

Case Studies in Diary Research

Diary research is a methodological approach that captures lived experiences as they unfold over time. In case study contexts, it provides a window into participants' daily routines, thoughts, emotions, and interactions with the environment. Understanding the specialized vocabulary associated with diary research is essential for designing, conducting, and analysing case studies that yield rich, actionable insights. The following exposition defines and explores the most frequently encountered terms, illustrates their practical application, and highlights common challenges that researchers may encounter.

Case study refers to an in-depth investigation of a bounded phenomenon, such as an individual, group, organization, or event. When combined with diary methods, the case study becomes a narrative chronicle that can reveal patterns of change, contextual influences, and causal mechanisms that are otherwise invisible in cross-sectional surveys. For example, a case study of a remote-working software developer may employ a weekly diary to track productivity, stress levels, and collaboration dynamics across a six-month period.

Diary method is the overarching technique of asking participants to record observations, reflections, or activities in a structured or unstructured format over a predetermined interval. The method can be implemented via paper journals, mobile applications, web-based platforms, or wearable devices. Researchers must decide whether to adopt a structured format (with predefined questions or prompts) or an unstructured format (allowing free-form entries). Structured diaries facilitate comparability across participants, whereas unstructured diaries capture richer, more nuanced data.

Prompt denotes a specific question, cue, or stimulus that guides participants in what to write. Prompts can be time-based (e.G., "At the end of each day, describe any moments of frustration you experienced"), event-based (e.G., "After each client meeting, note the key decisions made"), or thematic (e.G., "Reflect on how your health habits have changed this week"). Effective prompts are concise, unambiguous, and aligned with the research objectives.

Entry is an individual diary submission. Each entry typically includes a timestamp, the participant's narrative, and sometimes additional metadata such as location, mood rating, or activity codes. In a case study, entries serve as the primary data units that are later coded, categorized, and interpreted.

Longitudinal study is a design that collects data from the same participants repeatedly over an extended timeframe. Diary research is inherently longitudinal because it tracks phenomena as they evolve. Longitudinal designs enable researchers to observe trends, identify turning points, and infer temporal relationships. For instance, a longitudinal diary case study of a patient undergoing a new therapy may reveal how symptom severity fluctuates week by week, offering insights into treatment efficacy.

Recall bias describes the systematic error that occurs when participants rely on memory rather than immediate observation. Diary methods mitigate recall bias by prompting participants to record experiences

close to the moment of occurrence. However, if entries are delayed or if participants retroactively fill gaps, recall bias can re-emerge. Researchers should encourage real-time or near-real-time logging to preserve data fidelity.

Compliance refers to the degree to which participants adhere to the diary protocol. High compliance ensures sufficient data density for robust analysis, whereas low compliance can jeopardize the validity of the case study. Strategies to boost compliance include automated reminders, user-friendly interfaces, and incentives such as gift cards or feedback reports.

Ecological validity is the extent to which research findings reflect real-world conditions. Diary studies excel in ecological validity because they capture behavior in natural settings rather than artificial laboratory environments. For example, a diary case study of commuters' stress levels provides authentic insights into how traffic, weather, and personal schedules intersect to affect wellbeing.

Triangulation involves using multiple data sources or methods to corroborate findings. In diary case studies, triangulation may combine diary entries with sensor data (e.g., Heart-rate monitors), interview transcripts, or archival documents. By cross-checking narratives with objective measures, researchers can strengthen claims about causality and reduce reliance on self-report alone.

Participant-led design places the participant at the center of the diary construction process. Rather than imposing a rigid set of prompts, researchers co-create the diary structure with participants, allowing them to select topics, frequency, and format that best suit their lives. This approach fosters ownership, improves compliance, and can surface emergent themes that the researcher may not have anticipated.

Researcher-led design is the more traditional approach where the investigator defines the diary schedule, prompts, and format. While this design offers greater control and standardisation, it may also limit participants' expressive freedom and risk imposing the researcher's assumptions onto the data.

Sampling frame delineates the population from which case study participants are drawn. In diary research, the sampling frame often narrows to a specific subgroup (e.g., First-year university students) because the intensity of data collection demands a manageable number of participants. Purposive sampling, snowball sampling, or maximum-variation sampling are common strategies to ensure that the case(s) selected illuminate the research question.

Maximum-variation sampling seeks to capture a wide range of perspectives by selecting participants who differ on key dimensions such as age, gender, cultural background, or job role. In diary case studies, this technique can reveal how contextual factors shape diary content and compliance patterns.

Snowball sampling leverages participants' social networks to recruit additional cases. When a participant refers a colleague who also agrees to keep a diary, the sample expands organically. Snowball sampling is valuable for accessing hard-to-reach populations, such as freelance artists or underground activists, but it may introduce homogeneity if participants share similar networks.

Data saturation occurs when additional diary entries no longer generate new themes or insights. In case study research, saturation is assessed qualitatively by reviewing the evolving codebook and determining

whether novel codes continue to emerge. Because diaries produce large volumes of data, achieving saturation may require fewer participants but longer observation periods.

Codebook is a structured list of codes, definitions, and examples used to categorise diary content during analysis. Developing a codebook often begins with open coding, where researchers label emergent concepts, and proceeds to axial coding, which groups related codes into broader categories. For example, a codebook for a diary case study on work-life balance might include codes such as "time-pressure", "family-interaction", "remote-work", and "boundary-setting".

Open coding is the initial stage of qualitative analysis in which researchers generate descriptive labels for segments of text. Open coding is exploratory and encourages researchers to stay close to participants' language. In diary case studies, open coding may be performed on a subset of entries to identify recurring motifs before scaling up to the full dataset.

Axial coding follows open coding and involves linking codes to form higher-order categories or themes. Axial coding helps researchers understand relationships such as cause-effect, conditions, and consequences. For instance, axial coding might reveal that "time-pressure" (a code) frequently co-occurs with "stress-level" (another code), suggesting a causal link worth further investigation.

Thematic analysis is a flexible method for identifying, analysing, and reporting patterns (themes) within qualitative data. In diary case studies, thematic analysis can be applied to entire diaries, to specific time windows (e.G., Pre- and post-intervention), or to comparative groups (e.G., High-compliance vs low-compliance participants). Thematic analysis yields actionable insights that can inform policy, product design, or therapeutic interventions.

Grounded theory is a systematic methodology that aims to generate theory directly from data. When diary case studies are used to develop grounded theory, the researcher iteratively codes entries, memoises insights, and refines theoretical constructs. Because diaries provide longitudinal data, grounded theory can capture dynamic processes such as habit formation, identity negotiation, or role transition.

Memoing is the practice of writing reflective notes during the coding process. Memos capture analytical thoughts, methodological decisions, and emerging hypotheses. In diary research, memoing is especially valuable because the researcher must track temporal shifts and contextual nuances that may otherwise be lost in the volume of data.

Temporal granularity refers to the frequency and precision of diary entries. High temporal granularity (e.G., Hourly entries) offers fine-grained insight into rapid fluctuations, while low granularity (e.G., Weekly summaries) provides broader overviews. Selecting appropriate granularity balances participant burden against the research need for detail.

Retrospective entry is a diary submission that records events after they have occurred, often covering a longer period (e.G., A weekly recap). Retrospective entries are prone to recall bias, but they reduce participant fatigue and may be necessary when real-time logging is impractical. Researchers should clearly distinguish retrospective from real-time entries during analysis.

Real-time entry captures experiences as they happen or immediately thereafter. Mobile apps with push notifications facilitate real-time entry by prompting participants to log data at the moment of occurrence. Real-time entries minimise recall bias and increase data fidelity, but they demand higher participant commitment.

Compliance monitoring involves tracking whether participants submit entries according to the prescribed schedule. Automated dashboards, timestamp logs, and compliance metrics (e.G., Percentage of days completed) help researchers intervene early if participants fall behind. Prompt feedback, such as a gentle reminder message, can improve overall compliance rates.

Incentive structure defines the rewards offered to participants for completing diary tasks. Incentives may be monetary (e.G., \$20 Per completed week), non-monetary (e.G., Personalized feedback reports), or social (e.G., Contribution to a community knowledge base). The incentive structure should align with ethical guidelines and avoid coercion while motivating sustained engagement.

Ethical clearance is the formal approval granted by an institutional review board (IRB) or ethics committee. Diary research often involves sensitive personal data, making confidentiality and informed consent paramount. Researchers must specify how diary entries will be stored, anonymised, and who will have access.

Informed consent is the process by which participants agree to take part in the study after receiving clear information about its purpose, procedures, risks, and benefits. In diary case studies, consent forms should explicitly address the frequency of entries, the type of data collected (including any audio or video recordings), and the duration of data retention.

Anonymisation is the technique of removing personally identifying information from diary entries to protect participant privacy. Techniques include replacing names with pseudonyms, redacting locations, and aggregating demographic data. Anonymisation must be performed carefully to preserve the analytical value of the data while ensuring confidentiality.

Data security encompasses the technical measures used to protect diary data from unauthorized access. Encryption (both at rest and in transit), secure servers, and role-based access controls are standard practices. Researchers should document security protocols as part of the ethical compliance package.

Data saturation (re-mentioned for emphasis) is especially relevant in diary case studies because the richness of each participant's narrative can lead to early emergence of core themes. However, because diaries also capture change over time, saturation may be revisited at multiple points during the study to assess whether new temporal patterns continue to appear.

Triadic coding is a collaborative approach where three coders independently analyse the same set of diary entries and then reconcile differences through discussion. Triadic coding enhances reliability and reduces individual bias, which is critical when interpreting nuanced personal narratives.

Inter-rater reliability measures the degree of agreement between multiple coders. Common statistics include Cohen's kappa and Krippendorff's alpha. High inter-rater reliability indicates that the coding scheme

is well-defined and that the findings are replicable.

Member checking involves returning preliminary findings or interpretations to participants for verification. In diary case studies, researchers may share a summary of emergent themes with participants and invite feedback on accuracy and resonance. Member checking strengthens credibility and can uncover misinterpretations.

Reflexivity is the practice of reflecting on the researcher's own influence on the research process and outcomes. Diary research is inherently relational because participants disclose personal experiences. Researchers should maintain reflexive journals to note their assumptions, emotional responses, and positionality throughout the study.

Contextual factors are external variables that shape diary content, such as cultural norms, organisational policies, seasonal changes, or technological constraints. Recognising contextual factors is crucial for interpreting diary entries accurately. For instance, an increase in "work-related stress" entries during winter may be linked to holiday deadlines rather than personal burnout.

Temporal sequencing refers to the chronological ordering of events and themes within diary data. By mapping sequences, researchers can identify causal pathways, such as "initial anxiety → coping strategy adoption → reduced stress". Temporal sequencing is facilitated by visual tools like timelines or flowcharts.

Event-triggered diary is a design where participants are instructed to make entries only when specific events occur (e.G., After a conflict, after a purchase). Event-triggered diaries reduce participant burden and focus data collection on moments of interest. However, they rely on participants' ability to recognise and remember the target events.

Experience sampling method (ESM) is a variant of diary research that prompts participants at random intervals to report their current thoughts, feelings, or behaviours. ESM provides high-resolution snapshots of experience and mitigates recall bias. In case studies, ESM can complement scheduled diary entries to capture spontaneous moments.

Signal-contingent sampling is similar to ESM but uses pre-programmed signals (e.G., A beep every three hours) to trigger entries. This approach standardises the timing of data collection across participants, facilitating comparative analysis.

Time-contingent sampling involves prompting participants at fixed times (e.G., Daily at 9 pm). Time-contingent sampling is easier to implement and aligns with participants' daily routines, but it may miss short-lived fluctuations that occur between prompts.

Qualitative data analysis software (QDAS) includes tools such as NVivo, Atlas.Ti, or MAXQDA that support coding, memoing, and retrieval of diary text. While the use of software is optional, it greatly enhances efficiency when handling large volumes of diary entries.

Manual coding is the process of annotating diary text by hand, either on printed copies or within simple text editors. Manual coding may be preferred for small-scale case studies where the researcher wishes to

maintain close contact with the data.

Hybrid coding combines automated text-analysis techniques (e.G., Keyword extraction, sentiment analysis) with manual refinement. Hybrid coding can accelerate initial categorisation while preserving the depth of human interpretation.

Sentiment analysis is a computational technique that assesses the emotional tone of diary entries (e.G., Positive, negative, neutral). In case studies, sentiment trends over time can reveal mood trajectories, response to interventions, or the impact of external events.

Keyword frequency analysis counts the occurrence of specific terms across diary entries. While simple, keyword frequency can surface dominant topics or flag emerging concerns. Researchers should interpret frequency data alongside contextual reading to avoid misrepresenting nuance.

Network analysis examines relational patterns within diary data, such as references to social contacts, organisational units, or digital platforms. By mapping these connections, researchers can identify influential nodes, communication bottlenecks, or support structures.

Visual diary incorporates images, sketches, or photographs alongside text. Visual diaries enrich the data by providing non-verbal cues and can be especially valuable in design research or ethnographic case studies. Participants may capture photos of workspaces, products, or moments of inspiration, which are later coded for visual themes.

Audio diary uses voice recordings instead of typed text. Audio diaries reduce literacy barriers and allow participants to convey tone, pacing, and emotion. Transcription is required for textual analysis, but software such as automatic speech recognition can expedite the process.

Video diary captures moving images and sound, offering a multimodal perspective. Video diaries are useful for studying embodied practices, such as physical therapy exercises or cooking techniques. Ethical considerations are heightened because video reveals identifiable features such as faces and surroundings.

Hybrid diary combines multiple modalities (e.G., Text, audio, images) within a single entry. Hybrid diaries provide a richer data tapestry but increase the complexity of analysis and data management.

Data triangulation (re-emphasised) is essential for validating findings from diaries, especially when the case study aims to inform policy or product development. By comparing diary narratives with objective metrics (e.G., Heart-rate data, sales figures), researchers can confirm that self-reported experiences align with measurable outcomes.

Participant burden is the cumulative effort required from participants to complete diary tasks. High burden can lead to attrition, reduced data quality, and ethical concerns. Researchers should pilot test the diary protocol, estimate time per entry, and adjust frequency to minimise burden while still achieving research goals.

Pilot study is a small-scale preliminary investigation that tests the feasibility of the diary design, prompts, and technology. Piloting helps identify unclear questions, technical glitches, or unforeseen barriers to

compliance. Findings from a pilot inform refinements before the full case study rollout.

Iterative design is a cyclical process of developing, testing, and revising the diary instrument based on participant feedback and observed performance. Iterative design aligns with user-centred principles and ensures that the final diary tool is intuitive and fit-for-purpose.

Usability testing evaluates how easily participants can navigate the diary platform, understand prompts, and submit entries. Metrics such as task completion time, error rates, and satisfaction scores guide interface improvements.

Data management plan outlines procedures for data collection, storage, backup, and eventual disposal. A robust plan addresses version control, naming conventions, and documentation of data provenance, which are critical for reproducibility in case study research.

Version control tracks changes to diary instruments, coding schemas, and analysis scripts. Using tools like Git or simple change logs prevents confusion when multiple team members modify the study protocol.

Archival data refers to existing records that can be linked to diary entries, such as organisational logs, email archives, or public datasets. Incorporating archival data can enrich the case study by providing external validation or broader context.

Temporal validity assesses whether the findings derived from diary data remain applicable over time. Because diaries capture a snapshot of a particular period, researchers must consider whether observed patterns are stable, seasonal, or tied to unique events.

Transferability is the qualitative analogue of external validity. In case studies, transferability is achieved by providing thick description—detailed contextual information that enables readers to judge whether findings apply to other settings. Including excerpts from diary entries, participant demographics, and environmental details supports transferability.

Credibility reflects the confidence that the findings accurately represent participants' lived experiences. Strategies to enhance credibility include triangulation, member checking, prolonged engagement (e.g., Extended diary periods), and reflexivity.

Dependability concerns the stability of the research process over time. Maintaining audit trails, documenting methodological decisions, and using consistent coding procedures contribute to dependability.

Confirmability denotes the degree to which findings are shaped by participants rather than researcher bias. Reflexive journaling, transparent coding, and external audits help demonstrate confirmability.

Rich point is a moment or excerpt in a diary that offers deep insight into a phenomenon. Rich points are often highlighted in case study reports to illustrate key themes or to provide compelling evidence for theoretical claims.

Negative case analysis involves deliberately seeking out diary entries that contradict emerging patterns. By

exploring these outliers, researchers refine their interpretations and avoid overgeneralisation.

Cross-case synthesis is the process of comparing findings across multiple case studies. In diary research, cross-case synthesis may reveal common trajectories (e.G., Stages of adoption) or highlight divergent pathways due to contextual differences.

Longitudinal coding matrix is a tool that maps codes onto a timeline, allowing researchers to visualise how themes evolve for each participant. The matrix can be constructed in a spreadsheet, with rows representing codes and columns representing time intervals (e.G., Weeks).

Time-series analysis applies statistical techniques to diary data that have been quantified (e.G., Daily stress scores). Techniques such as autocorrelation, trend analysis, or ARIMA modeling can uncover periodic patterns or forecast future states.

Mixed-methods design integrates quantitative and qualitative elements within a diary case study. For example, participants may rate their mood on a Likert scale (quantitative) while also providing free-form narrative descriptions (qualitative). Mixed-methods designs leverage the strengths of both data types.

Quantitative diary measures include scales, checklists, or numeric ratings embedded within diary prompts. These measures enable statistical comparison across participants or time points and can be validated using psychometric techniques.

Psychometric validation assesses the reliability and validity of any scales used in diary entries. Researchers may conduct internal consistency analysis (e.G., Cronbach's alpha) or test-retest reliability to ensure that numeric ratings are stable and meaningful.

Ecological momentary assessment (EMA) is a synonym for real-time, experience-sampling diary approaches that capture data in participants' natural environments. EMA is particularly useful for health-related case studies, such as tracking symptom fluctuation in chronic illness.

Participant attrition denotes the loss of participants over the course of the diary study. Attrition can bias results if the remaining participants differ systematically from those who drop out. Strategies to mitigate attrition include regular check-ins, flexible scheduling, and reinforcing the value of participants' contributions.

Drop-out analysis examines characteristics of participants who discontinue the diary protocol, comparing them to completers on demographic and baseline variables. This analysis helps assess whether attrition threatens the study's internal validity.

Retention strategies may involve personalized feedback, milestone celebrations (e.G., A "30-day badge"), or providing participants with a summary of their own data at the study's conclusion.

Data cleaning is the process of preparing diary entries for analysis by correcting typographical errors, standardising date formats, and handling missing values. Automated scripts can flag anomalies, but researchers should review flagged items to avoid discarding meaningful content.

Missing data is a common challenge in diary research, especially when participants skip entries. Techniques for handling missing data include imputation (e.G., Mean substitution), interpolation (e.G., Linear interpolation for numeric scores), or treating missingness as a variable of interest (e.G., Low compliance as an indicator of disengagement).

Imputation methods vary in complexity. Simple methods (e.G., Last-observation-carried-forward) are easy to implement but may bias results; multiple imputation provides more robust estimates but requires statistical expertise.

Data integration refers to the merging of diary data with other data sources (e.G., Sensor logs, interview transcripts). Effective integration demands consistent identifiers, synchronized timestamps, and clear documentation of how each data type contributes to the overall analysis.

Timeline reconstruction is a technique where researchers piece together the sequence of events from diary entries, interview data, and external records to produce a comprehensive narrative of the case. This reconstruction aids in identifying pivotal moments and causal pathways.

Case narrative is the final written account that weaves together diary excerpts, thematic insights, and contextual information into a coherent story. A well-crafted case narrative demonstrates the depth of understanding achieved through the diary method and conveys the practical implications for stakeholders.

Stakeholder engagement involves sharing interim findings with individuals or organisations who have an interest in the case study outcomes. In diary research, stakeholders may include participants themselves, organisational leaders, policy makers, or product designers. Early engagement can refine research questions and ensure relevance.

Actionable insight is a finding that can directly inform decision-making, such as redesigning a workflow, adjusting a health intervention, or tailoring a user interface. Diary case studies often generate actionable insights because they illuminate day-to-day friction points and opportunities for improvement.

Implementation plan outlines how the insights derived from the diary case study will be operationalised. It may include recommendations, timelines, responsible parties, and evaluation metrics.

Evaluation metrics are criteria used to assess whether the interventions inspired by diary findings have achieved their intended effects. Metrics can be quantitative (e.G., Reduction in self-reported stress scores) or qualitative (e.G., Participants' perceived improvement in work-life balance).

Feedback loop describes the process by which participants receive information about the impact of their contributions, fostering a sense of ownership and encouraging future participation in research.

Ethical debriefing is a post-study conversation that allows participants to discuss any emotional discomfort, privacy concerns, or unexpected revelations that emerged during diary keeping. Debriefing helps address potential harms and reinforces ethical responsibility.

Data preservation involves archiving diary datasets for future reuse, replication, or secondary analysis. Preservation requires adherence to data standards (e.G., Metadata schemas) and may involve depositing

data in institutional repositories with controlled access.

Open science principles encourage sharing of research materials, protocols, and anonymised data to promote transparency and cumulative knowledge building. When feasible, diary case studies can contribute to open science by publishing the diary instrument, coding schema, and aggregated findings.

Limitations of diary case studies include potential self-selection bias (participants who agree to keep diaries may differ from those who decline), the burden of sustained participation, and challenges in generalising from a small number of cases. Researchers should acknowledge these limitations and discuss how they were mitigated (e.G., Through purposive sampling or triangulation).

Future directions for diary research include integrating artificial intelligence for real-time sentiment detection, leveraging passive data streams from smartphones, and expanding cross-cultural comparative case studies. Emerging technologies such as voice assistants can prompt participants hands-free, reducing friction and enhancing compliance.

Practical example 1 – Healthcare case study

A research team investigates how patients with chronic migraine manage triggers over a three-month period. They adopt a structured diary app that prompts participants twice daily (morning and evening) to record headache intensity (0-10 scale), medication use, sleep quality, and any suspected triggers (e.G., Bright light, stress). The prompts are concise, each limited to a single sentence, to minimise burden.

During the pilot, participants report that the evening prompt often coincides with bedtime routines, leading to rushed entries. The team iterates the design by moving the evening prompt to 8pm and adding an optional “quick-log” button for brief entries. Compliance monitoring shows a 90% completion rate after the adjustment.

After data collection, researchers conduct open coding on the narrative sections, identifying codes such as “screen time”, “caffeine”, and “social conflict”. Axial coding links “caffeine” with “headache intensity” and “sleep quality”. Sentiment analysis of free-text comments reveals a spike in negative sentiment during weeks with high work stress.

Triangulation is achieved by pairing diary data with wearable actigraphy data that records sleep duration and heart-rate variability. The combined analysis demonstrates that nights with elevated heart-rate variability correspond to higher headache scores the following morning.

Member checking involves sharing a summary of these patterns with participants, who confirm that the identified triggers resonate with their personal experience. The final case narrative highlights three actionable insights: (1) Reducing afternoon caffeine intake, (2) implementing brief relaxation exercises after stressful meetings, and (3) adjusting screen-time habits before bedtime. An implementation plan is co-created with a patient advocacy group, and evaluation metrics include a 20% reduction in average headache intensity over a six-month follow-up.

Practical example 2 – Design case study

A technology company wishes to understand how users interact with a new collaborative design tool. They

recruit ten designers and ask them to keep a hybrid diary for four weeks. The diary platform allows participants to upload screenshots, voice notes, and short text reflections after each design session.

Prompt examples include “What was the primary goal of today’s session?” And “Record any moments where the tool felt unintuitive.” Participants also receive a signal-contingent prompt at random intervals to rate their current level of flow (1-5).

Compliance is high (average of 5 entries per week) due to the incentive of receiving a personalised usage report at study’s end. Data cleaning involves standardising timestamps across time zones and anonymising uploaded screenshots by blurring any client logos.

Qualitative analysis uses a hybrid coding approach: An initial keyword frequency scan identifies recurring terms such as “layer”, “export”, and “lag”. Researchers then manually code a sample of voice notes, developing a codebook that captures themes like “performance bottleneck”, “feature discoverability”, and “collaboration friction”.

Network analysis maps references to team members within voice notes, revealing that participants frequently mention “project manager” when discussing communication delays. Temporal sequencing shows that “performance bottleneck” spikes during weeks when large file sizes are imported, suggesting a technical limitation.

The case narrative integrates visual diary excerpts (blurred screenshots of error messages) with thematic findings, illustrating how the tool’s export function caused frustration. Actionable insights include optimizing file handling algorithms, improving on-boarding tutorials for export features, and adding a real-time collaboration indicator.

Stakeholder engagement involves presenting these findings to the product development team, who prioritize the performance improvements in the next sprint. Evaluation metrics track the reduction in reported “lag” incidents and user satisfaction scores in a subsequent beta test.

Practical example 3 – Organizational change case study

An enterprise undergoing a digital transformation wants to gauge employee sentiment and adaptation processes. Researchers select a purposive sample of 15 employees across three departments (IT, marketing, operations). A event-triggered diary is employed: Participants are instructed to log entries whenever they experience a “significant change moment” (e.G., A new software rollout, a shift in reporting lines).

The diary platform sends a reminder email each Monday asking participants to reflect on the prior week’s change moments. Prompts are open-ended, encouraging participants to describe the event, their emotional response, and any coping strategies employed.

Compliance monitoring shows a gradual decline after the first month; the research team introduces a bi-weekly virtual check-in to discuss challenges and reinforce the study’s purpose. This intervention stabilises compliance at around 70% of expected entries.

Open coding identifies codes such as “uncertainty”, “training adequacy”, “peer support”, and “workflow

disruption". Axial coding reveals that "training adequacy" mediates the relationship between "uncertainty" and "coping strategies". Negative case analysis uncovers a participant who reports high "uncertainty" but low "peer support", leading to a recommendation for targeted mentorship.

Triangulation incorporates HR records of training attendance and system logs of software usage. The combined analysis shows that departments with higher training participation exhibit lower "workflow disruption" codes.

Member checking is performed through a workshop where participants review aggregated themes and suggest refinements. The final case narrative emphasizes three strategic recommendations: (1) Schedule mandatory training before major rollouts, (2) establish cross-department peer support groups, and (3) create a real-time feedback channel for employees to report workflow issues.

Evaluation metrics include post-implementation surveys measuring perceived readiness for change and system usage analytics indicating reduced error rates.

Challenges and mitigation strategies

Participant fatigue is a pervasive risk in diary case studies, especially when entries are frequent or lengthy. Mitigation includes limiting entry length, using visual prompts instead of text-heavy questions, and providing regular feedback that demonstrates the value of participants' contributions.

Technological barriers may arise if participants lack access to smartphones, reliable internet, or familiarity with the diary platform. Researchers can address this by offering alternative data-collection modes (e.G., Paper diaries) and providing brief training sessions.

Data overload can overwhelm analysts when each participant generates dozens of entries per week. To manage volume, researchers may employ automated text-analysis pipelines to flag high-frequency codes, use sampling strategies for deeper qualitative reading, and schedule regular coding sprints to keep analysis momentum.

Privacy concerns are heightened when diaries contain sensitive personal information. Robust anonymisation procedures, clear consent language about data use, and secure storage solutions are essential. Participants should be reminded that they can omit or redact any details they are uncomfortable sharing.

Interpretive bias occurs when researchers impose preconceived frameworks onto diary narratives. Reflexivity, triangulation, and involving multiple coders can reduce bias. Maintaining an audit trail of coding decisions further supports transparency.

Temporal misalignment between diary entries and external data sources (e.G., Sensor logs) can impede integration. Researchers should synchronise clocks across devices, use standardised timestamp formats, and, when necessary, apply interpolation techniques to align data streams.

Attrition bias threatens the representativeness of the case study if participants who drop out differ systematically from completers. Conducting dropout analysis, offering flexible participation windows, and maintaining regular contact can help mitigate attrition.

Ethical dilemmas may surface when participants disclose distressing experiences (e.G., Workplace harassment) in diaries. Researchers must have protocols for responding to such disclosures, which may include providing resources, notifying appropriate authorities, or pausing data collection if participant safety is at risk.

Generalisation limits are inherent to case study designs. While diaries provide depth, the small-sample nature restricts statistical generalisation. Researchers should emphasise transferability through thick description and encourage replication in varied contexts.

Quality assurance involves systematic checks at each stage: Pilot testing to ensure prompt clarity, compliance dashboards to monitor entry rates, inter-rater reliability calculations to verify coding consistency, and member checking to validate interpretations.

Software considerations differ based on research scale. For small-scale studies, a simple spreadsheet may suffice for timestamp logging, while larger projects benefit from specialised QDAS platforms that support multi-user coding, audit trails, and export of coded excerpts. Open-source alternatives (e.G., R packages for text analysis) can be integrated for custom analytics.

Reporting standards such as the Consolidated Criteria for Reporting Qualitative Research (COREQ) or the Standards for Reporting Qualitative Research (SRQR) provide checklists to ensure comprehensive documentation of diary methodology, sampling, data collection, analysis, and trustworthiness criteria.

Future methodological innovations include the use of natural language processing (NLP) models to automatically generate preliminary codes from diary text, thereby accelerating the coding process. However, researchers must remain vigilant about algorithmic bias and retain human oversight for nuanced interpretation.

Another emerging trend is the incorporation of contextual sensors (e.G., GPS, ambient light) that automatically enrich diary entries with environmental data, allowing for richer analyses of how physical context influences experiences.

Finally, the rise of decentralized data collection platforms enables participants to retain ownership of their diary data, granting them the ability to grant or revoke access at any time. This participant-centric model aligns with ethical imperatives and may increase willingness to engage in intensive diary research.

In sum, mastering the terminology outlined above equips researchers to design, execute, and analyse case studies that harness the power of diary methods. By attending to practical considerations—prompt design, compliance strategies, ethical safeguards, and rigorous analytical techniques—researchers can generate nuanced, actionable insights that illuminate the lived realities of individuals and organisations. The vocabulary serves as a shared toolkit, fostering clear communication among interdisciplinary teams and enhancing the credibility and impact of diary-based case study research.