

# 3

## Structure of the Investigation

### 3.1 Overview of the Approach Taken in This Study

Chapter 2 demonstrated that we are not looking at a completely unknown phenomenon—much knowledge exists about the challenges of very large public projects. We do not need to go out in the field and document phenomena that have never been seen before, proving that they have systemic causes and are not just idiosyncratic anecdotes. The existing work suggests that very large projects are complex social systems, the success drivers and challenges of which are roughly known but which are very difficult to manage because their specific instances interact and change over time. Moreover, not all the drivers are always relevant, but it is important to understand which are critical in specific situations. In other words, we are trying to identify the most important issues that go wrong in the specific Nigerian public sector context and how one might correct these issues.

A good method to test existing theoretical (causal) knowledge would be the careful statistical comparison of project characteristics from archival databases. If we compare thousands of projects with respect to success and the absence or presence of challenges and success drivers, we can use statistical methods to finely distinguish which success drivers make a difference and which do not. However, we have already pointed out that large-scale project data is simply not available in Nigeria, neither from government sources nor from accessible journalistic sources.

Therefore, we need to create our own database of projects. One good way of doing this is a survey—asking people who are involved in large projects to answer questions about the known success drivers (Creswell, 2009). Comparing the responses across projects enables us to test whether the identified success drivers actually make a difference. Indeed, this is one method that we have used: we asked 3 different respondents from each of 20 completed projects and 20 abandoned projects to respond to a questionnaire (and we obtained answers from all 3 respondents of 38 of the 40 targeted projects). We describe the way in which we carried this out in the next section of this chapter.

Questionnaires have limitations—even if each respondent fills out the questions with someone sitting across the table helping them (thereby reducing problems of sufficient effort and common interpretation), predefined questions only capture certain types of information, possibly missing additional issues that did not fit the assumed structure of the problem. Therefore, we added a second method by writing detailed case studies, “telling the causal stories” of what actually happened for 11 of the 38 surveyed projects. Ten cases comprise paired stories of a completed and an abandoned project in the same sector, and the eleventh case is the only steel plant in the sample, Ajaokuta, which has cost the country a phenomenal amount of money (\$5B and counting) without ever having produced a single ton of steel, and on which a previous case study already exists, which we shall revisit. We describe the way that we conducted the case studies, using a combination of interviews complemented by independent desk research from public sources, in the last section of this chapter.

## 3.2 Construction and Execution of the Survey

Questionnaires represent a useful method to test existing knowledge (or theories). They offer a number of advantages. We discuss these advantages, as well as their disadvantages, and how we used our design to limit these disadvantages (Popper, 1959; Rattray & Jones, 2007; Taylor & Bogdan, 1998; Grant & Wall, 2009). The strengths of the questionnaire method are as follows:

- The quantitative data generated can be used to test existing knowledge and theories and their hypotheses (this is called the “positivist view”, which holds that data can be “objectively” described and quantified).

- Questionnaires are practical; they can collect large amounts of information from a large number of people in a short period of time and in a relatively cost-effective way.
- Once the questionnaire is done, the research can be carried out by a group of people without compromising its validity and reliability, provided the questionnaire is well designed in a way that is not “subjective” but well-grounded in existing knowledge or theory.
- The results of the questionnaires can be quickly and easily quantified (“coded”) by the researchers with the help of software packages.
- The resulting quantified data can be analysed more “scientifically” and objectively than qualitative research, and it can be used to compare and contrast results with results from other research (here, the qualitative case studies).
- Questionnaires can assure anonymity and thus allow respondents to be open. This was particularly important in this context, where people felt exposed by the size and visibility of the projects and were willing to speak only if it was guaranteed that their identities would be protected.

The disadvantages of questionnaires are as follows (we outline how our design attempts to limit the disadvantages):

- *Phenomenologists assert that questionnaires (and quantitative research more generally) are artificial creations by the researcher, asking for limited information without explanation* (as opposed to qualitative research, which asks for the “full richness” of participants’ experiences—this is the opposite of the positivist view). Thus, questionnaires lack validity. Our response is that asking for the “full richness” of experience naturally carries its own biases (Where are the interviewees “led?”), and if existing explanatory theory is available, the “full richness” is wasteful because it will contain so many irrelevant details that the relevant core issues may be lost in the noise. If the questionnaire is carefully designed based on the existing professional knowledge (as described below), it is not artificial, and it has validity.
- *There is no way to tell how truthful a respondent is being or how much thought a respondent has put in.* We addressed these dangers by (a) asking three respondents from each project to fill out the questionnaire, that is, three people representing different parties in the project; this goes at least part of the way to preventing partial views and partisan information distortion and moving towards objectivity; (b) having an associate sit down with each respondent and leading them through the questionnaire, answering

questions about interpretation and making sure that nothing was glossed over.

- *The respondent may be forgetful or not thinking* within the full context of the situation. This is true, but this holds for all personal (non-archival) forms of data collection, and it is again at least partially addressed by the multi-respondent strategy.
- *When developing the questionnaire, the researcher is making his/her own decisions and assumptions about what is, and is not, important. Therefore, they may be missing something that is important;* also, some forms of information may not fit the theoretical lens of the questionnaire (such as emotions or tribal customs) and thus be overlooked by the pre-specified questions. This is again true, and this is the reason why we chose a mixed method combining the questionnaire with detailed case studies.

Here, we describe how the questionnaire was designed and executed. We started with the extended project management framework that concludes Chap. 2. These are the success drivers that 40 years of previous work have identified as professional knowledge about very large projects. We went through the following steps:

1. We decided to forego quasi-“archival” numerical measures, for instance, “the number of stakeholder complaints successfully negotiated”. Such measures, when not routinely available as standard content from IT systems, take inordinate amounts of effort to obtain or estimate (if they can be obtained at all). In order to keep the effort for the respondents within acceptable limits, we decided to use “Likert scale” questions of the type “To what extent do you agree with the following statement (1 = not at all, 4 = neutral, 7 = strongly)?” Likert scale answers are quantifiable and can be (and routinely are) used as quantitative answers, and they can be answered by respondents on the spot, using their knowledge of the context. They are less precise than IT-based archival numbers, and they may invite respondents to give biased answers. However, we addressed this worry by asking three respondents from each project.
2. We translated each of the 48 constructs in the project management framework into possible “measures” that one would be able to request in a questionnaire (Hinkin, 1998; Ghiselli et al. 1981); for example, the “clear vision” construct was expressed with measures such as the extent to which “the goals of the project were clearly understood, the goals were clearly measurable, the prioritization among the top three goals was clear” (this shows how several constructs required multiple measures). In doing so, the

authors did not simply invent measures but looked in previous literature across several disciplines (such as IT and engineering) to see how such constructs had been translated into measures before (Benaroch & Chernobai, 2017; Chua et al., 2012; Constantinides & Barrett, 2015; Dawson et al. 2016; Gopal & Gosain, 2010; Huber et al., 2017; Langer et al., 2014; Mani et al., 2014; Moeini & Rivard, 2019; Oliveira & Lumineau, 2017; Sabherwal et al., 2019; Tallon et al., 2013; Tian et al., 2015; Tiwana & Kim, 2015; Tiwana & Konsynski, 2010; Wu et al., 2015; Young Bong et al., 2017). As a result, the measures that we identified were not arbitrary inventions but had been tested and validated previously. This step resulted in 90 validated measures (including outcome measures).

3. It is still not feasible for senior participants to respond to 90 measures (and thus 90 questions) in a questionnaire within an acceptable time frame. Therefore, we condensed the questions by identifying measures with significant overlap and reduced them to 41, corresponding to 7 pages, which was judged acceptable through a prototype test with volunteer respondents. In addition, the questionnaire included some information about the role of the respondent in the respective project and about the size and outcomes of the project. The complete questionnaire is shown in Appendix.
4. Each questionnaire was sent to three respondents from each project: a project owner (a senior civil servant from the agency that owned the project and who was responsible for its goals), a project supervisor (a mid-level civil servant who was part of the organization that supervised and worked with the contractors that executed the project) and a project manager (an employee of the main contractor). Thus, three different perspectives of the project were represented: the strategic perspective of the owner, the execution perspective from the government side and the execution perspective from the contractor side.
5. Each respondent was approached by means of a personal letter from the lead author, in many cases followed up by a phone call. All respondents were guaranteed anonymity. For 38 of the targeted 40 projects, all 3 respondents agreed to participate. Each respondent was visited by a research assistant, who sat down with the respondent, who explained the questionnaire and was immediately available to clarify questions and interpretations and who ensured that the questionnaire was completed in full.
6. The completed questionnaires were coded in Cambridge by a separate research assistant and then analysed by the authors.

The result of this process was a data set of 114 questionnaires (3 from each project), with project outcome information and 41 measures of success drivers that had been validated by theory and by previously used measures in wider project management research. This data set formed the basis of the analyses reported in Chap. 5.

### 3.3 Construction of the Sample of Projects

Constructing a database of large government projects that enables a systematic comparison of successes and failures is difficult. In the absence of systematic data (the reader may remember that the commission that found a 63% abandonment rate of large government projects did not publish a list!), the projects had to be identified and paired for comparison, and the representatives of the abandoned projects had to be convinced to provide responses.

This took significant effort, time and investment of social capital. Business schools all over the world (including in Nigeria) are drowning in case studies of companies that have succeeded. Companies (and government agencies) love to talk about successes, and they use case studies as marketing tools to showcase to students how great they are. But take a look at how many failures are discussed in public, and you will find that there are very few. Organizations (even more than individuals) loathe speaking about their failures because they fear damaging their external image. Add to this the pressure on large government projects in Nigeria from the press and the public, and the reader may understand why no one has yet constructed this kind of data—not because no one cared but because it is difficult to do.

Table 3.1 presents the sample that the authors were able to construct. It contains 19 completed and 19 abandoned projects (of the targeted 40). Because of the abovementioned challenges, this sample is, to some degree, “opportunistic”: Which projects could we find that were completed versus abandoned, and which ones had senior managers who were willing to respond to a questionnaire? The sample is not arbitrary but consists of *matched pairs*—a pair of projects belongs to the same sector, has a similar budget size and, if possible, was carried out by the same contractor (the latter was possible only in around a third of the cases).

The matching reassures us that the outcome differences were not caused by large differences in context, complexity (the sector) or budget size, or by the abandoned projects somehow having worked with less competent contractors. The matching increases our confidence that the variables measured in the questionnaire indeed captured the differences between the paired projects.

Table 3.1 The sample of projects in this study

Completed projects			Abandoned projects				
Pair	Pair	Project	Budget \$M	Contractor	Project	Budget	Contractor
1	Roads	Lagos-Ibadan Express Road	500	Julius Berger, Reynolds	Lagos-Badagry Express Road	500	China Civil Engg & Constr. Co (CCECC)
2	Bridges	Third Mainland Bridge, Lagos	1000	Julius Berger, Reynolds	Second Niger Bridge	1000	Julius Berger, Reynolds
3	Energy/power	Egbin Power Station	690	Marubeni West Africa	Calabar Power Station	660	Marubeni West Africa
4		Zungeru Hydropower Plant	1000	CNEEC-Sinohydro	Delta State Power Plant	1000	General Electric
5		Shiroro Hydroelectric Power Station	100	Rockson Engineering Nigeria	Omoku Power Plant Station	100	Rockson Engineering Nigeria
6		Mambilla Hydroelectric Power	5000	Sinohydro Corporation, China			
6	Steel				Ajaokuta Steel Project, Kogi	5000	Tyajz Prom Export (TPE)
7	Water (dam)	Kanji Dam	250	Balfour Beatty; Nedeco Ita	Otukpo Dam	200	SCC Nigeria
8	ICT (satellite)	Nigeria Satellite 2	300	Surrey Satellite Technology (UK)	Nigeria Satellite 1	300	China Great Wall Industry Corporation
9	ICT (telecoms)	Airtel Nigeria	1000	Bharti Airtel (India)	Nigerian Telecom. Ltd (NITEL)	1000	Ministry of Communications
10	Sports stadium	Godswill Akpabio International Stadium	100	Julius Berger Nigeria	(Samuel) Ogebmudia Stadium	100	Peculiar Ultimate Concerns Ltd

(continued)

Table 3.1 (continued)

Completed projects			Abandoned projects				
Pair	Pair	Project	Budget \$M	Contractor	Project	Budget	Contractor
11	Airport	Abuja International Airport	500	CCEC (China)	Lagos MMA2	500	Bi-Courtney Aviation
12		Yenagoa International Cargo Airport	200	CCEC (China)	Jigawa Airport Project	200	State Ministry of Works
13	Sea port	Tin Can Island Port, Lagos	250	Port and Term. Multi Serv.	Calabar Seaport	250	Julius Berger Nigeria
14	Housing	Victoria Garden City (VGC) Housing Estate	1000	HFP Engineering Ltd	Festac Town Federal Housing Estate	1000	Federal Ministry of Housing
15		1004 Housing Estate	200	Zvecan Engineering Nigeria	Abuja Mass Fed. Housing	200	Wengfu (China)
16	Libraries	Olusegun Obasanjo Presidential Library	500	Gitto	Abuja National Library	500	Reynolds Construction
17	Social project	Nigerian Youth Empowerment Scheme (N-Power)	500	Federal Government of Nigeria	Subsidy Reinvestment and Empowerment Program (SURE-P)	500	Federal Government of Nigeria
18	Waste management	Lagos State Waste Management Authority	200	Government of Lagos State	Cleaner Lagos Initiative (Visionscape)	200	Government of Lagos State
19	Health care/hospitals	University College Teaching Hospital (UCH) Ibadan	500	Alexander Gray (UK)	University of Abuja Teaching Hospital (UATH)	500	Mssrs Cochair Technology

Collectively, this sample covers key sectors of government investment—roads, airports, power stations, ports, housing, ICT systems, waste management, hospitals, education and social projects. This increases our confidence that our findings do not just describe one specific sector but really do capture systematic elements of how the Nigerian government manages its large investment projects. Each project is presented in more detail in Chap. 4.

### 3.4 Construction of the Case Studies

Earlier, we discussed the limitations of surveys: although the quantitative analysis can demonstrate that there are systematic differences between the management practices of completed and abandoned projects, the variables are stylized. Therefore, the econometric analysis in Chap. 5 remains conceptual; it does not bring to life what the project problems looked like; it does not illustrate the causality of *how* the success drivers “drive” success; and because the questions represent the theoretical lens of our framework from previous professional knowledge, they may overlook “other” things that happened, which may offer “other” explanations. Therefore, we have chosen 11 of the projects in the sample for more detailed case studies that “bring the story to life”.

The 11 projects are again matched pairs, comprising 1 completed and 1 abandoned: 2 education projects (Abuja National Library and Obasanjo Presidential Library), 2 bridges (Third Mainland Bridge and Second Niger Bridge), 2 roads (Lagos-Ibadan Express Road and Lagos-Badagry Express Road), 4 power plants (Egbin versus Calabar Power Stations, and Zungeru Hydropower Plant versus Delta State Power Plant) and the 1 steel project in the sample, the Ajaokuta Steel Project, chosen for its size and prominence.

To write these case studies, the authors visited the sites and interviewed people on location, as well as in the ministries where decisions had been made. The interviews lasted 1–2 hours (some of which covered more than one case), and site visits lasted at least half a day each. The interviews are listed in Table 3.2. As is recommended by case study method experts (Yin, 2014), interview and site visit notes were written on the same day that the interviews took place. Later, the accounts from the interviews were complemented by desk research that cross-checked the accounts and filled in the gaps that the interviewees had not covered.

It turned out that the case studies did *not* reveal additional phenomena that had not been included, in principle, in the identified professional knowledge on very large projects. However, the case studies did show how the success

**Table 3.2** List of respondents interviewed across organizations

Interviewee	Position
1. Olusegun Obasanjo	President, Federal Republic of Nigeria, 1976–1979 and 1999–2007
2. Ibrahim Babangida	President, Federal Republic of Nigeria, 1985–1993
3. Goodluck Jonathan	President, Federal Republic of Nigeria, 2010–2015
4. Muhammadu Buhari	President, Federal Republic of Nigeria, 2015–current
5. Mr Alex Okoh and his team	Director Bureau of Public Enterprise
6. Mr Sonny Echono	Acting Minister, Ministry of Education
7. Dr Abdulkadir Muazu	Permanent Secretary, Federal Ministry of Mines
8. Engr Sumaila Abdul-Akaba and his team	Sole Administrator, Ajaokuta Steel Company
9. Jack Robinson	Head engineer, project supervising company Tractebel
10. Mr Edozien	Acting Permanent Secretary, Ministry of Power
11. Jack (name disguised)	Project manager at a major contractor
12. Mr Abubakar Ganiyu	Receiver, VGC Estates
13. Management team	VGC Estates Company
14. Mr Babatunde Fashola	Minister of Power, 2015–2019
15. Dr Yemi Kale	Statistician-General of the Federal Government
16. Mr Igwe Onuoha	Technical manager, Egbin power plant, from 1984
17. Name withheld	Representative of the contractor Bi-Courtney
18. Name withheld	Official in the Economic and Financial Crime Agency
19. Name withheld	Former high-ranking civil servant, India
20. Name withheld	Former high-ranking civil servant, Thailand
21. Name withheld	Former high-ranking civil servant, Indonesia

drivers worked and how the success drivers interacted with one another (e.g. if the project does not have stable funding, then contractors are tempted to play games in order to secure getting paid), as our narratives demonstrate in Chaps. 6, 7, 8, 9, 10, and 11. Moreover, the case studies reinforced the observation from the econometric analysis (Chap. 5) that there were consistent themes, across projects and sectors, regarding how the Nigerian government managed its large infrastructure projects in ways that turned out to be self-damaging.

## Appendix: Full Questionnaire as It Was Administered

The University of Cambridge Judge Business School offers a Business Doctorate Degree for very experienced and senior business people. The goal of this programme is to combine the student's vast experience with rigorous methodology to produce knowledge of high relevance and impact.

The thesis of which this questionnaire forms a part has the theme "The Major Leadership Challenge of Government Major Project Delivery in Nigeria". The project attempts to understand and improve management practices in the set-up and execution of very large infrastructure projects in Nigeria. Such projects have budgets of approximately \$1 billion, have thousands of people working on them and take a decade or more to complete. Unfortunately, many such projects do not succeed, which represents a significant drain on the scarce resources of the entire country. The experienced student undertaking this research is a senior Nigerian executive, Dr Jimoh Ibrahim Folorunsho.

### Our Request

The University of Cambridge solicits your support and assistance in the completion of this survey questionnaire. This will take approximately one hour, and we will make a guide available to help you articulate the answers. The purpose of the questionnaire is to examine management practices in large infrastructure projects in Nigeria.

The University will appreciate your sincere and honest views. The doctrine of exclusion and limiting clause shall be applicable, and neither you nor the University can be held responsible for any liabilities arising directly, or otherwise, in the course of the investigation relating to the opinion expressed. *All your answers will remain confidential and will not be shared with outside parties. Only aggregate results will be published—no individual responses.* The findings of this study will be publicly available in such an aggregated form. If you have any further questions, please contact any of the following by email: [c.loch@jbs.cam.ac.uk](mailto:c.loch@jbs.cam.ac.uk) [k.sengupta@jbs.cam.ac.uk](mailto:k.sengupta@jbs.cam.ac.uk) or [if21@cam.ac.uk](mailto:if21@cam.ac.uk)

On behalf of the Cambridge Judge Business School, we express our appreciation for your time spent completing this questionnaire.

## Project Variables

### Section A: Background Information

(i) Name	(ii) Telephone number
(iii) Occupation/role	(iv) Position/role you had in this project
(v) Email address	(vi) Name of organization
(vii) Official address	(viii) How long have you been in the organization?
(ix) How many people report to you?	(x) Who do you report to?
(xi) Project commencement date	(xii) Originally estimated delivery date
(xiii) Final/currently estimated delivery date	(xiv) Original budget size
(xv) Final/currently estimated total cost	(xvi) Success/effectiveness of operation: (1 = low success, 7 = high success) Measure of success (e.g. \$ of public benefit):

**Section B: We are asking 40 questions that relate to the methods and structures with which the project was managed. (*Circle the number* that corresponds to your reaction/estimation or fill out the text.)**

#### A. Governance

1. The project had a well-defined supervision structure (e.g. a combination of clear oversight by a government body with an external execution supervisor).

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

2. Outline the decision hierarchy structure (e.g. “minister – project officer – professional project supervising consultant – main contractor”).

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3. The composition of the supervision structure remained stable throughout.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

4. The supervision structure provided oversight on a regular basis throughout the project.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

5. The supervision structure provided clear guidance when it came to grey areas.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

6. All key decisions were approved by the supervision structure.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

7. The supervision structure was regularly kept informed of key aspects of the project.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

8. The supervision structure met regularly.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

9. The credentials of the members were subject to due diligence prior to membership.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

10. The supervision structure regularly uncovered difficulties in the project.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

11. The supervision structure regularly uncovered irregularities in the project.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

12. The supervision structure provided adequate guidance for resolving problematic aspects of the project.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

13. Significant gratification in any form was present in this project.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

14. The primary contractor was selected through a selection process appropriate for projects of this scale.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

15. The selection process was rigorous and open.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

16. The selection process considered contractors' demonstrated experience in similar projects elsewhere.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

### *B. Project Initiation*

17. Details regarding planning for the project received wide visibility, for example, through a website.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

18. The public were able to ask questions regarding the project.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

19. Key stakeholders outside the narrow decision circle had visibility and input before the approval processes of the project.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

20. The goals of the project were clearly understood by all parties.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

21. The goals were clearly measurable.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

22. The prioritization among the most important goals was clear.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

23. The project was created with a demonstrated business case defining the goals and public benefits.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

24. The benefits of the project to the economy or society were clear and measurable at the start of the project.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

25. The project goals and business case were subject to risk scenarios to capture the risks of outcomes.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

### C. Project Execution

26. The primary contractor had strong *capability* to deliver a project of similar characteristics and scale.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

27. The primary contractor had strong prior *experience* in similar projects with a *track record* of successful delivery of similar projects.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

28. The primary contractor and the supervising party had clearly defined roles.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

29. The primary contractor and the government’s assigned project supervisor (see Question 2) worked together constructively when problems occurred in the execution.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

30. *Sub-contractors*: Taken together, the sub-contractors had strong *capability* to deliver a project of similar characteristics and scale.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

31. The project had formal plans for managing stakeholders outside the project.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

32. The plans were actively used to positively influence stakeholders.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

33. Stakeholder views were used to make changes that improved the viability of the project.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

34. The project was adequately resourced (in terms of funds) for its initial size.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

35. The project funding was renewed/maintained when the project needed the funds to proceed.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

36. The project had an adequate supply of skilled staff on the government side.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

37. The project had adequate logistical support, for example, for delivery of materials or personnel.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

38. The timeline of the project plan was realistic.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

39. The project had a well-defined risk plan.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

40. The risk plan was comprehensive in the management of risks that did occur.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

41. The quality of the risk plan was consistent with similar plans used in projects of this magnitude worldwide.

1	2	3	4	5	6	7
Strongly disagree			Neither agree nor disagree			Strongly agree

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