

PPP and Innovative Finance in the South African Education Sector

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Abstract

This paper explores how innovative finance can address the financial and operational challenges faced by school feeding programmes in South Africa. Innovative finance aims to optimise social, environmental, and financial impacts using various tools, mobilising additional finance for development, and ensuring efficient use of existing funds. Scholars agree on the necessity of innovative finance to bridge the funding gap for achieving SDG 4 - Quality Education. Innovative finance can harness private sector participation to attract funds, foster innovation, and promote social justice in education. Besides attracting funds to support global development efforts, innovative finance tools in education can help reform state practices by improving education ministry operations. School feeding programmes are critical educational interventions globally, yet they face hurdles in terms of effectiveness due to operational and financial limitations. The research indicates that the key challenges experienced are related to financing. The methodology used is exploratory qualitative research through interviews, focusing on South Africa as a single case study. Interview responses from educators and the education ministry district officer in Thabo Mofutsanyana district provide a representative example of the national school feeding programme due to the standardised implementation rule of the National School Nutrition Programme. The main question addressed is how innovative finance can assist school feeding stakeholders in overcoming operational and financial challenges. Three sub-questions were identified: necessary operational modifications, considerations for selecting the ideal finance model, and how innovative finance strategies in public-private partnerships can facilitate investment into the programme. The results are presented in the form of a proposed funding model which is a modified social impact bond structure as well as key recommendations on programme design. This paper proposes using innovative finance to diversify funding, strengthen monitoring and evaluation, partner with the private sector to support expansion and sustainability, and encourage local procurement and community involvement.

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Acronyms and abbreviations

CSI	Corporate Social Investment
DBSA	Development Bank South Africa
DFI	Development Finance Institution
DBE	Department of Basic Education
DPME	Department of Planning, Monitoring and Evaluation
ECD	Early Childhood Development
ESG	Environmental Social and Governance
GIIN	Global Impact Investing Network
MIGA	Multilateral Investment Guarantee Agency
NSNP	National School Nutrition Programme
PPP	Public-Private Partnership
REIPP	Renewable Energy Independent Power Producer
SDGs	Sustainable Development Goals
SIB	Social Impact Bond
MSME	Micro-, Small & Medium Enterprises
SPV	Special Purpose Vehicle
UN	United Nations
WFP	World Food Programme

1. Introduction

1.1 Research area

Quality education is a key input to the universal goal of sustainable development, and as such the United Nations [UN] has highlighted quality education as one of the 17 Sustainable Development Goals [SDGs] (Sachs et al., 2022). Economists, international aid agencies and governments in developing countries all agree that high levels of education in the population are necessary although insufficient for achieving long-term economic growth and ultimately increasing the standard of living in the country (Hassan et al, 2022). Countries with higher human capital investments in the population tend to have higher income levels and higher economic growth rates (Glover and Levacic, 2020). Another observed benefit of having higher levels of education in the population is that technological advancements can be adapted more quickly, thereby increasing the speed of uptake of innovation in the economy (Glover and Levacic, 2020).

Education is financed through the public sector, private sector or public-private partnership (PPP). While governments in developing countries spend a significant portion of their national budget on education (UNESCO Institute for Statistics, 2023), households also spend millions on their children's education despite existing income constraints (Thapa et al., 2020). When making international comparisons on the average amount spent on education per learner per year, it appears that education expenditure as a proportion of government expenditure and GDP in South Africa is significantly higher than that of developed countries. In 2020, the USA spent 12.7% of government expenditure on education. This was 5.4% of GDP. Switzerland spent 14.2% of their government expenditure on education, which was 5.3% of their GDP. South Africa spent a much higher 18.5% of their government expenditure on education, which was 6.2% of GDP (UNESCO Institute for Statistics, 2023). However, despite this relatively higher level of investment, education in South Africa has been rated negatively in a recent assessment of progress made with SDG 4: Quality Education (Sachs et al., 2022). This negative rating was motivated by three findings: a declining participation rate in early childhood development (ECD) facilities, decline in net primary school enrolment, and a decline in the secondary school completion rate (Sachs et al, 2022). Putting these

findings against feedback of insignificant funding from school feeding stakeholders paints the picture that investment in education might be high but it does not reach the school feeding programme. School feeding is clearly not a priority. It is against this backdrop that this paper proposes the use of an SIB with a SPV to diversify the funding, strengthen monitoring and evaluation on school feeding, partner with the private sector to support expansion and sustainability of school feeding programmes by encouraging local procurement and community involvement. This will aid efforts towards improving our SDG 4 progress rating.

The SDG progress ratings by Sachs et al. (2022) explained in the paragraph above have inspired a focus in education strategy to address the key issues highlighted. Over the years, different education interventions have been explored by the education ministry and private sector institutions to address these highlighted key issues. These interventions can be categorised into either supply or demand side interventions. The merits of each type of intervention are discussed in detail in the empirical literature section of this paper. One type of intervention which far outperforms the rest in terms of implementation reach and global impact is school feeding. As of 2022, 87% of countries have some school feeding policy in place, reaching an estimated 418 million children worldwide (World Food Programme [WFP], 2022). Furthermore, school feeding programmes have created approximately 4 million jobs in 85 countries. Also in 2022, the School Meals Coalition was created by political leaders from 76 countries, which represent 58% of the world population across all income levels. The coalition aims to improve the quality and efficiency of existing school feeding programmes (WFP, 2022). This shows the interest and drive globally to make school feeding programmes better.

The vast reach of school feeding programmes and their growth in popularity is propelled by the impact of school feeding on children's educational outcomes and health. School feeding yields consistent positive impact on educational outcomes as measured by variables such as the dropout rate, enrolment rates, performance in tests and school completion rates (Kwatubana and Molaodi, 2021; Iddrisu et al., 2022; Aurino et al., 2023; Wang & Fawzi, 2020; Agu et al., 2023; Aurino et al, 2018). Another motivator for a focus on school feeding is that the return to investment from school feeding is high. Devereux et al. (2018) showed that a \$146 investment in education through school feeding yields \$1782 in productivity increases. Yet despite these documented benefits from investment into education through school feeding, the South African school feeding programme is still facing significant

challenges which point to the need for increased investment into the programme. The existing challenges are discussed in more detail in the literature review. One of the ways that investment can be enabled is through a PPP and innovative finance thinking.

A rich array of education, finance and PPP literature was reviewed to inform and structure the arguments presented in this paper. The theoretical literature review is broken up into four sections: public sector provision; private sector provision and PPP; opportunities for funding school feeding using innovative finance; and the moderating role of COVID-19 on education. The public sector provision section begins with motivations for state funding of education. These are: pursuit for equality of opportunity; UN Sustainable Development Goals (Rice, Monk & Zhang, 2020; Sachs et al., 2022); the collective social and economic benefits of education (Rice, Monk & Zhang, 2020); and the goals for social good provision. These goals are efficiency, adequacy, equity and transparency (van Ostaijen & Jhagroe, 2022; Besley & Maitreesh, 2017; Gonzalez, 2018; Rice, Monk & Zhang, 2020; Glover & Levacic, 2020). The motivators for state funding are important to this study because serve as important guard-rails to this study because they inform what the key considerations from the state will be going into a partnership. The motivators also serve as criteria to ensure that the proposed solution aligns with the state's goals for providing education.

The section on private sector provision and PPP section presents theories supporting private sector provision of education to justify the involvement of private sector actors in the proposed model. It also highlights private actors' goals and interests to contextualise the findings from the private sector financial institutions in the analysis chapter. Four main theories support private sector provision in education: the marketisation and consumer choice theory (Bevan, 2023); educational entrepreneurship theory (Verger et al., 2020); new public management theory (Avelar et al., 2020); and privatisation theory (Pappas, 2020). These theories show the different motivators for private sector involvement in school feeding. Understanding this will help to understand the different private actors in the study and what their motivators could be. Lastly, various PPP types in education are also explained: subsidies, vouchers and contract schools, showing mixed outcomes in education outcomes variables (Kabir, 2023; Verger et al., 2021; Crawford, 2019; Verger et al., 2020; Sreedhar, 2019; Shakeel et al, 2021). These examples of PPP in education serve as important to this study because they validate that PPP in education is possible and has been successful in various contexts.

Opportunities for innovative finance in education are also explored in the theoretical literature. This section is important because it provides context on the broader spectrum of innovative finance tools available to validate the feasibility of the solution proposed in Chapter 5, which follows the structure of a social impact bond (SIB). The section includes the definition of innovative finance, evolution of innovative finance and its viability in education (König et al, 2020; Agnese & Giacomini, 2023; Avelar et al., 2020; Li, 2020; Patton Power et al., n.d.). The theoretical literature review ends with the moderating role of the COVID-19 pandemic on education (Xu, 2020) and school feeding specifically (Kwatubana & Molaodi, 2021). This section highlights new challenges and opportunities in education that were brought about by the COVID-19 pandemic. A good understanding of these has ensured that the proposed solution as outlined in Chapter 5 and visually in the Appendix below is aligned with current needs in education, specifically school feeding programmes. Put together, these sections in the theoretical literature review serve the crucial function of contextualising the financing dimension of the study, which is critical for understanding the different dynamics at play when answering the second sub-question of the study as outlined in Section 1.3 below.

An array of observations and experiments have been conducted in education. The empirical literature review explores these and categorises them into conventional and novel moderating factors in education. Conventional moderating factors are supply and demand side interventions. Supply side interventions encompass access to schools, pedagogical materials, pupil-teacher ratio and governance (Hassan et al, 2022; Angrist et al., 2023; Aurino et al., 2023; Maruyama and Kurosaki, 2024; Kimani, 2022; Evans & Mendez Acosta, 2021; Cavalieri et al, 2023 and Bjork & Susanti, 2023). Demand side interventions include information-based approaches, conditional cash transfers, scholarship programmes and school feeding programmes (Hassan et al, 2022; Evans & Mendez Acosta, 2021; Garcia & Saavedra, 2023; Hassan et al, 2022; Iddrisu et al., 2022; Aurino et al., 2023; Agu et al., 2023; Aurino et al., 2023; Aurino et al., 2018; Devereux et al., 2018 and more). Of these interventions, school feeding consistently shows positive outcomes and cost-effectiveness.

Novel moderating factors in education are discussed too, namely digital transformation and technology integration, financial sustainability challenges, changes in regulatory environment, demand for lifelong learning and flexible delivery models, social justice and equity imperatives, globalisation and internationalisation trends, and environmental

sustainability initiatives (Siljebo, 2020; Nik Ahmad et al., 2019; Lawn et al., 2020; Fanghanel et al., 2020; Freeman & Tran, 2020; Yemini, 2020; Nurwidodo et al., 2021). The review concludes by focusing on the South African context, highlighting challenges like tight budgets, insufficient funds, failure to standardise implementation, recurring food safety incidents, payment delays, and the unjustified exclusion of early childhood years (Brits et al., 2017; DBE & DPME, 2016; Devereux et al., 2018; Aurino et al., 2023; Munje & Jita, 2019; Iddrisu et al., 2022 and more). The last section of the empirical literature review gives more context on school feeding in South Africa. This includes a look at the moderating role of apartheid on educational outcomes, highlighting the potential for school feeding to address inequality and improve education in South Africa (Kimani, 2022). The section also includes evolution of strategies in school feeding (Mensah & Karriem, 2021; KFC, 2022; Tiger Brands Foundation, 2021; Muller et al., 2023 and Kruger et al., 2020). The empirical literature review provides a comparison of different interventions in education to contextualise and justify the focus on school feeding in this paper.

A critical point of departure in this paper is highlighting the need for increased funding towards school feeding programmes. Mafugu (2021) conducted a study of the school feeding programme in the Molweni Circuit in Pinetown. One of his interviewees had the following to share about her experience on the programme: “In the past, there were days when learners would go without a meal. The food delivered was insufficient, and the service providers were not paid and consequently, they could not afford to buy food for the school (PE)”. This shows there is a need for schools to supplement funding from government to ensure that a) the enough food to feed the learners every single day and b) to ensure that service providers are paid their stipend for assisting on the programme. A similar phenomenon was observed in the interviews conducted as part of this paper where an interviewee shared that “We have had to use funds intended for buying textbooks and stationery to supplement the school feeding budget. We also supplement the feeding budget with money from fundraising initiatives that we run because the DBE allocation is not enough anymore”. Here we see a school supplementing the school feeding funding using funds intended for other schooling inputs. What these two fundings highlight is that the school feeding government allocation is not enough, hence the need for schools to find ways to supplement the funding.

A possible reason why the funding has become insufficient is that the purchasing power of the government allocation has been diminishing yearly due to inflation while the budget

allocation has remained rigid. One interviewee from this study shared the following: “I have seen no increases in the allocation per learner in the programme until in 2022 when it was increased by 10c. Clearly, this does not match inflation. But our hands are tied because we follow the budget allocation process from National Treasury, which is passed down to the province level”. By failing to make yearly inflation-linked adjustments to the budget allocation, the education ministry itself is contributing to the financial challenges of the school feeding programme. And as explained in the paragraph above, this leads to schools cutting spending on other critical school expenses such as textbooks to keep school feeding operational. Having additional funding towards the programme will relieve schools of this pressure and ensure that learners are fed without compromising on their other schooling inputs. As well as ensuring that food handlers are paid their stipend.

Key themes emerged from the interviews which suggest a need for programme modification. From an operations perspective, firstly, the programme could incorporate early childhood development centers such as pre-schools. This will expand the reach of the programme and will help address malnutrition earlier in the children’s lives. Secondly, operating hours could be expanded to include school holidays and weekends. This will ensure that the learners need for food is taken care of even outside of school terms. Lastly, the programme could formalize tackling household food insecurity in the learners’ homes. The school feeding programme can be used as a vehicle to address even the nutrient needs of impoverished adults in the communities around the schools.

From a financing perspective model should, firstly, consider incorporating social loan or bond principles. Investment in education projects aligns with ESG principles from their social impact. Leveraging this will diversify the funding and reduce reliance on government funding. Secondly, enforce stricter adherence to conventional credit rules will be crucial to the programme success. Despite the clear social and economic benefits of investing in education, the bottom line is still the most important consideration for financial institutions which could partner on this programme. Thirdly, align with the applicable tax and affirmative action laws that will become crucial when a donation partner is introduced to the programme. South African financial institutions require a SARS Section 18 tax exemption certificate for donations that they make. And a key requirement for this exemption certificate is BBBEE compliance which the feeding programme remodel will need to take into account. Lastly, consider that institutions vary in their preferences for project tenure. These themes play out in

different ways as explained the analysis. The study shows that by leveraging alignment on development and social impact goals, a private partner can bring expertise which could significantly improve the efficacy of the school feeding programme in South Africa. Through the use of a social impact bond with a special purpose vehicle as intermediary to attract investment from financial institutions with social impact goals. The additional funds from investment can be used to improve the operations of the programme and expand its reach.

1.2 Problem statement

In South Africa, the main challenges facing school feeding programmes stem from inadequate investment. Mafugu (2021) found a novel insight in his study of school feeding in Pinetown, South Africa that schools do not afford to ensure there is enough food for learners and pay food handlers using the funds provided by government. Devereux et al. (2018) conducted a study in Lady Frere and Qumbu, also in South Africa and found that Tiger Brands Foundation has become a crucial partner to the programme, supplementing government funding on the feeding programme. From the same study they found that although the NSNP has three pillars of which school feeding is only one, the other two pillars are neglected because all the funds go to school feeding. Munje & Jita, (2019) also conducted a study of school feeding in the Western Cape and they also noted inadequate finances as a key underpinned theme in the literature review to their study.

The key challenges mentioned in this literature review link to the broader research problem of insufficient government funding. The first challenge is outright funding shortages at schools. This limits the reach and efficacy of school feeding programmes and leaves many school children without meals (Mafugu, 2021). The second challenge is implementation inconsistencies. This is as a result of variability in funding and distribution of support for school feeding programmes. The schools which receive the higher levels of funding and support are able to follow the standard implementation guidelines while those receiving lower funding and support find themselves deviating from the standard implementation guidelines. (Devereux et al., 2018). These deviations present the school with the risk of getting the programme halted because of non-compliance. The third challenge is food safety concerns (Mafugu, 2021). Ensuring food safety standards are adhered to required resources that may

not be available under budget constraints. This could lead to children contracting foodborne illnesses, undermining the goals of the programme.

The fourth challenge is delayed payment of funds to schools. This disrupts the flow of resources necessary to ensure smooth operations and regular provision of meals to the children. This means the children's nutritional needs will be unmet and the programme's goals are undermined (Mafugu, 2020). The last challenge is inflexible budgeting (Mafugu, 2020). Having no flexibility in the funding mechanisms means the programme cannot respond adequately to changing conditions such as the decreasing buying power, increased demand or emergencies on the programme. This limits the efficacy of the programmes and results in the compromising of other schooling expenses to ensure school feeding continuity. Reducing the reliance on government funding by introducing additional funding partners is a clearly necessary pursuit on school feedings programmes.

Besides school feeding challenges, SDG progress ratings indicate that South Africa struggles with quality education, and efforts are stagnant (Sachs et al., 2022). A WFP (2022) study reports that the number of children reached by school feeding in upper-middle income countries has increased while the source of funding for school feeding programmes have remained 100% national budget expenditure. This means that failure to diversify the sources of funding as school feeding programmes increase their reach is causing increasing pressure on the fiscus. To resolve existing challenges, reduce school feeding's pressure on the fiscus, and advance towards the UN Sustainable Development Goal (SDG) 4: Quality Education, increased private sector participation is essential to supplement government funding. This study builds on education finance models and empirical literature to identify ways to increase funding for South Africa's school feeding programme and address operational and financial issues. The study addresses a critical open theoretical gap in school feeding research on collaboration and partnerships between the government education ministry and the private sector, specifically in South Africa. A further gap is that none of the existing studies investigate success factors that enable PPP and as well as discouraging factors as they relate specifically to a school feeding programme.

1.3 Research questions and scope

The main question that this study seeks to answer is: how can innovative finance help stakeholders in school feeding programmes navigate the financial and operational challenges faced in programme implementation.

To help scope the main question, the following three sub-questions have been identified:

1. What operational adjustments are required in the existing school feeding programme for a comprehensive approach?
2. What are the pivotal considerations for selecting a finance model that can effectively address the programme's current challenges?
3. How can innovative financial strategies within a PPP facilitate investment in the programme?

These questions are evidence based. They are grounded in the literature review and analysis, which both highlight the need for increased funding and operational improvements on the programme. This ensures that the study is addressing real and documented problems. While the sub questions provide a structured framework for the study, they are designed to facilitate a comprehensive and unbiased exploration of the issues by operationalising the broader research question. The goal is to identify effective strategies for improving school feeding programmes, without leading the research towards predetermined conclusions.

In terms of the scope of the research, the geographical focus will be on South Africa. This provides for a more nuanced study of the possible intersection between the South African education ministry, rural communities in South Africa and financial services institutions operational in South Africa. The scope is limited to basic education, which is schooling from grade 1-12, specifically quintile 1–3 schools which are the lower income schools. This is because that is the level of education where learners can benefit from a school feeding programme. While different innovative finance mechanisms exist and are explained in the theoretical literature, this study proposes an enhanced social impact bond. The involvement of various stakeholders in this study is key. The stakeholders who participated in this study are education ministry government representatives, educators, school feeding support staff, financial institutions, representatives from corporate social investment (CSI) teams of consumer sector firms, wholesalers supplying the programme, as well as school leadership.

1.4 Purpose and significance of research

The scholarship on school feeding has evolved over the years, beginning in the 1990s with research focusing on the impact of school feeding on child nutrition and later shifting to schooling outcomes (Tan et al., 1999). As the research progressed into the early 2000s, there was an increased focus on challenges and inefficiencies in the implementation of school feeding programmes across various countries (van Stuijvenberg, 2005). By the early 2010s, the focus shifted towards embedding sustainability measures into programmes, with emphasis on localisation and community involvement in food production (Bundy et al., 2006). The late 2010s saw an increased focus on the influence of education policy design in school feeding (Kroth et al., 2020), while the 2020s have seen opportunities from technological advancements and digitisation of school feeding programmes influenced by COVID-19 (Camaréna, 2022).

There are two key gaps identified in the literature. The first gap is in innovative finance research, where there are no studies exploring the use of social impact bonds in school level education. The second gap is in education research, where there is no dedicated research on collaborations and partnerships between government education ministries and the private sector to improve school feeding in South Africa. This study is a timely and appropriately positioned attempt to address both of these existing theoretical gaps. It explores the opportunity inherent in using innovative finance to navigate challenges in school feeding (Mafugu, 2021; DBE & DPME, 2016; Devereux et al., 2018) by supplementing government funding through partnerships with private sector financial institutions following the structure of a social impact bond. The discussion of innovative finance and PPPs in education are included in the theoretical literature review as outlined in Section 1.1 above.

In terms of education research, the study extends the scholarship on school feeding in South Africa in two ways: firstly, by focusing on the financing of school feeding programmes using PPP to ensure efficiency and continuity of the programmes; and secondly by exploring modification of the existing social impact bond structure (König et al, 2020) to suit the unique context of school feeding in South Africa. Additionally, the research emphasises

amplifying stakeholder voices to capture nuances in PPP design for school feeding, which addresses the existing knowledge monopoly held by certain institutions in this area of research (Languille, 2017). Overall, the research aims to explore and advance the use of innovative finance tools and structures in enhancing and sustaining school feeding programmes through partnerships and collaborations. The state of school feeding in South Africa as discussed in the empirical literature review is outlined in Section 1.1 above.

1.5 Research assumptions

This study focuses on the case for innovative finance through PPPs for South Africa's school feeding programme. Because the focus of the study is on school feeding, this limits the scope to the basic level of education and specifically quintile 1–3 schools which are the lower income schools, as mentioned in Section 1.3 above. Furthermore, the scope is limited to South Africa because all the interview participants work for institutions based in South Africa. The focus on school feeding is motivated by its higher implementation reach and global impact compared to other education interventions, as explained in Section 1.1 above. While the study's findings are limited to one sector in a specific country, its intention is to provide a complementary funding model to supplement public funding in the education ministry. As explained in the scope (Section 1.3 above) the study will make a case for using a social impact bond to do so. The study does not aim to explore the pricing mechanisms of different financial instruments but rather focuses on conceptualising the structures necessary to enable a relationship between the private sector and the education ministry to supplement financing.

2. Literature review

2.1 Theoretical literature review

The theoretical literature review is broken up into four sections: public sector provision; private sector provision and PPP; opportunities for funding school feeding using innovative finance; and the moderating role of COVID-19 on education. The public sector provision section features a discussion of motivations for state funding for education. This is important to this study because it explains the current lay of the land and why government should remain a part of the funding mix. The private sector provision and PPP section features discussion of four theories supporting private sector provision of education, types of PPP in education, example programmes and key arguments of PPP sceptics. This section is important to the study because it contextualises the key idea that the private sector has a role to play in funding education. The section on opportunities for funding school feeding using innovative finance is a discussion of the innovative finance landscape, and also explains the mechanisms behind the different tools currently in use. This is important to the study because it justifies the choice of social impact bonds as a tool to be explored. The last section discusses the moderating role of COVID-19 on education to show how the sector was able to adapt to shock in the form of a pandemic. These sections each serve the crucial function of contextualising the financing dimension of the study, which is critical for understanding the different dynamics at play when answering the second sub-question of the study as outlined in Section 1.3 above.

2.1.1 Public sector provision

Before expanding on why supplementary funding for education is necessary and beneficial, it is important to highlight why governments invest in education. The motivators for state funding are important to this study because serve as important guard-rails to this study because they inform what the key considerations from the state will be going into a partnership. The motivators also serve as criteria to ensure that the proposed solution aligns with the state's goals for providing education. The state's role in financing education is driven

by four key motivators, each emphasising the importance of ensuring access, equity, efficiency and reducing inequality through educational provision (Rice, Monk & Zhang, 2020; Kimani, 2022; Sachs et al., 2022). Firstly, a fundamental aim of state involvement in education financing is to ensure equality of opportunity for children from diverse socio-economic backgrounds (Rice, Monk & Zhang, 2020). By redistributing resources, the state seeks to mitigate the influence of parental income and wealth on educational opportunities, thereby promoting social mobility and reducing inequality, particularly in developing countries (Kimani, 2022). The second motivation is that quality education is a Sustainable Development Goal, highlighting the imperative for state investment in education to contribute to global development efforts (Sachs et al., 2022).

Thirdly, state investment in education is motivated by the recognition that educational benefits extend beyond individual gains to broader societal and economic outcomes (Rice, Monk & Zhang, 2020). A well-educated population correlates with higher rates of economic growth, enhanced social cohesion, and improved democratic processes (Rice, Monk & Zhang, 2020). These external benefits underscore the rationale for state financing of education, ensuring that all citizens can access and contribute to these collective advantages. As seen in the classification of the benefits of education in Table 2.1 below, countries with a more educated population have higher rates of economic growth, lower crime rates, better social cohesion, and higher productivity. And as a result, they have higher net tax revenue, better health facilities, less reliance on government financial support and much better democratic political processes characterised by greater civic participation and informed public decision making (Rice, Monk and Zhang, 2020).

Table 2.1: Classification of the benefits of education (Rice, Monk and Zhang, 2020)

Benefit type	Private	Social
Market	Employability	Higher productivity
	Higher earnings	Higher net tax revenue
	Labor market flexibility	Less reliance on government financial support
	Greater mobility	
Nonmarket	Greater consumer efficiency	Lower crime rates
	Better household health	Less spread of infectious diseases
		Desired family size
		Better social cohesion
	Non-wage remuneration (fringe benefits and working conditions)	Civic participation (voter participation, volunteerism, charity; service in public agencies)
	Future opportunities for children	Technological change

The fourth motivator for state funding of education is the pursuit of goals for social goods provision. Efficient resource allocation in public education is guided by goals of efficiency, adequacy, equity and transparency (van Ostaijen & Jhagroe, 2022; Besley & Maitreesh, 2017; Gonzalez, 2018). Efficiency seeks to maximise outcomes with minimal resources, encompassing both technical and productive efficiency (Rice, Monk & Zhang, 2020). Adequacy of spending varies globally, influenced by factors such as GDP per capita and educational priorities (Glover & Levacic, 2020). Transparency in fund allocation enhances accountability and reduces corruption risks, fosters public trust and participation in education governance (van Ostaijen & Jhagroe, 2022; Besley & Maitreesh, 2017; Gonzalez, 2018). Equity in resource distribution aims to ensure fairness, considering both equality of opportunity and vertical/horizontal equity principles (Rice, Monk & Zhang, 2020; Glover & Levacic, 2020). These four motivators discussed in this section serve as important guard-rails to this study because they inform what the key considerations from the state will be going into a partnership. The motivators also serve as criteria to ensure that the proposed solution aligns with the state’s goals for providing education.

2.1.2 Private sector provision and PPP

This section presents theories supporting private sector provision of education to justify the involvement of private sector actors in the proposed model in Appendix A.1. It also highlights private actors' goals and interests to contextualise the findings from the private sector financial institutions in Section 4. Private sector involvement in education is largely motivated by the individualistic benefits of education, such as better employment opportunities and improved quality of life for individuals and their families (Rice, Monk & Zhang, 2020). Four main theories support private sector provision in education. The first theory is the marketisation and consumer choice theory, which suggests that introducing market mechanisms in education can enhance efficiency and innovation. However, critics caution it may increase inequality and reduce democratic control (Bevan, 2023). Educational entrepreneurship theory considers the role of entrepreneurial actors driving innovation in education but raises concerns about their profit motives and impact on social goals (Verger et al., 2021). New public management (NPM) theory advocates adopting private sector management techniques in public services (Avelar et al., 2020). And lastly the privatisation theory focuses on transferring educational services from the public to the private sector to improve efficiency and accountability, although critics point to potential equity issues (Silva & Oliveira, 2020). These theories show the different motivators for private sector involvement in school feeding. Understanding this will help to understand the different private actors in the study and what their motivators could be.

In developing countries, innovative PPPs have emerged to address challenges in providing universal basic education due to inadequate state funding (Glover & Levacic, 2020). PPPs in education aim to improve education quality and accessibility by leveraging resources from both the private and public sector. Notable examples of PPPs in education include Colombia's *Colegios en Concesion* (CEC) and Liberia's Partnership Schools for Liberia (PSL), which have shown positive outcomes (Crawford, 2019; Verger et al., 2021). Contract schools and school vouchers are other types of PPPs with varying levels of success in different contexts (Kabir, 2023; Verger et al., 2021; Sreedhar, 2019). These examples of PPP in education serve as important to this study because they validate that this kind of partnership is possible and has been successful in various contexts.

2.1.3 Opportunities for funding school feeding using innovative finance

This paper explores innovative finance tools as viable means to form a PPP in the education sector. And as such it is important to provide context on the broader spectrum of innovative finance tools available to validate the feasibility of the solution proposed in Section 5, which follows the structure of a social impact bond (SIB). Innovative finance aims to optimise social, environmental, and financial impacts using various financial and philanthropic tools, mobilising additional finance for development and ensuring efficient use of existing funds (Patton Power et al., n.d.; Avelar et al, 2020; Li, 2020). The concept emerged in 2002 after the Monterrey Consensus, which called for exploring new sources of finance (König et al, 2020), and has since evolved through different phases, focusing initially on mobilising international private capital and later on aid effectiveness and then increased private sector engagement (Avelar et al., 2020). Recently, the focus has shifted towards strengthening local capital markets and replicating successful models in new sectors and regions (König et al, 2020).

Scholars agree on the necessity of innovative finance to bridge the funding gap for achieving Sustainable Development Goal 4 (SDG 4) – Quality Education (Avelar et al., 2020). Innovative finance can harness private sector participation to attract funds, foster innovation, and promote social justice in education (Avelar et al., 2020). Besides the key benefit of attracting funds to support global development efforts, using innovative finance tools in education can also help with reforming state practices through improving education ministry operations (Avelar et al., 2020). Innovative finance mechanisms in education encompass debt-based instruments, blended finance, diaspora funding, and social impact bonds (SIBs). Debt-based instruments, such as bonds, raise funds for development projects while also providing investors with fixed returns (König et al, 2020). Blended finance combines public and private sector funds to mitigate investment risks and attract private capital (Li, 2020). Diaspora funding taps into migrant remittances to fund development projects, facilitated by different platforms like Homestrings and LelapaFund (Patton Power et al., n.d.). Trade credit financing offers working capital solutions, particularly useful in connecting smallholder firms to markets (Patton Power et al., n.d.). Risk mitigation tools, such as social impact insurance and guarantees, are essential in reducing risk and aiding efforts to attract investors to projects (Patton Power et al., n.d.; König et al, 2020).

SIBs represent outcome-based contracts between public service providers and private investors, with funding for interventions targeting specific social outcomes and repayment

contingent on achieving results (Avelar et al., 2020). Figure 2.1 below shows the structure of a SIB bond, with its key players and their responsibilities. It provides an intuitive structure to be followed by a PPP which has been proven effective in different contexts (König et al, 2020). A big benefit of using an Environmental, Social and Governance (ESG) leaning bond is the potential reduction of debt financing. Agnese & Giacomini (2023) conducted a study on whether ESG factors affect the pricing of bonds on the primary market. They used a dataset of 19 106 fixed-rate bonds issues by 63 European banks from 2006 – 2021. They found that *ceteris paribus*, banks with higher ESG scores had a lower bond costs at issuance. Picking a financial partner with sustainability as core to their strategy and governance will help reduce the cost of debt to the benefit of the programme.

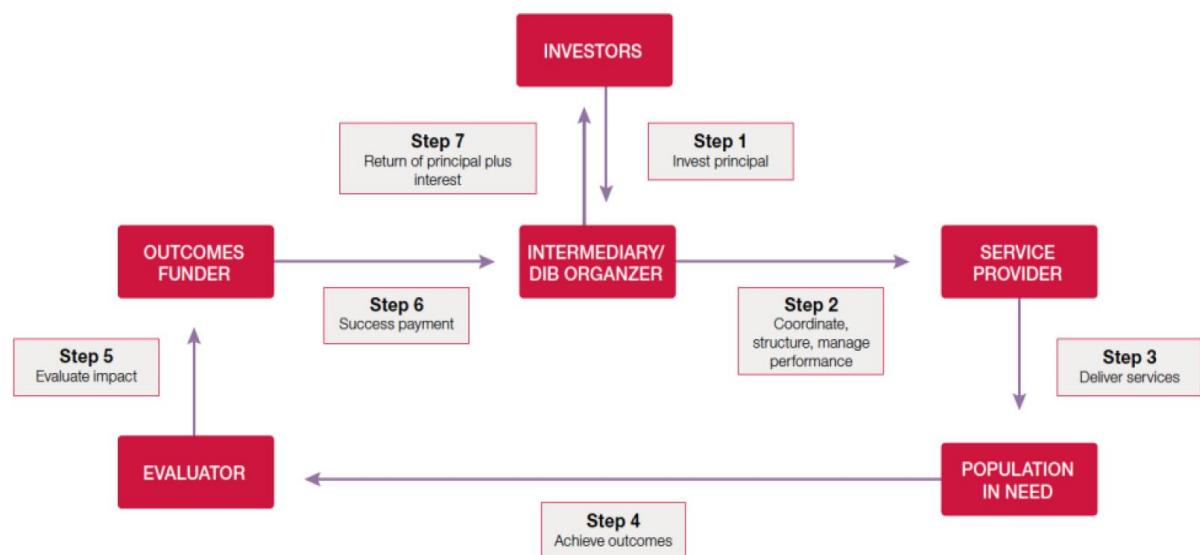


Figure 2.1: Organisational structure of a SIB (König et al, 2020)

2.1.4 The moderating role of the COVID-19 pandemic on education

This section highlights new challenges and opportunities in education that were brought about by the COVID-19 pandemic. A good understanding of these has ensured that the proposed solution as outlined in Section 5 and visually in the Appendix below is aligned with current needs in education, specifically school feeding programmes. The COVID-19

pandemic exacerbated educational disparities, especially among racial groups, as schooling transitioned to online platforms (Xu, 2020). Younger and academically less prepared students, particularly black students, faced heightened challenges which led to widening equity gaps (Xu, 2020). Access to technology, stable internet, and self-directed learning skills contributed to these disparities, compounded by decreased teacher-student interactions (Xu, 2020). Figure 2.2 below illustrates that online learning exacerbated the gap between racial groups, with black students experiencing sharper declines in grades than Asian and white students (Xu, 2020). This demonstrates the urgency and need for investment into school feeding programmes which serve lower income schools which are predominantly black in South Africa (Kimani, 2022) to improve black students' grades and contribute to closing this widening gap between races.



Figure 2.2: Average course grade by course delivery format and race (Xu, 2020)

School feeding programmes specifically also faced unprecedented challenges during pandemic lockdowns, leaving many children without meals (Kwatubana and Molaodi, 2021). Legal action taken by NGOs in South Africa compelled government to reinstate these programmes after closure (Kwatubana and Molaodi, 2021). Legal action was taken by two organisations called Equal Education and Section 27 against the closure of school feeding programmes. The court ruled in favour of the NGOs, and hybrid models combining physical

attendance with food parcel distributions were introduced to sustain programmes amid logistical hurdles (Kwatubana and Molaodi, 2021). In the same study, Kwatubana and Molaodi (2021) further found that extending school feeding beyond traditional days could provide a more comprehensive safety net for vulnerable children, addressing ongoing food insecurity concerns. The challenges presented in this section existed before the pandemic but were exacerbated by it. This means that this attempt at improving an education programme such as school feeding needs to be aggressive in addressing these challenges that were exacerbated by COVID-19. This highlights the need for new modalities of school feeding as is explored further in the proposed solution of this study.

2.2 Empirical literature review

The empirical literature review is broken up into conventional moderating factors in education, novel moderating factors in education, and an overview of the South African context with its evolution of school feeding strategies. The conventional moderating factors feature a discussion of demand side and supply side interventions in education across the globe. The results from these interventions justify the choice of school feeding as an education intervention of focus in this study. It also provides learnings on structuring an education intervention programme such as one this study proposes. The section on novel moderating factors discusses new moderating factors as have been influenced by societal, economic and technological changes, and how they impact education. The South African context informs this study in that it provides a brief history of school feeding in South Africa, and explains how the education ministry's policy has faced challenges and changes over the years. This is crucial in the study because it highlights what is lacking in the education sector in South Africa that this paper can find solutions for.

2.2.1 Conventional moderating factors in education

Conventional moderating factors consist of demand side and supply side interventions. Demand side interventions aim to increase students' and households' interest in education, while supply side interventions focus on improving resources and infrastructure within schools (Hassan et al, 2022). Understanding the relationship between these interventions and educational outcomes can guide donors and financial institutions in making informed investment decisions (Hassan et al, 2022). The first supply side intervention is access to schools. Building new schools has boosted enrolment rates, as seen in studies from Indonesia, Mozambique, Pakistan, Burkina Faso and Afghanistan (Barrera-Osorio et al. 2022; Angrist et al., 2023; Aurino et al., 2023). Building new schools has also improved learning outcomes, as demonstrated in Afghanistan and Burkina Faso (Angrist et al., 2023; Aurino et al., 2023). The second supply side intervention is providing pedagogical materials such as textbooks. Studies conducted in Kenya and Sierra Leone show that providing pedagogical materials can

positively influence learning outcomes if materials are age-appropriate and effectively distributed (Evans & Mendez Acosta, 2021; Maruyama and Kurosaki, 2024).

The third supply side intervention is integrating technology into classrooms through computer-aided learning. From studies in India and China it appears that computer-aided learning leads to significant improvements in academic performance (Major, Francis & Tsapali, 2021). However, in Columbia and Peru, computer-aided learning was proven ineffective due to inadequate planning on how to integrate the technology into learning (Barrios Aguirre et al., 2021; Escueta et al., 2020). The fourth supply side intervention is the pupil-teacher ratio in classrooms. Kimani's (2022) study in South Africa showed that the lower the pupil-teacher ratio, the higher the likelihood of completing secondary school. Furthermore, they found that a lower pupil-teacher ratio has a greater effect at lower education levels. In terms of test scores, studies in Bolivia, Chile and Kenya found that reducing the class size leads to improvements in test scores (Kedagni et al., 2021; Evans & Mendez Acosta, 2021). The last supply side intervention is governance, an encompassing term for how schools are managed. From studies in Uganda and Brazil, Mugellini et al. (2021) and Cavalieri et al (2023) observed that a lack of good governance as evidenced by corruption has a negative impact on test scores. However, programmes aimed at providing training to strengthen school governance have inconclusive impact on educational outcomes, as observed in Madagascar and Indonesia (Bjork & Susanti, 2023 and Ochmann et al., 2022).

On the demand side, interventions target households and students, addressing market imperfections and incentivising educational participation. The first demand side intervention is conditional cash transfer (CCT) programmes, which offer cash incentives for children's school attendance. They consistently demonstrate positive effects on enrolment rates and learning outcomes, especially for girls, in countries like Mexico, Malawi, China, Brazil, Honduras and Pakistan (Hassan et al, 2022; Garcia & Saavedra, 2023; Evans & Mendez Acosta, 2021). The second demand side intervention is scholarship programmes. In Kenya, Tanzania and Benin, the results of standard and varied implementation of scholarship programmes are consistent in yielding a positive impact on schooling outcomes (Sabates et al, 2021; Hassan et al, 2022).

The third demand side intervention is school feeding, which incentivises educational participation by alleviating household constraints. Studies by Iddrisu et al. (2022), Aurino et

al. (2023), Wang & Fawzi (2020) and Agu et al. (2023) all agree that malnutrition and hunger have adverse effects on children's learning ability. Studies of school feeding programmes in Ghana, Nigeria and Burkina Faso showed that school feeding improved learners' schooling outcomes as measured by school attendance, enrolment, retention rate, and test scores (Iddrisu et al., 2022; Agu et al., 2023; Aurino et al., 2023; Aurino et al., 2018). All these results show that the positive schooling outcomes that result from introducing school feeding are not country-specific, but are rather consistent across different parts of the world. School feeding is most effective as an education intervention when integrated into comprehensive education systems with strong teacher performance and adequate resource allocation (Aurino et al., 2023; Devereux et al., 2018).

On the cost-benefit side, cross country analysis on the return on investment on school feeding was reported by Devereux et al. (2018). They found that in Ghana, Kenya, Lao PDR and Zambia, benefit-to-cost ratios of the benefits from education to society compared to the cost ranged from 7:1 to 16:1. Furthermore in Kenya, they found that an investment cost of \$146 into a single child's education and school feeding was expected to yield \$1 782 in productivity increases propelled by improved education (Devereux et al., 2018). By any standard, this is an extraordinary return. It is this finding that has highlighted the potential of school feeding to improve schooling outcomes and inspire further probing into different ways that the potential of school feeding programmes can be unlocked and investment returns maximised to the benefit of communities in developing countries.

2.2.2 Novel moderating factors in operations, financing and governance of education

Recent years have seen the emergence of novel moderating factors in operations, financing, and governance of education, shaped by societal, technological, and economic changes. These factors influence how educational institutions function, secure funding, and manage themselves. There are seven key novel factors. The first factor is digital transformation and technology integration. The integration of technology into education has become a significant moderating factor, affecting operations, financing, and governance. Digital platforms for teaching, learning management systems, and data analytics tools impact operational

efficiency, financing strategies, and governance structures within educational institutions (Siljebo, 2020). The second factor is financial sustainability challenges. Economic uncertainties, exacerbated by events such as the COVID-19 pandemic, have posed challenges to the financial sustainability of educational institutions. Factors such as declining enrolment, reduced government funding, and increased competition necessitate novel financing strategies and resource allocation approaches (Laktionova et al., 2021; Nik Ahmad et al., 2019).

The third factor is the evolving regulatory environment. Changes in regulatory frameworks, including government policies, accreditation standards, and compliance requirements, have a significant impact on educational governance. Institutions must adapt their governance structures and decision-making processes to comply with evolving regulations while maintaining institutional autonomy and academic integrity (Lawn et al., 2020). The fourth is the demand for lifelong learning and flexible delivery models. The increasing demand for lifelong learning and non-traditional education pathways has led to the emergence of flexible delivery models, such as online and blended learning. Educational institutions must adapt their operations, financing mechanisms, and governance frameworks to accommodate these changing preferences and cater to diverse learner needs (Fanghanel et al., 2020).

The fifth factor is social justice and equity imperatives. Heightened awareness of social justice issues and equity concerns has prompted educational institutions to reassess their governance structures and operational practices. Strategies aimed at promoting inclusivity, diversity, and equity require institutional commitment, resource allocation, and stakeholder engagement (Freeman & Tran, 2020). The sixth factor is globalisation and internationalisation trends. The globalisation of education and increasing internationalisation of student populations present opportunities and challenges for educational institutions. Managing international collaborations, cross-border operations, and diverse stakeholder interests necessitate a nuanced approach to governance, financing, and operational decision-making (Yemini, 2020). The last is environmental sustainability initiatives. Growing concerns about environmental sustainability have prompted educational institutions to adopt environmentally responsible practices in their operations and governance. Sustainable campus development, energy-efficient infrastructure, and eco-friendly policies require innovative financing mechanisms and governance frameworks (Nurwidodo et al., 2021).

2.2.3 South African context and evolution of strategies in school feeding programmes

School feeding in South Africa has a long history, beginning with the Peninsula School Feeding Association (PSFA) providing meals to school children in 1958 (Mensah & Karriem, 2021; Brits et al., 2017). In 1994, the National Department of Health launched the Integrated Nutrition Programme to consolidate feeding schemes to combat malnutrition and food insecurity (Mensah & Karriem, 2021; Brits et al., 2017). The Primary School Nutrition Programme was later taken over by the Department of Basic Education (DBE) and evolved into the National School Nutrition Programme (NSNP), which now reaches over 9 million children in 19,000 quintile 1–3 primary and secondary schools (Mulaudzi et al. 2024). The NSNP aims to tackle child hunger, enhance learning, improve attendance, and promote healthy lifestyles (DBE & DPME, 2016). However, it faces challenges such as funding shortages, implementation inconsistencies, food safety concerns, delayed payments, and inflexible budgeting (Mafugu, 2021; Devereux et al., 2018).

Mafugu (2021) found a novel insight in his study of school feeding in Pinetown, South Africa that schools do not afford to ensure there is enough food for learners and pay food handlers using the funds provided by government. Devereux et al. (2018) conducted a study in Lady Frere and Qumbu, also in South Africa and found that Tiger Brands Foundation has become a crucial partner to the programme, supplementing government funding on the feeding programme. From the same study they found that although the NSNP has three pillars of which school feeding is only one, the other two pillars are neglected because all the funds go to school feeding. Munje & Jita, (2019) also conducted a study of school feeding in the Western Cape and they also noted inadequate finances as a key underpinned theme in the literature review to their study.

The key challenges mentioned in this literature review link to the broader research problem of insufficient government funding. The first challenge is outright funding shortages at schools. This limits the reach and efficacy of school feeding programmes and leaves many school children without meals (Mafugu, 2021). The second challenge is implementation inconsistencies. This is as a result of variability in funding and distribution of support for school feeding programmes. The schools which receive the higher levels of funding and

support are able to follow the standard implementation guidelines while those receiving lower funding and support find themselves deviating from the standard implementation guidelines. (Devereux et al., 2018). These deviations present the school with the risk of getting the programme halted because of non-compliance. The third challenge is food safety concerns (Mafugu, 2021). Ensuring food safety standards are adhered to required resources that may not be available under budget constraints. This could lead to children contracting foodborne illnesses, undermining the goals of the programme.

The fourth challenge is delayed payment of funds to schools. This disrupts the flow of resources necessary to ensure smooth operations and regular provision of meals to the children. This means the children's nutritional needs will be unmet and the programme's goals are undermined (Mafugu, 2020). The last challenge is inflexible budgeting (Mafugu, 2020). Having no flexibility in the funding mechanisms means the programme cannot respond adequately to changing conditions such as the decreasing buying power, increased demand or emergencies on the programme. This limits the efficacy of the programmes and results in the compromising of other schooling expenses to ensure school feeding continuity. Reducing the reliance on government funding by introducing additional funding partners is a clearly necessary pursuit on school feedings programmes.

Possible solutions to these challenges include diversifying funding, strengthening monitoring and evaluation, partnerships with the private sector to support expansion and sustainability, and encouraging local procurement and community involvement (Mensah & Karriem, 2021; Devereux et al., 2018). Despite these challenges, the programme has advanced towards self-reliance and private sector partnership (KFC, 2022; Tiger Brands Foundation, 2021). Alongside this is a growing body of research emphasising the importance of extending the programme to include ECD centres (Muller et al., 2023; Kruger et al. 2020; Aurino et al., 2023). Figure 2.3 highlights disparities in public expenditure on education, with ECD (pre-primary) receiving minimal funding compared to primary education in different parts of the world (Stellakis, 2018). However, historical apartheid legacies persist, impacting education equity despite policy efforts to redistribute funds and provide fee exemptions for impoverished students. Innovative education policies like school feeding programmes are pivotal for breaking inequality cycles and promoting social mobility (Kimani, 2022).

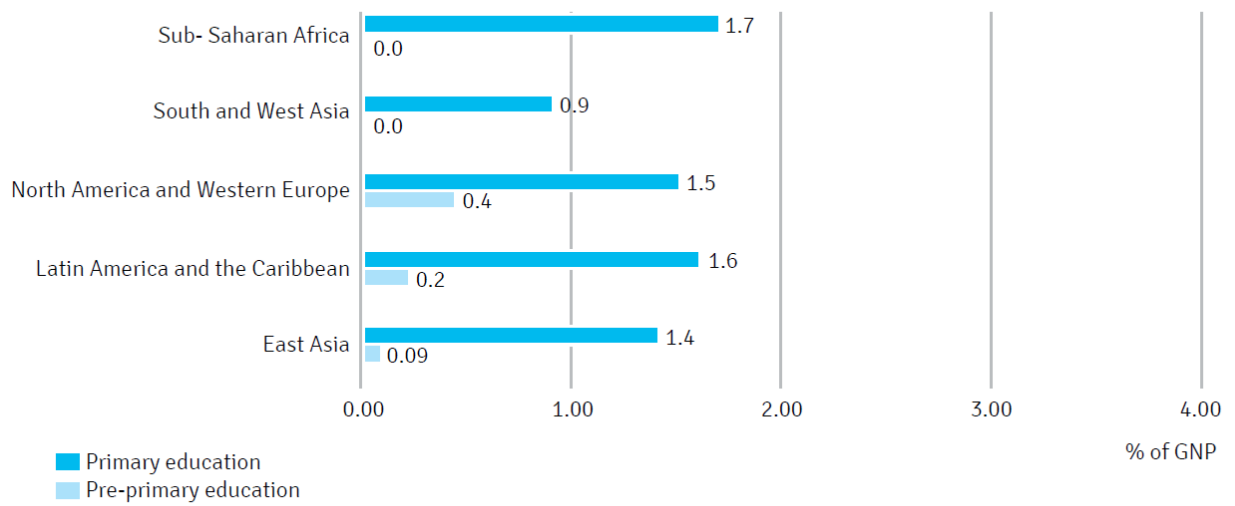


Figure 2.3: Public expenditure on pre-primary and primary education as a percentage of GNP by region (Stellakis, 2018)

3 Methodology

3.2 Research approach

The study adopts a qualitative research approach, embracing an interpretivist paradigm and utilising an inductive and exploratory process to identify themes for theorising. The focus is on exploring how innovative finance can support stakeholders in navigating financial and operational challenges within school feeding programmes. To address this, qualitative methods are essential for capturing and interpreting the complexities of programme implementation. To delve into this area, three sub-questions are outlined. The first examines the operational adjustments required in the existing school feeding programme for a comprehensive approach, calling for a qualitative study. The second looks into the pivotal considerations for selecting a finance model that can effectively address the programme's current challenges, which also requires a qualitative inquiry to understand the guiding finance principles. The final sub-question explores how innovative financial strategies within a PPP can facilitate investment in the programme, also aiming to generate qualitative insights for theorisation. An embedded case study approach is used which explores multiple sub units within a single main case. The focus is on South Africa as a single case study. The interview responses from educators and the education ministry district officer in Thabo Mofutsanyana district in the Free State province provide a representative example of the national school feeding programme in South Africa due to the standardised implementation rule of the National School Nutrition Programme (NSNP).

3.3 Research design

The methodological choice for this research is qualitative, as mentioned above. The strategy followed is an embedded single-case study. This is because the study focuses on multiple parts of a single case and involves more than one unit of analysis. The sub-units focus on different salient aspects of the case and allow for multiple methods which can be applied to the sub-units. The study seeks to explore how innovative finance can help stakeholders in school feeding programmes overcome financial and operational challenges. Three sub-

questions guide the research: operational adjustments required in the existing school feeding programme for a comprehensive approach; pivotal considerations for selecting a finance model that can effectively address the programme's current challenges; and how innovative financial strategies within a PPP can facilitate investment in the programme.

The study employs an embedded case study approach to integrate knowledge from various stakeholders, such as financial institutions, the education ministry, educators, suppliers, and service providers. The focus is on improving school feeding in South Africa as the single case study to provide prototypical insights into the role of the private sector in facilitating investment into school feeding programmes as an intervention in education. The research aims to assess necessary operational modifications and explore perspectives from the education ministry, educators, and suppliers on current programme design successes and failures. Additionally, it seeks to understand optimal finance models by examining insights from financial institutions and the education ministry, alongside feedback from potential investors in school feeding programmes. The study will also evaluate how PPPs with innovative finance strategies can drive investment in school feeding. It will explore different ways to combine finance with domestic funding, comparing programme objectives with those of impact investor institutions to identify effective financing tools and structures. Through this research, the study aims to contribute to the development of school feeding programmes in South Africa and similar settings worldwide.

3.4 Sampling and data collection

The approach taken in this study is purposive sampling because interview participants were selected based on their ability to provide rich insight into the research questions. Technical experience is crucial to theorising in this study, so a random selection of participants would not have been feasible. Respondents were chosen on the basis that they were involved with the day-to-day operations of school feeding or that they were in decision-making roles regarding finances at the Department of Basic Education or at their respective corporate firms. For the first research question relating to operational adjustments, the interview participants were required to be involved with the day-to-day feeding operations in a school. Educators provided insights into operational design and processes, while the wholesaler

offered a supply chain perspective. Food handlers provided a perspective from food preparation and the principal and hostel matron provided an operations management perspective. CSI representatives from the potential partner firm provided a perspective of how private sector partners could contribute to the operations.

For the second sub-question relating to the finance model, the interview participants were required to be in decision-making roles about finances in their different organisations. The education ministry district officer was the correct level of government representative because they distribute funds from provincial governments to schools for feeding and they approve all procurement requests for food supply to the schools. The sustainable finance manager was selected because they are experienced in enabling ESG finance deals and would provide insight into innovations in finance for a programme for social benefit. The debt capital market associate would provide insight into the intricacies of debt capital markets. The financial institutions selected have years of experience managing portfolios spanning the entire African continent and have successfully enabled investment into many programmes. The school principal was also crucial to theorising on the finance model because they are responsible for the school's spending and budget. For the last sub-question on PPP and innovative financial strategies, the interview participants were required to be in existing PPPs. This way they could contribute their experience to assist in theorising for this paper. It is for this reason that CSI coordinators from different organisations involved in education projects were interviewed. More details on the stakeholders are shown in Table 3.1 below.

The interview responses from educators and the education ministry district officer in Thabo Mofutsanyana district in the Free State province provide a representative example of the national school feeding programme in South Africa due to the standardised implementation rule of the National School Nutrition Programme (NSNP). Implementation details such as feeding times, budgets, food preparation, and menus are prescribed and consistent across districts. Findings from Thabo Mofutsanyana district can be generalised to other districts as the NSNP is implemented according to nationally designed guidelines monitored by the DBE and the Department of Planning, Monitoring and Evaluation (DPME). Similarly, the interview insights from financial institutions are representative of the sector because they are guided by two things: the profit motive in financial institutions which is a cross-cutting factor and ESG which is embedded in strategies of all large financial institutions.

Saturation was achieved in this study by ensuring adequate sample size with minimum of 4 respondents per sub-question. Saturation was also achieved by thorough interrogation of the responses from research subjects. After analysing the transcripts from interviews, the respondents were contacted numerous times after the interviews to confirm certain details, expand on certain ideas and to clarify any points of confusion. And at the point of analysis of this paper, no new themes were being identified when contacting the respondents. Similarly, in analysis of the transcripts and organising the data into results tables, the same themes kept coming up even from different interview respondents. Further, no new information can be found in the transcripts other than what is reported in the study.

Table 3.1: Interviewees, sub-question of the study, and contribution to the study

Title	Sub-sector	Area of activity	Contribution to study
Sub-question 1: What operational adjustments are required in the existing school feeding programme for a comprehensive approach?			
Public School Teacher	Education	Teaching	Operational design of school feeding and its impact on educational outcomes.
Wholesaler	Service provider	Food supplier	Supply chain of school feeding programmes.
Public School Food Handler	Education	Feeding programme	Day to day operations of feeding in schools.
Private School Hostel Matron	Education	Support staff	Management of a feeding programme.
Sub-question 2: What are the pivotal considerations for selecting a finance model that can effectively address the programme's current challenges?			
Sustainable Finance Manager	Financial institution	Financial	Financing model and ideal PPP
Public School Principal	Education	School leadership	End-to-end management of a school feeding programme.
Education Department District officer	Government	Programme management and monitoring	Strategy behind school feeding programmes and requirements for PPP design from the government's perspective.
Debt Capital Markets Associate	Financial institution	Financial	Solution design and debt capital market insight.
Sub-question 3: How can innovative financial strategies within a PPP facilitate investment in the programme?			

Food manufacturing Firm CSI coordinator	Consumer	PPPs	Insight into partnerships from the past.
Financial Institution CSI Officer	Financial services	Financiers	PPP in education as well as programme design to attract CSI investment.
Corporate Finance Solution Manager	Financial services	Financiers	Insight into existing partnerships in education.
Food Firm CSI Project Coordinator	Consumer	PPPs	Insight into existing partnerships in education.
Distribution Firm Project Manager	Consumer	PPPs	Insight into existing partnerships in education.

3.5 Data analysis

The analysis techniques used in this study is thematic analysis, which consists of three steps. The first step is familiarisation with the data. The second step is grouping and categorising the text to identify the key themes. And the third step is verifying the themes from the interview results with those which have been identified in the literature review, followed by reporting the verified themes that emerged from the interviews. The first step required reading the transcripts of interviews a few times, as well as playing the recordings while making notes to highlight the key ideas. The more times the recordings and transcripts were reviewed, ideas were being crystallised while new ones were identified. The second step required thinking in terms of how to categorise the key ideas identified into themes.

The study utilised three sub-questions as a framework for categorisation. The first sub-question focused on operational adjustments needed for a more comprehensive school feeding programme, resulting in findings categorised across a further three analytical tables for each sub-question. The three analytical tables detail 1) unique operational factors, 2) underlying processes, and 3) key outcomes. A similar approach was applied to the second and third sub-questions, resulting in a total of nine analytical tables. The analysis section compared findings with theoretical and empirical literature, clarifying the study's contribution

to the scholarship on school feeding, education finance, and education intervention programmes.

3.6 Research criteria

The study ensured validity, reliability, objectivity, and saturation through several strategies. Validity was achieved by carefully selecting a representative sample group with relevant technical expertise, and employing triangulation to examine the subject matter from various perspectives. Respondent validation allowed participants to provide feedback on interpretations, maintaining authenticity and recognising their experiences. Reliability was upheld by utilising methods such as refutational analysis to explain contradictions, theoretical triangulation to integrate diverse frameworks, and detailed interview notes and transcriptions to organise data. This approach ensured transparency and consistency in the research. Objectivity was attained through triangulation, which cross-checked and compared information from multiple sources, leading to comprehensive results independent of the researcher's perspective. Saturation was achieved by ensuring a minimum of four respondents per sub-question, and thoroughly interrogating responses. Consistent themes across interviewees indicated no new information beyond the study's findings.

3.7 Limitations of the study

The study recognised the potential biases and subjectivity of interview findings due to its qualitative approach involving a small sample size. However, care was taken in the interview stages to ensure that the respondents were experienced and had a direct and deep understanding of the topics they were interviewed for. A further mitigation of this limitation was that tools such as triangulation, a minimum of 4 respondents per sub-question, respondent validation, and refutational analysis were used to ensure validity, reliability, and objectivity. Triangulation was used to integrate diverse frameworks and to cross-check and compare information from multiple sources, leading to comprehensive results independent of the researcher's perspective. Refutational analysis was used to explore and explain contradictions from the interview respondents. Respondent validation was used through

allowing participants to provide feedback on interpretations, maintaining authenticity and recognising their genuine experiences in the study.

The focus on a single case study (South Africa) means that the findings may not be easily generalizable to other contexts or countries. The unique socio-economic and political conditions in South Africa may limit the applicability of the results to other countries. Therefore, the case is representative of school feeding programmes in rural communities within South Africa. Another limitation is that some research gaps cannot be closed due to time, cost, and analytical complexity. For example, randomised controlled experiments to test the success of the solution proposed in this study would require extensive trials and multidisciplinary expertise. Another key limitation is that study relies on a relatively small number of interviewees, which may not capture the full range of experiences and perspectives. This can limit the robustness of the findings and the ability to draw broader conclusions. As a mitigation, the discussion features a critical discussion of these potential limitations and implementation challenges of the proposed model to lend credibility to the study. To this end, the findings of this study should be used as a starting point for understanding how to facilitate investment into public sector programmes through PPP and innovative finance thinking. Despite these limitations, the study remains viable and is expected to significantly contribute to the scholarship on education, innovative finance and school feeding.

3.8 Research ethics

The study was conducted in line with the University of Cape Town (UCT) Code of Ethics, in full honesty and free of any deception. The research did not discriminate on grounds of gender, race, ethnic group, age, religion, income, handicap or illness. I was able to obtain informed consent of all participants using the UCT Graduate School of Business approved interview consent form. No confidential data was collected, the identities of the individuals were kept completely anonymous and there were no payments made or gifts exchanged to any of the participants. The researcher is self-funded and there are no conflicts of interest related to sponsorship of the research.

4 Findings and analysis

The section is divided into two subsections, one detailing the findings and the other analysing the findings. Both the findings and analysis sub-sections are further divided into the three sub-questions that this study seeks to answer. In the findings sub-section, for each of the sub-questions, the results are divided into key moderating factors, process dimensions and outcomes. And for each sub-question in the analysis, the key themes are categorised as either hindering factors or success factors for enabling PPP to increase investment into school feeding.

4.1 Findings

4.1.1 School feeding operations

Table 4.1 below details operational considerations which came up strongly in the interviews with stakeholders involved in the day-to-day operations of school feeding. It includes the following themes: household-level food insecurity, outreach programmes, COVID-19 experience with the presence of own kitchen and delivery driver, who serves the food, inflation and prospects of including ECD. Household-level food insecurity speaks to the blind side of implementing school feeding while ignoring the households' learners come from, and is a critical novel insight which emerged from the interviews. School feeding, as it is currently implemented in public schools, does not address the root cause of child hunger, which is food insecurity at home. A lot of children who benefit from school feeding come from households with deep food insecurity. By design, schools which implement school feeding are the lowest income schools, namely quintile 1–3 schools on the quintile system. This issue does not exist in private education where learners come from well-off families. This is one part of the programme the school principal mentioned being least proud of.

Outreach programmes highlight the presence of initiatives to improve communities surrounding schools. Outreach programmes are run in both private and public schools, but

they are targeted at different recipients. In public schools it is to the families of the children in the schools, while in private schools it is to the community surrounding the schools. This is because in public schools with school feeding, the learners themselves and their families need the outreach. However, in private schools, the learners do not need outreach and are in a position to give back. The use of the school feeding programme as a vehicle to administer further outreach is a novel insight in the current scholarship on school feeding.

In COVID-19, the presence of an own kitchen and driver speaks to how important it became for a school to have its own facilities to continue operations during the pandemic. Having a dedicated kitchen and delivery driver enabled public schools to continue feeding programmes during the COVID-19 lockdown. Private schools were completely shut down during the COVID-19 pandemic. Public schools were open for administering school feeding. Further, by having their own dedicated kitchens, public schools could ensure adherence to additional safety precautions during food preparation. In this way, learners could collect food during normal feeding time while adhering to COVID-19 pandemic rules. The importance of having own facilities as a key learning from the COVID-19 pandemic is a novel insight which came from the interviews.

Inflation highlights the diminishing purchasing power of the budget allocation from government and how that is managed in public vs private schools. The efficient implementation of the school feeding programme relies on allocation of sufficient government funding to public schools. Similarly in private schools, the budgeted amount should match the rising costs. Inflation is a cross-cutting factor affecting both private and public schools by reducing the purchasing power. In public schools, teachers reported that the budget has remained rigid despite efforts to communicate food price increases. The failure of education ministry budget processes to increase school feeding budgets proportionately to inflation is also a novel insight from this study.

The interviews also explored the importance of having ECD as part of the national school nutrition programme. There is a hesitation to involve ECD years of school feeding into the national school feeding programme model in public schools. From the perspective of the CSI manager at a large financial institution, this inclusion would be aligned with CSI strategy. In private schools with school feeding, this would not be a welcome inclusion since pre-school children are too young to live in a hostel independently. This possible inclusion of ECD to

school feeding is clearly only viable in public schools with school feeding. The interview participants responded differently to the question of including ECD. The DBE district officer’s hesitation contradicts the literature reviewed which expresses a need to include ECD in school feeding operations. While the CSI’s manager’s support confirms the literature (Stellakis, 2018; Kruger et al. 2020; Muller et al. 2023).

Table 4.1: Operational considerations, moderating factors and structures across different types of feeding programmes

Finding	Details	Representative quotes
Household level food insecurity	Current public school feeding programmes fail to address the root cause of child hunger: food insecurity at home. Many beneficiaries hail from households experiencing severe food insecurity, unlike their counterparts in private education from more affluent backgrounds.	<p><i>One thing I am least proud of about the programme is that it places emphasis on feeding children in the time they are at school while ignoring the poor households that the children come from, and that is where the problem starts (Public School Principal).</i></p> <p><i>Our school is a quintile 1 school so the learners in our school are indeed from very poor households (Public School Teacher).</i></p> <p><i>[Large private school] is a private fee-paying school so the learners that come here are from well-off areas in the surrounding towns. We do not have the issue of household food insecurity in our learners' families (Private School Hostel Matron).</i></p>
Outreach programmes	Outreach programmes are run in both private and public schools, but they are targeted at different recipients. In public schools it is to the families of the children in the schools while in private school it is to the community surrounding the school.	<p><i>We run an outreach programme where we supply food parcels to families when they have funerals (Wholesaler).</i></p> <p><i>We do not have an outreach programme specifically aimed at the homes children come from because in our school it is not necessary. However, we have done outreach programmes such as clothing drives to support local orphanages as well as other drives especially for Mandela Day (Private School Hostel Matron).</i></p>

<p>COVID-19: Presence of an own kitchen and delivery driver at school vs buying in food from vendors</p>	<p>Having a dedicated kitchen and delivery driver enabled public schools to continue the feeding programme during the COVID-19 lockdown. Private schools were completely shut down during the COVID-19 pandemic.</p>	<p><i>During the COVID-19 lockdown, learners were coming to school to collect cooked meals during the normal feeding time (Public School Food Handler).</i></p> <p><i>School feeding continued with extra safety precaution during the COVID-19 lockdown. Additional safety protocols implemented to school feeding during COVID-19 reduced the amount of time learners spent in the classroom learning (Public School Principal).</i></p> <p><i>We were fully operational and supplying schools during the COVID-19 lockdown. (Wholesaler).</i></p> <p><i>The hostel was completely shut down during the pandemic so there was no feeding activity at all (Private School Hostel Matron).</i></p>
<p>Inflation</p>	<p>Efficient school feeding hinges on adequate government funding for public schools and matching budgets for private schools. Inflation affects both sectors, diminishing purchasing power and underscoring the need for adaptable budgeting strategies.</p>	<p><i>The DBE budget has remained rigid despite efforts to communicate food price increases (Public School Teacher).</i></p> <p><i>One of the biggest challenges we have with implementing the school feeding programme is that when food prices increase, the government takes a long time to increase the budget allocation per learner (Public School Principal).</i></p> <p><i>Every year we experience an increase in costs to keep the hostel operational because our contracted service providers increase prices (Private School Hostel Matron).</i></p>
<p>Including ECD</p>	<p>Public schools are hesitant to integrate ECD into their feeding programmes, despite corporate social investment (CSI) alignment. Private schools oppose ECD inclusion due to young children's unsuitability for hostel</p>	<p><i>I'm divided on the issue of including ECD centres to the nationally managed school feeding programme (District Officer).</i></p> <p><i>We have noticed that investment into education has become saturated at tertiary level of education to the neglect and underfunding of ECD (pre-school) and foundation phase learning (grade 1–3) (CSI manager).</i></p>

	living.	<i>So, school feeding at ECD ages does not happen at our school because at our pre-school and day care, none of the learners live in the hostel because they are too young. They bring their own packed lunches from home (Private School Hostel Matron).</i>
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Table 4.2 builds on the themes identified in Table 4.1 above. The themes in Table 4.2 below explain how the factors identified in Table 4.1 above play out. The first theme is food parcels, which are a solution to household level food insecurity as identified in Table 4.1 above. This solution for household food insecurity plays out only in public schools because private school learners are from wealthy homes. Public School Teachers have identified this deep need for food in learners' households, and they started an initiative to provide leftover food to vulnerable learners to take home. Food handlers assist with distributing the food leftovers to the learners in need who have been identified. This is a novel insight from the interviews.

The second theme in Table 4.2 below is the idea to extend school feeding operations to include school holidays. This is another solution to household food insecurity. The proposal to extend school feeding programmes to cover holidays aims to address household food insecurity, a concern identified by educators. Despite support, budget constraints and teacher objections pose challenges. Increasing funding and extending food handler workdays could facilitate this programme enhancement. Household food insecurity persists beyond term days, emphasising the vital role of school feeding programmes in addressing child hunger originating from home. This is a further novel insight from the interviews.

Theft has been identified in school feeding programmes, which serves as evidence of food insecurity in the communities surrounding schools. The school premises are equipped with many valuable tools and equipment, and yet the items sought after by the thieves who break in are only food items. There are also reported cases of theft by the food handlers. Theft of food only is a clear indication of the depth of food insecurity that exists in the community surrounding the school. An effective solution to this theft will require some interventions that reduce hunger in the communities surrounding schools. This is a novel insight from the interviews.

Outreach programmes are another key theme that came up in the interviews. These outreach programmes play out differently in public vs private schools. In public schools, outreach programmes are enabled by partnerships between the schools and wholesalers, where the wholesaler provides food supplies to bereaved families. In private schools, the outreach is through a partnership that the schools have had with different charitable organisations in the communities surrounding the school, where the schools donate clothes and other materials. This shows the desire to contribute positively to community well-being. The use of school feeding as a vehicle to do further outreach is a novel insight from the interviews.

The presence of own kitchen and delivery driver at school during COVID-19 versus buying prepared food from vendors was a key theme from the COVID-19 pandemic. Implementing safety protocols was straightforward in both private and public schools because they had their own kitchens. This is how schools were able to resume operations even in school feeding when lockdown restrictions eased while ensuring the safety of all learners and staff. This would have played out differently if schools did not have their own kitchen and dedicated staff. Further, assuring the safety of the food would have been less straightforward. This is a novel insight from the interviews.

Inflation is another cross-cutting factor which plays out very differently in private vs public schools. In public schools, the budgets do not respond according to inflation, which shows poor planning by the DBE. In private schools, inflation is planned for every year and school fees are adjusted according to yearly inflation rates. Yearly adjustment of school fees ensures that the quality of food in private school is maintained and there are no funds dedicated for other school funds used for feeding. The situation is very different in public schools where schools can go years without any adjustment in the allocation. This is a novel insight from the interviews.

Another key theme is the possible inclusion of ECD. The possibility of extending the school feeding programme to include ECD is a significant consideration. Both the DBE and the Department of Social Development already fund feeding programmes in registered ECD centres, though separately. There is endorsement for centralising feeding operations under one programme, including ECD. This aligns with the focus on ECD by certain finance institutions, suggesting potential collaboration between these finance institutions and ECD initiatives. Integrating ECD into the feeding programme addresses the underlying issue of

household food insecurity from a younger age, aiding in alleviating nutritional challenges for vulnerable children. This confirms and adds to findings in the literature (Stellakis, 2018; Kruger et al. 2020; Müller et al. 2023).

Table 1.2: Operational process dimensions of different types of programmes and how they play out in distinct food and school programmes.

Finding	Details	Representative quotes
Food parcels – solution to household food insecurity	The solution for household food insecurity plays out only in public schools because private school learners are from wealthy homes. In public schools, food handlers assist with distributing food leftovers to the learners in need, and teachers help by identifying needy learners.	<i>Our school staff identify vulnerable children, and we give them the food that is left over to take home and feed the rest of the family. This often happens on Fridays just before the feeding programme closes for the weekend as well as before school holidays (Public School Teacher).</i> <i>Some learners who have been identified as needing food at home come to the kitchen after school to collect left over food to take home (Public School Food Handler).</i>
Operating during school holidays – solution to household food insecurity	Children from impoverished families endure prolonged periods of hunger, especially during school holidays. The demand for food persists despite school closures, highlighting the necessity to extend feeding programmes throughout the school year as a solution to household food insecurity.	<i>Keeping school feeding operational during school holidays is a good idea as there is a real and deep need for it in households that the learners come from. The biggest problem with implementing it will be staff members having their holidays taken away from them (Public School Teacher).</i> <i>While we would love to expand school feeding to be operational during school holidays, government provides barely enough money for school term days (Public School Principal).</i>
Household food insecurity – evidence from theft	Theft of food is a clear indication of the depth of food insecurity that exists in the community surrounding the	<i>We have had incidents where food handlers steal learners' food (Public School Teacher).</i> <i>We have also had incidents of break-ins into the school where the thieves</i>

	school. It is a result of that underlying food insecurity issue.	<i>vandalised school buildings to steal the food (Public School Teacher).</i>
Outreach programmes – how they do what they do	There are operational outreach programmes run in public schools through wholesalers as well as at private schools. This shows the desire to contribute positively to community well-being.	<i>We work closely with the teachers and principals to identify bereavement in children’s families. Once this is communicated to us in advance of the funerals, we contribute to the funeral by gifting them produce and food supplies (Wholesaler).</i> <i>We have an annual pre-loved clothing run in the hostel for Mandela Day. The learners donate clothes they do not wear anymore and on Mandela Day the entire hostel visits the nearby orphanage and donates the clothes (Private School Hostel Matron).</i>
COVID-19 - Presence of an own kitchen and delivery driver at school vs buying in food from vendors	Implementing safety protocols was straightforward in both private and public schools because they have their own kitchens. This is how schools were able to resume operations when lockdown restrictions eased.	<i>Protocols were instilled to enhance the safety of the food. The delivery driver had to be masked at all times and the car and delivery personnel were sanitised after every delivery (Wholesaler).</i> <i>How we continued operations was by getting learners to bring containers with lids and wear a mask. They received the cooked food to take away and consume at home (Public School Teacher).</i>
How inflation is managed	Inflation is a cross-cutting factor which plays out very differently in private vs public schools. In public schools, their budgets do not respond to inflation proportionately, which shows poor planning by the DBE, and in a private school, inflation is planned for every year and school fees are adjusted accordingly.	<i>I have seen no increases in the allocation per learner in the programme until in 2022 when it was increased by 10c. Clearly, this does not match inflation. But our hands are tied because we follow the budget allocation process from National Treasury, which is passed down to the province level (DBE District Officer).</i> <i>Every year, our learners’ school and hostel fees increase by a percentage determined by the school’s board. Prior to that, our contractors send their budget for the upcoming year and the percentage increase is dependent on that calculation (Private School Hostel Matron).</i>

Including ECD	Since noticing that investment in education is saturated at tertiary level, [Large Financial Institution] changed strategy to focus more on ECD. However, the DBE feels strongly that ECD should remain a social development ministry focus area.	<p><i>Registered ECD centres receive an allocation of their own from both the Education ministry and the Social Development Ministry. Many of them already use some of this funding on feeding the children (DBE District Officer).</i></p> <p><i>Since our strategy refresh, we shifted focus from university level education to ECD, specifically the ages between 4 – 9-year-olds. The key channel through which we intend to implement this new strategy are ECD practitioners, Foundation Phase teachers and primary caregivers (CSI Manager).</i></p>
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Table 4.3 below details outcomes from school feeding and categorises them into key themes. The first key outcome is the benefit from school feeding to learners’ educational outcomes. Observations by teachers confirm the widely accepted benefits of school feeding in the literature (Kwatubana and Molaodi, 2021; Iddrisu et al., 2022; Aurino et al., 2023; Wang & Fawzi., 2020; Agu et al., 2023; Aurino et al, 2018). There are tangible improvements to schooling outcomes from successful implementation of school feeding in public schools. When asked to comment on what they have identified to be the benefits of school feeding, educators shared that school feeding improves learners' school attendance, performance in tests, and concentration, amongst others. This positive outcomes from implementation of the programme are a result of how different process factors play out.

The second key theme is an extension of the first one discussed above. Solving household food insecurity leads to better educational outcomes. If left untreated, the positive impact of school feeding on educational outcomes can be stifled by household food insecurity. If learners do not eat the food served because they want to save it for their family, the entire purpose of school feeding is defeated, and the benefits of school feeding to learning outcomes will be lost. This emphasises the need to address food insecurity from the children’s homes to improve the efficacy of school feeding programmes to educational outcomes. This is a novel insight from the interviews.

Community wellness and dignity is a key outcome of outreach programmes. Through outreach programmes, different actors can contribute to the well-being and dignity of the community around the school. The wholesaler is one such actor through their bereavement support programme. By assisting bereaved families with produce and food supplies, loved ones can have dignified funerals and family left behind can have their immediate need for food taken care of. Mandela Day is an exemplary initiative of how private schools contribute to the well-being of community members in need. It is also an excellent opportunity to teach children about the importance of giving back. This is a novel insight from this study.

A crisis-proof operational plan was a key outcome of the COVID-19 pandemic. The lessons on crisis management and how to ensure continuity in crisis moments will inform programme design in the future. The food handler at the public school mentioned that the plan they followed to ensure continuity of the programme during COVID-19 would be useful even in the next crisis. Besides school feeding, an operational plan was followed to continue teaching activities through various online learning tools in private schools. However, in public schools learning activities were halted, which meant learners lost learning time. The learnings from private schools will be valuable to public schools in future to ensure continued learning even in public schools. This is a further novel insight from the interviews.

Inflation has different outcomes because different stakeholders are affected by the measures taken to manage it. Parents of children in the private school face yearly increases in school fees because of inflation. However, public schools find themselves cutting budgets for other learning inputs to be able to keep school feeding operational. Clearly, for private schools, the standard of education is maintained and there are no substitutions of resources due to budget constraints, while in public schools, school feeding is prioritised using funds meant for other school expenses. This is a novel insight from the interviews.

Renewal or non-renewal of conditional funding is a key outcome of failing or succeeding in the goal of standardised implementation in public schools. Public schools must adhere to the standardised implementation details of school feeding as stipulated in the National School Nutrition Programme implementation guide in order to continue receiving funding. This important conditionality is tested by monitoring and evaluation processes. Some leeway is granted to extreme situations and freak incidents like floods in an area, or workers' strikes. A favourable outcome of the monitoring and evaluation process is highly sought after by the

schools' leadership. This is confirmed by the programme implementation guide (DBE & DPME, 2016).

Table 4.3: Key outcomes of food and school programmes in distinct contexts

Finding	Details	Representative quotes
Impact of school feeding on educational outcomes	Observations by teachers confirm what has been widely agreed upon in school feeding literature. There are tangible improvements to schooling outcomes from successful implementation of school feeding in public schools.	<p><i>Since implementing school feeding, we have seen a reduction in learners absenteeism rates, a reduction in dropout rates, improvement in learners' concentration and performance in all their subjects (Public School Teacher).</i></p> <p><i>The teachers report improvements in learners' concentration levels and performance in assessments. This is because the food provided improves learners' energy levels, which helps them focus in class and perform much better in schoolwork (Public School Principal).</i></p>
Solving household food insecurity leads to better educational outcomes	If left untreated, the positive impact of school feeding on educational outcomes can be stifled by household food insecurity.	<p><i>What we saw was that the really poor learners would dish up the food and not eat at school with the thinking to take it home to share with the rest of the family. This undermines the very aims of what school feeding aims to do because the learner is at school hungry all day (Public School Teacher).</i></p> <p><i>When we started providing the very poor children with the option to get leftovers, they ate their food during school instead of saving it and going hungry (Public School Food Handler).</i></p>
Outreach programmes – community well-being and dignity	Through outreach programmes, different actors can contribute to the well-being and dignity of the community around the school.	<p><i>By assisting bereaved families with produce and food supplies, loved ones can have dignified funerals and family left behind can have their immediate need for food taken care of (Wholesaler).</i></p> <p><i>Our Mandela Day clothing drive is how we contribute to the well-being of community members in need. And it's an excellent opportunity to teach children about the importance of giving back</i></p>

		(Private School Hostel Matron).
COVID-19 – crisis-proof operational plan	The biggest outcome of the COVID-19 pandemic were the lessons on crisis management and how to ensure continuity in crisis moments.	<p><i>After a few months of learners doing the online learning, they got more and more comfortable with the new method of learning. And teachers got better and better at teaching remotely (Private School Hostel Matron).</i></p> <p><i>Having to creatively find ways to ensure continuity of our school feeding programme has helped us create a plan to follow in the next crisis (Public School Food Handler).</i></p>
Inflation – outcomes	Parents of children in the private school face yearly increases in school fees because of inflation while public schools are cutting budgets for other inputs to be able to keep school feeding operational.	<p><i>The direct outcome of inflation in our school is higher fees that parents need to pay. So far, we have not experienced major challenges from parents with paying their school fees (Private School Hostel Matron).</i></p> <p><i>We have had to use funds intended for buying textbooks and stationery to supplement the school feeding budget. We also supplement the feeding budget with money from fundraising initiatives that we run because the DBE allocation is not enough anymore (Public School Principal).</i></p>
Failing or succeeding at standardised implementation – renewal or non-renewal of conditional funding	Public schools must follow standardised school feeding protocols to maintain funding. Compliance is monitored, allowing flexibility for emergencies like floods or strikes. This ensures efficient resource allocation while addressing unexpected challenges.	<p><i>We get random visits from the Department of Planning, Monitoring and Evaluation. They conduct surprise visits to assess the implementation of school feeding against the prescribed implementation guide. If the school has followed the guide to satisfactory standards, they qualify for continued school feeding programme funding (Public School Principal).</i></p> <p><i>When the evaluators come, they check the kitchen we prepare food in and store it, they look at times it takes to prepare food, they look at what we cook and what ingredients we have in stock against the prescribed menu (Public School Food Handler).</i></p>

4.1.2 Finance model considerations for school feeding

Table 4.4 below details key financial considerations that emerged from the interviews on how [Large Financial Institution] can enable investment into school feeding. The first theme is social bond/loan. Given the significant social potential of the programme, the financial institution explored sustainability principles for bonds and loans. Educational investments are inherently ESG-oriented due to their societal impact. Adhering to international principles is essential for firms emphasising the social impact in financing deals, enhancing ESG scores and potentially reducing finance costs. This confirms the cost benefits from ESG as discussed in the literature (Agnese & Giacomini, 2023).

The second theme is conventional credit for a nutrition programme. There are two types of possible financial institutions which were interviewed, a CSI manager and a sustainable finance manager. Key differences emerge in the way they do business. The CSI manager explained that the most important factor to their investment decisions is that they do not any partnerships with for profit companies. The sustainable finance manager expressed that despite the often obvious social benefits of projects, the bottom line of any deal is the most important thing. This shows that the financial institution's business model will also inform the potential financing structure of this programme. This is a novel insight from the interviews.

Donations linked to tax and affirmative actions is another key theme. A partnership with CSI at [Large Financial Institution] will be donation only, with guard-rails for BBBEE informing different parts of the partnership. The CSI manager explained that every year, they need to get a Section 18 exemption certificate to continue operations. This is also a compliance requirement for BBBEE. This shows how affirmative action is a key motivator for corporates and will inform their preferences on how to partner with the programme. This is a novel insight from the interviews.

The last theme is the tenure of investment and partnership. Different business units have different appetites for tenure of projects. This is a critical input in the finance process, and the mandate of the team approached for funding will likely inform their appetite for different tenures. In CSI, contracting is done on no more than one year terms, with possible renewal

dependant on various factors. In sustainable finance, there is no limit to the tenure and the team has entered into many deals spanning decades. This is a novel insight from the interviews. Put together, these three themes highlight that the mandate of the team approached for funding will influence both the tenure and the type of investment product explored. Furthermore, because of the social benefits of school feeding, principles for sustainability and social investment also apply.

Table 4.4: Financial considerations, moderating factors and structures in distinct financing settings

Findings	Details	Representative quotes
Social bond/loan	Investment in education projects emphasises social impact, aligning with ESG principles. Financiers must adhere to strict international principles for ESG reporting, crucial for improving organisational ESG scores and highlighting the social impact of school feeding projects.	<p><i>Financing for school feeding is guided by sustainability and social investment principles, using social bonds or loans. A key requirement is a clear target population, such as low-income or marginalised communities, to ensure meaningful social impact (Sustainable Finance Manager at Large Financial Institution).</i></p> <p><i>For bond issuance, there are listing requirements for social bonds on the JSE sustainability segment that this would need to follow (Sustainable Finance Manager at Large Financial Institution).</i></p>
Conventional credit for nutrition programme	For bankers, the bottom line is crucial despite the clear social and economic benefits of investing in education.	<p><i>Our projects involve corporate lending, often integrating social or green elements for client benefit. While prioritising profitability, collaboration with the Corporate Financing Solutions team ensures projects align with both financial and societal objectives for the bank's success (Sustainable Finance Manager at Large Financial Institution).</i></p> <p><i>In our team we are not focused on capacity building. We have financial models which output metrics we take into account to assess the soundness of any deal (Debt Capital Markets Associate).</i></p>
Donations linked to	A partnership with	<i>We donate money only, no sponsorships</i>

<p>tax and AA exemptions</p>	<p>CSI at [Large Financial Institution] will be donation only with guard-rails for BBBEE informing different parts of the partnership.</p>	<p><i>and no partnerships with any for profit company. The reason why is because we want a Section 18 tax exemption certificate from SARS at the end of the year. This is also a compliance requirement for BBBEE (CSI Manager at Large Financial Institution).</i></p> <p><i>We do not get donations from corporate institutions because our school is fee paying and considered a high-income quintile school (Private School Hostel Matron)</i></p>
<p>Tenure of investment and partnership</p>	<p>Institutions vary in their project tenure preferences, a vital aspect in financing decisions. The team's mandate influences their appetite for project duration. Corporate social investment (CSI) contracts typically span one year, renewable based on evaluations. Sustainable finance favours longer tenures, aligning with their objectives.</p>	<p><i>Our budget is annually pre-approved, with long-term projects lasting 3-5 years. Contracts are renewed yearly based on monitoring and evaluation, ensuring flexibility in case of poor bank performance. The budget is 0.6% of net profit (CSI Manager at Large Financial Institution).</i></p> <p><i>We have worked on projects with varying tenures. I have not worked on a project which was halted purely on the basis of long tenure. We have many 20-year deals with various corporates (Sustainable Finance Manager).</i></p>

Table 4.5 below details key process dimensions that emerged from the interviews on how [Large Financial Institution] can enable investment into school feeding. The first key process dimension is how sovereign risk affects bankability of projects. Sovereign risk emerged as a significant concern during discussions with the sustainable finance manager. Projects involving government entities pose challenges from a bankability standpoint due to stringent credit requirements at [Large Financial Institution]. Additionally, sustainability and social investment principles impose further requirements, particularly for social bonds or loans involving government deals. This is a novel insight from the interviews.

The second process dimension is margin adjustment. This could apply based on the outcome of evaluation of the project using the principles for sustainability and social investment as described in Table 4.4 above. If the programme meets the requirements for social bonds or loans, the programme could qualify for a margin adjustment if the tie back to social outcomes can be proven. In the discussion about margin adjustment, the sustainable finance manager explained that they do not provide margin adjustments for business as usual and that the targets need to be ambitious and core to that organisation. The school feeding programme shows immense potential to qualify for a margin adjustment on grounds of social impact. In order for the margin adjustment to apply, ambitious targets need to be clearly articulated which are core to the programme. This is a novel insight from the interviews.

The third process dimension is financial management and reporting. The sustainable finance manager from [Large Financial Institution] explained that International Financial Reporting Standards [IFRS] have added new standards for disclosure and reporting ESG activity in companies. This will reflect in companies annual integrated reports. This is another way that principles for sustainability and social investment will play out in the finance model for school feeding. The second and third process dimensions in Table 4.5 are how principles for social bonds/loans in Table 4.4 play out in the financing process. From a financial institution perspective, the ESG element of this potential finance deal will come with additional financial reporting requirements as well. This is a novel insight from the interviews.

Table 4.5: Process dimensions of the finance models and how they play out to generate unique outcomes.

Findings	Details	Representative quotes
Bankability and sovereign risk	Investments into government programmes often come with a higher level of risk due to sovereign risk and in the South African case, misappropriation of funds too. Credit processes are a lot stricter for projects involving government, and governance	<p><i>Projects face challenges from sovereign risk and fund misappropriation concerns. Meeting credit requirements and sustainability elements is essential. Additionally, tracking the use of funds in school feeding schemes adds complexity, making these projects difficult from a banking perspective (Sustainable Finance Manager).</i></p> <p><i>The first thing I think of in deals involving the government is sovereign risk. And what I have seen over the years is that our</i></p>

	strategies are crucial to get these kind of projects over the line.	<i>typical credit requirements are a lot stricter for deals involving government ministries (Sustainable Finance Manager).</i>
Margin adjustments	The school feeding programme shows immense potential to qualify for a margin adjustment on grounds of social impact. In order for the margin adjustment to apply, ambitious targets need to be clearly articulated which are core to the programme.	<i>We do not provide margin adjustments for targets that are business as usual or that you would have to meet anyway for compliance or legal reasons. There has to be an extra push or an increase in the ambition of targets. We cannot incentivise bare minimum behaviour from corporates (Sustainable Finance Manager).</i> <i>For a sustainability-linked facility, key performance indicators (KPIs) and targets guide margin reduction discussions. KPIs should align with the core aspects of the organisation, such as carbon emissions for oil and gas, and health and safety for mining companies (Sustainable Finance Manager).</i>
Financial management and reporting	Stringent financial reporting procedures monitor the school feeding programme budget allocation to prevent fraud. These measures serve as safeguards. In considering financing, the ESG aspect introduces additional reporting obligations for financial institutions, enhancing transparency and accountability.	<i>The financial reporting process begins with a sundry form signed by district directors, followed by a compliance certificate signed by the principal and school governing body. Monthly income and expenditure reports with proof must align with 90-110% of the budget; overspending reports are required if spending exceeds 110% (District Officer).</i> <i>International Financial Reporting Standards [IFRS] have added new standards for reporting ESG. And companies now have to align their ESG goals stipulated in strategy to what is being actualised year to year (Sustainable Finance Manager).</i>

Table 4.6 below details the possible good and bad finance process outcomes and categorises them according to themes. The first outcome consideration is outcomes measurement and impact valuation. Both the CSI and sustainable finance managers conduct yearly impact valuations on their investments, verifying project outcomes against set targets. Third-party

auditors or consultants are contracted for this purpose. Contract renewal for CSI hinges on meeting targets; failure results in non-renewal. Sustainable finance contracts include penalty clauses for target non-achievement, potentially affecting margins. The importance of outcomes measurement to the process of financing impact projects is a critical novel insight from the interviews.

The second outcome consideration in Table 4.6 is the possible reputation risk from social washing. Both the sustainable finance and CSI managers emphasised the reputation risk associated with impact reporting and ESG scores. The CSI manager ensures independent impact assessments precede project reporting, aiming to safeguard shareholder interests and brand reputation. The sustainable finance manager cited Deutsche Bank as an example of reputation damage due to ESG reporting discrepancies, underscoring the importance of adhering to ESG standards set by IFRS. It is for this reason that IFRS has created ESG standard to be followed in the reporting of ESG as explained in Table 4.5 above. This added risk from possible reputational damages is a critical novel insight from the interviews.

The third outcome consideration is the benefit of institutional networks. Sometimes the outcome of a finance deal process can be an unconventional one which ends in investment from a different institution to the one approached. The sustainable finance manager collaborates with development finance institutions (DFIs) to facilitate investment in impactful projects they do not have appetite for. If projects lack revenue potential, they may not meet bankability standards but could benefit from other funding sources such as philanthropic family trusts. In these cases, the sustainable finance manager acts as an ESG advisor, aiding in quality reporting to attract grant funding from other philanthropic organisations and development institutions. The use of institutional relationships to enable funding is a novel insight from the interviews.

Table 4.6: Impacts of good and less good financing model outcomes in distinct settings

Findings	Details	Representative quotes
Outcomes measurement and impact valuation	Success in ESG programmes is measured by meeting yearly targets from impact assessments.	<i>Targets must be independently verified annually or over an agreed tenure for contract continuity. Verification is conducted by auditors such as PwC, KPMG, EY, and consultants from SGS and</i>

	<p>These assessments, conducted by independent external auditors, determine contract continuity with financial institutions and are essential for both CSI and sustainable finance contracts.</p>	<p><i>CBI. Failure to reach impact targets incurs penalties (Sustainable Finance Manager at Large Financial Institution).</i></p> <p><i>Outcomes measurement, conducted by third-party consultants, is crucial to year-end processes. This monitoring and evaluation (M&E) informs the CSI strategy for the next year, and contracts are renewed based on outcomes against agreed impact targets (CSI Manager at Large Financial Institution).</i></p>
<p>Social washing and reputation risk</p>	<p>A prominent international bank faces reputation damage due to social washing in pursuit of high impact scores. This concern prompts both corporate social investment (CSI) and sustainable finance teams at large financial institution to prioritise yearly impact assessments before reporting and contract renewals.</p>	<p><i>Deutsche Bank's offices were raided because they were calling things sustainable. Like labelling loans and things as sustainable and there was good evidence that it was actually business as usual. And they are now known in the market as greenwashers. So, there is reputational risk around this (Sustainable Finance Manager at Large Financial Institution).</i></p> <p><i>We are aware of the reputational risk involved with the work we do and our responsibility to shareholders to ensure that the CSI budget actually achieves tangible social outcomes. For this reason, before reporting on any projects, we conduct an impact assessment through auditors (CSI Manager at Large Financial Institution).</i></p>
<p>The benefit of institutional networks</p>	<p>A deal process can lead one institution to connect a programme with another institution for investment, leveraging strong ties and a network of industry peers, even if the initial financial institution isn't directly investing.</p>	<p><i>We collaborate with DFIs to leverage their impact investing expertise, exposing them to our client base. In blended finance deals, our sustainable finance and structured finance teams work together to raise funds for client projects, combining loans, bonds, and DFI funding (Sustainable Finance Manager at Large Financial Institution).</i></p> <p><i>As an ESG advisor, we support projects with significant social impact but limited revenue potential, helping clients prove impact and governance. This enables them to attract grant funding from philanthropic and development</i></p>

		<i>organisations through quality reporting (Sustainable Finance Manager at Large Financial Institution).</i>
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4.1.3 Opportunities for PPP in school feeding

Table 4.7 below details the key considerations for creating a PPP with the education ministry for school feeding. The first consideration is the private sector financial institution's focus area of investment. Key differences emerged between the CSI manger and the sustainable finance manager in their focus areas. With the CSI team, there is a niche strategic focus on education at ECD and foundation phase ages at schools, specifically focusing on developing future skills such as robotics and programming. On the other hand, the sustainable finance team has a much broader focus area which spans different sectors including education. These differences in investment focus areas aid programmes in picking the appropriate investment partner and are a key novel insight from the interviews.

The second key consideration is whether the project has a secure future income stream. This came across strongly in the interview with the sustainable financier manager. When asked to speak about some of their signature deals, she emphasised the income streams of each project and how these income streams were clear to them from conceptualisation stage. One obvious characteristic which is consistent to signature sustainability linked deals at [Large Financial Institution] is that they all have a secure stream of future revenue. This future income stream is embedded within the contracting terms and is critical to the credit risk process to ensure that the programme can meet its repayment terms. The details of three signature deals are expanded on in Table 4.7 below showing the importance of a clear future income stream as a common characteristic in all success cases. This is a novel insight from the interviews.

The third consideration is the benefit of experience with PPP. From financial institution interviews, it emerged that [Large Financial Institution] has a rich history of PPP across the continent from both their CSI business and their sustainable finance business. With this comes experience and longstanding relationships with different ministries and key development institutions which the potential PPP this study is solving for can leverage. Specifically, the DBE is a long-time partner of the CSI team. These established relationships

and experience will work to enable the PPP, and the existing synergies will work for the benefit of the PPP. This benefit of experience with PPP is a novel insight from the interviews.

Table 4.7: Unique considerations, moderating factors and structures in PPP

Findings	Details	Representative quotes
Development focus area	Financiers focus on different investment sectors, with some taking a broad approach and others specialising. The sustainable finance team covers multiple sectors, while the CSI team targets specific education subsectors and project types.	<p><i>Education is the focus of our investment due to its impact on achieving development goals and reducing inequality. Our strategy now emphasises early childhood education, foundation phase learning, and future skills development in public schools (CSI Manager).</i></p> <p><i>On the social side, the focus is on social impact, such as improving infrastructure, access to essential services like health and education, MSME [micro, small and medium enterprise] financing, individual financing with social benefits, and funding for student and affordable housing (Sustainable Finance Manager).</i></p>
Security from future income stream	One obvious characteristic which is consistent to signature sustainability linked deals at [Large Financial Institution] is that they all have a secure stream of future revenue. This future income stream is embedded within the contracting terms.	<p><i>In one signature deal we did in Kenya we invested in a company providing solar off grid and financed the pooled expected future payments from over a million potential customers (Sustainable Finance Manager).</i></p> <p><i>In the REIPP [renewable energy independent power producer] project with ESKOM, there is a 25-year purchasing agreement from the renewable energy plants which provides security for the revenue and income (Sustainable Finance Manager).</i></p> <p><i>For the Kenyan Roads Infrastructure programme as well, we embedded the future income stream as a key part of our contract with the ministry. Repayment will be through toll proceeds and the Roads Maintenance Levy Fund (RMLF) which is a tax on fuel charged at \$0.03/litre (Sustainable Finance Manager).</i></p>

<p>The benefit of experience with PPP</p>	<p>[Large Financial Institution] possesses established ties with government ministries across South Africa and Africa, spanning sustainable finance and CSI sectors. This presents an opportunity to leverage these relationships and bring extensive PPP experience to the partnership.</p>	<p><i>We have experience with PPP, notably working with the Kenyan government on their roads annuity programme. We finance construction companies and provide guarantees for this large infrastructure project to build tarred roads across different zones (Sustainable Finance Manager).</i></p> <p><i>The DBE, a key partner in education strategy, receives a small seed stipend for provincial allocation to support CSI projects in their regions. The CSI team works well with government at different levels, maximising reach and achieving project success (CSI Manager).</i></p>
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Table 4.8 below details the processes dimensions in PPP and how they would play out to enable or inhibit investment in school feeding. The first process dimension is strategic alignment of the two institutions going into partnership. The sustainable finance manager highlighted their team's role in executing the ESG strategy of [Large Financial Institution]. Projects selected for investment by the CSI manager must align with the group's CSI strategy. This alignment with the institution's ESG or CSI strategy is central to the PPP building process, ensuring mutual goal pursuit and synergy within the partnership. This is a novel insight from the interviews.

The second process dimension is risk mitigation strategies. Different finance tools are incorporated into the finance structure based on risk assessments to mitigate risks assumed by financial institutions. High risks related to the client or potential revenue streams may require risk mitigation tools such as special purpose vehicles (SPVs) and guarantees. SPVs are utilised in projects involving client or revenue stream risks to isolate parent holding risks and establish a new legal entity, particularly beneficial for partnerships. Guarantees are frequently employed in PPPs, especially for large infrastructure projects, to mitigate associated risks effectively. The findings on the use of guarantees for risk mitigation confirms the literature (Patton Power et al., n.d.; König et al, 2020) while the findings on using SPVs for risk mitigation are a novel insight from this study.

The third process dimension is the legal process as explained in Table 4.8 below. What stood out from the discussion with both financial institutions on the legal process is that KPIs must be clearly laid out with penalties in the contract between the parties involves. This to protect both parties getting into the contract and will require that the parties be aligned in terms of their impact goals beforehand. This relies on strategic alignment in terms of the project's goals and the financial institutions' focus area of investment (as detailed in able 4.7). The impact goals stated in the contract will also be a critical input into the outcomes measurement process. This finding about the importance of clear performance measures in the legal process and how that feeds into yearly outcomes measurement confirms the literature (Sinclair et al., 2021 and Méndez-Suárez et al., 2020).

Table 4.8: Process dimensions of PPP and how they play out to enable or inhibit investment

Findings	Details	Representative Quotes
Strategic alignment is key for partnerships	Partnerships between institutions require alignment in strategic goals to foster synergies and drive impact. CSI should align with the specific CSI strategy, while sustainable finance should match the broader ESG strategy of the financial institution.	<p><i>The team prioritises projects that align with the CSI strategy, not necessarily those needing the bank. This approach ensures alignment with their goals amid numerous proposals (CSI Manager).</i></p> <p><i>The sustainable finance team works with different product teams and across business units to see how they can bring in social, green and sustainability elements to what we do with clients. We are part of the implementation leg of the group's ESG strategy (Sustainable Finance Manager).</i></p>
Risk Mitigation Strategies	Depending on the outcome of risk assessment, different finance tools may need to be embedded in the finance structure to reduce the risk taken on by a financial institution. These include but are not limited to SPVs, and Guarantees.	<p><i>Special Purpose Vehicles (SPV) are used to manage high-risk deals, isolating parent company's assets and risks, providing a new legal personality. SPVs are tailored to specific needs, enabling risk transfer and optimising partnerships. (Sustainable Finance Manager).</i></p> <p><i>MIGA guarantees are often required for higher risk deals, offering comfort during lending. These guarantees provide commercial terms and have been consistently used in PPPs, particularly for large infrastructure projects (Sustainable Finance Manager).</i></p>

Legal Process	Both the CSI business and sustainable finance have clearly laid out legal process for contracting. And for both, impact assessment is an important part because ramifications or penalties clauses will be informed by outcomes of impact investment.	<p><i>The loan or bond agreement includes provisions for sustainability, such as KPIs, margin adjustments, and penalties for not meeting targets. For social projects, use of proceeds is monitored to ensure funds support the intended social purpose (Sustainable Finance Manager).</i></p> <p><i>Legal agreements protect both the institution and external parties in contractual agreements. The CSI business's legal team handles contracting, while the contracting party consults their legal team. Together, they ensure accountability and manage potential failures' ramifications (CSI Manager).</i></p>
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Table 4.9 details a successful PPPs outcome and outlines a potential role for [Large Financial Institution] in PPPs with the DBE. The PPP process may lead to outright rejection or various levels and types of involvement from the financial institution. [Large Financial Institution] can engage in concessional funding, provide first loss cover, offer ESG advisory, act as guarantor, act as lead arranger, or serve as a placement agent in bond deals to facilitate investment in school feeding. Unconventional outcomes of deal processes, discussed in Table 4.6, underscore the viability of signature deals resulting from strategic alignment of project goals and financial institution strategies, as enabled by risk mitigation strategies explored in Table 4.8.

Table 4.9: PPP investment outcomes

Findings	Details	Representative Quotes
Potentials roles for a Large Financial Institution in PPP.	Beyond lending and donation, there are many different ways that [Large Financial Institution] can partner with DBE to enable investment into school feeding. These include but are not limited to	<i>In 2019, a project approached [Large Financial Institution]'s structured finance team to raise funds for eco-friendly student accommodation in Kenya. The Acorn Green Bond, rated B1 by Moody's, was listed on the Nairobi and London Stock Exchanges, with the securities team as lead arranger and placement agent. (Sustainable Finance Manager).</i>

	<p>concessional funding, first loss cover, ESG advisory, being lead arranger and placement agent in bond deals.</p>	<p><i>What we have also done in projects where we identified that extra impact is concessional funding as well as first loss cover (Sustainable Finance Manager).</i></p> <p><i>In a large infrastructure project to build tarred roads in Kenya. We play a role in financing the construction companies as well as providing guarantees (Sustainable Finance Manager).</i></p> <p><i>Often, we are the lender and or arranger. We also work with multilaterals, ECA and have brought in grant financing as well (Sustainable Finance Manager)</i></p>
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4.2 Analysis

This analysis section is divided into the three sub-questions that this study seeks to answer. For each sub-question, the analysis will be structured in such a way that the key themes from the findings section are categorised as either hindering factors or success factors for enabling PPP formations to increase investment into school feeding.

4.2.1 School feeding operations

4.2.1.1 Hindering factors

Household food insecurity presents a significant impediment to the school feeding programme (Table 4.1). Because the programme's focus is on feeding children during school hours, it overlooks hunger in vulnerable households. Children from these households save the food served to them to share with their families, which completely nullifies the aim of school feeding. Interviews with school staff and wholesalers highlight that this issue has been identified and existing initiatives are implemented to address this gap, such as distributing leftover food to vulnerable families and providing food parcels during funerals. Formalising these initiatives into the programme design might require additional monitoring and planning, but will be of great value, as advocated by Aurino et al. (2023) and Agu et al. (2023). What this means for the theory is that failure to respond to the need in the community and expand the school feeding programme to address the child hunger in the families is negatively affecting the efficacy of the school feeding programme. A proposed solution which addresses this issue must consider the financial commitment that will be required to increase school feeding operations to include the broader households. This will further necessitate an increase in funding towards the programme.

Rigid budget allocations from the national treasury pose another obstacle (Table 4.1). Both teachers and principals note that the budget's inflexibility hampers schools' operations beyond school feeding because addressing inflationary pressures comes at the expense of other schooling inputs. Despite concerns raised, budget adjustments often lag behind inflation rates, indicating disconnects between the education ministry and operational realities. This

issue has been documented in research for years, as highlighted by Devereux et al. (2018) and Mafugu (2021). Payment delays from the government also exacerbate operational challenges (Table 4.1). Principals and wholesalers cite delayed funds as a significant hurdle, leading to disruptions in food supply and school operations. Measures such as strict payment protocols and streamlined processes aim to mitigate these delays, as noted by Devereux et al. (2018) and Mafugu (2021). What this means for the theory is that by failing to 1) make timely payments to schools and 2) make yearly inflation-linked adjustments to the budget allocation, the education ministry itself is contributing to the operational failures of the school feeding programme. The fiscus is under pressure and a yearly adjustment of the school feeding budget allocation is unlikely. A funding partner is necessary for this reason as well, to provide the necessary increase in the budget allocation.

Exclusion of earlier childhood years from the feeding programme presents another hindrance (Table 4.2). Despite increasing focus on ECD in research, the programme's scope has remained unchanged and begins too late to address critical nutritional needs. CSI stakeholders recognize the importance of ECD investment and have adjusted their strategies accordingly. However, there is a missed opportunity to integrate feeding programmes into public ECD centers, highlighting the need for expanded programme coverage and oversight. What this means for the theory is that the efficacy and reach of the programme is greatly stifled by the unjustified exclusion of education at ECD level from the current school feeding programme. Expanding the programme reach to include ECD will require a significant funding increase. This is another reason why a funding partner is necessary on the programme.

4.2.1.2 Success factors

The programme's response to the COVID-19 pandemic, detailed in Table 4.1, represents a significant success factor, shaping crisis management strategies for future school feeding operations (Kwatubana & Molaodi, 2021). The DBE's innovative approaches during lockdown restrictions showcased adaptability, with provinces like KwaZulu-Natal and Eastern Cape distributing food parcels to students, as observed in interviews with educators and wholesalers and in research by Kwatubana & Molaodi (2021). Despite challenges such as legal disputes with NGOs, interviewees explained that ensuring programme continuity was possible through adaptations such as requiring students to bring lunch boxes and consume

meals at home. What this means for the theory is that the strategies born from ensuring programme continuity during the pandemic can serve as models for addressing future crises and providing sustained support to students during other extended periods of unavoidable extreme circumstances.

The second success factor to school feeding operations is expanding operations to include school holidays as explained in Table 4.2. Because teachers and principals are acquainted with the financial situations in the homes of most learners in their quintile 1–3 schools, they encourage the idea of extending the programme to operate during school holidays. The teacher is quoted saying: “Keeping school feeding operational during school holidays is a good idea as there is a real and deep need for it in households that the learners come from”. The principal highlights that the government only funds the feeding programme during school term days, which excludes operations during school holidays. Expanding the programme to weekends and holidays would require additional investment. This expansion could improve learners' health and educational outcomes, as well as promote participation in extracurricular activities. Providing take-home rations on Fridays could maintain teacher work-life balance while supporting students' study and nourishment over the weekends and holidays. What this means for the theory is that the efficacy of the school feeding programme can be greatly improved by including weekends and school holidays into feeding days.

4.2.2 Financial model considerations for school feeding

4.2.2.1 Hindering factors for investment in the programme

The impediments to investment in the school feeding programme are multifaceted, and influenced by various factors outlined in Table 4.4. Firstly, financial institutions' business models prioritise profit, constraining investment choices. While social projects may be appealing for portfolio diversity and ESG reporting, profitability remains paramount. Private sector involvement in PPPs is primarily driven by profit motives. This view was shared in interviews as well as in Languille's (2017) work. Conversely, CSI's non-profit nature prioritises project reach and community impact over financial returns, although with strict criteria for project type, sectors of reach and duration of partnership as explained in the tables

above. Secondly, investment tenure poses a challenge (Table 4.4), with potential conflicts arising from financial institutions' budget cycles. CSI annual budget pre-approval and short-term contracts align with their profit allocation model, hindering long-term commitments. However, corporate and sustainable finance departments may offer more flexibility, as evidenced by their involvement in long-term projects such as 20-year deals. What this means for the theory is that not all private sector financial institutions are suitable partners for school feeding. The business models can be exclusionary due to misalignment with different aspects of a programme such as school feeding.

The third impediment is outcomes measurement (Table 4.6), which is crucial for assessing social impact and qualifying for margin adjustments. Both CSI and sustainable finance departments conduct annual monitoring and evaluation, essential for sustaining partnerships. This aligns with literature emphasising credible impact assessment for innovative finance structures like social impact bonds (Sinclair, McHugh & Roy, 2021; König et al, 2020). What this means for theory is that continued programme financing and qualifying for margin adjustment both depend on the outcomes measurement process. By extension, the outcomes measurement process presents a significant hindrance to programme financing.

Reputation risk poses another challenge (Table 4.6), particularly in ESG-rated deals prone to "social washing". Institutions must carefully structure deals and conduct thorough monitoring to mitigate this risk. Examples like Deutsche Bank's recent greenwashing scandal and the reputational damage from that underscore the importance of credible impact reporting. From the interviews, CSI's emphasis on quality impact assessment reflects their commitment to preventing reputational damage and maintaining credibility and shareholder trust. What this means for theory is that ESG investments have the added risk due to possible reputational damage for the firm, and as such will inspire a hesitancy to invest at financial institution firms.

Lastly, bankability and risk profile influence investment decisions (Table 4.5). Despite the positive social impact of school feeding, financial institutions will prioritise commercial viability and risk management. Stricter credit requirements apply to government projects due to concerns over governance and sovereign risk. Innovative financing tools may mitigate these risks, fostering private sector involvement. What this means for theory is that despite the clear benefits of school feeding to society, financial institutions will still prioritise

commercial viability in the decision to finance any programme. This can significantly hinder financing because a programme such as school feeding is designed with community development at the forefront and not necessarily commercial viability.

4.2.2.2 Success factors enabling investment in the programme

The first success factor to getting investment into the programme is sustainability principles (explained in Table 4.4) and the moderating impact they have on social investment. Over the last decade, the integration of ESG principles into corporate strategies has significantly increased globally. This trend is governed by international standards such as the International Capital Market Association's principles which provide a framework for social and sustainability-focused investments. These strict guidelines emphasise targeting specific populations like low-income, marginalised, and disaster-impacted communities to ensure meaningful impact. The sustainable finance manager interviewed stressed that these principles influence firms' strategic decisions and guide their approach to social impact projects. For bond issuance, there are specific listing requirements for social bonds on the JSE sustainability segment. What this means for theory is that although ESG is embedded in most firms' strategies now, sustainability principles provide the necessary regulatory frameworks which help maintain best practices and enable investment into most deserving programmes that achieve tangible social benefits.

Institutional networks play a crucial role in unlocking financing from different institutions, as outlined in Table 4.6. Deals often lead lenders to other financial institutions through recommendations, especially if the initial approach does not align with their sector appetite or expertise. DFIs have a mandate to fund projects for social impact and development and are attracted to projects such as those related to education, nutrition, and health. Institutions like [Large Financial Institution] work with these DFIs through blended finance, as described in Table 4.6. This approach may involve combining bonds, loans, or financing with DFIs to structure suitable financing plans. The structured finance team will work out the structure for the financing plan. The corporate financing team will take over the loan component, the capital markets team will take over the bond component and the sustainable finance team will take over the ESG component at the very end. Additionally, sustainable finance teams may act as ESG advisors, helping clients improve reporting to better reflect governance and social

impact, potentially attracting grant funding from philanthropic institutions. What this means for theory is that there are rich networks of collaboration within firms and between them which work together to enable investment into programmes in different and often unconventional ways.

Financial reporting processes play a crucial role in programme implementation (Table 4.5), ensuring transparency and accountability. For this programme, protocols for reporting will be outlined from school-level reporting to national consolidation. This will mitigate fraud and misappropriation risks, enhancing investor confidence. Furthermore, the adoption of ESG standards under IFRS promotes transparency in firms' ESG practices, aiding investors in assessing sustainability performance and guiding investment decisions. What this means for theory is that the ESG aspect introduces additional IFRS reporting obligations for financial institutions, enhancing transparency and accountability. This will further enable visibility of the programme to other potential financial institutions and attract more investment into the programme.

4.2.3 Opportunities for PPP in school feeding

4.2.3.1 Hindering factors for PPP in education for school feeding

The focus area of investment for financial institutions significantly influences their investment decisions. While both sustainable finance and corporate social investment (CSI) prioritise basic education, and quality education aligns with ESG principles, actual investment interests can vary. The specific sub-sectors within education that firms prioritise can limit their investment scope. For instance, [Large Financial Institution's] CSI team which was interviewed stated that they are strategically focused on Foundation Phase learning and ECD, specifically programmes aiming to build future skills such as robotics and coding in young children. And while this narrow focus aligns with their strategy, it excludes many projects in the broader education sector such as school feeding. Conversely, the sustainable finance manager interviewed expressed openness to a broader range of projects, including infrastructure, essential services, housing and student financing, as long as they have measurable social impact. What this means for the theory is that the specificity in focus areas

of the financial institution can be a great impediment to investment. The more specific the strategy, the more projects will be excluded because they do not perfectly align with the financial institution's strategic objectives.

4.2.3.2 Success factors which enable PPP in education or school feeding

The success factors crucial to the implementation of a PPP with the DBE are multifaceted and interlinked. Table 4.7 outlines the significance of security from future income streams as a primary factor, evident in signature deals discussed by the sustainable finance manager interviewed. These signature deals discussed in Table 4.7, such as the loan facility to a solar panel manufacturer in Kenya, and Eskom's REIPPP programme, all exhibit a secure future revenue stream, signaling that repayment is highly likely. The Kenyan roads annuity programme, financed through toll proceeds and the Roads Maintenance Levy Fund, further illustrates this trend. Notably, the repayment model for the proposed project involves leveraging the DBE's annual savings from reduced educational expenses due to improved learner performance, aligning with literature emphasising the positive impact of school feeding programmes on academic outcomes. What this means for theory is that being able to demonstrate how the programme will generate income to be able to repay the loan or bond is crucial for financial institutions and is a key factor to enabling investment into a programme seeking funding.

Experience in PPPs emerges as another critical factor (Table 4.7). [Large Financial Institution]'s history of successful PPPs, particularly in large infrastructure projects, demonstrates their capability in this domain. However, caution is advised, as private sector proponents often hold a monopoly on PPP knowledge, potentially hindering public sector stakeholders' understanding of associated costs and innovative partnership models, as argued by Languille (2017). Private sector financial institutions can play many different roles in PPPs with the DBE, as outlined in Table 4.9. These include including structuring bonds, concessional funding, first loss cover, ESG advisory, and being lead arranger and placement agent in bond deals. What this means for theory is that there are advantages to programmes getting their foot in the door at financial institutions with more experience in PPP because they can take on different roles, which may enable investment into the programme besides

just financing them through a loan. Further, because of their rich experience, they are open to financial innovation.

Additionally, risk mitigation strategies, such as special purpose vehicles and guarantees, discussed in Table 4.8, are vital in reducing investor risk and facilitating project financing. The use of guarantees, including those from institutions like the Multilateral Investment Guarantee Agency (MIGA), ensures revenue security, lowers financing costs and can address concerns associated with higher risk government deals. This will improve the viability of investment into the programmes and enable even high-risk programmes to get the financing they need. What this means for theory is that risk mitigation tools are available for use to make projects less risky and more desirable for investment. Using these tools can significantly reduce finance costs.

While this paper focuses on the financial and operational challenges of school feeding programmes and explores innovative finance solutions, it is important to acknowledge that there are other significant structural moderating factors that impact these programmes. These include governance and policy-related challenges, such as the rigid nature of Treasury funding and general food insecurities in many households. Additionally, issues related to governance structures, regulatory environments, financial sustainability, and social justice imperatives also play a crucial role. However, for the scope of this study, these factors will be held constant and not explored in detail.

5 Discussion

When combining the analysis of results and the literature reviewed, one can identify model implications for school feeding as well as for the structure of PPPs. This discussion will present the school feeding model implications first, then the finance structure and PPP model implications. The section will end off with a critical examination of implementation challenges of the proposed model and limitations. There are four key implications that both the literature and stakeholder interviews have suggested as vital to providing a more holistic approach to school feeding. The first key implication is the urgent need for increased funding in the school feeding programme. Interviews revealed that this funding shortfall results from years of inflation outpacing budget increases, leading to diminishing buying power for schools. Principals and district officers cited instances where budget allocations failed to match rising food prices, with infrequent adjustments exacerbating the problem. The principal stated in his interview that they have had many instances of the school's budget for other inputs being used for school feeding to ensure programme continuity. This is also highlighted by research conducted by the DBE and DPME (2016) indicating that 42.2% of schools struggle to implement the programme as intended due to costs. This inadequacy of funds has been consistently identified as a major challenge in South Africa's school feeding system, as found by Devereux (2018) and Mafugu (2021).

The second implication is the need to extend the school feeding programme to ECD, emphasising that education begins before grade 1 and that early childhood years are crucial for foundational development. From the interview with the CSI manager, I understood that in line with the globally increased focus on ECD, [Large Financial Institution] has shifted their strategy to focus on driving impact into ECD and foundational levels of learning. Existing CSI-led partnerships between the firm and educational institutions that were mentioned by the CSI manager highlight their strategic interest in addressing health and development needs from birth to three years old to enhance future educational outcomes. Research by Aurino et al. (2023) underscores the significance of nutrition during the first two years of a child's life, which profoundly impacts the effectiveness of school feeding programmes. Delaying nutrition interventions until age seven poses challenges in addressing malnutrition suffered during early childhood (Aurino et al., 2023). Recent shifts in education investment towards ECD are noted, with a renewed focus on cognitive and socio-emotional development in early

childhood (Stellakis, 2018). These efforts emphasise the need for the DBE to align with the focus on foundational education to ensure holistic development and improved educational outcomes from an early age.

The third school feeding model implication is to extend the school feeding programme to include the rest of the households learners come from. This addresses the root cause of child hunger, which is food insecurity in their homes. It emerged in the interviews with educators that they have informally identified vulnerable children in schools and taken steps to assist them, such as donating unused food supplies weekly and before school holidays. Additionally, wholesalers collaborate with schools to provide food hampers to bereaved families. Formalising these outreach efforts as part of the programme will allow bolder and more efficient leveraging of existing structures and networks within the school feeding programme to deepen impact in households and the community. Administering food parcels to needy households can also serve as a means to ensure consistent food access during weekends and holidays, comprehensively addressing child hunger beyond the confines of school hours.

The fourth implication for the school feeding model is to enhance efforts towards food production within schools. Despite the fact that South Africa's school feeding programme's three pillars include sustainable food production, interviews with teachers and principals reveal inadequate implementation in this area. Incorporating food production into schools can reduce programme costs while offering practical learning experiences and empowering learners with agricultural skills for use at home. Integrating farming practices into the curriculum not only extends learning beyond the classroom but also fosters community empowerment through food self-sufficiency. Interviews also revealed that some schools have existing partnerships with NGOs like Food & Trees for Africa's EduPlants programme to implement this food production pillar. They have also been instrumental in supporting schools on their journeys to create and manage vegetable gardens. Extending this programme to all South African schools is possible through formalising the partnership between Food & Trees for Africa and the DBE. This will enhance food sustainability and drive down school feeding costs while improving educational outcomes. Such initiatives underscore the potential for school feeding to not only alleviate hunger but also foster community resilience and the empowerment of learners.

The analysis conducted has helped to identify model implications for the finance model and PPP design as well. In the interview with the sustainable finance manager, different options for the finance structure of this PPP emerged. However, one that they highlighted as most appropriate was the social impact bond. Following from this finding, a deeper investigation was done to assess the appropriateness of SIBs for a school feeding PPP. Following work by Sinclair et al. (2021) and Mendez-Suarez et al. (2020) led to creation of a criteria for projects that SIBs work well for. Put together, the criteria are: firstly, the payout must be in the short term and benefits must be high. Secondly, the performance measures must be clear. Thirdly, the treatment populations must be clearly defined. And lastly, impact assessment must be credible. The current model of school feeding has documented positive impact on schooling outcomes and DBE savings are likely in the short term. Therefore, criterion one is met. The performance of the school feeding programme is measured using school enrollment rates, pass rates, learner performance in tests, the dropout rate in school and absenteeism rates. These measures are clear, therefore criterion 2 is met. Each school in the country is allocated a quintile, and as per programme design, school feeding is administered to quintile 1, 2 and 3 schools in the country. Therefore criterion 3 is met. Each government ministry and district undergoes an independent audit process to provide assurance on what is reported as part of the DPME processes. Therefore, criterion 4 is met. Clearly school feeding meets all the criteria for SIB use so, following this investigation, it seemed sensible to proceed with a SIB.

There are five key actors in the structure of an SIB as presented in Figure 2.1: government, which is the outcomes funder, an intermediary which organises the bond, outside investors, an evaluator and the service provider. For each of these, there are model implications from the analysis presented. The government (in this case the DBE) is responsible for the school feeding programme and as such must agree on this proposed project structure. They will also be responsible for determining the KPIs of the PPP. These will include but not be limited to reducing dropout rates, increasing enrollment, increasing pass rates, improving performance on standardised tests and other variables. The DBE will provide the funds for performance-based payments to investors. They will also provide some of the funding in the PPP. The DBE budget allocation will be contributed as funding for the PPP, a key deviation from a SIB as we have come to know it. The intermediary will be the most important role of this SIB and this role must be played by an SPV. An SPV should be created to act as an intermediary in the SIB for three reasons. The first reason for is to isolate the school feeding operation from the DBE. The second reason is to give this school feeding programme a new legal

personality. The third reason is to ringfence funding from financial institutions and provide assurance that funds will be used for the intended purpose. Isolating school feeding operations to an SPV with greater governance and control will also mitigate the risk involved with this kind of PPP to potential investors. Besides being the intermediary for the SIB, the SPV will also issue the bond. The SPV will recruit private capital and repay investors based on achievement of performance targets set by government.

Another important component is the outside investor, who in this case will be multiple private sector partners because the approach taken is blended finance. The investors will be divided into two groups. One will be parties who purchase the bond on the listed exchanges. They will provide most of the working capital to the SPV and they will be paid performance-based payments from savings that the DBE will make from having more and more children completing schooling in minimum time, thus keeping fewer children in schools benefitting from school feeding. Another group of investors will be the donation partners of the programme. This will be CSI donations and grant funding. The donations will be on an ad hoc basis and will only supplement the working capital from bond purchases. Because there is a big risk that the DBE will not actualise the potential future savings from more children finishing school in minimum time, a guarantee will be crucial to ensure that bond holders will receive their repayments should outcomes be met but savings be insufficient to cover all repayments. This reduces the risk to the investor and will improve the risk rating of the bond. One agency which features a lot in development projects is the World Bank's MIGA arm which will be ideal for this PPP because of the strategic alignment between this PPP and the work that they do.

A dedicated service provider will also be a crucial part of the SIB, which will be responsible for the end-to-end operations and management of school feeding. This will be a welcome relief to the DBE, which is running a lot of different projects, often with poor management. This poor management is evidenced by delay in payments, which has been highlighted as one of the biggest challenges on the programme by literature, and by the school teacher, school principal and wholesaler interviewed. The service provider will receive funding for the operational costs from the SPV, and the timeliness of payments will be improved in this way. The SPV will also enlist the services of an evaluator. Their duty will be to conduct an impact assessment to see how the programme is measuring against the pre-agreed performance and impact targets. These targets will be those decided by the DBE upon creation of the SIB. The

impact assessment will also be important for renewing the contract with CSI which as the interviews have indicated, is conditional on achieving impact targets.

An evaluator, preferably a reputable second-party rating agency or consultancy, is also critical, and will conduct impact assessments based on pre-agreed targets set by the DBE. These assessments inform contract renewals, particularly with CSI partners, contingent on achieving impact targets. The involvement of an experienced evaluator ensures robust monitoring and evaluation processes. Furthermore, maximising partnership with a private sector financial institution is recommended. This institution's involvement spans three key areas within the SIB structure. Firstly, arranging and listing the bond on stock exchanges, leveraging their securities and capital markets expertise. Secondly, providing CSI donations from the company's CSR business to supplement the bond issue. Thirdly, collaborating with the SPV's ESG advisory team on impact reporting and connecting with institutions interested in providing grant funding. Insights from interviews with sustainable finance and CSI managers of a large financial institution inform these recommended roles, emphasising their interest in enabling the proposed PPP. Overall, the proposed SIB structure integrates various stakeholders and leverages private sector expertise to address challenges and maximise the programme's impact and sustainability.

Another important feature recommended in addition to the SIB structure is that the agreement should seek to maximise the partnership with the private sector financial institution for the benefit of the programme. The involvement of a private sector financial institution in the PPP must be at three different points in the SIB. For the bond issue, their securities and capital markets team will work together to arrange the bond and list it on stock exchanges. For this part, they will play the arranger and lead placement agent role for the SPV. The CSI donations which will supplement the bond issue will also come from the same company's CSI business. The ESG advisory team in sustainable finance at the same firm must also work with the SPV on impact reporting to prove social impact as well as to connect the SPV with institutions in their network that would be interested in providing grant funding. These different roles that the private sector partner will play were inspired by interviews with the sustainable finance manager and CSI manager of a large financial institution where interest

was shown in blending finance to enable this PPP. All the model implications discussed above are presented in an illustrative diagram in figure A.1 in the Appendix.

Drawing from the experiences of other implemented SIBs, potential challenges and limitations to this proposed model can be identified. The first challenge is a lack of transparency in the bond pricing approach which will lead to pricing opacity. As of the time this paper was written, there was still no standard and accepted sustainable finance yield curve for pricing a social impact bond. This will present significant challenges with liquidity management in the special purpose vehicle in the SIB structure (Kumar, 2022). Another key challenge will be to establish trust between the stakeholders involved in this elaborate structure. Government (the DBE in this case) and the funders are likely to be focused on different aspects of the SIB. DBE will focus on the implementation details while funders will focus on maximising returns (Gustafsson-Wright et al., 2022). While this can be the undoing of a partnership, it is also an opportunity for the different stakeholder groups to bring their unique and nuanced perspectives and experiences to enrich the SIB.

Another challenge will be brought about by the incentive for opportunistic behavior by the different stakeholders involved in the SIB (Pandey et al., 2018). For example, the service provider might overstate the positive impact they drove on the programme to get their contracts renewed. Similarly, private investor groups might pressure the independent evaluator to report good results so that they can receive their bond repayments from the SPV. There is also incentive for the DBE to pressure the evaluator into reporting understated performance outcomes to reduce the pay off to investors. Many more such incentives for opportunism exist right across the structure of a SIB (Pandey et al., 2018). To this end, Hevenstone et al. (2022) also highlighted in their research on SIB implementation that the high financial stakes might undermine evidence generation. They identified that local stakeholders will try by even fraudulent means to avoid showing failure in the impact evaluation process because this leads to funding cuts for the programmes.

Another potential challenge is a key learning from the COVID-19 pandemic. It is that any disruptions to learning activities for a prolonged period will greatly affect learning outcomes.

This could lead to disastrous outcomes measurement findings in the SIB and will require adequate tweaks to be stipulated in the legal contract for unavoidable freak incidents which could affect the key metrics of the measurement and evaluation processes. (Gustafsson-Wright et al., 2022). Another challenge which is also a learning from COVID-19 is that funders and operators in SIBs are relying more and more on digital methods of monitoring and evaluation. This is motivated by greater safety, less susceptibility to disruptions and cost reduction as compared to in person methods. This presents a unique challenge in the South African school feeding context where learners are from impoverished communities and will likely face challenges such as no internet connectivity and computer illiteracy which will inhibit the use of these digital methods of monitoring (Gustafsson-Wright et al., 2022).

The implementation of SIBs and SPVs involves significant administrative and logistical challenges as well. An SIB such as the one proposed in this paper will require careful coordination amongst the education ministry, private investors and service providers. There is also a lot of logistics and administrative complexity involved with the contracting and outcomes evaluation. Rijpens et. Al. (2020) found in his study that the performance tracking in SIBs is rigorous and leads to difficulties in aligning the different stakeholders interests. Furthermore, a study by Wang and Xu (2020) on SIBs and the use of SPVs highlights the administrative complexity in setting up and managing SPVs. Meticulous legal structuring is required to ensure that risk is isolated as intended and to ensure that the SPV complies with regulatory standards. The administrative complexity with SPVs is also seen in how SPVs must navigate non-conventional financial transactions which often involve securitization and off balance sheet financing (Wang & Xu, 2020). Furthermore, maintaining accurate records, ensuring transparency, and managing operational risks are critical for the successful implementation of an SPV structure and will present additional administrative and logistical challenges (Rijpens et. al., 2020). These challenges underscore the importance of robust governance frameworks and effective project management to mitigate risks and ensure the efficacy of SIBs and SPVs in achieving their intended social outcomes.

There are some areas where the data is limited in supporting recommendations. One such area is with the pricing of the SIB. This paper makes mention of margin adjustments and other factors directly affecting the pricing of the SIB only as concepts instead of showing the

actual numbers. Seeing how the different drivers would affect pricing would be beneficial for making the case for SIBs. However, it is not the focus of this study. The second area where the data is limited is that the interviews were conducted on school feeding stakeholders involved with the South African programme. Conducting a multi-country analysis would enrich this study by adequately capturing how the phenomena studied in this paper would play out in different countries. However, the aim of the study is a deep and nuanced analysis of the South African case.

6 Conclusions

The scholarship on school feeding has evolved over the years since the introduction of school feeding programmes in the 1990s. During that time, research has been done to investigate the impact of school feeding on child nutrition. This quickly evolved to a focus on school feeding's impact on schooling outcomes. One of the first studies was by Tan et al. (1999), who studied the Philippines school feeding programme. Shortly after in the early 2000s, the research evolved into a greater focus on the challenges and inefficiencies of implementation in various countries' school feeding programmes. Van Stuijvenberg (2005) is an example of a study investigating the impact of failure to adhere to standardised implementation plans and how that impacts the outcomes of the programme. The early 2010s saw an evolution of the research to focus on embedding sustainability measures into the programme, spearheaded by Bundy et al. (2006). The main idea behind sustainability approaches was localisation, which seeks to decrease reliance on government funds by getting the communities surrounding schools more involved in food production. Around the same time, there was also a big shift toward cost-benefit studies for school feeding as spearheaded by Aurino et al. (2023). The late 2010s saw an increasing focus on education policy design as it relates to school feeding (Kroth et al., 2020). In the 2020s the focus of scholarship has been on opportunities from increasing the use of technology, and what digitisation looks like in school feeding programmes as inspired by COVID-19 (Camarena, 2022).

There are two key gaps identified in the literature. The first gap is in innovative finance research, where there are no studies exploring the use of social impact bonds in school level education. The second gap is in education research, where there is no dedicated research on collaborations and partnerships between government education ministries and the private sector to improve school feeding in South Africa. This study is an attempt at closing these two research gaps. It takes a new look at school feeding with the intention of answering the question on how to use PPP and innovative finance as tools to improve school feeding in South Africa. The approach is also a unique one which prioritises the voices of stakeholders involved with the day-to-day operations of school feeding as well as the voices of private sector financial institutions who could be potential partners and funders of the programme. Prioritising these stakeholders' voices in this way was a deliberate decision in the design of

the research to focus on the nuances of PPP design for issues in school feeding specifically, as opposed to a generic study on PPP.

There are research limitations from critiques of PPPs and SIBs which are critical to interpreting this work. PPPs have generally been widely criticised in finance and public policy research. One such critique by Languille (2017) warned that the existing scholarship on PPPs is largely controlled by advocates of these types of partnership, such as the World Bank, philanthropic institutions, e.g., The Bill and Melinda Gates Foundation, and aid organisations, e.g., development finance institutions (DFIs). This has caused a quasi-monopoly of knowledge which prevents stakeholders in the partnerships from understanding all the costs involved in PPPs. This further prevents them from realising the need to think of new ways to make the interactions between the public sector and private sector work better to serve communities as well as to achieve development goals. The way this study prioritises the stakeholders' voices is an effort to prevent this siloed thinking caused by this quasi-monopoly of knowledge from being perpetuated further. What is most novel about this study is its focus on what stakeholders from different sectors have said.

SIBs have also been critiqued in research. Sinclair et al. (2021) stress that SIBs are a sinister form of financialisation of social policy which transforms the beneficiary groups into fictitious commodities. They state that SIBs reflect the beliefs that 1) only that which can be observed and measured is important; 2) that state funding is an investment from which a calculable return must be made; and 3) a redefinition of citizens as customers. All of these point to an egregious and compound error in social policy which shows how SIBs inflict ontological violence on the vulnerable groups in society that they are meant to serve (Sinclair et al., 2021). Another critique is that SIBs focus on solving for symptoms or manifestations of problems instead of the complex root causes which have multiple compounding factors and contested ideas on their nature and causality. What this in effect does is offer help to some people in specific areas to keep their heads above the water, while the deeper and more powerful current exists unchallenged and continues to sweep other people away (Sinclair et al., 2021). Another critique of specifically SIBs aimed at improving educational outcomes is that they lead to an obsession with meeting target metrics such as pass rates and test scores. This encourages teachers to protect themselves by using unjust practices such as “teaching to the test” and creaming top scholars. The focus becomes improving metrics for outcomes

evaluation at the expense of true understanding of concepts and providing support to struggling learners (Sinclair et al., 2021).

Another key critique of SIBs is that they provide a platform for innovation only on the financing side while they do very little if anything at all to promote innovation in social service. This is because from the perspective of social services, SIBs are nothing more than a new investment strategy (Tan et al, 2021). Another key critique is that the champions and original users of SIBs regarded randomised controlled trials (RCT) as the gold standard of impact evaluation. However, what is often observed now is that the organisations contracted for impact evaluation in most SIBs use other less rigorous methods. The less rigorous methods fail to eliminate the possibility of impact being attributed to the SIB's intervention when it possibly comes from variables other than the intervention (Sinclair et al., 2021). These critiques will provide important guard-rails to the contract terms specifically as they relate to community representation, ensuring outcomes measured do not incentivise unjust practices, and ensuring the use of RCT by the evaluator contracted to do impact measurement.

Despite these critiques of PPPs and SIBs, the findings of this study will be of significance to different groups of scholars, interest groups and institutions as follows. The first group is education policymakers. In the introduction it was explained that South Africa received a negative rating on SDG 4: Quality Education which was motivated by a declining participation rate in ECD, decline in net primary school enrolment and a decline in the secondary school completion rate. As a response, there is a joint effort by education policymakers and development researchers in South Africa to investigate ways to improve this rating. Increasing investment in school feeding to expand the programme to ECD is a recommendation of this paper which will solve for one of the motivators of the negative rating. Furthermore, it emerged from the interviews with educators that school feeding has improved school enrolment and retention rates. Increasing investment in school feeding as this paper recommends will improve these metrics and therefore will combat the second and third motivators of the negative SDG 4 rating. Increased funding will solve the identified operational and financial challenges identified by scholars (DBE & DPME, 2016; Devereux et al., 2018; Munje & Jita, 2019; Mafugu, 2021; Aurino et al., 2023; Munje & Jita, 2019;

Iddrisu et al., 2022) and interview participants who are stakeholders in the South African school feeding programme.

The second set of stakeholders who will get much value from this research are the management teams of development institutions with a keen interest in feeding programmes. This study will provide a focus on the finance side of school feeding programmes, which is crucial to continuity and improving efficiency of existing school feeding programmes. A key gap which exists in school feeding research is studies that focus on collaborations and partnerships between the government education ministry and the private sector specifically for school feeding and how they can enable investment in school feeding.

The third stakeholder set are the management teams at financial institutions and innovative finance researchers. The study will take the discussion beyond the widely understood categories of innovative finance tools and how they work (Thapa et al., 2020; Patton Power et al. n.d.; König et al, 2020). The study focuses on application of the tools advocated for in innovative finance scholarship with specific regard to school feeding, which is a key part of one of the focus areas of innovative finance, namely access to education. To this end, the novel contribution of this study is that it modifies the well-known structure of social impact bonds from innovative finance research (König et al, 2020) to suit it to a public private partnership in school feeding. This is a critical gap in the scholarship which this paper closes by providing an analysis of the key themes emerging as key considerations from school feeding stakeholders and potential financial institutions and unpacking them to understand the nature of the potential relationship.

The fourth stakeholder set which will greatly benefit from this study are ESG consultants and management of ESG teams at financial institutions. The study features interview insights from a sustainable finance manager at a large financial institution which will be valuable to theorising the key role that large financial institutions can play in school feeding programmes through their ESG strategies. Critical to this, from the financial institution side, are the key considerations and requirements to get investment into social programmes such as school feeding over the line, and the implications of these key considerations for the finance model. The key themes from these discussions will advance the scholarship on financing education beyond traditional education finance models (Thapa et al., 2020; Glover and Levacic, 2020; Rice Monk and Zhang, 2020). This paper recommends a new model for school feeding with

the use of an SIB run by an SPV with a guarantee embedded in the structure. In this SIB, blended finance will be used to source finance from three different sources: bond purchases, donations from CSI, and grant funding facilitated by [Large Financial Institution]. The novelty of this structure will inspire new thinking in the sustainable finance sub sector.

7 Directions for Future Research

Future research can look at developing a framework for financing agrarian development in communities surrounding schools with school feeding, looking at how to create smallholder farmer cooperations which can assist in managing the farming operations, pooling funds for the access of members, and combining expertise of different people. Food production is a pillar of many school feeding programmes including the South African one. However, it is often not considered in schools, or poorly managed. With the right level of thinking and research this network of farmers can then provide fresh produce to school feeding as well as provide a closer market for the community. Community member will be empowered with new skills from this, and unemployed members of the community can find employment in the cooperations. A finance model will be a crucial part of the design of this agrarian development framework.

Based on the theoretical literature review conducted, there is a gap in research on PPPs in education in South Africa. To this end, this research on financing agrarian development to support school feeding will deepen the scholarship of PPPs in education in South Africa. The key questions that the study should seek to answer are: 1) How can school feeding programmes be used as a vehicle to advance local farming and agriculture? 2) How can a school feeding PPP facilitate a multi-sector effort toward agrarian development? And 3) how will pricing play out under different types of partnerships with financial institutions? The methodology of this study should ideally be a randomised controlled trial spanning a few years after implementation of what the study findings will propose. The RCT will allow more rigorous testing of the true impact of the programme based on lived experiences. The

sampling will be stakeholders involved with agriculture at different levels, stakeholders involved with the day-to-day operations of school feeding, and financial institutions.

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Appendix

Figure A.1: Conceptual Framework of the proposed structure

