A Corpus-Based Comparative Genre Analysis of Human-Written and AI-Generated Research Abstracts: Examining Rhetorical Move Structures

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Abstract

Research abstracts are disciplinary and communicative genres that are structured in the form of academic texts. As the academic writing based on the application of Artificial Intelligence tools becomes more common, the questions about the degree to which the AI-generated abstracts can be described by the traditional rhetorical approaches emerge. The purpose of the study is to compare the rhetorical move structure of human-written and AI-generated research abstracts based on the corpus-based comparative genre analysis. The research was based on Swales Move Analysis framework and formed two balanced corpora (40 abstracts by a human and 40 by an AI) under controlled conditions wherein both produced abstracts were generated with the help of the same titles. It used a mixed-method approach that involved qualitative identification of moves with quantitative distribution of frequency and sequencing. Data were gathered using purposive sampling of indexed journals in the same field and during the same period, as well as by using standardized prompts to generate abstracts on AI to be consistent. The results show that both corpora are organized according to the five-move structure, but AI-generated abstracts are less specific in their methods and techniques, have less detailed results descriptions, and are more predictable in linear sequence formation. Although AI systems are effective at reproducing structural conventions, human abstracts are more rhetorically flexible as well as empirically rich, which means that they are more competent in the genre. The paper has significant implications about the academic writing pedagogical method and the use of AI in academic writing.

Keywords: Corpus-Based Analysis, Genre Theory, Rhetorical Moves, Research Abstracts, Move Analysis, Academic Discourse, Genre Competence.

Introduction

In the academic publishing sector, abstracts are important in indexation, database access, and the academic presence. They are commonly the main gatekeeping process by which research is getting recognized, because the readers in most cases use abstracts to establish the relevance and credibility of a study (Hyland, 2005; Swales, 1990). Therefore, the abstract is not just a summary but an intentional rhetorical area whereby the authors locate their research in disciplinary discourse communities. Academic writing is guided by familiar genre conventions that are informed by communicative interests. As put by John Swales (1990), genres are communicative events which are defined by organized rhetoric moves which perform certain functions. When it comes to research abstracts, the moves usually are defining a research territory, a gap or a niche, presenting the current work, reporting, and discussion of implications. Every step is added to the communicative efficiency of the abstract. In that, a sentence like, this study studies the role of digital literacy in higher education, is indicative of the Purpose move as the author tries to clearly define the purpose of the study.

Genre competence indicates the belonging to a disciplinary society. Effective rhetorical practitioners do not violate the expectations and conventions of the discipline (Bhatia, 1993; Swales, 2004). They are not capricious but social patterns of ordering and arranging movements which indicate the conventions of an academic discourse (Hyland, 2004). The knowledge of these conventions helps scholars to effectively and persuasively communicate in their areas of work. The last several years have witnessed the development of the Artificial Intelligence (AI) tools, including

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ChatGPT, which have altered the writing experience in academic institutions. Big language models have also proven to be capable of producing concise, grammatically correct scholarly writing, such as research abstracts (Dwivedi et al., 2023; Kasneci et al., 2023). Such trends have also led to controversies about authorship, originality, and scholarship honesty (Cotton et al., 2023; Lund and Wang, 2023). Although the text generated by AI may have a seemingly flawless structure, there are still doubts that the systems are truly genre conscious or only repeat familiar patterns in an algorithmic manner (Floridi and Chiriatti, 2020; van Dis et al., 2023).

There is increasingly growing concern about whether AI is capable of reproducing genre conventions in an accurate and meaningful way. Other researchers indicate a formulaic reliability of AI-written academic articles, but a lack of disciplinary flexibility (Gao et al., 2023; Susnjak, 2022). There are also other arguments that AI systems may replicate rhetorical structures successfully, which may pose issues with pedagogy and evaluation (Baidoo-Anu and Owusu Ansah, 2023; Zhai, 2022). Regardless of such discussions, there are few empirical studies based on corpus research comparing human-written and AI-generated research abstracts. Corpus linguistics provides a systematic approach to linguistic analysis of patterns of use in large text collections (McEnery and Hardie, 2012). The corpus based approach enables the researcher to discover the frequent occurrence of structure of rhetorical moves, the frequency distribution and investigating the sequence within an organization in an objective manner (Biber et al., 1998). The move analysis is based on the genre theory created by Swales and offers a systematic structure of the assessment of the functional organization of texts. Dividing abstracts into rhetorical moves allows the researchers to determine the correspondence between the texts created by AI and the existing genre conventions or their violation.

Due to the growing application of AI tools in the context of academic writing, there is a pressing necessity to conduct empirical research on the structural arrangement of the AI-generated research abstracts. Instead of placing emphasis on the stylistic quality or grammatical correctness only, the study of the rhetorical move structures provides a more profound insight into genre competence. Corpus-based comparative analysis will provide the opportunity to conduct a systematic assessment of both human-written and AI-generated abstracts, which will also be adding to the overall discussion on AI and academic communication.

Research Questions
1.   Which rhetorical strategies occur in the case of human-written and AI-generated research abstracts?
2.   What are the frequency of each rhetorical move in the two corpora?
3.   What is the order of sequencing and realization of rhetorical moves, and can AI be as genre competent as human authors are?

Research Objectives
1.   To determine and contrast the structure of rhetorical moves in the human-written and AI-generated research abstracts based on the Move Analysis framework by Swales.
2.   To compare and quantify the frequency and the occurrence of the rhetorical moves in the two corpora.
3.   To examine the sequencing patterns and depth of move realization to assess genre competence in AI generated abstracts.

Literature Review
The research abstracts are also central to every academic text because they are rather shortened versions of the entire research articles. They are also used as summaries as well as promotional strategies that situate research in the disciplinary circles (Hyland, 2005; Swales, 1990). The rhetorical organization of abstracts is of particular concern as they affect the readership, the visibility of the indexing as well as the citation rates, and the editorial decision-making (Bhatia, 1993; Santos, 1996). Being genre-based texts, abstracts are written according to familiar structural conventions that are indicative of common communicative functions within the discourse communities within academia (Swales, 2004).

The genre theory is based on which the research abstracts are understood. On the one hand, genres are communicative occurrences marked by organized rhetorical moves, which perform a specific role (John Swales, 1990). Applied to research abstracts, such moves usually involve setting up a research territory, a niche or gap, presenting the current work, reporting findings, and discussing implications. The move-based organization has been extensively proved in the field (Hyland, 2000;

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Pho, 2008; Samraj, 2005). The normativity of these rhetorical strategies reveals the standards of academic collaborations and supports the effective knowledge sharing (Dudley-Evans, 1994; Martin and Rose, 2008).

Analyzing movement has been an overpowering way of looking at genre organization. Abstracts scholars have used the framework by Swales to examine the disciplinary variation in abstracts, whereby they found that the fields differed about move realization and sequence (Hyland, 2004; Kanoksilapatham, 2005). As an example, research indicates that the abstracts of hard sciences tend to focus on methodological accuracy and quantitative outcomes, when in contrast, the abstracts of social sciences are likely to pre-empt theory background and interpretive conclusions (Melander et al., 1997; Dos Santos, 1996). The five-move model despite its disciplinary variation is still a popular model of abstract construction (Swales and Feak, 2012).

The move analysis has also been reinforced by corpus linguistics which makes it possible to conduct large-scale systematic studies on rhetorical patterns (Biber et al., 1998; McEnery and Hardie, 2012). The quantification of the frequency of the moves, analysis of lexical signs, and sequencing tendencies can be done objectively with the help of corpus-based studies (Hunston, 2002). These methods increase the methodological rigor and diminish the use of impressionistic analysis. Genre studies based on corpus studies have established that rhetorical actions are not accidental but occur statistically in academic discourses (Anthony, 1999; Kafes, 2012).

The introduction of the Artificial Intelligence (AI) into academic writing provides the dimensions of the genre analysis. ChatGPT and other large language models create consistent academic text on the basis of predicting language patterns that rely on huge datasets (Floridi and Chiriatti, 2020). The recent research points to the disruptive effect of generative AI in the context of higher education, academic integrity, and scholarly communication (Dwivedi et al., 2023; Kasneci et al., 2023). Although AI systems can be characterized as highly grammar and coherent, people still have concerns about the rhetorical and genre awareness of systems (Cotton et al., 2023; Lund and Wang, 2023).

Research on AI-generated academic text indicates that these articles are likely to reproduce traditional formats, although they might be disciplinarily insensitive (Gao et al., 2023; Zhai, 2022). The abstracts produced by AI often have statements of purpose and generalized inferences but lack the methodological specificity (Susnjak, 2022; van Dis et al., 2023). It begs the question of whether AI exhibits some genre competence or is only able to repeat the structural templates learned (Rudolph et al., 2023).

Genre competence does not only entail structural conformity, but it is also a feature of membership in a discourse community and knowledge of communicative intent (Bhatia, 2004; Hyland, 2019). Move are also strategically manipulated by human writers in order to meet the disciplinary requirements, the awareness of the audience and the positioning of epistemology (Hyland, 2004; Martin and White, 2005). On the contrary, AI systems produce text in a probabilistic way without being aware of discourse community standards (Floridi and Chiriatti, 2020). As a result, the analysis of rhetorical move realization of AI-generated abstracts becomes essential to assess the genre competence.

The similarities and differences between human and machine-generated texts are not studied in a large number. Available studies are inclined towards stylistic fluency, detectability, or moral consequences instead of rhetorical structure (Baidoo-Anu and Owusu Ansah, 2023; Holmes et al., 2022). Corpus-based studies have pitted move distribution and sequencing between AI and human abstracts against each other very few times in a systematic manner. The analysis of abstracts is a perfect genre where abstracts can be compared since they represent structurally limited genres.

Moreover, the arguments about the role of AI in academia focus on the necessity of empirical data, instead of conjectural statements (Dwivedi et al., 2023; van Dis et al., 2023). The assessment of AI generated abstracts using a method of corpus based move analysis adds to evidence-based debate around the idea of AI integration in academic writing. This analysis is correlated with the more general issues related to academic integrity, transparency in authorship, and pedagogical adaptation (Cotton et al., 2023; Rudolph et al., 2023).

To sum up, previous studies prove that the abstracts of the research are organized genres with foreseeable rhetorical actions (Swales, 1990; Hyland, 2005). Corpus linguistics offers powerful mechanisms of textual analysis of such patterns in a systematic manner (Biber et al., 1998; McEnery

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and Hardie, 2012). In the meantime, an up-and-coming field of research on AI-written academic texts has brought out the necessity to consider rhetorical competence beyond surface fluency (Gao et al., 2023; Kasneci et al., 2023). Nevertheless, there is still a gap in the comparative studies of human- and AI-written research abstracts by using the move analysis as the main framework in the corpus-based research. The response to this gap can be added to the body of genre theory, corpus linguistics, and modern AI discourse research, providing the idea of how text generation algorithms collide with the existing academic norms.

Methodology

The theory that underpins the design is the genre theory especially the move-based analytical framework offered by John Swales (1990). It is a mixed-method study, a combination of qualitative and statistical methods. The qualitative part entails detection and interpretation of rhetoric actions in each abstract and the quantitative part gauges frequency distribution and sequence. It is both descriptive (recording patterns of structures) and explanatory (explaining differences using the terms genre competence and variation in organizations).

The quantitative stage was the calculation of counts of frequencies and percentage distributions of the each rhetorical move in both corpora. Structural similarities and differences were characterized by comparison of statistical tables, whereas linear and embedded patterns were found using the sequencing analysis. The qualitative stage reviewed the richness and specificity of move realisation, methodological specificity, integration of results within a context and the occurrence of generalised and discipline-specific language. Such an interpretive analysis was also able to complement the findings of statistical analysis, which allowed the evaluation of genre competence and rhetorical sophistication in both human-made and AI-generated abstracts.

The research is formed by two equal corpora: Human Corpus and AI Corpus, which comprise 40 research abstracts each (N = 80 in total).

The Human Corpus consists of 40 peer-reviewed abstracts chosen by indexed academic journals in the same field and similar time period in order to produce consistency in rhetorical expectations and reduce as much diachronic variation as possible. The only inclusion criteria was full-length empirical research articles and the abstract was to be one that was obtained after reputable databases so as to be authentic.

The AI Corpus consists of 40 abstracts produced by the same research titles as the ones in the Human Corpus. All works were created under controlled conditions with the use of standardized prompts (e.g., the task of writing a 200-word abstract about digital literacy in higher education). There was the approximation of word limits to the average length of human abstracts. There was no iterative improvement or editing performed and this ensured that there was reliability and that there was minimisation of interference of the researcher.

Abstracts were transformed into plain texts. The non-essential metadata was eliminated, and every abstract was divided into sentences to be coded at the move level. The sentences were assigned numbers in order of series so that they could be traced.

Move identification in accordance with the Five-Moves scheme by Swales:

Move 1 (Background), Move 2 (Purpose/Gap), Move 3 (Methodology), Move 4 (Results), and Move 5 (Conclusion/Implication). All the abstracts were read as a whole and then functional analysis of the sentences performed. Sentences were placed in the correct move category and merged moves (e.g., M1+M2) were noted where relevant. All the coded information were placed in a spreadsheet in order to organize them systematically. Consistency and reliability was guaranteed by pilot coding and definite operational definitions.

Data Analysis

**Human Corpus Analysis (Quantitative and Interpretive).**

This part shows the quantitative and qualitative results of the analysis of the Human Corpus that includes 40 research abstracts of peer-reviewed works that were chosen by indexed online academic journals of the similar discipline and time period. All abstracts were divided into separate sentences and coded based on the five-move structure suggested by John Swales (1990). The coding process revealed the patterns of the occurrence, sequencing and merging of rhetorical moves in the dataset.

General Distribution of Frequency of Moves.

The frequency and percentage distribution of each rhetorical move in the 40 abstracts written by humans was the initial step of the quantitative analysis.

Move	Frequency (Out of 40)	Percentage
M1 (Background)	34	85%
M2 (Purpose)	40	100%
M3 (Method)	38	95%
M4 (Results)	36	90%
M5 (Conclusion)	30	75%
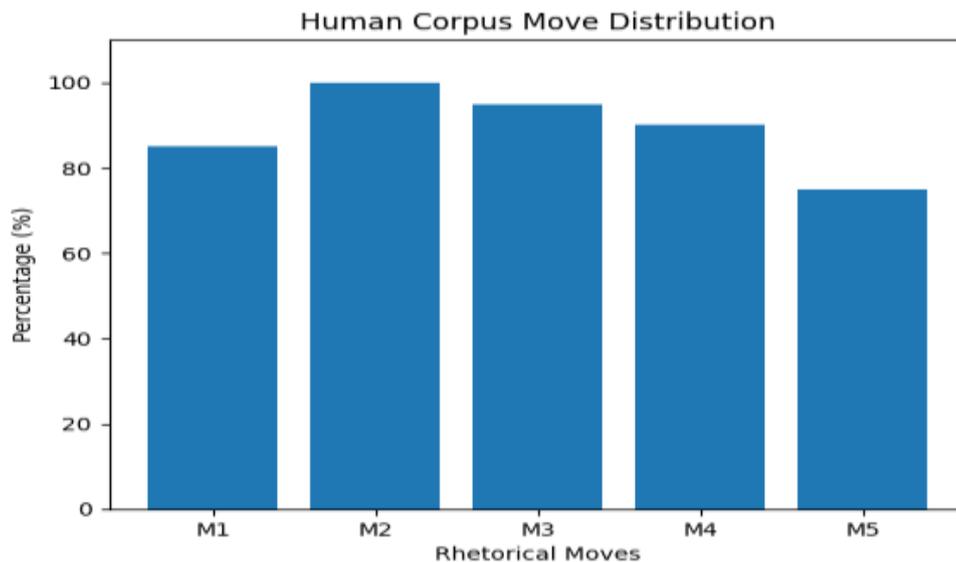
The statistics indicate that Move 2 (Purpose) had been performed in all 40 abstracts (100%), which means that the explicit statement of research objectives is a strongly conventionalized aspect of writing an abstract in academic. This indicates that this is true to what past genre research indicates that the Purpose move is mandatory in most fields (Hyland, 2005; Swales, 2004). Such sentences like, this study is going to investigate the relationship between digital literacy and academic performance, are a clear indication of the communicative role of creating the niche.

Move 3 (Methodology) also evidenced a high frequency (95%); this indicates that there are high disciplinary expectations towards methodological transparency. Human authors generally added certain details, e.g. the number of participants, research design, or analysis tools (e.g. Data were collected by using a structured questionnaire among 120 undergraduate students). This particularity is certain disciplinary accuracy and that of epistemological responsibility.

Move 4 (Results) was found in 90 percent of the corpus. Quantified results or statistically based statements (ex: the results showed that there was a significant positive correlation ($p < .05$)) were often a part of results statements. It proves the fact that human abstracts are more inclined to focus on empirical basing of reporting results.

Move 1 (Background) was found in 85 percent of the abstracts. This was of very frequent occurrence, but was sometimes combined with Move 2. As an example, the sentences like Recent studies have emphasized the significance of digital literacy nevertheless, very little research has been conducted to identify its effects in rural settings carry out a background setting and niche identifying.

Move 5 (Conclusion/Impression) happened in 75 percent of the abstracts, which is the least common move in the Human Corpus. In other instances, authors also concluded abstracts with findings, instead of giving explicit implications. This gives an indication of disciplinary difference in the perceived need of explicit concluding statements.

Move Density Structural Completeness.
In addition to presence/absence frequency, the move density per abstract was explored. Mean abstracts by humans had 4.5 moves out of 5. The number of abstracts that contained all five moves was 32 and those that did not contain any of the five moves was eight.

This means that it has a high degree of structural completeness and genre conformity. The fact that some cases lack the Move 5 implies that conclusion statements are widespread rather than necessarily in some subfields. However, the general occurrence of Purpose, Method and Results moves confirm centrality of transparency of research in human academic writing.

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General Sequencing Patterns.

Sequencing was done to study the sequence of appearance of the moves. The preponderant sequencing pattern was:

M1 → M2 → M3 → M4 → M5

Such a linear development took place in 27 out of 40 abstracts (67.5%). This implies great adherence to conventional rhetoric flow.

Nevertheless, it was found that deviations existed:

- Combination of M1 and M2 in the opening sentence.
- M2 and M4 immediately after shorter abstracts.
- Infrequent interlacing of Move 5 in Move 4.

As one example, a merged sentence like:

Although there has been growing interest on the concept of digital literacy, this research paper explores its effects on academic engagement.

Combines Move 1 and Move 2.

This shows that human authors are flexible in structural conventions. Both moves are not always strictly divided, but they are situationally combined.

Move Length and Elaborative depth.

Average sentence distribution per move was quantitatively measured, and the distribution was found to be the following:

- M1: 1–2 sentences
- M2: 1 sentence (nearly always explicit)
- M3: 1–2 sentences
- M4: 1–2 sentences
- M5: 1 sentence (if present)

The moves of Move 3 and Move 4 were frequently elaborated on more than other moves. This implies that human authors make more emphasis in methodological clarity and empirical findings than in a broad contextual framing. Particular research instruments were named in abstracts in which Move 3 was especially described (e.g., surveys, interviews, corpus tools). This particularity suggests good generic competence and sensitivity to expectations of the discipline.

Patterns of Move Merging

There was movement merging in 18 of the 40 abstracts (45%). The most frequent merging patterns were:

- M1 + M2 (Background + Purpose)
- M4 + M5 (Results + Implication)

For instance:

The results show a high degree of correlation and this implies that digital literacy trainings are needed to be incorporated in university curriculums.

This one sentence also reports results as well as explains implications.

Move merging indicates rhetoric effectiveness instead of structural inadequacy. It is a sign of high level of genre competence where writers gain strategic compression of information without losing clarity.

The Genre Competence Assessments.

According to the quantitative results, Human Corpus shows:

- Strictness in five-move model.
- Powerful Purpose and Method movement.
- Routine publication of empirical findings.
- They include implications moderately but regularly.
- Shakeable and consistent sequencing patterns.

These features are in line with the traditional genre norms in scholarly writing (Swales, 2004; Hyland, 2005).

Identified Structural Tendencies.

The statistical picture allows establishing the structural tendencies:

- Purpose statements are mandatory.
- It is highly anticipated that method reporting is done.

- The key element of abstract construction is results.
- The conclusion statements are not universal.
- Background framing is elaborated differently.
- Move merging promotes the economy of rhetoric.
- Sequencing usually proceeds in customary fashion.
- Human abstracts are neither too detailed nor too short.

Interpretive Discussion.
The numerical results imply that the abstracts by humans exhibit a high level of genre conformity and rhetorical level. The fact that most of the abstracts contain almost all five moves demonstrates high awareness of discursive communities. Also, the common methodological description evidence shows disciplinary responsibility. Human abstracts have an adaptive structuring compared to rigid templates. Authors combine moves strategically and change the sequence depending on communicative emphasis. This is a flexible behavior that implies inbuilt genre competence as opposed to structure-mechanicality.

Additionally, the fact that Move 5 (75%) is slightly lower implying that explicit implication statements are not mandatory but can be determined by the context. This subtle difference brings out the interpretation aspect of genre realization.

**AI Corpus Analysis (Quantitative and Interpretive).**
This part is an exposition of the quantitative and qualitative results obtained through AI Corpus, which compiled 40 abstracts produced in controlled conditions with the same research titles as in the case of Human Corpus. Standardized prompts were utilized in generating all abstracts without post-generations editing in order to ensure uniformity and reliability of the methodology. Similar to Part 1, the abstracts were divided into sentences and coded in the five-move system as suggested by John Swales (1990). It analyses distribution frequency, structural sequencing, depth of move realization and development of rhetoric patterns.

Frequency Distribution of Moves.
Frequency distribution of rhetorical moves in the AI Corpus resulted in the following distribution:

Move	Frequency (Out of 40)	Percentage
M1 (Background)	37	92%
M2 (Purpose)	40	100%
M3 (Method)	32	80%
M4 (Results)	28	70%
M5 (Conclusion)	38	95%

AI Corpus Move Distribution
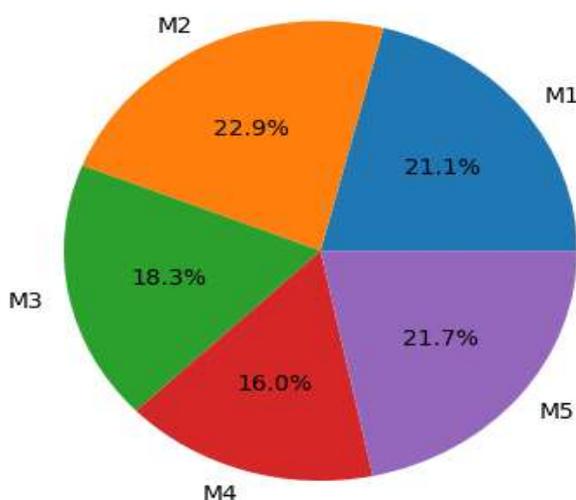
The statistics used point out that Move 2 (Purpose) was present in both abstracts (100%), as is the case in the Human Corpus. The abstracts that were generated by AI always contained clear aim statements like:

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- This paper will examine how academic engagement is affected by digital literacy.
- This implies that AI models are very reflective of the traditional expectation of stating research objectives explicitly.

Move 1 (Background) was present in 92% of the abstracts which is a little bit more than in the Human Corpus. AI abstracts often started with contextual formulaic statements like:

- Digital literacy has been incorporated in the past few years as a necessity of higher education.
- These openings were structurally correct but tended to be based on generalised phrasing and not discipline context.

Move 3 (Methodology) occurred in 80% abstracts, which was lower frequency than human texts (95%). Methodological descriptions were provided in many cases when they were mentioned, usually in a cursory fashion, e.g.:

- The surveys and interviews were used to collect the data.
- In contrast to human abstracts, such detailed aspects of the procedure as a sample size, statistical software, or analysis models were often omitted.

Move 4 (Results) was only found in 70% of AI abstracts, which is considerably less than in the Human Corpus (90%). Other abstracts generated by AI contained statements of generalized findings, and some were able to make a conclusion right after the purpose without concisely reporting their findings. Such exclusion is a sign of less strong compliance with reporting conventions of empirical nature.

The second most used move in the AI Corpus was Move 5 (Conclusion/Implication), which was present in 95% of the abstracts. Conclusion statements are usually in evaluative language that is general and includes things like:

In general, the results underline the need to incorporate digital literacy into the education policy.

Nevertheless, there are instances where such implications have been introduced without detail results that have been presented before.

Move Density and Structural Completeness.

In the abstracts of AI, 4.3 of 5 moves were contained in average. Although in most instances structurally complete, AI texts had varying emphasis patterns as compared to human abstracts.

All five moves were available in thirty abstracts and were not used in ten others (Move 3 (Method) or Move 4 (Results)). It is worth noting that the absence of the results was more common in the AI Corpus than in the Human Corpus.

This implies that abstracts produced by AI focus more on structural completeness during purpose and conclusion but could focus less on empirical reporting.

Sequencing Patterns.

The analysis of the sequences showed a largely linear evolution:

M1 → M2 → M3 → M4 → M5

This trend was found in 32 of 40 abstracts (80 percent), which is more structurally homogeneous than in the Human Corpus (67.5 percent). Embedded or merged moves were not common in the abstracts generated by AI. Rather, sentences with moves in them were generally given in distinct sentences thus creating predictable organizational movement.

For example:

- A higher level of education has translated to increased significance of digital literacy. (M1)
- The study will seek to explore its effects on student performance. (M2)
- The information was gathered among the university students through survey. (M3)
- Findings show that there is a positive correlation between digital literacy and engagement. (M4)

The results point to the necessity of curriculum reform.

This strict linear form shows a great deal of uniformity but little rhetoric variation.

Formulaic Openings and Lexical Repetition.

The lexical repetition in Move 1 and Move 5 was among the most salient quantitative tendencies in the AI Corpus. Phrases such as:

"In recent years…"

"This study aims to…"

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These formulaic introductions helped towards predictability of structure. Though these expressions are compatible with the conventions of the genre, they are repeated, which means that they reproduce pattern algorithms instead of rhetorical strategy. The methodological specificity is based on the premise that the study was conducted in a specific manner, which was not generalizable to other populations.

Methodological Specificity.

The methodological specificity is founded on the fact that the study was carried out in a particular way that could not be extended to other populations.

Even though the proportion of abstracts that contained an AI abstract contained 80% of Method move, the scope of methodological reporting was significantly reduced.

Typical features were:

Absence of sample size.

Statistical indicator deficiency.

Descriptions of generic data collection.

Little information on research design.

For example:

The analysis of data was performed with the help of proper methods.

This sentence meets the formal criteria of Move 3 but is not disciplinarily specific.

This is contrary to human abstracts: which often contained detailed explanations:

One hundred and twenty undergraduate students were used as the sample, and SPSS was used to analyze the data.

Reporting of Results

The smaller percentage of Move 4 (70) suggests that AI does not always focus on detailed reporting of results. Results were frequently generalized even in its presence:

The results showed improvements in a significant way.

Numerical values or statistical significance indicators were not often included as in the case of human abstracts. This implies that AI-generated writings mimic the effect of results being present but failing to incorporate empirical layers.

There are excessive conclusion statements.

The fact that Move 5 (95%) occurred high indicates that there is a tendency to overemphasize implications. Conclusion statements were present in some instances without result sections that were well developed.

For instance:

In general, these conclusions demonstrate the significance of digital transformation.

These inferences were at times not explicitly correlated to the data that was reported. This tendency implies structural compliance and less evidential foundation.

Identified Structural Tendencies.

The statistical description of the AI Corpus shows the following trends:

- Good compliance with the inclusion of Purpose statements.
- Much uniformity in the incorporation of Conclusion moves.
- Reduced rate of Detailed Method and Results reporting.
- Linear sequencing pre-eminently.
- Limited move merging.
- Repeated application of formulaic patterns of lexicon.
- Bare structural competence.

Interpretive Discussion.

The quantitative results show that the abstracts produced by AI are structurally conforming on a surface level. The fact that most rhetorical moves have been included implies that AI systems have been taught the standard templates of the genre. The lower rate of Move 4 and the lack of specificity of Move 3, however, suggest poorer empirical integration.

The powerful linear sequencing and the limited movement fusing is in contrast to the loose structure of the human abbreviations. Although such predictability increases certainty, it is also indicative of an algorithmic consistency, as opposed to an adaptive rhetorical strategy.

Also, the prevalence of conclusion statements implies that AI is more focused on generating a feeling of fullness, despite the lack of empirical elaboration support. The analytic focus on closure in this structure could be an indication of acquired textual patterns in text discourse datasets.

In general, the AI Corpus is consistent in structure and familiar genre set. Nevertheless, the analysis shows less methodological specificity, less empirical depth and more formulaic repetition, as compared to those of human-written abstracts.

These results create a platform of direct comparison in part 3, where quantitative difference and organizational trends in both corpora will be in-depth compared.

Comparative Analysis and Organizational Pattern Results.

Comparative Analysis

This part shows a systematic comparison between Human Corpus and AI Corpus in terms of the frequency of moves, completeness, sequencing, and rhetorical realization. The comparative analysis is based on the integration of the quantitative results and the qualitative interpretation in order to assess the genre competence and organizational sophistication.

Distribution of Comparative Moves.

The frequency distribution of rhetorical moves across both corpora is summarized in the following table:

Move	Human %	AI %
M1 (Background)	85%	92%
M2 (Purpose)	100%	100%
M3 (Method)	95%	80%
M4 (Results)	90%	70%
M5 (Conclusion)	75%	95%

AI Corpus Move Distribution
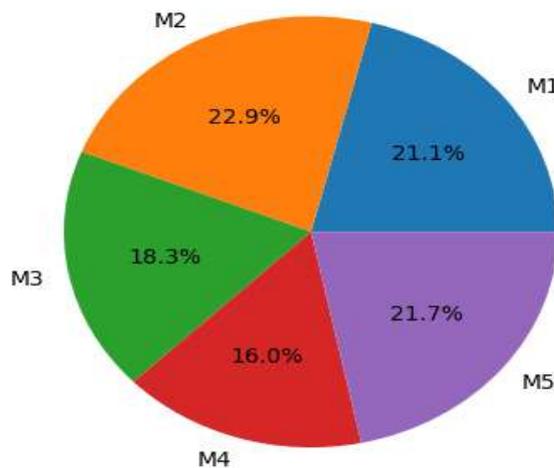
The table and graph reveal both similarities and significant contrasts.

The similarities and major contrasts can be observed in the table.

Purpose Move (M2): Equal Frequency.

The both corpora show 100% inclusion of Move 2 (Purpose). It implies that it is structurally necessary to explicitly mention research goals both in the human and AI-created abstracts. This is the basic convention that the AI system manages to recreate. But at the same time frequency is the same, but qualitative depth is different. The purpose is usually placed in a particular research gap by human writers, but AI statements are rather straightforward and abstract.

Background Move (M1): Slightly More in AI.

Move 1 (92% AI abstract) was slightly more prevalent in AI abstracts (85% human) than in human abstracts. This implies that AI models syntactically produce the contextual opening statements. Yet, such openings were often based on the standard phrases like:

"In recent years…"

Increasingly important such and such.

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Human authors, in contrast, tended to frame the research area in terms of either discipline-based references or problem framing. Therefore, although AI is more frequent it does not imply that it is more contextually integrated.

Method Move (M3): Reduced in AI

Move 3 had been found in 95 percent of human abstracts and 80 percent of AI abstracts. This is structural difference of 15 percent.

Abstracts that are normally given by human beings usually include:

- Sample size
- Research design
- Analytical tools
- Statistical indicators

Commonly, AI abstracts contained short, generalized methodology statements with no details. Move 3 was even not mentioned in certain cases. This implies that AI is more concerned with the look of the structure than a factual accuracy.

Results Move (M4): Large Opposition.

Move 4 is showing one of the largest differences: 90% Human Corpus and 70% AI Corpus.

Empirical discoveries were given more attention in human abstracts and usually contained quantifiable data or claims that were based on statistics. For example:

The result showed a statistically significant correlation ($p < .05$).

Abstracts generated by AI often gave generalized results:

The results show that there are positive results.

Some simply did not report results, and instead summarized them in conclusions. This implies less assimilation of empirical detail in texts on AI.

Conclusion Movement (M5): Overrepresentation in AI.

Move 5 was abstracted in 95% of AI abstracts, vs. 75% in Human Corpus. It shows that there is a tendency of high closure of AI-generated texts. Nevertheless, qualitative analysis shows that AI findings did not tend to refer directly to the reported data. The results provided a sufficient implication and human conclusions were more contextually based and omitted when it was strategic to do so. This implies that AI relies too much on conclusion statements to bring about structural completeness.

Comparison of Structural Completeness.

In looking at the existence of all the five moves:

Human Corpus: 32 abstracts incorporated all the five moves.

AI Corpus: 30 abstracts contained all the five moves.

Both datasets contain highly structured completeness, but the type of completeness is different. Human abstracts in some cases did not include Move 5 but still had a good Method section and Results section. AI abstracts, in their turn, were at times lacking in detail Results though well-purposed and Conclusion.

This implies that there are differences in the priorities of rhetoric.

Findings of Organizational Pattern.

Flexibility vs Predictability Flexibility and predictability are often interchangeably used to refer to the same concept in sequencing.

Sequencing Flexibility vs Predictability Flexibility vs Predictability Flexibility and Predictability.

Patterns of sequencing were flexible in human abstracts. Despite the prevailing pattern taking the traditional linear pattern (M1→M2→M3→M4→M5), abnormalities were prevalent.

Examples of flexibility were:

M1 + M2 merged in one sentence.

M4 is integrated into the description of methodology.

M5 became a part of result statements.

This is a sign of adaptive rhetorical strategy.

The abstracts of AI, on the contrary, exhibited very predictable linear sequencing. In 80 percent of instances, motions were of a strict sequence with slight merging. This structural rigidity implies algorithmic continuity as opposed to strategic change.

Move Merging Patterns.

Move merging was common in 45 percent of human texts but not common in AI texts.

Human merging patterns:

- *M1 + M2*
- *M4 + M5*

Mergers between AI were not common and were usually carried out accidentally and not strategically. Merger in human texts is a sign of rhetorical economy and high competence in genres. Such lack of flexibility in AI abstracts implies poor contextual adaptation.

Depth of Realization.

Human abstracts were more detailed on:

- Methodological specificity
- Statistical reporting
- Contextualized implications

AI abstracts demonstrated:

- Surface-level conformity.
- Generalized reporting.
- Monotonous mastery of words.

Human Result:

The regression results showed that there was a significant relationship (=.45, p =.01).

AI Result:

The results showed that there were significant correlations.

The lack of empirical indicators in AI results decreases the plausibility of evidence.

Lexical Patterning and Formulaicity.

There were repetitions of some formulaic expressions in AI abstracts:

"In recent years…"

"This study aims to…"

In general, the results point to the fact that...

The human abstracts showed the presence of more lexical variation and terminology of a discipline-specific nature. This disparity implies that AI has a dependence on the high-frequency academic phrase templates, whereas writers who are of human origin apply to contextual lexical choices.

Investigating whether they are able to identify the genre or not.

Genre competence involves:

- Consciousness of communicative intention.
- Strategic move integration.
- Context-sensitive elaboration.
- Disciplinary alignment.

The comparative results show:

AI Strengths:

- High structural conformity.
- Regular Purpose and Conclusion.
- Clear linear organization.
- Familiarized academic style.

AI Limitations:

- Less methodological specification.
- Reduced prevalence of literal Results.
- Overgeneralized implications.
- Predictable sequencing.
- Limited move merging.

Human Strengths:

- Elastic rhetorical sequencing.
- Empirical specificity.
- Contextualization of the findings.
- The omissions when it is strategic.
- Advanced move merging.

Slaughterhouse-FF Structural Tendencies in general.

Based on the combined analysis, the following trends are manifested:

_____

- The two corpora are both based on the five-move model.
- Purpose is included across the board.
- Methods and Results are highlighted in human texts.
- Background and Conclusion are highlighted in AI texts.
- Rhetorical flexibility appears in human abstractions.
- Structural predictability is presented in AI abstracts.
- To a greater extent, human writers exhibit greater empirical grounding.
- Instead of mastering genres adaptively, AI shows pattern imitation.

Conclusion

The research paper aimed to focus on the rhetorical structure of research abstracts written by humans, and those produced by AI using a comparative genre analysis based on the move-based model by Swales via a corpus-based study. The goal of the research was to understand the rhetorical move structures, frequency distribution of rhetorical moves, sequencing patterns, and the degree to which the AI-generated abstracts are competent in their genre aspects against human writers, by building two balanced corpora of 40 human-written and 40 AI-generated abstracts.

The results show that both corpora mostly follow the traditional five-move outline of research abstracts; Background (M1), Purpose (M2), Method (M3), Results (M4), and Conclusion (M5). The Purpose move was represented in 100% by both data sets, which supports its centrality as well as its almost mandatory position in academic abstract writing. This proves that AI systems manage to reproduce one of the most important genre conventions namely making an explicit statement on the purpose of the research. In the same manner, Background and Conclusion moves were both highly included in both corpora, which is indicative of structural awareness of the general arrangement of abstracts beginning and ending in general.

There were however some significant variations in the distribution and actualization of Method and Results moves. The distribution of human-generated abstracts was greater in Method (95) and Results (90) than in the AI-generated abstracts (80 respectively). It means that human writers focus more on empirical disclosure and evidential basis than on AI systems do. Disciplinary accountability and methodological accuracy was often reflected in human abstracts that contained certain information, e.g., the number of participants, research tools, and statistical results. On the contrary, abstracts generated by AI tended to offer abstract descriptions of the methodology and general statements on the results, sometimes not reporting them at all. This trend is an indication that AI is capable of structural duplication, but not empirical integration.

Organizational patterns also demonstrate the variations in the level of rhetorical sophistication. The human abstracts were flexible in sequencing, with move merging and contextual embedding (e.g. Background and Purpose in one sentence). This type of merging is a sign of high genre competence and economization of rhetoric. Abstracts produced by AI on the other hand had a more linear and predictable sequencing (M1→M2→M3→M4→M5) with less merging. As much as this structural regularity improves clarity, it also indicates algorithmic predictability and not an adaptive rhetorical strategy.

The other meaningful result is the presence of overrepresentation of the Conclusion move in AI-generated abstracts (95% vs. 75% in human texts). AI systems were more inclined to focus on closure and implications and did not always feature fully developed results sections. This trend reflects a bias towards formal fullness and persuasion framing, despite a lack of empirical richness. The human authors, conversely, occasionally left out direct conclusions where the implications were implicitly expressed in the results, as a sign of more subtle rhetorical judgement.

In general, the research finds that AI-generated research abstracts conform to genres on the surface level but are not similar to human-written abstracts in terms of the methodological specificity, the empirical depth, and the rhetorical flexibility. AI systems are good at replicating the structural skeleton of the academic abstracts, but they are not contextually integrated or disciplinarily focused. Human authors, who are guided by the knowledge of domains and membership in discourse community are more adaptively competent and able to realize strategic moves.

The results are added to the study of genre theory, corpus linguistics, and AI discourse analysis to present an empirical evidence of the interplay of algorithmic text generation and the current academic norms. Although AI tools may help in the generation of structurally coherent abstracts, the results they generate must be critically considered in terms of depth, precision and

alignment with the discipline. With the growing definition of AI in academic writing, reasons to know its capabilities and weaknesses in the realization of genres are critical towards the preservation of scholarly rigor and integrity.

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