

XIAOGE ZHANG, PhD

1A Oak Tree Avenue, Cambridge, UK, CB4 1AZ

✉ sharqcc@gmail.com | 🌐 xgzhang.com (Portfolio) | **in** [linkedin.com/in/xgzhang2026](https://www.linkedin.com/in/xgzhang2026)
☎ +44 7785796662 | **Full Right to Work in the UK (No sponsorship required)**

Professional Profile

Quantitative scientist (PhD, York) with 7+ years of advanced modelling and causal inference research, transitioning into HEOR consulting with a dedicated focus on decision-analytic modelling and evidence synthesis for HTA submissions. Brings working knowledge of NICE methodological standards across economic evaluation, survival extrapolation, and network meta-analysis, developed through independent reconstruction of published NICE appraisals. Combines academic rigour with practical model-building and validation experience in R, Stan, and Excel.

Technical Competencies

- **Economic Evaluation:** Experienced in building and validating Partitioned Survival Model (PSM) and Multi-state Markov models; proficient in implementing structural assumptions including treatment waning, cure fractions, and ONS-linked background mortality; skilled in PSA/DSA and threshold analysis.
- **Evidence Synthesis:** Proficient in Bayesian Network Meta-Analysis (NMA) including population-adjusted indirect comparisons (ML-NMR); experienced in parametric survival extrapolation (Weibull, Gompertz, splines) and aggregate data reconstruction from published sources.
- **Real-World Evidence:** Familiarity with UK real-world data sources (SACT, CPRD) and their application to NICE evidence requirements; working knowledge of propensity score methods and observational study design.
- **Technical Toolkit:**
 - **R:** flexsurv, survival, meta, netmeta, tidyverse; experienced in reproducible scripting and output generation.
 - **Stan:** Hierarchical Bayesian models, MCMC diagnostics (R-hat, ESS).
 - **Excel:** Decision-analytic model building, Solver-based calibration, automated PSA/DSA dashboards.
 - **MS Office:** Word and PowerPoint for client-facing deliverables and scientific communications.

Independent HEOR Technical Portfolio

A self-directed technical repository applying quantitative methods to NICE/SMC evidence standards.

GitHub: github.com/Qsev/XGZ-HEOR-Portfolio (Models, Code, and Visual Analytics)

Case Study 1: Oncology Model Validation & Remediation (Excel/R)

2026

- **Focus:** Technical validation and remediation of an industrial-grade **3-State PSM** for oncology, ensuring structural consistency and biological plausibility for NICE submission.
- **Remediation:** Identified and resolved time-unit mismatches causing survival crossovers; implemented a hazard-chaining algorithm in R to eliminate discontinuities at the trial-to-extrapolation boundary.
- **Analytics:** Built an automated PSA/DSA dashboard linked to **ONS UK Life Tables**; conducted threshold analysis to identify the Patient Access Scheme (PAS) discount required to offset subsequent therapy cost penalties.

Case Study 2: Evidence Synthesis & External Control Arms (R/Stan)

2025–2026

- **Focus:** Reconstructing evidence networks and External Control Arms (ECA) to quantify treatment effects in single-arm oncology studies (e.g., TA1013, TA1017) lacking direct comparators.

- **Analytics:** Applied population-adjusted indirect comparison methods and propensity-based weighting to address baseline imbalance; developed Bayesian hierarchical models in **Stan** with full MCMC diagnostics (R-hat, ESS).
- **Validation:** Conducted sensitivity analyses for unmeasured confounding to assess robustness of treatment effect estimates.

HTA Appraisal Review & Methodology Repository

2025–Present

- **Scope:** Systematic review of **20+ NICE appraisals**, examining methodological choices and their impact on cost-effectiveness conclusions across oncology and rare disease submissions.
- **Repository:** Developed 50+ technical reference cards covering effective sample size (ESS) shrinkage, treatment waning, and non-linear utility mapping—providing a structured knowledge base for model development and quality assurance.

Professional Experience

Lecturer → Associate Professor (Quantitative Economics & Modelling)

2018 – 2025

Southwestern University of Finance and Economics

Sichuan, China

- **Scientific Writing & Research Delivery:** Principal writer for a sub-project within a National Social Science Fund Major Grant (2020–2023); produced structured technical reports synthesising quantitative evidence under competitive peer review and institutional quality standards.
- **Quantitative Project Supervision:** Supervised 15 Master’s students through full research cycles—from study design and analytical methodology to final reporting—managing concurrent projects with structured feedback and quality review at each stage.
- **Statistical Communication:** Led bilingual curriculum design for quantitative methods courses; consistently recognised for translating complex modelling concepts into accessible, structured outputs for diverse audiences.

Graduate Teaching Fellow (Statistics & Economics), University of York

2013 – 2017

- Delivered postgraduate and undergraduate teaching in Mathematics, Statistics, and Economics during PhD; awarded Teaching Excellence Awards in two consecutive years for clarity in communicating quantitative methods.

Education

University of York, Ph.D. in Economics

York, UK | 2013 - 2018

University of Sheffield, M.Sc.

Sheffield, UK | 2011 - 2012

Selected Publications

Peer-reviewed publications in Economics Letters, Pacific-Basin Finance Journal.

- Developed an Indirect Inference framework to calibrate bias in dynamic panel models with irregular data intervals (Economics Letters, 2023).
- Modelled firm risk-taking behaviour under monetary policy uncertainty using high-dimensional stochastic systems (Pacific-Basin Finance Journal, 2022).

Additional Information

- **Languages:** English (Full Professional Proficiency); Mandarin (Native).
- **Visa Status:** Full Right to Work in the UK (No sponsorship required).
- **Certification:** Associate Fellow (AFHEA) of Advance HE, UK (awarded 2025).
- **References:** Professional and academic references available upon request.