



Documentary Evidence Mapping for the Redesign of Employment Certificates

Mapeo de evidencia documental para el rediseño de certificados de empleo

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Resumen. Esta contribución corta organiza evidencia documental para orientar el rediseño de la emisión de certificados laborales en la Universidad Nacional de Chimborazo. El problema declarado por el equipo es que el trámite consume tiempo, incluye pasos manuales y no deja un registro de emisión verificable. Se analizaron un corpus de 19 fuentes y un inventario de 16 expedientes. Un proceso ETL asistido por inteligencia artificial produjo un modelo estrella en cinco archivos CSV, posteriormente consolidado en Excel y en un tablero de control. El análisis textual empleó nube de palabras, n-gramas, índice de Jaccard y red de coocurrencia. El modelo registró 8 marcos y 51 menciones: la gestión por procesos apareció en 11 documentos y la ISO 15489 en 10; cuatro marcos tuvieron cero menciones. Los hallazgos no demuestran una mejora operativa, pero delimitan referentes y vacíos que deben verificarse antes de implementar un rediseño institucional.

Palabras clave: *gestión documental; certificados laborales; ETL; modelo estrella; análisis textual.*

Abstract. This short contribution organizes documentary evidence to inform the redesign of employment certificate issuance at the Universidad Nacional de Chimborazo. The team identified a process with manual steps, time consumption, and no verifiable issuance record. The study combined a corpus of 19 sources with an inventory of 16 files. An AI-assisted ETL procedure generated a star model in five CSV files, later consolidated in Excel and a dashboard. Textual analysis used word clouds, n-grams, the Jaccard index, and a co-occurrence network. The model recorded 8 frameworks and 51 mentions: process management occurred in 11 documents and ISO 15489 in 10, while four frameworks had no mentions. These results do not establish operational effectiveness; they identify documentary references and gaps that should be checked before institutional implementation.

Keywords: *document management; employment certificates; ETL; star model; text analysis.*

1. Introduction

Documentary management links administrative processes with the availability, traceability, and later consultation of records. In higher education, diagnostic studies of documentary practices and reviews of process automation show that the organization of records and workflows merits explicit analysis [1, 2]. The present contribution addresses the issuance of employment certificates at the Universidad Nacional de Chimborazo (UNACH). According to the information supplied by the team, issuing a certificate requires time and manual steps, while the process does not leave an issuance record that makes each certificate verifiable.

The objective is not to claim that the process has already been optimized. It is to map the documentary evidence available to support a later redesign. Formal models of electronic document management, business-process applications in higher education, and reviews of electronic records management provide relevant reference points [3-5]. The contribution is therefore exploratory and applied: it combines a small documentary corpus with a structured representation of its mentions in order to distinguish the frameworks most visible in the corpus from those that are not represented.

2. Materials and methods

2.1. Documents and data

Two data inputs were used. The first was a corpus of 19 sources on documentary-process redesign and certificates in higher education. The second was an inventory of 16 files from the Pentaho workshop. The supplied context does not identify persons or disclose the content of those files; consequently, the analysis is

reported at the aggregate level. The corpus includes literature on process automation, documentary systems, governance, and management in university or public-sector settings [1-6].

2.2. Data transformation

The team implemented an extract-transform-load (ETL) procedure with assistance from an artificial-intelligence agent and retained the same aggregate count as the 16-file inventory. For the documentary corpus, the data were represented in a star model with five CSV files. These files were consolidated in Excel and used to prepare a control dashboard. This stage provided a consistent structure for counting documents, frameworks, and mentions; it did not estimate time savings or evaluate a deployed application.

2.3. Text analysis

The analysis used a word cloud to identify frequent terms, n-grams to retain recurrent multiword expressions, the Jaccard index to compare term overlap, and a co-occurrence network with thematic communities. These procedures are descriptive text-analysis techniques. No predictive model or classifier was trained or validated. The standards ISO 15489 and ISO 30301, ISO 9001, and the Ecuadorian technical rule were used only as documentary reference points [7-10].

3. Results

The star model contains 19 documents, 8 frameworks, and 51 mentions. The two reported frameworks with the greatest document coverage are process management, present in 11 of the 19 documents, and ISO 15489, present in 10. Four frameworks have no mention in the corpus: ISO 30301, ISO 9001, Agreement SGPR-2019-0107, and the UNACH internal regulation. This finding refers exclusively to the represented corpus; it does not establish that a framework is absent from the institutional process or from the applicable legal environment.

Table 1. Aggregate records in the documentary analysis

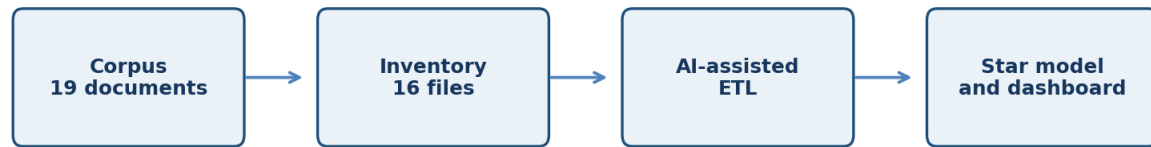
Record	Value	Interpretation
Documents in the corpus	19	Documentary sources analyzed
Operational inventory	16	Files registered in the Pentaho workshop
Frameworks in the star model	8	Analytical categories represented
Total mentions	51	Links between documents and frameworks

Source: prepared by the authors from the team corpus and inventory.

Table 2. Reported document coverage by framework

Framework	Documents with mention	Reading of the count
Process management	11 / 19	Highest reported coverage
ISO 15489	10 / 19	Second highest reported coverage
ISO 30301	0 / 19	No mention in the corpus
ISO 9001	0 / 19	No mention in the corpus
Agreement SGPR-2019-0107	0 / 19	No mention in the corpus
UNACH internal regulation	0 / 19	No mention in the corpus

Note: the context reports eight frameworks, but provides individual counts only for the six shown. Counts are corpus mentions, not implementation indicators.



Analytical sequence reported by the team

Figure 1. Data preparation and analytical sequence

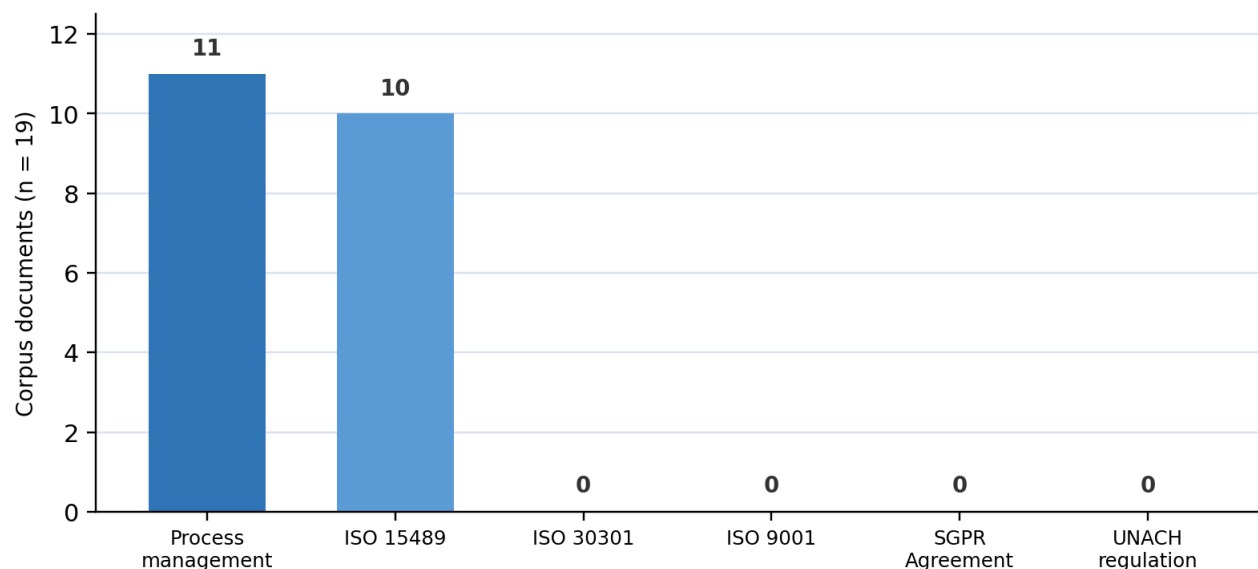


Figure 2. Coverage of the six reported frameworks in the corpus

4. Discussion

The results offer a compact evidence map rather than an evaluation of the current certificate-issuance process. The prominence of process management and ISO 15489 identifies two useful starting points for examining sequence, responsibilities, records, and traceability. At the same time, the zero counts signal gaps in the corpus representation. They should lead to a targeted review of institutional documents and regulations, not to a conclusion that these instruments are not used at UNACH.

The contribution has two limitations. First, the corpus is small and the individual values of two of the eight frameworks were not supplied. Second, the inventory contains only an aggregate count, so no duration, error rate, satisfaction measure, or before-after comparison can be inferred. A subsequent institutional stage could validate the current workflow, define the required issuance record, and test a proposed digital flow with appropriate legal and operational review. That stage would be necessary to make an effectiveness claim.

5. Conclusions

The documentary model organized 19 sources, 8 frameworks, and 51 mentions relevant to certificate-issuance redesign.

Process management and ISO 15489 are the most represented references in the reported corpus, with 11 and 10 documents, respectively.

The four zero-count frameworks identify documentary gaps that should be checked against institutional records before any implementation decision.

The present evidence map supports a later redesign discussion, but it does not demonstrate reduced processing time, fewer errors, or effectiveness of an automated solution.

Declaration of AI assistance

This article was drafted with assistance from Gemini (Google) based on information supplied by the authors, who reviewed the content and are responsible for it.

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