



Web Portals on Linked Open Data: Testing Sampo-UI in Projects on Early Modern Bibliographic Data and Chinese Calligraphy and Arts

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ABSTRACT (ENGLISH)

The publication of cultural heritage data as Linked Open Data increases interoperability but imposes an access barrier for non-technical users. This paper evaluates the use of semantic portals to facilitate access to RDF-serialised data, analysing the Sampo-UI framework through two case studies: (1) WenDang, WRITE Digital Archive, for exploring data on contemporary Chinese calligraphy and arts with visual components and UI customisations, and (2) a workflow based on Early Modern bibliographic data extracted from the SPARQL service of the Bibliothèque nationale de France. The paper addresses strengths (reuse, JSON-driven configuration, independence between data management and user interface generation) and limitations (configuration complexity, dependence on iterative alignment between configurations and SPARQL queries) for small- to medium-scale datasets in the Digital Humanities.

Keywords: Semantic Web; SAMPO Framework; Web Interfaces; Bibliographic Data; Calligraphy

ABSTRACT (ITALIANO)

Portali Web Basati su Linked Open Data: Sperimentazione di Sampo-UI su Progetti Dedicati ai Dati Bibliografici della Prima Età Moderna e alla Calligrafia e alle Arti Cinesi. La pubblicazione dei dati relativi al patrimonio culturale sotto forma di Linked Open Data aumenta l'interoperabilità, ma crea una barriera di accesso per gli utenti privi di un background tecnico. Questo articolo valuta l'uso dei portali semantici per facilitare l'accesso ai dati serializzati in formato RDF, analizzando il framework Sampo-UI attraverso due casi di studio: (1) WenDang, WRITE Digital Archive, per l'esplorazione di dati su calligrafia contemporanea cinese con componenti visuali e personalizzazioni UI, e (2) un workflow basato su dati bibliografici relativi alla prima età moderna estratti dallo SPARQL endpoint della Bibliothèque nationale de France. Il paper affronta punti di forza (riuso, configurazione JSON guidata, indipendenza tra la gestione dei dati e la generazione dell'interfaccia utente) e limiti (complessità di configurazione, dipendenza dall'allineamento iterativo tra le configurazioni e le query SPARQL) per dataset di piccola-media scala nell'ambito delle Digital Humanities.

Parole chiave: Semantic Web; SAMPO Framework; Interfacce Web; Dati Bibliografici; Calligrafia

1. INTRODUCTION

Cultural heritage organisations have been increasingly converting and publishing their data as RDF Linked Open Data (LOD) datasets, adhering to Semantic Web principles (Candela, 2025; Marden et al., 2013). While such technologies foster interoperability in data linking, they also introduce an access barrier for end users, who often lack the technical expertise needed to explore SPARQL queries or interpret RDF data. Thus, although many Cultural Heritage (CH) projects provide SPARQL endpoints, this is rarely sufficient to ensure meaningful access to information in semantic datasets. To address this challenge, web interfaces and portal solutions have been developed to make RDF data more accessible. Several frameworks currently support exploration, browsing and analysis without forcing users to engage directly with complex data models or query languages. Their development, however, raises open questions regarding usability, scalability and adaptability to different datasets and user groups.

This paper explores effective approaches to developing web interfaces for exposing RDF data, whether semantic web portals can enhance data discovery and lower the access threshold to semantic content, and to what extent the Sampo model and Sampo-UI framework represent a suitable solution for

distributing and making accessible small-to-medium triplestore datasets to specialised and general audiences.

To answer these questions, the paper builds on the Sampo model and Sampo-UI framework as a reference approach for semantic portal development. After a literature review of approaches and tools for generating user-friendly interfaces to disseminate RDF data, and an introduction to the conceptual and technical background of the Sampo framework, the paper presents two case studies in which Sampo-UI was tested to present research data. The first case study analyses the use of Sampo-UI within the WenDang project to expose and explore data on contemporary Chinese calligraphy and related artistic practices, and evaluates the framework as a potential long-term user interface for a domain-specific semantic digital archive. The second case study applies Sampo-UI to a data processing workflow based on bibliographic data retrieved from the Bibliothèque nationale de France SPARQL endpoint, illustrating its use in refining and exploring historical datasets.

This article aims to identify both the strengths and limitations of the Sampo approach, thereby contributing to a practical, broader discussion of the role of semantic portals in reducing barriers to accessing RDF data. Guided by these goals, the paper addresses two research questions. (RQ1) What requirements and design choices emerge from the analysis of existing solutions for creating semantic portals that allow users to access and explore Linked Open Data research datasets without requiring SPARQL or knowledge of the underlying data model? (RQ2) To what extent do the Sampo model and the Sampo-UI framework respond to the need for reusable and easily configurable tools for publishing and maintaining web dissemination resources for small-to-medium RDF datasets in Digital Humanities, in light of two case studies (WenDang and a bibliographic workflow on BnF data)?

2. LITERATURE REVIEW (ALTERNATIVES TO SAMPO)

Beyond tools for federated queries and runtime visualisations on SPARQL endpoints, recent research has focused on web portals for publishing RDF content to both expert users and wider audiences. This literature review considers alternatives for exposing RDF datasets, from exploration interfaces to reproducible portal frameworks, evaluating them on four layers: (1) service stability over time; (2) consistency with Linked Data best practices (URI management and navigation between linked entities); (3) support for generic and expert exploration modes; and (4) replicability across datasets or endpoints. Tools for exploring SPARQL endpoints and lowering the entry threshold – such as RDF Surveyor (Vega-Gorgojo et al., 2017, 2019), LODGVis (Coimbra et al., 2019), and RDF Visualizer (Petrakis et al., 2019) – support inspection of classes, instances and relationships, but are not complete publishing systems and remain mainly runtime. Other tools support dissemination through complementary functions: LODStats (Ermilov et al., 2016) provides structural statistics, MELODY (Renda et al., 2023) supports query-based storytelling, while static approaches such as Jekyll RDF (Arndt et al., 2019) and SPUK (Barzaghi, 2025) generate entity-centric HTML artefacts but not query-based interfaces or runtime perspectives. Endpoint-oriented solutions such as LD Viewer (Lukovnikov et al., 2014) and LodView (Kirillovich & Nikolaev, 2022) provide immediate, minimally configurable web views, including content negotiation, yet they do not offer multi-view analysis possibilities on semantic portals. Infrastructure-level platforms – such as RKBPlatform (Glaser & Millard, 2007), CubicWeb (Simon et al., 2013),¹ OntoWiki (Frischmuth et al., 2015), and CLEF (Daquino et al., 2023) – integrate publication with services, synchronised views, or collaborative curation rather than providing a reusable public framework. In the cultural heritage domain, ResearchSpace (Oldman & Tanase, 2018) and WissKI (Scholz & Goerz, 2012) support specialist modelling and curation, while data.open.ac.uk (Cudre-Mauroux et al., 2016) is a robust institutional reference, but it can't be adopted as a reusable toolkit for small-to-medium projects. Finally, SAMPO-UI (Hyvönen, 2012, 2020, 2023) is a framework for building reproducible semantic portals on knowledge graphs accessible via SPARQL, enabling reusable, configurable perspectives and lowering the technical barrier to disseminating semantic datasets through coordinated views such as faceted search and thematic perspectives.

3. SAMPO PORTALS FOR CULTURAL HERITAGE

Cultural heritage data are highly heterogeneous and language-specific, affecting how they are collected, modelled, and published. Digital Humanities research has focused on breaking data silos to enable a Web of Data based on Linked Data principles (Heath & Bizer, 2011; Hyvönen, 2012), where a main challenge

¹ <https://www.cubicweb.org/> (cons. 08/02/2026).

remains semantic interoperability across diverse datasets. The Sampo model addresses this goal by providing guidelines for creating LOD services and semantic portals, aligned with FAIR and W3C best practices (Hyvönen, 2023; Hyvönen et al., 2023). This model is further articulated through three core ideas: (1) a “business model” for Linked Data publication, (2) multiple application perspectives for exploring data, and (3) a two-step interaction paradigm combining faceted search with analysis or visualisation of filtered results (Hyvönen, 2020).

Introduced in 2002 (Hyvönen, 2023), the Sampo model has been tested through several implementations, including portals developed by SeCo (Aalto University) and HELDIG (University of Helsinki) (Hyvönen, 2020). A Sampo portal may be implemented using Sampo-UI, a JavaScript framework providing a landing page for selecting application perspectives (typically entity classes), followed by faceted search and multiple visualisation components. Configuring a Sampo-UI portal requires an RDF triplestore accessible via a SPARQL endpoint. In the latest version, the configuration is entirely JSON-based; the backend is implemented in Node.js, and the frontend is built with React and Redux (Rantala et al., 2023; Ikkala et al., 2021). Early portals following the Sampo model include CultureSampo,² integrating data from 22 libraries, archives and museums and supporting citizen participation (Hyvönen et al., 2009), and BookSampo,³ aggregating Finnish fiction literature from the mid-19th century onwards and attracting around two million users per year (Ahola et al., 2025). Other examples include WarSampo⁴ and BiographySampo⁵ (Hyvönen et al., 2015; Hyvönen et al., 2019). More recently, projects employing the Sampo model have been developed outside the Finnish context, demonstrating its reusability across new domains, such as Beltrans-ui, exploring the BELTRANS⁶ corpus by the Royal Library of Belgium about intra-Belgian literary translations⁷, and the OntoVE project (De Bastiani & Fabbris, 2025) by the Ca’ Foscari University of Venice and Net7⁸, about Germanic Cultural Heritage items linked to the Veneto region.

4. METHODOLOGY

Despite operational differences between WenDang and the BnF workflow, in both projects the Sampo-UI portal configuration is the final step of a broader pipeline that must first produce a stable RDF data service, including extraction, semantic modelling, mapping to RDF, data harmonisation, semantic enrichment, publication via a SPARQL endpoint, data validation, and quality checks.

Sampo-UI runs in a Node.js environment and is configuration-driven: portal logic is defined by JSON configuration files and associated SPARQL queries (implemented as JavaScript modules), rather than through extensive custom coding. The codebase is organised into three main folders: *configs* (portal configuration, perspectives, instance pages: structure, perspectives, facets, displayed properties), *server* (backend and SPARQL directory, including queries against the RDF triplestore populating facets, result lists, instance pages aligned with perspective configs), and *client* (frontend configuration and components: localisation, reusable and project-specific JS components, CSS, UI customisation). Configuration and querying are developed iteratively, adjusting JSON and SPARQL as tests reveal mismatches of any type, such as cardinality, data types, labels, or performance. The minimal replicable unit consists of a SPARQL endpoint, versioned queries, and JSON configurations for perspectives, facets, and views. The separation between the data layer and UI supports reuse across datasets while keeping modelling choices and transformations traceable.

5. THE WENDANG AND THE EARLY MODERN BNF CASE STUDIES

The WenDang case study examines the adoption of the Sampo-UI framework in WenDang – WRITE Digital Archive, a project that represents and provides access to data on contemporary Chinese calligraphy and arts. The archive is affiliated with the European Research Council Starting Grant research project called *WRITE – New forms of calligraphy in China: a contemporary culture mirror* (GA n. 949645)⁹,

² <https://www.kulttuurisampo.fi/?lang=en> (cons. 08/02/2026).

³ <https://analyysi.kirjasampo.fi/enComhis/s/> (cons. 08/02/2026).

⁴ <https://www.sotasampo.fi/en/> (cons. 08/02/2026).

⁵ <https://seco.cs.aalto.fi/projects/biografiasampo/en/> (cons. 08/02/2026).

⁶ <https://www.kbr.be/en/projects/beltrans/> (cons. 22/04/2026).

⁷ <https://github.com/kbrbe/beltrans-ui> (cons. 22/04/2026).

⁸ <https://www.netseven.it/> (cons. 22/04/2026).

⁹ <https://writcalligraphyproject.eu/> (cons. 19/04/2026).

which investigates new forms of calligraphy that have emerged in contemporary China. The WRITE project's main research question concerns whether contemporary calligraphic practices can still be understood as calligraphy in the traditional sense, and to what extent such a transformation is identifiable. WenDang therefore serves not only as a public-facing digital archive but also as a research infrastructure supporting data-driven analysis within the project. The design and development of WenDang largely align with the Sampo model guidelines, which can be used to verify how the archive implements Linked Open Data (LOD) principles and semantic portal design.

In WenDang, the dataset is created and curated collaboratively with domain experts. In line with the Sampo model's emphasis on Semantic Web-based content creation (Hyvönen, 2023), it is linked to external authority and vocabulary resources. Where applicable, class instances are aligned with Wikidata entities, while some concepts are aligned with terms from Getty Art & Architecture Thesaurus (AAT)¹⁰, Chinese Iconography Thesaurus (CIT)¹¹ and others. Future work includes planned alignments with the Virtual International Authority File (VIAF)¹² and the Getty Union List of Artist Names (ULAN)¹³ for people, to further support interoperability.

Although the Sampo model encourages reuse of shared ontology infrastructures (Hyvönen, 2023), no existing ontology met WenDang's needs, given the specificity of contemporary Chinese calligraphy as a domain. A dedicated ontology was therefore developed¹⁴; however, where possible, classes and properties from Wikidata were reused to provide contextual information, thereby ensuring partial alignment with established standards. As the Sampo model suggests, the WRITE dataset is maintained independently of the UI layer. However, as WenDang is still a work in progress, it relies on a local Apache Jena Fuseki¹⁵ triplestore rather than a publicly exposed SPARQL endpoint. Nevertheless, this setup reflects the conceptual separation proposed by the Sampo model. For data entry and curation, WenDang employs Omeka S,¹⁶ chosen for its ease of use for non-expert users (domain experts). Data is then exported from Omeka S in JSON-LD and Turtle (TTL), cleaned, harmonised, enriched and prepared to be visualised and explored in a custom Sampo-UI semantic portal. The Sampo-UI application perspectives align perfectly with the main conceptual classes of the WRITE dataset, including four WRITE collections – Visual Arts, Performing Arts, Graffiti Art, and Decorative and Applied Arts – as well as Calli-Writing Units,¹⁷ and any other relevant classes.¹⁸ Faceted search of the Sampo UI has proven intuitive and useful for narrowing result sets and supporting exploratory workflows. Spatial visualisations provided by the framework can help situate artists, artworks, and events geographically, while temporal views can support the exploration of stylistic and material changes over time (e.g., shifts in the use of traditional black ink on white paper using a brush). Statistical visualisations, such as pie charts, can also provide quantitative overviews, useful both for public exploration and for research-oriented analysis within the WRITE project.

WenDang also deals with Sampo-UI customisation to improve usability and data exploration. Given the visual nature of the WRITE data, an additional component was developed for WenDang: a browse-by-image view implemented as a masonry image gallery (see Figure 1), allowing users to search through visual material alongside standard Sampo-UI visualisations. Furthermore, to prevent information overload and enhance readability for detailed descriptions in tabular views, data are fielded into conceptual sections, for example: *identification* (title in English, title in other languages, type), *creation* (creator, date, location), *formal description* (material/support, tool, dimension, colours), and, for Calli-Writing Units, *textual/linguistic description* (writing system, character form, script style, transcription, translation). Customisation is still in progress, including structural and visual improvements, along with enhancements to the mobile version of the portal.

The choice to provide access to WenDang data through Sampo-UI confirms its viability as a reusable framework in a domain-specific project. However, the implementation showed that reuse is not always

¹⁰ <https://www.getty.edu/research/tools/vocabularies/aat/> (cons. 19/04/2026).

¹¹ <https://chineseiconography.org/> (cons. 19/04/2026).

¹² <https://viaf.org/en> (cons. 08/02/2026).

¹³ <https://www.getty.edu/research/tools/vocabularies/ulan/> (cons. 08/02/2026).

¹⁴ The WRITE ontology can be consulted here: <https://w3id.org/write/ontology> (cons. 19/04/2026).

¹⁵ <https://jena.apache.org/documentation/fuseki2/> (cons. 08/02/2026).

¹⁶ <https://omeka.org/s/docs/user-manual/> (cons. 08/02/2026).

¹⁷ In an artwork, a content unit featuring elements of calligraphy and/or writing, in a form of meaningful writing, set of signs and/or set of lines.

¹⁸ For detailed description of the classes and the project's documentation, consult the official documentation page: <https://wendang-project.github.io/documentation/> (cons. 19/04/2026).

straightforward. Non-technical users may find configuration challenging when project requirements extend beyond documented scenarios. In such cases, the documentation may be insufficient, requiring consultation of existing Sampo repositories as practical references.

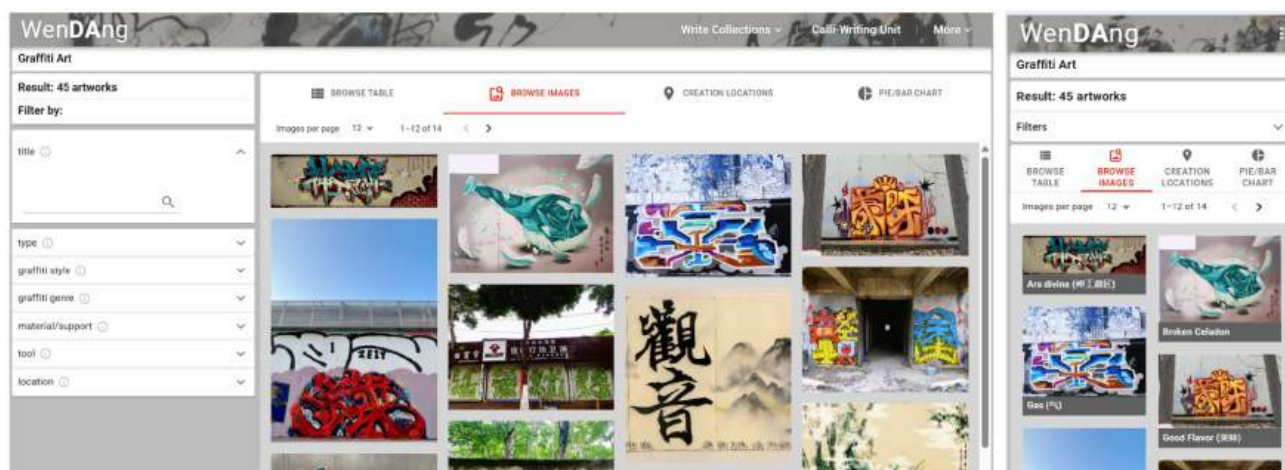


Figure 1: Masonry-style image gallery in WenDang Sampo portal for desktop and mobile.

In the context of the BnF Early Modern Polished Dataset case study, over the last 15 years, quantitative analysis of early modern books has enabled new approaches to studying large-scale cultural, economic, and intellectual change in early modern Europe (Dittmar, 2011; Tolonen et al., 2021; Marjanen et al., 2025). Because this research requires harmonisation and enrichment of large historical datasets that are not computationally usable without preprocessing, enhancement of bibliographic information has become a topic of research in its own right. Historical catalogues such as the English Short Title Catalogue and the Finnish Fennica have therefore been subjected to “bibliographic data science” (Lahti et al., 2019a). However, many collections remain unsuitable for quantitative analysis, and limited integration between bibliographic resources constrains historical research. Many research questions, such as those concerning cultural influence, are transnational, yet most datasets have been gathered by national organisations with limited scope. Thus, studying Franco-British cultural influence in the eighteenth century (Eagles, 2000; Grieder, 1985) requires harmonising collections from both countries and identifying overlapping actors to compare cultural trends (e.g., whether an author became popular in both countries). This motivates our case study, which focuses on extracting, creating and harmonising a dataset on early modern books published in France and integrating it with British data that has already been extensively harmonised and enriched (Lahti et al., 2019b; Ijaz, 2019; Hill, 2019).

For data retrieval, BnF data was obtained through a script-based¹⁹ workflow (Moretti et al., 2025) that mined early modern bibliographic information from the French National Library collections via its SPARQL interface. Queries were run for records published between 1454 and 1800 and for relevant metadata fields; additional queries targeted involved entities (authors, editors, translators, etc.), and the resulting biographical metadata was used to construct an actors dataset linked to bibliographic production. Operationally, SPARQL queries against the BnF endpoint were executed in batches (by year for editions and by iterating over role URIs for agents) and materialised into tabular outputs (CSV) for analysis. The dataset then underwent iterative polishing to enhance research reusability (problematic values, normalisation, deduplication, sampling-based controls, consistency checks), producing computationally usable data for comparison and potentially for mapping to external resources (e.g., ESTC), while preserving traceability through reports and intermediate outputs. Tables were rearranged according to research needs agreed with domain experts, producing curated intermediate datasets, performance metrics and quality reports. Finally, curated tables were reconverted into RDF – mapping the original BnF data model to the Cultural Heritage Acquisition and Digitisation Application Profile, CHAD-AP (Barzaghi et al., 2025) – and loaded into a triplestore (Apache Jena Fuseki), on which a custom Sampo-UI portal is configured as a web access layer. Configuration follows Sampo-UI’s separation between: portal and perspective settings (JSON), perspective-specific SPARQL query files (JavaScript modules), and

¹⁹ https://github.com/ariannamoretti/Early_Modern_BnF_Harmonisation (cons. 19/04/2026).

localisation files for labels and UI text. Portal setup was guided by established Sampo patterns. Existing GitHub instances were consulted, including the BookSampo web application repository,²⁰ to validate configuration choices and align perspective design with a comparable bibliographic domain. Sampo-UI worked effectively as the dissemination layer of a larger harmonisation workflow (as shown in Figure 2), keeping data engineering and user-facing exploration separate through its modularity. Portal configuration still requires technical mediation, particularly for custom views and advanced interaction scenarios, indicating strong reusability but a non-trivial implementation effort.

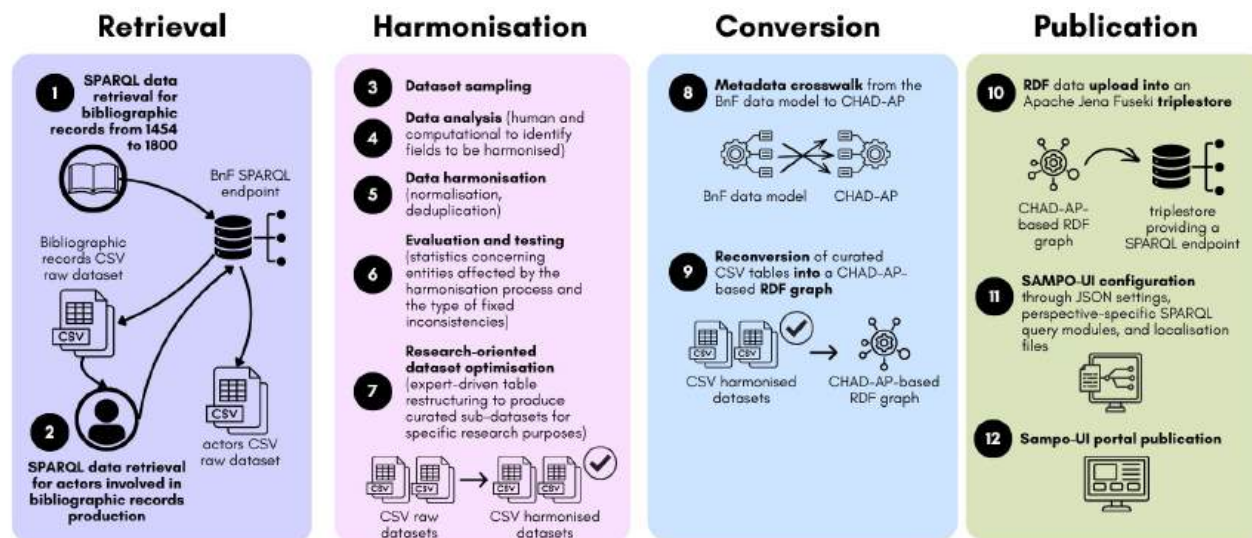


Figure 2: Data management workflow (data retrieval, harmonisation, conversion, and publication).

6. CONCLUSIONS

After a benchmark literature review on tools for web publication and exposition of RDF datasets, we selected Sampo-UI for implementation and documented two case studies following the suggested workflow: WenDang, where Sampo-UI is assessed as a potential long-term UI layer for a domain-specific semantic archive on Chinese contemporary calligraphy and arts, and a BnF workflow where Sampo-UI is used as the dissemination step for extracted, harmonised and enriched early modern bibliographic data from the BnF SPARQL endpoint. Across both cases, Sampo proved robust for publishing and exploring RDF datasets in heterogeneous contexts. Strengths include adaptability to different information structures and a mature ecosystem of reusable references. Conversely, configuration can be an obstacle for inexperienced users when scenarios deviate from documented cases; some features require implicit knowledge or checks on other repositories. As both projects are still evolving, the conclusions concern active implementation settings rather than production-state performance. Future work will focus on stable public deployments and improved implementation documentation to support replicability and reduce adoption barriers.

In conclusion, RQ1 is addressed by demonstrating that Sampo-UI is a viable and methodologically coherent framework for LOD publication and exploration in small-to medium-sized research projects with heterogeneous semantic structures. RQ2 is addressed by identifying conditions for effective reuse: clear separation between data and UI, configuration-driven extensibility, and stronger operational documentation to bridge the gap between conceptual reusability and practical implementation effort.

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²⁰ <https://github.com/SemanticComputing/booksampo-web-app> (cons. 08/02/2026).

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REFERENCES

- Ahola, A., Peura, T., & Hyvönen, E. (2025). Using linked data for data analytic literary research: Case BookSampo—Finnish fiction literature on the semantic web. *Journal of the Association for Information Science and Technology*, 76(7), 937–958. <https://doi.org/10.1002/asi.24984>.
- Arndt, N., Zänker, S., Sejdiu, G., & Tramp, S. (2019). Jekyll RDF: Template-Based Linked Data Publication with Minimized Effort and Maximum Scalability. *Web Engineering: 19th International Conference, ICWE 2019, Daejeon, South Korea, June 11–14, 2019, Proceedings*, 331–346. https://doi.org/10.1007/978-3-030-19274-7_24.
- Barzaghi, S. (2025). Simple Publisher of Knowledge (SPUK) [Computer software]. Zenodo. <https://doi.org/10.5281/zenodo.15389756>.
- Barzaghi, S., Heibi, I., Moretti, A., & Peroni, S. (2025). Developing Application Profiles for Enhancing Data and Workflows in Cultural Heritage Digitisation Processes. In G. Demartini, K. Hose, M. Acosta, M. Palmonari, G. Cheng, H. Skaf-Molli, N. Ferranti, D. Hernández, & A. Hogan (Eds), *The Semantic Web – ISWC 2024* (pp. 197–217). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-77847-6_11.
- Candela, G. (2025). Browsing Linked Open Data in Cultural Heritage: A Shareable Visual Configuration Approach. *Journal on Computing and Cultural Heritage*, 18(1), 1–15. <https://doi.org/10.1145/3707647>.
- Coimbra, D. B., Negrão, J. O. M., & Durão, F. A. (2019). LODGVis: An interactive visualization for linked open data navigation. *Proceedings of the 25th Brazilian Symposium on Multimedia and the Web*, 433–440. <https://doi.org/10.1145/3323503.3360300>.
- Cudre-Mauroux, P., Daga, E., d'Aquin, M., Adamou, A., & Brown, S. (2016). The Open University Linked Data – data.open.ac.uk. *Semantic Web*, 7(2), 183–191. <https://doi.org/10.3233/SW-150182>.
- Daquino, M., Wigham, M., Daga, E., Giagnolini, L., & Tomasi, F. (2023). CLEF. A Linked Open Data Native System for Crowdsourcing. *J. Comput. Cult. Herit.*, 16(3). <https://doi.org/10.1145/3594721>.
- De Bastiani, C., & Fabbris, G. (2025). Making Germanic Cultural Heritage accessible to students: A proposal for a case study. *Diversity, Equity, and Inclusion: Challenges and Opportunities for Digital Humanities in the Age of Artificial Intelligence. Proceedings of the 14th Annual AIUCD Conference, Verona, 11–13 June 2025*, 485–491.
- Dittmar, J. (2011). Information Technology and Economic Change: The Impact of the Printing Press. *The Quarterly Journal of Economics*, 126(3), 1133–1172. <https://doi.org/10.1093/qje/qjr002>.
- Eagles, R. (2000). *Francophilia in English Society, 1748–1815*. Macmillan Press and St. Martin's Press.
- Ermilov, I., Lehmann, J., Martin, M., & Auer, S. (2016). LODStats: The Data Web Census Dataset. In P. Groth, E. Simperl, A. Gray, M. Sabou, M. Krötzsch, F. Lecue, F. Flöck, & Y. Gil (Eds), *The Semantic Web – ISWC 2016* (pp. 38–46). Springer International Publishing. https://doi.org/10.1007/978-3-319-46547-0_5.
- Frischmuth, P., Martin, M., Tramp, S., Riechert, T., & Auer, S. (2015). OntoWiki – An authoring, publication and visualization interface for the Data Web. *Semantic Web*, 6(3), 215–240. <https://doi.org/10.3233/SW-140145>.
- Glaser, H., & Millard, I. C. (2007). RKB explorer: Application and infrastructure. *Proceedings of the 2007 International Conference on Semantic Web Challenge - Volume 295*, 97–104. <https://dl.acm.org/doi/10.5555/2889885.2889898>.
- Grieder, J. (1985). *Anglomania in France, 1740–1789: Fact, Fiction, and Political Discourse*. Librairie Droz.

- Heath, T., & Bizer, C. (2011). *Linked Data: Evolving the Web into a global data space*. Springer Cham. <https://doi.org/10.1007/978-3-031-79432-2>.
- Hill, M. J., Vaara, V., Säily, T., Lahti, L., & Tolonen, M. (2019). Reconstructing Intellectual Networks: From the ESTC's bibliographic metadata to historical material. *Digital Humanities in the Nordic and Baltic Countries Publications*, 2(1), 201–219. <https://doi.org/10.5617/dhnbpub.11096>.
- Hyvönen, E. (2012). *Publishing and using cultural heritage Linked Data on the Semantic Web*. Springer Cham. <https://doi.org/10.1007/978-3-031-79438-4>.
- Hyvönen, E. (2020). Semantic "Sampo" Portals for Digital Humanities Based on a National Linked Open Data Infrastructure. <https://seco.cs.aalto.fi/publications/2020/hyvonen-sampos-white-paper-2020.pdf>.
- Hyvönen, E. (2023). Digital humanities on the Semantic Web: Sampo model and portal series. *Semantic Web*, 14(4), 729–744. <https://doi.org/10.3233/SW-223034>.
- Hyvönen, E., Leskinen, P., Tamper, M., Rantala, H., Ikkala, E., Tuominen, J., & Keravuori, K. (2019). BiographySampo—Publishing and Enriching Biographies on the Semantic Web for Digital Humanities Research. In P. Hitzler, M. Fernández, K. Janowicz, A. Zaveri, A. J. G. Gray, V. Lopez, A. Haller, & K. Hammar (Eds), *The Semantic Web* (pp. 574–589). Springer International Publishing. https://doi.org/10.1007/978-3-030-21348-0_37.
- Hyvönen, E., Leskinen, P., & Tuominen, J. (2023). LetterSampo—Historical Letters on the Semantic Web: A Framework and Its Application to Publishing and Using Epistolary Data. *ACM Journal on Computing and Cultural Heritage*, 16(1), 21:1–21:23. <https://doi.org/10.1145/3569372>.
- Hyvönen, E., Mäkelä, E., Kauppinen, T., Alm, O., Kurki, J., Ruotsalo, T., Seppälä, K., Takala, J., Puputti, K., Kuittinen, H., Viljanen, K., Tuominen, J., Palonen, T., Frosterus, M., Sinkkilä, R., Paakkari, P., Laitio, J., & Nyberg, K. (2009). CultureSampo: A National Publication System of Cultural Heritage on the Semantic Web 2.0. In L. Aroyo, P. Traverso, F. Ciravegna, P. Cimiano, T. Heath, E. Hyvönen, R. Mizoguchi, E. Oren, M. Sabou, & E. Simperl (Eds), *The Semantic Web: Research and Applications* (Vol. 5554, pp. 851–856). Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-02121-3_69.
- Hyvönen, E., Tuominen, J., Makela, E., Dutruit, J., Apajalahti, K., Heino, E., Leskinen, P., & Ikkala, E. (2015). Second World War on the Semantic Web: The WarSampo Project and Semantic Portal. *Proceedings of the ISWC 2015 Posters & Demonstrations Track (Co-Located with the 14th International Semantic Web Conference)*, 1486, 4. <https://urn.fi/URN:NBN:fi:aalto-201812106153>.
- Ijaz, A. Z., Tolonen, M., Lahti, L., & Tiihonen, I. (2019). Analytical Determination of Editions from Bibliographic Metadata. In H. Jantunen, S. Brunni, N. Kunnas, S. Palviainen, & K. Västi (Eds), *Proceedings of the Research Data and Humanities (RDHUM) 2019 Conference* (pp. 9–19). University of Oulu.
- Ikkala, E., Hyvönen, E., Rantala, H., & Koho, M. (2021). Sampo-UI: A full stack JavaScript framework for developing semantic portal user interfaces. *Semantic Web*, 13(1), 69–84. <https://doi.org/10.3233/SW-210428>.
- Kirillovich, A., & Nikolaev, K. (2022). Adapting the LodView RDF Browser for Navigation over the Multilingual Linguistic Linked Open Data Cloud. *2022 IEEE 9th International Conference on Sciences of Electronics, Technologies of Information and Telecommunications (SETIT)*, 143–149. <https://doi.org/10.1109/SETIT54465.2022.9875628>.
- Lahti, L., Marjanen, J., Roivainen, H., & Tolonen, M. (2019). Bibliographic Data Science and the History of the Book (c. 1500–1800). *Cataloging & Classification Quarterly*, 57(1), 5–23. <https://doi.org/10.1080/01639374.2018.1543747>.
- Lahti, L., Vaara, V., Marjanen, J., & Tolonen, M. (2019). Studying Digital Humanities with Research Data: Perspectives from Finland. In J. H. Jantunen, S. Brunni, N. Kunnas, S. Palviainen, & K. Västi (Eds), *Proceedings of the Research Data and Humanities (RDHUM) 2019 Conference: Data, Methods and Tools* (Vol. 17, pp. 57–65). University of Oulu. <http://urn.fi/urn:isbn:9789526223216>.
- Lukovnikov, D., Stadler, C., & Lehmann, J. (2014). LD viewer—Linked data presentation framework. *Proceedings of the 10th International Conference on Semantic Systems*, 124–131. <https://doi.org/10.1145/2660517.2660539>.

- Marden, J., Li-Madeo, C., Whysel, N., & Edelstein, J. (2013). Linked open data for cultural heritage: Evolution of an information technology. *Proceedings of the 31st ACM International Conference on Design of Communication*, 107–112. <https://doi.org/10.1145/2507065.2507103>.
- Marjanen, J., Tahko, T., Lahti, L., & Tolonen, M. (2025). Book Printing in Latin and Vernacular Languages in Northern Europe, 1500–1800. In J.-M. Hanssen & S. Furuseth (Eds), *The Hermeneutics of Bibliographic Data and Cultural Metadata* (pp. 27–66). National Library of Norway.
- Moretti, A., Tiihonen, I. L. I., & Fischer, J. P. (2025). Early Modern COMHIS BnF-Derived Dataset Production Workflow v1. <https://doi.org/10.17504/protocols.io.kqdg31n5zl25/v1>.
- Oldman, D., & Tanase, D. (2018). Reshaping the Knowledge Graph by Connecting Researchers, Data and Practices in ResearchSpace. In D. Vrandečić, K. Bontcheva, M. C. Suárez-Figueroa, V. Presutti, I. Celino, M. Sabou, L.-A. Kaffee, & E. Simperl (Eds), *The Semantic Web – ISWC 2018* (Vol. 11137, pp. 325–340). Springer International Publishing. https://doi.org/10.1007/978-3-030-00668-6_20.
- Petrakis, K., Minadakis, N., Doerr, K., Theodoridou, M., & Doerr, M. (2019). RDF Visualizer: A Tool for Displaying, Browsing and Exploring High Density RDF Data. *Proceedings of the ISWC 2019 Satellite Tracks (Posters & Demonstrations, Industry, and Outrageous Ideas) Co-Located with 18th International Semantic Web Conference (ISWC 2019)*, 2456, 197–200. <https://ceur-ws.org/Vol-2456/paper51.pdf>.
- Rantala, H., Ahola, A., Ikkala, E., & Hyvönen, E. (2023). How to create easily a data analytic semantic portal on top of a SPARQL endpoint: Introducing the configurable Sampo-UI framework. *CEUR Workshop Proceedings*, 3508, 28–39. <https://ceur-ws.org/Vol-3508/paper3.pdf>.
- Renda, G., Daquino, M., & Presutti, V. (2023). Melody: A Platform for Linked Open Data Visualisation and Curated Storytelling. *Proceedings of the 34th ACM Conference on Hypertext and Social Media*, 1–8. <https://doi.org/10.1145/3603163.3609035>.
- Scholz, M., & Goerz, G. (2012). WissKI: A Virtual Research Environment for Cultural Heritage. In *Frontiers in Artificial Intelligence and Applications*. IOS Press. <https://doi.org/10.3233/978-1-61499-098-7-1017>.
- Simon, A., Wenz, R., Michel, V., & Di Mascio, A. (2013). Publishing Bibliographic Records on the Web of Data: Opportunities for the BnF (French National Library). In P. Cimiano, O. Corcho, V. Presutti, L. Hollink, & S. Rudolph (Eds), *The Semantic Web: Semantics and Big Data* (pp. 563–577). Springer. https://doi.org/10.1007/978-3-642-38288-8_38.
- Tolonen, M., Hill, M. J., Ijaz, A. Z., Vaara, V., & Lahti, L. (2021). Examining the Early Modern Canon: The English Short Title Catalogue and Large-Scale Patterns of Cultural Production. In I. Baird (Ed.), *Data Visualization in Enlightenment Literature and Culture* (pp. 63–119). Palgrave Macmillan. https://doi.org/10.1007/978-3-030-54913-8_3.
- Vega-Gorgojo, G., Giese, M., & Slaughter, L. (2017). Exploring semantic datasets with RDF surveyor. *CEUR Workshop Proceedings*, 1963.
- Vega-Gorgojo, G., Slaughter, L., Von Zernichow, B. M., Nikolov, N., & Roman, D. (2019). Linked Data Exploration With RDF Surveyor. *IEEE Access*, 7, 172199–172213. <https://doi.org/10.1109/ACCESS.2019.2956345>.