

Case Report

Public-private partnerships for school infrastructure development: International review and recommendations for Saudi Arabia

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CITATION

Biygautane M, Clegg S. (2024).
Public-private partnerships for school infrastructure development: International review and recommendations for Saudi Arabia. *Journal of Infrastructure, Policy and Development*. 8(6): 3672.
<https://doi.org/10.24294/jipd.v8i6.3672>

ARTICLE INFO

Received: 14 December 2023

Accepted: 29 January 2024

Available online: 14 June 2024

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Abstract: As Saudi Arabia embarks upon a transformative economic journey under the umbrella of its Vision 2030 and National Transformation Plan, the Saudi government plans to implement various initiatives to engage the private sector in meeting new national development goals, including the provision of 1600 schools through the public-private partnership (PPP) route. This article provides an international outlook and review of the use of PPPs to deliver school infrastructure and analyzes Saudi Arabia's potential to implement this promising program. Effective use of the PPP model can guarantee the timely provision of schools and other infrastructure projects that could fulfill the vision of Saudi Arabia's political leadership, potentially serving as a catalyst and blueprint for other Gulf states. The case study argues that, while Saudi Arabia's schools' program enjoys significant political support, its government needs simultaneously to pursue the parallel objective of developing the necessary institutional, legal, regulatory, and supervisory frameworks essential for successful PPP projects globally. The article concludes with recommendations to mitigate existing challenges and foster the involvement of the private sector in education sector development.

Keywords: public-private partnerships; schools infrastructure development; Saudi Arabia; international review

1. Introduction

Public-private partnerships (PPPs) are no longer adopted exclusively to deliver economic infrastructure projects, such as airports, tunnels, and roads. A report by the World Bank (2009) argued that PPPs have the potential to incorporate innovative ways of improving services related to education, economic development, healthcare, and social work through a business model guaranteeing access to such services at an affordable price, while simultaneously delivering them with high efficiency. Since then, governments worldwide have gradually set up regulatory and legal frameworks and policies that would allow PPPs to operate effectively as an integral part of their service delivery.

In Saudi Arabia, the last fifty years have witnessed impressive developments in many areas, with the country managing to catch up with and, in some cases, even exceed the developed world in many global human development rankings. When it comes to offering infrastructure and public goods, the Saudi government has been the primary provider since it discovered oil and gas. The rudiments of a modern state, ranging from buildings, roads, and airports to investments in human capital, all had to be constructed from scratch. Moreover, as part of its social contract and distribution of oil revenues, the government provided free education and social benefits to all its

citizens, which necessitated the government playing a leading role in financing the substantial investments required by such projects.

Over the last few years, this system has started to change. First, several events have stressed its budget's capacity for public spending. Saudi Arabia has realized that uncertainty over fluctuating oil profits, combined with the fluctuation of global oil prices, all necessitate new financing strategies that match global best practices. The Saudi government recognizes that the involvement of the private sector in providing infrastructure and other social services is essential if it wishes to reduce financial strain on its exchequer. Second, taking a cue from Western nations in implementing New Public Management (NPM) practices within the public sector, governments' attitudes toward public spending are changing.

NPM popularized new service delivery methods assuming many forms, including policies such as contracting out, privatization and the use of PPPs, which Saudi Arabia has adopted to varying degrees over recent few years. Furthermore, Saudi Arabia has become determined to minimize reliance on natural resources of oil and gas while using their revenues to found an economically competitive market providing services previously delivered by the public sector. Saudi Arabia is investing heavily in sectors that will help establish a knowledge economy's rudimentary basis for the inevitable day when fossil fuels are either exhausted or superseded.

We provide an international review of the performance of PPPs as a vehicle for delivering school infrastructure and other educational services. Saudi Arabia's readiness to adopt PPPs as the policy of choice for its ambitious plan to build 1600 schools is highlighted. The PPP model can potentially provide schools on time and within budget, thereby attaining the vision of Saudi Arabia's political leadership. Such a model could serve as a catalyst and blueprint for other Gulf states wishing to follow Saudi Arabia's example. Reflecting upon the Saudi context, this article argues that, while Saudi Arabia's school program enjoys significant political support and boasts ambitious plans for the sustainable growth of Saudi Arabia, the country has yet to develop the necessary institutional, legal and regulatory, and supervisory frameworks that serve as the essential foundations for any successful PPP project. While numerous PPP projects have been conducted in Saudi Arabia in the past, they were implemented on an ad hoc basis with varying contractual arrangements and results.

2. Theoretical frameworks

2.1. Meaning(s) of PPPs

This section discusses the arguments and debates surrounding PPPs as a concept and highlights theoretical discussions concerning the meanings and pros and cons of PPPs.

PPPs extend the NPM agenda of incorporating the managerial skills of the private sector for the provision of public services (Broadbent and Laughlin, 2003). Promising better value for money and the ability to do more with less, PPPs have become a common strand of contemporary public policy. They promise efficiency in funding public infrastructure services through appropriately allocating risks, rewards, and responsibilities (Teicher et al., 2006). PPPs describe relationships through which government collaborates with the private sector to finance, design, deliver, and

maintain infrastructure services. Commonly used definitions for PPPs are:

- “an arrangement between two or more parties who have agreed to work cooperatively toward shared and/or compatible objectives and in which there is shared authority and responsibility; joint investment of resources; shared liability or risk-taking; and ideally mutual benefits” (European Commission, 2003, p. 16);
- “a cooperative venture between the public and private sectors, built on the expertise of each partner, that best meets clearly defined public needs through the appropriate allocation of resources, risks and rewards” (Canadian Council for PPPs, 2022); and
- “long-term contract between a private party and a government entity, for providing a public asset or service, in which the private party bears significant risk and management responsibility and remuneration is linked to performance” (PPP Knowledge Lab, 2022).

In a PPP project, the government and the private sector collaborate throughout the various stages of service provision. While the private sector assumes responsibility for the design, construction, operation, maintenance, financing, and risk management operations, the government is responsible for strategic planning and industry structure, obtaining permits, and regulating and meeting community service obligations (NSW Office of Financial Management, 2002). PPPs take various contractual forms, including Design Construct and Maintain (DCM), Build, Own and Operate (BOO), and Build, Own, Operate and Transfer (BOOT) (Grimsey and Lewis, 2000; Webb and Pulle, 2002). The private contractor owns the infrastructure for the contract term and delivers contracted services paid for directly by the government or customers. Government’s role may be supplying infrastructure services or it might these from the private sector.

2.2. PPPs in the education sector: Initiatives, models, and contractual agreements

This section presents the initiatives, models, and contractual agreements that PPPs in the education sector may use. These offer a wide range of options that Saudi Arabia could consider in pursuing its school projects.

Involvement of the private sector in delivering economic infrastructure services, such as bridges, railways, and airports, has long been a common practice in developed and developing countries (Patrinos, 2023). On the other hand, private sector involvement in social infrastructure service delivery, including hospitals and schools, is a relatively recent phenomenon (Fennell, 2010; World Bank, 2009). PPPs in the education sector can be classified into five initiatives, with the public and private sectors playing different roles in each (see **Table 1**).

Table 1. Explanations and financial models of school PPPs with examples from international experience.

PPP type	Explanation and financial model	Examples
Private sector philanthropic initiative.	<ul style="list-style-type: none"> In the US, foundations provide funding for basic education. The most common form of PPP in US basic education. In the UK, educational academies are established by sponsors ranging from businesses to volunteer groups, acting in partnership with the government to provide free education to children. Funds provided by the state or private donors to some schools. 	<ul style="list-style-type: none"> Philanthropic foundations (USA). Academies Programme (UK). Philanthropic venture funds (USA).
School management initiative.	<ul style="list-style-type: none"> Educational authorities partner directly with private providers to operate public schools. Schools are privately managed but publicly owned and funded and education is free of charge to all students. The private sector sometimes pays for infrastructure costs, while the government pays teachers' salaries based on student enrolment. 	<ul style="list-style-type: none"> Contract schools (USA). Charter schools (USA and Canada). Independent schools (Qatar).
Purchase of educational services from private schools.	<ul style="list-style-type: none"> The government pays a subsidy for each student enrolled in an eligible private school. In New Zealand, Alternative Education (AE) schools are funded on a per-student basis. Schools cannot charge students extra fees. 	<ul style="list-style-type: none"> Alternative Education (AE) in (New Zealand). Financial assistance per child enrolled (Pakistan).
Vouchers and voucher-like programs.	<ul style="list-style-type: none"> Parents can use government vouchers to pay for either public or private schools. In the Netherlands, the voucher system incentivizes schools to offer better education to attract more students. 	<ul style="list-style-type: none"> School funding system (Netherlands). Targeted individual entitlement and independent school subsidies (New Zealand).
School infrastructure initiative.	<ul style="list-style-type: none"> The most common forms are BOT or Design, Build, Finance, Operate, Transfer (DBFOT). The government provides land for building schools on nominal lease rent. The private sector bears capital costs upfront for infrastructure and provides non-core services. The government retains responsibility for education delivery and teaching. The government often provides lower capital subsidies and viability gap funding up to 20% of project cost. Arrangements for 25–30 years with contracts specifying exact services that vary by country. 	<ul style="list-style-type: none"> Private Finance Initiative (UK). PPP New Schools Project (Alberta-Canada). New Schools PPPs (South Australia). PPP for New Schools (Egypt). Schools PPP project (Spain).

Sources: Education International (2009); World Bank (2009); CfBT (2008); McKinsey and Company (2014).

2.2.1. Private sector philanthropic initiatives

This type of initiative is considered the most common partnership between the public and private sectors in the educational arena, and it takes the form of donations of money or goods to public schools by organizations or individuals on an ad hoc basis or under the umbrella of corporate social responsibility (UNICEF, 2011). In 2006, over 70,000 corporate, private, and community-based foundations in the US distributed US\$41 billion worth of grants to the education sector (CfBT, 2008). The Bill and Melinda Gates Foundation is a prominent organization leading educational and philanthropic initiatives in the US.

This philanthropic model is certainly not exclusive to the US and can be found in Asia and the Gulf region. In India, for example, the Bharti Foundation donated US\$50 million to establish non-profit private schools in remote areas of the country, and the Philippines and Pakistan have also used donations from corporate foundations to construct schools (World Bank, 2009). In Singapore, an investment company called Orient Global donated more than US\$100 million to build schools and improve

infrastructure in developing countries. In 2007, the Dubai-based Mohammed bin Rashid Al-Maktoum Foundation was established with an endowment fund of US\$10 billion to enhance educational systems in the Arab world and provide scholarships to needy students wishing to pursue their education. Furthermore, in 2015, the Al-Ghurair Foundation in the United Arab Emirates was formed with an endowment of US\$1.13 billion from Abdullah Al-Ghurair to provide financial support for local and regional schools and scholarships for students to enroll in the region's top universities.

2.2.2. School management initiative

Under this form of collaboration, the public sector remains the owner and financier of schools, which it contracts either to a private sector entity or not-for-profit, non-governmental organizations (NGOs) to operate, manage and run (Patrinós, 2023). The government pays either a yearly management fee or a fixed sum per student to the school operator, and payments are based strictly on performance measures and benchmarks in a concession contract lasting approximately 25 years. This model includes US contract schools, which have existed since the 1990s and have the private sector operator running a school under management or operational contract (World Bank, 2009; CfBT, 2008).

A second example can be found in charter schools which are secular schools operating under performance measures specified in their charter, a contract establishing them. Management contracts range from three to five years with the financing body that funds their educational activities held accountable. Since their introduction, the number of charter schools in the US has increased exponentially, from 253 schools in 1995 to 4147 in 2007 (Vanourek, 2005).

2.2.3 Purchase of educational services from private schools

This demand-driven initiative involves the government (often the ministry of education) purchasing places for students in private schools to increase student enrollment, particularly in remote areas, and enhance the quality of educational systems. To qualify for government contracts to fund students, schools must meet the minimum criteria regarding infrastructure and quality of their teachers and programs. Schools are then accountable for student performance, which is the critical criterion for government contract renewal. This initiative is prevalent in many developing countries such as Uganda, Côte d'Ivoire, the Philippines, as well as in developed countries, including New Zealand.

2.2.4. Vouchers and voucher-like programs

A school voucher is a certificate parents can use to enroll their children in a school of their choice. It allows parents to choose the school that they believe offers the type of educational quality desirable for their children. Therefore, such a model encourages competition among schools to offer superior performance and attract higher numbers of students. This is more commonly used than a model in which the government pays schools directly based on the number of students. This approach is widely used in rural areas of developing countries while also being used in New Zealand, the Netherlands, and the USA.

2.2.5. School infrastructure initiatives

Since the 1990s, PPPs have become an essential delivery route for school

infrastructure development worldwide. Although the contractual structures of school PPPs can vary significantly, BOT is the most adopted form of partnership in which the private sector raises the necessary finances for building a school, operates it, and then transfers it to the public sector upon expiration of a contract period ranging from 25 to 30 years (Patrinos, 2005). The UK has primarily taken this route since 1992 via the Private Finance Initiative (PFI) and, in October 2007, at their peak, more than 115 PFI deals worth US\$6.5 billion had been signed between the UK private sector and the Department of Children, Schools and Families to construct infrastructure for schools in various parts of the UK (HM Treasury, 2007). Other countries in which PPPs are commonly used for schools are Australia, Canada, Germany, and the Netherlands (see the individual sections on these countries for a detailed account of the structures and models of their school PPPs).

2.3. Government purchases and contract types for education sector PPPs

While the previous section provided a general description of the various initiatives through which the public and private sectors collaborate to deliver different forms and types of services in the education sector, this section offers a detailed description of what these initiatives deliver and their contract types.

Operational services may entail the operation of a single school or an entire system of public schools, particularly in remote regions. Under this type of operational contract, the private sector manages all processes related to maintenance of the schools, staff, and students, as well as delivery of educational materials, the design of which remains within the purview of the government. When governments purchase educational services using student vouchers, they ensure the competitiveness of the education sector by forcing private sector institutions to provide higher quality and affordable prices. This initiative expands student access to schools while obviating the upfront costs of constructing and operating them.

Table 2. PPP models in the education sector.

PPP model	What governments purchase	Contract type
Management, professional, and support services (input).	<ul style="list-style-type: none"> School management (financial and human resources management). Support services (meals and transportation). Professional services (teacher training, curriculum design, textbook delivery, quality assurance, and supplemental services). 	<ul style="list-style-type: none"> Management contract. Professional services contract (curriculum design).
Operational services (process).	<ul style="list-style-type: none"> Student education, financial and human resources management, professional services, and building maintenance. 	Operational contract.
Education services (output).	<ul style="list-style-type: none"> Student placement in private schools (by contracting schools to enroll specific students). 	Contract for providing education to a specific number of students
Facility availability (input).	<ul style="list-style-type: none"> Infrastructure and building maintenance. 	Provision of infrastructure services contract.
Facility availability and education services (input and output).	<ul style="list-style-type: none"> Infrastructure combined with services (operational or educational output). 	Provision of infrastructure contract with education services contract.

Sources: Education International (2009); World Bank (2009); CfBT (2008); McKinsey & Company (2014).

Although the facility availability model is most common in North America, Europe, and Australia, it is also the most difficult to achieve, as it involves various

contractual types (see **Table 2**). As indicated by the World Bank (2009), this model requires the competitive selection of a private sector consortium to raise finances for the construction of a facility and its operation and management. The government, meanwhile, maintains full control over the provision of teaching materials, personnel, and other curriculum-related issues. One model that has not been tested sufficiently in the educational arena is the combination of facility availability and provision of services under one contract. While it has been proven extensively in the healthcare sector, the model has yet to be utilized in the education sector.

2.4. Range of contractual options in providing school infrastructure and risk transfer

The contractual forms assumed by school partnership programs are multiple, ranging from complete government ownership of assets to their full privatization. As **Table 3** illustrates, school projects can either be designed and built based on government-specified requirements, operated by the private sector as indicated previously, or fully funded by the government with turnkey school operations held by the private sector partner operations. Other standard contractual arrangements can take the form of Lease or Own, Develop and Operate (L/ODO) arrangements, whereby the school is bought from the government and operated by the private sector for a certain period as specified in a contract. Similarly, the BOO model can transfer ownership and operation of a school facility to a private entity.

It is important to note that the levels of risk carried by the public and private sectors can differ substantially, depending on the contractual arrangements between the two sectors. In the case of complete privatization of school assets or concession agreements, the private sector bears all project risks. By contrast, when the project is wholly owned by the government or delivered on a traditional Engineering, Procurement, and Construction (EPC) basis, most of the project’s risks reside with the public sector.

Table 3. Contractual forms of school partnership programs.

Contractual forms of school partnership program.	Features
Traditional design and build.	The government contracts a private partner to design and build a school facility to specific requirements.
Operation and maintenance.	The government contracts a private partner to operate a publicly owned school facility.
Turnkey operation.	The government provides financing while the private partner designs, constructs, and operates a school for a specified period with the public partner retaining facility ownership.
Lease-purchase.	The private partner leases a school to the government for a specified period, after which ownership is vested with the government.
Lease or Own, Develop, and Operate (L/ODO).	The private partner leases or buys a school from the government and develops and operates it under contract with the government for a specified period.
Build, Operate, and Transfer (BOT).	The private partner obtains an exclusive contract to finance, build, operate, maintain, manage, and collect user fees from a school for a fixed period to amortize its investment and, upon franchise end, the title reverts to the government.
Build, Own, and Operate (BOO)	The government either transfers ownership and responsibility for an existing facility or contracts a private partner to build, own, and operate a new facility perpetually.

Sources: Education International (2009); World Bank (2009); CfBT (2008); McKinsey and Company (2014).

The PPP model, however, provides a middle ground for risk sharing by transferring risks to the party best able to handle them. For example, risks associated with construction, operation, and maintenance can be borne by the private sector, while those pertaining to *force majeure* and unexpected regulatory, legal, or other changes in policy direction that might affect project continuity, can be handled by the public sector. This risk-sharing approach to the management of infrastructure projects promises timely completion and facilitates efficient handling of the inherent risks of such projects.

Standard PPP models and rationale for school PPPs

In an extensive empirical research survey, Education International (2009) investigated the PPP models utilized to deliver school infrastructure in 57 countries. As **Figure 1** below illustrates, nearly 70% of all survey respondents indicated that the most widely used PPP model in their respective countries was infrastructure PPP. This was followed by the outsourcing of support services (46.8%) and private operation of public schools (39.2%), with the least-used types being the outsourcing of curriculum design and outsourcing of delivery (29.1% and 27.8%, respectively). Regarding the regional concentrations of these PPP projects, they were primarily used in North America, Europe, and the Asia Pacific, with a smaller presence in Africa and Latin America (Asian Development Bank, 2010).

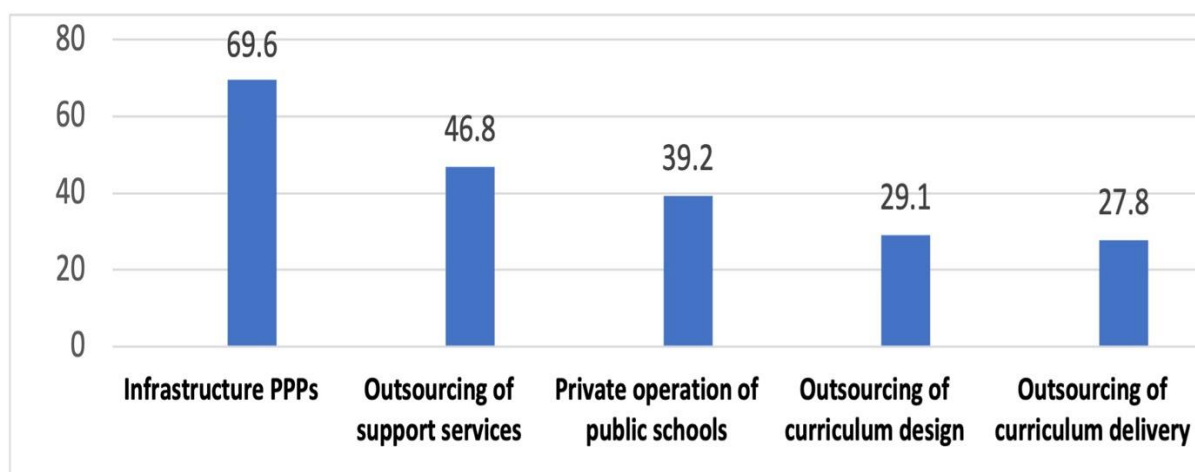


Figure 1. Common school PPP models.

Source: Education International (2009).

Findings from Education International (2009) also help to explain the motivations behind government use of PPPs to deliver school infrastructure. As shown in **Figure 2**, the three most cited reasons are budgetary constraints (78.5%), improvement of educational quality (57%), and provision of more innovative approaches to school asset management (50.8%). These reasons resonate with international research on PPPs showing rising government fiscal deficits and the search for more efficient infrastructure service delivery encouraging governments to pursue the PPP route.

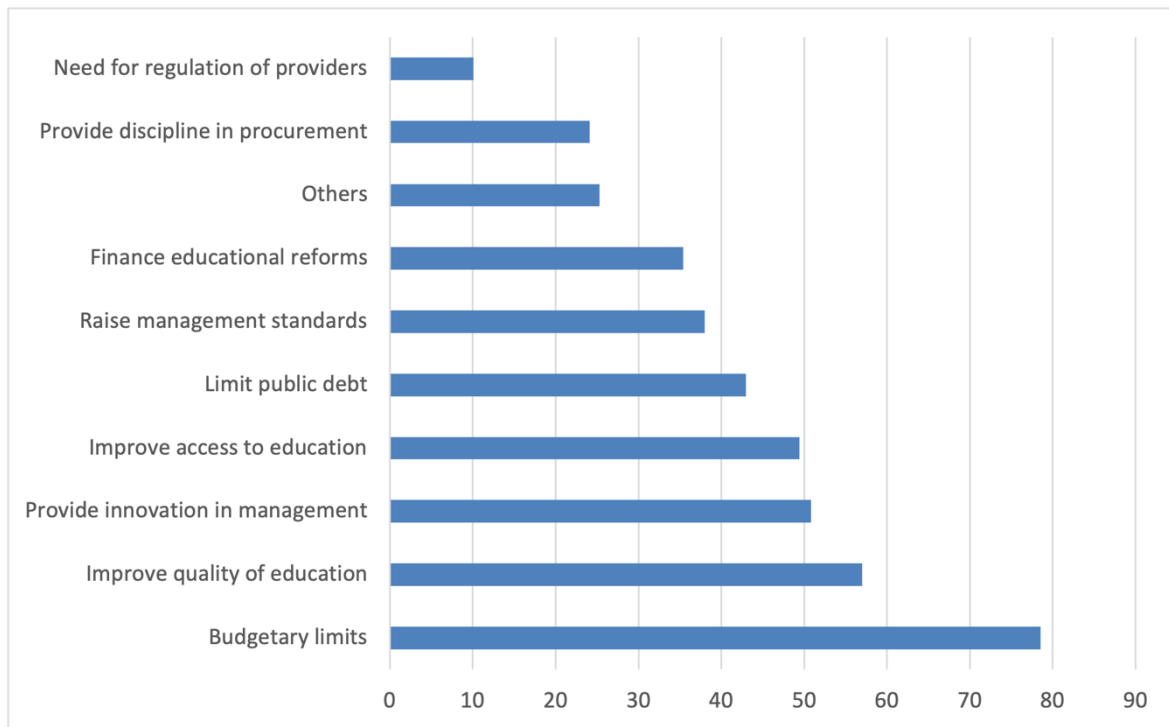


Figure 2. Governments’ reasons for school infrastructure delivery via PPPs.

Source: Education International (2009).

In terms of utilizing private finance for infrastructure development, World Bank data (2020) shows the Middle East and North Africa (MENA) region as the most globally reticent in employing such finance. Numerous reasons explain this reluctance, including a lack of local capital markets to generate necessary funds for such projects as well as weak regulatory and legal frameworks to govern and supervise PPP contracts. These factors can also make international investors reluctant to mobilize massive financial resources in MENA countries.

2.5. International examples of school infrastructure delivery via PPPs.

This section provides an international review of school PPP programs’ performance to date across an array of Western countries and reflects on experiences within some Middle Eastern and Gulf countries.

2.5.1. School PPPs in Australia

Australia has demonstrated an extensive track record of reliance on the PPP model to deliver its economic and social infrastructure services (Ross, 2004), and New South Wales (NSW) had its first experience with building schools via the PPP route when it constructed nine schools worth US\$129 million (NSW Office of Financial Management, 2002; World Bank, 2009). The project was delivered through the NSW New Schools Project Concession Deed between the Minister of Education and the contractor, and the contract had two components. Axiom Education Pty Ltd first, was responsible for financing, designing, and constructing the schools. Second, it contracted to provide facility management services such as building maintenance, security and cleaning for 25 years. The Department of Education now pays a monthly fee based on the performance and availability of schools for classes, and the contract

allows for upward or downward adjustments to reflect any amounts owed to the state or contractor under the provisions of the Concession Deed. Debt finance has been provided to the contractor through bonds underwritten by ABN AMRO Bank NV in Australia under a private debt financing arrangement (Banks, 2008).

The success of this initiative resulted in the extension of the use of PPPs for school infrastructure into ten other schools completed between 2006 and 2009, with a net worth of US\$168 million (Audit Office of New South Wales, 2006). In these cases, the Department of Education pays the private operator a monthly fee based on the availability of schools for classes. At the end of the contracts, lasting until approximately 2032, the contractor will transfer the buildings to the public sector. It is estimated that delivering these projects on a PPP basis saved 7% of their total project costs compared with delivery on an EPC basis (OECD, 2010).

Furthermore, The Victorian government has utilized PPPs to deliver major school infrastructure projects. For example, the New Schools PPP Project, which began in 2017, involved the construction and maintenance of twelve new schools (Victoria State Government, 2017). The private sector partner is responsible for the schools' upkeep for 25 years, ensuring high standards of facility management and maintenance.

Three other states in Australia have also used PPP projects for schools. For example, South Australia relied on PPPs for financing, construction, and 30-year maintenance of six public schools, while education services remain under the government's umbrella. Similarly, in 2013, the Queensland government announced the selection of the Plenary Schools Consortium to deliver ten schools. This consortium will be responsible for designing, constructing, commissioning, partially financing, and managing the schools' facilities. Six schools opened between 2015 and 2016, and another three opened in 2017. Furthermore, the state of Victoria engaged the private sector in building 15 schools delivered between 2017 and 2018 and refurbishing and fixing many other existing ones. Payments for all these PPP deals were based on the "availability and satisfactory operation" model.

2.5.2. School PPPs in New Zealand

New Zealand's government began adopting PPPs as a policy approach for delivering infrastructure services in 2010. The government stated that "it will use PPPs where they can be demonstrated to provide clear value for money (VfM) and where they will improve service delivery outcomes" (National Infrastructure Plan, 2010). It was the lack of funding to support projects requiring substantial upfront costs, that saw the New Zealand government resort to PPPs (Ernst and Young, 2013).

The first two projects to be delivered on a PPP basis were Hobsonville Point Primary and Secondary Schools, where Learning Infrastructure Partners was awarded a contract of 25 years for two schools on a Design, Build, Finance, and Operate (DBFO) basis. Since completion of construction, the contractor receives quarterly payments based on the availability of the schools for classes and agreed-upon standards of performance in maintaining and operating the schools. The project financially closed in 2012, with both schools being finished on time and within budget. The success of the Hobsonville Point schools increased the New Zealand government's interest in using PPPs for school projects such that in 2015 the government awarded a US\$298 million contract to the Future Schools Partners (FSP) consortium to build and maintain

four new schools (Norton, 2015). Furthermore, in July 2016, three consortia were shortlisted to design, finance, build, and maintain six additional schools worth more than US\$200 million on a PPP basis (New Zealand Ministry of Education, 2012). In all three PPP projects, the project contracts specified that the government retained ownership of the schools' facilities and land and indicated that deductions in payments could occur for the non-availability of teaching spaces or failure to meet specified performance indicators. The principal and a board of trustees would be responsible for each school's governance and day-to-day running.

2.5.3. School PPPs in Canada

Nova Scotia was Canada's first province to utilize the PPP model to build schools. In the mid-1990s, local government faced financial constraints owing to declining natural resource prices and a lack of sufficient funds to build urgently needed schools. The province resorted to the PPP route to secure access to schooling for an increasing number of students (Ronald, 2005). Thirty-nine schools were designed, built, financed and maintained by the private sector through the Design, Build, Finance, Manage and Operate (DBFMO) model used in most Canadian school PPP projects (Boardman et al., 2016). The private sector owned the schools, which were leased for 20 years, while the development of curriculum and education delivery remained the government's responsibility (Infrastructure Ontario, 2015).

The government can decide whether to renew the lease (twice for a period of up to five years each), walk away, or buy the schools from the private sector upon the expiry of the PPP contract. Annual rent payments are equivalent to 85% of the capitalized cost of the project, meaning that the government can use facilities delivered more efficiently and on time that are cheaper by 15%. In order to make this deal more attractive to the private sector, the schools' buildings are rented to the school system from 8:30 AM to 3:30 PM, Monday to Friday, from September to June. Outside of these official hours, the facilities can be rented to approved organizations and businesses for commercially competitive prices. These additional revenues then help the private sector recoup the 15% of project costs it did not receive from the government. However, the performance of the Nova Scotia school PPP project was not as successful as expected. In February 2010, a report by the Auditor General pinpointed numerous weak points in implementing the PPP contracts and concluded that the government could have saved more than \$52 million had it delivered the projects via the EPC method.

In Saskatchewan, a PPP was used to build 18 new joint-use schools, which opened in 2017. This project was part of a larger initiative to create efficient, shared-use facilities that serve both educational and community needs. The private partner was responsible for the design, construction, financing, and maintenance of the schools for 30 years (Wright Construction, 2018).

The province of Alberta, meanwhile, had a more successful experience using PPPs to build 18 schools in Edmonton and Calgary in 2007, providing 12,000 new spaces for local students (OECD, 2010). The total cost of the project reached US\$634 million, and when construction finished in 2010, the government paid a lump-sum advancement payment of \$125 million to the project company. The government then began the payment of capital and maintenance fees over 30 years, under the condition

that the schools be available for classes and well-maintained (Schmold, 2009). This project was a greater success, as the schools were delivered on time and within budget.

2.5.4. School PPPs in the US

The US lags significantly behind Europe and Canada in its implementation of school PPPs for two reasons: 1) the US government did not face the same fiscal challenges confronted by most local governments in Europe in the 1980s and 1990s, with the majority of US municipalities and public schools having sufficient funds to expand, renovate, or build new schools, and 2) US federal and state governments offer tax incentives to school facilities owned and operated by the public sector (PWHC, 2010; Ronald, 2005). As a result, school systems have not been an attractive investment target for the private sector. Furthermore, unlike in the UK, where the private sector can own school property for a certain number of years, private entities in the US receive only a lump sum payment for financing, designing, and building public schools.

Nevertheless, there have been a few school PPPs delivered through innovative mechanisms. For example, two high schools in Houston, Texas, were constructed by Gilbane Properties in 1998, which created a not-for-profit corporation issuing tax-exempt bonds, managing the construction process, and retaining the title for facilities when construction finished. Gilbane Properties' not-for-profit corporation receives an annual lease payment from the local government to repay its debt, and this arrangement resulted in saving more than US\$20 million on the construction of the two schools, with their delivery finished a year ahead of schedule.

A similarly innovative approach was adopted in 2001 to rebuild James F. Oyster Bilingual Elementary School in Washington, DC, when a national real estate development company called LCOR Incorporated partnered with the District of Columbia Public Schools to deliver the project. The cost of building the school was financed with a 35-year tax-exempt bond package worth US\$11 million issued by the District of Columbia. The bonds would be fully repaid from revenues generated by a 211-unit apartment building LCOR Incorporated constructed for US\$29 million on unused land belonging to the school. Taxpayers paid nothing for the newly built school, financed through Payment In-Lieu of Taxes (PILOT) from income generated by renting the newly built apartments. The school was thus constructed at no cost to taxpayers, and provided new apartment units offering better housing for the community at affordable prices.

In 2020, Prince George's County Public Schools entered into a PPP to modernize and rebuild six schools. In this \$400 million project, the private partner is responsible for financing, designing, building, and maintaining the schools over a 30-year period, allowing the district to expedite the construction process compared to traditional methods (Smith, 2023).

2.5.5. School PPPs in Europe

England and Wales

Since the introduction of the Private Finance Initiative in 1992, the school partnership program in the UK became the most extensive in the world, with over 700 projects reaching financial close and the private sector contributing more than \$67 billion by 2012 (HM Treasury, 2012). By 2007, England had signed 115 PFI school deals at a value of more than US\$11.6 billion under the DBFO model, with projections

that this would increase to US\$16 billion in the coming years (World Bank, 2009). Furthermore, more than 717 projects have been signed in England, with 648 already in various operational stages (HM Treasury, 2012). The UK government's Priority School Building Programme (PSBP), launched in 2011, includes several PPP projects aimed at rebuilding and refurbishing schools. The second phase, PSBP2, announced in 2014, continues to leverage PPPs to address school infrastructure needs (Gov. UK, 2024). For example, the Midlands batch project, which involves several schools, utilizes a PPP model where private partners design, build, finance, and maintain the schools for a period of 25 years.

The Welsh government also signed more than 20 school-related PPP deals. Payment for all these projects has been made under an “availability-based” model, and this can take many forms, including monthly, quarterly, or annual rent payments based on contractual terms. School councils are also not obliged to rent the facilities beyond their initial lease terms, which incentivizes the private sector to keep the school facilities up to the highest standards (HM Treasury, 2005).

Scotland

Scotland has also adopted the PFI model for school PPP projects predominantly due to a lack of financial resources for public procurement (Accounts Commission, 2002). Due to inadequate and dilapidated school buildings more than 130 existing schools needed refurbishment and renewal in 2002 at a cost of approximately US\$554 million. To meet this need, the Scottish government provided subsidies for local education authorities to meet their lease payments and operating costs. Performance reporting underpins the payment mechanism of PFI school contracts, with payment to the consortium dependent upon 1) timely completion and delivery of the new or refurbished schools and 2) delivery of services and maintenance over 25 to 30 years. Scotland's PFI financing is quite novel; for example, in the case of Balfron High School, 99% of its debt came from a bank and only 1% from equity. This reduced the overall interest costs with PFI contracts to 5% per year (World Bank, 2009). The PFI model in Scotland has delivered school projects on time and within budget, especially in the South Lanarkshire and Glasgow Schools Projects, which secured approximately US\$800 million in private finance (HM Treasury, 2003). The government retains control over educational policies and curriculum development.

The Netherlands

Education in the Netherlands has been decentralized and demand-driven for over 100 years, and the use of PPPs for school construction began in 2005 when the Ypenburg suburbs needed to accommodate 1200 students (CfBT, 2008). The contract was for 30 years, including 1.5 years for construction and 28.5 years for maintenance, cleaning, furnishing, and ICT (World Bank, 2009). While payments for school PPP projects in the Netherlands are based on the availability of facilities for students, public and private schools are also funded by government vouchers given to parents to choose the schools to which they wish to send their children. Government funding for schools remains critical yet dependent on performance, a system that incentivizes schools to provide the best possible educational facilities to attract more students. While the government makes decisions and policies regarding educational systems, at the operational level, schools are governed by private boards, which manage the schools'

quotidian administrative activities.

Germany

Germany's biggest PPP project was undertaken for the Offenbach Schools in 2005, in which the government contracted out financing, refurbishment, and operation of 88 government schools (a total of 450 buildings) at the cost of approximately 550 million Euros (German Federal Ministry of Finance, 2010). The private sector partners operated the schools for 15 years and received monthly payments from the government based on the availability of schools and performance (World Bank, 2009). Another school-related PPP project was implemented in Frankfurt in 2007 and involved building new facilities, refurbishing existing ones, financing three schools, and then operating and maintaining them for 20 years. School Cologne-Rodenkirchen is another major PPP project in which the contract volume reached 127 million Euros and involved financing, construction, and operation of the schools over 27 years (InfraPPP, 2013). Payments from the government in all these projects have depended upon the availability of buildings and services during school hours. Monthly payments can also involve penalties if the private partners cannot provide the agreed-upon performance standards.

Spain (Madrid)

Spain boasts some of the largest school PPP deals in all of Europe, as there has been a growing need for additional schools due to rapid population growth in Madrid. Schools are privately owned and managed in that city, and the regional government pays teachers' salaries and half of all operating expenses. Between 2005 and 2012, the government awarded 56 PPP concessions to build and operate grant-aided schools with an investment of 650 million Euros (Carpintero and Siemiatycki, 2015). These school projects were tendered one by one (around 10 to 15 million Euros for each) rather than as a bundled concession to allow small companies to participate, and 53 of these schools are now running. As a result, small enterprises have played a significant role in delivering PPP projects for schools. The concession period for these PPPs is up to 50 years, and roughly 40% of contracts have been financed through project finance (Financier World Wide, 2012). The procurement process was simple, with standardized tender documents used in implementing the projects. Banks also required that schools be built in a complete unitary process, rather than in stages, to eliminate construction risks, with the consortia assuming construction, operational, financial, and demand risks (Carpintero and Siemiatycki, 2015).

2.5.6. School PPPs in the Middle East

Egypt

Egypt implemented one of the Middle East's largest PPP deals in the education sector on government provided land for which the private sector designed, constructed, financed, furnished, and provided non-educational services under long-term agreements for 345 schools across 23 governorates in 2006 (CfBT, 2008). This successful initiative was expanded in 2007 to cover more than 2210 new primary and secondary schools valued at more than US\$1.2 billion (World Bank, 2009). The aforementioned 345 schools are currently under operation, and payment for these projects is based on the "availability and performance" model in line with international

best practices for delivering PPP school projects.

United Arab Emirates

The government of Abu Dhabi in the United Arab Emirates has extensively used the PPP model, particularly in managing its many public schools. Many of its schools and universities, such as the Sorbonne Abu Dhabi, Zayed University, as well as several others, are managed and operated by a range of private sector entities (Financier World Wide, 2012). In 2008, a report by the Abu Dhabi Department of Economic Development (2008) on PPP use in the education sector indicated that PPP projects added 61 schools for the academic year 2007–2008 in Abu Dhabi and Al Ain. These PPPs mainly took the form of contract management services. As a notable example, The United Arab Emirates University was constructed through a 30-year BOT agreement, including financing, construction, and management of campus facilities. The project was completed at US\$410 million in 2009, and the contractual structure took the format of a performance-based contract, with the government paying a monthly charge for the availability of buildings and proper management of facilities.

Qatar

The government partly funds numerous private sector operated schools and universities in Qatar, while independent schools in Qatar have been run by government-selected operators and overseen by the Supreme Educational Council since 2005 (World Bank, 2009). Independent schools can be either new or converted from existing ones owned by the Ministry of Education. Operators are granted three-year agreements to run the schools dependent upon satisfactory performance. Independent schools operate on open admission policies and the curricula are designed by the Ministry of Education. The government then pays schools based on the number of enrolled Qatari students, while international students must pay tuition.

As of this writing, Qatar has yet to extend its use of PPPs to finance, construct, and maintain its schools. While there were several proposals to build numerous schools on a PPP basis, most were canceled, put on hold, or reverted to an EPC structure. Nonetheless, the Qatari government has recently announced the development of a PPP law and legal framework to enable school PPP projects.

Kuwait

Unlike some other Gulf countries, where the use of PPPs for education has been a relatively nascent phenomenon, in Kuwait, there have been numerous attempts by the Kuwait Authority for Partnerships Projects to procure nine schools (five kindergartens, three elementary schools, and one middle school) on a Design, Build, Finance, Operate, and Maintain (DBFOM) basis since 2013. Nevertheless, procuring these schools has been sluggish, and financial close has not been reached for any projects (InfraPPP, 2015).

Saudi Arabia

All public schools in Saudi Arabia are delivered through the EPC model and are fully funded by the Ministry of Education. The abundance of oil revenues in recent decades has simplified the financing of infrastructure projects through public funding. PPPs have been restricted to independent water and power plants and have yet to be extended to social infrastructure.

2.6. Impact of school PPPs on educational outcomes

This section presents the findings of a few existing studies regarding the performance and impact of each PPP initiative or model on certain educational outcomes, which offer a clear picture allowing the Saudi government to determine which PPP model could best serve its interests and fulfill policy objectives.

Overall, the four types of PPP models described have varying impacts on educational performance indicators, as shown in **Table 4** below. School vouchers have a substantial effect on increased accessibility of schools for students and are an equally powerful influence improving the quality of educational outcomes, since the voucher model induces competition in the education market by allowing parents to choose schools reputed for high standards. This model also lowers costs, since schools wish to attract more vouchers.

Government subsidies for educational services have considerable ramifications for increased enrollment in existing schools and reduction of educational inequality, yet little impact on competition. Private management of schools significantly lowers education inequality, has a moderate impact on increased enrollment, and a low effect on competition. Meanwhile, the PFI model of delivering school infrastructure through the private sector has a high impact on reducing education inequality, as it increases the number of schools via private finance, reduces costs of infrastructure when delivered through a competitive consortium (and the bidding process is transparent), and allows project risks to be transferred to the party best suited to handle them.

Table 4. Impact of partnership types on performance indicators.

Contract type.	Effect on increasing enrolment.	Effect on improving educational outcomes.	Effect on reducing educational inequality.	Effect on reducing costs.	Risk sharing.	Competition.
Vouchers	Strong for number of students who receive vouchers.	Strong for school choice.	Strong when targeted.	Strong when the private sector is more efficient.	Low.	Significant.
Subsidies	Strong when using existing private infrastructure.	Moderate but limited by available places and quality of services delivered in the private sector.	Strong when targeted.	Moderate.	Moderate.	Low.
Private management and operation	Moderate but limited by the supply of private school operators.	Moderate but limited by available places in the private sector.	Strong when targeted.	Moderate.	Low.	Low.
Private finance initiatives	Moderate but limited by financial constraints.	Low.	Strong when targeted.	Strong.	Significant.	Low.

Source: World Bank (2009); McKinsey & Company (2014).

Overall, growing evidence suggests that delivery of school infrastructure through private finance results in superior performance. A Treasury report in the UK examining the performance of 61 PFI school infrastructure projects showed that 88% of those projects were delivered on time and within budget. Another study investigating the results of 37 PFIs demonstrated that 76% of the projects were delivered on time, with 79% completed within budget. Furthermore, only 27% of those projects would have been delivered within their timeframes and budgets had they been

delivered under the traditional EPC model (CfBT, 2008). HM Treasury report (2003) also showed that 76% of public sector school project clients expressed satisfaction with the private sector's performance in handling, operating, and maintaining school infrastructure. Likewise, for Australia's infrastructure PPP school projects, the Australian Department of Education and Training (2003) stated that projects delivered through the PFI model are often delivered two years ahead of those delivered using EPC and save the government 7% of the total project costs. As indicated by the cases of Australia and New Zealand, such positive outcomes are the primary motivation behind utilizing PPPs to construct a larger number of schools in both countries.

3. How essential is the PPP model for Saudi Arabia's future schools?

This section explains how essential the PPP model is for Saudi Arabia's school program, particularly considering the decline in oil prices and the shift of government policies toward broader involvement of the private sector in the provision of public services. More importantly, the readiness of Saudi Arabia to construct its school program through the PPP model is assessed, and the requisite tools to achieve it are pinpointed.

To create 1600 schools over the next ten years, the Saudi government needs to seek mutual collaboration with the private sector using the PPP model. In its search for sustainable development, greater civic engagement in decision making, and transformation into a knowledge- and innovation-based economy, engaging the private sector in lieu of state financial resources is vital for the delivery of its much-needed school infrastructure. This has been clearly articulated in both Vision 2030 and the Saudi National Transformation Plan. Local or international private sector entities and banks can provide the Saudi government with the financing and the skills required to operate and maintain them if the public sector creates and establishes the legal and institutional capacity for an ecosystem in which the private sector can operate effectively. Saudi Arabia school projects would further stimulate innovation and strategic partnerships in other infrastructure-related areas.

The proper utilization of PPPs to build schools affords numerous advantages to Saudi Arabia and minimizes disadvantages that could arise from delivering a national program of such magnitude through the EPC model. Topping the list of such advantages is the creativity and innovation available to local or international private sector service providers. Such access to the talent, human capacity, and tools necessary to provide services can be transferred as knowledge to the local workforce. Engagement with the private sector in delivering schools should enable the government of Saudi Arabia to achieve value for money, proper transfer of risks, and higher quality of services and products associated with the schools' design, construction, and maintenance.

4. How prepared is Saudi Arabia to deliver schools successfully via the PPP model?

While the political leadership of Saudi Arabia fully supports the adoption of PPPs in both its Vision 2030 and the National Transformation Plan, the country faces several

institutional, governance, and legal hurdles in making PPPs an operational tool to achieve newly set policy goals. Over the past decade, numerous infrastructure projects have been developed throughout the Kingdom using the PPP model (particularly in independent water and power plants), without reliance on institutionalized legal frameworks or models, being conducted on contractual and ad hoc bases. Furthermore, while PPPs have been used in several cases in Saudi Arabia, the absence of policies or laws to govern them makes the private sector hesitant to enter more complex forms of partnerships with the public sector. As such, scrutinizing Saudi Arabia's contextual factors and customizing the importation of PPP policies to meet the local context is essential for their success. It is, therefore, imperative to develop a unique PPP model that is pertinent to Saudi Arabia and fits its unique political, economic, and social characteristics.

Over the past two decades, Saudi Arabia has relied on the experiences of international consulting companies that have designed and constructed several high-profile projects based on international best practices and management solutions. This strategy has allowed Saudi Arabia rapidly to achieve infrastructure services commensurate with developed countries. Nevertheless, there remains a need to institutionalize this knowledge and experience to facilitate the implementation of more complex projects. Considering its dwindling oil profits, the Saudi government's strategy of increasingly investing in local firms and companies to develop infrastructure services and drive economic growth makes sense. However, there is still a need for specialized units within the government to regulate, monitor, and administer PPP projects. Private sector companies need to consult with and involve numerous government entities, with PPPs often requiring the involvement of various ministries, authorities, and entities that, at times, require lengthy bureaucratic processes. Hence, simplifying, streamlining, and reducing the burden of bureaucracy on the private sector will serve as an enabling factor that can facilitate the establishment of PPPs.

In light of other international contexts, this could be achieved by empowering a "one-stop shop" PPP unit to handle all necessary paperwork within a single ministry. More importantly, such a unit would be responsible for conducting feasibility studies and ensuring that a proposed PPP project is aligned with Saudi Arabia's economic objectives and priorities. The government of Saudi Arabia established the National Center for Privatization & PPP, which can assume this role. Furthermore, instituting a regulatory framework will be a key enabler to ensure the success of PPP programs, as it can protect the interests of all players in a PPP agreement. A government unit empowered to play such a role would attract the interest of both public and private entities in collaborating to create public value while also providing private profits. The technical and legal expertise necessary for administering PPPs could also be provided by such a unit, representing the public sector across the various stages of the PPP agreement.

The establishment of the proper legal and policy grounds for PPPs to deliver Saudi Arabia's school project is thus vital to its success. To date, however, the country has yet to develop a dedicated PPP law to facilitate the delivery and procurement of public infrastructure via the private sector. Although the Private Sector Participation Law was enacted in 2022, this law has not been adopted to initiate and implement PPP projects. There have been many efforts to draft a PPP law specifically designed to

cater to the interests and protect the rights of public and private institutions entering into collaborative agreements. At the time of writing, a specific legal framework that could be referred to in the case of disputes beyond the local courts, which do not have the expertise to handle such technical and complex matters is still to be developed.

A dearth of talent is a pressing issue facing Saudi Arabia. PPPs require advanced technical skills in identifying potential projects, drafting contracts, negotiating risk transfers, and ultimately implementing projects. The public sector is usually at a comparative disadvantage in PPP contracts if it lacks experts that can protect its rights in the case of disputes. Hence, recruiting and training skilled talent is essential if the country wishes to implement a sustainable and comprehensive PPP program successfully, serving the best interests of both the public and private parties forming partnerships.

Observation of international practices in administering PPPs reveals that enabling institutional factors is critical. Saudi Arabia's government should implement three key frameworks and enabling dynamics to secure a sound ecosystem for school PPP projects. First, an institutional framework must ensure the existence of an independent governmental body that will anchor the public sector's efforts and initiatives to implement successful PPP projects. A central PPP unit is thus essential in Saudi Arabia to enable a streamlined and simplified process for public and private entities intending to enter a PPP contract. Such units usually provide technical support and advisory services to private and public entities before they engage in PPP projects. Saudi Arabia's school PPP program will be complex to manage given the cross-sectorial nature of infrastructure PPP projects. It will encompass curricula development, government entities providing educational services, and the private sector's role in operating and maintaining school facilities. Managing such a web of cross-sectorial entities requires a central governing body to facilitate collaboration and smooth the lengthy processes required by PPP contracts.

Second, a sound and transparent legal environment must be established to support PPP to serve as a key driver in encouraging private sector entities to confidently invest in Saudi Arabia's school PPP project. A sector-specific PPP law defining the legislative, legal, and governance-related matters that secure investors' rights vis-à-vis the private and public sectors is equally essential. This can be specifically designed to address disputes that commonly emerge while administering long-term contracts. Hence, both parties can know that, in the case of a breach of contract, a legal authority exists with explicit laws that can solve their disagreements or disputes. Such an authority can instill significant confidence, especially in the private sector, which usually bears of the major risks.

Third, a supervisory framework is necessary to ensure that PPP projects are monitored continuously throughout the project cycle, and this will guarantee that projects are in line with the contractual and legal agreements before their start. Close scrutiny and following up on public and private sector projects' deadlines and milestones is a proactive mechanism to avoid future disputes or disagreements, especially during the project delivery period. Schools, which are a fairly standardized product, are an ideal vehicle for PPPs because they can be planned on a modular basis and rolled out rapidly in volume, with fast organizational learning and transfer of knowledge from one project to another (Flyvbjerg, 2021).

5. Lessons learned

This section presents the lessons and findings of the article together with recommendations that aim to address existing challenges facing the transformation of Saudi Arabia’s school program from a lofty ambition into a successful reality.

There are numerous lessons that Saudi Arabia can learn from global experiences, serving as valuable tools for the success of its school project and the achievement of quality and timeliness. PPPs undoubtedly offer a potential strategic option for Saudi Arabia, to deliver 1,600 schools. Using private finance to build 1,600 new schools is a path that will allow Saudi Arabia to accomplish a project of such magnitude. To do so, the Saudi government must also invest in building an institutional legal and regulatory infrastructure that will attract local and international private sector companies. As this article has shown, several challenges could inhibit the successful implementation of school PPP projects, and this section provides some recommendations on how to mitigate them.

As **Table 5** illustrates, the five listed PPP initiatives potentially can enhance the education sector in Saudi Arabia. While the private sector’s philanthropic initiatives can provide financial resources to improve the quality of infrastructure and educational programs, government reliance on the private sector’s management of schools, purchasing of educational services, and issuing of vouchers that parents can use to enroll their children in local schools are all innovative ways in which the public and private sectors can form partnerships in Saudi Arabia.

Table 5. The prospects of various PPP initiatives in Saudi Arabia.

PPP initiative.	Prospects in Saudi Arabia.
Private sector philanthropic initiative.	<ul style="list-style-type: none"> • Saudi Arabia hosts philanthropic family businesses that can devote a share of their wealth to financing or building new schools or refurbishing existing ones. • Part of Saudi Arabia’s Zakat money (almsgiving) could be strategically channeled toward the education system. • The government can introduce incentives to encourage the private sector to donate to building schools as part of their corporate social responsibility.
School management initiative.	<ul style="list-style-type: none"> • This initiative can easily enhance the quality of management for existing schools in Saudi Arabia. • This initiative has been highly tested in the Gulf region, particularly in Qatar and the UAE, and it has substantially improved schools’ overall management practices. • Best practices and knowhow from the private sector can potentially be transferred to train local talents. • The government can implement and oversee curricula while the private sector handles operational tasks.
Purchase of educational services from private schools.	<ul style="list-style-type: none"> • This model would allow the Saudi government to pay schools’ annual fees based on the number of Saudi students enrolled. • This would be more helpful in the Eastern and Southern areas of the Kingdom, where there is a more significant need for schools. • This model would create a strong demand in the schools’ infrastructure sector and incentivize local merchant families to utilize empty land for building schools.
Vouchers and voucher-like programs.	<ul style="list-style-type: none"> • The government can induce competition among its schools by providing parents with vouchers that would allow them to freely select those they think to offer higher education and infrastructure quality. • This model has been tested in Qatar and other Middle Eastern countries and proved effective when designed and delivered correctly.
School infrastructure initiative.	<ul style="list-style-type: none"> • Saudi Arabia can rely on local and international private sector partners to finance, design, build, maintain, operate, and transfer schools to the government. • This model requires the existence of regulatory, legal, and supervisory frameworks to successfully attract the private sector. • If the requirements are met, this model has been proven internationally to attract private finance for schools.

Source: Authors' analysis.

6. Recommendations

The Saudi government can successfully deliver its school PPP program if it is carried out in parallel with implementing the necessary institutional environment. This can take many forms, including the following.

6.1. Establish (amend) existing policies, regulatory, and legal frameworks

Saudi Arabia's existing policies and regulatory frameworks allow for implementing infrastructure services through the traditional EPC model. However, procurement of the school infrastructure program via the PPP model will require a significant amendment of the Government Procurement Law to enable the private sector to finance and own facilities for a period and then transfer them to the public sector.

6.2. Build capacity to manage PPP contracts

PPP projects require a sophisticated cadre of technical, legal, and financial advisers who can study the feasibility of PPP proposals, ensure effective implementation, and monitor governance and progress. International experience has shown that developing the capacity of public sector entities to enact legislation and policies that can drive the implementation of PPPs is crucial. This capacity ensures that public sector employees are trained in navigating the complexities associated with PPP agreements and are aware of the risks that might emerge throughout the process. Furthermore, a dedicated PPP unit can facilitate coordination, collaboration, and knowledge sharing across the various layers of bureaucracy. It minimizes the possibility of the private sector actor capturing a disproportionate share of the PPP returns through insufficient front-end planning and surveillance on the part of the public sectors actors.

Contract management is a significant feature of successful service delivery via PPPs. Practitioners must therefore be well trained to develop effective and efficient contract management plans and negotiation skills. Furthermore, successful PPPs emerge from clarity of purpose, sensible preparation and documentation of projects, accountability, competitive pricing, and professional contract management. To avoid failure, the parties involved in PPPs should understand a project's expected outcomes and risks and how they can maximize value for money.

6.3. Empower the role of the private sector in providing school infrastructure

The government of Saudi Arabia has traditionally funded all public infrastructure services, and thus the introduction of PPPs and attempts to engage the private sector as funders of public schools will result in a significant cultural shift in the Kingdom's infrastructure development. Hence, government provision of subsidies, encouragement of philanthropic funding for private schools, and incentives to engage the private sector in funding the school program will go a long way toward making the project a success.

6.4. Allow and enable tapping into the international market and labor

PPPs are inherently complex contractual agreements, and even advanced economies such as Australia, the US, and Canada often import lawyers and financial advisors from the UK to advise them on the best contractual and legal mechanisms when using PPPs for infrastructure development. To guarantee the success of its school PPP program, the government of Saudi Arabia should facilitate granting residency visas to private entities working to build the necessary capabilities that do not yet exist within the Kingdom.

6.5. Use clearly defined and appropriate funding models

Reliance on international consultants should not deter Saudi Arabia from developing a model of funding that reflects the cultural and social characteristics of the Kingdom, as well as the unique composition of its private sector. The UK's PFI model is just one example, and funding models tailored to the Saudi environment, perhaps using Islamic Finance principles, should be investigated.

6.6. Facilitate borrowing from local banks

PPP projects entail substantial upfront investments often provided on an 80% debt, 20% equity basis. Local banks must therefore be willing to provide long-term loans, and existing insolvency legislation should be revised to enable the implementation of projects with a longer duration and greater risks. This is particularly salient in the case of international investors willingness to invest in the education sector in Saudi Arabia.

6.7. Establish PPP performance and monitoring mechanisms

It is difficult to predict the performance of a PPP project; hence, performance and governance monitoring mechanisms are essential to ensure that public and private sector parties adhere to their contractual obligations. Establishing an independent auditing body that can safeguard and monitor PPP projects across their various implementation and performance stages is thus critical for the overall success of such projects and programs.

6.8. Governance and accountability mechanisms

Governance and accountability issues are paramount if PPPs wish to achieve better results in Saudi Arabia and gain greater acceptability and trust from the private sector (Bovaird, 2004). In the initial stages of a program, it is especially important to guarantee a fair and transparent bidding process that ensures a project is allocated to the party best suited to handle it. PPPs are more likely to fail when governance risks are not carefully and thoroughly assessed, and when citizens' concerns are not prioritized or the outcomes of the partnership widely shared. PPPs may be commercially successful but when the partnership is a two-way affair between the government and business sectors rather than one that directly includes citizen interests, their legitimacy is not guaranteed.

6.9. Incentivizing school performance

An important factor for the Saudi government is the provision of sufficient incentives for schools to perform well. International experience has shown that creating competition among schools via vouchers that parents can use to freely choose schools for their children is an effective method. This forces schools to compete in the market and provide higher quality facilities, competent staff, and creative learning methodologies.

7. Conclusion

This article presented an international overview of PPPs used to deliver school infrastructure by examining countries where such policies have been tested for decades, analyzing their experiences. It is clear from this review that PPPs are used for three main reasons, and the first is to compensate for significant fiscal deficits in government budgets. In European countries, Canada, and some Middle Eastern countries like Egypt, private finances provided a valuable option for delivering much-needed schools when sufficient public funds were unavailable. Second, although PPPs promise better efficiency of service delivery, in theory, international experience reveals diverse outcomes—sometimes culminating in significant successes, such as in the US, Germany or the UK until recently, with the failure of providers such as Carillion, causing PPPs to fall lose legitimacy (Kollewe, 2018) or the failure to deliver efficiently, as in the case of Canada. Nonetheless, when PPPs' contractual and operational components are designed correctly, they have a considerable potential to meet the public sector's desired financial and quality-related objectives. The third key reason for using PPPs is to ensure risk allocation to the party best qualified to shoulder it. While the private sector takes on risks associated with construction to ensure the use of high-quality materials and minimize maintenance costs at later stages, the public sector handles broader political or other risks falling beyond the scope of the private sector.

Finally, the article examined the potential of Saudi Arabia's ambitious school program being constructed through the PPP route. It provided a holistic picture of the conceptual arguments surrounding PPP school models in the existing literature and shed light on the readiness of Saudi Arabia's government and private sector to adopt the PPP model for a school program of such magnitude. It recommended the advantages of scalability and rapid roll out that modular design and construction would offer. Ultimately, Saudi Arabia will need to develop the necessary legal, institutional, and supervisory frameworks essential for PPPs prior to successfully delivering its school PPP program. The article proposes the implementation of these frameworks to mitigate existing challenges and encourage the private sector's adoption of contractual arrangements and engagements to protect the interests of the two sectors.

Author contributions: Conceptualization, MB and SC; methodology, MB; writing—original draft preparation, MB; writing—review and editing, SC; visualization, MB; supervision, SC; project administration, MB. All authors have read and agreed to the

published version of the manuscript.

Conflict of interest: The authors declare no conflict of interest.

References

- Abu Dhabi Department of Economic Development. (2008). Education and public-private partnerships (PPPs). International experiences and lessons. Available online: [https://ded.abudhabi.ae/en/studies-indicators/Studies/Education%20and%20Public%20Private%20Partnership%20\(PPP\)%E2%80%A6%20Internation.pdf](https://ded.abudhabi.ae/en/studies-indicators/Studies/Education%20and%20Public%20Private%20Partnership%20(PPP)%E2%80%A6%20Internation.pdf) (accessed on 3 September 2022).
- Accounts Commission. (2002). Taking the initiative. Using PFI contracts to renew council schools. Audit Scotland. Available online: http://www.audit-scotland.gov.uk/docs/local/2002/nr_020612_PFI_schools.pdf (accessed on 2 September 2022).
- Asian Development Bank. (2010). Public-private partnerships in ABD Education lending. 2000-2009. Available online: <http://www.adb.org/sites/default/files/publication/27484/ppp-education-2000-2009.pdf> (accessed on 1 September 2022).
- Audit Office of New South Wales. (2006). Available online: <https://web-archive.cloud.audit.nsw.gov.au/publications/financial-audit-reports/2006-reports/volume-2-2006.1.html> (accessed on 7 September 2022).
- Banks, G. (2008). Riding the third wave: Some challenges in national reform. Productivity Commission, Melbourne.
- Boardman, A., Siemiatycki, M., & Vining, A. (2016). The theory and evidence concerning public-private partnerships in Canada and elsewhere. *The School of Public Policy SPP Research Papers*, 9(12), 1-32.
- Bovaird, T. (2004). Public-Private Partnerships: from Contested Concepts to Prevalent Practice. *International Review of Administrative Sciences*, 70(2), 199–215. <https://doi.org/10.1177/0020852304044250>
- Broadbent, J., & Laughlin, R. (2003). Public private partnerships: an introduction. *Accounting, Auditing & Accountability Journal*, 16(3), 332–341. <https://doi.org/10.1108/09513570310482282>
- Caldwell, B., & Keating, J. (2004). Adding value to public education: An examination of the possibilities for public-private partnerships. Available online: www.acde.edu.au/?wpdmact=process&did=MjUuaG90bGluaw (accessed on 1 September 2022).
- Canadian Council for PPPs. (2022). Definitions and Models. Available online: http://www.pppcouncil.ca/web/Knowledge_Centre/What_are_P3s_/Definitions_Models/web/P3_Knowledge_Centre/About_P3s/Definitions_Models.aspx?hkey=79b9874d-4498-46b1-929f-37ce461ab4bc (accessed on 5 September 2022).
- Carpintero, S., & Siemiatycki, M. (2015). PPP projects in local infrastructure: evidence from schools in the Madrid region, Spain. *Public Money & Management*, 35(6), 439–446. <https://doi.org/10.1080/09540962.2015.1083690>
- CfBT. (2008). Public-private partnerships in basic education: An international review. Available online: http://www.azimpremjifoundation.org/pdf/ppp_report.pdf (accessed on 3 September 2022).
- Darvish, H., Zou, P., Loosemore, M., & Zhang, G. (2006). Risk management, public interests and value for money in PPP projects: Literature review and case studies. *The CRIOCM International Symposium on “Advancement of Construction Management and Real Estate”*.
- Department of Education and Training. (2003). *New Schools Privately Financed Project: Summary of Contracts*, Government of New South Wales, Sydney.
- Education International. (2009). Public-private partnerships in education. Education International. Available online: <http://download.ei-ie.org/docs/irisdocuments/research%20website%20documents/2009-00086-01-e.pdf> (accessed on 3 September 2022).
- English, L. (2006). Public private partnerships in Australia: An overview of their nature, purpose, incidence and oversight. *UNSW Law Journal*, 29(3), 250-262.
- Ernst & Young. (2013). Mayoral position paper on public private partnerships. Available online: <https://media.nzherald.co.nz/webcontent/document/pdf/201348/PPPStudyForAttachmen1.pdf> (accessed on 3 September 2022).
- European Commission. (2003). *Guidelines for Successful Public-Private Partnerships*. Available online: https://ec.europa.eu/regional_policy/sources/docgener/guides/ppp_en.pdf (accessed on 8 September 2022).
- Fennell, S. (2010). Public private partnerships and educational outcomes: New conceptual and methodological approaches. Department for International Development. Available online: <http://ceid.educ.cam.ac.uk/researchprogrammes/recoup/publications/workingpapers/WP37->

- PPP_and_Educational_Outcomes.pdf (accessed on 2 September 2021).
- Financier World Wide. (2012). Infrastructure & project finance. Infrastructure and project finance. Available online: <http://www.financierworldwide.com/annual-review-infrastructure-project-finance-2012/#.V8q9UJh97IU> (accessed on 3 September 2022).
- Flyvbjerg, B. (2021) Four ways to Scale Up: Smart, Dumb, Forced and Fumbled” Said Business School Working Papers, Oxford University.
- Forward, P. (2006). Public private partnership or conflict: Is it time for a new approach? *UNSW Law Journal*, 29(3), 263-269.
- German Federal Ministry of Finance. (2010). PPP schools Frankfurt. Case Study, Partnerschaften Deutschland, OPP Deutschland. AG.
- Grimsey, D., & Lewis, M. (2007). Public Private Partnerships and Public Procurement. *Agenda - A Journal of Policy Analysis and Reform*, 14(2). <https://doi.org/10.22459/ag.14.02.2007.06>
- Grimsey, D., & Lewis, M. K. (2002). Evaluating the risks of public private partnerships for infrastructure projects. *International Journal of Project Management*, 20(2), 107–118. [https://doi.org/10.1016/s0263-7863\(00\)00040-5](https://doi.org/10.1016/s0263-7863(00)00040-5)
- Grimsey, D., & Lewis, M. K. (2005). Are Public Private Partnerships value for money? *Accounting Forum*, 29(4), 345–378. <https://doi.org/10.1016/j.accfor.2005.01.001>
- Gov. UK. (2024). Priority School Building Programme: overview. Available online: <https://www.gov.uk/government/publications/psbp-overview> (Accessed 7 June 2024).
- HM Treasury. (2003). PFI: Meeting the investment challenge, Her Majesty’s Stationery Office, London.
- HM Treasury. (2005). Application note: Value for money in refinancing?. Available online: www.gov.uk/government/uploads/system/uploads/attachment_data/file/225371/08_application_note_value_for_money_280205.pdf (accessed on 5 August 2022).
- HM Treasury. (2007). PFI Signed Projects List—December 2004 (The Treasury, London).
- HM Treasury. (2012). Private finance 2. Available online: www.hm-treasury.gov.uk/infrastructure_pfireform.htm (accessed on 10 September 2022).
- Infrastructure Ontario. (2015). Making projects happen. Value for money assessment. Available online: www.infrastructureontario.ca/WorkArea/DownloadAsset.aspx?id... (accessed on 3 September 2022).
- InfraPPP. (2013). Bilfinger Berger Infra fund acquires stakes in four German PPP projects. Available online: <https://www.infrappworld.com/news/bilfinger-berger-infra-fund-acquires-stakes-in-four-german-ppp-projects> (accessed on 5 June 2024)
- InfraPPP. (2015). Kuwait issues RFP for schools PPP project. Available online: <https://www.infrappworld.com/news/kuwait-issues-rfp-for-schools-ppp-project> (Accessed 4 June 2024).
- Kollewe, J. (2018). Carillion: what went wrong and where does it go from here? Available online: <https://www.theguardian.com/business/2018/jan/15/carillion-what-went-wrong-liquidation-staff> (accessed on 6 June 2024).
- Kozarowski, D. (2006). Public private partnerships- solution worth pursuing despite their complexity. *UNSW Law Journal*, 29(3), 308-317.
- Mckinsey & Company. (2014). Partnering for outcomes: Public private partnership for school education in Asia. Mckinsey Center for Government. Available online: <http://www.mckinsey.com/global-locations/asia/singapore/en/our-work/mckinsey-innovation-campus> (accessed on 1 September 2022).
- National Infrastructure Plan. (2010). Available online: <https://infrastructure.planninginspectorate.gov.uk/wp-content/uploads/2010/12/nationalinfrastructureplan251010.pdf> (accessed on 3 September 2022).
- New Zealand Ministry of Education. (2012). Available online: <http://www.education.govt.nz/news/consortia-shortlisted-for-third-schools-ppp> (accessed on 15 May 2024)
- NSW Office of Financial Management. (2002). Private provision of public infrastructure and services.
- Norton, H. (2015). Australasian firms team up for Kiwi PPP. Available online: <http://www.australasianlawyer.com.au/news/australasian-firms-team-up-for-kiwi-ppp-200227.aspx> (Accessed 5 June 2024).
- OECD. (2010). Flexible and alternative approaches to providing school infrastructure in Alberta, Canada. Available online: http://www.oecd-ilibrary.org/education/flexible-and-alternative-approaches-to-providing-school-infrastructure-in-alberta-canada_5kmh36j9vwmw-en?crawler=true (accessed on 3 September 2022).
- Patrinos, A. (2005). Education contracting: Scope of future research, program on education policy and governance report. Harvard University.

- Patrinos, A. (2023). Designing effective public-private partnerships in education. Available online: <https://blogs.worldbank.org/en/education/designing-effective-public-private-partnerships-education> (accessed on 7 June 2024).
- PPP Knowledge Lab. (2022). PPP Reference Guide, Version 3. Available online: <https://ppp.worldbank.org/public-private-partnership/ppp-knowledge-lab> (accessed on 3 September 2022).
- Price Water House Coopers. (2010). Public-private partnerships: US perspective. Available online: <http://www.pwc.com/us/en/capital-projects-infrastructure/publications/public-private-partnerships.html> (accessed on 3 September 2022).
- Ronald, D. (2005). Public-private partnerships offer innovative opportunities for school facilities. The Maryland Public Policy Institute. Germantown, un. Available online: https://www.mdpolicy.org/docLib/20051112_PPPSchoolFacilities.pdf (accessed on 3 September 2022).
- Ross, P. (2004). Australia's first public private partnership school project. Available online: http://www.oecd-ilibrary.org/education/australia-s-first-public-private-partnership-school-project_616725002620?crawler=true (accessed on 3 September 2022).
- Sands, V. (2006). The right to know and obligation to provide: Public private partnerships, public knowledge, public accountability, public disfranchisement and prison cases. *UNSW Law Journal*, 29(3), 334-341.
- Schmold, S. (2009). Building Together-It's time to act infrastructure report. Alberta School Boards Association.
- Strategy. (2012). Partnerships for transformation: Using public-private partnerships in the GCC. Available online: <https://www.strategyand.pwc.com/m1/en/ideation-center/media/private-sector-participation-in-the-gcc.pdf> (accessed on 4 September 2022).
- Smith, C. (2023). Prince George's County Saves Big by Bundling School Construction. Available online: <https://www.governing.com/finance/prince-georges-county-saves-big-by-bundling-school-construction> (accessed on 7 June 2024).
- Teicher, J., Alam, Q., & Gramberg, B. V. (2006). Managing trust and relationships in PPPs: some Australian experiences. *International Review of Administrative Sciences*, 72(1), 85-100. <https://doi.org/10.1177/0020852306061624>
- UNICEF. (2011). Non-state providers and public-private partnerships in education for the poor. Available online: <https://www.adb.org/publications/non-state-providers-and-public-private-partnerships-education-poor> (accessed on 3 September 2022).
- Vanourek, G. (2005). State of the Charter School Movement, 2005: Trends, issues, and indicators, Charter School Leadership Council, Washington, DC.
- Victoria State Government. (2017). New Schools PPP. Available online: <https://www.dtf.vic.gov.au/partnerships-victoria-ppp-projects/new-schools-ppp> (Accessed 7 June 2024).
- Webb, R., & Pulle, B. (2002). Public private partnerships: An introduction. Department of the parliamentary library.
- World Bank data. (2020). Available online: www.worldbank.org (accessed on 11 July 2022).
- World Bank. (2009). The role and impact of public-private partnerships in education. Available online: http://www.ungei.org/resources/files/Role_Impact_PPP_Education.pdf (accessed on 3 September 2022).
- Wright Construction. (2018). Saskatchewan joint use schools. Available online: <https://www.wrightconstruction.ca/project/p3-schools/> (accessed on 5 June 2024).