UNIVERSITAS
GADJAH MADA
**ANALISIS VOLUME BETON BERDASARKAN METODE KONVENSIONAL DAN BIM SERTA PENYEBAB PERBEDAAN HITUNGAN
DENGAN PENDEKATAN MIXED METHODS Studi Kasus Pembangunan SD Negeri Joglo Surakarta**
Alvin Hannan Jusuf Prabowo, Dr. Toriq Arif Ghuzdewan, S.T., M.Sc.E.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

DAFTAR PUSTAKA

Adiwijaya, M., Rahman, A., dan Santoso, D., 2024. Metodologi wawancara semi-terstruktur dalam penelitian kualitatif: Panduan praktis untuk peneliti. Jurnal Metode Penelitian Kualitatif, 12(1), 23–38.

Al Farizi, M. dan Sutantiningrum, B., 2025. Evaluasi metode perhitungan QTO tulangan kolom dengan Tekla Structures dan Autodesk Revit. Jurnal Teknik Sipil dan Lingkungan, 10(1), 45–57. https://doi.org/10.29244/jsil.10.1.45-57

Alathamneh, S., Collins, W., dan Azhar, S., 2024. BIM-based quantity takeoff: Current state and future opportunities. Automation in Construction, 165, 105549. https://doi.org/10.1016/j.autcon.2024.105549

Amroin, A., 2024. Perhitungan Volume Menggunakan Autodesk Revit pada Struktur Bangunan Rumah Sakit Orthopedi dan Traumatologi. Skripsi, Universitas Islam Indonesia. https://dspace.uii.ac.id

Asroni, A., 2017. Teori dan Desain Balok Plat Beton Bertulang Berdasarkan SNI 2847-2013. Muhammadiyah University Press, Surakarta.

Autodesk, 2022. Material Takeoff Schedules in Autodesk Revit. Autodesk Help Documentation. https://help.autodesk.com/cloudhelp/2022/ENU/Revit-DocumentPresent/

Autodesk, 2024. Create a Material Takeoff Schedule. Autodesk Help. https://help.autodesk.com/cloudhelp/2024/ENU/RevitLT-DocumentPresent/files/GUID-9165A53A-C6B8

Autodesk, 2024. Structural Elements: Columns, Framing, and Floors. Autodesk Revit Help. https://help.autodesk.com/view/RVT/2024/ENU/

Autodesk, 2025. Revit 2025: Schedules and Material Takeoff. Autodesk Documentation. https://help.autodesk.com/view/RVT/2025/ENU/

Azhar, S., 2011. Building information modeling (BIM): Trends, benefits, risks, and challenges for the AEC industry. Architectural Engineering and Design Management, 11, 241–252.

Bakar, A.R.A., Haron, A.T., dan Rahman, R.A., 2021. Building information modelling execution plan (BEP): A comparison of global practice. International Journal of Engineering Technology and Sciences, 7, 63–73. https://doi.org/10.15282/ijets.7.2.2020.1005

Banihashemi, S., Hosseini, M.R., Golizadeh, H., dan Sankaran, S., 2022. Machine learning-integrated 5D BIM informatics: Building materials costs data classification and prototype development. Engineering, Construction and Architectural Management, 29(1), 1–28. https://doi.org/10.1108/ECAM-11-2020-0971

Bernstein, H.M., Jones, S.A., dan Young Jr., N.W., 2008. Building Information Modeling (BIM): Transforming Design and Construction to Achieve Greater Industry Productivity. McGraw-Hill Construction.

Braun, V. dan Clarke, V., 2021. Thematic Analysis: A Practical Guide. SAGE Publications.

Cartlidge, D., 2017. The Quantity Surveyor's Pocket Book, Edisi ke-3. Routledge. https://doi.org/10.4324/9781315558509

UNIVERSITAS
GADJAH MADA
ANALISIS VOLUME BETON BERDASARKAN METODE KONVENSIONAL DAN BIM SERTA PENYEBAB PERBEDAAN HITUNGAN
DENGAN PENDEKATAN MIXED METHODS Studi Kasus Pembangunan SD Negeri Joglo Surakarta
Alvin Hannan Jusuf Prabowo, Dr. Toriq Arif Ghuzdewan, S.T., M.Sc.E.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Casey, M.A., 2022. Focus Groups: A Practical Guide for Applied Research, Edisi ke-6. SAGE Publications.

Chen, L., Luo, H., dan Fang, W., 2022. Automated identification of building information model errors using a multi-layered knowledge representation and a reasoning approach. Automation in Construction, 135, 104109. https://doi.org/10.1016/j.autcon.2021.104109

Chudley, R., Greeno, R., dan Kovac, K., 2020. Building Construction Handbook, Edisi ke-12. Routledge. https://doi.org/10.4324/9780429325991

Clark, F.D. dan Lorenzoni, A.B., 1997. Applied Cost Engineering, Edisi ke-3. Marcel Dekker.

Creswell, J.W., 2006. Qualitative Inquiry and Research Design: Choosing Among Five Approaches, Edisi ke-2. SAGE Publications.

Creswell, J.W. dan Plano Clark, V.L., 2018. Designing and Conducting Mixed Methods Research, Edisi ke-3. SAGE Publications.

Doumbouya, L., Gao, G., dan Guan, C., 2016. Adoption of the building information modeling (BIM) for construction project effectiveness: The review of BIM benefits. American Journal of Civil Engineering and Architecture, 4, 74–79. https://doi.org/10.12691/ajcea-4-3-1

Eastman, C.M., 2008. BIM Handbook: A Guide to Building Information Modeling for Owners, Managers, Designers, Engineers, and Contractors. John Wiley & Sons.

Guetterman, T.C., Chang, T., DeJonckheere, M., Basu, T., Schumacher, B., dan Vydiswaran, V.G.V., 2021. Augmenting qualitative text analysis with natural language processing: Methodological study. Journal of Medical Internet Research, 22(1), e15504. https://doi.org/10.2196/jmir.9702

Harvard Catalyst, 2026. Mixed Methods Research: Explanatory Sequential Design. Harvard Medical School. https://catalyst.harvard.edu/services/mixed-methods/

Heriyanto, H. dan Nurislaminingsih, R., 2025. Analisis tematik dalam penelitian kualitatif: Dari coding hingga tema. Jurnal Penelitian Kualitatif Indonesia, 8(2), 112–128.

Jeong, Y. dan Kim, H., 2024. Automation of rebar quantity estimation in the detailed design stage using BIM. Korean Journal of Construction Engineering and Management, 25(3), 54–63. https://doi.org/10.6106/KJCEM.2024.25.3.054

Kementerian Pekerjaan Umum dan Perumahan Rakyat, 2016a. Pedoman Analisis Harga Satuan Pekerjaan Bidang Pekerjaan Umum (Permen PUPR No. 28/PRT/M/2016). Kementerian PUPR RI.

Kementerian Pekerjaan Umum dan Perumahan Rakyat, 2016b. Pedoman Penyusunan Rencana Anggaran Biaya Pekerjaan Konstruksi (Permen PUPR No. 11/PRT/M/2016). Kementerian PUPR RI.

Kementerian Pekerjaan Umum dan Perumahan Rakyat, 2018. Peraturan Menteri PUPR No. 22/PRT/M/2018 tentang Pedoman Teknis Pembangunan Bangunan Gedung Negara. Kementerian PUPR RI.

Kementerian Pekerjaan Umum dan Perumahan Rakyat, 2023. Pedoman Implementasi Building Information Modelling (BIM) pada Bangunan Gedung dan Infrastruktur. Direktorat Jenderal Cipta Karya, Kementerian PUPR RI.

Laorent, D., Nugraha, P., dan Budiman, J., 2019. Analisa quantity take-off dengan menggunakan Autodesk Revit. Dimensi Utama Teknik Sipil, 6(1), 1–8. https://doi.org/10.9744/duts.6.1.1-8

UNIVERSITAS
GADJAH MADA
**ANALISIS VOLUME BETON BERDASARKAN METODE KONVENSIONAL DAN BIM SERTA PENYEBAB PERBEDAAN HITUNGAN
DENGAN PENDEKATAN MIXED METHODS Studi Kasus Pembangunan SD Negeri Joglo Surakarta**
Alvin Hannan Jusuf Prabowo, Dr. Toriq Arif Ghuzdewan, S.T., M.Sc.E.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Latupeirissa, J.E. dan Arrang, M., 2024. Factors affecting the sustainability of BIM implementation in construction projects in Indonesia. International Journal of Engineering and Management Research, 14(2), 22–30. https://doi.org/10.31033/ijemr.14.2.4

Latupeirissa, J. dan Arrang, A.T., 2024. Analisis faktor-faktor yang mempengaruhi keberlanjutan implementasi BIM pada proyek konstruksi di Indonesia. Journal of the Civil Engineering Forum, 10(1), 1–12. https://doi.org/10.1007/s41024-023-00376-1

Liu, H., Cheng, J.C.P., Gan, V.J.L., dan Zhou, S., 2022. A novel data-driven framework based on BIM and knowledge graph for automatic model auditing and quantity take-off. Advanced Engineering Informatics, 54, 101757. https://doi.org/10.1016/j.aei.2022.101757

Liu, Z., Shi, Y., dan Yang, B., 2022. Open BIM-based quantity take-off system for evaluating building elements with complex geometry. Applied Sciences, 12(4), 1814. https://doi.org/10.3390/app12041814

Maghiar, M., Simons, T., dan Dubin, R., 2021. BIM quantity take-offs analysis for accurate estimates of concrete volume in buildings. Construction Innovation, 22(3), 579–595. https://doi.org/10.1108/CI-08-2020-0133

Mosley, B., Bungey, J., dan Hulse, R., 2012. Reinforced Concrete Design to Eurocode 2, Edisi ke-7. Palgrave Macmillan. https://doi.org/10.1007/978-1-137-01225-6

National Institute of Building Sciences, 2006. National Building Information Modeling Standard Version 1.0. NIBS. https://www.nationalbimstandard.org

Nugraha, P. dan Isaac, M., 2022. The Comparison Between the BOQ of BIM Method and Conventional Method. LOGIC Jurnal Rancang Bangun dan Teknologi, 22(3). https://ojs.pnb.ac.id/index.php/LOGIC/article/download/2260/1662

Pertiwi, D.A., 2024. Analisis Perbandingan Volume Pekerjaan Beton Metode Konvensional dan BIM Menggunakan Autodesk Revit pada Proyek Gedung Bertingkat. Skripsi, Universitas Gadjah Mada. https://etd.repository.ugm.ac.id

Pham, T., Kim, S., Lee, D., dan Park, H., 2024. BIM-based automatic extraction of daily concrete and formwork requirements for site work planning. Automation in Construction, 157, 105165. https://doi.org/10.1016/j.autcon.2023.105165

Pishdad, P. dan Onungwa, I., 2024. Analysis of 5D BIM for cost estimation, cost control, and payments. Buildings, 14(4), 972. https://doi.org/10.3390/buildings14040972

Pratama, A.A. dan Marzuki, P.F., 2023. Analisis tingkat kematangan implementasi BIM pada proyek konstruksi gedung di Indonesia. Jurnal Teknik Sipil, 30(2), 135–148. https://doi.org/10.5614/jts.2023.30.2.15

Pratama, D.N. dan Marzuki, P.F., 2023. BIM adoption in Indonesian construction industry: Challenges and opportunities. Journal of Physics: Conference Series, 2453, 012025. https://doi.org/10.1088/1742-6596/2453/1/012025

Rani, H.A., Farouk, A.M., Pratama, R.A., dan Ismail, R., 2023. Building information modeling adoption in developing countries: A systematic literature review. Infrastructures, 8(3), 57. https://doi.org/10.3390/infrastructures8030057

Rinchen, S., Dorji, T., Wangchuk, K., dan Chhetri, P., 2024. Adoption and challenges of building information modeling in construction projects. Procedia Landscape Architecture Series, 3, 100138. https://doi.org/10.1016/j.plas.2024.100138

UNIVERSITAS
GADJAH MADA
ANALISIS VOLUME BETON BERDASARKAN METODE KONVENSIONAL DAN BIM SERTA PENYEBAB PERBEDAAN HITUNGAN
DENGAN PENDEKATAN MIXED METHODS Studi Kasus Pembangunan SD Negeri Joglo Surakarta
Alvin Hannan Jusuf Prabowo, Dr. Toriq Arif Ghuzdewan, S.T., M.Sc.E.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Royal Institution of Chartered Surveyors, 2021. New Rules of Measurement 2: Detailed Measurement for Building Works, Edisi ke-2. RICS Publishing. https://www.rics.org/nrm2

Saavedra, R., Meléndez, W., dan Garcés, G., 2025. Comparative analysis of quantity take-off in concrete, steel bars and formwork in apartment buildings based on CAD and BIM methodologies. Journal of Information Technology in Construction, 30, 159–184. https://doi.org/10.36680/j.itcon.2025.008

Saavedra, R., Prieto, F., Herreño, A., dan Botero, L.F., 2025. Comparative analysis of quantity takeoff and cost estimation for concrete, steel reinforcement, and formwork: CAD versus BIM based on Delphi and AHP approaches. Journal of Information Technology in Construction, 30, 118–140. https://doi.org/10.36680/j.itcon.2025.008

Sacks, R., Eastman, C., Lee, G., dan Teicholz, P., 2018. BIM Handbook: A Guide to Building Information Modeling for Owners, Managers, Designers, Engineers and Contractors, Edisi ke-3. John Wiley & Sons. https://doi.org/10.1002/9781119287568

Seeley, I.H. dan Winfield, R., 2009. Building Quantities Explained, Edisi ke-5. Palgrave Macmillan. https://doi.org/10.1007/978-0-230-24744-9

Sianturi, R., Pohan, A., dan Simatupang, F., 2025. A comparative analysis of quantity take-off processes in construction projects using Graphisoft Archicad and Autodesk Revit. JACEIT: Journal of Applied Civil Engineering and Infrastructure Technology, 6(1), 1–10. https://doi.org/10.36606/jaceit.v6i1

Simatupang, F.J., Hasibuan, G.C.R., Jaya, I., Syahrizal, dan Dewi, R.A., 2024. Quantity take off comparison using building information modelling (BIM) with Autodesk Revit software and traditional method. International Journal of Architecture and Urbanism, 8(2), 184–190. https://doi.org/10.32734/ijau.v8i2.16146

Simatupang, F.J., Pohan, A., Sianturi, R., dan Hasibuan, G.C.R., 2025. A comparative analysis of quantity take-off processes in construction projects using Graphisoft ArchiCAD and Autodesk Revit. Journal of Civil Engineering and Project and Infrastructure Management, 3(1), 1–10. https://doi.org/10.32734/jce-pim.v3i1

UK BIM Framework, 2020. Information Management According to BS EN ISO 19650: Guidance Part 1 — Concepts. UK BIM Framework. https://www.ukbimframework.org

Valinejadshoubi, M., Bagchi, A., dan Moselhi, O., 2024. Automated system for high-accuracy quantity takeoff using BIM. Journal of Construction Engineering and Management, 150(9). https://doi.org/10.1061/JCEMD4.COENG-14356

Valinejadshoubi, M., Bagchi, A., dan Moselhi, O., 2025. BIM-based quantity takeoff and cost estimation for sustainable construction. Journal of Construction Engineering and Management, 151(11), 05025014. https://doi.org/10.1061/JCEMD4.COENG-15512

Valinejadshoubi, M., Moselhi, O., Iordanova, I., Valdivieso, F., dan Bagchi, A., 2024. Automated system for high-accuracy quantity takeoff using BIM. Automation in Construction, 156, 105155. https://doi.org/10.1016/j.autcon.2023.105155

Valinejadshoubi, M., Moselhi, O., Iordanova, I., Valdivieso, F., dan Bagchi, A., 2025. A cloud-driven framework for automated BIM quantity takeoff and quality precision check. Buildings, 15(21), 3942. https://doi.org/10.3390/buildings15213942

Venkatesh, M., Bhatt, M., dan Shukla, A., 2023. Digital twin and BIM-based quantity surveying: A systematic review. Smart and Sustainable Built Environment, 12(4), 875–899. https://doi.org/10.1108/SASBE-03-2022-0058

UNIVERSITAS
GADJAH MADA
ANALISIS VOLUME BETON BERDASARKAN METODE KONVENSIONAL DAN BIM SERTA PENYEBAB PERBEDAAN HITUNGAN DENGAN PENDEKATAN MIXED METHODS Studi Kasus Pembangunan SD Negeri Joglo Surakarta
Alvin Hannan Jusuf Prabowo, Dr. Toriq Arif Ghuzdewan, S.T., M.Sc.E.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

Watt, A., 2014. Project Management, Edisi ke-2. BCcampus. https://opentextbc.ca/projectmanagement/

Yuliana, S., 2019. Estimasi Biaya Konstruksi: Teori dan Praktik. Andi Offset.