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BBA | Semester 6 | UK6DSCMGT301

# Research Methodology

Course Code: UK6DSCMGT301 • Module 1 Notes


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# Module 1: Introduction to Research

Nature, Scope, Scientific Methods, Typology, and Research Process

## Chapter 1: Conceptual Foundations and Philosophy of Scientific Research

### 1.1 Definitional Parameters: The Nature and Essence of Research

Research in its most foundational epistemological formulation is an organized, systematic, data-based, critical, objective, and scientific inquiry or investigation into a specific problem, undertaken with the overarching objective of discovering answers, finding solutions, or establishing generalizable truths. The term itself is derived etymologically from the French prefix *re-* (denoting intensive repetition, renewal, or anew) and *chercher* (meaning to search, closely inquire, or explore). In the intellectual traditions of business management, commerce, and the social sciences, research functions as the cognitive and empirical engine of rational, evidence-based decision-making. In the absence of structured research, corporate leaders, administrative policymakers, and economic planners are forced to rely on personal intuition, subjective conjecture, anecdotal folklore, or unverified rule-of-thumb traditions—approaches that prove volatile and hazardous in complex, globally integrated commercial landscapes.

The defining hallmark of scientific inquiry is its adherence to a disciplined methodology that distinguishes formal research from casual observation, unverified opinions, or journalistic commentary. Scientific research does not simply amass disconnected factual information; it systematically constructs theoretical frameworks that explain *why* phenomena occur, *under what conditions* they persist, and *how* future outcomes can be accurately anticipated. It bridges the divide between abstract conceptual speculation and tangible empirical reality through disciplined observation, controlled experimentation, and rigorous data analysis.

### 1.2 Essential Characteristics of Scientific Research

To qualify as genuine scientific inquiry, an investigation must satisfy several rigorous methodological hallmarks:

- **Purposiveness:** Every scientific research endeavor commences with a distinct, unambiguous focus and an explicitly stated goal or problem statement. A study lacking a well-defined purpose degenerates into aimless data gathering without analytical direction.
- **Methodological Rigor:** Rigor ensures that the research design, data collection instruments, and analytical protocols rest upon a solid theoretical foundation and follow scrupulously disciplined scientific procedures. Rigor eliminates haphazard shortcuts, careless record-keeping, and biased sampling.
- **Testability:** The propositions or hypotheses formulated by the researcher must be empirically testable using verifiable quantitative or qualitative evidence. Concepts that cannot be observed, measured, or subjected to empirical scrutiny fall outside the domain of scientific research.

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- **Replicability:** A hallmark of scientific truth is that independent investigators, following the identical documented methodology under comparable conditions, should arrive at consistent findings. Replicability protects the academic community against idiosyncratic flukes, selective reporting, and fraudulent claims.
- **Precision and Confidence:** In management and social science research, investigators frequently study representative samples rather than entire populations. *Precision* refers to the closeness of the sample findings to the true reality of the universe. *Confidence* reflects the statistical probability that the estimations and inferences drawn from the sample are correct within specified confidence intervals (e.g., 95% or 99% confidence).
- **Objectivity:** The interpretation of findings and the drawing of conclusions must be guided strictly by factual empirical data rather than subjective emotions, personal biases, or vested institutional interests. Scientific objectivity requires researchers to accept empirical outcomes even when they directly contradict cherished personal hypotheses.
- **Generalizability:** Generalizability pertains to the scope of applicability of the research findings. The greater the range of organizations, demographic groups, geographic regions, or industrial settings across which the findings hold true, the higher the scientific value and theoretical utility of the research.
- **Parsimony:** Parsimony, often linked to the philosophical principle of Occam's Razor, dictates that simplicity in explaining phenomena is preferred over unnecessary complexity. An empirical model that explains 80% of the variance in customer loyalty using three well-defined independent variables is scientifically superior to an unwieldy model requiring twenty variables to achieve the same predictive power.

## 1.3 Scope, Significance, and Utilities of Research in Business Management

The scope of research in contemporary business administration is pervasive, spanning every functional department and strategic hierarchy of the enterprise. In marketing management, research examines consumer cognitive processing, brand equity dynamics, price sensitivity, customer journey mapping, and the effectiveness of digital omni-channel campaigns. In corporate finance, research analyzes capital structure determinants, cost of capital optimization, dividend payout behaviors, portfolio diversification, and credit rating risk models. In human resource management, research investigates the drivers of voluntary employee turnover, workplace psychological safety, compensation equity, and leadership styles. In operations and supply chain logistics, research optimizes facility layouts, inventory replenishment thresholds, assembly line balancing, and reverse logistics sustainability.

Beyond individual corporate boundaries, business research serves profound macroeconomic and societal utilities. Governments and regulatory agencies (such as the Reserve Bank of India, the Securities and Exchange Board of India, and NITI Aayog) rely on empirical research to formulate fiscal policies, interest rate adjustments, industrial tariffs, foreign direct investment guidelines, and social welfare programs. Research provides the evidentiary foundation for identifying systemic economic disparities, consumer welfare trends, and labor market shifts.

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# Chapter 2: Epistemology and Scientific Reasoning: Induction versus Deduction

## 2.1 The Philosophy of Knowledge: Deductive Reasoning

Scientific inquiry advances through two foundational modes of logical reasoning: deduction and induction. The dynamic interaction between deductive verification and inductive theory-building constitutes the intellectual core of all academic progress.

**Deductive Reasoning (The Top-Down Paradigm):** Deductive reasoning commences from established theoretical frameworks, broad universal principles, or known scientific laws, and moves logically toward specific empirical hypotheses and observable real-world instances. In formal logic, a deductive argument is valid if the truth of the overarching premises guarantees the truth of the conclusion. In business research, deduction represents the dominant paradigm of quantitative, positivist, and confirmatory inquiry. The deductive cycle follows four systematic stages:

1. **Theory:** The investigator identifies an established theoretical framework from existing literature (for example, Vroom's Expectancy Theory of Motivation, Jensen and Meckling's Agency Theory, or Porter's Five Forces Model).
2. **Hypothesis:** From this overarching theoretical architecture, the researcher deduces explicit, directional, and empirically testable propositions predicting relationships between operational variables.
3. **Observation:** The researcher gathers empirical data in real-world settings using standardized instruments, structured questionnaires, or secondary financial datasets to measure the variables.
4. **Confirmation or Refutation:** Statistical hypothesis testing is conducted to determine whether the empirical data supports or refutes the deduced hypothesis, thereby reinforcing, modifying, or challenging the foundational theory.

## 2.2 Inductive Reasoning: The Bottom-Up Paradigm

**Inductive Reasoning (The Bottom-Up Paradigm):** Inductive reasoning progresses in the opposite direction. It begins with specific, detailed empirical observations, measurements, and contextual experiences, discovers emerging patterns and structural regularities, and culminates in the formulation of tentative generalized conclusions, conceptual propositions, or entirely novel theoretical frameworks. In an inductive argument, the premises provide strong probabilistic support for the conclusion, but do not mathematically guarantee its certainty. Induction is the cornerstone of qualitative, exploratory, phenomenological, and interpretivist research paradigms. The inductive cycle unfolds across four stages:

1. **Empirical Observation:** The researcher immerses themselves directly in the phenomenon of interest through open-ended qualitative interviews, ethnographic participant observation, or historical case analyses.
2. **Pattern Recognition:** The collected qualitative narratives and observational field notes are systematically analyzed, categorized, and coded to identify recurring behavioral patterns, thematic

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clusters, and emotional expressions.

3. **Tentative Propositions:** The observed thematic regularities are synthesized into provisional conceptual relationships and working propositions.
4. **Theory Generation:** The researcher integrates these propositions into a coherent, comprehensive theoretical model that provides conceptual insight into the observed phenomenon.

| Dimension of Comparison | Deductive Approach | Inductive Approach |
|---|---|---|
| Starting Point | Existing theoretical models and general principles | Raw empirical observations and specific experiences |
| Direction of Logic | Top-Down: From general theory to specific instances | Bottom-Up: From specific instances to general theory |
| Epistemological Stance | Positivism and Critical Realism; objective reality | Interpretivism and Social Constructivism; contextual reality |
| Core Research Goal | Testing, validating, and confirming existing theories | Generating, discovering, and building new theories |
| Data Characteristics | Quantitative, structured, numerical, and measurable | Qualitative, unstructured, rich textual descriptions |
| Role of Hypotheses | Formulated a priori before data collection begins | Emerges a posteriori from data analysis and synthesis |
| Sampling Strategy | Large, statistically representative probability samples | Small, purposive, information-rich contextual samples |
| Risk Profile | Rigid structure; risk of testing irrelevant theoretical models | Open-ended; risk that observed patterns lack broad validity |

## 2.3 The Abductive Research Approach and Methodological Triangulation

While deduction and induction are frequently presented as polar opposites, modern management research increasingly embraces **Abductive Reasoning**. Popularized by the pragmatist philosopher Charles Sanders Peirce, abduction begins with an empirical anomaly or a surprising real-world observation that cannot be adequately explained by established theories. The researcher oscillates iteratively between empirical data and theoretical literature, formulating the most plausible explanatory hypothesis. Abductive logic is particularly prevalent in contemporary business case study research, organizational turnaround studies, and crisis management analyses.

To overcome the inherent biases and limitations associated with relying solely upon a single reasoning mode or data source, scholars advocate **Methodological Triangulation**. Triangulation involves employing multiple epistemological perspectives, data collection techniques, theoretical frameworks, or analytical methods within a single investigation. *Data Triangulation* collects data from varied time

periods, geographic spaces, and respondent tiers; *Investigator Triangulation* uses multiple independent researchers to code and interpret data; and *Methodological Triangulation* combines quantitative surveys with qualitative depth interviews (Mixed-Methods Research Design), yielding robust, cross-validated insights that neither paradigm could achieve in isolation.

# Chapter 3: Typology and Classifications of Business Research

## 3.1 Fundamental versus Applied Research

The broad domain of scientific inquiry is classified into distinct typologies according to purpose, operational structure, time horizon, and research environment.

**Fundamental (Basic or Pure) Research:** Fundamental research is driven primarily by intellectual curiosity, scholarly inquiry, and the intrinsic desire to expand the universal boundaries of scientific knowledge, without any immediate, direct, or commercial practical application in view. Pure research seeks to formulate universal laws, uncover foundational behavioral mechanics, or develop abstract mathematical models. Examples in business include investigating the neurological pathways governing human risk perception under cognitive overload, formulating general mathematical theories of organizational turbulence, or exploring the philosophical foundations of corporate moral agency. Although basic research may yield no immediate financial return, it creates the foundational intellectual capital from which transformative applied breakthroughs eventually emerge.

**Applied Research:** Applied research is undertaken with the explicit intention of solving an immediate, concrete, practical problem faced by an enterprise, an industry, or public administrators. Applied research applies theoretical frameworks directly to specific operational dilemmas. Examples include identifying the root causes of a 22% spike in manufacturing defect rates in an automotive assembly plant, evaluating which compensation structure optimizes retail sales productivity, or assessing consumer willingness to adopt a new digital payment interface. Applied research produces timely, pragmatic, and actionable recommendations directly usable by executive decision-makers.

## 3.2 Exploratory, Descriptive, and Causal Research

Depending on the degree of clarity surrounding the research problem and the nature of the research objective, studies are classified into exploratory, descriptive, or causal designs:

**Exploratory Research:** Exploratory research is conducted when the research domain is nascent, poorly understood, or characterized by ambiguity. It is not designed to provide definitive quantitative answers, but rather to gain initial familiarity, clarify problem definitions, discover key variables, and formulate grounded hypotheses for subsequent empirical testing. Exploratory methods are flexible, unstructured, and qualitative, relying on literature scans, pilot focus groups, in-depth expert interviews, and projective techniques.

**Descriptive Research:** Descriptive research seeks to provide an accurate, systematic, and comprehensive profile of the characteristics, behaviors, frequencies, or demographic distributions of a specific population, market, or phenomenon. It addresses questions of *Who*, *What*, *Where*, *When*, and *How much*. Examples include profiling the demographic and lifestyle characteristics of luxury electric

vehicle buyers in metropolitan cities, auditing annual employee turnover rates across IT service firms, or cataloging retail market share distributions across FMCG product categories. Descriptive research relies upon structured questionnaires, observational schedules, and secondary registers. While descriptive studies reveal powerful statistical correlations, they cannot establish direct cause-and-effect relationships.

**Causal (Explanatory) Research:** Causal research investigates cause-and-effect relationships between specific independent variables (causes) and dependent variables (effects). It moves beyond descriptive correlation to answer the question of *Why*. To scientifically substantiate causality, three mandatory empirical criteria must be satisfied:

1. **Concomitant Variation:** A statistically demonstrable correlation showing that changes in the independent variable are reliably accompanied by corresponding changes in the dependent variable.
2. **Temporal Precedence (Time Order of Occurrence):** Definitive empirical proof that the cause occurred prior to the observed effect in chronological time.
3. **Non-Spuriousness (Elimination of Extraneous Factors):** The systematic exclusion or statistical control of all confounding, extraneous, or intervening variables that could provide an alternative explanation for the observed relationship.

## 3.3 Specialized Research Designs: Ex-Post Facto, Action, and Diagnostic Research

**Ex-Post Facto Research:** Translated literally from Latin as "after the fact," ex-post facto research investigates empirical phenomena where the event or the independent variable has already occurred naturally, and where the researcher cannot manipulate, randomize, or control experimental exposures. For instance, studying the financial distress of hospitality firms following an unexpected economic recession constitutes an ex-post facto investigation. The researcher observes the consequences retrospectively and attempts to reconstruct plausible causal mechanisms by matching affected firms with control groups, while carefully controlling for historical biases.

**Action Research:** Pioneered by social psychologist Kurt Lewin, action research is a participatory, collaborative, and iterative methodology designed to simultaneously solve a practical organizational problem while advancing reflective academic knowledge. Action research is structured as an ongoing spiral of four systematic phases:

- **Plan:** Diagnosing the local problem, gathering preliminary diagnostic data, and formulating an action intervention.
- **Act:** Implementing the strategic intervention within the live organizational environment.
- **Observe:** Systematically recording and monitoring the behavioral and operational consequences of the intervention.
- **Reflect:** Critically analyzing outcomes, extracting theoretical insights, and refining the plan for the next iteration.

**Diagnostic Research:** Closely aligned with descriptive research, diagnostic studies seek to uncover the underlying causes or frequency with which a specific organizational malfunction or behavioral

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breakdown occurs, along with its association with other variables (e.g., diagnosing the specific factors driving high absenteeism among night-shift manufacturing personnel).

## Chapter 4: The Systematic Steps in the Research Process

### 4.1 The Research Process as an Integrated System

Scientific research is neither an erratic sequence of spontaneous activities nor an isolated set of clerical procedures. It is a highly structured, sequential, and interdependent process where every individual stage derives its theoretical validity from preceding stages and provides the essential foundation for subsequent phases. An omission, conceptual ambiguity, or methodological error introduced in an early phase inevitably degrades the analytical integrity of the final outcomes.

### 4.2 Step-by-Step Overview of the Research Architecture

The standard scientific research process in business studies unfolds across nine disciplined stages:

1. **Identification and Definition of the Management Problem:** Translating vague, symptomatic business anxieties (e.g., falling profitability, rising customer churn) into a precise, conceptually anchored, and researchable problem statement.
2. **Extensive Literature Review:** Thoroughly surveying published scholarly journals, textbooks, industry benchmark reports, and theoretical repositories to determine what is already known, identify relevant conceptual models, and isolate the critical *Research Gap*.
3. **Development of Theoretical Framework and Hypotheses:** Delineating the operational variables (independent, dependent, moderating, mediating) and establishing clear, testable directional hypotheses based on theoretical logic.
4. **Formulation of the Research Design:** Formulating the overarching master blueprint specifying whether the investigation is exploratory, descriptive, or causal; establishing the study setting (natural field vs. contrived laboratory); defining the unit of analysis; and setting the time horizon (cross-sectional vs. longitudinal).
5. **Operationalization, Measurement, and Scaling:** Translating abstract theoretical constructs into measurable operational definitions, constructing structured measurement instruments (questionnaires, observational rubrics), and evaluating psychometric scaling properties.
6. **Sampling Design and Sample Size Determination:** Defining the target population, establishing the sampling frame, selecting the sampling technique (probability vs. non-probability), and mathematically calculating the minimum required sample size to guarantee statistical power.
7. **Execution of Data Collection:** Administering survey instruments, conducting structured interviews, or extracting archival financial logs while strictly monitoring response rates and mitigating non-sampling biases.
8. **Data Processing, Statistical Analysis, and Hypothesis Testing:** Editing raw questionnaires, coding responses, imputing missing data, performing descriptive summaries, and executing inferential parametric or non-parametric statistical tests.

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9. **Interpretation of Findings and Report Preparation:** Contextualizing empirical results within the broader literature, extracting actionable managerial implications, and preparing the formal research monograph or executive briefing document.

# Chapter 5: Methodological Rigor, Research Paradigms, and Practical Project Formulation

## 5.1 Epistemological Paradigms: Positivism, Interpretivism, and Pragmatism

Every business research inquiry is implicitly or explicitly anchored in a foundational philosophical paradigm that governs how the researcher conceptualizes truth, reality, and valid evidence. A **research paradigm** consists of three interrelated philosophical dimensions:

- **Ontology:** The philosophical study of the nature of reality. *Objectivist ontology* asserts that social and economic reality exists independently of human observers, operating according to immutable natural laws. *Subjectivist or Constructionist ontology* maintains that social reality is continuously created, modified, and negotiated through the subjective interactions, language, and cultural perceptions of human actors.
- **Epistemology:** The philosophical theory of knowledge, defining what constitutes acceptable, valid, and legitimate knowledge. *Positivist epistemology* contends that genuine knowledge is gained exclusively through sensory observation, empirical measurement, and logical deduction. *Interpretivist epistemology* posits that human social actions cannot be studied like physical particles; valid knowledge requires empathetic understanding (*Verstehen*) of the internal subjective motivations, cultural values, and shared meanings of participants.
- **Axiology:** The philosophical study of values and ethics in research. Positivists demand an entirely value-free, detached stance where personal convictions do not contaminate findings. Interpretivists acknowledge that research is intrinsically value-laden, requiring the researcher to explicitly reflect on how their own social background shapes data interpretation (reflexivity).

In modern applied management research, **Pragmatism** has emerged as a dominant philosophy. Pragmatism rejects dogmatic philosophical purity in favor of actionable problem-solving. It asserts that the ultimate criterion of truth is the practical consequence of an idea in action. Pragmatist researchers freely combine quantitative surveys with qualitative interviews, selecting whatever methodological tools best address the core research questions.

## 5.2 Developing an Academic Business Research Proposal

Before launching empirical investigations, scholars and corporate consultants must formulate a formal **Research Proposal**. The proposal serves three vital functions: (a) it forces the investigator to clarify and operationalize every phase of the project; (b) it serves as an evaluative document for academic defense committees or institutional funding bodies; and (c) it functions as an operational contract establishing timelines, deliverables, and ethical boundaries.

A standard academic business research proposal comprises ten essential structural sections:

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1. **Tentative Project Title:** A concise, informative title indicating the core independent and dependent variables and the industrial or geographic context.
2. **Executive Introduction and Background:** Articulating the broader industry context, contemporary market dynamics, and the operational relevance of the domain.
3. **Statement of the Problem:** Formulating the central research problem with sharp conceptual boundaries, separating observable operational symptoms from underlying systemic causes.
4. **Review of Key Literature and Conceptual Model:** A synthesized review of foundational theoretical frameworks and empirical studies, culminating in a visual conceptual framework and explicit identification of the research gap.
5. **Research Questions and Specific Objectives:** Stating clear, logically sequenced research questions and matching operational objectives.
6. **Hypotheses Formulation:** Formulating null and alternative hypotheses grounded in theoretical logic and empirical evidence.
7. **Detailed Research Methodology:** Explicitly delineating the research design, target population, sampling frame, sampling technique, sample size determination, measurement scales, data collection tools, and proposed statistical software and tests.
8. **Significance and Managerial Implications:** Outlining how the expected findings will contribute to theoretical advancement and provide practical solutions for corporate management.
9. **Work Plan, Budget, and Timeline Schedule:** Providing a realistic chronological schedule of project phases alongside projected financial requirements.
10. **Preliminary Reference List:** Demonstrating academic thoroughness through a curated list of foundational scholarly citations formatted in standard academic style.

## 5.3 Comparative Analysis of Research Strategies

The choice of research strategy shapes the entire operational trajectory of a study. The following comparative matrix synthesizes the core operational attributes of dominant research strategies in business management:

| Research Strategy | Primary Research Objective | Data Collection Techniques | Control Over Behavioral Events | Focus on Contemporary Events |
|---|---|---|---|---|
| **Experiment** | Establish causal relationships between manipulated IV and measured DV | Controlled laboratory or randomized field measurement | High to Complete control through randomization and isolation | Yes: Contemporary live events under observation |
| **Survey** | Identify demographic patterns, attitudes, | Standardized questionnaires and structured | No control: Observes variables in natural settings | Yes: Contemporary cross-sectional or longitudinal states |

| Research Strategy | Primary Research Objective | Data Collection Techniques | Control Over Behavioral Events | Focus on Contemporary Events |
|---|---|---|---|---|
| | correlations, and generalizable trends | interview schedules | | |
| **Case Study** | Deep, holistic exploration of a complex phenomenon in real-life context | Multiple sources: interviews, internal documents, archival records, observation | No control: Preserves contextual complexity | Yes: Contemporary organizational and strategic events |
| **Archival Analysis** | Analyze longitudinal patterns, historical trends, and document registries | Secondary databases, annual reports, corporate minutes, government bulletins | No control: Retrospective analysis | Past and Contemporary: Dependent on record availability |
| **Action Research** | Simultaneously resolve practical problems while generating scientific knowledge | Collaborative diagnostic cycles, participant observation, reflective logs | Moderate control through planned organizational interventions | Yes: Live real-time organizational transformations |

## 5.4 Cognitive Heuristics, Researcher Biases, and Safeguards in Business Research

Even the most seasoned researchers and business analysts are susceptible to insidious cognitive biases and psychological heuristics that can unconsciously distort problem formulation, data collection, and statistical interpretation. Recognizing and actively mitigating these cognitive distortions is essential to maintaining scientific objectivity:

- **Confirmation Bias:** The unconscious psychological tendency to search for, interpret, favor, and recall information in a way that confirms one's preexisting beliefs or preferred hypotheses, while systematically ignoring, downplaying, or rationalizing contradictory empirical evidence. Safeguards include pre-registering research hypotheses, blinding data analysts to experimental conditions, and actively assigning "devil's advocate" roles during data review.
- **Availability Heuristic:** The cognitive shortcut where people assess the frequency, probability, or likelihood of an event based on how easily concrete instances come to mind. In business research, an investigator might overestimate the prevalence of corporate fraud or brand crises simply because recent high-profile scandals received sensational media coverage. Safeguards demand relying strictly on systematic, empirical frequency distributions and probability registries rather than spontaneous recall.
- **Anchoring and Adjustment Bias:** The common human tendency to rely too heavily on the first piece of information encountered (the "anchor") when making subsequent analytical judgments.

When setting initial parameter bounds or valuation estimates in financial research, analysts frequently under-adjust away from arbitrary initial figures. Objective econometric modeling and automated calibration protocols mitigate anchoring distortions.

- **Social Desirability Bias:** The tendency of survey respondents to provide answers that will be viewed favorably by others, systematically over-reporting socially virtuous behaviors (e.g., environmental consciousness, ethical purchasing, charitable donations) and under-reporting stigmatized behaviors (e.g., absenteeism, financial distress, workplace procrastination). Researchers neutralize this bias by guaranteeing strict respondent anonymity, employing indirect questioning techniques, and utilizing randomized response techniques for sensitive topics.
- **The Halo Effect:** A cognitive bias wherein an observer's overall positive impression of a person, brand, or institution influences their evaluation of specific individual traits. In consumer surveys, respondents who love a brand's smartphones may unconsciously rate its customer service and laptop keyboards as superior without ever having used them. Safeguards require randomized item sequencing, specific behavioral measurement anchors, and separate battery assessments.

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