

SAGE Research Methods Cases: Business & Management

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Case Study Title		Using innovation stories from digital platforms to explore what motivates innovation
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Author bio. <i>Please include a separate biography for each author. Maximum of 200 words per author. Bios will not be copy-edited; please ensure they are correct.</i>		<p>Dr Johan Ninan is an Assistant Professor at the Faculty of Civil Engineering and Geosciences, Delft University of Technology (TU Delft), the Netherlands. Previously, he was a Post-Doctoral Fellow in the Bartlett School of Sustainable Construction at University College London (UCL). His research focuses on megaprojects, stakeholder engagement, collaboration, innovation, and project organizing with a particular emphasis on the role of digital media. He has published in leading project management journals such as International Journal of Project Management, Project Management Journal, and Construction Management and Economics. He was awarded the 2020 IPMA Global Young Researcher Award and the 2020 APM Paper of the Year Award.</p>
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Author bio. <i>Please include a separate biography for each author. Maximum of 200 words per author. Bios will not be copy-edited; please ensure they are correct.</i>		<p>Dr Natalya Sergeeva is an Associate Professor at the Bartlett School of Sustainable Construction, University College London (UCL). Natalya lectures on project management and innovation management at the postgraduate and executive levels. She has some practical experience managing construction and infrastructure projects and consultancy. Natalya's research explores the nature and role of narratives in leading projects and firms, individual and organizational identities, and the ways leaders articulate and translate narratives and identities. She has published a number of articles in leading journals, such as Industrial Marketing Management, International Journal of Project Management,</p>

	Project Management Journal, International Journal of Innovation Management, and Creativity and Innovation Management.
Discipline	Business & Management [D12]
Sub-discipline within Business & Management	Other Management Specialties [SD-BM-14]
Academic Level of intended readership. Select the level best suited to the case study content.	Postgraduate
Published articles based on the research project this case study explores.	Ninan, J., Sergeeva, N., & Winch, G. (2022). Narrative shapes innovation: a study on multiple innovations in the UK construction industry. Construction Management and Economics, 1-19. https://doi.org/10.1080/01446193.2022.2037144
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Your case study must not exceed 5000 words. Discussion Questions, MCQs, and References do not count towards this limit.

Please ensure you have read through this template and the manuscript guidelines before you begin writing your case study.

Abstract

The abstract should be a concise summary of this case study. What original research is this case study based on? What aspect of the research process, or specific methodological and

practical challenges, will your case study address? Emphasize what the reader will learn from reading this case study, and how they might apply it in their own research practice. Please do not cite references within the abstract.

[Insert here: Maximum of 250 words]

The objective of this research study was to investigate the role of narratives in shaping multiple innovations in the UK construction industry. A total of 133 innovation stories published in a year are compiled from a digital portal Infrastructure Industry Innovation Partnership (i3P). The stories are qualitatively analyzed using open coding, axial coding, and constant comparisons to understand their motivations. The resulting framework explains how narrative shapes innovation across health, safety, sustainability, and productivity. The use of online research methods has increased in the modern era with the internet becoming more interactive and ubiquitous. However, there is still limited knowledge on how to handle these large amounts of digital data. In this case study, we provide some practical steps to improve data collection, analysis and presentation of online data. All innovations for a year were collected to get a representative sample without excluding any to reduce the researcher bias of exclusion. Open coding, axial coding, and constant comparisons were used to refine the categories generated and improve the theoretical contribution. During presentation of findings, steps were undertaken to guard the privacy of respondents.

Learning Outcomes

Learning outcomes must explain what the reader will learn from reading your case study. Readers should be learning about research methodology, methods, and practicalities. How will the reader be able to apply what they have learned to their own research practice?

Please refer to these learning outcomes when writing your case study. Your case study must satisfy each proposed outcome. It is vital that you provide achievable and measurable learning outcomes. Please start each learning outcome with an action verb.

See the links below for guidance on writing effective learning outcomes:

- [Writing learning outcomes](#)
- [Bloom's Taxonomy Action Verbs](#)

[Insert 3–5 learning outcomes under the statement provided below: “By the end of this case, readers should be able to . . .”].

By the end of this case study, readers should be able to . . .

- Identify sources of digital data to study practice of large number of organizations.
 - Improve the validity of online qualitative research findings.
 - Safeguard the privacy of respondents while considering data in the digital space.
-

Case Study

Insert your case study below. The main body of the text should be between 2,000 and 5,000 words.

We encourage the use of headings and sub-headings add structure to the body of your case, enhance online discoverability and make your case easier to read on screen.

Suggested top-level headings (H1s) are included in the template. If you are using subheadings in a section, please apply the appropriate Word style tags (H2 or H3) so that the desired nesting structure is clear.

Every section with a heading must be followed by a Section Summary. Each Section Summary should consist of 2-3 bullet points, written out as full sentences, which summarize the key information in the section.

Project Overview and Context

Here you can include information about the focus of your research project. Why were you interested in studying this topic? In what context was this research undertaken?

This section should not read as a literature review but should explain the rationale behind your research project. In the following sections you will be concentrating on your research methodology, which is the primary focus of your case study.

[Insert text here: We suggest up to 500 words]

The nature of the construction industry is different from other sectors due to the unique and temporary nature of projects. Innovations can bring efficiency and effectiveness to the tradition-bound construction industry (Ozorhon et al., 2016). However, construction projects are interorganizational and multileveled (Winch, 2010), and hence the industry-level narratives need to be adopted by firms to enable innovations at project sites.

This research aims to explore the practice of innovation in construction projects as there is a need to understand what ‘is’ happening in construction innovation, rather than what ‘should’ happen. Among the different possibilities for innovation in the construction sector, it is worth investigating why a particular innovation is pursued by practitioners to shape future innovations for industry improvement, specifically the role of narratives in shaping innovation. For example, existing research on organizations note how stories about earlier events were used to motivate and persuade team members (Deuten & Rip, 2000; Enninga & van der Lugt, 2016).

Narratives provide a way to manage the tensions prevalent in the industry as they render human intentions meaningful (Bruner, 1990) and influence practice along a particular direction (Carlsen & Pitsis, 2020). Weick and Roberts (1993) highlight narratives as a fabric that holds groups together as they improvise their ways through difficult situations. They shape an individual’s ‘entire web of beliefs’ (Tversky and Kahneman, 1981) and hence have performative implications as they constitute words that get things done (Sergeeva & Winch, 2021). For example, Ninan et al. (2022) studied project narratives of an infrastructure project in Twitter and recorded that these narratives brought about a change in preference of the community in the form of less resistance to traffic diversions during project construction and even provided a common rationale for the different internal stakeholders to work together. Whilst we acknowledge that factors such as incentives and rewards can motivate innovation (Liu & Chan, 2017; Gann & Salter, 2000), we argue that narratives shape or guide innovation in a particular direction.

Narratives can be identified and studied at multiple levels: individual, project, firm, industry; and their interactions are of particular interest and importance for meaning making, strategy and policy making (Sergeeva & Green, 2019). Industry-level narratives are ‘grand narratives’ that occur in texts at particular times in history, and that provide meaning for all the practitioners in the industry (Fenton & Langley, 2011). In contrast, firm-level narratives are narratives within organization which provides meaning for the practitioners associated with the firm. We seek to investigate the role of narratives in shaping innovation and transforming construction by considering multiple innovations stories in the UK construction industry. In the process, we ask (1) what are the innovations in the construction industry? and (2) how do narratives shape these innovations?

Section Summary

What are the key points the reader should take from this section?

- *In order to improve construction innovation, there is a need to understand what ‘is’ happening in construction innovation, rather than what ‘should’ happen.*
- *Narratives can influence practice along a particular direction.*

Research can improve the understanding of organizational practice by studying what ‘is’ happening rather than what ‘should’ happen.

Research Design

Describe how you designed your study, and why you designed it that way. Explain the rationale behind any fundamental decisions you made. In later sections you can describe any changes that were made to your original design.

Ensure that you define and explain any key terms for the reader.

[Insert text here: We suggest up to 800 words]

We adopted a unique research method to capture and analyze multiple innovations compiled from an innovation repository in the UK, Infrastructure Industry Innovation Portal (i3P), in order to address the research questions. We chose to study innovations in the construction sector across different organizations in the UK rather than focus on one company because of two reasons. First, the construction industry in the UK is an important focus for government policymakers due to its size, poor efficiency, low skill level, labor intensiveness, and its large multiplier effect into the wider economy (Raiden et al., 2018). Second, the UK setting enables an investigation on the role of narratives in construction innovation, as innovation is routinely stressed through multiple industry reports such as Egan (1998), HM Government (2013) and Farmer (2016) in an attempt to improve the performance of the construction industry.

The innovation stories are obtained from an industry wide online digital portal, i3P, where different companies post their innovation stories. The portal, set up in 2016, is a spin-off from Crossrail's Innovate 18 program and was subsequently jointly developed by the Knowledge Transfer Network (KTN), Tideway and Crossrail in an attempt to connect industry partners and enable industry collaboration on innovation. We chose to study the i3P portal for the following reasons. First, it provides a platform for different organizations to share ideas, partner with others, and innovate for potential industry improvements. Second, the innovation cases posted online can be categorized as 'online naturalistic' data (Ninan, 2020) because they exist naturally without the intervention of the researcher (Silverman, 2015). Third, there is limited respondent bias as it eliminates recollection and question bias issues observed in the data collected through interviews as here, we try to make sense of the original text as the actors themselves wrote or said it (Whittle et al., 2008). Finally, the written format of innovation stories in the platform encourages reflective thinking and allows muted voices to be heard thereby overcoming the limitations of standard interviews (Patterson, 2005). Thus, we studied 133 innovation stories posted on i3P between 1 January 2019 and 31 December 2019.

In the portal, each innovation was recorded with three sub-headings – motivation, solution, benefits. Within each innovation story, we looked at the innovation and the narratives that motivated this innovation. For example, we discuss an innovation to use exoskeletons in construction sites, which is an innovation in health and safety. From our empirical data on the motivators for this innovation, we saw that there was a firm-level narrative aimed to reduce the estimated 6.6 million working days which were lost due to musculo-skeletal disorders, which

we categorized as a narrative of profit maximization. There was also an industry-level narrative of health and safety that enabled this innovation. Thus, we found evidence of firm-level and industry-level narratives motivating an innovation.

Section Summary

What are the key points the reader should take from this section?

- *An industry wide online platform compiles data from different companies.*
- *Innovation cases posted online can be categorized as 'online naturalistic' data because they exist naturally without the intervention of the researcher.*

The study of an industry wide online platform can inform practices across a large number of organizations who are active in the digital space.

Research Practicalities

Includes a discussion of practical and ethical considerations you had to navigate when conducting your research. Were there challenges that had to be overcome to access participants or data? Were your personal skills compatible with the research you were intending to carry out? What of time constraints, costs, and resources? What ethical considerations were essential?

[Insert text here: We suggest up to 1100 words]

Some practical and ethical considerations were used in this research study. We focused on studying all the innovations in a fixed period of time in order to avoid bias of excluding some innovations we felt irrelevant during the data collection. The innovation stories are thus representative of the data in the platform as we studied 133 innovation stories posted on i3P between 1 January 2019 and 31 December 2019. Even though the innovation stories of only a year are considered, it can be considered as representative of the platform as the year considered was not an unusual year and is representative of innovation stories from other years (Kaminsky, 2021). We captured all the innovations for the year to get a representative sample without excluding any to reduce the researcher bias of exclusion.

We adopted qualitative coding by using open coding, axial coding, and constant comparisons to analyze the data collected systematically and generate the theoretical model (Groat & Wang, 2002; Eisenhardt & Graebner, 2007). First, we used open coding to break down, examine and categorize the data into open categories (Strauss & Corbin 1990). We went through each innovation story and open coded the type of innovation and the narrative surrounding them. For each new story, the codes evolved as they were assigned to categories that fully represent the meaning. For example, we initially assigned innovations that improve time to a category

‘improving time,’ which was expanded to ‘innovations that improve productivity’ to include improvements of productivity, time, and cost together. Second, we used axial coding to find the relation between these innovation categories and narratives categories. Axial coding involved putting categories back together in new ways to provide new insights (Strauss and Corbin, 1990). While open coding fractures the data, axial coding allows theory to emerge from data as the researcher investigates ‘what is really going on’ in the data (Tie et al., 2019). Third, constant comparison was used to improve the quality of the theory by comparing codes generated from the open codes and axial codes with the new data as data collection and analysis are taken up in parallel. Through the systematic use of open coding, axial coding, and constant comparisons, we were able to arrive at broad categories of innovations such as ‘innovations that enable project completion,’ ‘innovations that improve productivity,’ ‘innovations in health and safety,’ and ‘innovations in sustainability.’ We also arrived at broad categories of narratives that enable innovation such as ‘narratives of improving productivity,’ ‘narratives of health and safety,’ ‘narratives of sustainability,’ ‘narratives of profit maximation,’ and ‘narratives of image creation.’

Many scholars have highlighted that the privacy of respondents can be compromised in the research using online data sources due to the traceability of quotes (Beaulieu and Estalella 2012; Ninan, 2020). Traceability is not a major concern in construction management research settings as compared to data relating to sensitive topics such as assisted dying (Dehkhoda et al., 2020) or medical conditions (Rier, 2007), where the online data presented in research can be traced back to reveal the medical condition of an individual. However, efforts should still be taken in construction management research to minimize any potential risks to people and organizations engaging in the digital space. There are ways to overcome traceability and make quotes ‘Google-proof’, such as cutting the length of verbatim quotes and hiding not only the respondent’s name but also identifiers like place, associations, etc. (Ninan, 2020). In this research, we have removed identifiers from the innovations so that the organizations are not identified in the innovations thereby maintaining the confidentiality of the organizations. For example, we removed the identifiers such as the name of the organization and the name of the site when GoPro cameras were used to monitor lifting at a construction site, as seen below,

*“During the lift of the Water Treatment Plant shed at *** (name of organization and name of the site), there was limited clearance between the building being lifted and the handrails of the structure it was being lifted over. This meant that the clearance at both ends of the structure needed to be monitored carefully at all stages of the lift”*
(Innovation 85)

We also purposefully reduced the length of verbatim quotes to provide only the relevant information necessary for the authenticity of the research. Thus, we address some of the privacy and confidentiality challenges of human research participants in research using online data sources or the re-use of existing data sets (Ruggiano and Perry, 2019).

Section Summary

What are the key points the reader should take from this section?

- *Capture all instances for a year to get a representative sample without excluding any to reduce the researcher bias of exclusion.*
- *Steps should be taken to safeguard the privacy of respondents due to the traceability of quotes for research using online data sources.*

Researcher bias of exclusion can be eliminated if all the data for a representative year can be considered for analysis. Researchers can safeguard the identity of the respondents by ‘Google-proofing’ quotations by removing identifiers.

Method in Action

How did your research project play out in reality? Did it go according to plan, or did you need to adapt parts of the process? This should be a “warts and all” description and evaluation of how your chosen research method/approach actually worked in practice. What went well? What did not go to plan? What challenges did you face? How did you respond? Remember that cases should explore both the successes of your methodology and the challenges and problems. Both can provide rich learning opportunities.

[Insert text here: We suggest up to 1100 words]

The research study was carried out according to the plan, however, some adjustments were made according to the reviewer’s comments. One of the comments received early in the research process was to take adequate steps to ensure qualitative rigor while collecting and analyzing data from online databases. We took multiple steps during the research process to ensure qualitative rigor following the reviewer’s comments. Firstly, we displayed instances in a table to present the qualitative data without destroying the meaning of the data through intense coding following the suggestion by Miles and Huberman (1994). For instance, an indicative table showing the different constructs and evidence is shown in Table 1.

Table 1: Displaying instances in table

Constructs	Evidence
Innovations that improve productivity	Positioner Actuator Manipulator (PAM) used to save time (Innovation 84)
	New vibrating ripper used to increase productivity 5 times (Innovation 71)
	Digital document management software used to reduce operational inefficiencies (Innovation 116)

Secondly, the contextual data in the findings section, were anchored in the existing literature on innovations in the construction sector for triangulation and validation (Eisenhardt, 1989).

For instance, there was an innovation to have a tag on the helmet which vibrates when a worker enters an exclusion zone to reduce the injuries to workers entering working zones around construction plants. To support this instance of using technology to reduce accidents, we referenced the work of Datta et al. (2020) where they used digital innovations such as 4D CAD for visualization to improve safety performance in construction sites. We thus enfolded the findings, discussions and propositions in supported and contrasting literature for validation.

Thirdly, we tried to show data through quotations extracted from the innovation stories. Sandelowski (1994) records that quotes are used in qualitative research to support researcher claims, as well as to illustrate ideas and illuminate experiences. For instance, to support an instance where an organization opted to transport materials through the river rather than by road to reduce pollution and lorry movements in the city, we used a quotation from the innovation story as below,

“Through our ‘Sustainable transport–more by river’ strategy, we are ensuring that we transport as many materials as we can by river, taking lorry movements off London’s roads to limit pollution, congestion and to protect road-users. River transport produces less emissions than the road equivalent (per tonne km), even when compared with Euro VI HGVs [European Union’s Heavy Goods Vehicle emission standards]” (Innovation 39)

Finally, we consolidated all the 133 innovations captured from the i3P portal from 1 January 2019 and 31 December 2019 in appendix of the manuscript along with its date of posting. Showing the innovations in the appendix is part of audit trail where enough details are provided for other researchers to enable them to repeat the research in a similar setting (Cooney, 2011). Part of the appendix is shown in Table 2.

Table 2: Innovations considered in this research study shown in Appendix.

Sl. No	Title of innovations	Date
1	Magnetic safety barrier	7 January 2019
2	Hydraulic stone splitter	7 January 2019
..
23	Boom mounted excavator camera	6 February 2019
24	Digital tools design construction	6 February 2019
25	Briefing pack	6 February 2019
..
47	Context capture	16 April 2019
48	Hospital grab and go	16 April 2019
49	Implementing waste hierarchy CLAIRE	25 April 2019
...
131	Cantilevered cable feeds	21 November 2019
132	Colour code site priorities phases	10 December 2019
133	Lessons learned site level	10 December 2019

Another suggestion we received from the reviewers was to show the trace of data. They recommended we triangulate all the data in the manuscript with the serial numbers of the innovations in the appendix (Table 2). We referenced the serial numbers in all the quotations and instances in table to triangulate the presentation of the data.

Section Summary

What are the key points the reader should take from this section?

- *Enfold the findings, discussions and propositions in supporting and contrasting literature for validation.*
- *Give additional data in the appendix of the manuscript for audit trail.*
- *Triangulate all the data in the manuscript by referencing the serial number of stories in annexure with all quotations and tables.*

There is a need for qualitative researchers to improve the validity of their findings. Enfolding the findings in supporting and contrasting literature is a recommended strategy. Researchers can also consider giving additional data in appendix of the manuscript.

Practical Lessons Learned

This is perhaps the most important section of your research methods case study. Looking back, reflect on which aspects of your methodology went well, and which aspects did not go well. What would you do differently? What did you learn from the experience, and what advice do you have for readers planning their own research projects?

[Insert text here: We suggest up to 1100 words]

One of the challenges we faced during the initial stages of our research study was to collect data regarding innovation from different organizations in the construction industry. We understood early on that data collection through interviews with a few organizations would not give us enough information on the practice of innovation. Hence, we opted to use innovation stories from an industry wide online portal. Such data compiled from digital sources is widely acknowledged as ‘new ways of seeing’ (Bansal et al., 2018) and they can give significant insights on the practice of management in organizations which can inform how they can be managed better. As more work migrates online, many interactions concerning those work is only available in the digital environment. Many conversations relating to construction projects are only evident online and they are not currently captured or analyzed. Observing digital space and analyzing the data from these sources can help us understand how people interact in construction industry.

However, researchers have to be careful using online data sources. The traceability of quotes can reveal identity or personnel and organizations active in the construction management setting. Steps to avoid traceability such as google-proofing quotations can be adopted by limiting the length of quotations and hiding identifiers. There can also be challenges of poor representativeness of data as all organizations may not be represented in the digital space (Kaplan and Haenlein, 2010). Additionally, non-verbal cues such as changes in tone of voice may not be understood from digital data (Germain et al., 2018).

In this research study we have only used data from the digital platform. Looking back at our data collection phase, it would have been beneficial to triangulate the data collected from digital platforms with interview data. Using interview data would have addressed one of the main limitations of using digital data, i.e., the limited engagement of the researcher with the context, thereby restricting their ability to probe deeper or ask follow-up questions (Roberts, 2015). For example, Ninan et al. (2022) studied external stakeholder management using news articles and semi-structured interviews. They note that news articles provide insights into ‘what was communicated strategically to external stakeholders’, while the interviews with the project team provide insights into ‘what really happened on site’. Contrasting the data collected from these two sources, they shed light on the practice of strategic communication of information to external stakeholders. Thus, naturalistic data can be used to either verify or disprove informant’s claims.

Section Summary

What are the key points the reader should take from this section?

- *Data compiled from digital sources is widely acknowledged as ‘new ways of seeing’ as more and more interactions occur in the online space.*
- *Triangulating data collected from digital platforms with interview data can improve a researcher’s engagement with setting.*

Researchers should investigate new ways of seeing to understand practice in the 21st century as more and more interactions occur in the online space. Data collected from digital platforms can be combined with interviews for interesting research findings.

Conclusion

Includes a round-up of the issues discussed in your case study. This should not be a discussion of conclusions drawn from the research findings, but should focus reflectively on the research methodology. Include just enough detail of your findings to enable the reader to understand how the method/approach you used could be utilized by others. Would you recommend using this method/approach or, on reflection, would you make difference choices

in the future? What can readers learn from your experience and apply to their own research?

[Insert text here: We suggest up to 400 words]

The objective of this research study was to investigate the role of narratives in shaping innovation in the construction industry. From our data, we saw that innovators actively look for areas where they can intervene, and narratives improve the visibility of some areas thereby guiding innovations to them. We were able to contrast between innovations and narratives at the firm-level and industry-level narratives and how they motivate innovations by using data compiled from digital sources. With this research method case, we call on researchers to look for other data sources relevant to their area of interest which can inform practice in the modern digital world. Sources can range from electronic versions of federal periodicals to online repositories of public comments to more interactive internet resources, all of which provide rich data for understanding a phenomenon under consideration of the researcher (Natow, 2019).

We discuss the several practical considerations we adopted while collecting the data, analyzing the dataset and presenting the findings. While collecting the data, we captured all the innovations for the year to get a representative sample without excluding any to reduce the researcher bias of exclusion. While analyzing the dataset, we used open coding, axial coding, and constant comparisons. In the process, we were able to refine the categories generated and improve the theoretical contribution. While presenting the findings, we took steps to guard privacy of respondents by making the quotations ‘Google-proof’. We also triangulated all the data in the manuscript by referencing the serial number of stories in annexure with all quotations and tables.

Discussion Questions

[Insert three to five discussion questions related to the methodology and practical considerations described in your case study]

Discussion questions should be suitable for eliciting debate and critical thinking. The questions should encourage the reader to apply what they have learned beyond the context of the research project discussed. They should not test the reader’s memory of specifics about the discussed project. Avoid questions which require only a single-word answer such as “yes” or “no.”

1. What are some online data sources for your area of research?

2. What are some of the steps to reduce traceability of online data sources?
 3. How to improve the validity of qualitative research findings?
-

Multiple Choice Quiz Questions

Multiple Choice Quiz Questions should:

- *Test readers' understanding of your case study*
- *Not require any information that is not included in this case study*
- *Relate to research methodology, not the substantive research topic*
- *Not include 'all of the above', 'none of the above' or implausible distractors*
- *Cause the reader to identify the rationale behind the answer. For example:*

What was the method used to increase the reliability of this field observation study?

- A. *Inter-coder reliability was calculated to ensure an acceptable Krippendorff's alpha.*
- B. *Constant comparison was used, whereby two coders visiting the same site simultaneously would conduct independent coding and reconvene to resolve any discrepant codes to produce a single set of codes for the observation. - CORRECT*
- C. *Researchers were asked to write about how their personal idiosyncrasies might have shaped the coding process, so these reflexive accounts can be used by the reader in assessing the study's reliability*

Guidance for writing MCQs can be found here:

- [Tips for Writing Effective multiple-choice questions](#)
- [The process of writing a multiple-choice question](#)

[Insert three to five multiple choice quiz questions below. Each question should have three possible answers (A, B, or C), with one correct answer. Please indicate the correct answer by writing CORRECT after the relevant answer.]

1. What are NOT some 'Google-proofing' strategies to guard privacy of respondents
 - a. Cutting the length of verbatim quotes
 - b. Removing identifiers such as place and associations
 - c. Not showing any data [CORRECT]
2. How to study the practice innovation from a large number of organizations
 - a. Interview people from 2-3 organizations.

- b. Study data from portals where large number of organizations are active [CORRECT]
 - c. Circulate a questionnaire to your contacts and ask them to circulate it further
- 3. Which of these are NOT ways to improve qualitative rigour
 - a. Enfolding findings in supporting and contrasting literature
 - b. Not using audit trial [CORRECT]
 - c. Publishing data in appendix

Further Reading

Please ensure content is inclusive and represents diverse voices. In your references, further readings and web resources you should aim to represent a diversity of people. We have a global readership, and we want readers of a wide range of perspectives to see themselves reflected in our pedagogical materials.

[Insert list of up to six further readings here, in APA Style.]

Bansal, P., Smith, W.K., & Vaara, E. (2018). New ways of seeing through qualitative research.

Academy of Management Journal, 61(4), 1189–1195.

Ninan, J. (2020). Online naturalistic inquiry in project management research: Directions for research. *Project Leadership and Society*, 1(1), 1-9.

Web Resources

[Insert links to up to six relevant web resources here, in APA style]

...

...

...

References

[Insert bibliography of references cited in text here]

References should conform to American Psychological Association (APA) style, 7th edition, and should contain the digital object identifier (DOI) where available. SAGE will not accept cases that are incorrectly referenced. Please ensure accuracy before submission. For help on reference styling see <https://apastyle.apa.org/style-grammar-guidelines>.

Bansal, P., Smith, W.K., & Vaara, E. (2018). New ways of seeing through qualitative research.

Academy of Management Journal, 61(4), 1189–1195.

Beaulieu, A., & Estalella, A. (2012). Rethinking research ethics for mediated settings.

Information, Communication & Society, 15(1), 23-42.

Bruner, J. (1990). *Acts of meaning*. Harvard University Press.

Carlsen, A., & Pitsis, T. S. (2020). We are projects: Narrative capital and meaning making in

projects. *Project Management Journal*, 51(4), 357-366.

Cooney, R. G. N. (2011). Rigour and grounded theory. *Nurse Researcher*, 18(4), 17.

Datta, A., Ninan, J., & Sankaran, S., (2020). 4D visualization to bridge the knowing-doing gap

in megaprojects: an Australian case study. *Construction Economics and Building*, 20(4), 25-41.

Dehkhoda, A., Owens, R. G., & Malpas, P. J. (2020). A netnographic approach: views on

assisted dying for individuals with dementia. *Qualitative Health Research*, 30(13), 2077-2091.

Deuten, J. A., & Rip. A. (2000). Narrative infrastructure in product creation processes.

Organization, 7(1) 69–93.

Egan, J. (1998). *Rethinking construction*. London: Department of the Environment, Transport

and Region (DETR).

- Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review*, 14(4), 532-550.
- Eisenhardt, K. M., & Graebner, M. E. (2007). Theory building from cases: Opportunities and challenges. *Academy of Management Journal*, 50(1), 25-32.
- Enninga, T., & van der Lugt, R. (2016). The innovation journey and the skipper of the raft: About the role of narratives in innovation project leadership. *Project Management Journal*, 47(2), 103-114.
- Farmer, M. (2016). *The Farmer review of construction labour model: Modernise or die*. London: Construction Leadership Council.
- Fenton, C., & Langley, A. (2011). Strategy as practice and the narrative turn. *Organization Studies*, 32(9), 1171–1196.
- Gann, D. M., & Salter, A. J. (2000). Innovation in project-based, service-enhanced firms: the construction of complex products and systems. *Research Policy*, 29(7-8), 955-972.
- Germain, J., Harris, J., Mackay, S., & Maxwell, C. (2018). Why should we use online research methods? Four doctoral health student perspectives. *Qualitative Health Research*, 28(10), 1650-1657.
- Groat, L., & Wang, D. (2002). *Architectural research methods*. New York, NY: Wiley & Sons.
- HM Government. (2013). *Construction 2025. Industrial Strategy: Government and industry in partnership*. London: HM Government.
- Kaminsky, J. (2021). Who are we talking to? Situating construction engineering and management knowledge. *Journal of Construction Engineering and Management*, 147(2), 1-23.

- Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of social media. *Business Horizons*, 53(1), 59-68.
- Liu, A. M., & Chan, I. Y. (2017). Understanding the interplay of organizational climate and leadership in construction innovation. *Journal of Management in Engineering*, 33(5), 04017021.
- Miles, M., & Huberman, A. M. (1994) *Qualitative data analysis: An expanded sourcebook*. Thousand Oaks, CA: Sage.
- Ninan, J. (2020). Online naturalistic inquiry in project management research: Directions for research. *Project Leadership and Society*, 1(1), 1-9.
- Natow, R. S. (2019). Online qualitative data sources for federal regulatory policy studies. *American Behavioral Scientist*, 63(3), 315-332.
- Ninan, J., Mahalingam, A., & Clegg, S. (2022). Asset creation team rationalities and strategic discourses: evidence from India. *Infrastructure Asset Management*, 9(3), 1-9.
- Ozorhon, B., Oral, K., & Demirkesen, S. (2016). Investigating the components of innovation in construction projects. *Journal of Management in Engineering*, 32(3), 04015052.
- Patterson, A. (2005). Processes, relationships, settings, products and consumers: The case for qualitative diary research. *Qualitative Market Research: An International Journal*, 8, 142–156.
- Raiden, A., Loosemore, M., King, A. and Gorse, C. (2018). *Social value in construction*. London: Routledge.
- Rier, D. A. (2007). Internet social support groups as moral agents: the ethical dynamics of HIV+ status disclosure. *Sociology of Health & Illness*, 29(7), 1043-1058.

- Roberts, L. D. (2015). Ethical issues in conducting qualitative research in online communities. *Qualitative Research in Psychology*, 12(3), 314-325.
- Ruggiano N and Perry T (2019). Conducting secondary analysis of qualitative data: Should we, can we, and how? *Qualitative Social Work*, 18(1), 81–97.
- Sandelowski, M. (1994). Focus on qualitative methods. The use of quotes in qualitative research. *Research in Nursing & Health*, 17(6), 479-482.
- Sergeeva, N. & Green, S. D. (2019). Managerial identity work in action: Formalised narratives and anecdotal stories of innovation. *Construction Management and Economics*, 37(10), 604-623.
- Sergeeva, N. & Winch, G.M. (2021) Project narratives that potentially perform and change the future. *Project Management Journal*, 52(3), 264-277.
- Silverman, D. (2015). *Interpreting qualitative data*. London: Sage.
- Strauss, A., & Corbin, J. M. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. London: Sage.
- Tie, Y. C., Birks, M., & Francis, K. (2019). Grounded theory research: A design framework for novice researchers. *SAGE Open Medicine*, 7, 2050312118822927.
- Tversky, A., & Kahneman, D. (1981). The framing of decisions and the psychology of choice. *Science*, 211(4481), 453-458.
- Weick, K. E., & Roberts, K. (1993). Collective mind in organizations: Heedful interrelating on flight decks. *Administrative Science Quarterly*, 38(3) 357–381.
- Whittle, A., Mueller, F., & Mangan, A. (2008). In search of subtlety: Discursive devices and rhetorical competence. *Management Communication Quarterly*, 22(1), 99-122.

Winch, G. M. (2010). *Managing construction projects: an information processing approach* (2nd ed.). Oxford: Wiley-Blackwell.