Comparative analysis of traditional vs. AI-assisted Health Technology Assessment dossier writing

HTA113

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INTRODUCTION

With the rapid advancement of **artificial intelligence (AI)**, its applications in the **pharmaceutical industry** are expanding beyond drug discovery and development. A key area of interest is whether AI can assist in the preparation of **Health Technology Assessments (HTAs)**, which are critical for evaluating the clinical and economic value of new therapies.

OBJECTIVE

HTA dossier writing is currently a time intensive, costly and valuable **resource binding process**. AI supported creation of dossiers might be a **promising approach** to overcome these issues. This study aims to **compare** the traditional writing of dossiers for drug HTA in Germany (AMNOG) versus an AI-assisted approach in terms of **time and cost**.

METHOD

DO-BO®, the first commercially available **AI-based dossier writing platform**, was compared to the traditional **human-only** dossier writing process.

Both approaches utilized **systematic literature reviews** for dossier creation.

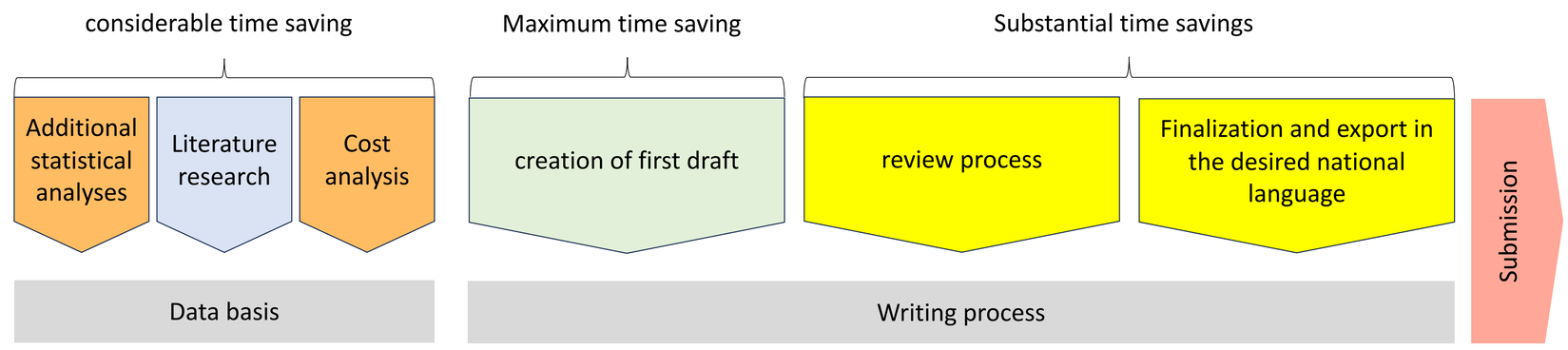
Traditional process: Dossiers were written entirely by **human experts**.

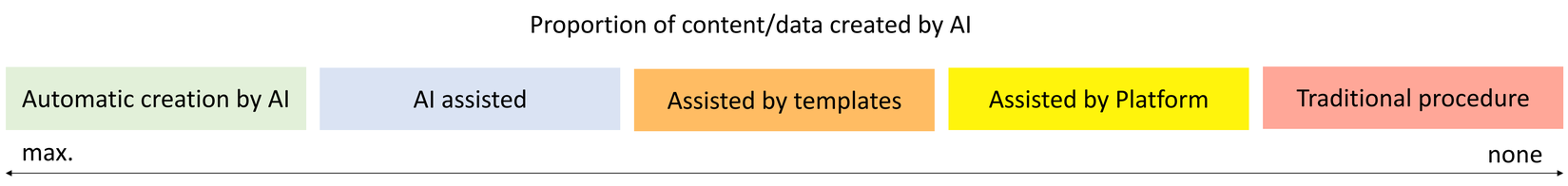
AI-powered process: A pre-trained large language model (DO-BO®) generated the draft dossier, supervised by a **single human expert**.

RESULTS

PROCESS

The dossier creation process required the **same steps** for both traditional and AI-assisted method. However, the use of the platform provided **different levels of support**. The level of support provided by the AI platform was classified into **five categories**, with the highest category representing the **automatic creation of content** or data and the **traditional procedure** representing no support.





TIME AND COST REDUCTION

The **mean time** frame for the creation of a traditional dossier is **12 months** (range 9 to 18 months), associated with costs of **150’000 €** (range 120’000 to 300’000 €) for a standard use case. The study found that the AI-assisted HTA writing **reduced the mean time** required for a draft dossier by 53% in comparison to the traditional writing method. This **time saving** relates to **6,36 months**, associated cost **reduction of 78’000 €**. The quality of the AI-assisted dossier based on DO-BO® is comparable to traditional dossier writing[1].

Reduction of costs and time

Type of creation	Mean time	Time range	Mean costs	Cost range	Time reduction	Cost reduction
Traditional dossier writing	12 months	9 – 18 months	150’000 €	120’000 – 300’000 €		
AI-assisted HTA writing	5.64 months	N.A.	72’000 €	N.A.	6.36 months (53 %)	78’000 € (52 %)

N.A.: not available

CONCLUSIONS

AI-assisted **HTA writing** offers significant improvements over traditional methods, providing notable reductions in both **time** and **costs**. By automating tasks such as literature reviews, data synthesis, and dossier drafting, AI platforms can alleviate the burden on human experts, enabling faster and more efficient **Health Technology Assessment (HTA)** preparation. This not only accelerates the decision-making process for the reimbursement of new therapies but also enhances the consistency and standardization of assessments.

However, to fully realize the potential of AI in HTA writing, further research is needed. Refining and training **AI models** to better understand the nuances of health technology assessments, as well as ensuring their adaptability to different therapeutic areas and complex datasets, will be crucial. Additionally, given the variation in **HTA requirements** across different countries, future research should explore the customization of AI tools to meet specific **national guidelines** and **regulatory frameworks**. This will ensure that AI-based platforms can support the diverse and evolving needs of global health systems, enhancing both the **quality** and **efficiency** of HTA processes worldwide.

REFERENCES

[1]Cost and time analysis based on internal reference projects using real AMNOG dossiers (n = 49).

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