parents, which mostly concerns attending lessons for quality improvement and discussing various issues of schools, and attending school activities. Social media chats are again emphasised as an important channel for communication:

> *"Our school welcomes the participation of parents in school life. We, parents, discuss and agree on which lessons to attend. We attend the lessons, make a video, and share in groups. The school invites us whatever issue they have. I personally always participate in the activities. They [school] write [news/information] in the group chats" (FGD with parents/caregivers, Bishkek city)*

Despite this positive feedback, parents/caregivers noted that challenges resulting from the COVID-19 pandemic restricted their full engagement with the school as they could not meet in person for around a year, while online platforms were not always easy to use or accessible (e.g., FGD with parents/caregivers in Bishkek). Moreover, not every parent/caregiver can attend these events because of their work

Timeline/school type	Score	P-value
Baseline (T1)		
Project	5.361	
Comparison	5.759	
Difference (P-C)	-0.398	.001***
Endline (T2)		
Project	5.713	
Comparison	5.778	
Difference (P-C)	-0.065	.453
Diff-in-Diff	0.333	.025**

*** p<0.01; ** p<0.05; * p<0.1

Fig. 21. DID analysis for school management accountability (participants falling under the category of the poor).

Timeline/school type	Score	P-value
Baseline (T1)		
Project	5.381	
Comparison	5.467	
Difference (P-C)	-0.086	.152
Endline (T2)		
Project	5.734	
Comparison	5.741	
Difference (P-C)	-0.007	.920
Diff-in-Diff	0.079	.306

*** p<0.01; ** p<0.05; * p<0.1

Fig. 20. DID analysis for school management accountability (participants falling under the category of the non-poor).

Table 19
Percentages of positive responses (agree, strongly agree) for measurement items on school management accountability, disaggregated by gender.

School management accountability reported by parents/caregivers	Baseline (T1) Project (male N = 173) (female N = 667)	Baseline (T1) Comparison (male N = 193) (female N = 647)	Difference	Endline (T2) Project (male N = 310) (female N = 568)	Endline (T2) Comparison (male N = 274) (male N = 598)	Difference	Difference T2-T1 for project schools	Sig. (p-value)	Difference T2-T1 for comparison schools	Sig. (p-value)
Aggregate percentage of responses for all questions										
Male	41.30%	46.40%	-5.10%	64.60%	66.30%	-1.70%	23.30%	***	19.90%	***
Female	48.60%	54.00%	-5.40%	74.50%	67.10%	7.40%	25.90%	***	13.10%	***
By items										
1. School management informs me about the quality control measures taken to ensure the quality of teaching.										
Male	53.80%	64.20%	-10.40%	74.20%	75.90%	-1.70%	20.40%	***	11.70%	
Female	58.20%	63.40%	-5.20%	81.70%	77.60%	4.10%	23.50%	***	14.20%	***
2. Information about the school budget is readily available to parents through different public platforms (e.g., information stand, school meetings).										
Male	52.60%	58.00%	-5.40%	61.30%	63.90%	-2.60%	8.70%		5.90%	
Female	61.20%	65.20%	-4.00%	75.00%	69.20%	5.80%	13.80%	***	4.00%	
3. School sufficiently contacts and provides information to parents about school activities.										
Male	60.10%	69.40%	-9.30%	74.50%	77.40%	-2.90%	14.40%	***	8.00%	
Female	64.30%	70.50%	-6.20%	80.80%	79.40%	1.40%	16.50%	***	8.90%	***

*** p<0.001; ** p<0.01; * p<0.05

Table 20
Percentages of positive responses (agree, strongly agree) for measurement items on school management accountability, disaggregated by income level.

School management accountability reported by parents/caregivers	Baseline (T1)			Endline (T2)						
	Project (poor N = 158) (non-poor N = 682)	Comparison (poor N = 182) (non-poor N = 658)	Difference	Project (poor N = 326) (non-poor N =552)	Comparison (poor N = 370) (non-poor N = 502)	Difference	Difference T2-T1 for project schools	Sig. (p-value)	Difference T2-T1 for comparison schools	Sig. (p-value)
Aggregate percentage of responses for all questions										
Poor	49.40%	66.50%	-17.10%	71.90%	69.30%	2.60%	22.50%	***	2.80%	
Non-poor	46.50%	48.40%	-1.90%	70.50%	65.10%	5.40%	24.00%	***	16.70%	***
By items										
1. School management informs me about the quality control measures taken to ensure the quality of teaching.										
Poor	62.00%	62.00%	0.00%	79.40%	77.70%	1.70%	17.40%	***	15.70%	***
Non-poor	57.00%	72.00%	-4.00%	78.80%	76.60%	2.20%	21.80%	***	15.60%	***
2. Information about the school budget is readily available to parents through different public platforms (e.g., information stand, school meetings).										
Poor	59.00%	61.00%	-2.00%	66.30%	66.70%	-0.40%	7.30%		5.70%	
Non-poor	61.00%	75.00%	-14.00%	72.50%	68.20%	4.30%	11.50%	**	-6.80%	
3. School sufficiently contacts and provides information to parents about school activities.										
Poor	61.00%	84.00%	-23.00%	80.40%	82.50%	-2.10%	19.40%	***	-1.50%	
Non-poor	64.00%	67.00%	-3.00%	77.50%	76.00%	1.50%	13.50%	***	9.00%	

*** p<0.001; ** p<0.01; * p<0.05

Timeline/school type	Score	P-value
Baseline (T1)		
Project	5.364	
Comparison	5.365	
Difference (P-C)	-0.001	.990
Endline (T2)		
Project	5.899	
Comparison	5.821	
Difference (P-C)	0.078	.120
Diff-in-Diff	0.079	.273

*** p<0.01; ** p<0.05; * p<0.1

Fig. 22. DID analysis for school management responsiveness (all sample).

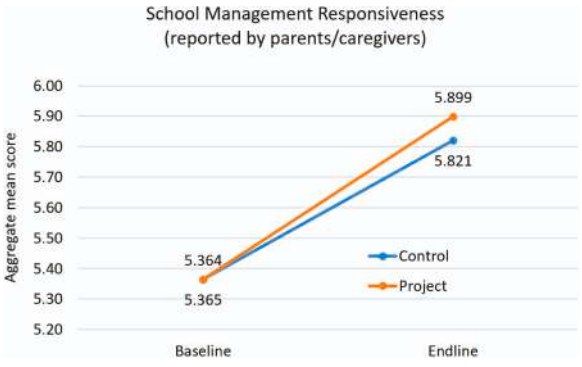

Fig. 23. Mean score of the project and comparison schools for school management responsiveness at baseline and endline (all sample).

commitments, discussed more in the section below.

6.5. Empowerment of parents

An impact of the project on parent empowerment can be observed (Fig. 28, Fig. 29). The aggregate mean score of parents/caregivers from the project school has increased since baseline (from 5.063 at T1 to 5.394 at T2); while the changes in the mean score of the parents/caregivers from the comparison school have been much smaller (5.190 at T1 – 5.296 at T2). Importantly, project schools started at a significantly lower point than comparison schools. At the endline, project schools have exceeded comparison schools (Fig. 29). The over time difference in the differences of the mean scores of the project and comparison schools are significant (DID = 0.225, p-value =.009) (Fig. 28).

The analysis of positive responses (agree, strongly agree) indicated that, on average, 5.40% fewer parents/caregivers from the project schools at baseline agreed with the statement on parent empowerment. The situation has changed at the endline as more people from project schools expressed agreement (Table 24). On average, project schools have seen an 18.60% increase in the aggregate percentages. Most significant changes have occurred in relation to items 1 and 2. More parents/caregivers from project schools at the endline agreed that parents have the opportunity to contribute to decision-making and planning activities, and parents are involved in budget decisions (Table 24).

Both male and female parents/caregivers from the project schools started at baseline at a lower point than their counterparts from the comparison schools (Figs. 30–31). At endline, the former group has superseded the latter group. However, the over time difference in the aggregate mean scores of the male and female participants from the project and comparison schools have been found significant only for female participants (DID = 0.218, p-value =.030) (Fig. 31).

Similar to the general trend presented above, the most significant changes for men and women in the project schools have concerned items 1 and 2 in Table 25. Regarding item 3, compared to baseline, 8.10% more women at endline said that they now acted as a volunteer at school or helped the school on a voluntary basis, which is understandable given that women are more active than men that emerged from the qualitative data.

Survey participants categorised as poor and non-poor from project schools had lower mean scores at baseline than those from comparison schools. At endline, as can be seen in Figs. 32–35, both groups from the project schools have superseded their fellows from the comparison schools. However, only the over time difference in the means scores of the poor from project and comparison schools has been found statistically significant (DID = 0.508, p = .002), which was driven by a sharp drop in the mean score of the poor from the comparison schools (Fig. 35) which may be connected to the increased poverty rate in light of COVID-19. As noted above, the poor households have been affected by COVID-19 most which may have limited their time to attend various events and activities.

Table 26 shows that the poor and non-poor categories from project

Table 21
Percentages of positive responses (agree, strongly agree) for measurement items on school management responsiveness.

School management responsiveness reported by parents/caregivers	Baseline (T1)			Endline (T2)			Difference E-B for project	Sig. (p-value)	Difference E-B for comparison	Sig. (p-value)
	Project (N = 840)	Comparison (N=840)	Difference	Project (N=878)	Comparison (N=872)	Difference				
Aggregate percentage of responses for all questions	46.30%	44.50%	1.80%	73.60%	66.70%	6.90%	27.30%	***	22.20%	***
By items										
1. School expenditures are aligned with school needs.	49.20%	45.90%	3.30%	78.60%	66.00%	12.60%	29.40%	***	20.10%	***
2. School is responsive to the priorities expressed by parents.	56.90%	66.80%	-9.90%	78.50%	77.30%	1.20%	21.60%	***	10.50%	***
3. School welcomes the participation of parents in school management.	63.90%	70.00%	-6.10%	79.30%	78.90%	0.40%	15.40%	***	8.90%	**

*** p<0.001; ** p<0.01; * p<0.05

Timeline/school type	Score	P-value
Baseline (T1)		
Project	5.418	
Comparison	5.258	
Difference (P-C)	0.16	.134
Endline (T2)		
Project	5.897	
Comparison	5.670	
Difference (P-C)	0.227	.008***
Diff-in-Diff	0.067	.625

*** p<0.01; ** p<0.05; * p<0.1

Fig. 24. DID analysis for school management responsiveness (male participants).

Timeline/school type	Score	P-value
Baseline (T1)		
Project	5.397	
Comparison	5.350	
Difference (P-C)	0.047	.422
Endline (T2)		
Project	5.900	
Comparison	5.891	
Difference (P-C)	0.009	.877
Diff-in-Diff	-0.038	.507

*** p<0.01; ** p<0.05; * p<0.1

Fig. 25. DID analysis for school management responsiveness (female participants).

schools have experienced significant changes in items 1 and 2. At endline, both the poor and non-poor have seen an increase in the percentages of those who agreed and strongly agreed (Table 26).

At FGDs, parents/caregivers from the project school said that more parents/caregivers were now engaged in influencing decision-making on the school budget and ensuring that expenditures were aligned with school needs. They noted that meetings are now conducted in school to discuss the budget where parents make their suggestions to address the issues and needs of the school.

"Before parents/caregiver never participated [in discussing budget]. The school budget never went beyond school administration. But now, maybe the society is developing or the level of education is rising, parents/caregivers are participating [in the discussion of the budget]. There is transparency and accountability. There are roundtables with the participation of parents/caregiver. Debates with opposing views may also happen. The decision is being now made together with parents". (FGD with parents/caregivers, Alai district, Osh province)

"Parents are involved in making decisions around the budget decision. They make suggestions. There are parents who are against it. But in general, the majority of parents agree. After all, the budget includes the necessary items. There is a meeting when the budget is planned; parents are involved, problems and needs are discussed" (FGD with parents/caregivers, Bishkek city)

Commonly, parents/caregivers said that WhatsApp groups had been created in the past three years in each class. All the information about school and performance of children is now distributed through such WhatsApp groups by their class teacher (as demonstrated in the quote below), showing the importance of the class teachers in communication and engagement with parents/caregivers. In addition, parents/caregivers indicated that teachers provide information to them via phone calls, letters, and open-door lessons when parents/caregivers are invited to attend lessons and provide their feedback. Some parents also stated that meetings had been arranged via Zoom and other similar platforms.

"There have been changes in the past three years due to technological advancement. Teachers and parents have organised [social media] groups, and they are now communicating there. There are WhatsApp groups. Information is provided about how children are studying. Information is accessible" (FGD with parents/caregivers, Osh city)

However, parents/caregivers noted that WhatsApp groups require better moderation since it may cause some arguments among parents/caregivers, making them leave groups and demotivate in the interaction with school and other parents. Stories of conflicts among parents in the social media groups have been shared, indicating that online communication also needs some rules and boundaries for effective communication.

Further, notwithstanding the positive achievements in parent empowerment to improve schools, endline participants noted that work with parents/caregivers should continue since parent engagement and empowerment require constant interaction and communication with parents/caregivers. For example, community facilitators and fieldwork facilitators repeatedly stated that it was sometimes challenging to mobilise parents/caregivers and ensure that they attend meetings and discussions as parents/caregivers. Seasonal agricultural activities were noted as a key barrier, indicating that work with parents should take into account such factors.

7. Discussion and conclusion

This paper sought to examine whether parents/caregivers observed changes in teachers' and school managements' accountability and responsiveness and experienced empowerment as a result of the AKF intervention on community engagement in school education. The AKF's project was the first of its kind in Central Asia that promoted community

Table 22
Percentages of positive responses (agree, strongly agree) for measurement items on school management responsiveness, disaggregated by gender.

School management responsiveness reported by parents/caregivers	Baseline (T1) Project (male N = 173) (female N = 667)	Baseline (T1) Comparison (male N = 193) (female N = 647)	Difference	Endline (T2) Project (male N = 310) (female N = 568)	Endline (T2) Comparison (male N = 274) (male N = 598)	Difference	Difference T2-T1 for project schools	Sig. (p-value)	Difference T2-T1 for comparison schools	Sig. (p-value)
Aggregate percentage of responses for all questions										
Male	48.60%	42.20%	6.40%	72.30%	64.00%	8.30%	23.70%	***	21.80%	***
Female	45.80%	45.20%	0.60%	74.20%	68.00%	6.20%	28.40%	***	22.80%	***
By items										
1. School expenditures are aligned with school needs.										
Male	46.20%	40.40%	5.80%	74.50%	59.10%	15.40%	28.30%	***	18.70%	***
Female	49.90%	47.40%	2.50%	80.80%	69.20%	11.60%	30.90%	***	21.80%	***
2. School is responsive to the priorities expressed by parents.										
Male	54.30%	68.90%	-14.60%	77.10%	75.20%	1.90%	22.80%	***	6.30%	
Female	57.60%	66.20%	-8.60%	79.20%	78.30%	0.90%	21.60%	***	12.10%	**
3. School welcomes the participation of parents in school management.										
Male	66.50%	70.20%	-3.70%	77.10%	75.50%	1.60%	10.60%		5.30%	
Female	63.10%	70.00%	-6.90%	80.50%	80.40%	0.10%	17.40%	***	10.40%	**

*** p<0.001; ** p<0.01; * p<0.05

Timeline/school type	Mean score	P-value
Baseline (T1)		
Project	5.135	
Comparison	5.297	
Difference (P-C)	-0.162	.214
Endline (T2)		
Project	5.394	
Comparison	5.312	
Difference (P-C)	0.082	.426
Diff-in-Diff	0.244	.142

*** p<0.01; ** p<0.05; * p<0.1

Fig. 30. DID analysis for parent empowerment (male participants).

Timeline/school type	Mean score	P-value
Baseline (T1)		
Project	5.044	
Comparison	5.157	
Difference (P-C)	-0.113	.100
Endline (T2)		
Project	5.394	
Comparison	5.289	
Difference (P-C)	0.105	.154
Diff-in-Diff	0.218	.030*

*** p<0.01; ** p<0.05; * p<0.1

Fig. 31. DID analysis for parent empowerment (female participants).

Timeline/school type	Score	P-value
Baseline (T1)		
Project	5.342	
Comparison	5.333	
Difference (P-C)	0.009	.881
Endline (T2)		
Project	5.891	
Comparison	5.870	
Difference (P-C)	0.021	.745
Diff-in-Diff	0.012	.886

*** p<0.01; ** p<0.05; * p<0.1

Fig. 26. DID analysis for school management responsiveness (participants falling under the category of the non-poor).

Timeline/school type	Score	P-value
Baseline (T1)		
Project	5.461	
Comparison	5.483	
Difference (P-C)	-0.022	.846
Endline (T2)		
Project	5.912	
Comparison	5.755	
Difference (P-C)	0.157	.046**
Diff-in-Diff	0.179	.191

*** p<0.01; ** p<0.05; * p<0.1

Fig. 27. DID analysis for school management responsiveness (participants falling under the category of the poor)for poor.

engagement in school education through a local mechanism of BoTs whose merit as a platform for engaging communities in the management of social service institutions/organisations is stipulated in the legislation. As explained in Section 4, the AKF intervention was carefully designed to implement the steps required for successful community engagement discussed in Section 3. The essential components of community involvement, notably performance and budget hearings, social contracts, and community scorecards, constituted the AKF intervention.

In a nutshell, the presented evidence makes it possible to state that the AKF intervention positively impacted the accountability and responsiveness of teachers from the perspective of parents/caregivers, regardless of gender and economic status. This may be due to the fact that teachers are the first point of contact for parents/caregivers. The advancement of various communication technologies and social media platforms (especially in light of the COVID-19 pandemic) has further strengthened this communication between teachers and parents/caregivers. It was interesting to learn how teachers and schools were using

Table 23
Percentages of positive responses (agree, strongly agree) for measurement items on school management responsiveness, disaggregated by income level.

School management responsiveness reported by parents/caregivers	Baseline (T1) Project (poor N = 158) (non-poor N = 682)	Baseline (T1) Comparison (poor N = 182) (non-poor N = 658)	Difference	Endline (T2) Project (poor N = 326) (non-poor N =552)	Endline (T2) Comparison (poor N = 370) (non-poor N = 502)	Difference	Difference T2-T1 for project schools	Sig. (p-value)	Difference T2-T1 for comparison schools	Sig. (p-value)
Aggregate percentage of responses for all questions										
Poor	51.30%	51.60%	-0.30%	76.40%	65.90%	10.50%	25.10%	***	14.30%	
Non-poor	45.20%	42.50%	2.70%	71.90%	67.40%	4.50%	26.70%	***	24.90%	***
By items										
1. School expenditures are aligned with school needs.										
Poor	52.00%	53.00%	-1.00%	74.80%	61.00%	13.80%	22.80%	***	8.00%	
Non-poor	49.00%	44.00%	5.00%	80.80%	69.80%	11.00%	31.80%	***	25.80%	***
2. School is responsive to the priorities expressed by parents.										
Poor	64.00%	78.00%	-14.00%	80.10%	80.60%	-0.50%	16.10%	**	2.60%	
Non-poor	56.00%	64.00%	-8.00%	77.50%	74.80%	2.70%	21.50%	***	10.80%	**
3. School welcomes the participation of parents in school management.										
Poor	66.00%	82.00%	-16.00%	77.70%	78.80%	-1.10%	11.70%	**	-3.20%	
Non-poor	63.00%	67.00%	-4.00%	81.90%	79.00%	2.90%	18.90%	***	12.00%	***

*** p<0.001; ** p<0.01; * p<0.05

Timeline/school type	Mean score	P-value
Baseline (T1)		
Project	5.063	
Comparison	5.190	
Difference (P-C)	-0.127	.037**
Endline (T2)		
Project	5.394	
Comparison	5.296	
Difference (P-C)	0.098	.102
Diff-in-Diff	0.225	.009***

*** p<0.01; ** p<0.05; * p<0.1

Fig. 28. DID analysis for parent empowerment.

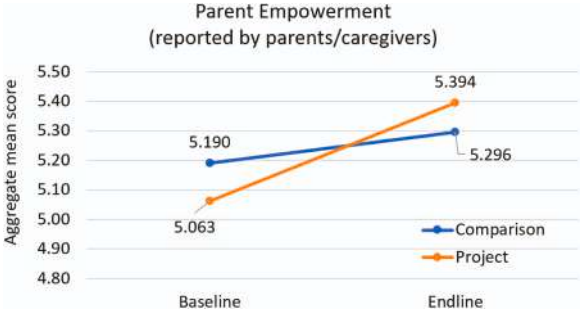

Fig. 29. Mean score of the project and comparison schools for parent empowerment at baseline and endline.

different functionalities of social media platforms, including images, to provide information and report on expenses to parents/caregivers.

Surveyed parents/caregivers also reported about improved school management accountability and parent empowerment. In particular, women and those from low-income households thought that school management accountability and parent empowerment significantly improved. Parents/caregivers from the project schools reported a positive change precisely in the areas that the AKF project focused on - increased provision of information to parents and improved reporting on school spending, and raised funds. In line with the literature (Shaeffer, 1992), increased reporting by schools on expenditures motivated parents/caregivers to become more aware of school matters and willing to support the school.

According to the survey, engaging community members in identifying the needs of schools through AKF's community scorecards appear to have promoted the alignment of school expenses with school needs. This intervention helped schools that were not used to community interaction mainly due to the Soviet past (Deyoung, 2006; de la Sablonnière, Taylor, and Sadykova, 2009) open up to their communities. Statements of parents/caregivers that the school budget never went beyond school deserve particular attention. It demonstrates a transformation in the way school budgets are now handled in these schools and indicates a greater involvement and say of parents/caregivers in the budget matters.

However, the findings around the positive impact on women and those parents/caregivers from low-income households should be interpreted with a pinch of salt since the study showed that (a) women are generally more involved in the matters of schools than men and (b) the poverty level rose due to the implications of the COVID-19 pandemic lockdown which was evident in the fact that there were more respondents reporting less income at endline than at baseline. Further, changes observed in school management responsiveness did not meet the statistical threshold to be considered significant mainly because the situation in the comparison schools improved too which may be due to

Table 24
Percentages of positive responses (agree, strongly agree) for measurement items on parent empowerment.

	Baseline (T1) Project (N = 840)	Baseline (T1) Comparison (N=840)	Difference	Endline (T2) Project (N=878)	Endline (T2) Comparison (N=872)	Difference	Difference E-B for project schools	Sig. (p-value)	Difference E-B for comparison schools	Sig. (p-value)
Aggregate percentage of responses for all questions	36.30%	41.70%	-5.40%	54.90%	46.90%	8.00%	18.60%	***	5.20%	
By items										
1. Parents have the opportunity to contribute to decision-making and planning activities.	48.60%	60.15%	-11.55%	69.60%	65.90%	3.70%	21.00%	***	5.75%	
2. Parents are involved in school budget decisions.	43.55%	57.25%	-13.70%	62.05%	52.35%	9.70%	18.50%	***	-4.90%	-
3. I act as a volunteer at school or help school in any way on a voluntary basis.	54.20%	54.40%	-0.20%	59.55%	56.90%	2.65%	5.35%		2.50%	-

*** p<0.001; ** p<0.01; * p<0.05

Table 25
Percentages of positive responses (agree, strongly agree) for measurement items on parent empowerment, disaggregated by gender.

	Baseline (T1)			Endline (T2)						
	Project (male N = 173) (female N = 667)	Comparison (male N = 193) (female N = 647)	Difference	Project (male N = 310) (female N = 568)	Comparison (male N = 274) (male N = 598)	Difference	Difference E-B for project schools	Sig. (p-value)	Difference E-B for comparison schools	Sig. (p-value)
Aggregate percentage of responses for all questions										
Male	40.90%	44.60%	-3.70%	54.40%	50.70%	3.70%	13.50%	***	6.10%	-
Female	35.10%	40.90%	-5.80%	55.20%	45.20%	10.00%	20.10%	***	4.30%	-
By items										
1. Parents have the opportunity to contribute to decision-making and planning activities.										
Male	47.50%	61.40%	-13.90%	70.90%	66.20%	4.70%	23.40%	***	4.80%	-
Female	49.70%	58.90%	-9.20%	68.30%	65.60%	2.70%	18.60%	***	6.70%	-
2. Parents are involved in school budget decisions.										
Male	43.90%	63.40%	-19.50%	63.80%	51.60%	12.20%	19.90%	***	-11.80%	***
Female	43.20%	51.10%	-7.90%	60.30%	53.10%	7.20%	17.10%	***	2.00%	-
3. I act as a volunteer at school or help school in any way on a voluntary basis.										
Male	54.30%	54.80%	-0.50%	56.90%	57.00%	-0.10%	2.60%	-	2.20%	-
Female	54.10%	54.00%	0.10%	62.20%	56.80%	5.40%	8.10%	**	2.80%	-

*** p<0.001; ** p<0.01; * p<0.05

Timeline/school type	Mean score	P-value
Baseline (T1)		
Project	5.054	
Comparison	5.101	
Difference (P-C)	-0.047	.486
Endline (T2)		
Project	5.397	
Comparison	5.305	
Difference (P-C)	0.092	.238
Diff-in-Diff	0.139	.178

*** p<0.01; ** p<0.05; * p<0.1

Fig. 32. DID analysis for parent empowerment (participants falling under the category of the non-poor).

Timeline/school type	Mean score	P-value
Baseline (T1)		
Project	5.103	
Comparison	5.506	
Difference (P-C)	-0.403	.003***
Endline (T2)		
Project	5.389	
Comparison	5.284	
Difference (P-C)	0.105	.262
Diff-in-Diff	0.508	.002***

*** p<0.01; ** p<0.05; * p<0.1

Fig. 34. DID analysis for parent empowerment (participants falling under the category of the poor).

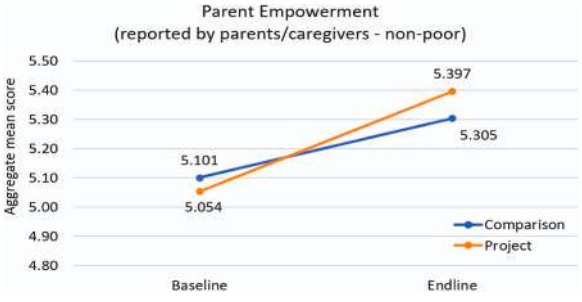

Fig. 33. Mean score of the non-poor respondents from the project and comparison schools for parent empowerment at baseline and endline.

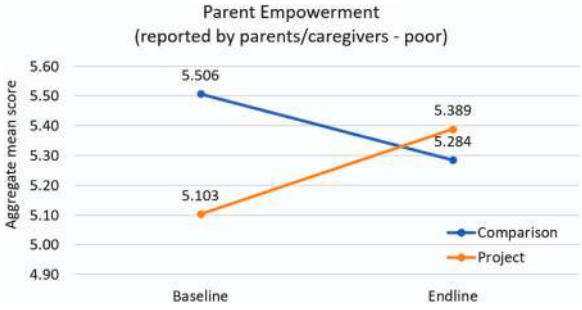

Fig. 35. Mean score of the poor respondents from the project and comparison schools for parent empowerment at baseline and endline.

the overall education reforms happening in schools (as discussed in Section 2) on the school management level.

The experience of the AKF intervention and its outcomes has multiple implications for the academic literature and development practice. As stated in Section 1, academic studies on community engagement in schools have primarily focused on the outcomes of community involvement on children's academic performance. Knowledge has been limited regarding whether parents/caregivers (as account-holders) observed changes in teachers' and school management's accountability and responsiveness due to the efforts to promote community involvement. This paper showed that tracking changes in accountability and responsiveness from the perspective of parents/caregivers is important in understanding in which areas most transformation happens. In the case of the AKF project, most changes happened concerning reporting on school expenditures and providing information to parents. These are important transformations given the limited role of parents/caregivers and communities during the Soviet and post-Independence times.

Another implication for future research is the increasing role of social media in the communication between schools, teachers, and parents/caregivers. The use of social media has been growing in Kyrgyzstan in the last decade (Jailobaev et al., 2021), and COVID-19 has accelerated this process. Consequently, this area can be of interest to researchers to explore if and how social media improve communication and include parents/caregivers from various socio-economic and ethnic backgrounds and if the power dynamics dissolve or remain in the virtual realm in the context of education in Kyrgyzstan. For example, women in

Table 26
Percentages of positive responses (agree, strongly agree) for measurement items on parent empowerment, disaggregated by income level.

	Baseline (T1)			Endline (T2)						
	Project (poor N = 158) (non-poor N = 682)	Comparison (poor N = 182) (non-poor N = 658)	Difference	Project (poor N = 326) (non-poor N =552)	Comparison (poor N = 370) (non-poor N = 502)	Difference	Difference E-B for project schools	Sig. (p-value)	Difference E-B for comparison schools	Sig. (p-value)
Aggregate percentage of responses for all questions										
Poor	37.70%	59.70%	-22.00%	54.40%	48.50%	5.90%	16.70%	***	-11.20%	-
Non-poor	35.90%	36.70%	-0.80%	55.20%	45.70%	9.50%	19.30%	***	9.00%	-
By items										
1. Parents have the opportunity to contribute to decision-making and planning activities.										
Poor	50.60%	65.40%	-14.80%	72.70%	71.50%	1.20%	22.10%	***	6.10%	-
Non-poor	48.40%	55.70%	-7.30%	67.60%	61.60%	6.00%	19.20%	***	5.90%	-
2. Parents are involved in school budget decisions.										
Poor	44.00%	66.10%	-22.10%	62.60%	51.40%	11.20%	18.60%	***	-14.70%	***
Non-poor	43.60%	48.10%	-4.50%	61.40%	53.20%	8.20%	17.80%	***	5.10%	-
3. I act as a volunteer at school or help school in any way on a voluntary basis.										
Poor	51.20%	64.50%	-13.30%	56.20%	59.90%	-3.70%	5.00%	-	-4.60%	-
Non-poor	52.30%	51.50%	0.80%	60.50%	54.60%	5.90%	8.20%	**	3.10%	-

*** p<0.001; ** p<0.01; * p<0.05

Nigeria found the freedom to organise various initiatives with the help of WhatsApp groups (Hafiz et al., 2018).

From the perspective of practical implications, the study provides valuable lessons learned for the roll-out of BoTs throughout the country. The Ministry of Education and Science (MoES) of Kyrgyzstan is planning to roll out BoTs to all schools in the country. The guidelines, procedures, and mechanisms developed by the AKF project to work with BoTs, communities, and schools can be used by the MoES for roll-out as the evidence suggests that these tools can bring about increased accountability, responsiveness, and parent/caregiver empowerment which can make schools more relevant to the needs of their children and resources available in their communities. In other words, the AKF project has built a foundation that can be capitalised on and avoid potential pitfalls.

The literature indicated that the largest risk of community engagement is that community committees and parents/caregivers can contribute to basic infrastructure and resources only with no involvement in other areas such as monitoring the quality of teaching (Edwards, 2019). Parents/caregivers in the AKF project started receiving more information about teaching, and school expenses, and their involvement in decision-making has increased. These achievements should be sustained and expanded in the long run. Parents/caregivers and other community members should be given more say in monitoring teaching and learning outcomes so that they are not just involved in the issues of infrastructure and fund-raising. Recommendations made by Edwards (2019) are very reflective of the discussion held at KIIs and FGDs within this study that indicated that the potential roll-out of community engagement will have to ensure that (i) training is provided over time as membership on the school committees changes at regular intervals to ensure that successive generations of parents have the skills and information necessary to carry out their duties; (ii) informational campaigns are run over time, so that community members are aware of the design and details of community engagement models to avoid general ignorance within communities of the purposes and processes of community involvement in school; (iii) where teachers are expected to facilitate community participation, mechanisms for this should be clarified and communicated to teachers; (v) clear guidelines should be put in place to resolve any tension between school committees and school directors because of overlap in the responsibilities assigned to each; and (vi) consistent political support at the highest levels is required for sustainability of community engagement efforts in the long-run (Edwards, 2019, pp 23–34).

There are a couple of limitations of this study. The operationalisation of accountability and responsiveness was limited to this study's purpose. Future research can explore other ways of measuring these concepts. Clustering standard errors has not been done in the difference-in-difference analysis due to the different sample sizes within the subgroups in the sample (e.g., women vs. men). Future research can explore ensuring more comparable sample sizes of subgroups for clustering standard errors.

CRediT authorship contribution statement

Kanykey Jailobaeva: Methodology, Conceptualization, Writing – original draft. **Temirlan Jailobaev:** Conceptualization, Methodology, Visualisation. **Gulsaadat Baialieva:** Data collection. **Rakhat Ismanbaeva:** Supervision. **Dilbara Kirbasheva:** Supervision. **Marc-Antoine Adam:** Supervision, Writing – review & editing.

Declarations of interest

None

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