Ark

Public-Private Partnerships in Education in Developing Countries:

A Rigorous Review of the Evidence

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Commissioned by:
Ark Education Partnerships Group

Ark's Education Partnerships Group (EPG) commissioned this rigorous review to provide a high-level global summary of the evidence currently available on the impact of PPPs on learning outcomes. We did this because EPG supports governments in developing countries to improve the performance of public education systems, including through partnering with the private sector — and we want our support to be as effective as possible. Getting children learning should be the primary objective of any educational policy. Public private partnerships are seen by some governments as one way to achieve this, by improving the quality and efficiency of education systems. If designed well and implemented alongside a strong accountability framework, they should hold the potential to raise learning outcomes.

Potential is one thing, evidence of impact is another. As Justin Sandefur notes in his foreword, the authors of the review found that the evidence base we have so far is limited. It does not allow us to draw strong and universal conclusions about the impact of PPPs on learning outcomes. This kind of policy innovation is complex, requires effective government oversight and can be politically contentious, so we advise our government partners to pilot cautiously and to gather contextually relevant evidence to inform any policy decisions. EPG has committed to evaluating as rigorously as possible the PPP programmes we support, to better-understand what works to improve children's learning outcomes. In so doing, we will increase and improve the global evidence base.

We can all agree that learning outcomes across the developing world are dismal and radical improvement is urgently needed. We hope this review helps move the debate beyond unhelpful — and often false — dichotomies between the relative merits of the public and private sectors, and shines a light on the need to gather more and better data on what does and doesn't work.

Rt Hon David Laws, *Executive Chairman, Ark Education Partnerships Group*
Susannah Hares, *Executive Director, Ark Education Partnerships Group*

Contents

Foreword

Schools across large swaths of the developing world are failing children, in what UNESCO has labelled a "learning crisis" (UNESCO, 2013)[1]. Enrolment is booming, but literacy and numeracy levels aren't. As policymakers explore and test various tools to address this learning crisis, private schools provide a useful — and sometimes politically uncomfortable — reference point. Because in many, though certainly not all, countries and contexts, private schools are somehow able to produce significantly higher learning levels than government schools, and often at lower cost (Day Ashley et al., 2014).

But if the previous paragraph sounds like a case for pouring public monies into private schooling, it isn't. As this careful study commissioned by Ark Education Partnerships Group makes clear, there are at least two major logical hurdles that need to be cleared before claiming any evidentiary basis for a public-private partnership in education.

First, do the learning levels associated with private schooling really represent a causal treatment effect? This question points to the importance of screening studies on the basis of methodological rigour. Correlation is of course not causation, and it's important to focus on how studies adjust not just for the socio-economic differences between children in public and private education, but for selection of pupils into private schooling on unobservable dimensions related to academic aptitude or parental demand for quality schooling.

Sadly for researchers' sake, even overcoming this causal inference problem is not enough to draw policy conclusions. That's because the policy question here is not whether private schools work, but whether the public sector can successfully partner with them.

Private schools generally aren't free, and charging fees inevitably means excluding poorer kids. The focus of this review is specifically on policies to overcome this apparent equity-efficiency trade-off, by using public monies to give free or subsidised access to privately delivered education.

[1] http://unesdoc.unesco.org/images/0022/002238/223826e.pdf

> *For all of the controversy and cacophony around public-private partnerships in education, we actually have very few high-quality studies that quantify their impacts*

The second evidentiary hurdle to be overcome — and the core focus of this review — is to show that the developing country governments can replicate the performance of private education once public finance is added to the equation. The finding that the private sector can run schools better than an under-funded, under-staffed Ministry in a hypothetical developing country (clearly a contested premise) is no indication that that same developing country Ministry can run the procurement, monitoring and evaluation, and overall governance of a public-private partnership more effectively than it manages its own schools. Good private schools don't guarantee big impacts and equitable access from a public-private partnership.

For all of the controversy and cacophony around public-private partnerships (PPPs) in education, we actually have very few high-quality studies that quantify their impacts. Just acknowledging and documenting that level of collective ignorance is one of the most important and refreshing aspects of this review.

But the review does have substantive lessons to provide. It offers a useful typology of PPP contract structures, ranging from voucher programs to school subsidies and contract schools. And it delves deep in to the specific design features in the handful of major PPP initiatives in the developing world that have been subjected to seriously quantitative evaluation to date. There is a growing consensus in the US literature that private school voucher programs have often failed to raise learning levels (Leonhardt 2016)[2], while charter schools have a more mixed track record, with some well-documented major successes (Chabrier et al 2016). It's too soon to say whether this generalisation applies in the countries covered here, but it is important to separate these program designs from each other, and the evidence reviewed here is (at best) probably not inconsistent with a similar pattern.

This review is ultimately somewhat inconclusive; such is the nature of the evidence we have so far. But on a topic characterised by strident advocates on either side, it is refreshing to read a review focused on serious evidence and which goes beyond binary conclusions to wrestle with the complexities of this issue and the many design features that policymakers have to confront. The obvious next step is more research, mapping out the results of those various design choices, and distilling them into a coherent theory that can guide policymaking. For now, it's time to go back to the field and get more data.

Justin Sandefur, *Senior Fellow at the Center for Global Development*

[2] https://www.nytimes.com/2017/05/02/opinion/school-vouchers-charters-betsy-devos.html

Preface

Given the need to increase access and learning outcomes, private and public sectors need to do more, and hopefully do more together, to help us achieve the learning goals of the 21st century.

What can researchers do to support this?

The most important thing would be to design studies that answer better questions. For instance, instead of seeking to prove whether vouchers, contract schools or subsidies work, ask instead: To what extent do PPPs raise learning outcomes? How cost-effective are they? For whom do they improve outcomes? Under what conditions?

We should be bolder in experimenting with different designs of PPP mechanisms relating to policy conditions, the enabling environment or the regulatory framework in order to identify which mechanisms are necessary to enable PPPs to improve learning.

Harry Anthony Patrinos, *Practice Manager, Education, The World Bank*

Executive Summary

Introduction

In the face of an increasing child population, pressures on educational quality and ever-tighter budgets, governments are facing immense pressure to deliver education in a more equitable and efficient manner. As a result, governments around the world are making the economic and political decision to engage the non-state sector to deliver education that may have previously been delivered by the public sector. They do this because they believe the resultant public-private partnerships (PPPs) bring about efficiencies that improve not only the quantity but also potentially the quality of education for all children across all sectors by maximising the advantages offered by each sector. Governments entering into such arrangements are typically driven by one or more of the following goals: increasing access, improving quality and delivering education in the most cost effective manner.

“In the face of an increasing child population, pressures on educational quality and ever-tighter budgets, governments are facing immense pressure to deliver education in a more equitable and efficient manner

PPPs are now widespread across both the developed and developing world. Such arrangements come in various guises and with differing characteristics, ranging from the type of school provision, the contractual arrangements in place, ownership structures, funding arrangements, accountability procedures and the characteristics of the target student population. The most common forms of educational PPPs have ranged from contracts relating to infrastructure, construction and management of schools to the provision of educational services and operations as a whole, for example through voucher schemes or charter schools. These contracts typically outline how the government will fund non-state providers to supply an educational service of a defined quantity and quality for a specific period of time. The terms share the risk across

the two sectors, and also tend to include specified performance targets as well as sanctions for non- or poor performance.

Aims and objectives of this review

This study focuses specifically on programmes where public finance is combined with private provision through vouchers, subsidies and/or contract/charter schools. It addresses the following research questions:

- What is the impact of educational PPPs on learning outcomes for children? In particular, do PPP schools raise attainment of children in the lower socio-economic quintiles?
- Through what mechanisms do PPPs appear to impact learning outcomes?
- What are the ways in which educational PPPs have been shown to support improvements across an education system?
- What are the key elements of an effective PPP policy, and how can it ensure school operators have adequate autonomy while governments retain oversight with regards to commissioning, funding and regulation?
- What kind of environment enables an effective PPP? What other structures need to be in place to ensure effective policy implementation?
- What, if any, policy pointers have emerged from this review?

The evidence: pre-2009

This rigorous review collates and discusses carefully identified evidence from 2009 onwards. This decision is based on the understanding that Patrinos (2009) and LaRocque (2008) provide excellent summaries of evidence on the role and impact of educational public-private partnerships prior to this period. These studies show there are very few empirical studies examining the impact of PPPs, but their evidence base does provide some useful lessons about different types of contracts. Both studies look at the four key types of PPPs (vouchers, subsidies, private management/contract schools and private finance initiatives, i.e. long-term government contracts with private partners for the provision of school infrastructure), and their role in improving educational outcomes such as enrolment, student learning, inequality, etc. They conclude that there is some evidence that private management of public schools has had a positive impact on student test scores in contexts such as the US, Colombia and Venezuela. However, what it is about these charter schools or concession schools that makes them more effective is less clear-cut.

The evidence on vouchers is more controversial with a much more mixed evidence base, and whilst there has been some evidence on the positive role that these voucher reforms have made in certain contexts, there is still much more that remains undiscovered in relation to vouchers and school choice. The empirical literature on vouchers, however, is relatively larger and technically stronger than in other types of contractual arrangements; the evidence on charter schools, for example, is extensive but very context specific, focusing mainly in the US. In relation to subsidies, the authors find that there is only limited robust empirical evidence on this type of arrangement in a few contexts and their findings are therefore inconclusive. The authors highlight the need for more research in particular into the role that subsidies and private finance initiatives can play in improving educational outcomes.

Summary of evidence in this review

This review identifies 22 studies of medium or high quality over a range of contexts and summarizes them below based on whether they discuss one of the following arrangements: contract schools, government subsidies to non-state providers and voucher schemes.

Contract schools: Three studies covering two contexts (Colombia and Pakistan) provide evidence on contract schools. Two of the studies use quantitative methods and one also employs more stringent econometric techniques to add rigour to the analysis. Overall, there is very limited evidence on the relationship between contract school arrangements in developing countries and learning outcomes. What evidence exists is inconclusive as to whether these types of arrangements have a positive effect on learning outcomes. However, the advantages of this type of arrangement are indicated not only by improved learning outcomes, but also by other educational aspects, such as enrolment, better management practices etc. While there is very limited robust evidence on whether these schools directly benefit the poorer quintiles, emerging evidence does suggest contract schools may be able to reach more disadvantaged students in certain contexts. Only one study adopts relatively stringent strategies to overcome statistical biases. This review therefore concludes these studies — while suggestive — provide an *insufficient body of evidence* for a positive relationship between contract schools and pupil learning outcomes.

Subsidies: Nine studies covering seven contexts (Colombia, Pakistan, Peru, Philippines, Sierra Leone, Uganda and Venezuela) provide evidence on arrangements whereby the government subsidises a private school or faith-based organisation in some manner. All nine studies examine the relationship between some form of government subsidy for private or faith-based schools and learning outcomes. The existing evidence is weakly positive, suggesting government subsidies to private schools might have benefits when it comes to improving learning outcomes. However, these studies are limited either by limitations in their methodology or, where robust techniques have been implemented, by not answering the specific questions posed in this research. Nevertheless, there is some evidence to support the claim that these programmes are reaching poorer members of society and therefore have the potential to improve their learning outcomes. Overall, the quality of the studies reviewed in this section ranges from low-medium to high quality with some studies adopting relatively stringent strategies to overcome statistical biases. This review therefore concludes they provide a *modest body of evidence* for a weakly positive relationship between subsidies to private or faith-based schools and the learning outcome of their students.

Vouchers: This review examines the findings of nine studies of voucher programmes, six of which are in the context of Chile, one in India, one in Pakistan and one is a systematic review covering various contexts. On the whole, the evidence on the Chilean voucher system is mixed and controversial, with authors highlighting the potential of such programmes to increase social stratification and inequities. In particular, robust and more specific evidence is required for whether these voucher schemes improve the learning outcomes of the most disadvantaged in society. The evidence from the remaining studies in other contexts is also mixed, with the impact of voucher programmes on individuals from the most disadvantaged backgrounds not clear. A key benefit of voucher programmes in specific contexts should, however, be highlighted: that of increased enrolment, particularly of those who would not have otherwise participated in school. Overall, the quality of the studies reviewed in this section is of medium/high to high quality with many studies adopting empirical strategies aimed at controlling

confounding factors such as differential socio-economic background. The *body of evidence* for the relationship between voucher provision and learning outcomes is mixed and inconclusive, and therefore *insufficient*.

Conclusions

- The key challenge in evaluating different types of PPPs lies in overcoming endogeneity issues. This is due to self-selection on the part of both schools (for example, when they choose students based on observed characteristics) and students (when they choose particular types of schools based on observed and unobserved characteristics). Simply comparing enrolment rates or learning outcomes of participants and non-participants will not accurately reflect a programme's 'effect', as researchers are typically unable to control unobserved characteristics that may bias the outcome being measured. The challenge, therefore, lies in creating the correct 'counterfactual', i.e. comparison group, to derive meaningful conclusions on the effectiveness of a particular type of PPP. Some studies that utilise more robust econometric techniques are better able to address these challenges than others. Overall, more stringent studies of this nature are required going forward.

- It is also important to note that while there may be some evidence on the relative effectiveness of non-state schools (whether in a PPP or not) on improving learning outcomes, this comparison tends to be based on worryingly low levels of overall achievement across the entire education system and, therefore, any relative advantage associated with the non-state sector may still not be sufficiently large to alleviate quality concerns. However, this must then be caveated with the fact that some PPP interventions have been implemented with the intention of improving educational access in situations where children may not otherwise be attending school. Therefore, judging such interventions on parameters of quality alone may lead to unfair conclusions.

- As with all impact evaluations, conclusions on the efficacy of a policy must distinguish between whether these impacts — be they negative, positive or unseen — have arisen due to their design or their implementation so as to guide future policy initiatives. One overarching fact observed during the course of this review is that untangling this relationship has proved elusive for many researchers.

- The evidence on different types of PPPs and their impact on educational outcomes is growing. However, robust and scientifically rigorous evidence has not yet reached the stage whereby definitive conclusions can be reached on a wide scale. The research that does exist tends to be context- and design-specific, and there is a dearth of high-quality studies from which generalisable conclusions can be derived.

1

Introduction to PPPs

Public-private partnerships (PPPs) in education have gained traction and influence over the past few decades, as witnessed by the growing number of collaborations between the private sector and the state to help governments around the globe meet their educational needs. They are increasingly viewed as providing a way of meeting the Education for All goals (Patrinos et al., 2009) and, more recently, the Sustainable Development Goals. According to Hodge et al. (2010, as cited in Termes et al., 2015), PPP contracts can be defined as "some sort of durability between public and private actors, in which they jointly develop products and services and share risks, costs and resources that are connected with these products" (p. 4). The question of whether private or non-state schools offer a better quality education than their government school counterparts has been subject to significant debate over the past few years: for example, Day Ashley et al. (2014) summarise some recent evidence on the role and impact of private schools in developing countries. This question is also at the centre of any debate about the potential effects on student achievement of PPPs, whether they are charter schools, contract schools, vouchers or other such programmes that give the private sector a role in the provision of public education.

In the first instance, it is important to define the terms 'private' and 'non-state' providers as they are used in this review. Private schools typically tend to encompass any "market-oriented (nominally for profit) schools that are dependent on user fees for some or all of their running and development costs" (McLoughlin, 2013). As a result, these schools tend not only to have a degree of independence from the state but also rely on attracting and retaining students to ensure their business models remain viable and successful. The term 'private' also encompasses a broad array of different types of providers with varied motivations, operating at different scales, reaching different populations and facing different levels of government regulations. The term 'non-state' schools includes 'private schools' (as previously defined) as well as religious schools, schools run by national or international NGOs, schools established by charitable foundations, philanthropic schools and community schools. It could also incorporate non-state providers subsidised or financed by the government while being

managed independently, as well as NGOs sub-contracted by governments to provide certain education programmes (Wales et al., 2015). This review encompasses literature relating to all types of non-state providers, including private schools.

> *Governments approach these programmes with different goals, including increasing access, improving quality, reducing inequalities and reducing costs*

Governments approach these programmes with different goals, including increasing access, improving quality, reducing inequalities and reducing costs (Patrinos et al., 2009). Depending on context, therefore, PPPs offer a theoretical opportunity for governments to combine the potential reductions in inequality offered by the public financing of education with the efficiencies of private schooling (Barrera-Osorio et al., 2015). Theoretically speaking, different arrangements can offer strongly positive educational outcomes when it comes to enrolment and learning; in reality, however, these arrangements are complex and may result in unexpected consequences despite the best of intentions. For example, while in theory, voucher programmes may deliver a significant increase in enrolment figures by making private spaces available, in reality, they may simply result in a reallocation of enrolment between the private and public sector, with very little gains on overall enrolment (Patrinos et al. 2009, p. 32). The impact on learning outcomes of arrangements in which the government subsidises the private sector is limited by the availability of places and the quality of instruction within it (ibid, p. 32). Nevertheless, proponents argue that different types of PPPs can significantly reduce inequalities and have a moderate-strong impact on reducing costs, provided they are targeted and well-designed (ibid, p. 32).

1.1 PPPs: theory

Proponents of PPPs use several arguments that are pro-private provision of education in nature to support their view. They argue that these types of arrangements can combine the theoretical benefits offered by the private sector with government financing in a manner that improves choice, innovation and efficiency, perhaps even more so than in a purely market-led or a purely public environment. They highlight the following key arguments to promote the implementation of such arrangements: firstly, that private organisations offer a potential flexibility that means they are able to customise services more specifically to the needs of their clients. For example, government school providers typically have less autonomy in the recruitment and effective management of teachers compared to the private sector. Another argument in favour of private provision is that private schools may be more accountable to fee-paying parents as a direct consequence of the financial transactions involved (Day Ashley et al., 2014) and this benefit may be conferred on certain types of PPPs, such as voucher schemes, where parents are the direct recipients of the financial benefit and can therefore hold schools further to account.

Additionally, it can be argued PPPs allow the distribution of risk. By investing alongside others, the potential premiums and losses of a partnership are spread across partners in a pre-determined way, thereby reducing the exposure to risk of any individual partner. Certain types of PPPs offer the government and private sector the ability to share the risk, which is

likely to encourage private providers who may otherwise be reluctant to bear the full financial burden (or other risks) of entering the education market. In turn this means for the state that partnering with existing private schools may be a more cost-effective way of increasing access than building new schools and hiring more teachers.

Thirdly, PPP proponents argue that private entities can operate in a more efficient manner than their public counterparts. Day Ashley et al. (2014) summarise the evidence for this, finding moderate evidence that private schools are more cost-effective than their public school counterparts. And finally, they argue their entry into the education market will stimulate competition between private schools and public schools, with the threat of losing students acting as an incentive for them both to provide services offering high quality and value for money. Day Ashley et al. (2014), however, find limited evidence to support this latter hypothesis.

Opponents of PPPs, on the other hand, argue that they are subject to cost-cutting measures that essentially undermine the quality of education being provided. For example, if PPP providers are not held sufficiently to account when it comes to achievement criteria, they may allocate sub-optimal resources, particularly with regards to those resources aimed at improving their students' achievement (Bonilla, 2011). Additionally, as profit becomes a motive for the provision of education, PPPs may result in providers avoiding the 'non-profitable' students, typically those who are the most marginalised and served only by the government sector. This potential 'cream skimming' of more capable students can exacerbate existing inequalities in education access and quality.

In addition to this, critics of these arrangements also argue that private providers' curriculums do not reflect the social goals of education (Benveniste et al., 2003, as cited in Bonilla, 2011), and this criticism could also apply to the PPP context. There is also the risk that such arrangements can create opportunities for corruption, particularly if sufficient accountability structures are not in place (Kingdon, 2007). Finally, it has been argued that the injection of public money can alter school governance incentives by lowering parental power and information, and thereby hindering educational outcomes. This argument is based on the fact that empirical evidence has linked active parental involvement to improved student outcomes in private schools. With schools more reliant on government funds instead of community or parental financing, PPPs could arguably lead to reduced accountability to parents.

> *"PPPs are now widespread in various guises across both the developed and developing world*

Nevertheless, PPPs are now widespread in various guises across both the developed and developing world. There has been a lively, sometimes heated, debate recently in both academia and the popular press about the relative effectiveness of private and public schools, as they are generally defined. Several variants of PPP schemes have arisen in the recent past and these have taken various forms. Figure 1 below summarises the different ways PPPs can be structured, depicting variables such as the type of school provision, the contractual arrangements in place, ownership structures and funding arrangements. The educational space can range from 100 per cent public provision, wherein the government provides, finances and regulates the educational services fully, to 100 per cent private provision, wherein all educational provision is provided and financed by the private sector. Within these two extremes lie the more realistic educational spaces which exist in most countries around the world, with the most emblematic of educational PPPs perhaps

being education voucher schemes, loans and scholarships aimed at providing funding directly to children in order to increase school choice. Another illustrative PPP is represented by the creation of publicly financed and privately operated 'contract' or 'charter' schools. These PPPs are typically viewed as 'hybrids' of public and private schools, and while they are owned and funded by the public sector, they are managed by the private sector and may therefore be exempt from certain regulations (Termes et al., 2015).

Figure 1: Financing and provision of services in public-private partnerships

		Provision	
		Private	**Public**
Finance	**Private**	• Private schools • Private universities • Home schooling • Tutoring	• User fees • Student loans
	Public	• Vouchers • Contract schools • Charter schools • Contracting out	• Public schools • Public universities

Source: Patrinos et al. (2009), Figure 1 (p.3)

Within the broad group of government-funded and privately produced educational PPPs, an important distinction should be made between 'block' funding to a school and 'per-student' funding to a school. For example, the numerous government-aided schools in India that have existed throughout the post-Independence period of nearly 70 years are PPPs, which receive block funding from government, meaning the amount of funding to the school (based on the number of appointed teachers) is assured irrespective of the number of students. This means that if a school's student enrolment falls, its funding does not fall since teacher salaries still have to be paid. Under block grant-funded PPPs, there is little incentive for schools to compete over number of students as their funding is not at stake.

The other kind of government funding for private schools is per student funding. This kind of funding provides a financial incentive for schools to attract and retain children, meaning schools would have to put in more effort than in the case of block grant-funded PPP schools. PPPs funded 'per student' are therefore considered far superior to those funded with a 'block grant'. A further distinction within PPPs funded 'per student' should be made between those where the government gives the funding directly to the school ('supply-side' funding) and those where the government gives the funding to schools via parents ('demand-side' funding), either as a voucher or as a Direct Benefit Transfer, i.e. cash for spending on their children's education, and then the parents give the voucher to the school. Demand-side funding is liable to make schools more responsive to parents than supply-side funding, since schools depend on parents for their revenue from government. Block-funding for PPP schools is thought to be inferior since this system offers fewer inherent incentives.

Countries around the world have experimented with initiatives that seek to broaden the decision-making autonomy of schools and promote accountability, while retaining different levels of public control depending on the type of arrangement being advocated. In recent years, the establishment of concession schools, charter schools and voucher-funded private and public

schools has become prominent in Colombia, Chile, the USA, and New Zealand. In South Asia there is also a growing appetite for PPPs, with Pakistan investing heavily in PPP schools and India bringing in the new Right to Education (RTE) Bill 2009, which requires all private schools to allocate 25 per cent of their places to publicly-paid children from disadvantaged backgrounds. A number of countries in Africa are also introducing different forms of PPPs.

Figure 2: Illustration of the countries and geographies that have experimented with any type of PPP

1.2 PPPs: the evidence

There is a buoyant literature on the relative 'performance' of private (variously defined) and public schools internationally, with both qualitative and empirical studies assessing the relative effectiveness of different school types. The efficacy of schools has typically been judged in various ways: for example, via the achievement outcomes of students (an output-based measure of school performance), via measuring teacher effort, and via the availability of inputs, though this latter approach has been discredited by long-standing scepticism based on evidence of the failure of input-based approaches measures (e.g. Hanushek, 2003)[1]. More recently, the literature on different school types has been synthesised, with the role of private schools being synthesised in a recent review by Day-Ashley et al. (2014), and that of philanthropic and religious schools by Wales et al. (2015). Evidence focusing more specifically on educational PPPs has been synthesised by LaRoque (2008) and Patrinos et al. (2009). Not only is this dated, but it also fails to capture some of the key questions posed by the commissioning body

— Ark Education Partnerships Group (Ark EPG) — for this review. In particular, in looking at the literature on PPPs, the commissioning body is keen to move away from a framework that focuses on comparing the relative effectiveness of PPPs against existing state or private alternatives, to one where PPPs are investigated more broadly in terms of their impact on all students in the overall education system.

> *Important pieces of education policy affecting tens of millions of children are made on scarce evidence*

There are important areas in which the evidence-to-date is largely lacking, especially for developing countries. In particular, there is little evidence on which types of PPPs work well, i.e. whether it is charter schools, concession schools, voucher schools, or outright private schools without any public funding. While some evidence exists on these issues in developed countries, e.g. the US, New Zealand and Sweden, there is relatively little evidence — though it is now starting to emerge — in developing countries, even in countries where PPPs have existed for several years or are being adopted in abundance. Nevertheless, important pieces of education policy affecting tens of millions of children are made on scarce evidence. For example, the RTE Bill in India has chosen to give considerable public resources directly to the private schools in their newly formulated PPPs in schooling. Is this better than an alternative type of PPP that involves giving a financial benefit directly to the families of disadvantaged children in the form of a school voucher entitling them to attend a school of their choice? This could set up very different incentives for schools compared with a system where the school receives the resource directly from the government, since poor families are potentially empowered by being given the resource at their disposal, which in turn would likely induce schools to be more accountable to parents. These kinds of debates are useful for encouraging governments to pilot different ways of giving public resources to private schools in one small area, e.g. in a few specific districts, before scaling up the programme nationally. However, without knowing what the evidence for these issues is, it is not possible to make concrete suggestions.

> *The review focuses on the impact of PPPs on learning outcomes as well as synthesising the more scattered and often overlooked evidence on the policy frameworks and enabling environments within which PPPs operate*

This rigorous review aims to overcome this gap and focus on educational PPPs in developing countries where the government funds non-state actors, for example private or non-government organisations, or community or religious groups, to provide education while retaining control (to a varying extent) of the commissioning, funding and regulation of these organisations. More specifically, the review will focus on the role of contract schools, charter schools and academies that aim to deliver free education. However, given the potentially limited literature on these types of schools in the context of developing countries, this review also briefly discusses some recent literature on these schools within the developed world. This is further supplemented with a discussion on the more extensive literature about vouchers for private schools in developing countries, which falls within the broader category of 'public financing of private school provision'. The review focuses on the *impact of PPPs on learning outcomes* as well as synthesising the more scattered and often overlooked evidence on the policy *frameworks and enabling environments*

within which PPPs operate. For example, this includes the funding arrangement under which a PPP operates, whether there is flexibility in the curriculum, what governance and management arrangements are in place, who the target beneficiaries of the arrangement are, what accountability systems the providers operate under, etc.

In this review, we will aim to answer the following questions:

- What is the impact of educational PPPs for education on learning outcomes for children? In particular, do PPP schools raise attainment of children in the lower socio-economic quintiles?
- Through what mechanisms do PPPs appear to impact learning outcomes?
- What are the ways in which PPPs for education have been shown to support improvements across an education system?
- What are the key elements of an effective PPP policy to ensure school operators have adequate autonomy while governments retain oversight with regards to commissioning, funding and regulation?
- What is the enabling environment for an effective PPP? What other structures need to be in place to ensure effective policy implementation?
- What, if any, policy pointers have emerged from this review?

This review collates and discusses carefully identified evidence from 2009 onwards. The decision to include evidence from this cut-off date was made in collaboration with the commissioning body and is based on the understanding that Patrinos (2009) and LaRocque (2008) provide excellent summaries of evidence prior to this period. We will aim to summarise evidence post-2009 about programmes that combine public finance with private provision: namely vouchers, subsidies and contract or charter schools.

This review is organised as follows: section two details the methodology used to undertake the review and sets out the theoretical framework; section three presents the results and discusses the key findings thereof; and section four concludes with policy implications and pointers for the future.

2

Approach and Methodology

2.1 Methodological approach

The team undertaking this review has followed a series of steps usually adopted in conducting a Systematic Review, while acknowledging that a Rigorous Literature Review will adopt more flexible standards than those used in a Systematic Review. The team also believes a good quality review starts with a concrete theoretical framework that sets out the inputs, the assumptions, the broader policy environment and the potential causal and non-causal pathways through which PPPs are expected to impact on the ultimate outcome of interest — student learning. Our review therefore starts by using a theoretical framework developed by Ark EPG that will allow us, towards the end of the review, to situate the analysis of educational PPPs and indicate where the literature is particularly strong and where the evidence is especially weak. This will allow interested readers of the review to form more evidence-based judgements regarding educational PPPs.

Explicit inclusion and exclusion criteria have been used to conduct searches of bibliographical databases, key journals, and organisational websites, as well as supplemental key word searches, searches by hand, and contacting authors and experts to arrive at a comprehensive collection of literature covering a wide range of disciplines. For example, databases such as the International Bibliography of the Social Sciences (IBSS: covering economics, politics, sociology and anthropology), Science Direct and Web of Knowledge (covering all sciences and humanities), and the Education Resources Information Centre (ERIC) have been used to ensure a broad coverage of all disciplines within which the PPP debate may exist. In addition to published literature, sites such as RePEC and the Conference Proceedings Citation Index have also been used to search for working papers, conference papers and PhD and Masters dissertations. An iterative procedure was followed to search for relevant literature using a number of key words and synonyms to ensure the coverage of all theoretical concepts relating to educational PPPs. All team members were consulted and the search criteria and strategy were agreed

upon, ensuring various key concepts within this theme were covered through the use of a comprehensive range of search terms. We also consulted Ark EPG to ensure our emphasis was aligned fully with their key considerations.

> *The comprehensive sweep of the evidence base identifying a variety of different studies ensured that we were able to identify a range of studies that are able to address all questions posed by the review, especially about the kind of environment that enables effective PPPs, rather than focus only on relative effectiveness*

In the next stage of the review, we set up stringent inclusion and exclusion criteria in order to screen the evidence base. We characterised the included studies according to their geographical region or country, setting (whether it was rural or urban, etc.), comparators, sample size, whether they account for confounding factors, the appropriateness of data collection and analysis, and study design (i.e. whether it was qualitative or quantitative). Studies identified as meeting the inclusion criteria were analysed in depth using a consistent and detailed data extraction methodology, and then assessed for quality and relevance. The dimensions used for this critical appraisal included assessing the methodological quality of each study, the relevance and appropriateness of its research design, and the relevance of its focus. Each study was then given an overall Weight of Evidence as provided by the study in investigating this research theme. The validity, reliability and applicability of each study were also examined to a certain extent. All studies, irrespective of design, were also assessed on criteria such as completeness of reporting, feasibility of assumptions, consideration of confounding factors, etc. The comprehensive sweep of the evidence base identifying a variety of different studies ensured that we were able to identify a range of studies that are able to address all questions posed by the review, especially about the kind of environment that enables effective PPPs, rather than focus only on relative effectiveness.

Based on the above findings, studies were judged to be either high, medium or low quality (see Appendix 3 and Table A3 for details on how individual study quality was assessed). It should be noted that our classifications were based on these categories. However, our final quality classifications covered more categories (high, medium-high, medium, medium-low and low), while studies of low quality were excluded from the final review. In order to ensure rigour, judgements relating to the above were done independently by team members. Key experts were also requested to comment on the final list of studies included for in-depth review to ensure that important evidence had not been overlooked[3]. The results of this in-depth review were collated to form a synthesis of evidence and to provide a Weight of Evidence on the various issues involved in a review of literature relating to educational PPPs. Where the results of the research were in narrative form, they were synthesised using narrative empirical synthesis in order to collate results from different types of research disciplines. It should be noted a few studies that did not necessarily meet quality assurance procedures were still included in the review, as the authors believed they nonetheless provided useful insights and considerations that were important for a balanced point of view. The Evidence for Policy and Practice Information and Coordinating Centre (EPPI) reviewer was also used to undertake this review. While we followed extreme rigour in undertaking the review, the review itself has been written aimed for an audience of policy-makers, donors, NGOs, school operators, etc. The evidence has, therefore, been collated and discussed in a very accessible manner with the technical details relegated to an appendix.

[3] We are grateful to Harry Patrinos and Felipe Barrerra-Osorio for their valuable responses to the list of studies sent to them for review.

2.2 Theoretical framework

The quality and efficiency arguments for the private provision of education are usually met with counter arguments that raise concerns about access; rights-based critics argue that fee-charging schools are accessible only to those who can afford to pay for them, while state provision is the assured means with which equitable access can be guaranteed for all. They also note that poorer students are likely to languish in deteriorating public sector schools, while more motivated or able students, or those with the means to access better schools, exit the system, which results in widening inequalities. Critics ask PPP proponents to be wary of similar concerns in relation to PPPs. Some go further, arguing that PPPs can lead to governments losing control over what is effectively a public service. However, while this may be the case, public provision is often characterised by the burdens of bureaucracy and ossified input-management, which leads to poor quality provision manifesting itself in inadequate achievement levels (Hsieh and Urquiola, 2006).

“Policy makers are increasingly entering into a range of partnerships with private providers to deliver educational services

As mentioned above, policy makers are increasingly entering into a range of partnerships with private providers to deliver educational services; how this frames the theoretical relationships and the resultant outcomes for children is highlighted in Figure 3 below. This theory of change provides an overview of how PPP reforms, once implemented, can impact not only the learning outcomes in the schools where formal PPP arrangements have been explicitly made, but also throughout the entire education system.

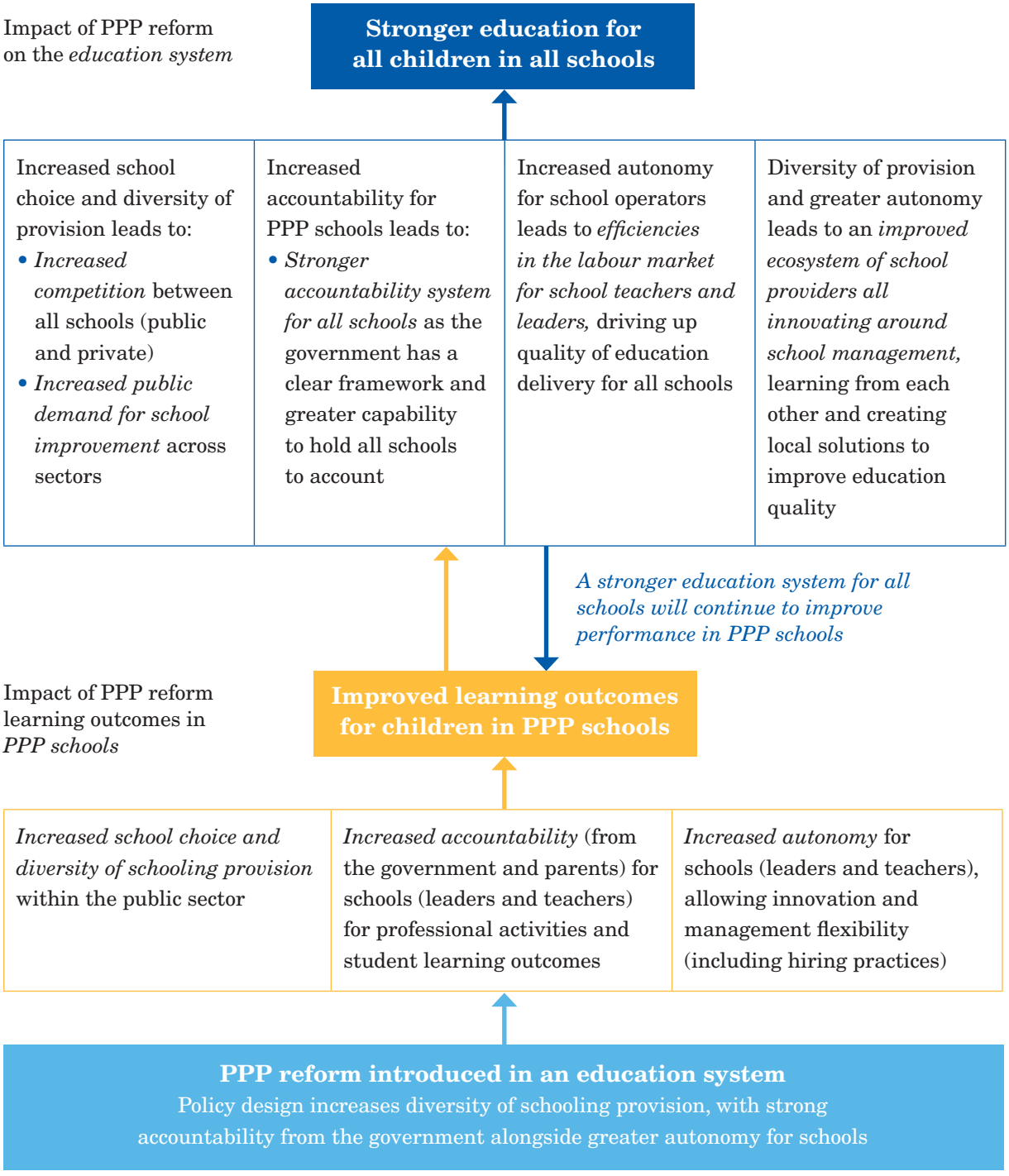
The three channels through which PPP reforms can improve the learning outcomes of children *within* their own schools are:

- Increased *choice and diversity* of schooling provision: for example, this could lead to competition between all schools, encouraging both sectors to make changes aimed at maintaining or increasing student numbers within their own school.
- Better *accountability* measures: this could lead to stronger system-wide accountability. For example, as the government develops clear frameworks to hold all schools to account.
- Increased *autonomy*: improved autonomy for school operators could potentially result in efficiencies in the teacher labour market, which would drive up the quality of all schools.

In addition to these three channels, diversity of provision and increased autonomy could potentially improve the education eco-system, leading to innovation in the way schools are managed, schools learning from one another, and the creation of local solutions to improve educational quality.

However, there are a range of enabling conditions that need to be in place to ensure these theoretical relationships actually work as expected. For instance, the actual PPP contracts themselves need to be well designed, and the government needs to have the capacity to ensure they can be implemented and enforced so they remain true to form. The surrounding educational market and regulatory environment needs to be conducive to such arrangements, with the existence of either a currently buoyant private sector in education or fertile conditions

Figure 3: Theory of change



Enabling Factors

- PPP arrangements are well designed and the government has the capacity to ensure they are effectively implemented, overseen and enforced
- Conductive regulatory environment
- Buoyant private sector in education
- Equality considerations at the forefront in the design, implementation and enforcement stages to ensure that these arrangements improve (not exacerbate) inequalities in the provision of educational services

> *There are a range of enabling conditions that need to be in place to ensure these theoretical relationships actually work as expected… The actual PPP contracts themselves need to be well designed, and the government needs to have the capacity to ensure they can be implemented and enforced*

in which a fruitful private sector can grow. There are some negative, and sometimes unintended, effects of PPPs that also need to be avoided. For example, it has been argued that these sorts of arrangements can not only dampen the state's control over what should be a public service, but also that poorly designed PPPs can further exacerbate socio-economic segregation (Patrinos et al., 2009). This may happen if high-quality private schools select particular pupils to improve their educational outcomes, or if more able students self-select better schools, thereby leaving deteriorating public schools with poorer or less able students and encouraging a vicious cycle. It is worth noting that many of the PPP arrangements reviewed in this paper may not have been designed specifically with these theoretical underpinnings, and the evidence therefore needs to be interpreted with this in mind. For example, in some instances, the PPP policy may not have been well designed, while in others, implementation may have hindered the theorised results, etc.

3

Results and Discussion

3.1 Identifying the evidence

This section presents the findings of the rigorous review conducted to examine the following research question:

> What is the impact of educational PPPs in learning outcomes for children? In particular, do PPP schools raise attainment of children in the lower socio-economic quintiles?

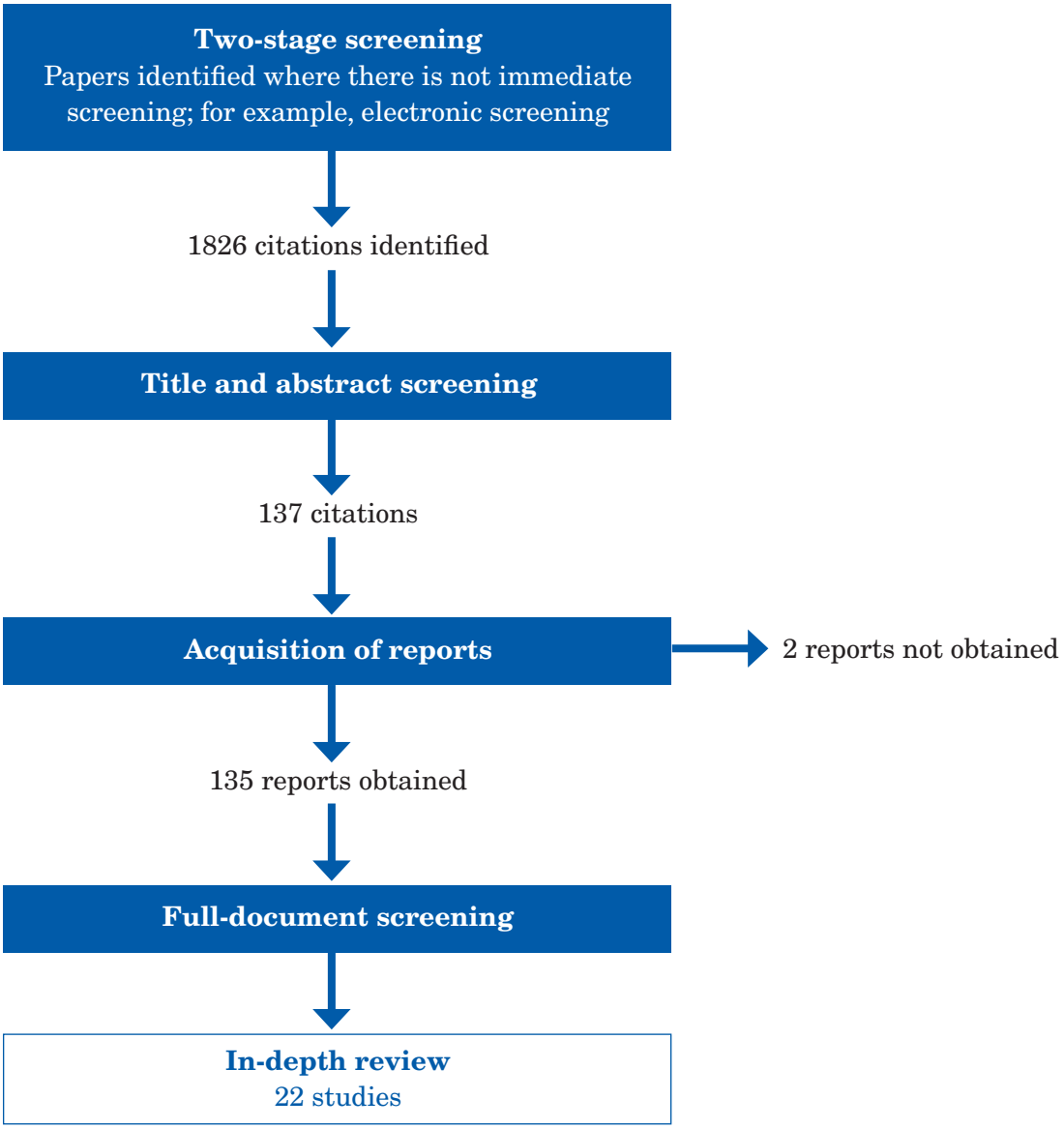
Evidence from the literature answering the aforementioned question was extracted to examine a further sub-set of research questions, namely:

1. Through what mechanisms do PPPs appear to impact learning outcomes?
2. What are the ways in which PPPs for education have been shown to support improvements across an education system?
3. What are the key elements of an effective PPP policy to ensure school operators have adequate autonomy while governments retain oversight with regards to commissioning, funding and regulation?
4. What is the enabling environment for an effective PPP? What other structures need to be in place to ensure effective policy implementation?

In order to obtain a more holistic understanding of these research questions, evidence is also presented from a wider range of literature that may not have necessarily met the inclusion criteria set forward for this review, but that nonetheless provides useful insights into the functioning of educational PPPs and their relationship with eventual student outcomes.

Figure 4 below provides a summary map of the evidence, from initial searches to the final 22 studies identified for inclusion and review, and illustrates the filtering process from initial screening to in-depth review. A total of 1,826 citations were obtained on which the authors of this review conducted an initial screening based on the title and abstract of the paper. As a result, 137 citations were brought forward for their entire text to be reviewed. Further to this, a total of 113 studies were excluded based on the authors' independent views as to whether they met the quality criteria and/or answered the review questions.

Figure 4: Filtering of evidence from searches to mapping to synthesis



Key challenges in evaluating PPPs

It should be noted that, as in Patrinos et al. (2009), we are mindful of the fact that quality research in this area would necessarily address issues of endogeneity and selection when evaluating different types of PPP programmes. For example, any evaluations of voucher programmes would need to deal with the endogeneity that arises due to such programmes typically requiring students to apply for them, meaning those who do apply may be either more able, more motivated or both. The challenge is particularly severe in education, as 'self-selection' on unobservables arises from both schools 'cream skimming' better students and from the students themselves. For example, schools that apply for government subsidies and children who ultimately choose to attend these schools are likely to have different characteristics than schools that do not apply and students who do not attend these schools (Patrinos et al. 2009, p. 36). Simply comparing enrolment rates or learning outcomes of participants and non-participants will not be an accurate reflection of the effect of a programme, as researchers are typically unable to control for these unobserved characteristics which may bias the resultant outcome being measured.

We therefore aim to summarise evidence that uses stringent techniques to account for these potential biases. A range of techniques are available to economists to address endogeneity and sample selection biases, such as propensity score matching, instrumental variable techniques and the gold-standard randomised controlled trials. However, as the evidence base on certain, even major, programmes is limited, some studies that may not necessarily use adequately stringent techniques also form part of the evidence base, with a view to generating a more comprehensive review on worldwide efforts to adopt different PPP arrangements. Wherever possible, we highlight the limitations of any studies included in the review. As a result of this filtering procedure, 22 studies were identified as addressing both the research questions and meeting the quality criteria. The findings from these 22 studies are discussed below.

The figure below (Figure 5) provides an overview of the geographical spread of the reviewed literature. As can be seen, there is a wide international spread, with studies included from Latin America, Africa and South and East Asia.

Figure 5: Geographical location of the studies included for review

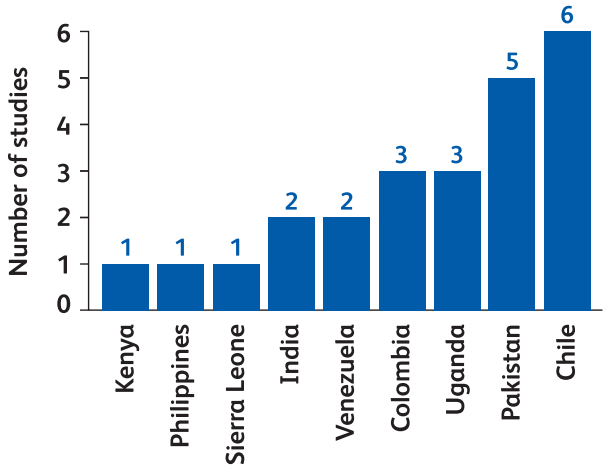


Table 1 illustrates the different types of PPPs discussed in the reviewed studies. These range from contract schools to arrangements where the government subsidises the private sector, or where students are contracted directly through vouchers.

Table 1: Number of studies for each type of PPP arrangements, by quality of study

Types of intervention	Quality of study					
	High	High/ Medium	Medium	Medium / Low	Unranked	Total
Contract		1		2		**3**
Government Subsidy	2	1	4	2		**9**
Vouchers	1	2	5			**8**
Others			1		1	**2**
Total	**3**	**4**	**10**	**4**	**1**	**22**

One of the objectives of this review is to provide guidance as to the overall strength of the body of literature identified by the authors to be part of this study. In doing so, this review uses DFID's note on 'Assessing the Strength of Evidence in the Education Sector (2014) to assess the strength of evidence in respect to the main research question. Table 2 sets out this framework. The strength of evidence framework was adapted and ultimately used to assess whether the evidence was 'strong', 'modest' or 'insufficient' in respect to the main research question:

> What is the impact of educational PPPs on learning outcomes for children? In particular, do PPP schools raise attainment of children in the lower socio-economic quintiles?

Table 2: Assessing the strength of evidence

Strong	High-quality body of evidence, large or medium in size, generally consistent, and covers several contexts.
Modest	High- or moderate-quality studies, medium-size evidence body, generally consistent, not covering a wide range of contexts.
Insufficient	High- or moderate-quality studies, small or medium-sized body, inconsistent, and covers very limited contexts.

Source: DFID (2014)

3.2 Key findings

What is the impact of education PPPs on learning outcomes for children? In particular, do PPP schools raise attainment of children in the lower socio-economic quintiles?

Table 3 below provides a summary map of the evidence from the **22** studies that have been included for in-depth review.

Table 3: Summary map of the evidence

No.	Year	Authors	Country	Methodology	Type of scheme	Quality assessment of study methodology*
1	2009	Anand et al.	Chile	Econometric techniques	Vouchers	Medium
2	2009	Elaqua, Contreras and Salazar	Chile	Econometric techniques	Vouchers	Medium
3	2009	Contreras, Bustos and Sepulveda	Chile	Econometric techniques	Vouchers	Medium
4	2009	Allcot and Otega	Venezuela	Econometric techniques	Government subsidised private schools	Medium
5	2009	Wodon and Ying	Sierra Leone	Econometric techniques	Government subsidised private schools	Medium
6	2009	Lara, Mizala and Repetto	Chile	Econometric techniques	Vouchers	Medium/High
7	2010	Malik	Pakistan	Descriptive statistics and interviews	Government-subsidised private schools and vouchers	Medium/Low
8	2010	World Bank	Philippines	Econometric techniques	Government-subsidised private schools	Medium/Low

No.	Year	Authors	Country	Methodology	Type of scheme	Quality assessment of study methodology*
9	2011	Bonilla	Colombia	Econometric techniques	Contract schools	Medium/High
10	2011	Elaqua, Contreras, Salazar and Santos	Chile	Econometric techniques	Vouchers	Medium
11	2012	Mizala and Torche	Chile	Econometric techniques	Vouchers	Medium
12	2014	Amjad and MacLeod	Pakistan	Econometric techniques	All types of PPP schools	Medium
13	2014	Osorio and Wodon	Venezuela	Econometric techniques and qualitative techniques	Government-subsidised private schools	Medium/High
14	2015	Andrabi et al.	Pakistan	Econometric techniques	Unconditional grant	Not Applicable**
15	2015[4]	Barrera-Osorio et al.	Pakistan	RCT	Government-subsidised private schools	High
16	2015	Barrera-Osario, Galbert and Habyarima	Uganda	RCT	Government-subsidised private schools	High
17	2015	Malik et al.	Pakistan	Descriptive statistics and econometric techniques	Contract schools	Medium/Low
18	2015	Muralidharan and Sundararaman	India	RCT	Vouchers	High
19	2015	Termes et al.	Colombia	Realist Evaluation Approach	Contract schools	Medium/Low

[4] This review is based on a 2013 version of the 2015 analysis (the latter is not publicly available as yet).

No.	Year	Authors	Country	Methodology	Type of scheme	Quality assessment of study methodology*
20	2016	Shakeel, Anderson and Wolf	USA, Kenya, Colombia and India	Meta-analysis and systematic review	Vouchers	Medium/High
21	2016	Crawfurd	Uganda	Econometric techniques	Government-subsidised private schools	Medium
22	2016	Economic Policy Research Centre (PEAS and Ark EPG)	Uganda	Econometric techniques	Government-subsidised private schools	Medium

*Each individual study has been categorised as being one of the following: High quality, Medium-High, Medium or Medium-Low quality based on factors such as validity, reliability etc. that are shown in Appendix Table A3.

**We are unable to rate this study as we could only access the abstract (the full study is not yet available from the authors).

The evidence from these 22 studies is discussed in categories based on the main features of a PPP programme. It should, however, be noted that many of these programmes are multifaceted and could potentially fit in more than one category. Table 4 provides further details on each of the 22 studies reviewed.

3.2.1 Results: contract schools

Summary of findings

Evidence of this particular type of PPP arrangement can be found in three studies covering two contexts (Colombia and Pakistan). Two of the studies use quantitative methods and one also employs more stringent econometric techniques to add rigour to the analysis.

Relationship with learning outcomes positive, negative, neutral or mixed (number of studies):

	High	Medium/High	Medium	Medium/Low
Positive		Colombia (1)		Pakistan (1)
Neutral				
Mixed				Colombia (1)
Negative				

Note: number of studies in brackets

Overall, there is very limited evidence of the relationship between contract school arrangements in developing countries and learning outcomes. The existing evidence is inconclusive as to whether these types of arrangements are positively related to learning outcomes. There are, however, some indications of the advantages of this type of arrangement, not only in terms of improved learning outcomes but also with respect to other educational aspects, such as increased enrolment and better management practices. Robust evidence on whether these schools directly benefit the poorer quintiles is very limited, but emerging evidence appears to suggest that contract schools may be able to reach the more disadvantaged in certain contexts.

“There is very limited evidence of the relationship between contract school arrangements in developing countries and learning outcomes. The existing evidence is inconclusive as to whether these types of arrangements are positively related to learning outcomes

Overall, the quality of the studies reviewed in this section is wide-ranging, with only one study adopting relatively stringent strategies to overcome statistical biases. Therefore, this body of evidence, while suggestive, provides an insufficient body of evidence (as per Table 2) of the positive relationship between contract schools and student learning outcomes.

In this section we review evidence relating to contract schools. Also called ‘charter’ schools in certain contexts, these types of arrangements typically marry *private management* with *public funding and ownership* and are therefore a form of public-private hybrid. Importantly, specific characteristics of contract/charter schools tend to vary depending on the context in which they operate. For example, while both the US charter schools and the Colegios en Concesión (CEC) schools in Colombia are supported by public funds and not open to collective bargaining by teachers, charter schools in the US, unlike CEC schools, are responsible for finding their own students and may target students interested in non-standard education programmes (Bonilla, 2011). Similarly, in arrangements such as CEC schools in Colombia and charter school type models in Punjab and Sindh (under the Partnerships for Management umbrella), the government contracts the administration and day-to-day running of a school to a private entity. Other types of arrangements may also differ in specific ways depending on context. Nevertheless, one key aspect that remains common across these arrangements is that the government contracts with private entities to undertake the operation of public schools on behalf of the state. According to Patrinos et al. (2009), a range of different services can be procured from the private sector. Governments can contract for inputs (such as teacher training, management, curriculum design), processes (managing and operating schools), outputs (providing education for specific students) or facilities (infrastructure and building maintenance), or both inputs and outputs that combine infrastructure provision with services such as operational or educational outputs (Patrinos et al. 2009, p. 9).

Engaging with the private sector through the means of a contract is a PPP instrument that has been used internationally, in many contexts and in varying forms. Theoretically, this type of arrangement can facilitate academic innovation and, by balancing accountability with innovation, may help improve the quality of education provided by the schools in question. In principle, schools should be given enough autonomy to allow them to function effectively and be incentivised to increase student performance, but at the same time these arrangements should contain the necessary accountability measures to ensure certain standards and

conditions are met. Therefore these contracts will contain rewards as well as sanctions for non-performance (Patrinos et al., 2009). In some situations, the private entity may also share some of the financial risk.

The only study using stringent econometric techniques to evaluate a contract school programme in Colombia is by Bonilla (2011), which examines the short- and long-term achievement effects of the Colegios en Concesión (CEC) programme. This programme was a large-scale initiative implemented in 2000 in Bogota, Colombia (see Box 1 below for further details). Under this PPP arrangement, the government contracted out the administration of some traditional public schools to reputed, not-for-profit private schools and universities, and, in so doing, allowed these schools to operate "outside public schools' collective bargaining provision(s) in return for being accountable, among other things, for the academic performance of their students in the ICFES test, a high-stakes college entry national standardized test" (p. 2).

Using a variety of empirical techniques, including those aiming to control for selection effects, the author finds that CEC students exhibit important and significant gains in test scores on the ICFES test (0.6 and 0.25 standard deviations higher in maths and verbal tests respectively) compared to traditional public school students. The author also provides further evidence that these positive results are not driven by unintended strategic responses by CEC schools, such as selecting high-performing students from a pool of test-takers, or through differences in educational inputs such as teacher qualifications, pupil-teacher ratios or per-pupil expenditure. The author also evaluates whether attending a CEC school has longer-term benefits, such as improving students' chances of investing in higher education, etc. The results indicate that CEC students have a greater likelihood of attending a higher education institution and vocational programmes compared to those not attending CEC schools. In addition to this, the author finds that CEC students are more likely to attend selective higher education institutions and exhibit lower college dropout rates[5]. This leads the author to conclude that "the overall results provide compelling evidence that the contractual arrangement that defines the operation of CEC schools are successful at improving the academic performance of their students relative to TPS [traditional public schools]" (p. abstract).

"The overall results provide compelling evidence that the contractual arrangement that defines the operation of CEC schools are successful at improving the academic performance of their students relative to TPS [traditional public schools]

One of the methodological advantages was the fact that this programme did not allow CEC schools to choose students or teach a different curriculum, and they had similar resourcing to Traditional Public Schools (TPS). This reduced the bias of any estimates that would otherwise plague similar evaluations of other programmes. In addition to this, the author uses stringent empirical techniques to address any biases that may be created through unobservables. However, as with any other study, the validity of these results is conditional on these presumptions holding true. For example, a main presumption of this analysis is that because CEC schools were constructed in the poorest areas of the city, one can use a student's proximity to the nearest school as a valid instrument. The author argues that because

[5] However, the author cautions that the 2008 data used in their analysis may potentially be incomplete and these results should be considered preliminary.

this is not correlated with observed family or student characteristics, it is unlikely to be correlated with unobserved characteristics as well. In fact, the author states that the evidence points to the fact that unobservables are potentially negatively associated with academic performance. However, the findings are highly dependent on the validity and reliability of this measure/instrument.

A second study by Termes et al. (2015) also evaluates Bogota's CEC programme using basic quantitative and qualitative methods involving semi-structured interviews, focal groups, questionnaires and analysis of secondary sources. The sample used in their analysis includes both CEC and public schools and uses a realist evaluation approach. The authors find that there do not appear to be statistically significant differences in learning outcomes between CEC and public schools after controlling for socio-economic background and the school day. However, the authors find that CEC school students and parents appear more satisfied and more engaged than their public counterparts, and that these schools are able to create greater loyalty among parents and students.

The authors identify specific challenges in relation to this programme, such as issues of equity, quality and segregation. The authors question whether this schooling modality provides better school opportunities for the poor, and whether the CEC programme truly adds value. In particular, their case study evidence suggests that the bias in favour of vocational schooling for CEC graduates compared to their counterparts is demonstrative of economic as well academic barriers faced by poorer students when they seek to access higher education, an aspect the CEC programme is unable to address. This finding is reiterated by Bonilla (2011). The authors of this study also state that these schools only enjoy moderate levels of autonomy and that their cost-effectiveness is largely a result of poorer teacher employment conditions. While authors such as Bonilla (2011) highlight the fact that students were allocated to the CEC programme by the Department of Education of Bogota, Termes et al. (2015) state that, despite being a prohibited practice, many CEC schools "strategically select their students" (p.3). Moreover, the authors note that this cream-skimming of students has been possible due to "contractual ambiguity and lack of strict control from the Department of Education of Bogota" (p. 23). One important limitation of this study's findings in relation to student outcomes is the authors' inability to adopt stringent econometric techniques to overcome potential biases. The authors have used basic quantitative techniques within their realist evaluation approach and, therefore, their conclusion that school day and socio-economic status (SES) are more influential in determining student outcomes than school type is to be treated with caution.

The final study evaluating this type of arrangement is by Malik et al. (2015), who conduct a mixed-methods study of public-private partnerships in Pakistan. Their study focuses specifically on Partnerships for Management (PfM). In this type of arrangement, the state contracts private providers to manage government schools. The authors study a specific PfM example, the adopt-a-school mechanism that has been in operation in the Punjab and Sindh provinces over the last several decades. Under this contractual arrangement, private actors, be they individuals or corporations, undertake management and construction responsibilities for state schools. Broadly speaking, under the management aspect of this arrangement, the private actor

> *"…in Punjab, adopted schools are associated with better learning outcomes, and the increase in learning outcomes becomes higher over time*

assumes responsibility for hiring teachers for sanctioned but unfilled positions and training and managing them, making infrastructural inputs available and, with the help of the school head and the School Management Committee (SMC), making decisions regarding school funds, supplementary books for children, extracurricular programmes and science labs, etc.

In a first empirical evaluation of these types of arrangements, the authors find evidence of significant improvements in 'adopted' PfM schools in Punjab and Sindh. Despite being operational for more than 15 years, no concerted efforts have been made to evaluate or monitor this programme in the country. Lack of quality data has therefore meant the authors of this study have used secondary data supplemented with primary field data from several sources to carry out their analysis. The authors use propensity score matching techniques and find that in Punjab, adopted schools are associated with better learning outcomes, and that the increase in learning outcomes becomes higher over time. The difference in percentage change in adopted versus un-adopted schools from 2009–2013 is positively in favour of adopted schools, with 12.1, 10.1 and 55.5 percentage change being observed in maths, Urdu and English scores using Punjab Education Commission data on learning outcomes. In Sindh, the authors find moderate or low learning improvements among grade 4 students using survey data. However, this analysis is based on a very short time period and with no baseline comparison, meaning these results cannot be treated with much confidence. Additional benefits are also found in both provinces, where enrolment is shown to increase in adopted schools more than in un-adopted schools. For Sindh, the impact of adoption on learning outcomes is found to be ambiguous. The authors note that since improvements in learning outcomes may take longer to manifest, and as data for Sindh is only available for a shorter period, this finding may be due to the fact that learning outcomes in this province would need to be tracked for a longer period of time in order for the true relationship to become apparent. While this study aims to use stringent econometric techniques, the quality and availability of underlying data severely limits the confidence with which the findings can be interpreted. These limitations are acknowledged by the authors themselves.

> *"The evidence on the role of contract-type schools in improving learning outcomes is therefore both limited and inconclusive*

The evidence on the role of contract-type schools in improving learning outcomes is therefore both limited and inconclusive. This review has found only one study post-2009 of sufficiently high quality (Bonilla, 2011) that can provide evidence on this type of PPP arrangement. With regards to pre-2009 evidence, Patrinos et al.'s (2009) summary of literature on privately managed schools has identified mostly studies from charter schools in the US, and in the main finds very mixed evidence as to whether these schools yield higher test scores than their public school counterparts. The only other sufficiently rigorous evidence of charter schools is dated pre-2009 and relates to the CEC schools in the city of Bogota, Colombia. This study by Barrera-Osorio (2006) uses propensity score matching techniques and finds that dropout rates are lower in CEC schools than in similar public schools; that there appears to be spill-over effects in that public schools near CEC schools seem to have lower dropout rates than public schools outside their area of influence; and, finally, that test scores in CEC schools are higher than test scores in similar public schools.

3.2.2 Results: subsidies

Summary of findings

Evidence for arrangements whereby the government subsidises a private school or faith-based organisation in some manner is available in nine studies covering seven contexts (Colombia, Pakistan, Peru, Philippines, Sierra Leone, Uganda and Venezuela).

Relationship with learning outcomes positive, negative neutral or mixed (number of studies):

	High	Medium/High	Medium	Medium/Low
Positive	Pakistan (1), Uganda (1)	Venezuela (1)	Venezuela (1), Sierra Leone (1), Uganda (2)	Pakistan (1), Philippines (1),
Neutral				
Mixed				
Negative				

Note: number of studies in brackets

Nine studies examine the association between some form of subsidy from the government to private or faith-based schools and learning outcomes. The existing evidence is weakly positive and suggests government subsidies to private schools may have benefits when it comes to improving learning outcomes. However, these studies either face challenges in terms of the limitations of their own methodology or, where robust techniques are implemented, do not answer the specific questions posed in this research. There is some evidence to support the claim nevertheless that these programmes are reaching the poorer members of society and therefore have the potential of improving their learning outcomes.

Overall, the quality of the studies reviewed in this section ranges from low-medium to high quality, with some studies adopting relatively stringent strategies to overcome statistical biases. They therefore represent a modest body of evidence (as per Table 2) of the weakly positive relationship between subsidies to private or faith-based schools and the learning outcomes of their students.

In this type of arrangement, the government subsidises a private provider for educational services. The form that this takes differs from programme to programme, and can involve a per-student subsidy or an unconditional grant such as a block grant, which remains flat and constant irrespective of changes in student enrolment over time because it is instead related, for example, to the salaries of a given number of teachers appointed in that school. The different types of programmes are discussed individually in the studies reviewed below. In one such arrangement, the government subsidises education provision to a faith-based provider. This can be achieved in various ways, with one of the most common ones being through the payment of teacher salaries, while the providers

“The existing evidence is weakly positive and suggests government subsidies to private schools may have benefits when it comes to improving learning outcomes

retain autonomy in all other decision-making. Theoretically, it is argued that the management and performance of faith-based schools is strong; such schools are run according to an ethos of 'working for God' rather than for profit and tend to have a longer-term commitment to the communities in which they work. This is what is argued to make the functioning of these schools different (Osorio & Wodon, 2014).

One example of such an arrangement is provided by the Fe y Alegría (FYA), a non-governmental organisation (NGO) initiative with religious foundations. The FYA had humble beginnings in Venezuela in 1955 with the primary objective of providing quality education to children and adults in disadvantaged areas in order to fill gaps in public provision. This organisation has since spread to 17 Latin American countries, as well as to parts of Africa and Spain, and is known to have reached more than 1.4 million children in 2006. Each FYA central office enters into an agreement with the respective country's government that teacher salaries will be paid by the state. This means that while teachers are selected by FYA, they are subject to the laws and regulations of a public teaching career. FYA is, however, required to raise additional funds through local and international efforts to cover costs associated with infrastructure and the implementation of any innovative educational programmes. The FYA model is also sometimes described as an example of "a privately managed education system funded on a shared basis" (Osorio and Wodon, 2014, p.38).

In many countries, FYA is seen to serve poor communities or at least establish schools in poor neighbourhoods. Allcot and Ortega's (2009) study in Barrera-Osorio, Patrinos & Wodon (2009) uses the econometric estimation of average treatment effects (ATE) to compare the outcomes (maths and verbal) of FYA students in Venezuela with their public school counterparts and find that consistently, across different estimation methods, FYA students perform slightly, but significantly, better than public school students (one-tenth of a standard deviation). These findings are attributed to differences in the institutions' organisational behaviour namely management and cultural characteristics as FYA schools do not tend to have higher per pupil spending.

Three specific organisational and cultural factors that have been highlighted by the authors as making FYA stand out in Venezuela are: school level autonomy (decentralised decision-making), labour flexibility and a 'family feeling' in the schools. In terms of the first, similar to government schools, in FYA there is a central authority that determines overall guidelines and principles. However, much of the decision-making is delegated to the school level where principals can make recruitment and retention decisions for teachers, purchase supplies and have autonomy to control their budgets as well as execute infrastructure changes. Unlike public schools which tend to be very highly centralised, the FYA schools' large-scale projects whilst being coordinated centrally, are initiated at the school-level with the school continuing to play an active role in on-going decision-making. In terms of the second, despite FYA teachers being paid similarly to their public school counterparts (although they do not receive a retirement package and it has been suggested that they work longer hours) there are important differences in their hiring and management. FYA teachers are hired at the school level, are not unionised and have far more flexible contracts as compared to their public school counterparts. They are initially recruited on a trial basis before being offered permanent positions and are monitored more heavily. This contractual flexibility and their selection process have been suggested to produce higher quality teaching. Finally, the FYA organisation has been suggested to imbibe a 'family feeling' amongst all personnel and students. The teachers and students are said to exert more effort, respect school property and value discipline.

According to the authors, because FYA schools are oversubscribed, admission is based on observables such as poverty, and the richness of this dataset would suggest their estimates are likely to be unbiased due to sorting and selection effects. However, this evaluation would be more stringent had it been based on a random selection of participants into the programme as stated by the authors themselves. It should be also noted that while the findings are positive in a statistical sense, the positive effect on learning levels is small in absolute terms, and therefore a more elaborate cost-benefit analysis of such an intervention would be needed to further reinforce these findings, i.e. by putting their marginal achievement advantage over public schools together with any per-student cost advantage they may have.

Similarly, a book edited by Osorio and Wodon (2014) assesses the performance of Fe y Alegría (FYA) across Venezuela and Colombia, and discusses literature on Peru. The studies in this book find that students in these schools tend to perform as well in test scores, if not slightly better, than in other schools. However, these findings must be caveated by the fact that, while students in FYA schools appear to perform better than their counterparts in non-FYA schools in some subjects after controlling for background characteristics, they do less well in others. Secondly, while statistically significant and positive, the achievement gains can be marginal. The book's findings are triangulated using qualitative data and case studies, and suggest that the somewhat better performance is due to a complex mixture of factors and not only related to inputs or resources used by these schools; it is also due to the management of these resources and the schools' ability to implement and test innovative programmes. Other factors, such as their capacity and flexibility as well as their ability to take into account local realities, were also cited as factors behind their success.

More specifically, evidence from Venezuela, for example, shows that FYA students perform 0.05 and 0.06 standard deviations higher in verbal and mathematics scores after controlling for observable characteristics, such as the child age and gender, the father's profession and mother's education, and socio-economic status, etc. (p. 18). Evidence from Colombia concludes that, despite FYA schools catering to poorer students, over time negative gaps in educational achievement for FYA students either vanish or become gains across the years (p. 34). Using data over five years, the authors of this study show that while raw achievement scores show FYA students performing worse than students from other non-FYA schools[6], once students' background characteristics are appropriately controlled for, FYA students perform as well as, if not better than, other schools' students in mathematics and Spanish (with the exception of 2003, one year out of the five studied). However, they tend to perform worse in physics, chemistry and biology. In Peru, the literature review evidence suggests that FYA schools have a reputation of providing "better quality than provided by public schools" (p.55), and this can be attributed to the higher degree of independence with which they can generate and manage funds, as well as their ability to select teachers more effectively and other contributing factors (see section below). The book by Osorio and Wodon (2014) notes that despite being a large and influential network that caters to the poor and marginalised, this initiative has not been sufficiently evaluated (p.1).

Another study investigating the performance of students in publicly subsidised faith schools in Sierra Leone is by Wodon and Ying (2009) in a book edited by Barrera-Osorio, Patrinos and Wodon (2009). Faith-based providers are particularly important providers of education in conflict-affected countries where state provision has been weakened by war, due to their long-

[6] The authors note insufficient information in the database to distinguish between different control groups (e.g. private schools, public schools, etc.) means their comparison group includes all non-FYA schools.

term commitment to their communities and their ability to reach the poorest members of those communities. There are three main providers within the educational sector in Sierra Leone: purely private schools, government schools and government-assisted schools that tend to be faith-based. Faith-based schools constitute the largest market share of schools in Sierra Leone, with more than half of all students attending them. Government-assisted faith-based schools receive the same government subsidy as government schools in the form of teacher salaries and teaching materials. These schools tend to serve the poor more than government schools because they are located in the most disadvantaged areas of the country and tend to have more female students enrolled.

The 2009 study aims to compare the performance of faith-based school students with public school students using data from the 2004 Sierra Leone Integrated Household Survey. The authors analyse who these schools serve as well as students' performance, which is measured simply by whether the students can read and write English, whether they can compute and whether they have repeated a grade or not. Raw achievement differences suggest students in religious schools underperform compared with those in government schools. However, when econometric techniques and appropriate controls are used, this finding is reversed. The authors use probit models and, after controlling for child and household characteristics as well as taking into account the potential endogeneity of school choice, they find that faith-based schools perform slightly but statistically significantly better than government schools. More specifically, when controlling for other characteristics, attending a faith-based school statistically significantly as well as strongly improves performance in numeracy and marginally significantly (not statistically so) for reading English as compared to a child in a public school. For example, shifting from a non-faith-based school to faith-based school improves a child's probability of completing a computation from 39.1 to 46.6 per cent. In relation to English reading, this probability only increases from 20.4 to 24.3 per cent.

“When controlling for other characteristics, attending a faith-based school statistically significantly as well as strongly improves performance in numeracy and marginally significantly (not statistically so) for reading English as compared to a child in a public school

Given that these schools serve disadvantaged pupils and focus on poor rural areas, as well as the fact that they have a very large market particularly at the primary level, and can perform at least as well as government schools once appropriate controls are taken into account, provides an argument in favour of the fact that financial support should be provided by the state to these schools. The evidence on this programme is reasonably robust in nature with sound methodologies used to support any claims.

Educational public-private partnerships have played a critical role in helping the government of Uganda meet the demand for educational places that arose after the introduction of the Universal Secondary Education (USE) initiative. In another study in an African context, Barrera-Osorio et al. (2016) estimate the short-term impact of this PPP programme on the performance of participating private secondary schools. This initiative involved the government offering a subsidy of 47,000 UGX (approximately 13 USD[7]) per student per term

[7] Based on the exchange rate on 7-11-2016.

to low-cost private schools who met the eligibility criteria, and who then may not charge these students any other school fee. Participating schools retain control over student admissions and may enrol as many and whichever students they want and may continue to charge fees to non-USE students.

> *More than 600 private schools implemented the PPP programme between 2007 and 2010*

More than 600 private schools implemented the PPP programme between 2007 and 2010, with the main agenda being an increase in access to education in order to meet universal secondary education policy goals. The resulting contractual agreement meant that partner schools received financial support to cover tuition fees, as well as funds to provide text books and teaching materials. These schools were typically located in rural areas and catered to less well-off families and those from disadvantaged backgrounds. The randomised nature of the phase-in allowed the study's authors to estimate the causal impacts of the programme on student performance. In late 2010, more than 200 schools applied to be part of the programme starting in 2011. Of the 254 that met the minimum criteria, only 101 were selected to be part of the evaluation sample. Schools were then randomly assigned to one group (51 treatment schools that implemented the programme in 2011 and 50 schools that were invited to implement the programme in 2012 if they chose to reapply).

The study reports that the programme successfully improved enrolment and student performance in participating schools was also significantly better. Test scores in mathematics, English and biology were found to be approximately 0.2 standard deviations better than test scores for students in non-participating private schools. The scores were found to be statistically significant for English and mathematics but not for Biology. In examining what has driven these results, the authors put forward several factors including better input availability (more teachers, better resources etc.) as well as positive selection of government aided students. Moreover, the authors do not note any adverse impacts on the governance of participating schools and participation in the programme appears to improve the likelihood of school survival (i.e. the likelihood of remaining financially viable and not closing), "…an outcome with implications for the efficiency of PPPs." (p.3)

This paper is deemed to be of high quality and, therefore, claims that there is a causal relationship between the intervention and resultant student outcomes can be supported. However, it must be noted that this intervention compares PPP schools to private schools and not to government schools. Therefore, the findings of this paper for the purposes of this review do not provide answers as to whether PPP schools are more effective in imparting learning than government schools. What it does reveal is that the programme increased access of USE students without changing school governance in any way. This utilisation of excess capacity in private schools enabled the schools to operate at a more economic scale allowing a more efficient use of teachers as well as instructional outputs. The authors also put forward the argument that this is a viable solution of partnering governments with private schools to meet the demands of education at lower per student costs (p. 23).

Another initiative involved PEAS (Promoting Quality in Access in African Schools), a charity providing access to quality education for students from disadvantaged backgrounds in Sub-Saharan Africa, intervening to provide the resources required for the building of secondary

schools in Uganda in 2008. As of December 2015, there were 24 PEAS schools operating in Uganda with approximately 12,000 students. These schools are supposedly managed in a more effective manner, which can be an important determinant of the effectiveness of these schools, which should then be reflected in better learning outcomes. One study that examines this aspect is Crawfurd (2016), which uses an internationally comparable composite measure of school management quality (data collected through phone interviews) for 199 Ugandan secondary schools, and individual test score data for over 40,000 students at two points in time. The authors use a value-added framework, i.e. one that controls for students' prior attainment, to compare public schools with purely private schools and PPP schools (both individual domestic PPP schools and a chain of 19 PPP schools internationally managed by PEAS), and find a clear and significant positive relationship between school management type and student outcomes at both school- and individual student level. Controlling for prior achievement as well as a range of individual, household and school characteristics, they find on average differences of up to 0.24 standard deviations in test scores across different types of school management. In addition to this, it should be noted that observable characteristics of head teachers and schools play little role in explaining the variation in test scores. However, this study finds little variation in the quality of school management, and therefore outcomes, of the three school types studied, with the exception of a small number of elite government schools and the PEAS schools.

> *"The authors… find a clear and significant positive relationship between school management type and student outcomes at both school and individual student level*

PEAS schools are found to score over two standard deviations better than the average school in Uganda, meaning the better management of PEAS schools translates into better outcomes for PEAS students, but not for PPP students in general, whose results do not show any advantage over those in public schools. Key features of the PEAS model and how this may potentially translate into improved learning outcomes are discussed in subsequent sections. By using a framework that controls for students' prior attainment, Crawfurd and Elks (2016) find that any differences in student performance are mainly a reflection of differences in the composition of the student body, rather than caused by the USE programme itself.

> *"This study also provides evidence that the PEAS programme has improved access for children from disadvantaged backgrounds due to the fact that a majority of these students would not otherwise have access to secondary education*

Another as yet unpublished study[8] evaluating the PEAS network in Uganda was conducted in 2016 by the Economic Policy Research Centre, and provides evidence of this type of PPP school having a positive impact on access as well as quality. In particular, this study provides evidence that these schools benefit children from poorer backgrounds. Moreover, even though PEAS students are from more disadvantaged backgrounds and have lower prior achievement, regression analysis and propensity score-matching methods show they currently perform better in both mathematics and English than their counterparts in public schools, and also perform as well in both subjects as children

[8] It should be noted that Ark are heavily involved in the commissioning of this report and in the PEAS programme as a whole.

in other private schools. This study also provides evidence that the PEAS programme has improved access for children from disadvantaged backgrounds due to the fact that a majority of these students would not otherwise have access to secondary education: three out of five PEAS students are in the poorest two quintiles of household asset distribution. Furthermore, this report examines the issue of sustainability and provides evidence that these schools are more affordable in terms of total costs compared to other private schools, with total schooling costs similar to those in government schools. It is worth noting this study provides a comparison of PEAS schools to other schooling types and, while it concludes that these schools perform better in terms of student outcomes, this is not necessarily evidence that PPPs in general perform better, but rather the PEAS model itself may be more effective. This may be due to the fact that their internal accountability systems are focused on high performance, whereas Ugandan policy doesn't have any in-built accountability mechanisms to incentivise strong performance.

Another example of a large-scale educational PPP initiative that uses a government subsidy is one initiated by the Punjab Education Foundation (PEF) in Pakistan. The Foundation Assisted Schools (FAS) programme started in six districts in 2005 and has since been extended to all 36 districts in Punjab, with around 3,000 partner schools catering for around 1.3 million children[9]. A policy intervention designed to improve educational quality, it assigned financial and technical support to low-cost private schools for each child enrolled in the programme. This takes the form of a per-student subsidy of Rs. 350 (approximately 4 USD) per month per enrolled child, and focuses on schools with low literacy and high numbers of out-of-school children. Preference is also given to female educational institutions. Continued participation in the programme requires that students meet pre-determined performance standards.

A study by Malik (2010) reviewing the FAS programme mentions similar PPP models that have also been introduced in other parts of the country. There has also been a reported decline in drop-out rates among students, as well as improved rates of teacher attendance. According to the author, between 2006–2009 student academic performance data showed an increase from one to 17 percent of students scoring in the top decile, and a decrease from 21 to four percent of low-achieving students scoring less than 40 per cent, demonstrating improvements in overall student performance at both ends of the ability spectrum. An independent evaluation of this programme conducted by Innovative Development Strategies finds the programme made significant progress in improving access to education, especially for the more economically disadvantaged and those living in slum areas. Of particular note is the finding that this intervention resulted in substantial improvements in educational quality, especially with regards meeting the needs of poorer families. Much of this was attributed to efficiency-related factors that hinder public provision but enhance private provision of education. Given that the test data on which these findings are based are Quality Assurance Tests (QAT) administered by PEF rather than national or international assessment, the "real performance cannot be judged against larger student populations" (p. 13), though the apparent large effect sizes are promising. This study has been judged by the authors of this review to be of medium/low quality.

"The programme made significant progress in improving access to education, especially for the more economically disadvantaged and those living in slum areas

[9] http://pef.edu.pk.pefsis.edu.pk/fas/index.aspx

A relatively recent high-quality study by Barrera-Osorio and Raju (2014) evaluates the impact of this PEF programme on student enrolment and inputs, finding large positive effects. This paper does not form part of the core review documents as it does not examine the impact on learning outcomes as such, and therefore does not fit our main review question. However, as achieving minimum test scores forms a core condition of programme participation and is used as a cut-off to distinguish between treated and untreated schools within the paper, it is of interest and discussed below. In particular, the paper provides interesting insights on the programme's system-wide impacts and the design of effective PPPs in the Pakistani context (see case study below).

In a recent intervention, the Sindh Education Foundation (SEF), a quasi-governmental agency in the province of Sindh in Pakistan, has undertaken educational initiatives to address the needs of marginalised populations, especially those in rural areas of the province. One such programme aimed at leveraging the private sector is the Promoting Low-Cost Private Schooling in Rural Sindh (PPRS) programme, which aims to improve access to primary education through public-private partnerships. Having been selected through a stringent vetting and randomisation process, the private entities receive a per-student cash subsidy to operate co-educational primary schools, as well as additional non-monetary assistance aimed at improving educational quality. Any child aged 5-9 in the village can enrol without paying any tuition fees. Two different subsidy schemes were introduced: a gender-uniform subsidy, whereby the school receives the same amount (Rs. 350 per month) for both male and female students, and a gender-differentiated subsidy, whereby female students are associated with a higher subsidy (Rs. 450 per month for females versus Rs. 350 per month for males) in an effort to reduce the gender gap in educational outcomes. Surprise inspections form part of the oversight by the government.

A high-quality randomised control trial study by Barrera-Osorio et al. (2013)[10] evaluates this programme by comparing the enrolment outcomes and test scores of programme schools with those of government and other private schools in 161 randomly chosen villages in rural Sindh. The authors utilise an RCT design to undertake the evaluation, and find that the introduction of such an intervention into villages leads to substantial improvements in enrolment, with treatment villages experiencing a 30 percentage point increase in enrolment for children within the target age group. In addition to this, the authors find a 12 percentage point increase in enrolment among the older age group. Similarly positive effects of the programme are found in relation to learning outcomes, with treatment villages enjoying test score increases of 0.67 standard deviations for pre-enrolled children and 2.01 standard deviations for children who enrolled in the schools as a result of the programme. No gender differences were found in these effects by the authors.

The final study to form part of the discussion in this sub-section is one by the World Bank (2011), which examines the case of one of the largest PPP programmes in the Philippines. This programme serves more than half a million students, which in 2009 represented nearly 10 per cent of high school students in the country. It provides an example of a state government explicitly recognising the complementary nature of public and private school educational provision, and the benefits that can be achieved from such collaboration. The Education Service Contracting (ESC) programme provides "poor but deserving" primary school graduates with financial support from the public chest to attend private secondary schools with which the government has

[10] This paper is available on the main author's website and the author directed us to this version for use in this review. This paper is also referred to as Barerra-Osorio (2015) in Table 3.

entered into contractual arrangements. The ESC programme also aims to relieve congestion in public schools and maintain the financial viability of private secondary schools, with more than one third of private secondary enrolments supported by it. The aim is to increase access as well as improve quality at the primary and secondary levels. The programme uses two types of contracts: first, the Department of Education contracts with selected private schools to enrol students who would otherwise be in the public sector, and second, the department contracts a private agency to carry out the day-to-day administration of the programme. This programme has seen tremendous growth since its implementation, representing nine per cent of all students in public high schools and almost 36 per cent of those in private high schools.

According to the report, through this programme, the state can enrol students in private schools for 58 per cent of the per-student cost it would otherwise require in the public sector

According to the report, this programme generates significant cost-savings for the government. Such partnerships have the potential of improving enrolments while at the same time reducing costs. According to the report, through this programme, the state can enrol students in private schools for 58 per cent of the per-student cost it would otherwise require in the public sector. The evidence on learning outcomes from this report is based on a comparison of TIMSS scores among eighth grade students in private and public schools. The report suggests that private schools have the potential to improve learning outcomes significantly in the Philippines. Even after controlling for students' backgrounds and other observable differences, the report finds large achievement advantages among private school students in the programme. This private school advantage remains even after using more rigorous methods to control for selection and school choice. The authors acknowledge these findings are limited in that they are unable to explicitly account for the impact of ESC, but they do show the potential of private schools in improving learning outcomes in general. Additionally, as one of the outcomes of the ESC is the enrolment in private schools by students whose economic disadvantages or lower ability would have meant they attended public schools, the programme is likely to improve these individuals' own scores and, therefore, in turn improve the test scores of the population of students across the country as a whole.

Overall, the post-2009 evidence discussed in this sub-section is weakly positive and suggests there are potential benefits in a government subsidising private schools to improve outcomes and reach the more disadvantaged. However, this must be combined with the caveat that many of the studies reviewed in this section face methodological constraints. The pre-2009 evidence on subsidies summarised by Patrinos et al. (2009) identifies very limited robust empirical evidence on arrangements where the government subsidises a private provider to deliver education services. In particular, the authors have identified only one study that examines this arrangement and investigates the impact on learning outcomes. The evidence in this regard concludes that there is no private-public school achievement differential after controlling for individual and school effects. The authors also discuss evidence from two studies in which the government subsidises a faith-based provider to deliver education. In the first instance, having reviewed a study of the FYA programme in Venezuela, they note positive effects on maths and verbal scores (0.08 and 0.1 standard deviations respectively). The second study examining CEC schools in Colombia also finds positive effects of such arrangements in both maths (0.19 standard deviation) and reading (0.27 standard deviation) scores. These findings are broadly in line with the post-2009 literature that has been examined in this review.

3.2.3 Results: vouchers

Summary of findings

Voucher schemes offer an alternative means of the public sector engaging with the private sector, whereby a student's parents receive a government-funded tuition coupon redeemable at eligible private and public schools of their own choice. This review examines the findings of nine studies, six of which examine the Chilean voucher programme, one is in the context of India, one in Pakistan and one systematic review covering various contexts.

Relationship with learning outcomes positive, negative, neutral or mixed (number of studies):

	High	Medium/High	Medium	Medium/Low
Positive	India (1)			
Neutral				
Mixed		Chile (1), several contexts (1)	Chile (5)	Pakistan (1)
Negative				

Note: number of studies in brackets

Nine studies covering three contexts (plus a global systematic review covering studies in the USA, Kenya, Colombia and India) examine voucher programmes and their association with learning outcomes. Most of the studies (six) are on the Chilean voucher system and, on the whole, the evidence is mixed and controversial, with authors highlighting the potential for such programmes to increase social stratification and inequities. In particular, robust and more specific evidence is required on whether these voucher schemes benefit the most disadvantaged in society in terms of improved outcomes. The evidence from the remaining studies is also mixed. One study on Pakistan, while showing positive results, is severely mired in methodological limitations. The other study argues that private schools are more productive than public schools as they are able to achieve similar results across comparable subjects at both a lower cost and by allocating instructional time more efficiently, which is shown by an examination of learning outcomes of private voucher recipients compared to those students not in receipt of a voucher to attend a private school. However, as the study does not find significant differences in outcomes in two of the three subjects, this evidence has been reviewed to be mixed and only weakly positive. The impact that the various voucher programmes reviewed in different contexts have on individuals from the most disadvantaged backgrounds is not so clear. However, increased enrolment, particularly of those who would not have otherwise participated in school, should be highlighted as a key benefit of voucher programmes in specific contexts.

> *"The evidence is mixed and controversial, with authors highlighting the potential for such programmes to increase social stratification and inequities*

Overall, the quality of the studies reviewed in this section is of medium/high to high quality with many studies adopting empirical strategies aimed at controlling for confounding factors such as differential socio-economic background. This body of evidence on the relationship between voucher provision and learning outcomes is mixed and inconclusive, and therefore insufficient (as per Table 2).

School vouchers are state-funded coupons or grants that give parents the purchasing power to choose an eligible private or public school for their child. The three core features of a voucher programme are the funding formula, which sets a certain amount for the voucher per student; enrolment based on family choice, not family location etc.; and the ability of individual schools to be responsible for managing and allocating their government funding. Voucher programmes can vary over several dimensions, such as family eligibility (whether all families are eligible, or only some, e.g. poorer families), whether all schools are eligible (i.e. what the eligibility criteria are), whether schools can charge a top-up or not, whether there will be any compensatory funding (e.g. based on location, age, SES), capital funding (e.g. subsidising the expansion of new schools), issues relating to information (e.g. will schools be required to give parents information and, if so, about what and how much?), and the allocation of places on a lottery basis to avoid schools cream-skimming the best students when faced with oversubscription. Proponents of voucher schemes argue that they provide students with the choice to access private schools that may potentially be of better quality than the state provision available, particularly those who would not otherwise be able to afford it. Additionally, these arrangements may also provide parents with more choice so they can better match students to schools. Finally, advocates argue that increased competition in the education market will make all schools, whether government or private, more efficient due to the pressure to improve or risk losing students. Opponents argue that educational provision should be the role of the state, that government schools are not necessarily of poorer quality, and may be better able to meet the needs of the communities they serve. The argument cited most often is that vouchers may exacerbate inequities and disadvantage if private schools use selection criteria to 'cream-skim' the best students.

“School vouchers are state-funded coupons or grants that give parents the purchasing power to choose an eligible private or public school for their child

Over the past few decades, the use of educational vouchers has increased several-fold, and this has been accompanied by an increase in research evidence examining the contribution these voucher programmes have made in improving educational progress. Often these vouchers have aimed at a target audience based on economic as well as other forms of disadvantage. Voucher programmes are generally viewed as a way to increase access to quality education, especially among the more disadvantaged individuals, by offering them the opportunity to access presumably better quality private schooling. This section aims to summarise the post-2009 evidence on such voucher programmes, with the aim to review quality empirical work that has emerged on our countries of interest.

One well-recognised and oft-discussed voucher programme implemented at scale was the universal voucher scheme initiated by the Chilean government in 1981. As this programme has been intact for many decades, it is not surprising that it has been the subject of intense scrutiny. This scheme places relatively few restrictions on private schools, including allowing them to function for profit unlike their public school counterparts on which more restrictions are placed. A distinguishing feature of the Chilean voucher programme is that it gives the choice to all students to attend either a public or private school subsidised by the government on a per-student basis, whereas other voucher programmes allocate vouchers to a select few, for example through the mechanism of a lottery. An additional feature of this programme is the ability of private schools to charge top-up fees and to establish their own admission

and expulsion policies. This is especially crucial as private schools use intensive selection mechanisms to screen potential students, whereas public schools are obliged to admit all applicants as long as there are vacancies.

This review has identified six studies that evaluate the voucher programme in Chile. The studies identified in this context have investigated various characteristics of the Chilean voucher programme, including the association of aspects such as switching school type, school size, and school-level versus household socioeconomic status with learning outcomes.

One study by Anand et. al. (2009) aims to estimate the average effect on learning outcomes of moving a low-income student from a public to a fee-charging private voucher school. Using propensity score matching techniques partly to control for selection bias, the authors find that students from low-income families who attend fee-charging private voucher schools benefit from test scores that are 0.2 standard deviations higher than students with similar observable characteristics who attend public schools. The authors also find there to be no statistically significant difference in the learning outcomes of low-income students in fee-charging private voucher schools as compared to their similar peers in free private voucher schools. This, the authors note, could be attributed to the more flexible management of private schools or due to the fact that market competition has encouraged these fee-charging schools to improve their quality. Positive peer effects have also been identified as a potential channel through which these effects might be operating. The limitations of comparing students based only on observable characteristics means that factors such as parents who are more highly motivated and more involved in their child's educational experience cannot be fully captured, despite the authors' attempts to control for this with variables that proxy for parental engagement and involvement.

The Chilean context has also been the subject of a study in a book chapter by Elaqua, Contreras and Salazar (2009). In this study, the authors examine student achievement across different schooling types, but in particular examine the issue of whether the size of a schooling operation matters, due to the ability of larger scale providers, in particular franchises, to use economies of scales to lower per-student costs. By comparing the academic achievement of grade four students in larger private voucher school franchises with that of public school and private voucher school students, they find initial results that indicate private independent voucher students would achieve results 0.13 standard deviations higher in private franchise voucher schools than they would in non-franchise independent voucher schools and public schools. However, after controlling for selection bias, the disadvantage of private voucher schools and public schools is significantly reduced. The authors note that "the findings provide some ground for optimism about the effects of school vouchers and some (but not all) categories of private schools on student achievement" (p. 34). These findings are reiterated in a later journal article by Elaqua, Contreras, Salazar and Santos (2011), in which the authors note that larger franchises may have a significant advantage over independent schools, and that policies creating incentives for private school owners to become part of or to start franchises may have the potential for improving learning outcomes.

"The findings provide some ground for optimism about the effects of school vouchers and some (but not all) categories of private schools on student achievement

The features of the Chilean voucher system that make it possible for private schools to select children based on ability means they could choose those deemed the least costly to educate, which would in turn result in a positive selection bias on any estimates comparing the educational outcomes of private versus public schools. Using 2005 System of Measurement of the Quality of Education (SIMCE) data, Contreras, Bustos and Sepulveda (2009) find that, after controlling for family and school characteristics as well as student selection criteria (in OLS and IV estimates), students attending schools using selection criteria tend to obtain mathematics scores that are between seven and 10 per cent higher than those who attend schools not using selection criteria. This, the authors claim, should not be seen purely as evidence of the failure of voucher systems, but be used as evidence to redesign and improve the functioning of voucher systems in the country.

Lara et al. (2009) investigate the effect of private voucher education on student academic achievement using data on approximately 44,000 students from 2006 administered to tenth graders in Chile, with earlier test score data from the same students in 2004 to control for past achievement. The exogenous change that occurs when primary school pupils switch to secondary schools allows the authors to compare the performance of students who have moved from a public school to a private voucher school with that of their peers who have remained in the public schooling system. Using various econometric techniques that aim to control for sample selection and other biases, they find that private voucher education leads to small and sometimes insignificant differences in student achievement. These estimated effects of private voucher education are lower than those shown in previous cross-sectional data analysis from Chile, but more in line with the US literature that finds small although often ambiguous effects. The small estimated effects of vouchers could be due to the fact that competition is similar across both types of schools, causing them to achieve similar results. Alternatively, the lack of pressure on private schools (minimal standards need to be met and little supervision within the programme) may be the reason behind private schools not being sufficiently motivated to improve performance.

“Using various econometric techniques that aim to control for sample selection and other biases, they find that private voucher education leads to small and sometimes insignificant differences in student achievement

Mizala & Torche (2012) take a different approach in that instead of focusing on differences between schooling sectors (private vouchers versus public schools), this paper examines the socio-economic distribution of achievement within and between schools across school sectors. The key premise of the paper is that schools are an important unit of stratification among voucher schools. As mentioned previously, the Chilean voucher system could give rise to stratification through sorting with private schools ‘skimming off’ the best pupils. This paper examines whether school level socio economic status matters more for test scores net of student level resources than a child’s own family socio-economic status (SES) and finds clear evidence that this is in fact the case. The authors also find that the relationship between aggregate school-level SES and test scores is twice as strong in the private voucher schools rather than in the public sector and this leads to a pronounced socio-economic stratification of achievement with students attending private voucher schools facing an educational achievement that is more closely related to their schools’ SES than their own households’ (p. 141). This is attributed by the authors to the fact that schools can change top-up fees requiring parents to supplement

tuition with additional household funds which could result in better off families sorting themselves into better schools. Additionally, the authors note that the institutional design of a 'flat voucher' which is independent of any means-testing allows private schools "to shape their student body and manage their teaching staff, thereby specialising in distinct market niches to accomplish their diverse financial and educational objectives" (p. 141).

On the whole, as with the pre-2009 evidence, this review examining studies post-2009 also finds that evidence on the relationship between vouchers and learning outcomes in the Chilean programme is very mixed. While there is some evidence of a positive relationship between learning outcomes and attending private voucher schools (albeit without the studies being able to fully control for selection bias and endogeneity), there is strong empirical evidence post-2009, similar to the findings of pre-2009 evidence, of student sorting in the private voucher sector. This would indicate there are potential benefits of implementing a voucher scheme. However, strategies must be employed to alter the incentives on private providers to cream-skim students based on ability or socio-economic status, and thereby reduce potential negative equity effects. In this vein, as mentioned by Mizala and Torche (2012), a law aimed at reducing socio-economic segregation by introducing a means-tested voucher and prohibiting schools from selecting students based on entrance tests or parental interviews was enacted in Chile in 2008 (p. 142). As with any evidence on Chile, the research presented in the current review also faces contamination effects, as the programme has been operational since the 1980s and disentangling the true impact of the programme on learning outcomes is mired in methodological issues and a lack of baseline data (Patrinos et al., 2009). It has also been noted that the main beneficiaries of this reform were those students attending basic schooling (as compared with those in secondary schooling) at the time when the reform was implemented, a finding based on estimations examining the labour market returns on both schooling and cognitive outcomes (Patrinos and Sakellariou, 2011).

"Strategies must be employed to alter the incentives on private providers to cream-skim students based on ability or socio-economic status, and thereby reduce potential negative equity effects

Another study also examines a voucher scheme enacted as part of the PEF programme in Pakistan. Designed to target slums in the province of Punjab, the Education Voucher Scheme (EVS) was piloted in 2006. It aimed to deliver vouchers to every household with children aged five to 13 years, allowing parents to redeem them against tuition payments at selected private schools. The private schools were accountable to PEF and subjected to periodic reviews of student learning outcomes among other factors. The vouchers were aimed at low-income families and were providing free private education to over 30,000 students in the province at the time of the study undertaken by Malik (2010). According to the author, raw comparisons of QAT scores clearly demonstrate that EVS students from low-income families with poor educational backgrounds perform equally, if not better, than non-EVS students from middle income families. However, as mentioned previously, QAT scores do not provide a national benchmark, and it must be noted that the methodology used in this report (simple descriptives) means any relationship observed by the author must be viewed with caution. However, as the author notes, one of the key benefits of this programme has been the overall increase in enrolment, particularly of low-income children. Additionally, the potential for reducing child labour and improving parental bargaining power is worth noting.

Another South Asian context that provides evidence for voucher schemes is presented by Muralidharan and Sundararaman (2015), who examine experimental evidence on the aggregate effect of school choice on test scores in Andhra Pradesh state in India, where a voucher scheme featuring a unique two-stage randomisation of an offer of vouchers led to 23 per cent of students in public schools located in programme villages moving to a private educational setting. The AP School Choice experiment was carried out in five districts across Andhra Pradesh and a total of 180 villages with at least one recognised private school. Parents of public school students in all 180 villages were invited to apply for a voucher that would be allocated by a lottery. These vouchers covered all school fees, textbooks, workbooks, notebooks, stationery and school uniform. The value of the voucher was paid directly to the school and books and materials were provided directly to the voucher households by the schools.

The AP School Choice project forms part of a larger programme known as the Andhra Pradesh Randomised Evaluation Studies. This is an education research partnership created between the government of Andhra Pradesh, the Azim Premji Foundation and the World Bank. Participation of private schools in the programme was voluntary; however, private schools could not use selection criteria to choose voucher-winning students once they had accepted participation. The study's authors find that students who won a lottery to attend private schools had better outcomes in Hindi, which is only taught in private schools, and similar outcomes in other subjects, despite the fact that these private schools spend a third less per student than the public sector. The authors argue that private schools are more productive than public schools as they are able to achieve similar results in mathematics and Telugu with substantially less instructional time, using the additional time generated to produce larger gains in teaching an additional subject (Hindi). These gains for voucher winners do not appear to be at the expense of other students who may have been indirectly affected by the programme. The authors also do not find any evidence of spill-over effects for state school students who did not apply for the voucher, nor for those who did apply and lost out. Finally, they did not find any negative spill-over effects on private school students who were already in these schools to begin with.

“The authors argue that private schools are more productive than public schools as they are able to achieve similar results in mathematics and Telugo with substantially less instructional time

This high-quality experimental study is a valuable evaluation of the system-wide effects of large-scale government reforms. The Right to Education Act (2009) mandated the provision of 25 per cent of private school places for children from disadvantaged backgrounds, with their fees being reimbursed by the government. If the RTE Act is implemented as planned, this provision is likely to result in India having one of the largest numbers of children attending private schools through public funding as well as the largest attempts at school integration anywhere in the world.[11]

Shakeel, Anderson and Wolf (2016) undertake a systematic review and meta-analysis of private school voucher programmes globally. This is the most recent meta-analysis of randomised controlled trials (RCTs) that evaluates the achievement effects of voucher programmes. It should be noted that of the 19 studies included in this meta-analysis, only one study (Muralidharan and Sundararaman, 2015) is included in our analysis above, due to the

[11] http://www.ncaer.org/uploads/photo-gallery/files/1382332164KM_NCAER_Working_Paper.pdf, p. 6

fact that the studies reviewed by these authors are either pre-2009 or present evidence from the US. The results of the meta-analysis are nevertheless important, as they provide us with a summary of the most robust global evidence on voucher programmes to date. This report indicates that voucher programmes around the world tend to impact test scores positively and significantly, and particularly so in contexts where there is a greater private-public gap in educational quality. Generally, the authors find that the positive advantages tend to be more in reading than maths, that impacts are greater for non-US programmes and, finally, that they are greater for publicly funded programmes than for those funded privately. Positive effects of approximately 0.17 standard deviations are found in reading, although much of this is driven by the PACES programme in Colombia. The positive effect in mathematics is estimated to be approximately 0.11 standard deviations.[12]

3.2.4 Other types of interventions

There is one study that does not distinguish between the nature of the PPP arrangement sufficiently for it to be included in one of the categories above. Amjad and MacLeod (2014) examine PPP schools as defined in the Annual Status of Education Report (ASER, 2012) data from Pakistan without specifically being able to identify whether these schools are in receipt of a grant, if the children receive vouchers or the private school is in a contractual arrangement with the government to provide educational services. The authors aim to answer two specific research questions: firstly, do students of private schools in Pakistan outperform students in government schools, and secondly, and most importantly for our analysis, how do PPP schools perform in relation to other private schools and government schools. Finally, the authors also aim to investigate whether the level of private school fees is related to student outcomes. Using data from a sample of more than 30,000 children across 1,820 government, 560 private and 16 PPP schools and using regression analysis, the authors find that private school students generally outperform those of government schools in literacy and numeracy assessments, and that this private school advantage persists even after accounting for child and household characteristics, including private tuition. The analysis also demonstrates clearly that PPP schools display superior learning outcomes to government schools, with private tuition a key factor in these differences in performance. Without supplementary private tuition, however, PPP schools do not seem to do any better than government schools, and in fact do worse. It should be noted that the authors' conclusion is based on a sample of only 16 PPP schools and the authors of this review therefore feel these findings do not allow generalisable conclusions to be drawn.

A paper by Andrabi et al. (2015) investigating the equilibrium effects of unconditional grants to private schools in Pakistan has not been fully reviewed in this study as the final empirical results are currently being completed.[13] The abstract of the paper reports that the authors study equilibrium effects of unconditional cash grants to private schools across more than 250 villages and 850 schools in rural Pakistan. The researchers allocated villages randomly into one of the following: high intensity (all private schools in the village are offered grants), low intensity (only one private school is randomly selected for a grant offer) and pure control (no schools receive offers). The initial findings show that enrolment, fees, revenues and test scores

[12] Another systematic review on the impact of voucher programmes in developing countries was conducted in 2013 by Morgan et al. The two studies that met the inclusion criteria (one on PACES in Columbia and the other on Quetta in Pakistan) were dated 1999 and 2002, and therefore Morgan et al. (2013) is not included in this review.

[13] In order to source this paper, we directly approached the authors. They have confirmed that the paper is not available publicly for citation at this stage, but will be available in January 2017. The authors have, however, provided an abstract of the paper which is briefly discussed here.

respond differently to the level of financing provided. The alleviation of credit constraints through the funding of more than one school means schools are induced to invest in quality in order to compete effectively. However, when only one school is funded, price competition is limited and schools expand their capacity without improving quality as well. These results suggest that by reducing credit constraints for all players in the market, it may be possible to 'crowd in' higher quality service provision.

3.2.5 Evidence from developed contexts

A number of countries across the developed world have implemented reforms in their education systems aimed at improving educational outcomes. In particular, four countries — USA, England, Sweden and New Zealand — have introduced reforms to tackle issues surrounding the quality of public education as well as inequality in students' access to quality. Governments in these countries have focused on finding the optimal format for the structure of their educational system to reduce inequality as well as improve student outcomes. With this agenda in mind, these governments have considered the role that PPPs can play in promoting better educational service delivery, and the reforms they have introduced have been based on a belief that increased autonomy can lead to a more efficient and effective delivery of schooling services. A common feature across these four contexts has been to give PPP schools the scope to operate with more autonomy compared with state schools, by either converting existing schools or creating new ones. For example, in England, the education system has seen the introduction of academy schools; in the USA, the spread of charter schools is now extensive; New Zealand has seen the development of 'Tomorrow's Schools', and Sweden of 'free schools'. These initiatives, albeit in developed country contexts, may provide useful lessons for other contexts. They also provide useful lessons for ways in which PPP arrangements can be better structured to achieve desired outcomes.

> *A number of countries across the developed world have implemented reforms in their education systems aimed at improving educational outcomes*

UK Academies

The introduction of academy schools in the beginning of the century in England, on the whole typically consisted of 'conversions' of pre-existing schools rather than the creation of new ones. At this time, during the early 2000s, there was an on-going concern particularly in disadvantaged urban areas that certain children were attending secondary schools that were not of a sufficiently adequate standard. As a result of this, the Labour government introduced the concept of an 'academy school', the first of which opened in 2002. This initial remedial programme then gained traction to become "…a radical and encompassing programme of school reform that has radically changed England's educational landscape" (Eyles et al. 2016, p. 6). Until 2010, the key objective of this programme was to reform failing schools. However, a major change in this occurred with the introduction of the Academies Act of 2010 which led to a massive expansion of the academisation of secondary schools with the programme no longer being solely focussed on poorly performing schools but as a general programme to increase school autonomy and competition amongst schools on the whole. This resulted in a dramatic rise in the number of academies with 61 per cent of the schools in England falling within this category by January 2015. One key difference with this change was the fact that

these latter academies were now generally high performing schools that tended to enrol more advantaged pupils (p.7).

Academies were made effectively independent from local government and could determine their own teacher pay regulations and curriculum. These schools, however, receive operational government funding and are accountable for maintaining learning standards. The PPP arrangements within the academies differ depending on whether they are 'converter academies' (generally outstanding schools that become academies to gain autonomy from the local authority), 'free schools' (a type of academy whereby the founders, typically parents, education charities and religious groups, submit an application to the Department for Education to open a new school) or 'sponsor academies' (a school that was part of the pre-2010 remedial programme, or a former local authority school given academy status following poor performance). The central government finances the academies on a per-student basis and at the same rate as state schools, with provisions in the early stages to cover costs associated with the move to becoming an independent provider. Academies can also generate further funding through philanthropic efforts or have their funds topped up by the government. Academies have responsibility for staffing issues and even have the freedom to opt out of the secondary sector's national curriculum except for specific subjects. They also enjoy greater freedom in relation to day-to-day management of the school, personnel issues, budgeting, their ethos and extra-curricular activities.

> *Central government finances the academies on a per-student basis and at the same rate as state schools, with provisions in the early stages to cover costs associated with the move to becoming an independent provider*

Early studies examining pre-2010 academies have generally found that they have had a positive impact on educational quality. Three recent studies of pre-2010 academies — Eyles and Machin (2016), Eyles et al. (2016a) and Eyles et al. (2016b) — provide the most comprehensive causal evaluation to date. These studies provide evidence that pre-2010 academies "…significantly improved their student intake as a result of the academy conversion and had a positive causal impact on both student performance and on a number of medium term outcomes such as degree completion" (Eyles et al., 2016, p. 8). Estimating the impact of academy conversion presents its own set of challenges, particularly given the fact that the intake of schools changed after conversion. Both Eyles and Machin (2016) and Eyles et al. (2016b) conclude that students who attended academies performed significantly better compared to their peers who did not. There is limited evidence on post-2010 converter academies because existing studies are severely limited by the incomparability of pre- and post-2010 academies, as well as the issue of 'matching' studies being potentially biased by unobservable school attributes that may have led to conversion in the first instance (Eyles et al., 2016). This study by Eyles, Silva, Heller-Sahlgren, Machin and Sandi (2016) on the impact of academies aims at first to present causal estimates of the impact of post-2010 converter academies on student achievement. The author finds that both pre-2010 sponsored and post-2010 outstanding converters have positive effects on Key Stage 4 performance. However, after four years, the former's impact is estimated to be three times as large (30 per cent of a standard deviation) as that of the latter (11 per cent of a standard deviation). This research did not, however, find positive effects for good and satisfactory or inadequate schools. All in all, the evidence points to the fact that the key question for a student, as Andrews (2016) states, is not "are

they in an academy or in a local authority school", but "are they in a high performing school group or not". Andrews also notes that the government should not pursue full academisation as a policy objective, but aim for students to be in a good school, regardless of whether it is an academy or not. Moreover, by focusing resources and policy on understanding what drives high-performing academies can help to ensure lower-performing schools can learn from the best.

Additional research by Francis, Hutchings and Kirby (2016) finds that the best academy chains do succeed in transforming the educational outcomes of their students. Some chains, however, appear to perform below the mainstream average for disadvantaged students, though they show signs of above-average improvement. Similarly, these authors also suggest that sponsorship is not a panacea for underperformance, and that struggling schools and academies should be supported to improve through the spread of best practice, developing capacity and monitoring the rate at which they expand.

US Charter Schools

Introduced in the US in 1992, charter schools have since become a prominent feature of the educational system there. Nationwide enrolment in these schools has increased from less than one per cent in 2000 to more than four per cent in recent times (Eyles et al., 2016). Charter schools are publicly funded and owned but privately managed. These schools receive between 60 and 100 per cent of their funding from the government on a per-student basis, and tend to enjoy a high degree of autonomy in relation to a number of factors such as curriculum, structure, school hours, etc. Of particular importance is their ability to recruit and retain teachers according to their own criteria, especially as charter school teachers are very rarely unionised. There is a large base of evidence that examines the impact these schools have had on their students' outcomes and the evidence is mixed. Eyles et al. (2016) summarise it thus: "Some charter schools seem to generate large and lasting positive effects; in particular, positive effects appear concentrated in urban centres and at schools practising the 'No Excuses' model, which stresses behavioural norms and work ethic. The largest benefits tend to accrue to less privileged students, while negative effects have been found for more privileged students (e.g. Gleason et al., 2010). A general finding from this literature is that the benefits from charter attendance are larger in math than in reading test scores (see, e.g. Hoxby et al., 2009; Gleason et al., 2010; Angrist et al., 2010; Abdulkadiroglu et al., 2011; Dobbie and Fryer, 2011; and Fryer, 2014)" (p. 40).

Sweden's Free Schools

1992 saw the start of a major decentralisation process in the educational system of Sweden. This radical reform allowed students to choose, by means of a voucher, any government school from within their entire municipality, but, most importantly, also allowed private 'free schools' to receive public funding. Free-school status enabled private schools to enrol students whose studies would be financed by the municipality in which they resided. Similar to PPP arrangements in other parts of the world, this initiative was also based on the premise that these provisions would increase competition and choice. By 2013 there were 790 free schools in Sweden, making the educational system one of the most decentralised in western Europe. Changes were introduced to the PPP arrangement over time, such as abolishing schools' ability to set their own curriculum and obliging them to comply with the national curriculum, while also abolishing their ability to charge fees. Early evidence examining the effects of this programme on learning outcomes indicate positive school and competition effects, and a general conclusion from the early literature (Ahlin 2003, Bergstrom and Sandstrom 2005, and

Bohlmark and Lindahl, 2007) reveals positive and significant learning outcome benefits for students in this programme. More recent studies (Edmark et al., 2014 and Bohlmark and Lindahl, 2015) find the reform had smaller effects on learning outcomes and suggest increased competition did not have as large benefits as previous literature suggested. Heller-Sahlgren (2013) offers some explanations as to why this may have been the case: firstly, this reform was enacted alongside other reforms with seemingly negative effects on student outcomes; secondly, due to the level of uncertainty around the voucher programme, relatively few students actually enrolled in the initial stages of the reform; thirdly, these free schools received less beneficial fiscal treatment than municipal schools when it came to the tax deduction of their expenses, therefore reducing their incentive to improve quality; and finally, the lax accountability faced by these schools and the lack of accurate, good-quality information given to parents may have meant these schools diverted their efforts from improving quality to ventures aimed at attracting more students.

> *By 2013 there were 790 free schools in Sweden, making the educational system one of the most decentralised in western Europe*

Lessons

Evidence from the UK, US and Sweden, while mixed and not overwhelmingly positive, has indicated that PPP arrangements can potentially be successful in raising learning outcomes. The evidence on these countries and the countries covered in the review above suggests that, where there has been success in programmes, it has been driven by giving schools autonomy to manage operations such as curriculum design and timetabling, as well as recruit teachers, regulate their pay and terminate contracts. This has been counterbalanced with an accountability framework requiring these schools to maintain a certain level of learning standards. These frameworks have also included a mechanism for ensuring that non-performing schools can be excluded and shut down.

Table 4: Summary of included studies

Anand, Mizala and Repetto (2009) **Using School Scholarships to Estimate the Effect of Private Education on the Academic Achievement of Low-Income Students in Chile**				
Country(ies) and Region	**Methodology**	**Research question**	**Results**	**Key information**
Chile, Latin America	Econometric techniques — propensity score matching	Compare the test scores of reduced fee-paying, low-income students paying fees in private voucher schools with those in public schools and free private voucher schools.	They find that students in fee-charging private voucher schools score slightly better than those in public schools (test score gain of 0.2 SD). There is no difference in the test scores of students in fee-charging private voucher schools versus those in free private voucher schools.	**Type of scheme:** Vouchers **Quality of study methodology:** Medium

Elacqua, Contreras, and Salazar (in Barrera-Osorio, Patrinos and Wodon, "Emerging Evidence on Vouchers and Faith-Based Providers in Education") (2009) **The Effectiveness of Franchises and Independent Private Schools in Chile's National Voucher Program**				
Country(ies) and Region	**Methodology**	**Research question**	**Results**	**Key information**
Chile, Latin America	Econometric techniques — education production function estimations	Using 2002 National Test score data for fourth graders in Spanish and maths to compare the academic achievement of students in private voucher school franchises, public schools and private independent voucher schools.	Controlling for individual and peer characteristics, they find a representative private independent voucher student to be achieving more in private voucher franchise schools compared to private independent voucher schools (0.13 SD higher achievement). Students in private independent voucher schools also have slightly higher achievement than those in public schools. Controlling for selection bias reduces significantly the disadvantage of public schools and increases the advantage of private franchise schools. Students in larger private school franchises outperform their private independent school counterparts (0.10 SD greater achievement in Spanish and mathematics).	**Type of scheme:** Vouchers **Quality of study methodology:** Medium

Contreras, Bustos, and Sepúlveda (in Barrera-Osorio, Patrinos and Wodon "Emerging Evidence on Vouchers and Faith-Based Providers in Education") (2009) **When Schools Are the Ones That Choose: Policy Analysis of Screening in Chile**				
Country(ies) and Region	**Methodology**	**Research question**	**Results**	**Key information**
Chile, Latin America	Econometric techniques — education production function controlling for various student and household characteristics. A main variable is the school's administrative management (whether the student attended a private subsidised school or not) and the school's student selection criteria (e.g. ability, SES, religion, etc.)	This study uses individual information from the 2005 SIMCE for fourth grade primary students from 2005 in maths, language and science.	The evidence indicates that the different selection methods are widely used by private subsidised schools, and especially in schools with high socioeconomic profiles. As the theory suggests, student ability selection is the most frequently used and produces significant effects on subsequent academic outcomes. The results show that the public-private gap observed in earlier studies disappears after controlling for the selection criteria used. Students attending schools using selection criteria tend to obtain higher test scores than those who do not although this should not be used as evidence of failure of the voucher system but as a means of improving the voucher system that exists.	**Type of scheme:** Vouchers **Quality of study methodology:** Medium

Allcot and Ortega (in Barrera-Osorio, Patrinos and Wodon "Emerging Evidence on Vouchers and Faith-Based Providers in Education") (2009) **The Performance of Decentralized School Systems: Evidence from Fe Y Alegría in República Bolivariana de Venezuela**				
Country(ies) and Region	**Methodology**	**Research question**	**Results**	**Key information**
Venezuela, Latin America	Econometric techniques — average treatment effects	Aims to compare Fe Y Alegría students to a control group of Venezuelan public school students using test scores in maths and verbal reasoning (similar to American SATs).	Using various estimation methods, the results consistently show Fe y Alegría students to perform slightly (but significantly) better in both maths and verbal reasoning. The authors conclude that this finding is due to the organisational behaviour reflected in different management practises and cultural characteristics.	**Type of scheme:** Government-subsidised private schools **Quality of study methodology:** Medium

Wodon and Ying (in Barrera-Osorio, Patrinos and Wodon "Emerging Evidence on Vouchers and Faith-Based Providers in Education") (2009) **Literacy and Numeracy in Faith-Based and Government Schools in Sierra Leone**				
Country(ies) and Region	**Methodology**	**Research question**	**Results**	**Key information**
Sierra Leone, Africa	Probit models controlling for several explanatory variables, instrumental variable used to control for the endogeneity of school choice	The authors provide a comparative assessment of faith-based (more than half the students in the sample are in faith-based, government-assisted schools) and public schools using data from 2004 in literacy and numeracy.	The authors find faith-based schools perform slightly better than government schools after controlling for household and child characteristics and for endogeneity. Although this effect is statistically significant in primary schools, its magnitude is very small. However, faith-based schools serve disadvantaged students (especially in rural areas) and the empirical results are supportive of the state providing financial assistance to schools.	**Type of scheme:** Government-subsidised private schools **Quality of study methodology:** Medium

Lara, Mizala and Repetto (2009) **The Effectiveness of Private Voucher Education: Evidence from Structural School Switches**				
Country(ies) and Region	**Methodology**	**Research question**	**Results**	**Key information**
Chile, Latin America	Propensity score matching, change in change and other econometric techniques	Analyses the effect of private voucher education on student academic performance by focussing on students forced to enrol at a different school to attend secondary education once they have graduated from primary school - structural switches.	The estimated effect of private voucher education amounts to about four to six per cent of one standard deviation in test scores. The literature on Chile using previous cross sectional data had found effects of about 15-20 per cent.	**Type of scheme:** Vouchers **Quality of study methodology:** Medium/High

Malik (2010) **Public-Private Partnerships in Education: Lessons Learned from Punjab Education Foundation**				
Country(ies) and Region	**Methodology**	**Research question**	**Results**	**Key information**
Pakistan, South Asia	Descriptive statistics and interviews	PEF has undertaken a number of PPP initiatives including FAS, CPDP, TICSS and EVS. This research evaluates them.	Shows positive results for FAS students and EVS students as compared to non-FAS and non-EVS students. The author notes learning outcomes are particularly better for those from poorer backgrounds.	**Type of scheme:** Government-subsidised private schools and vouchers **Research funded by:** ADB **Quality of study methodology:** Medium/Low

World Bank (2011) **Philippines: Private Provision, Public Purpose**				
Country(ies) and Region	**Methodology**	**Research question**	**Results**	**Key information**
Philippines, East Asia	Quantile regression and propensity score matching	Describes the history, evolution and coverage of the ESC programme. Includes an assessment of the types and overall quality of private schools in the Philippines. The study includes a description and assessment of how the programme is administered and implemented and any suggested improvements in this regard.	The programme generates significant cost savings for the government. The raw comparison of TIMSS scores of private and public school students shows a positive private school effect, even after controlling for student background and other observable differences. Additionally, as this results in enrolment in private schools by students who would otherwise have to attend public schools, this is likely to improve their own scores, and therefore the authors argue that in turn improves the academic test scores of the Philippines as a whole. The findings, however, are limited, as the authors are unable to account explicitly for the impact of ESC itself as compared to a general private school effect.	**Type of scheme:** Government-subsidised private schools **Research funded by:** World Bank **Quality of study methodology:** Medium

Bonilla (2011) **Contracting Out Public Schools and Academic Performance: Evidence from Colombia**				
Country(ies) and Region	**Methodology**	**Research question**	**Results**	**Key information**
Colombia, Latin America	Econometric techniques such as structural equation modelling	Evaluation of the short- and longer-run achievement effects of the Colegios en Concesión (CEC) programme	Authors provide compelling evidence that CEC schools are successful at improving the academic performance of their students relative to students in traditional public schools.	**Type of scheme:** Contract schools **Quality of study methodology:** Medium

Elacqua et al. (2011) **The Effectiveness of Private School Franchises in Chile's National Voucher Program**				
Country(ies) and Region	**Methodology**	**Research question**	**Results**	**Key information**
Chile, Latin America	Econometric techniques	This paper uses fourth grade data to compare achievement in private franchises, private independent, and public schools in Chile.	Their findings suggest that franchises have a large advantage over independent schools, once student and peer attributes and selectivity are controlled for. They also find that further disaggregating school franchises widens the larger franchise advantage.	**Type of scheme:** Vouchers **Quality of study methodology:** Medium

Mizala and Torche (2012) **Bringing the Schools Back In: The Stratification of Educational Achievement in the Chilean Voucher System**				
Country(ies) and Region	**Methodology**	**Research question**	**Results**	**Key information**
Chile, Latin America	Multilevel modelling	Examination of the socioeconomic stratification of achievement in the Chilean voucher system using a census of fourth and eighth graders and accounting for unobserved selectivity into school sector.	The authors find that an association between the school's aggregate family socioeconomic status (SES) and test scores is much greater in the private-voucher sector than in the public one, resulting in marked socioeconomic stratification of test scores. They also find that the amount of tuition fees paid by parents in private-voucher schools has no bearing on test scores, after controlling for the socioeconomic makeup of the school.	**Type of scheme:** Vouchers **Quality of study methodology:** Medium

Amjad and MacLeod (2014) **Effectiveness of Private, Public and Private-Public Partnership schools in Pakistan**				
Country(ies) and Region	**Methodology**	**Research question**	**Results**	**Key information**
Pakistan, South Asia	Econometric techniques	Assesses whether students of private or PPPs schools outperform government school students.	Private school students outperform government students, though some differences are possibly due to differences in school type, with PPP students generally outperforming government school students and performing close to equally with students from private schools. Much of this difference in PPP student performance can however be attributed to differences in levels of private tuition.	**Type of scheme:** All PPP schools — analysis done by school type (government, private, PPP) **Quality of study methodology:** Medium

Osorio and Wodon (2014) **Faith-Based Schools in Latin America: Case Studies on Fe Y Alegria**				
Country(ies) and Region	**Methodology**	**Research question**	**Results**	**Key information**
Venezuela, Colombia and Peru, Latin America	Quantitative and qualitative methods used (average treatment effects, instrumental variables, propensity score matching, interview and focus groups)	An assessment of the performance and selected aspects of the management and pedagogical practices of Fe y Alegría schools.	The evidence gathered in the case studies presented in this volume suggest that the federation often does reach the poor, and that it does empower them through the provision of a good quality education. In República Bolivariana de Venezuela, and at least for some subjects in Colombia, empirical evidence based on test scores suggests that the performance of Fe y Alegría is strong once controls for the students who are served by the schools are introduced, and this performance assessment is also supported by the evidence gathered in the case of Peru, for example in terms of the internal efficiency of the schools. The other case studies presented in this volume suggest that the factors that lead to good performance are complex and related not only to the types of 'inputs' or resources used by the schools in the education process, but also to the management of these resources, and the ability to implement and test innovative programs.	**Type of scheme:** Government-subsidised private schools **Research funded by:** World Bank **Quality of study methodology:** Medium/High

Andrabi et al. (2015) **Upping the Ante: The Equilibrium Effects of Unconditional Grants to Private Schools.**				
Country(ies) and Region	**Methodology**	**Research question**	**Results**	**Key information**
Pakistan, South Asia	Econometric techniques			**Type of scheme:** Unconditional grant **Quality of study methodology:** Not Applicable**

** We are unable to rate this study as we could only access the abstract (the full study is not yet available from the authors).

Barrera-Osorio et al. (2015) **Leveraging the Private Sector to Improve Primary School Enrolment: Evidence from a Randomised Controlled Trial in Pakistan**				
Country(ies) and Region	**Methodology**	**Research question**	**Results**	**Key information**
Pakistan, South Asia	RCT	Evaluates the effect of publicly funded private primary schools on enrolment and test scores in rural Sindh.	The authors find that test scores in treatment villages are 0.67 standard deviations higher than those in control villages. Programme is also found to increase enrolment by 30 percentage points in treatment villages. No gender differences are found.	**Type of scheme:** Government-subsidised private schools **Quality of study methodology:** High

Barrera-Osorio, Galbert and Habyarima (2015) **The Impact of Public-Private Partnerships on Private School Performance: Evidence from a Randomised Control Trial in Uganda.**				
Country(ies) and Region	**Methodology**	**Research question**	**Results**	**Key information**
Uganda, SSA	RCT-randomized phase-in study design to estimate the causal impacts of the programme on private school performance	Estimating the short-term impact of a PPP programme on the performance of participating private secondary schools.	The authors find that the programme successfully absorbed large numbers of eligible students and student performance in participating schools is significantly better.	**Type of scheme:** Government-subsidised private schools **Research funded by:** Financial support received from the World Bank's Education Program Development Fund, Bank-Netherlands Partnership Program Trust Fund and Poverty and Social Impact Analysis Trust Funds **Quality of study methodology:** High

Malik et al. (2015) **Partnerships for Management in Education: Evidence from Punjab and Sindh**				
Country(ies) and Region	**Methodology**	**Research question**	**Results**	**Key information**
Pakistan, South Asia	Descriptive statistics and econometric techniques	Assess the contribution of PfMs towards achieving goals of access, governance and quality and aiming to understand the factors that inhibit the operation of this mechanism at scale.	The study provides evidence of significant improvements in terms of enrolments and other aspects in 'adopted'/PfM schools in Punjab and Sindh and better learning outcomes in PfM schools in Punjab.	**Type of scheme:** Contract schools **Research Funded by:** ILM IDEAS and others **Quality of study methodology:** Medium

Muralidharan and Sundararaman (2015) **The Aggregate Effect of School Choice: Evidence from a Two Stage Experiment in India**				
Country(ies) and Region	**Methodology**	**Research question**	**Results**	**Key information**
India, South Asia	RCT	Examine the test score difference between lottery winners and losers.	Lottery winners display higher tests scores in Hindi and the same in other subjects. Additionally private achieve these test score gains at a lower cost per student than their public counterparts. The positive effects of voucher winners do not come at the expense of other students.	**Type of scheme:** Vouchers **Quality of study methodology:** High

Termes et al. (2015) **Public-Private partnerships in Colombian Education: The Equity and Quality Implications of Colegios en Concesión**				
Country(ies) and Region	**Methodology**	**Research question**	**Results**	**Key information**
Colombia, Latin America	Realist evaluation approach	The authors aim to examine the assumptions behind the promotion of the CEC programme in Colombia and challenge some of the main conclusions reached by existing evaluations of this programme so far.	The authors find that CEC has not achieved the expected results; that these schools enjoy only moderate levels of school autonomy; their economic efficiency largely relies on a drastic worsening of teachers' employment conditions; that many CEC schools have strategically selected their students during enrolment processes, though this practice is not allowed by the Education Department; and the pedagogical differentiation that these schools have promoted within the education system has not necessarily translated into substantive academic improvement. In fact, in relation to the latter, the authors observe that in terms of learning outcomes, there are not statistically significant differences between CEC and public schools after controlling for the school day and economic status of students.	**Type of scheme:** Contract schools **Quality of study methodology:** Medium

Shakeel, Anderson and Wolf. (2016) **The Participant Effects of Private School Vouchers Across the Globe: A Meta-Analytic and Systematic Review**				
Country(ies) and Region	**Methodology**	**Research question**	**Results**	**Key information**
USA, Kenya, Colombia and India, Global	Meta-analysis and systematic review	Rigorously assess the participant effects of private school vouchers, i.e. to estimate the average academic impacts that the offer or use of a voucher has on a student. Only uses RCTs.	Overall global effect size from meta-analysis indicates null impact on maths scores and positive but small impacts on reading scores. In terms of recommending policy, the authors draw the following conclusions. They found that in general, privately funded programmes show more positive effects, but this could be the result of several different things. For example, it could be that private donors may have better planning, implementation, and oversight than government forms of funding. In addition, it could be that privately funded programmes are more likely to have financial support for RCT studies when they are thought to be succeeding, and that these types of studies are more prevalent in the literature.	**Type of scheme:** Vouchers **Quality of study methodology:** Medium/High

Crawfurd (2016) **School Management in Uganda**				
Country(ies) and Region	**Methodology**	**Research question**	**Results**	**Key information**
Uganda, SSA	Econometric techniques — OLS value-added framework to evaluate the effects of ownership and management structure. Management surveys were conducted through telephone interviews. This was then used alongside secondary test score data.	Compare public schools with PPP schools, both domestic PPPs and a chain of 19 internationally managed PPPs	The author finds a clear and positive correlation between school management and student outcomes at the school and individual levels. A school with a one SD higher management score is associated with between 0.1 and 0.24 SDs average test scores depending on which factors are controlled for.	**Type of scheme:** Contract schools **Quality of study methodology:** Medium

Economic Policy Research Centre (2016) **Evaluation of the PEAS network under Uganda Universal Secondary Education Programme — Baseline Report**				
Country(ies) and Region	**Methodology**	**Research question**	**Results**	**Key information**
Uganda, SSA	Econometric techniques — propensity score matching	PEAS, in partnership with Ark EPG, sought to evaluate the PEAS programme in Uganda in comparison with private and government schools to establish pathways through which the PEAS programme impacts on the quality, access and sustainability of secondary education provision in Uganda.	The ordinary regression results show that PEAS students outperformed those in government schools in both English and maths, and performed as well as those in private schools in English but less well in maths. However, by matching students based on observed characteristics, the results show that the performance of PEAS students is the same as those in all non-PEAS schools. These results suggest that PEAS intervention has improved students' performance, because PEAS schools admitted students that had lower prior achievement than their counterparts in other school types.	**Type of scheme:** Contract schools **Quality of study methodology:** Medium

3.3 Subsidiary research questions

This section examines the evidence in relation to the following sub-questions posed in the review:

1. Through what mechanisms do PPPs appear to impact learning outcomes?
2. What are the ways in which PPPs for education have been shown to support improvements across an education system?
3. What are the key elements of an effective PPP policy to ensure school operators have adequate autonomy while governments retain oversight with regards to commissioning, funding and regulation?
4. What is the enabling environment for an effective PPP? What other structures need to be in place to ensure effective policy implementation?

While the evidence on different types of PPP arrangements reviewed in this study is mixed, the studies in question have indicated several channels through which PPPs have the potential to improve learning outcomes and support improvements across the entire education system. These range from PPP schools having better inputs and resources to these PPP arrangements being able to strike a fine balance between greater autonomy and increased accountability, as well as reaching an equilibrium between equal access targets and greater efficiency. The following sections provide examples from the reviewed studies that offer further insight into this question, with Table 5 summarising the key policy features of each programme and the findings of the associated study. The discussion that follows highlights some of the channels through which the different PPP arrangements reviewed have worked, as well as those instances and aspects that have hindered their potential efficacy.

Table 5: Key features of reviewed programmes

Contract			
Programme	**Studies evaluating programme**	**Type of PPP arrangement**	**Country**
Colegios en Concesión (CEC) programme	Bonilla (2011) Termes et al. (2015)	Contract	Bogota: Colombia
Key policy features		**Overall results**	
This programme was a large-scale initiative implemented in 2000 in Bogota, Colombia. Under this PPP arrangement, the government contracted out the administration of traditional public schools (TPS) to reputable, not-for-profit private schools and universities. The Department of Education of Bogota (SED) contracted out all newly constructed public schools between 1999-2003 (ultimately 25 schools) to private academic institutions on 15-year contracts. The contracts were awarded through a bidding process based on superior academic results of the private institutions in the ICFES test, the proposed profile of potential teachers and the yearly cost per student. All CEC schools were located in low-income areas and offered the same academic curriculum as public schools, with the SED allocating students rather than CEC schools being able to choose them. Expenditure per student was the same as that in public schools. CEC schools were different from traditional public schools in the following ways: CEC schools could recruit and remove teachers on a yearly contractual basis and this resulted in a higher teacher turnover; CEC schools, on average, had better school facilities as compared to TPS schools; and the former were subject to performance evaluations, unlike TPS. This PPP arrangement was the largest programme of its kind, serving more than 40,000 students and aimed at improving educational quality. This was the first policy in Colombia designed to hold public schools accountable for the learning outcomes of their students. A key differentiating factor in this PPP arrangement was that the bidding process was not open to all operators, but limited to those who could demonstrate high academic performance of their students.		**Mixed** Bonilla (2011): CEC students' scores are 0.6 and 0.25 standard deviations higher in maths and verbal test scores as compared to students in TPS schools. Termes et al. (2015): no statistically significant difference in academic outcomes between CEC and TPS students once full-day and socio-economic status has been taken into account.	

Contract

Programme	Studies evaluating programme	Type of PPP arrangement	Country
Partnerships for Management (PfM) Programme/Adopt-a-school model	Malik et al. (2015)	Contract	Punjab, Sindh: Pakistan

Key policy features	Overall results
This policy incorporated the involvement of private actors who were contracted by the Sindh and Punjab states to undertake the management and reconstruction of selected state schools. The programme has been in operation since the mid-1990s and was initiated initially as a means of introducing additional resources for infrastructure into the state sector. However, it has over time evolved into a partnership for management and capacity development. The PfM model became known as the 'adopt-a-school' model. There are 600 adopted schools in Punjab and 500 in Sindh. The models differ across the two provinces In Sindh, a formal agreement allows private entities to invest resources into public schools in terms of infrastructure, teaching resources, etc., monitor teachers, and improve management and decision-making at the school level. They have no authority to fire or discipline teachers and no state-funding. In Punjab, the partnerships are more a means of expanding private provision, and operate outside the Punjab Education Foundation with no clear policy guidelines or operating procedures.	**Mixed** Malik et al. (2015): adopted schools are associated with better learning outcomes and this increase is higher over time in Punjab. On the contrary, in Sindh, moderate-low learning improvements are observed.

Government Subsidy

Programme	Studies evaluating programme	Type of PPP arrangement	Country
Fe y Alegría (FYA)	Allcot and Ortega (2009) in Venezuela, and Osorio and Wodon (2014) with research by different authors in Venezuela, Colombia and Peru	Government-subsidised, faith-based private schools	20 countries overall, with 17 in Latin America (Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Nicaragua, Panama, Paraguay, Peru, Dominican Republic and Venezuela), one in Spain, and two in Africa (Chad, Congo).

Key policy features	Overall results
This non-governmental organisation (NGO) initiative with religious foundations was founded in 1955 in Venezuela, with the primary objective of providing quality education to children disadvantaged due to socio-economic background, special education needs and other forms of marginalisation. Since its humble beginnings in a small part of Venezuela, the programme has expanded to 20 countries and was known to serve over 1.4 million children in 2006. The initiative combines several programmes, including teaching training, adult and radio education, and a majority of its programmes target education provision at the primary and secondary level. In terms of funding, each FYA Central Office enters into an agreement with the respective country government that stipulates teacher salaries will be paid by the government. However, while teachers are selected by FYA, they are subject to the laws and regulations of a public teaching career.	**Mixed** Allcot and Ortega (2009): graduation from FYA schools increases student test scores by 0.1 of a standard deviation relative to graduation from a public school. Osorio and Wodon (2014): students in these schools tend to perform as well in test scores, if not slightly better, than in other schools. **Venezuela:** FYA students perform 0.05 and 0.06 standard deviations higher in verbal and mathematics scores after controlling for observable characteristics. **Colombia:** Despite catering to poorer students, over time negative gaps in educational achievement for FYA either vanish or become gains across the years. However, while students in FYA schools perform as well as, and sometimes better, than their non-FYA counterparts in mathematics and Spanish, they are worse off in physics, chemistry and biology.

Government Subsidy

Programme	Studies evaluating programme	Type of PPP arrangement	Country
Government subsidies to faith-based schools in Sierra Leone	Wodon and Ying (2009)	Government-subsidised, faith-based private schools	Sierra Leone

Key policy features	Overall results
The government subsidises faith-based providers through payment of teacher salaries and the provision of teaching materials. No such assistance is given to private schools and a similar level of assistance is given to government schools. Faith-based schools provide the majority of schooling provision in the country.	**Weakly positive** Wodon and Ying (2009): Attending a faith-based school statistically significantly and strongly improves performance in numeracy, and marginally significantly (not statistically) so in reading English, as compared to a child in a public school. Shifting from a non faith-based school to a faith-based school improves a child's probability of completing a computation from 39.1 to 46.6 per cent. In relation to English reading, this probability only increases from 20.4 to 24.3 per cent.

Government Subsidy

Programme	Studies evaluating programme	Type of PPP arrangement	Country
PPP programme in Uganda as part of the 2007 Universal Secondary Education (USE) policy	Barrera-Osorio et al. (2016), Crawfurd (2016), EPRC (2016)	Government-subsidised private schools	Uganda

Key policy features	Overall results
In 2007 the government of Uganda introduced a Universal Secondary Education (USE) programme and developed a PPP programme to accommodate a rising number of students. Under this arrangement, private schools were required to apply to the Ministry of Education and pass certain quality standards in order to enrol. Eligible schools received a per student, per term subsidy, with the programme being phased into the entire school over the course of several years. The schools could determine which students and how many of them could be enrolled, and school administrators retained control over budget and expense-related decisions. By 2010, more than 600 schools were implementing the programme. Since 2008, the PEAS network has also been operating 24 schools in partnership with the Government of Uganda.	**Weakly positive** Barrera-Osorio et al. (2016): Test scores in mathematics, English and biology were found to be approximately 0.2 standard deviations better than test scores for students in non-participating private schools. The scores are statistically significant for English and mathematics but not for biology. Crawfurd (2016): The way a school is managed affects school performance, with better management leading to improved student outcomes. The management score does not vary across school type in Uganda except for a small number of elite public schools and the PEAS schools, which score 1.1 points better than the average school in terms of management quality. EPRC (2016): Although PEAS students tend to be from more socially disadvantaged backgrounds and with worse prior learning outcomes, they presently perform as well as their counterparts in non-PEAS schools in English and mathematics. These schools are perceived to be more affordable than non-PEAS schools.

Government Subsidy

Programme	Studies evaluating programme	Type of PPP arrangement	Country
Foundation Assisted Schools	Malik (2010)	Government-subsidised private schools	Punjab: Pakistan

Key policy features	Overall results
The Foundation Assisted Schools (FAS) programme started in 2005 in six districts in Punjab and has since been extended to all 36 districts with around 3,000 partner schools catering to approximately 1.3 million children. Aimed as a policy intervention, it is designed to improve educational quality by offering financial and technical support to low-cost private schools for each child enrolled in the programme. This takes the form of Rs. 350 (approximately $4) per month per enrolled child and focuses on schools with low literacy and a high number of out-of-school children. Preference is also given to female educational institutions. Continued participation in the programme requires that students meet performance standards.	**Weakly positive** Malik (2010): Between 2006 and 2009, student academic performance data has shown an increase in the percentage of students scoring in the top decile and a decrease in the percentage of low-scoring students, i.e. those who score less than 40 per cent. The intervention is reported to have resulted in improvements in educational quality, particularly for poorer families.

Government Subsidy

Programme	Studies evaluating programme	Type of PPP arrangement	Country
Promoting Low-Cost Private Schooling in Rural Sindh (PPRS)	Barrera-Osorio et al. (2013)	Government-subsidised private schools	Sindh: Pakistan

Key policy features	Overall results
This intervention by the Sindh Education Foundation (SEF) was initially launched in 2008-2009 and was designed by the SEF in collaboration with the Reform Support Unit (Government of Sindh) and the World Bank. This intervention supports the establishment and management of private schools in under-served areas to improve access to quality education. Three indicators are used to identify under-served areas: number of out-of-school children, distance to nearest primary school and gender disparity in primary school participation. The programme now covers over 800 primary and elementary schools, approximately 130,000 students and just under 2,000 teachers in 18 districts of rural Sindh. The private entities are selected through a vetting and randomisation process, and go on to receive a per-student cash subsidy to operate co-educational primary schools as well as additional non-monetary assistance aimed at improving educational quality. Any child aged five to nine in the village is afforded tuition-free enrolment. Two different subsidy schemes were introduced: a gender-uniform subsidy whereby the school receives the same amount (Rs. 350 per month) for both male and female students, and a gender-differentiated subsidy, whereby female students are associated with a higher subsidy (Rs. 450 per month for females and Rs. 350 per month for males) in an effort to reduce the gender gap in educational outcomes. In addition to the per-student subsidy, the programme also offers other support in the form of upgrading primary schools to elementary schools and providing technical support by establishing computer labs in select elementary schools, etc.	**Positive** Barrera-Osorio et al. (2013): Children in treatment villages score 0.67 standard deviations higher than those in control villages on mathematics and language exams, while children induced to enrol because of the treatment score 2 standard deviations higher.

Government Subsidy

Programme	Studies evaluating programme	Type of PPP arrangement	Country
Education Service Contracting (ESC) programme	World Bank (2011)	Government-subsidised private schools	Philippines

Key policy features	Overall results
The Education Service Contracting (ESC) programme serves more than half a million students, which in 2009 represented nearly 10 per cent of high school students in the country. It provides financial support from the public chest to 'poor but deserving' primary school graduates to attend private secondary schools with whom the government has entered into contractual arrangements. The ESC programme also aims to relieve congestion in public schools and maintain the financial viability of private secondary schools, with more than one-third of private secondary enrolments supported by it. The aim is to increase access as well as quality at primary and secondary level. The programme uses two types of contracts, the first being when the Department of Education contracts with selected private schools to enrol students who would otherwise be in the public sector. In the second, the department contracts a private agency to carry out the programme's day-to-day administration. This programme has seen tremendous growth since its implementation with nine per cent of total students in public high schools and almost 36 per cent of those in private high schools in 2009.	**Weakly positive** World Bank (2011): The study is able to show that private school students enjoy the advantage of better learning outcomes than public school students, even when rigorous methods of controlling for selection are used. The impact of private schooling is statistically significant, with a difference in scores of at least 0.3 and 0.4 of a standard deviation in maths and science. However, the study is unable to evaluate the impact of ESC programme as such. The authors do note the fact that ESC students tend to be less wealthy and that their attendance in a private school benefits them academically suggests that the ESC provides them with access to better quality schooling than they would have otherwise been able to afford.

Vouchers

Programme	Studies evaluating programme	Type of PPP arrangement	Country
Chilean universal voucher programme	Anand et al. (2009) Elaqua et al. (2009) Contreras et al. (2009) Lara (2009) Elaqua et al. (2011) Mizala and Torche (2012)	Universal voucher scheme	Chile

Key policy features	Overall results
Introduced in 1981, the Chilean voucher programme is one of the very few programmes across the world that is universal in nature. This reform grants a flat-rate per-student subsidy directly to the private or public school selected by a family based on the number of students enrolled ('funds follow the student'). There are four key institutional features of this programme: 1) the flat-rate subsidy given to a private voucher school is the same amount as that given to a municipal school of similar characteristics; 2) private voucher schools have full control over admission and expulsion policies, while public schools must accept all applicants unless oversubscribed; 3) public school teacher regulations are governed by government legislation, while private voucher schools can operate more flexibly as private firms in relation to recruitment, dismissal and promotion; and 4) private voucher schools and only secondary public schools are allowed to implement additional fees.	**Mixed** Anand et al. (2009): evidence is weakly positive, with student learning in private voucher schools 0.2 standard deviations higher than public school students with similar characteristics Elaqua et al. (2009) and Elaqua et al. (2011): private independent voucher students achieve more in private franchise voucher schools than in private non-franchise voucher schools and public schools. However, this differential is reduced after controlling for selection bias. Contreras et al. (2009): after controlling for family and school characteristics, as well as student selection criteria, those students attending selective schools obtain seven to 10 per cent higher test scores in maths than those who attend non-selective schools. Lara (2009): private voucher education leads to small and sometimes insignificant differences in student achievement. Mizala & Torche (2012): school-level SES matters more for test scores net of student level resources than a child's own family SES. The relationship between aggregate school-level SES and test scores is twice as strong in private voucher schools than in the public sector leading to SES-stratification of achievement.

Vouchers

Programme	Studies evaluating programme	Type of PPP arrangement	Country
Education Voucher Scheme (EVS)	Malik (2010)	Voucher scheme targeted at low-income families in slums	Punjab: Pakistan

Key policy features	Overall results
The EVS was initiated in 2006 as a pilot in slum areas of Punjab and has since launched in 14 phases across 36 districts of the province, targeting more than 300,000 children in over 1,300 partner private schools. According to the Punjab Education Foundation website, the age group of the beneficiaries is between six and 16 years. Both profit-making and non-profit entities are eligible to participate in the scheme based on certain pre-defined selection criteria, and PEF enters into an arrangement whereby parents can redeem the voucher against tuition payments at selected private schools. The value of the voucher varies by education level: Rs. 450 per month at primary level, Rs. 500 per month at middle-school level and Rs. 600 per month at the matriculation level.[14]	**Weakly positive** Malik (2010): raw comparisons of test scores indicate EVS students from low-income families perform equally with, if not better than, non-EVS students from higher income families. This analysis is based on simple descriptives and should therefore be viewed with caution.

[14] http://pef.edu.pk.pefsis.edu.pk/evs/index.aspx

Vouchers

Programme	Studies evaluating programme	Type of PPP arrangement	Country
Andhra Pradesh School Choice Project	Muralidharan and Sundararaman (2015)	Randomised offer of vouchers (lottery)	Andhra Pradesh: India

Key policy features	Overall results
The AP School Choice experiment was carried out in five districts across Andhra Pradesh, with a total of 180 villages with at least one recognised private school. Parents of students in public schools in all 180 villages were invited to apply for a voucher that would be allocated by lottery. These vouchers covered all school fees, textbooks, workbooks, notebooks, stationery and school uniform. The value of the voucher was paid directly to the school, and it would then provide books and materials directly to the voucher households. The AP School Choice project forms part of a larger programme known as the Andhra Pradesh Randomised Evaluation Studies. This is an education research partnership created between the government of Andhra Pradesh, the Azim Premji Foundation and the World Bank. Participation of private schools in the programme was voluntary, although once they had accepted participation, schools could not use selection criteria to choose voucher-winning students.	**Weakly positive** Muralidharan and Sundararaman (2015) find that after two and four years of the programme, there is no difference between the test scores of lottery winners and losers in Telugu and maths. However, the authors find large positive effects of attending a private school in Hindi (0.55 standard deviations) for voucher winners. The annual cost per student in the public school system is three times as high as in the private school system. Private schools are more productive than public schools as they are able to achieve similar results in maths and Telugu with substantially less instructional time and at a lower per-student cost. Private schools use the additional time generated to produce larger gains in teaching an additional subject (Hindi).

Autonomy and accountability: freedom within a framework

Two key dimensions can potentially change as a result of a PPP arrangement: with greater autonomy comes the need for greater accountability compared with public schools. For example, this would include freedom with regard to operations: schools are able to run their day-to-day matters unhindered, giving them the freedom to determine things such as the length of the school day or year, the ability to set the curriculum of their choice, and the opportunity to choose new and innovative pedagogical styles. This freedom could also extend to allowing schools the flexibility to hire and fire their staff according to their own schooling policies. This increased autonomy, however, needs to be aligned with better accountability measures that ensure all providers not only meet the standards of quality set out by the state, but also that they are answerable to other stakeholders, such as parents.

> *With greater autonomy comes the need for greater accountability compared with public schools*

While engaging the private sector may be seen as a means of improving innovation in academia and bettering student performance through the two channels of autonomy and accountability, Bonilla (2011) argues that the nature of the contractual arrangements put in place may result in substantially different degrees of autonomy and therefore generate varied sets of incentives for providers, which may in turn ultimately result in differences in students' academic performance. For example, arrangements with minimal achievement-based accountability goals may result in schools investing sub-optimally in resources aimed at improving academic achievement. The author's evidence on CEC schools in Colombia suggests that the positive results of their research could be attributed to the fact that this particular PPP arrangement ensures CEC schools are accountable for their students' academic performance. Similarly, Malik (2010) highlights continuous monitoring and evaluation of student learning through an accountable and transparent framework as being the main mechanism through which PEF has impacted learning outcomes positively.

In another study of CEC schools by Termes et al. (2015), the authors state that these schools did not achieve expected results because the autonomy they actually enjoy is minimal, and they use selection criteria to boost performance, despite this practice not being allowed by the education department. The authors also find that the pedagogical choices made by these schools have not translated into substantive results when it comes to student outcomes. The authors concede that while these schools have a certain level of autonomy in some regards, for example their ability to recruit and retain teachers, they remain subject and subordinate to the government in many aspects such as their finances (salary, budgets, etc.). The poorer working conditions of teachers in CEC schools and its resultant negative impact on teacher turnover could be potential factors in explaining the CEC performance identified by the authors. On a positive note, the authors suggest better levels of accountability to parents for CEC schools and improved school-family relationships, with families frequently taking part in open days, parents' days and workshops initiated by programme participation. Moreover, the authors note that CEC schools enjoy some elements of pedagogical autonomy in relation to both curriculum content and teaching practice, with head teachers having a key role in student evaluation and discipline.

Better management practices within schools may also be achieved through a combination of factors, as put forward by Crawfurd (2016) in their analysis of PEAS schools in Uganda.

The author attributes better academic performance of students in this instance to some key elements of the PEAS models. These include more and improved targets in relation to enrolment as well as achievement, based on detailed school improvement plans with performance targets; high levels of head teacher accountability, with rewards and sanctions based on performance; ongoing continuous professional development with support and training provided throughout the year; and finally, more efficient deployment of labour, in particular the appointment of a school director to manage each school allowing head teachers to focus on managing the school as opposed to being burdened by administration.

The Fe y Algeria (FYA) programme in various contexts also provides vital evidence on the mechanisms through which this particular PPP programme has impacted learning outcomes, with several of the authors of the reviewed literature putting forward arguments thereof. Allcot and Ortega (2009) highlight how the decentralised nature of the FYA programme's management structure contributed to the positive outcomes observed. In particular, they mention the fact that these schools give head teachers more decision-making power in aspects such as teacher recruitment, which has resulted in them being able to influence the culture of their schools more effectively, with many schools able to instil a 'family feeling' by improving relationships between staff, parents and students. Osorio and Wodon's 2014 book also includes several examples of instances where FYA schools' autonomy and accountability structures improve their provision of educational services. The overarching aspect of these schools is the fact that their educational objectives and pedagogical model are guided by the "…relationship between five elements: context, experience, reflection, action, and evaluation. This paradigm defines the curricular and pedagogical orientation and supports the teaching-learning relationship in Jesuit education centres" (p. 39). As an international organisation, FYA affords the countries, regions and centres 'functional autonomy' within a central framework of principles and objectives. While schools comply with their respective country's educational regulations, they also enjoy significant levels of autonomy. Alcazar and Valdivia (2014) in this edited volume put forward several factors explaining the success of FYA schools in Peru, many of which have also been offered as factors explaining the success of these schools in other contexts. They include the following:

"These schools give head teachers more decision-making power in aspects such as teacher recruitment, which has resulted in them being able to influence the culture of their schools more effectively, with many schools able to instil a 'family feeling' by improving relationships between staff, parents and students

- A high degree of independence to generate and manage resources;
- The creation of a favourable institutional environment to provide a more holistic learning experience that goes beyond the classroom;
- Central office provision of tutoring, training and supervision to teachers as well as senior leadership;
- Independence with regard to teacher recruitment, with a particular emphasis on hiring those new teachers based not only on their observable characteristics, but also on the more unobservable ones, such as their attitudes and motivation;
- Offering similar salaries to those of public sector teachers, however with non-monetary incentives such as training, recognition, etc. forming an important part of the package;

- The active engagement of parents; and
- Effective pedagogic management.

Malik et al.'s 2015 study in Pakistan also notes that teachers in 'adopted' schools receive improved training and that interactions between parents and teachers are better in adopted than in un-adopted schools, while head teachers also appear to receive better management support in adopted schools as compared to their public school counterparts. Certain interventions such as the PfM model in Punjab and Sindh in Pakistan also introduce additional layers of management with the school-adopting organisation becoming involved in the final delivery of education. The involvement of organisations adopting a school results in the school becoming more empowered by giving them an amplified voice in bureaucracy, which allows them to articulate their schools' demands to local authorities. In certain situations this can be seen as a mechanism that compensates for the lack of voice of the communities. In a similar vein, the Economic Policy Research Centre report (2016) evaluating PEAS schools also flags the fact that PEAS schools have better functioning parent-teacher associations as a channel through which accountability in these school settings is improved. The report also cites teachers in PEAS schools reporting more constant internal and external monitoring than in non-PEAS schools. PEAS school leaders are also found to be better managers and leaders.

Box 1 below provides the case study example of CEC schools in Colombia and discusses different viewpoints on whether the Colombian charter school experience showcases improved accountability within the education system in the country.

Box 1
Case Study 1: Charter Schools — the Colombian Experience

The policy context: a government designed and driven initiative aimed at improving education quality

- Existing institutional arrangements left little room for the Department of Education of Bogota (SED) to coordinate the actions of a complex public education system in Bogota. With wages being determined through collective bargaining and with the SED having little ability to coordinate traditional public schools (TPS), the impetus was provided for the creation of CEC schools in the hope that this initiative would allow the SED to monitor and demand better educational quality by benefitting from the different incentives faced by private providers.
- This PPP arrangement was the largest programme of its kind initiated and implemented by a local administration in a developing country.

"This PPP arrangement was the largest programme of its kind initiated and implemented by a local administration in a developing country

- The programme ended up serving more than 40,000 pre-high school students and was aimed at improving educational quality.
- The government contracted out the administration of TPS to reputable, not-for-profit private schools and universities.
- Implemented in 2000 in Bogota in Colombia, this large-scale initiative involved the SED contracting out all the newly constructed public schools between 1999-2003 to private academic institutions on 15-year contracts. Ultimately this totalled 25 schools.
- The contracts were awarded through a bidding process based on superior academic results of the private institutions in the ICFES test (a high-stakes, multiple-subject, standardised test taken by a majority of students in their final year of high school and forming a key determinant of admission into higher education), the proposed profile of potential teachers and the yearly cost per student.
- All CEC schools were located in low-income areas where excess demand was at its highest and offered the same academic curriculum as public schools, with the SED allocating students rather than CEC schools being able to choose them.
- Expenditure per student in the CEC schools was the same as that in public schools (the equivalent of $500 per student for food, learning supplies and tuition).
- CEC schools were different from TPS in the following ways: CEC schools could recruit and remove teachers on a yearly contractual basis and this resulted in a higher teacher turnover; CEC schools, on average, had better school facilities as compared to TPS schools; and the former were subject to performance evaluations unlike TPS.
- This was the first policy in Colombia designed to hold public schools accountable for the learning outcomes of their students.
- A key differentiating factor in this PPP arrangement was that the bidding process was not open to all operators but limited to those who could demonstrate the high academic performance of their students.
- Both charter schools in the US and CEC schools are similar in that they are supported by public financing, cannot choose their students and are not subject to teacher collective bargaining. Unlike US charter schools, the CEC programme was not driven by the private sector but by the state.

The evidence: Did student outcomes improve? And for whom?

Pre-2009 evidence

- Two evaluations in Bogota: Sermiento et al. (2005) and Barrera-Osorio (2006).

- Sermiento et al. (2005) surveyed 22 CEC schools and 10 comparable TPS schools to find that the former have a better academic environment, more autonomy in relation to resource allocation and teacher management, and face higher accountability to the SED.

- Barrera-Osorio (2006) finds that CEC students display higher test score outcomes (1-2 more points) in ICFES relative to TPS students and also display lower drop-out rates.

- Given that these two evaluations were conducted early on in the programme and the fact that students graduating from CEC schools at these initial stages had spent most of their years of education in the public sector, any resultant estimates on the effects of the programme may not be truly reflective of the programme's efficacy.

- The evidence is also based on the use of cross-sectional data that limits the extent to which causality can be attributed.

Post-2009 evidence:

- Our study has found two papers, one of which evaluates student outcomes using econometric techniques and another using descriptive statistical analysis.

- Bonilla (2011): using econometric techniques, the author finds CEC students' scores are 0.6 and 0.25 standard deviations higher in maths and verbal test scores as compared to students in TPS schools.

- Termes et al. (2015): the authors find no statistically significant difference in academic outcomes between CEC and TPS students once controlling for full-day and socio-economic status.

Analysis

- The CEC programme has faced criticism both in terms of whether it has *actually achieved its desired outcomes* and in terms of its longevity and scalability.

- The requirement that only those private schools that meet minimum quality standards can be part of the bidding process *limits the extent to which the private sector can engage in this arrangement*. Barrera-Osorio (2006) questions the scalability of the programme, stating that it may be limited due to the fact it relies on high-quality private schools to manage public schools. As there is a limited number of such schools and even fewer that may actually participate in the programme, the potential for expansion is restricted.

> *"Accountability and competition mechanisms in operation in CEC schools did not have the intended effects and more specifically… the lack of competition in the bidding process affected the accountability faced by the providers*

- Others have also questioned *the competitive dynamics and resultant accountability* of this programme. Authors (Edwards and Hartley, undated; Edwards, DeMatthews and Hartley, undated; Edwards, 2014) suggest that the accountability and competition mechanisms in operation in CEC schools did not have the intended effects and, more specifically, that the lack of competition in the bidding process affected the accountability faced by the providers. Similarly, limited choice for parents undermined the competitive mechanism under which the competitive dynamics of most PPPs kick in.

- Edwards (2014) also notes that applicants were *uncertain about the nature of the programme* and whether it would continue, which therefore affected their willingness to participate.

- *Uncertainty regarding how accountability would be measured* has also been noted as a reason for the difference in theory versus practice in this programme (Edwards, 2014).

- Anecdotal evidence garnered from newspaper reports also suggests that because CEC schools only represent a very minimal percentage of educational institutions in the country, they are *not addressing the continuing problems within the public sector* and are only creating a separate model of schools that leaves the very worst schools behind. This criticism is also levelled by the anti-privatisation argument.

- There are also suggestions that to meet the test-based accountability requirements, some schools were *gaming the system* by reclassifying low-performing students as having special needs or imposing suspensions on them so that they do not bring down the average test scores of the schools.

- Other anecdotal accounts supporting this arrangement highlight the fact that these schools provide *technical training* from grade nine onwards that *prepares its graduates for the world of work.* In some instances, graduates of CEC schools have shown entrepreneurial spirit and set up their own businesses generating further employment.[15]

- Recent newspaper articles indicate that the government of Colombia is committed to expanding the CEC programme in the country.[16]

An expert's view on the CEC programme: A brief discussion with Harry Patrinos

"None of the anti-privatisation arguments hold. If anything, the CEC programme was a publicisation of education."

According to Harry Patrinos, an academic expert of this programme, there were several critical features of the CEC schools that set it apart:

[15] http://colombiareports.com/bogota-colombia-schools-education/
https://panampost.com/daniel-raisbeck/2014/04/10/colombias-free-schools-bring-self-reliance-entrepreneurship-to-bogotas-poorest/
[16] https://panampost.com/julian-villabona/2016/08/09/bogota-to-build-15-new-charter-schools/

1. The *contract design* under this arrangement was key: it ensured that schools met minimum quality levels and that this would be maintained, as with other terms of the contract, irrespective of changes within the government.

2. The programme *did not pose a threat* to any would-be opposers; for example, public schools would not face a reduced budget as a consequence of increasing funds to private institutions, there were no job losses in the cadre of public teachers and, while parents had increased choice, this threat of competition actually manifested itself in improving all education providers in the immediate vicinity within which parents could choose a school.

3. The *pre-selection of schools through a 'quality short-list' was actually a favourable condition* that helped ensure quality from the very beginning of the programme.

4. The clear conditions of the *built-in cost-controls* allowed this model to be set up and run in the most efficient manner.

With respects to the CEC programme, Harry Patrinos notes that the only rigorous evidence on the performance of these schools in Colombia is provided by the studies by Barrera-Osorio (2006) and Bonilla (2011). Their findings of a positive impact of this programme in the Colombian context rightly dominate. The sustainability of the programme has been evidenced by its longevity and its ability to survive changes in government and political parties. According to Patrinos, this is an example of a PPP that effectively promotes quality in low-income areas. More generally, he noted that while PPP arrangements are not a guarantee of success, they can provide a useful tool for meeting some of the conditions that are needed to reform education systems. He highlights the fact that education systems can achieve high returns on investment by ensuring that the right reforms are introduced to focus public investment on the poor and to ensure high quality learning. There are some specific ways this can be achieved and PPPs can play a role in each of these: by attracting good teachers, assessing students and schools, making the system accountable, providing autonomy to schools, paying attention to early childhood development and early reading, maintaining an awareness of culture, developing systems to measure current learning levels and set future targets through the provision of comprehensive information to stakeholders. He concludes that, in his view, more private activity is only possible if accompanied with fundamental changes in the public financing of schools.

More private activity is only possible if accompanied with fundamental changes in the public financing of schools

Efficiency and equity: better, but for whom?

Some of the key arguments surrounding PPP models are based on issues pertaining to equity and efficiency. Advocates of PPPs argue that the more efficient functioning of private schools through lower costs, increased competition and more productive and motivated teachers could benefit a public sector riddled with inefficiencies. Detractors argue that these types of models only exacerbate existing inequalities by giving more able or advantaged children access to better quality education at the cost of those more in need. However, it can be argued that with vouchers, the poor who could not afford private education before can go to private schools, which is arguably an improvement in equity. Moreover, if there is indeed a shortage of private schools (allowing them to cream skim students), there is also likely to be a supply-side response. When voucher schemes give guaranteed funding to 'recognised' schools, entrepreneurs are likely to come forward and open new schools and aim to get government recognition in order to take advantage of the new government subsidy in the form of the voucher. It is therefore maybe more appropriate to compare the equity situation under vouchers with the equity situation currently prevailing, and not compare it with an idealised perfect equity scenario of complete equality, i.e. the correct counterfactual is the current scenario, with which the equity effect of vouchers should be compared. Moreover, it is also useful to remember that, if the instrument of a PPP is used to achieve not only an efficiency goal but also expressly and consciously an equity goal, then particular types of PPP can deliberately be chosen; for example, Thomas Nechyba in the American Economic Review shows that a PPP designed with funding inversely proportional to family income should yield perfect equity, i.e. instead of the voucher value being one and the same for all eligible children, it is made inverse to family income, meaning the poorest children receive the highest amount, giving all children an equal chance to attend private school.

> *"It is therefore maybe more appropriate to compare the equity situation under vouchers with the equity situation currently prevailing, and not compare it with an idealised perfect equity scenario of complete equality*

On another note, Muralidharan and Sundararaman (2015) suggest that the main factor differentiating private schools from government schools in Andhra Pradesh in India is their substantially lower cost basis. This is due to their ability to employ teachers in the private sector for a sixth of the cost of public teachers without negatively impacting student outcomes. However, Termes et al. (2015) argue that CEC schools in Colombia, while enjoying a moderate level of school autonomy, are able to achieve higher levels of economic efficiency through poor teacher employment conditions. This, in turn, may explain why the CEC programme has not achieved its desired results, according to the authors. However, with regard to the FYA programme, the edited book by Osorio and Wodon (2014) suggests that these schools are able to reach the more disadvantaged and poor and provide them with a quality education. This is achieved, for example, through their being better able to adapt to local realities and creating a favourable institutional climate. In chapter seven of Osorio and Wodon (2014), Rivera notes that FYA's emergence in rural areas in Peru required them to adapt specifically and respond to local realities, and move explicitly away from the urban schools model they had been operating for some 30 years. This includes emphasising the development of skills for work and technical education, as well as including bilingual and multicultural education in other settings. As a result of this, the programme managed to reduce school drop-out and absenteeism rates,

improve teacher performance and develop materials that fit the needs of the rural community (p. 109).

However, there have been examples in the studies reviewed above that showcase instances where these arrangements are not always able to reach the poor or those in more remote locations (see discussion above). In particular, the ESC programme in the Philippines (World Bank, 2011) has faced many shortcomings in relation to equity. While the programme was initiated for poor but deserving students, actual ESC grantees tended to come from relatively well-off households, as grantees were expected to pay for any differences between the subsidy they receive and the fees charged by the schools, leaving poorer households unable to pay the difference. Additionally, the contract does not specify any performance criteria when it comes to targeting those most in need.

Achieving efficiency with equity requires the existence of a well-designed and well-structured PPP arrangement

Achieving efficiency with equity requires the existence of a well-designed and well-structured PPP arrangement. Another study examining the FAS programme in Pakistan[17] by Barrera-Osorio and Raju (2014) notes that the success of this programme in improving enrolment and better inputs is partly explained by the fact that the government subsidy was initially set at a low level to confine the programme's attractiveness to low-cost private schools and ease political pressures by ensuring the per-student subsidy was less than half the per-student expenditure in the public sector. Additional factors such as electronic transfer ensured timely and regular payments, which further enhanced the efficacy of this subsidy. Moreover, the modality of funding ensuring a monthly subsidy in direct proportion to enrolment incentivises schools to enrol additional students. Such accountability-based public subsidies can have large impacts on enrolment, numbers of teachers and other school inputs, as this study in Pakistan found.

Box 2 below also provides a case study example from the Ugandan context, showcasing specific design features and contextual factors that have affected the efficacy of the PPP programme there. In particular, the driving force behind the implementation of the Ugandan PPP programme was its primary goal of improving access to education. Therefore, while quality issues continually remain at the forefront of educational policy, a programme designed specifically to meet capacity demands should be judged on those parameters in the first instance. Evidence on this context has suggested that this programme was successful in improving capacity and it has been argued that by empowering a broader spectrum of parents to influence school matters, this policy has, to some extent, also led to a more equitable distribution of education (Barrera-Osorio et al., 2016).

[17] Not included in the 22 review studies, but provides interesting insights to help answer these questions nonetheless.

Box 2
Case Study 2: Per-Student Government Subsidy — the Ugandan Story

The policy context: a demand-driven PPP primarily aimed at improving access

The government of Uganda developed a PPP under which private schools were invited to apply to the Ministry of Education and pass certain quality standards in order to enrol

- To meet capacity demands resulting from the Universal Secondary Education (USE, 2007) programme, the government of Uganda developed a PPP under which private schools were invited to apply to the Ministry of Education and pass certain quality standards in order to enrol.
- To qualify, private schools needed to be registered and certified low-fee schools, i.e. charging less than 75,000 UGX, or USD 21.[18] These schools also needed to meet eligibility criteria in relation to infrastructure, staffing, governance, etc. While government schools were entitled to 41,000 UGX (approximately USD 11.7[19]) per term per student (including other transfers to schools such as teacher salaries), private schools were entitled to receive 47,000 UGX (USD 13.4[20]) per term on the condition that they did not charge any other non-boarding fees.
- Eligible schools received a per-student, per-term subsidy equivalent to USD 12.4[21] capitation grant, with the programme being phased into the entire school over the course of several years.
- PPP schools maintained the authority to choose the number of students who could enrol as well as determine admissions criteria. In addition to this, the school administrators continued to maintain authority in respect to budgeting.
- By 2010, more than 600 schools were implementing the programme. Since 2008 the PEAS network has also been operating 24 schools in partnership with the Government of Uganda.
- Regulation is known to be generally weak across the Ugandan school system due to government officials facing capacity constraints and tending to focus on primary education (Ark Education Partnerships Group, June 2016).
- PPP schools may be regulated very *slightly better*. All private schools must meet the basic requirements and minimum standards (BRMS) when they are set up.[22]

[18] Based on the exchange rate on 7-11-2016.
[19] As above (footnote 19).
[20] As above.
[21] As above.
[22] http://www.education.go.ug/files/downloads/Licensing%20and%20regGuidelines%202014%20latest%20version.doc

- These requirements are based largely on quality of inputs rather than teaching. In theory schools are then inspected every two years, again based largely on inputs, although this doesn't always happen in practice.

- PPP schools *may* be assessed against the BRMS when they join the programme, and may be inspected slightly more frequently as local government feels a greater connection with the school.

- Private schools inside and outside of the PPP operate under a very similar policy context in terms of curriculum flexibility, teacher contracting arrangements and governing boards.

The evidence: Did student outcomes improve? And for whom?

- The main evidence on this PPP arrangement is based on the study by Barrera-Osorio et al. (2016), which compared PPP schools to non-PPP private schools and found that test scores in mathematics, English and biology were approximately 0.2 standard deviations better than test scores for students in non-participating private schools. The scores were statistically significant for English and mathematics but not for biology. It was also found that these PPP schools were able to enrol more students, displayed better teacher attendance rates and were less likely to be shut down.

- Two other studies have examined a specific type of PPP — PEAS schools — and found that although PEAS students tend to be from more socially disadvantaged backgrounds and with worse prior learning outcomes, they presently perform as well as their counterparts in non-PEAS schools in English and mathematics. These schools are perceived to be more affordable than non-PEAS schools (EPRC, 2016). Crawfurd (2016) notes that the way a school is managed matters when it comes to its performance, with better management leading to improved student outcomes. The management score does not vary across school type in Uganda except for a small number of elite public schools and the PEAS schools, which score 1.1 points better than the average school in terms of management quality.

Analysis

- The main objective of this programme was to improve access and to allow children from lower-income households to access private education that they may not otherwise be able to afford. The evidence suggests that PPP schools are capable of absorbing USE students. In this regard, it can also be argued that increases in enrolment are illustrative of this programme having been successful in improving capacity and, some would argue, having provided a more equitable distribution of education by empowering a broader spectrum of parents to influence school matters (Barrera-Osorio et al., 2016).

- Given that PPP schools often tend to be located in rural areas and therefore may

not be the highest performing schools, the statistically significant findings of better outcomes in PPP schools is all the more encouraging of this type of arrangement.

- There is a clear difference in the financing of eligible private schools and government schools, with private schools receiving a larger per-student subsidy. This difference in financing could potentially explain the greater longevity of these schools, and the ability of more parents to send their children to these schools. Given that the major difference between PPP and non-PPP private schools is greater financing, it could be argued this extra funding is a potential driver of better outcomes in this case.

- Despite the prohibition that partner schools and/or government schools could not charge additional fees, parents still reported fees being paid to both government and private schools (Crawfurd, 2016).

- PPP schools are also seen to have a large number of teachers. A better teacher presence in PPP schools would suggest that they may be better managed and/or regulated as a result of joining the PPP.

- The results are also indicative of these schools utilising excess capacity, enabling them to operate at a scale that better utilises existing resources.

- Further work to analyse the causes of improved outcomes in the PPP in Uganda would be valuable, as would a comparison between government schools and their private and PPP counterparts. This might show whether PPP schools are a worthwhile investment compared to government schools, and allow an understanding of what drives this difference. For example, do PPP schools benefit from greater flexibility in their contractual relationships with teachers?

“The results are also indicative of these schools utilising excess capacity, enabling them to operate at a scale that better utilises existing resources

Inputs and resources: providing adequate means and tools

PPP schools may be able to provide students with an environment more conducive to learning through the provision of better inputs and facilities, such as more and better books, reduced class sizes, better infrastructure, etc. Termes et al. (2015) note that CEC schools are well known for being able to provide better facilities and material resources compared to their public school counterparts. Malik et al. (2015) also note that adopted schools in Punjab province in Pakistan have better facilities than un-adopted schools. On the other hand, the Economic Policy Research Centre Report (2016) on PEAS schools in Uganda notes that these schools have fewer teaching materials such as English and maths textbooks than non-PEAS schools.

However, the detailed study of FYA schools appears to suggest that factors in these school types leading to better performance are complex and not only related to the types of inputs or resources used, but also to the management of these resources and the implementation of innovative programmes. Allcot and Ortega in chapter two of Osorio and Wodon (2014) state

that in FYA schools, differences in financial inputs are not factors in explaining better student performance and that there are three specific organisational and cultural factors to which this better performance can be attributed: 1) decentralised decision-making, 2) labour flexibility and 3) the instillation of a 'family feeling' (p. 19). Barrera-Osorio and Raju (2014) note how a programme can be structured to influence investments in both the quantity as well as the quality of school inputs and resources directly. The FAS programme in Pakistan, for example, mandated infrastructure and learning environment conditions as well as requiring schools to invest in teaching tools and basic infrastructure to meet the demands of growing enrolments. This also included ensuring that student-teacher and student-classroom ratios were of a stipulated level.

Regulatory and legal environment: a scaffold for support and promotion

State policies can be facilitative or prohibitive towards non-state providers. For private and non-state providers to contribute to the overall quality of education effectively and in an equitable manner, these policies need to be complemented by interventions that leverage their resources efficiently (LaRocque and Lee, 2010). In order for a PPP programme to be effective, a policy and legal framework that positively endorses and fully supports it is required. Such a framework would allow both the government and private providers to pool abilities, capacities and resources as equal partners committed to the public provision of education through realistic goals (Malik et al., 2015). An example of this is provided in Pakistan, where policy infrastructure has been shown to support PfMs in one particular state (Sindh) and help facilitation of this programme. Unlike Sindh, however, PfMs in Punjab are shown to be viewed only as a means of expanding private provision and have been operating on a more ad hoc basis. This lack of a clear policy position has meant that there are no clear and transparent operational guidelines and this therefore hinders the effective functioning of this programme. There has also been a lack of identification strategies to find those schools and therefore those children in most need and to whom adoption should actually be offered. The sustainability of this programme has also been questioned, due to the fact that the non-state organisations adopting the state schools are more financially constrained, with many relying on philanthropic giving.

Another critical enabling factor necessary for the success of a PPP arrangement is an effective regulatory framework. In citing how the ESC programme in the Philippines functions, the World Bank (2011) study identifies shortcomings in the programme's regulatory framework that have hindered its implementation. System-wide weaknesses that arise due to the prevailing historical, social and political aspects within country contexts also often impact such arrangements.

Another critical enabling factor necessary for the success of a PPP arrangement is an effective regulatory framework

Studies have additionally identified the need for a healthy private education sector in order for PPPs to operate effectively. Governments are typically reluctant to recognise explicitly the role played by non-state and private providers, which results in an environment of suspicion that becomes a hindrance to effective design and implementation of PPP arrangements. Overly complex criteria for schools to become part of PPP arrangements, as well as inconsistent enforcement of regulations, weak legal frameworks, corruption and funding restrictions can

often hinder these programmes. A first step towards a healthy private education sector could involve providing legal recognition to private providers. Another could involve introducing well-designed policy frameworks aimed at promoting PPPs (LaRoque and Lee 2010). The extent to which risk-sharing actually occurs between the state and private providers can also be an important factor in determining the ultimate success or failure of any given programme (Termes et al., 2015). As mentioned earlier, a key mechanism through which PPPs are assumed to work is the increase of competition. However, in the case of CEC schools in Colombia, Termes et al. (2015) argue that several factors meant this did not materialise in reality, including, for example, the fact that very few private providers actually bid, which therefore limited the level of competition within the tendering process. This suggests that other attendant regulatory and financial circumstances were not attractive enough for a positive supply-response from the private schools. Boxes 3 and 5 below provide case study examples, with Box 3 showcasing PPPs in Pakistan from an experienced perspective and Box 5 providing an expert's opinion based on the Indian experience. Both case studies call for clear and transparent government policies for private partners as the necessary requirements for an environment that enables effective PPP arrangements.

Box 3
Case Study 3: Pakistani Experience with PPPs — a view from the experts[23]

By Baela Raza Jamil:

PPPs in education in Pakistan. Do they add value for learning outcomes?

The push for PPPs in education policy, sector plans and implementation in Pakistan has emerged over time as a counter narrative to sub-optimal public sector provision of services sans governance and adequate financing. PPPs in education, as in other sectors, is seen as a value-for-money proposition for meeting education strategic targets nationally (25 A or RTE) and globally (MDGs/SDGs/EFA). The emerging arguments fielded for blended approaches to public and private provision during the 1980s were that the money saved from a mix of private-public sector provision arrangements compared to purely public provision (as was the case prior to the 1972 nationalisation of education) would lead to enhanced choice for quality outcomes leading to both efficiencies and savings that could be ploughed back into public sector improvement (Jimenez and Tan, 1985 and 1987). For Pakistan and India, PPPs date back to 1854 and the first colonial policy on education, also known as the Wood's Despatch[24], that laid the ground for public policy on partnerships through grants in aid (Nasurallah and Naik, 1951). Grants in aid have continued well into the twenty-first century in the sub-continent in various forms; in Pakistan they

[23] Case study 3 is based on write-ups provided by Baela Raza Jamil, Rabea Malik and Faisal Bari.

[24] http://www.kkhsou.in/main/education/wood_despatch.html
Grant - in-aid system: The Wood's Despatch recommended the sanction of a grant-in-aid system in the Indian educational system. To educate the large number of people of India was a difficult task and so the grant-in-aid system was adopted by the government. Grants were given to those schools and colleges which satisfied the conditions given below:
a) The schools must provide secular education.
b) The school management should run the school well.
c) The school should agree to state inspection from time to time.
d) The schools should follow any rule prescribed by the government for the regulation of the grant.
e) The school must charge fees from the students.
Grants were given to the schools for increasing the teachers' salaries, construction of school buildings, granting scholarships to students, improving conditions of libraries, opening of science department etc.

were temporarily stopped in 1972 due to countrywide nationalisation. Grants in aid were resumed largely through the education foundations as semi-autonomous bodies formed in the 1990s and also directly through the departments and ministries to achieve UPE and EFA goals.

Since 2001/2 Pakistan has formally embraced PPPs as a public policy strategy under the Education Sector Reforms (ESR) Action Plan 2001-2005, with the aim of addressing both resource and management constraints by meeting targets through partnerships. The year 2010 was a landmark year for education and PPPs in Pakistan, in which, on the one hand, education was elevated as a fundamental constitutional right under Article 25a for all children aged five to 16 years of age, and, on the other, the provinces of Punjab and Sindh passed their provincial PPP Acts, which were largely infrastructure-focused. Subsequently both provinces issued new acts and amendments called the Punjab PPP Partnership Act 2014 and the Sindh PPP (Amendment) Act 2015 to include services beyond infrastructure across all sectors and providing a cover for the public financing of services through transparently procured partnerships.

This process of formalising PPPs in national and provincial laws, policies, sector plans and frameworks must be contextualised against the backdrop of a perforated education system that excludes many children across primary, middle and secondary levels. This is illustrated by low net enrolment rates (according to PSLMs 2014-15 this is 67 per cent at primary level; 37 per cent at middle; and 27 per cent at secondary/matric) and consistently low learning outcomes at grades three and five as recorded in country-wide citizen-led learning assessments or the Annual Status of Education Report (ASER, 2010-2015). Over the years emergent PPPs can be classified into various types in terms of 'who is the owner, manager and financier' of different service delivery models, with varying value propositions for learning outcomes and quality as well as access with equity.

The PPP typology in Pakistan

Type I: Here PPPs are initiated by the public sector or departments of education for their own locations or schools. They take the form of unsolicited proposals that are requested directly by the private sector, or where the public sector matches private sector entities with good will, but not open advertisements. Examples include cadet schools, grant-in-aid to public schools or targeted unsolicited partners negotiating grant-in-aid for school improvement. The financing model is mixed partly from grants-in-aid, partly from the private sector's own resources and user charges as well.

Type II: On public sector government-owned sites, PPPs are initiated by civil society and private groups who are keen to partner for school and learning improvement in underperforming public sector schools. These are unsolicited and negotiated with government on a case-by-case basis. For such schools the government rarely funds the venture but facilitates it with permissions to engage with and support specific partner schools. Financing for core salaries and other basic maintenance costs comes from public sector resources but all facilities support comes from philanthropy, CSR mobilisation and donor funds through CSOs or INGOs. In some cases these schools may well cross over

Figure 1: PPPs: Typologies of PPPs and Financing

Type I:	**Type III:**
On public sector government-owned sites and schools initiated by the education departments in provinces Financing: mixed; some government or user charges and fees. Governing body examples are cadet schools and public schools	Schemes under semi-autonomous bodies, Education Foundation programmes on private owners' sites and schools, and sometimes failed or underperforming public sector school sites managed by non-state partners. Financing: vouchers; subsidies per child for targeted schools and agreed outcomes or key performance indicators (KPIs)
Type II:	**Type IV:**
On public sector government-owned sites initiated by private sector philanthropy-CSR-CSOs through MoUs. Financing: public sector resources, supplemented by CSR, philanthropy and donors' funds through CSOs (Type II may well switch to Types I and IV)	Procured through PPPs or advertised under PPP Acts 2010 (Punjab and Sindh) Financing: majority public sector finance that may be topped up by private sector resources.

into Type I or Type IV, where the public sector begins to give them grant-in-aid through its core budgets. There are some cases of such crossovers as well.

Type III: PPPs are initiated by semi-autonomous bodies, specifically the Education Foundations, either to set up new schools with given targets or provide support to existing schools through low-cost school operators. The Education Foundations of late are also being given underperforming or failed public sector schools to be revived through private contractors through per-child vouchers or per-child cost programmes with clear key performing indicators (KPIs), targets and third party-assessed outcomes in terms of learning and the utilisation of funds.

Type IV: Pure PPPs advertised for specific services according to the need of the Education Department. The selected institution is awarded a procurement contract under the PPP Act/Law 2010/2014/15, particularly in Sindh and Punjab, where a competitive and transparent process is adopted, starting with an Expression of Interest (EOI) followed by a Request for Proposals (RFPs) to vetting RFPs through a special technical panel, pre-award assessment, the agreement of an award with given KPIs, and a disbursements schedule and monitoring. Here, the majority or almost 100 per cent of financing comes from the public sector, and some may come from private sector vendors. These types of procured partnerships are mobilised through the PPP Nodes/Cells/Units established under the Acts linked closely to the Finance and Planning and Development Departments.

The shifting position of Pakistan's public sector from being the sole provider, financier and manager, to a financier, enabler and regulator has created new spaces for citizens' initiatives to innovate formally as vendor through systematic and outcomes-based procurement regimes.

The Education Foundations[25] have clear charters/acts and rules of business for procuring services of non-state partners, which they have been doing efficiently by meeting all codal formalities of transparency and accountability with increasing budgets annually (in Sindh in the financial year 2016-2017 the budget of Rs. 7.5 billion was almost double that of the previous year). The clear message by provincial governments is to multiply outreach in education across sub-sectors by working with non-state vendors to address access, quality and equity, either in private schools or in under-performing or sub-optimal and closed public sector schools through the use of a per-child subsidy or voucher etc.

The new windows for PPPs now covered by law/acts of PPPs in Sindh and Punjab are the PPP Node and Cell respectively, set up explicitly to announce schemes for partnerships whereby merit-based transparent procurements are solicited from non-state partners to manage public sector entities or schools and other services. Both provinces have set up such units; however, Sindh is the first province to establish a PPP Node in its Education and Literacy Department specifically. The PPP Node has successfully procured the services of Education Management Organisations (EMOs) to manage newly constructed and existing schools in the public sector through a strict compliance regime vetted by all relevant authorities. Under this procurement all costs are duly covered by the government, including management costs. This path-breaking practice has just begun, with the first concession agreements signed in February 2016 and more planed for the coming years covered by a large-scale donor construction programme (SBEP-USAID) as well as existing government schools. These would clearly fall under the Type IV classification above.

In Punjab, the School Education Department (SED) in partnership with the Education Foundation is outsourcing low-performing and/or closed schools to the private sector through similar arrangements as in Sindh (1,000 schools partnered in 2016). This would fall under Type III classification with costing/finances given on a per-child subsidy/cost basis much lower than that of EMOs in Sindh. The PPP Cell located at the Planning and Development Department has yet to procure partners for education with complete coverage of financing as in the case of Sindh and the PPP Node.

Evidence of PPP Policies

What are the key elements of an effective PPP policy, and how can it ensure school operators have adequate autonomy while governments retain oversight with regards to commissioning, funding and regulation?

PPPs in education are covered under the National Education Policy (NEP) 2009 and more recently the Education Sector Plans (ESPs) for both provinces. There is no specific

[25] Punjab Education Foundation: www.pef.edu.pk ; Sindh Education Foundation: www.sef.edu.pk

stand-alone PPP policy for the sector; however, under each PPP Act in both Sindh and Punjab, PPP policy and rules[26] exist to cover all sectors as listed in the Acts.

The theoretical premise and principles of PPPs remain 'public money provided to a private partner for a service rendered with specific performance outcomes and risks shared by both parties'.

In the experience of PPPs under the Education Foundations and more recently with the Departments of Education covered by law, sufficient autonomy is given to operators so they can reach the outcomes and targets given, while the government or Education Foundation is expected to monitor, support and regulate through KPIs. The latter are formally made part of the concessions/agreements, and meeting them qualifies an operator for future support and financing.

This form of regulation based on performance or results-based financing is in place. However, this is still in the nascent stage. Regulatory regimes beyond that which is laid in the law, concession agreements and third-party validation for public money are still not in place. While the state moves from being the sole provider to financier and facilitator through PPPs, it has been reluctant to take on the role of a regulator of partnerships. There is a major concern in the public sector that creating multiple regulatory regimes in Pakistan when public sector performance itself remains low may lead to the choking of relationships and rent seeking layers of patronage of state and non-state partners. However, this perception may change as the number of partnerships procured by education departments fills the education landscape, financed by public money requiring public accountability and contemporary mechanisms of regulation that are both logical and enabling.

"The key elements of an effective PPP policy need clarity and transparency for all types of PPPs encouraged at various levels of schooling and beyond

The key elements of an effective PPP policy need clarity and transparency for all types of PPPs encouraged at various levels of schooling and beyond. To date the various options of PPPs are not completely understood by government officials, or perhaps there is a lack of clarity by design to allow 'discretionary' partnerships that have not met the rigours of compliance as expected in PPPs according to the law. It is clear that once the government enters into a formal agreement on procurement of services, then it must engage with regular, well laid-out monitoring rules to ensure that services are being delivered with clearly tracked results on public or private sector sites supported by public sector financing.

[26]Punjab: http://ppp.punjab.gov.pk/policy_act Sindh: http://www.pppunitsindh.gov.pk/

What kind of environment enables an effective PPP? What other structures need to be in place to ensure effective policy implementation?

The most critical aspect of an enabling environment for an effective PPP is the continuity of policies, systems and capacities for this evolving mode of providing education as a fundamental right under Article 25a of the Constitution of Pakistan.

Capacity building of public sector entities managing PPPs and ensuring the timely disbursement of funds are crucial for an effective PPP, as is private or non-state actors understanding public sector annual fiscal and planning calendars, culture and practices so they can meet milestones collaboratively.

Governance and decision-making arrangements are required that are sufficiently decentralised without major time lags and disruptions in the rhythm of implementation of successful PPPs. These governance or decision-making platforms must be readily available for mid-course corrections, both at the district and local (nearest to the school) level and also at the central level.

What are the ways in which educational PPPs have been shown to support improvements across an education system?

There are multiple dimensions that capture the PPP value addition in terms of an increase in enrolment, facility improvement, teacher training and innovations. While there has not been a rigorous research undertaking on the learning improvements that result from PPPs, two studies stand out. Amjad and McLeod (2012) and Wößmann (2005) both point towards the PPP advantage, especially in schools that demonstrate better learning outcomes when managed by the private sector through public sector financing modes. While the former looked at ASER Pakistan results in Urdu, Sindhi or Pushto, English and arithmetic by school type pitched at grade two and three level and learning outcomes from the household data, the latter study derived its findings from the PISA results of 29 participating OECD countries in capturing learning outcomes in reading, maths and science for 15 year olds.

However, Amjad and MacLeod (2012) do note that the outright learning advantage of schools managed and financed under PPPs gets diluted when controlled for private tuition or coaching, household income, mother's education and other factors beyond the obvious critical ones. While the better results of PPP-managed schools stand out for all subjects against public sector schools, other than Urdu they remain marginal when compared with private schools.

The conclusions of their study are worthy of reflection as we unpack PPPs in education: "What has become abundantly clear from this study is that there remains many questions about the efficacy and effectiveness of PPP school education as well as their interaction with an apparently effective private tuition industry and other influencing external factors. Of even more concern is that government school education remains mysteriously ineffective despite the now-massive investment that the Government of Pakistan has made in boosting teacher salaries. For policy-makers, there are no clear answers. Many

ideologues saw answers to the development of educational quality in the privatisation of education or in the development of PPP in education. This study demonstrates that PPP schools might be considered as a step forward but not the end of the line. There are not simple solutions and further research is required for better understanding the PPP schools system." (2012)

The typologies of the four types of PPPs by ownership, management and financing may expand further as the government begins to build its capacity to manage partnerships through a results-based regime ensuring predictability and consistency over time. Innovative partnerships can only flourish if there is autonomy with responsibility, evidence-based research leading to flexible mid-course corrections and well-established regimes for tracking outcomes, for which systems need to be fully in place with dedicated resources. The business case for PPPs needs further exploration for learning, equity and efficiency gains.

The apparently tremendous potential of PPPs in Pakistan's education sector can only be sustained through government effort and two-way partnerships that involve resource sharing between the public and private sector. Initiatives and reforms must be backed by concrete, timely and legally backed resource transfers as well as formal platforms for feedback, counselling and support for innovations to amend rules as needed for better and accountable outcomes.

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Box 4
Partnerships for Management in Education: Evidence from Punjab and Singh

by Rabea Malik and Faisal Bari

What are the political economy issues surrounding success and failure of the PPP programmes in Pakistan's context?

A variety of partnerships are being fielded in Pakistan, including vouchers for private schools, state subsidisation of low-fee private schools, and private management of state schools. The latter forms of partnerships for management hold, in our opinion, the most promise for turning struggling state sectors around in developing countries, as private partners support the state through capital and human resource investments to improve the management and infrastructure in government schools (i.e. the largest provider of education services with 60 per cent of enrolments). The potential of partnerships for management (PfMs) is held back in Pakistan by the state's limited recognition of their potential; a lack of enabling policy infrastructure; and a shortage of private- and community-level capacity for management.

The success of partnerships in our approach is defined in terms of enrolments, attendance rates and learning outcomes in the short to immediate term (two to five years), but also in terms of the strengthening of the state's capacity to deliver quality education in the long run. Sustainability should be a key parameter of public policy decision-making on this question. We define and assess sustainability in terms of the state's capacity to deliver services (i.e. operate and govern schools, and develop human resources in the

state's teaching and management force), and initiate, implement and monitor contracts with private actors (provincial and district-level education departments).

Evidence generated in our study demonstrates superior outcomes in schools taking part in even the most basic or restricted partnership for management schemes. The growth of Pakistan's partnerships for management has happened despite minimal support and arguably negative incentives offered by the state in terms of its interest in and willingness to work with motivated and qualified private actors. After more than a decade of operations, until recently, the government's policy infrastructure treated private partners as volunteers only, with limited recognised autonomy, while partnership rules were ad hoc and undocumented. Growth and expansion of the mechanism was limited by private capital raised by the partners themselves in the absence of the state's financial support. The state's understanding of the potential of PfMs has been restricted for a long time to infrastructural enhancement and upkeep. No surprise then that the scale and impact of partnership mechanisms has been limited.

The state machinery (or education bureaucracy, from the school education department, the finance department, planning and development department to the building works department) is geared towards building government schools, manning them and monitoring the state's staff. The machinery lacks capacity and flexibility of imagining, designing, steering and monitoring contracts with private actors for the management of government schools.[27] Additionally, both provincial governments have struggled to find reliable, high-capacity partners from the private sector.[28]

A number of these conditions have changed recently. Provincial legislatures in Punjab and Sindh have approved amendments to the Public Private Partnership Acts, which will allow the state to contract formally for private actors' services and channel finances to PfMs. The basic Education and Literacy Department in Sindh has pioneered mechanisms for legally binding agreements, as well as financing and monitoring mechanisms for partnerships for management. PfMs have been brought under the purview of the Education Foundation in Punjab, indicating the state's acknowledgement of the potential of these mechanisms and their formalisation of arrangements. Both provincial governments have included explicitly improved management and governance of state schools as objectives for partnerships.

Despite these positive developments, challenges remain: sustainability in terms of the state's capacity building is not a part of strategic policy thinking. Both the provinces are yet to articulate a credible exit strategy, which will in turn define concrete policy goals and the tracking of progress towards these goals.

[27] In Punjab, the education foundation mandated to oversee all partnerships was focusing entirely on private sector service delivery (subsidies for low fee private schools)

[28] In Punjab, there are perhaps fewer than 5 organizations with the credibility and demonstrable capacity and track record of adopting government schools. In Sindh, the partners are more in number but require capacity building for scale up.

Box 5
Case Study 4: Enabling Environment for an Effective PPP — A Case Study from India

by Geeta G. Kingdon

India has two dominant forms of public-private partnerships in education. Firstly, it has grant-in-aid schools, simply referred to as aided schools, which were inherited from the British at the time of Independence, and which cater to a substantial proportion of students at the middle and secondary education level. Secondly, India has recently converted every single private school into a PPP via its Right to Education Act 2009, which requires that every private school must give 25 per cent of its seats to designated children from poor and disadvantaged backgrounds, for which the government shall reimburse the private schools.

Unlike the British system that went through multiple reforms, over time the aided schools of India became ossified in the same state as at the time of Independence; indeed, the environment for their running became more hostile in the early 1970s when the aided schools' autonomy was seriously reduced through centralising legislation such as the Direct Payment Agreement of 1972 in Kerala and the Salary Disbursement Act of Uttar Pradesh in 1971, and in other states of India, which mandated that the salaries of aided school teachers would be paid directly into their bank accounts from the government treasury, rather than going as a grant to the private managers of their schools. This was counterthetical to effectiveness and increased accountability since it removed the need for teachers to be locally accountable to the private managements of their respective schools. It was little short of nationalising aided schools since aided school teachers are now recruited by the government's Education Public Service Commission, just like teachers of government schools, and aided schools are mandated to charge the same level of fee as that charged in government schools, i.e. nil. The loss of autonomy in important respects has ensured that the outcomes of aided school children are no better than those of children from government schools (Kingdon, 1996).[29]

Another aspect of an enabling environment is that there are incentives for efficiency built into the grant formula given by the government. In India, aided schools receive a block grant, i.e. a flat amount of government subsidy which de facto typically does not vary with changes in the number of enrolled students. There is anecdotal evidence that student enrolment in aided schools has fallen a lot over time (according to a 2009 World Bank survey, 85 per cent of aided schools reported having excess capacity), but the number of teachers appointed to a school typically remains unchanged, usually because teachers refuse to move to other schools as they are supported by powerful unions and by teacher politicians.

The second type of PPP in education in India is the new type created via the RTE Act 2009. To have an enabling environment for an effective PPP, at the very first level, the

[29] Most studies of the relative effectiveness of different types of schools in India compare private and public schools and leave out the third category of aided schools.

partnership must have the consent of the private partner. A counter-example is India's provision in its Right to Education Act 2009, which makes it legally binding for all private schools to give at least 25 per cent of their seats to children from designated economically weaker sections and disadvantaged groups, for which the government is required to reimburse them. This enactment was done without the prior consent of the private schools, many of which are trying to resist its implementation because the attendant policies are not conducive to their interests; for instance, although the Act prescribes the formula for the rate of reimbursement to be given to private schools for educating poor children, in actual fact, state governments are not reimbursing the legally correct amount, giving only a fraction of it. Moreover, there are many other problems with the implementation of several sections of the RTE Act in private schools; for example, the Act mandates that no child shall be denied admission in an extended period after the commencement of the school year, and even after the extended period, which has been interpreted by some state governments to mean that all private schools have to keep 25 per cent of their seats vacant throughout the year, just in case the district education authorities send some children for admission at a later part of the school year. Schools are reimbursed only if children are admitted, i.e. there is no reimbursement for keeping seats vacant, spawning resentment and avoidance behaviour on the part of the private schools. Furthermore, there have been delays of two to three years in the reimbursement of private schools for children educated under this 25 per cent provision. Many other rules about the application of the RTE Act on private schools are unclear and ambiguous, which undermines the effectiveness of this kind of forced PPP.

“The first part of an enabling environment for effective PPPs is to have clear and transparent policies for private partners, and to have a facilitative approach towards them, if they are to prove effective partnerships

The first part of an enabling environment for effective PPPs is to have clear and transparent policies for private partners, and to have a facilitative approach towards them, if they are to prove effective partnerships. It is also important to gain the cooperation of the partner by prior consent, rather than through legislative force. Moreover, it seems important that the government fulfils its part of any agreement, such as not reducing the financial grant or reimbursement compared to that stipulated in the partnership agreement, and to be fair by giving a penalty payment to private schools for losses suffered by them due to inordinately delayed payments.

4

Conclusions: Policy Implications and Pointers

This section of the report aims to provide key policy pointers that have emerged from the discussion above. It also highlights government stakeholders' and academic experts' opinions on what the key enabling and hindering factors have been from their first-hand knowledge of some of these programmes. Boxes A1 and A2 in Appendix 4 provide evidence from stakeholder interviews undertaken as part of primary qualitative data collection for this project. These findings summarise opinions taken from key stakeholders in Punjab and Sindh who have had first-hand experience of implementing PPPs in these contexts.

The key policy pointers arising from the review are as follows:

- *Building the evidence base.* This review has highlighted the need for further rigorous research in this area. While we have been able to present findings over a range of contexts and programmes, the evidence base is by no means sufficient to provide a strong weight of evidence for the research questions set forward in this review. To this end, it would be important as a starting point for country-level scoping exercises and analyses to be undertaken to identify more comprehensively the landscape of arrangements within a given context. There is also a need to undertake a political economy review in any given context to identify the extent to which PPP arrangements exist, as well the extent to which the government rhetoric and discourse in the legislation and policy framework recognises and facilitates given arrangements. These analyses must be complemented by rigorous evaluations of existing arrangements as well as ensuring that proposed initiatives incorporate evaluation from the design stages and not as an afterthought. This has been evidenced by the fact that despite there being a multitude of PPP

initiatives across the globe, there is no corresponding rigorous evaluation on many of these initiatives.

Capacity must be built on both sides, with governments improving their human resources engaged in developing and managing PPPs as well as non-state providers developing their skills to ensure high-quality and true-to-form service delivery

- *Capacity building within the government as well as within the private education sector.* Capacity must be built on both sides, with governments improving their human resources engaged in developing and managing PPPs as well as non-state providers developing their skills to ensure high-quality and true-to-form service delivery. Evidence from studies of contracts in Colombia shows that in order to be effective, the government must have the capacity required to carry out the accountability measures set forward in the contracts. Similar arguments are put forward by Malik et al. (2015) in the context of PfM schools in Pakistan, where they call for the need for formal mechanisms of evaluation and monitoring and a clearly articulated exit strategy that indicates the state's vision for how this effective policy tool can help achieve education goals. Effective PPP arrangements rest on a *fair, transparent and competitive bidding process* where all private organisations meeting the requirements posed by a given government are able and motivated to bid in a competitive manner. This includes setting clear objectives and streamlined criteria (Patrinos, 2009; Termes et al., 2015), *ensuring the surrounding educational climate is conducive to promoting PPPs.* For example, this may take the form whereby the government actively encourages a vibrant private sector and openly recognises the role of private providers. A shortage of quality operators who can participate in PPP programmes limits the ability of governments to use this as an effective policy tool. Additionally, defining the place of private providers in the national educational strategy as suggested by Patrinos (2009) will provide an enabling framework for successful PPP arrangements. One of the necessary conditions cited by some authors is the need for recognition by the state of the potential of partnership mechanisms to deliver on policy goals of equitable access and quality, and their potential to build the state's capacity for governance and service delivery. In particular, this may involve overcoming the resistance of governments to acknowledging a need for assistance. This acknowledgement also needs to be accompanied by the following: policy and legal frameworks that positively endorse and fully support PPPs; institutionalised access to the state for expanding the role of different arrangements, i.e. a publicly open, transparent and merit-based process of identification of civil society partners; legal recognition and protection of private partners, which will include a shift from voluntarism to shared responsibility; greater decision-making authority, i.e. financial and operational autonomy at the school level to ensure effectiveness in responding to local challenges and the clear definition of concrete targets and outcomes — immediate, intermediate and long term (Malik et al., 2015).

- *Ensuring accountability and the monitoring of educational service providers* to ensure the functioning of the education system is improved, including making sure *stakeholders are well informed* about the options available to them (parents) as well as the performance of the potential schools (government and parents) (Bonilla, 2014; Patrinos, 2016[30]).

[30] http://blogs.worldbank.org/education/six-ways-turn-education-spending-investments-high-returns.

Participants from the key stakeholder interviews conducted in Pakistan (see Appendix 4) cited the lack of responsibility of private school operators as a key factor that, in their opinion, has hindered PPPs in Pakistan. The fact they remain heavily dependent on government funding, as well as the government's inability to incentivise private schools chains in particular, or counter teacher resentment to privatisation, were cited as additional factors to the detriment of PPP arrangements in Punjab. Whenever the government was seen to take greater ownership and invest in planning and in the design and implementation of these arrangements, the stakeholders believed this benefited these arrangements positively.

Responsibilities must be clearly defined and PPPs will work well when the contributions of the non-state sector are recognised by the state

- *Ensuring that PPP contracts are well designed, with the roles and responsibilities of underlying players clearly outlined.* Responsibilities must be clearly defined and PPPs will work well when the contributions of the non-state sector are recognised by the state. In several opinion pieces in newspaper articles in India, Kingdon calls for the need for the government to adopt clear and transparent policies for private partners and to have a facilitative approach towards them if they are to prove effective partnerships. Including partners in a consultative manner would prove beneficial. Encouraging mutual trust, with governments fulfilling obligations once they have committed to them, is another crucial element of successful PPP arrangements (see for example Kingdon with regards India and Edwards, 2014 in Colombia).

- *Alleviating concerns of key stakeholders.* One particular challenge faced by PPP models is the risk of opposition from teacher unions when they perceive privatisation as a threat to their employment, but also when they think it will negatively affect their working conditions or force them to change their pedagogic practices. Studies that have shown successful PPP models appear to suggest that these arrangements do not pose a threat to existing structures and stakeholders (Patrinos, 2016), despite the fact that these models seem to encourage market incentives to remain the main motivator for those within PPP models (for example, as in the CEC arrangement in Colombia). *Agents of change within the political arena can provide the driving force in promoting policies and ensuring their sustainability.* Such agents of change can garner the support of stakeholders as well as ensuring programmes are introduced as per design. For example, within the Colombian context, the role played by Minister for Education Maria Fernanda Campo in the design and implementation of the CEC school model is perceived as being a critical catalyst. Future studies of PPP programmes could benefit from engaging with these agents of change and key stakeholders in order to understand better their incentives in choosing specific programmes when faced with a choice of viable options.[31]

- *There is little evidence that purely private provision will result in substantial learning gains across the entire education system.* There does not appear to be enough evidence that can conclusively and convincingly suggest that handing over education provision entirely to the private sector results in large enough gains across the entire system as the

[31] A comment emerging from a telephone conversation with Harry Patrinos.

relative performance advantages in the private sector have been based on existing and worryingly low levels of learning. Therefore, educational quality still remains a primary concern unless PPP arrangements are such that they require performance targets to be met and use specific mechanisms that target the participation of the most at-risk groups of children.[32]

[32] https://gemreportunesco.wordpress.com/2016/07/05/the-arguments-and-evidence-behind-public-private-partnerships-in-education/

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6

Appendices

Appendix 1: Inclusion and exclusion criteria

PICOST inclusion/exclusion criteria for defining studies (quantitative and qualitative)		
	Included	**Excluded**
Population	• Lesser-developed countries • Middle-income countries • Upper income countries • Upper middle income countries • Private or aided school children • Government schools • General schooling	• Transition economies • Tertiary schooling • Private- or aided-school children • Vocational and technical education
Intervention	• Public private partnerships such as vouchers, stipend programs, community initiatives etc.	• Any interventions that is not a result of public private partnership such provision of free books by government, teacher trainings etc.
Outcome	• Academic achievement tests (learning outcomes) • School enrolment, attendance, completion, transition	• Self-reported happiness, measures of well-being • Non-cognitive scores • Teacher quality (time on task, teacher motivation, competence, absence, skills, effort, qualifications, credentials, teacher test scores, etc.)

Appendix 2. Search strategy for electronic databases

Concepts and Search Terms

Five separate concepts are identified in order to construct the search strategy and manage the search terms. The main concept (that is, the main "input") here is public private partnerships (Interventions/Reforms) that leads to student outcomes. The search terms used are listed below.

Concept 1: Education (this ensures we only look at PPPs in the education sector)
Synonyms for education such as: education*, school(ing), learning, teaching, training, instruct*(ing/ion), academic, classroom, pupil, student, scholarship, literacy, tuition, pedagogy

Concept 2: Types of schools
Terms such as: private, NGO, non-government, non-state provider, civil society organisation, community, charity, voluntary, association, donor, philanthropic, independent, foundation, non-profit, charter, concession, contract, academies, assisted schools, state owned schools, government, public, for profit, low cost private, madrassah, non-state providers, independent schools, government-funded private schools, government-contracted private schools,

Concept 3: Types of initiatives
Public private partnership, PPP (s), voucher (s), school management initiative(s), philanthropic initiative(s), school capacity building initiative(s), community led initiative (s), adopt a school, concession(s), community participation project(s), school choice, school subsidy, educational stipend(s), educational grant(s), educational credit(s), financial assistance programme(s), education contract(s), private finance initiative(s), public funding

Concept 4: Student Outcomes — for this concept, the search terms are a mix of aspects of student outcomes and synonyms of "student" and "outcomes":

academic achievement(s), academic attainment, academic assessment(s), academic attendance, academic evaluation(s), academic enrolment, academic performance(s), academic progress, academic skill(s), academic test(s), academic test score(s) academic mark(s), academic result(s), academic retention, academic outcome(s)

child achievement(s), child attainment, child assessment(s), child attendance, child evaluation(s), child enrolment, child performance(s), child progress, child schooling, child skill(s), child test(s), child test score(s), child mark(s), child result(s), child retention, child outcome(s), classroom achievement(s), classroom attainment, classroom assessment(s), classroom attendance, classroom evaluation(s), classroom performance(s), classroom progress, classroom skill(s), classroom test(s), classroom test score(s), classroom mark(s), classroom result(s), classroom retention, classroom outcome(s), cognitive achievement(s), cognitive attainment, cognitive assessment(s), cognitive performance(s), cognitive progress, cognitive skill(s), cognitive test(s), cognitive test score(s), cognitive mark(s), cognitive result(s), cognitive retention, cognitive outcome(s), education achievement(s), education attainment, education assessment(s), education attendance, education evaluation(s), education enrolment, education performance(s), education progress, education test(s), education test score(s), education mark(s), education result(s), education retention, education outcome(s), learning achievement(s), learning attainment, learning assessment(s), learning performance(s), learning progress, learning skill(s), learning test(s), learning test score(s), learning mark(s), learning result(s), learning outcome(s), pupil achievement(s), pupil attainment, pupil assessment(s), pupil attendance,

pupil evaluation(s), pupil enrolment, pupil performance(s), pupil progress, pupil test(s), pupil test score(s), pupil mark(s), pupil result(s), pupil retention, pupil outcome(s), scholastic achievement(s), scholastic attainment, scholastic assessment(s), scholastic evaluation(s), scholastic performance(s), scholastic progress, scholastic skill(s), scholastic test(s), scholastic test score(s), scholastic mark(s), scholastic result(s), scholastic retention, scholastic outcome(s), student achievement(s), student attainment, student assessment(s), student attendance, student evaluation(s), student enrolment, student performance(s), student progress, student test(s), student test score(s), student mark(s), student result(s), student retention, student outcome(s), access, completion, transition (s), attendance, participation, enrolment (s), value add*, test score growth, literacy score (s)

Concept 5: Countries

Afghan* OR Armen* OR Bangladesh* OR Benin* OR Bhutan* OR Burkina Faso* OR Burund* OR Bolivia* OR Cambodia* OR Cameroon* OR Verde OR Cabo Verde* OR Central African Republic OR Chad* OR Comoros* OR Côte d'Ivoire OR Ivory Coast OR Djibouti* OR Eritrea* OR Ethiopia* OR Egypt* OR Georgia* OR Gambia* OR Ghan* OR Guinea OR Equatorial Guinea* OR Guatemal* OR Haiti* OR Hondura* OR Guyan* OR India* OR Indonesia* OR Kenya* OR Kiribati* OR Kyrgyz* OR Lao* OR Kosov* OR Lesotho OR Liberia* OR Madagasca* OR Malawi* OR Mali* OR Marshall Islands OR Mauritania* OR Micronesia* OR Moldova* OR Mongoli* OR Mozambi* OR Moroc* OR Nepal* OR Niger* OR Myanmar OR Pakistan* OR Papua New Guinea* OR Paraguay* OR Philippin* OR Rwanda* OR Samoa* OR São Tomé and Principe OR Senegal* OR Sierra Leon* OR Solomon Islands OR Somalia* OR Sudan* OR Swazi* OR Syria* OR Sri Lank* OR Tajik* OR Tanzania* OR Timor-Leste OR Togo* OR Tonga* OR Ukrain* OR Palestin* OR West Bank OR Gaza OR Turkmenistan* OR Tuvalu* OR Uganda* OR Uzbek* OR Vanuatu* OR Vietnam* OR Yemen* OR Zambia* OR Zimbabwe*OR Chile* OR Colombia* OR Brazil* OR Mexico* OR Peru* OR Algeria* OR Angola* OR Botswana* OR Burkina Faso* OR Burundi* OR Congo, Republic of the Congo* OR Gabon* OR Gambia* OR Ghana* OR Guinea OR Guinea-Bissau* OR Libya* OR Mauritius* OR Namibia* OR Niger* OR Nigeria* OR Seychelles* OR South Africa* OR South Sudan* OR Swaziland* OR Tunisia* OR Belize* OR Costa Rica* OR El Salvador* OR Guatemala* OR Honduras* OR Nicaragua* OR Panama* OR Argentina* OR Ecuador* OR French Guiana* OR Guyana* OR Suriname* OR Uruguay* OR Venezuela* OR ANTIGUA and Barbua* OR Dominica OR Dominican Republic* OR Grenada* OR Jamaica* OR St Lucia* OR St Vincent and the Grenadines* OR St Kitts and Nevis*

The search strings and strategy used to construct them within each database are detailed below.

Search Strings

EBSCO Host	
Database	**Search Strategy**
ERC	Concept 1 and concept 2 searches are run using the strings below, with date limitation for 1990 to 2015. They are then combined using "AND". This yields >800 hits. *Concept 1: Education* (this ensures we only look at PPPs in the education sector)

	Synonyms for education such as: education*, school(ing), learning, teaching, training, instruct*(ing/ion), academic, classroom, pupil, student, scholarship, literacy, tuition, pedagogy *Concept 2: Types of schools* Terms such as: private, NGO, non-government, non-state provider, civil society organisation, community, charity, voluntary, association, donor, philanthropic, independent, foundation, non-profit, charter, concession, contract, academies, assisted schools, state owned schools, government, public, for profit, low cost private, madrassah, non-state providers, independent schools, government-funded private schools, government-contracted private schools, Separate strings for concepts 3, 4, 5 are then run within the title/abstract/subject fields as follows. *Concept 3: Types of initiatives* Public private partnership, PPP (s), voucher (s), school management initiative(s), philanthropic initiative(s), school capacity building initiative(s), community led initiative (s), adopt a school, concession(s), community participation project(s), school choice, school subsidy, educational stipend(s), educational grant(s), educational credit(s), financial assistance programme(s), education contract(s), private finance initiative(s), public funding *Concept 4: Student Outcomes* — for this concept, the search terms are a mix of aspects of student outcomes and synonyms of "student" and "outcomes": academic achievement(s), academic attainment, academic assessment(s), academic attendance, academic evaluation(s), academic enrolment, academic performance(s), academic progress, academic skill(s), academic test(s), academic test score(s) academic mark(s), academic result(s), academic retention, academic outcome(s) child achievement(s), child attainment, child assessment(s), child attendance, child evaluation(s), child enrolment, child performance(s), child progress, child schooling, child skill(s), child test(s), child test score(s), child mark(s), child result(s), child retention, child outcome(s), classroom achievement(s), classroom attainment, classroom assessment(s), classroom attendance, classroom evaluation(s), classroom performance(s), classroom progress, classroom skill(s), classroom test(s), classroom test score(s), classroom mark(s), classroom result(s), classroom retention, classroom outcome(s), cognitive achievement(s), cognitive attainment, cognitive assessment(s), cognitive performance(s), cognitive progress, cognitive skill(s), cognitive test(s), cognitive test score(s), cognitive mark(s), cognitive result(s), cognitive retention, cognitive outcome(s), education achievement(s), education attainment, education assessment(s), education attendance, education evaluation(s), education enrolment, education performance(s), education progress, education test(s), education test score(s), education mark(s), education result(s), education retention, education outcome(s), learning

	achievement(s), learning attainment, learning assessment(s), learning performance(s), learning progress, learning skill(s), learning test(s), learning test score(s), learning mark(s), learning result(s), learning outcome(s), pupil achievement(s), pupil attainment, pupil assessment(s), pupil attendance, pupil evaluation(s), pupil enrolment, pupil performance(s), pupil progress, pupil test(s), pupil test score(s), pupil mark(s), pupil result(s), pupil retention, pupil outcome(s), scholastic achievement(s), scholastic attainment, scholastic assessment(s), scholastic evaluation(s), scholastic performance(s), scholastic progress, scholastic skill(s), scholastic test(s), scholastic test score(s), scholastic mark(s), scholastic result(s), scholastic retention, scholastic outcome(s), student achievement(s), student attainment, student assessment(s), student attendance, student evaluation(s), student enrolment, student performance(s), student progress, student test(s), student test score(s), student mark(s), student result(s), student retention, student outcome(s), access, completion, transition (s), attendance, participation, enrolment (s), value add*, test score growth, literacy score (s) *Concept 5: Countries* Afghan* OR Armen* OR Bangladesh* OR Benin* OR Bhutan* OR Burkina Faso* OR Burund* OR Bolivia* OR Cambodia* OR Cameroon* OR Verde OR Cabo Verde* OR Central African Republic OR Chad* OR Comoros* OR Côte d'Ivoire OR Ivory Coast OR Djibouti* OR Eritrea* OR Ethiopia* OR Egypt* OR Georgia* OR Gambia* OR Ghan* OR Guinea OR Equatorial Guinea* OR Guatemal* OR Haiti* OR Hondura* OR Guyan* OR India* OR Indonesia* OR Kenya* OR Kiribati* OR Kyrgyz* OR Lao* OR Kosov* OR Lesotho OR Liberia* OR Madagasca* OR Malawi* OR Mali* OR Marshall Islands OR Mauritania* OR Micronesia* OR Moldova* OR Mongoli* OR Mozambi* OR Moroc* OR Nepal* OR Niger* OR Myanmar OR Pakistan* OR Papua New Guinea* OR Paraguay* OR Philippin* OR Rwanda* OR Samoa* OR São Tomé and Principe OR Senegal* OR Sierra Leon* OR Solomon Islands OR Somalia* OR Sudan* OR Swazi* OR Syria* OR Sri Lank* OR Tajik* OR Tanzania* OR Timor-Leste OR Togo* OR Tonga* OR Ukrain* OR Palestin* OR West Bank OR Gaza OR Turkmenistan* OR Tuvalu* OR Uganda* OR Uzbek* OR Vanuatu* OR Vietnam* OR Yemen* OR Zambia* OR Zimbabwe*OR Chile* OR Colombia* OR Brazil* OR Mexico* OR Peru* OR Algeria* OR Angola* OR Botswana* OR Burkina Faso* OR Burundi* OR Congo, Republic of the Congo* OR Gabon* OR Gambia* OR Ghana* OR Guinea OR Guinea-Bissau* OR Libya* OR Mauritius* OR Namibia* OR Niger* OR Nigeria* OR Seychelles* OR South Africa* OR South Sudan* OR Swaziland* OR Tunisia* OR Belize* OR Costa Rica* OR El Salvador* OR Guatemala* OR Honduras* OR Nicaragua* OR Panama* OR Argentina* OR Ecuador* OR French Guiana* OR Guyana* OR Suriname* OR Uruguay* OR Venezuela* OR ANTIGUA and Barbua* OR Dominica OR Dominican Republic* OR Grenada* OR Jamaica* OR St Lucia* OR St Vincent and the Grenadines* OR St Kitts and Nevis* The final search string is then run using the following structure (C1 AND C2) AND (C3 OR C4 OR C5). This yields >1000 hits.

ECONLIT	The database "Econlit with Full Text" is used to search for literature from the period 2005-15. Concept 3 and concept 5 searches are run in title, subject and abstract field, with date limitations applied as below: *Concept 3: Types of initiatives* Public private partnership, PPP (s), voucher (s), school management initiative(s), philanthropic initiative(s), school capacity building initiative(s), community led initiative (s), adopt a school, concession(s), community participation project(s), school choice, school subsidy, educational stipend(s), educational grant(s), educational credit(s), financial assistance programme(s), education contract(s), private finance initiative(s), public funding *Concept 5: Countries* Afghan* OR Armen* OR Bangladesh* OR Benin* OR Bhutan* OR Burkina Faso* OR Burund* OR Bolivia* OR Cambodia* OR Cameroon* OR Verde OR Cabo Verde* OR Central African Republic OR Chad* OR Comoros* OR Côte d'Ivoire OR Ivory Coast OR Djibouti* OR Eritrea* OR Ethiopia* OR Egypt* OR Georgia* OR Gambia* OR Ghan* OR Guinea OR Equatorial Guinea* OR Guatemal* OR Haiti* OR Hondura* OR Guyan* OR India* OR Indonesia* OR Kenya* OR Kiribati* OR Kyrgyz* OR Lao* OR Kosov* OR Lesotho OR Liberia* OR Madagasca* OR Malawi* OR Mali* OR Marshall Islands OR Mauritania* OR Micronesia* OR Moldova* OR Mongoli* OR Mozambi* OR Moroc* OR Nepal* OR Niger* OR Myanmar OR Pakistan* OR Papua New Guinea* OR Paraguay* OR Philippin* OR Rwanda* OR Samoa* OR São Tomé and Principe OR Senegal* OR Sierra Leon* OR Solomon Islands OR Somalia* OR Sudan* OR Swazi* OR Syria* OR Sri Lank* OR Tajik* OR Tanzania* OR Timor-Leste OR Togo* OR Tonga* OR Ukrain* OR Palestin* OR West Bank OR Gaza OR Turkmenistan* OR Tuvalu* OR Uganda* OR Uzbek* OR Vanuatu* OR Vietnam* OR Yemen* OR Zambia* OR Zimbabwe*OR Chile* OR Colombia* OR Brazil* OR Mexico* OR Peru* OR Algeria* OR Angola* OR Botswana* OR Burkina Faso* OR Burundi* OR Congo, Republic of the Congo* OR Gabon* OR Gambia* OR Ghana* OR Guinea OR Guinea-Bissau* OR Libya* OR Mauritius* OR Namibia* OR Niger* OR Nigeria* OR Seychelles* OR South Africa* OR South Sudan* OR Swaziland* OR Tunisia* OR Belize* OR Costa Rica* OR El Salvador* OR Guatemala* OR Honduras* OR Nicaragua* OR Panama* OR Argentina* OR Ecuador* OR French Guiana* OR Guyana* OR Suriname* OR Uruguay* OR Venezuela* OR ANTIGUA and Barbua* OR Dominica OR Dominican Republic* OR Grenada* OR Jamaica* OR St Lucia* OR St Vincent and the Grenadines* OR St Kitts and Nevis* The following three concepts are then run individually in title, abstract and subject fields, with date limitations applied: *Concept 1: Education* Synonyms for education such as: education*, school(ing), learning, teaching, training, instruct*(ing/ion), academic, classroom, pupil, student, scholarship, literacy, tuition, pedagogy

Concept 2: Types of schools
Terms such as: private, NGO, non-government, non-state provider, civil society organisation, community, charity, voluntary, association, donor, philanthropic, independent, foundation, non-profit, charter, concession, contract, academies, assisted schools, state owned schools, government, public, for profit, low cost private, madrassah, non-state providers, independent schools, government-funded private schools, government-contracted private schools,

Concept 4: Student Outcomes — for this concept, the search terms are a mix of aspects of student outcomes and synonyms of "student" and "outcomes":

academic achievement(s), academic attainment, academic assessment(s), academic attendance, academic evaluation(s), academic enrolment, academic performance(s), academic progress, academic skill(s), academic test(s), academic test score(s) academic mark(s), academic result(s), academic retention, academic outcome(s)

child achievement(s), child attainment, child assessment(s), child attendance, child evaluation(s), child enrolment, child performance(s), child progress, child schooling, child skill(s), child test(s), child test score(s), child mark(s), child result(s), child retention, child outcome(s), classroom achievement(s), classroom attainment, classroom assessment(s), classroom attendance, classroom evaluation(s), classroom performance(s), classroom progress, classroom skill(s), classroom test(s), classroom test score(s), classroom mark(s), classroom result(s), classroom retention, classroom outcome(s), cognitive achievement(s), cognitive attainment, cognitive assessment(s), cognitive performance(s), cognitive progress, cognitive skill(s), cognitive test(s), cognitive test score(s), cognitive mark(s), cognitive result(s), cognitive retention, cognitive outcome(s), education achievement(s), education attainment, education assessment(s), education attendance, education evaluation(s), education enrolment, education performance(s), education progress, education test(s), education test score(s), education mark(s), education result(s), education retention, education outcome(s), learning achievement(s), learning attainment, learning assessment(s), learning performance(s), learning progress, learning skill(s), learning test(s), learning test score(s), learning mark(s), learning result(s), learning outcome(s), pupil achievement(s), pupil attainment, pupil assessment(s), pupil attendance, pupil evaluation(s), pupil enrolment, pupil performance(s), pupil progress, pupil test(s), pupil test score(s), pupil mark(s), pupil result(s), pupil retention, pupil outcome(s), scholastic achievement(s), scholastic attainment, scholastic assessment(s), scholastic evaluation(s), scholastic performance(s), scholastic progress, scholastic skill(s), scholastic test(s), scholastic test score(s), scholastic mark(s), scholastic result(s), scholastic retention, scholastic outcome(s), student achievement(s), student attainment, student assessment(s), student attendance, student evaluation(s), student enrolment, student performance(s), student progress, student test(s), student test score(s), student mark(s), student result(s), student retention, student outcome(s), access, completion, transition (s), attendance, participation,

	enrolment (s), value add*, test score growth, literacy score (s) All five strings are combined using (C3 AND C5) AND (C1 OR C2 OR C4). This yields 256 hits. Total hits from this database: 256
Proquest	
Database	**Search Strategy**
ASSIA	Concept 1 and concept 2 searches are run using the strings below, with date limitation for 1990 to 2015. They are then combined using "AND". This yields 122 hits. Similarly other concepts have been combined together with the structure (C2 and C3), (C3 and C4), (C3 and C5). This yield 681 hits. *Concept 1:* Education : education*, school(ing), learning, teaching, training, instruct*(ing/ion), academic, classroom, pupil, student, scholarship, literacy, tuition, pedagogy *Concept 2: Types of schools* Terms such as: private, NGO, non-government, non-state provider, civil society organisation, community, charity, voluntary, association, donor, philanthropic, independent, foundation, non-profit, charter, concession, contract, academies, assisted schools, state owned schools, government, public, for profit, low cost private, madrassah, non-state providers, independent schools, government-funded private schools, government-contracted private schools, Separate strings for concepts 3, 4, 5 are then run within the title/abstract/subject fields as follows. *Concept 3: Types of initiatives* Public private partnership, PPP (s), voucher (s), school management initiative(s), philanthropic initiative(s), school capacity building initiative(s), community led initiative (s), adopt a school, concession(s), community participation project(s), school choice, school subsidy, educational stipend(s), educational grant(s), educational credit(s), financial assistance programme(s), education contract(s), private finance initiative(s), public funding *Concept 4: Student Outcomes —* academic achievement(s), academic attainment, academic assessment(s), academic attendance, academic evaluation(s), academic enrolment, academic performance(s), academic progress, academic skill(s), academic test(s), academic test score(s) academic mark(s), academic result(s), academic retention, academic outcome(s child achievement(s), child attainment, child assessment(s), child attendance,

	child evaluation(s), child enrolment, child performance(s), child progress, child schooling, child skill(s), child test(s), child test score(s), child mark(s), child result(s), child retention, child outcome(s), classroom achievement(s), classroom attainment, classroom assessment(s), classroom attendance, classroom evaluation(s), classroom performance(s), classroom progress, classroom skill(s), classroom test(s), classroom test score(s), classroom mark(s), classroom result(s), classroom retention, classroom outcome(s), cognitive achievement(s), cognitive attainment, cognitive assessment(s), cognitive performance(s), cognitive progress, cognitive skill(s), cognitive test(s), cognitive test score(s), cognitive mark(s), cognitive result(s), cognitive retention, cognitive outcome(s), education achievement(s), education attainment, education assessment(s), education attendance, education evaluation(s), education enrolment, education performance(s), education progress, education test(s), education test score(s), education mark(s), education result(s), education retention, education outcome(s), learning achievement(s), learning attainment, learning assessment(s), learning performance(s), learning progress, learning skill(s), learning test(s), learning test score(s), learning mark(s), learning result(s), learning outcome(s), pupil achievement(s), pupil attainment, pupil assessment(s), pupil attendance, pupil evaluation(s), pupil enrolment, pupil performance(s), pupil progress, pupil test(s), pupil test score(s), pupil mark(s), pupil result(s), pupil retention, pupil outcome(s), scholastic achievement(s), scholastic attainment, scholastic assessment(s), scholastic evaluation(s), scholastic performance(s), scholastic progress, scholastic skill(s), scholastic test(s), scholastic test score(s), scholastic mark(s), scholastic result(s), scholastic retention, scholastic outcome(s), student achievement(s), student attainment, student assessment(s), student attendance, student evaluation(s), student enrolment, student performance(s), student progress, student test(s), student test score(s), student mark(s), student result(s), student retention, student outcome(s), access, completion, transition (s), attendance, participation, enrolment (s), value add*, test score growth, literacy score (s) *Concept 5: Countries* Afghan* OR Armen* OR Bangladesh* OR Benin* OR Bhutan* OR Burkina Faso* OR Burund* OR Bolivia* OR Cambodia* OR Cameroon* OR Verde OR Cabo Verde* OR Central African Republic OR Chad* OR Comoros* OR Côte d'Ivoire OR Ivory Coast OR Djibouti* OR Eritrea* OR Ethiopia* OR Egypt* OR Georgia* OR Gambia* OR Ghan* OR Guinea OR Equatorial Guinea* OR Guatemal* OR Haiti* OR Hondura* OR Guyan* OR India* OR Indonesia* OR Kenya* OR Kiribati* OR Kyrgyz* OR Lao* OR Kosov* OR Lesotho OR Liberia* OR Madagasca* OR Malawi* OR Mali* OR Marshall Islands OR Mauritania* OR Micronesia* OR Moldova* OR Mongoli* OR Mozambi* OR Moroc* OR Nepal* OR Niger* OR Myanmar OR Pakistan* OR Papua New Guinea* OR Paraguay* OR Philippin* OR Rwanda* OR Samoa* OR São Tomé and Principe OR Senegal* OR Sierra Leon* OR Solomon Islands OR Somalia* OR Sudan* OR Swazi* OR Syria* OR Sri Lank* OR Tajik* OR Tanzania* OR Timor-Leste OR Togo* OR Tonga* OR Ukrain* OR Palestin* OR West Bank OR Gaza OR Turkmenistan* OR Tuvalu* OR Uganda* OR Uzbek* OR

	Vanuatu* OR Vietnam* OR Yemen* OR Zambia* OR Zimbabwe*OR Chile* OR Colombia* OR Brazil* OR Mexico* OR Peru* OR Algeria* OR Angola* OR Botswana* OR Burkina Faso* OR Burundi* OR Congo, Republic of the Congo* OR Gabon* OR Gambia* OR Ghana* OR Guinea OR Guinea-Bissau* OR Libya* OR Mauritius* OR Namibia* OR Niger* OR Nigeria* OR Seychelles* OR South Africa* OR South Sudan* OR Swaziland* OR Tunisia* OR Belize* OR Costa Rica* OR El Salvador* OR Guatemala* OR Honduras* OR Nicaragua* OR Panama* OR Argentina* OR Ecuador* OR French Guiana* OR Guyana* OR Suriname* OR Uruguay* OR Venezuela* OR ANTIGUA and Barbua* OR Dominica OR Dominican Republic* OR Grenada* OR Jamaica* OR St Lucia* OR St Vincent and the Grenadines* OR St Kitts and Nevis*
Web of Knowledge	
Web of Knowledge	*Initial Search* Searches for concepts 3 and 5 were run using the topic field for each database. Searches were restricted by language (English) and by document type (Article OR Book Chapter). Here, searches within the databases "Social Sciences Index" and "Conference Proceedings Citation Index — Social Sciences & Humanities" (CPCI-SSH) are run together. The initial search strings are as follows *Concept 3:* Public private partnership, PPP (s), voucher (s), school management initiative(s), philanthropic initiative(s), school capacity building initiative(s), community led initiative (s), adopt a school, concession(s), community participation project(s), school choice, school subsidy, educational stipend(s), educational grant(s), educational credit(s), financial assistance programme(s), education contract(s), private finance initiative(s), public funding *Concept 5:* Afghan* OR Armen* OR Bangladesh* OR Benin* OR Bhutan* OR Burkina Faso* OR Burund* OR Bolivia* OR Cambodia* OR Cameroon* OR Verde OR Cabo Verde* OR Central African Republic OR Chad* OR Comoros* OR Côte d'Ivoire OR Ivory Coast OR Djibouti* OR Eritrea* OR Ethiopia* OR Egypt* OR Georgia* OR Gambia* OR Ghan* OR Guinea OR Equatorial Guinea* OR Guatemal* OR Haiti* OR Hondura* OR Guyan* OR India* OR Indonesia* OR Kenya* OR Kiribati* OR Kyrgyz* OR Lao* OR Kosov* OR Lesotho OR Liberia* OR Madagasca* OR Malawi* OR Mali* OR Marshall Islands OR Mauritania* OR Micronesia* OR Moldova* OR Mongoli* OR Mozambi* OR Moroc* OR Nepal* OR Niger* OR Myanmar OR Pakistan* OR Papua New Guinea* OR Paraguay* OR Philippin* OR Rwanda* OR Samoa* OR São Tomé and Principe OR Senegal* OR Sierra Leon* OR Solomon Islands OR Somalia* OR Sudan* OR Swazi* OR Syria* OR Sri Lank* OR Tajik* OR Tanzania* OR Timor-Leste OR Togo* OR Tonga* OR Ukrain* OR Palestin* OR West Bank OR Gaza OR Turkmenistan* OR Tuvalu* OR Uganda* OR Uzbek* OR Vanuatu* OR Vietnam* OR Yemen* OR Zambia* OR Zimbabwe*OR Chile*

	OR Colombia* OR Brazil* OR Mexico* OR Peru* OR Algeria* OR Angola* OR Botswana* OR Burkina Faso* OR Burundi* OR Congo, Republic of the Congo* OR Gabon* OR Gambia* OR Ghana* OR Guinea OR Guinea-Bissau* OR Libya* OR Mauritius* OR Namibia* OR Niger* OR Nigeria* OR Seychelles* OR South Africa* OR South Sudan* OR Swaziland* OR Tunisia* OR Belize* OR Costa Rica* OR El Salvador* OR Guatemala* OR Honduras* OR Nicaragua* OR Panama* OR Argentina* OR Ecuador* OR French Guiana* OR Guyana* OR Suriname* OR Uruguay* OR Venezuela* OR ANTIGUA and Barbua* OR Dominica OR Dominican Republic* OR Grenada* OR Jamaica* OR St Lucia* OR St Vincent and the Grenadines* OR St Kitts and Nevis* Indexes=SSCI, CPCI-SSH Timespan=1990-2015 This yielded 661 hits.
Other	
Database	**Search Strategy**
JSTOR	Since JSTOR is a non-bibliographic database and mainly a journal platform, it is not as well indexed as other databases available via the Proquest and EBSCOhost platforms. The database cannot cope with sophisticated search strategies that involve combining multiple concepts. Search strings have very limited character restrictions, allow for only four wild cards at a time. With all of these limitations, it was found that even a basic search using ALL concept-1 terms was not possible. In view of this, the decision was made to hand-search JSTOR, in order to be able to work within its limited functionality. This decision is reasonable, since many of the journals archived within JSTOR are also available via the databases being searched, via Proquest and EBSCOhost platforms. Therefore, an additional hand search of the JSTOR website further ensures that relevant literature is not missed. Multiple search strings were run for all the terms from concept 3 and concept 2. Only Item Title searches have been run. Since JSTOR only contains abstracts for 10 per cent of its journal articles, these have not been run. Full-text searches are far too broad, as the terms searched for appear anywhere in the article. This yielded an unmanageable number of hits. Searches were restricted to research in English, to content from within and outside JSTOR, and to Economics, Education, Social Sciences, Population Studies, Development Studies, Sociology, Psychology and Public Policy disciplines. No date restrictions were applied, and screening was limited to work from 1990 onwards. Search results were sorted by "relevance" and the first 100 titles were manually screened. If a relevant hit was found, this was manually uploaded to EPPI Reviewer. Total Hits: 7

SSRN	Each term within concept 3 is searched for individually as exact-phrase searches within quotation marks within the tiles + abstract +keywords field. These are not combined with other concepts due to the limited capacity of the database to interpret sophisticated search strings. Additionally, using terms from concept 3 only kept the search as broad as possible. Since RIS files were not supported to export citations, hits were manually screened on the website and relevant titles were uploaded to EPPI Reviewer. The following terms in concept 3 yielded 3 relevant hits: "public private partnerships" and "voucher". Total Hits: 53
Econ papers	We inserted search strings within the keywords and title fields and set to "search for phrase or word forms". A search of concept 1 alone yielded an unmanageable number of hits. Search strings have been constructed such that they combine concepts. For each set of terms within the parentheses, separate strings are run. These are then combined using the "combine" function at the bottom of the page. We inputted any quotation marks manually, as copy and paste will not replicate them. #CONCEPT 3, CONCEPT 4 AND CONCEPT 5 Public private partnership, PPP (s), voucher (s), school management initiative(s), philanthropic initiative(s), school capacity building initiative(s), community led initiative (s), adopt a school, concession(s), community participation project(s), child achievement(s), child attainment, child assessment(s), child attendance, child evaluation(s), child enrolment, child performance(s), child progress, child schooling, child skill(s), child test(s), child test score(s), child mark(s), child result(s), child retention, child outcome(s), classroom achievement(s), classroom attainment, classroom assessment(s), Afghan* OR Armen* OR Bangladesh* OR Benin* OR Bhutan* OR Burkina Faso* OR Burund* OR Bolivia* OR Cambodia* OR Cameroon* OR Verde OR Cabo Verde* OR Central African Republic OR Chad* OR Comoros* OR Côte d'Ivoire OR Ivory Coast OR Djibouti* OR Eritrea* OR Ethiopia* OR Egypt* OR Georgia* OR Gambia* OR Ghan* OR Guinea OR Equatorial Guinea* OR Guatemal* OR Haiti* OR Hondura* OR Guyan* OR India* OR Indonesia* OR Kenya* OR Kiribati* OR Kyrgyz* OR Lao* OR Kosov* OR Lesotho OR Liberia* OR Madagasca* OR Malawi* OR Mali* OR Marshall Islands OR Mauritania* OR Micronesia* OR Moldova* OR Mongoli* OR Mozambi* OR Moroc* OR Nepal* OR Niger* OR Myanmar OR Pakistan* #CONCEPT 2, CONCEPT 3 AND CONCEPT 5 private, NGO, non-government, non-state provider, civil society organisation, community, charity, voluntary, association, donor, philanthropic, independent, foundation, non-profit, charter, Public private partnership, PPP (s), voucher (s), school management initiative(s), philanthropic initiative(s), school capacity building initiative(s), community led initiative (s), adopt a school, concession(s), community participation project(s), school choice, school subsidy,

	educational stipend(s), educational grant(s), educational credit(s), financial assistance programme(s), education contract(s), private finance initiative(s), public funding, child achievement(s), child attainment, child assessment(s), child attendance, child evaluation(s), child enrolment, child performance(s), child progress, child schooling, child skill(s), child test(s), child test score(s), child mark(s), child result(s), child retention, child outcome(s), classroom achievement(s), classroom attainment, classroom assessment(s), classroom attendance, classroom evaluation(s), classroom performance(s), classroom progress, classroom skill(s), classroom test(s), classroom test score(s), classroom mark(s), classroom result(s), classroom retention. Total Number of hits = 105.
World Bank	Separate searches have been run for each individual term within concept 3. Search terms are automatically enclosed within quotation marks. Title searches are run separately in the following sections of the WB databases. Policy Research Working Papers Policy Research Reports World Bank Economic Review Titles (and, where possible, abstracts) from search hits had to be screened manually on the website and relevant hits were uploaded to EPPI Reviewer. The following terms within concept 3 yielded hits that were relevant and uploaded to EPPI Reviewer: Public private partnership, PPP (s), voucher (s), adopt a school, concession(s) Total number of hits = 14
DFID	Each term within each concept was searched for individually, as exact-phrase searches within brackets (..). These are not combined with other concepts due to the limited capacity of the database to interpret sophisticated search strings. The search strategy is, therefore, one of running each search term individually within the Words from Title search field. All documents type was searched. Total hits = 5
Google Scholar	Google Scholar allows only title and full-text searches. It does not allow abstract or keyword searches. Searching for individual phrases, or groups of phrases, in the full text, yields an overly large body of hits. Proximity searches and wild-card usage are not possible. Further, Google scholar truncates search strings after around 150 characters. So, given the truncation problem, it is not possible to combine concepts in order to reduce hits, as search strings that attempt to do so are cut off. Therefore, the only search strategy that yields an analysable number of results is to search within titles only, using the "with at least one of the words" field, with search terms from concept 2 only. Dates were restricted to 1990

	onwards, and publications to Education, Economics, Psychology, Sociology, Development Studies and Social Sciences titles. Also, since truncation does not allow us to run all of these phrases simultaneously, separate strings have been constructed according to their stems. Each of these strings is run separately for each discipline. Finally, the options "patents" and "citations" are unchecked, as the former refers to legal literature and the latter includes article citations, which are mainly duplicates. Finally, even though Scholar allows imports into Endnote, multiple imports are not supported, and a single RIS file cannot be generated. Screening has been undertaken on the website itself and relevant hits have been manually uploaded to EPPI Reviewer. In cases where more than 150 hits were yielded, the first 150 titles (and, where possible, abstracts, and full-text scans) were screened. An example search string is shown below. This is only displayed for the concept 2 terms with prefix public private partnerships due to space constraints. Similar strings were constructed for the rest of the terms in concept 3 All in title: "public private partnerships and non state providers" OR "public private partnerships and low cost schools" OR "public private partnerships and public schools" etc. Total number of relevant hits = 24
PERI Global	The website was searched manually for relevant report and publications. Total number of relevant hits = 20

Search databases used in the review

Platform	Database	Details
Databases for published papers and reports		
	ECONLIT - Economic Literature	EconLit with Full Text contains all of the indexing available in EconLit, plus full text for nearly 600 journals.
	ERC - Education Research	Provides indexing and abstracts for more than 2,100 journals, as well as full text for more than 1,200 journals.
PROQUEST	ASSIA - Applied Social Sciences Index and Abstracts	Health services, social work, sociology and psychology — journal articles.
	ProQuest Dissertations & Theses	Global

WEB OF KNOWLEDGE	CPCI-SSH	Conference Proceedings Citation Index - Social Science & Humanities
	WEB OF Science	All sciences and humanities
JSTOR	JSTOR	Social sciences
Databases for working papers and reports (grey literature)		
SSRN	SSRN	Social Science Research Network
REPEC	Econpapers	Research Papers in Economics
WORLD BANK	WORLD BANK	Working papers, reports (including DIME)
DFID	DFID	Research papers, reports
IDEAS	IDEAS	Research papers, reports
ISAPS	ISAPS	Working papers and reports
Peri Global	Peri Global	Research papers, reports
Additional sources for grey literature (for example, conferences), and grey literature itself, to be included by team members.		
Databases for Theses & Other		
GOOGLE SCHOLAR	GOOGLE SCHOLAR	
Hand Searching		
Hand Searching		This involves searching manually through references of shortlisted papers. This will need to continue even after full-text screening, as we will possibly need to locate additional papers from shortlisted bibliographies/references.

Appendix 3: Assessing the quality of evidence: Example form

Please refer to the DFID How To Note on Assessing the Strength of Evidence, February 2013, pp.10-13 for explanations of terms.

Principles of quality	Associated principles	YES/NO
Conceptual framing	Does the study acknowledge existing research?	
	Does the study construct a conceptual framework?	
	Does the study pose a research question?	
	Does the study outline a hypothesis?	
Openness and transparency	Does the study present or link to the raw data it analyses?	
	Does the author recognise limitations/weaknesses in their work?	

Appropriateness and rigour	Does the study identify a research design?	
	Does the study identify a research method?	
	Does the study demonstrate why the chosen design and method are good ways to explore the research question?	
Validity	Has the study demonstrated measurement validity?	
	Is the study internally valid?	
	Is the study externally valid?	
Reliability	Has the study demonstrated measurement reliability?	
	Has the study demonstrated that its selected analytical technique is reliable?	
Cogency	Does the author 'signpost' the reader throughout?	
	Are the conclusions clearly based on the study's results?	

(Source: DFID, 2013, How To Note on Assessing the Strength of Evidence, p.14.)

When you have completed the checklist in Table 2, use the following table to grade the quality of the study.

Table A.3

Study quality	Abbreviation	Definition
High	↑	Demonstrates adherence to principles of appropriateness/ rigour, validity and reliability; likely to demonstrate principles of conceptual framing, openness/transparency and cogency.
Moderate*	→	Some deficiencies in appropriateness/rigour, validity and/ or reliability, or difficulty in determining these; may or may not demonstrate principles of conceptual framing, openness/transparency and cogency.
Low	↓	Major and/or numerous deficiencies in appropriateness/ rigour, validity and reliability; may/may not demonstrate principles of conceptual framing, openness/transparency and cogency

(Source: DFID, 2013, How To Note on Assessing the Strength of Evidence., p.15.)

When you have completed the checklist in Table 2, use the following table to grade the quality of the study.

Appendix 4: Conversations with key participants in Pakistan

Box A1: Public Private Partnerships, Conversation with Representative from Punjab Education Foundation and Reform Support Unit (June 20, 2016)

Participants were senior officials based at the Budgeting and Planning, School Education Department Punjab and at the PPP Cell, Planning & Development Department Punjab

Question 1: What, in your opinion, was the original rationale in Pakistan for different PPPs in education? Where did the push come from? (Political? Donor driven?)

One participant suggested that whilst in the first instance PPPs were a more donor driven initiative, now they tend to be more demand-driven due to the government being unable to access all areas but in particular the poorer districts. The participant stated: 'Access is a huge challenge which has forced the government to move towards partnerships for better outreach.' Another highlighted the poor quality of government schools with learning at especially low levels. The way forward to improve the quality of education in all districts was through PPPs with the aim of school chains coming forward to join hands and raise the bar of government schools. Participant acknowledged the need for revenue/incentives to motivate these providers to reach the districts where government schools were not present. Teacher opposition to privatisation is highlighted as one of the challenges faced by the government.

Question 2: What, in your opinion, has been the impact of PPPs for education on quality of education especially for poorer and more disadvantaged children?

Regular monitoring, continuous feedback, attendance reports and assessments that form the accountability framework were cited by participants as factors that have improved the performance of PPP schools. The participant also felt definitely that these schools have had a positive impact on the quality of education due to the fact that they operate in rural areas where the poorest and most disadvantaged children reside. Such monitoring frameworks have simply not existed within traditional public schools. However, in recent years, provincial education departments have started collecting information on learning outcomes, teacher attendance etc. through their district coordinators (albeit only in Sindh and Punjab) and this could help establish an accountability framework within the public sector.

Question 3: In your opinion, have PPPs changed school autonomy and government accountability?

Participants agreed that PPPs have changed autonomy as well as accountability with PPP models giving schools autonomy on decision-making but also making them answerable to the government to ensure that these decisions are on fair grounds. The quality of teaching was also highlighted as a reason why schools are not improving.

However, this participant felt that under PPPs schools would be able to organise their own training as well as make decisions monitored by the government allowing them to hire and fire teachers who they do not feel are up to the mark. One of the main reasons for the differences between PPP and traditional public schools lies in their recruitment of teachers. The hiring and recruitment of teachers in traditional public schools continues to be done by the government with teachers in these schools offered 'jobs for life'. The virtual 'unsackable' permanent teachers are very different from those hired within the private (and PPP schools) where teachers can be fired if they are not seen to exert sufficient effort. This has resulted in greater autonomy in these schools.

Question 4: In your view what are the key success factors or reasons for failures of PPP policies in Pakistan?

Participants cited the lack of responsibility of private school operators, that they remain heavily dependent on government funding, a lack of government ability to incentivise private schools chains in particular or counter teacher resentment to privatisation as key factors that have hindered PPP policies in Punjab. However, according to participants, success factors include the government taking greater ownership and having invested more and planning to invest even more in the design and implantation of these arrangements. This is due to increased interest on part of the government that the PPP policy is being implemented in Sindh. The Punjab government is also working on replicating the same model.

Question 5: What are your views on the recent selection process adopted by the government for private school operators to take up government schools?

The participants expressed the view that whilst the selection process was open and fair, many organisations, especially large chain providers, did not take part in the bidding process as appropriate incentives had not been offered to do so. Other participants questioned the motives of operators who did come forward with the hope that they would deliver and perform in the future. Many civil society organizations, small private school chains ended up getting more schools and participants expressed that primarily their intention is more towards profit generation instead of improving the overall quality.

Question 6: What is the duration of the contract, how can the contract be terminated and how is it decided whether a contract is renewed or terminated? Has this policy changed over time?

The participants suggested that the contracts would be on a yearly basis with performance targets related to enrolment and learning levels and schools subject to a one year notice period should they fail to meet these targets. The contracts are not yet developed in Punjab as PPP Cell is still working on launching the policy formally.

Question 7: To what extent do PPP schools have flexibility around management practices, curriculum, and teacher recruitment in comparison with traditional public schools? In your opinion, are these flexibilities key drivers of educational improvements?

The participants were of the view that the essence of PPPs is to have more flexibility. However they were of the view that the exact parameters of this are currently under review.

Question 8: What other structures need to be in place to ensure effective PPP policy implementation?

Participants stated that investment in such arrangements must be from both sides. They state that currently only the government are investing and they, in turn, are dependent upon foreign aid. One challenge that needs to be met according to this participant is for investment to be required from private operators and for them to also work on sustainability of these programmes. Another participant highlighted the importance of confidence building amongst government teachers who feel threatened by privatisation and view it as a threat to their own employment.

Question 9: In your view what are the ways in which PPPs for education have been shown to support improvements across Pakistan's education system?

The participants supported the view that PPPs have provided access to education in areas where the government has failed and have led to an increase in enrolment in Punjab as a result. It is interesting to note that none of the participants mentioned improvements in quality as a positive outcome of PPPs within this context.

Box A2: Public Private Partnerships, Conversation with Representative from Sindh Education Foundation (June 29th, 2016)

Participant is a senior official based at the Sindh Education Foundation.

Question 1: What, in your opinion, was the original rationale in Pakistan for different PPPs in education? Where did the push come from? (Political? Donor driven?)

This participant also reiterated the fact that initially the push for PPPs was donor driven with it subsequently becoming demand/needs driven. The participant also highlighted the fact that PPPs were introduced to inculcate a sense of ownership lacking in government schools by involving parents and the local community.

Question 2: What, in your opinion, has been the impact of PPPs for education on quality of education especially for poorer and more disadvantaged children?

The participant categorically stated that in his opinion the quality of education has definitely improved through community involvement under PPPs as a result of improved monitoring. The participant also put forward the argument that the increased

competitive environment encouraged and motivated students, teachers, schools and school management committees (SMCs). According to this participant, educational quality has also improved through technical support provided as part of the programme as well an emphasis on teacher capacity building and improvements in teaching techniques. However, a challenge put forward was that this led to an increased teacher turnover due to teachers leaving for better opportunities. In particular, the participant highlighted the important role played by monitoring tools and mechanisms that have resulted in improvements in quality. In particular, internal assessments as well as third party assessments were highlighted as key. According to this participant, PPPs have improved education for the poor and disadvantaged but in particular for girls as in addition to quality they aimed at improving access by developing local level ownership. For example, where government schools were closed, community teachers, parents and children worked together to get schools functioning. Many civil society organizations have played their role in creating accountability and ownership at local level by mobilizing stakeholders and sharing information with them.

Question 3: In your opinion, have PPPs changed school autonomy and government accountability?

The participant stated that in the Adopt a School model, the responsibility lies with the operator while the authority lies with the government but there is no balance so in his opinion this is not a very effective form of PPP in Sindh. In other models, this is done more effectively as autonomy is transferred to the local level and the government doesn't get involved with micro management and only provide technical support (Books, subsidy etc.), take assessments, help in developing the school development plan and taking regular follow-ups while the rest of the management involving hiring, firing, holidays, community conflict resolution etc. lies with the operators.

Question 4: In your view what are the key success factors or reasons for failures of PPP policies in Pakistan?

The participant cited community ownership as benefiting the sustainability of schools as it has been observed that even if funding finishes, these schools keep on operating on minimal fees. However, the participant also noted the misuse of money as a failing within the system.

Question 5: What is your view on the recent selection process adopted by the government for private school operators to take up government schools?

The participant held the view that this was a rigorous process involving an expression of interest and application from the entity wishing to take up the schools followed by formal interviews undertaken by a panel of individuals from SEF and is chaired by the Managing Director. He viewed the interview process as an extensive exercise in which the academic profile as well as the psychological profile of the operator was evaluated. It was mentioned that this typically involved gauging the motivation of the provider to participate in this arrangement as well as discussing their goals and objectives etc. in participating in this arrangement. Aspects such as operator's reason behind applying,

qualification, knowledge about the education system, and vision etc. were also assessed.

Question 6: What is the duration of the contract, how can the contract be terminated and how is it decided whether a contract is renewed or terminated? Has this policy changed over time?

The participant stated that the contracts were yearly, renewable on the basis of performance with guidelines and targets relating to infrastructure, teaching and enrolment. Schools would be given an opportunity to improve as well as an issuance of a second warning for failure to improve after which contracts would be terminated. The participant stated that the policy has changed over time and become more rigorous with operators now requiring the minimum qualification of a Master's degree to qualify.

Question 7: To what extent do PPP schools have flexibility around management practices, curriculum, teacher recruitment in comparison with traditional public schools? In your opinion, are these flexibilities key drivers

The participant stated that schools are given the flexibility to micro manage the running of the school and the government does not interfere in that but only provides technical support and third party monitoring to check performance. In this participant's opinion this flexibility allows the local community to have a say in how the management is being done which leads to a sense of ownership which he believes is the key driving force for PPPs.

Question 8: What is your opinion about the following with respect to PPP policies: Regulation: what is the current accountability and regulatory system for schools? Has this had to change since the introduction of PPP schools? Data: how does the education system collect data about school characteristics and performance? Has this had to change since the introduction of PPP schools? Political economy: what are the power dynamics governing the introduction, regulation of PPP schools?

According to this participant, the regulation has become more rigorous through increased monitoring tools, data is collected through different paradigms including reporting involving pictorial evidence, principal signatures, and assessments. Data is also tracked with previous data to see if any drastic changes have taken place that are an anomaly. SEF pays the subsidy based on 3 indicators: Children Profiles, Head count and assessments. SEF visits quarterly to not only check this data but also to provide technical support, class room management and to assess operator attitude towards the teachers. Each party plays a defined role that is mutually decided through meetings. The operator is responsible for managing the school, SEF plays the role of the implementer, the government plays the supervisory role and the donor does the desk management.

Question 9: What other structures need to be in place to ensure effective PPP policy implementation?

According to this participant, all the schools should be given full autonomy to manage

their own affairs including the hiring and firing of staff. 'This will lead to all schools that are closed to being functional. There are currently 49,000 government schools of which 65% are closed. The entire system is politicized right now, the government teachers are doing dual jobs, not doing their duty so unless the education department becomes an independent body like in Bhutto's time or like universities, the system will not work effectively.' In addition to this, the participant called for more strict penalties for ghost teachers.

Question 10: In your view what are the ways in which PPPs for education have been shown to support improvements across Pakistan's education system?

The participant was of the opinion that PPPs have improved enrolment and continuation numbers as well as reducing dropouts. Some schools that started as one-room schools have now evolved into larger schools through better resource management. There has also been an improvement in some localities where PPP schools have led to improved socioeconomic conditions as a result of the employment opportunities they offer to the locals. The participant suggested:

'Every impossible becomes possible. It helped in inclusion especially for girls as those girls who didn't go to schools, not only do they start attending school but also finish studies and go on to teach in the same schools.'

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