

APPENDIX A: SURVEY INSTRUMENT OVERVIEW

Note: The complete survey instrument is available as Supplementary Material 3. This appendix presents the survey structure in table format with representative items from each module.

Table A1. Complete Survey Structure and Content Overview

Section	Question Range	Module Name	Respondents	Content Focus	No. of Items	Sample Items
1	Q1-Q4	Eligibility and Consent	All	Age confirmation, information comprehension, voluntary participation	4	Q2: I confirm I am 18 years or older [Yes/No]; Q3: I have read the participation information sheet [Yes/No - routes back to welcome if No]
2	Q5-Q19	Demographics and Work Context	All	Age, gender, education, location, discipline, industry, work setting, employment type, career choice, job satisfaction, work-life balance, hours, team size	15	Q5: Age range [18-24 / 25-34 / 35-44 / 45-54 / 55-64 / 65-74 / 74+]; Q9: Discipline/functional area [20 options]; Q15: Job satisfaction [5-point Likert]
3	Q20	Role Selection	All	Primary role identification (routing variable)	1	Q20: What is your PRIMARY role? [14 options including: Commissioning/Operations/Planning/Commercial/HSE/Leadership/Design/PM/Construction/Trades/Graduate/Academic/Other]
4A	Q21-Q40	Commissioning and Start-up	Commissioning only	Pressure to begin testing prematurely, defect severity downgrading, permit bypassing, documentation incompleteness, out-of-sequence work, retrospective checks, risk acceptance, premature equipment commissioning, vendor pressure, client pressure	20	Q21: Pressure to begin testing before system/equipment/documentation fully ready?; Q23: Peer/team pressure to downgrade defect severity?; Scale: Never / Rarely / Sometimes / Often / Very often / N/A
4B	Q41-Q47	Operations and Maintenance	Operations only	Keeping equipment running despite defects, deferred maintenance, operating outside limits, fast-tracked work, incomplete sign-offs, operating with known issues, maintenance scheduling pressure	7	Q41: Pressure to keep equipment running despite known defects?; Q42: Encouraged to defer maintenance to avoid production impacts?; Scale: Never / Rarely / Sometimes / Often / Very often / N/A
4C	Q48-Q52	Planning and Scheduling	Planning only	Schedule forecast manipulation, external pressure on reforecasts, delay reporting discouragement, incomplete planning inputs, milestone prioritization over realistic planning	5	Q48: Pressure to manipulate schedule forecasts to show improved progress?; Q50: Discouraged from reporting delays accurately?; Scale: Never / Rarely / Sometimes / Often / Very often / N/A
4D	Q53-Q57	Commercial and Contracts	Commercial only	Commercial deadlines influencing technical decisions, accepting incomplete documentation for milestones, variation/claim suppression, payment/liquidated damages exposure influence, client relationship priorities	5	Q53: Commercial deadlines/payment milestones influenced technical or safety decisions?; Q55: Discouraged from raising variations or claims?; Scale: Never / Rarely / Sometimes / Often / Very often / N/A
4E	Q58-Q64	HSE/WH5	HSE only	Premature safety sign-offs, rushed risk assessments, inappropriate risk acceptance, pushback on safety concerns, schedule pressure on safety decisions, bypassed safety processes, late HSE inclusion	7	Q58: Pressure to sign off on safety documentation before fully comfortable?; Q61: Pushback when raising safety concerns that might impact schedule?; Scale: Never / Rarely / Sometimes / Often / Very often / N/A

Section	Question Range	Module Name	Respondents	Content Focus	No. of Items	Sample Items
4F	Q65	Leadership	Leadership only	Number of direct reports (supervisory scope)	1	Q65: How many direct reports do you currently have? [0 / 1-5 / 6-10 / 11-20 / 21-50 / 51+]
4G	Skip	Other Roles	Design, PM, Construction, Trades, Graduate, Academic, Other	No role-specific module - proceed directly to Q66	0	Respondents selecting these roles skip directly to universal reconverge modules
5A	Q66-Q70	Workplace Pressure	All	Unrealistic expectations, role expansion, peer judgment, mistake treatment, hours pressure	5	Q66: I feel pressure to meet unrealistic expectations at work; Q68: I feel judged by peers if I do not perform at a certain level; Scale: Strongly disagree / Disagree / Neutral / Agree / Strongly agree
5B	Q71-Q72	Delay and Cost Attribution	All	Groups/processes associated with delays and cost overruns	2	Q71: Which groups/processes most commonly associated with delays? [Multi-select: Design/Procurement/Commissioning/Operations/HSE/Client/Regulatory/Weather/Equipment/Contractor/Other]; Q72: Same for cost overruns
5C	Q73-Q76	Psychological Outcomes	All	Feeling overwhelmed, anxiety, autonomy, wellbeing impact	4	Q73: I often feel overwhelmed by volume of work expected; Q75: I feel I have sufficient autonomy to make decisions; Scale: Strongly disagree / Disagree / Neutral / Agree / Strongly agree
5D	Q77-Q80	Peer Influence and Team Culture	All	Pressure to conform, colleague influence, hesitation to challenge seniors, groupthink	4	Q77: I feel pressure to conform to team norms even when I disagree; Q80: I have observed "groupthink" where consensus overrides individual judgment; Scale: Strongly disagree / Disagree / Neutral / Agree / Strongly agree
5E	Q81-Q86	Peer Pressure Impacts on Quality	All	Pressure to reduce quality, accepting substandard work, skipping processes, speed over quality, rework contribution, delivering unsatisfactory work	6	Q81: How often do you feel pressure from peers to reduce work quality to meet deadlines?; Q83: How often have you skipped processes/checks due to peer or schedule pressure?; Scale: Never / Rarely / Sometimes / Often / Very often / Not applicable
5F	Q87-Q96	Peer Pressure Impacts on Project Delivery	All	Bypassing approvals, informal scope changes, change request suppression, defect rating manipulation, shortened testing, risk acceptance, out-of-sequence work, workarounds, task assignment dynamics, cost increases	10	Q87: How often have you bypassed formal approval processes due to schedule pressure?; Q90: How often have defect ratings been manipulated to improve progress reporting?; Scale: Never / Rarely / Sometimes / Often / Very often / Not applicable
5G	Q97-Q100	Organizational Context	All	Leadership support, communication transparency, mistake treatment, independence encouragement	4	Q97: Leadership actively supports doing work properly, even if it takes longer; Q99: My organization treats mistakes as learning opportunities; Scale: Strongly disagree / Disagree / Neutral / Agree / Strongly agree
6	Q101	Optional Qualitative	All	Open-ended feedback	1	Q101: Is there anything else you would like to share about workplace pressure, peer influence, or decision-making? [Open text - optional]

Table A2. Branching Architecture Summary

Role Selected (Q20)	Routes To	Role-Specific Items	Then Routes To	Universal Items	Total Active Items	Est. Time
Commissioning and Start-up	Q21-Q40	20	Q66-Q100	35	55 + 19 demo = 74	10-12 min
Operations and Maintenance	Q41-Q47	7	Q66-Q100	35	42 + 19 demo = 61	10-12 min
Planning and Scheduling	Q48-Q52	5	Q66-Q100	35	40 + 19 demo = 59	10-12 min
Commercial and Contracts	Q53-Q57	5	Q66-Q100	35	40 + 19 demo = 59	10-12 min
HSE/WHS	Q58-Q64	7	Q66-Q100	35	42 + 19 demo = 61	10-12 min
Leadership	Q65	1	Q66-Q100	35	36 + 19 demo = 55	10-12 min
Design/PM/Construction /Trades/Graduate/Academic/Other	Skip to Q66	0	Q66-Q100	35	35 + 19 demo = 54	10-12 min

***Note: Demo = Demographics (Q5-Q19). All pathways include eligibility/consent (Q1-Q4) and optional qualitative (Q101). Completion time parity achieved through differential role-specific module lengths.**

Table A3. Scale Types and Response Formats

Scale Type	Questions	Format	Purpose
Binary Yes/No	Q1-Q4	Yes / No	Eligibility and consent screening
Multiple choice (single select)	Q5, Q7-Q12, Q17-Q20, Q65	Select one option	Demographics, work context, role selection
Multiple choice (multiple select)	Q9, Q71-Q72	Select all that apply	Discipline identification, delay/cost attribution
Open text	Q8, Q101	Free text entry	Location, qualitative feedback
5-point Likert (agreement)	Q66-Q70, Q73-Q80, Q97-Q100	Strongly disagree to Strongly agree	Attitudinal constructs, organizational perceptions
5-point Likert (satisfaction)	Q15-Q16	Very dissatisfied/poor to Very satisfied/good	Job satisfaction, work-life balance
6-point frequency (with N/A)	Q21-Q64 (role-specific)	Never / Rarely / Sometimes / Often / Very often / N/A	Role-specific pressure manifestations
6-point frequency (with Not applicable)	Q81-Q96	Never / Rarely / Sometimes / Often / Very often / Not applicable	Peer pressure impacts

Rationale for scale choices:

- 6-point frequency scale (role-specific): Includes N/A option as these items may not apply to all experiences within a role
- 5-point Likert (universal): Standard format for attitudinal items, no N/A needed as universally applicable
- Agreement scales: Capture perceptions and attitudes toward organisational conditions
- Frequency scales: Capture behavioural and experiential phenomena

1. Key Design Features

Completion Time Parity

- Despite variation in role-specific module length (0-20 items), all pathways achieve 10-12 minute completion time through:
- Longer role modules + standard universal items = equivalent time
- Shorter or no role modules + standard universal items = equivalent time
- All respondents answer same 19 demographics + 35 universal comparative items

5. Role-specific items targeted and relevant (no burden from irrelevant questions)

Converge-Diverge-Reconverge Architecture

1. Converge (Q1-Q19): All respondents complete the same eligibility, consent, demographics, and work context
2. Diverge (Q20-Q65): Respondents routed to role-specific modules based on Q20 selection
3. Reconverge (Q66-Q100): All respondents complete the same universal comparative modules measuring workplace pressure, psychological outcomes, peer influence, and organisational context

Anonymity Protection

1. No names, emails, organisational identifiers, or IP addresses collected
2. Google Forms configured with login requirements disabled
3. Response tracking disabled
4. Location asked as general "country or region" (Q8), not specific site/city

Ethical Safeguards

1. Multi-step consent with comprehension check (Q3)
2. Q3 "No" response triggers automated routing back to the welcome page
3. Voluntary participation confirmed (Q4)
4. The optional qualitative item (Q101) allows respondents to skip if preferred
5. N/A options in role-specific modules allow skipping non-applicable items

2. Data Structure Implications

Universal Variables (No Missing Data by Design)

1. Q1-Q19: Eligibility, consent, demographics (all respondents)
2. Q66-Q100: Workplace pressure, outcomes, peer influence, organisational context (all respondents)
3. Q101: Optional qualitative (missing data acceptable)

Role-Specific Variables (Structured Missingness by Design)

1. Q21-Q65: Only present for respondents who completed that role's module
2. Cannot compare role-specific responses across roles (different questions)
3. Use for within-role analysis or role-specific descriptions
4. Filter the dataset by role for role-specific analyses

Analysis Implications

1. Cross-role comparison: Use universal variables (Q5-Q19, Q66-Q100) only
2. Role-specific analysis: Filter by role, analyse role-specific variables (Q21-Q65)
3. Sample size requirements: Minimum n greater than or equal to 30 per role for meaningful analysis