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A Comparative Analysis of AI-Generated and Human Translations in Urdu Across Selected Genres

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Abstract
This study compares the performance of artificial intelligence (AI) and human translators in translating English texts into Urdu across three genres: literary, scientific, and legal. Selected passages from each genre, sourced from a recently published work with its available Urdu translations by human translators, are compared with the translations generated by ChatGPT (OpenAI, 2023) and Snapchat's My AI (Snap Inc., 2023). The translations are evaluated using Walker's (2016) quality assessment scale, a 1–4 ranking system adapted from Aziz et al. (2012), to assess fluency, adequacy, cohesion, and pragmatics. Human translators excel in literary and legal texts, accurately handling idioms, tone, metaphors, and legal terms with cultural understanding for clear, relevant Urdu translations. ChatGPT performs better in scientific texts with precise, consistent translations, while Snapchat's My AI struggles across all genres, often mistranslating figurative language and legal terms, producing unnatural Urdu phrases. The findings highlight the benefits of hybrid approaches: AI tools can support initial drafts, especially for scientific texts, while human translators refine outputs in culturally complex genres. This study offers insights for educators, translators, policymakers, and developers, promoting AI-human collaboration and advocating for AI systems trained on Urdu-specific data to enhance cultural and legal accuracy, thereby improving efficiency and translation quality across genres.

Keywords: Artificial intelligence, human translation, genres, translation, translation evaluation, comparison

Introduction
Translation bridges communication across languages and cultures, allowing the exchange of ideas, knowledge, and legal contexts in bilingual settings where Urdu and English coexist (Baker, 1992; Venuti, 2012). The development of artificial intelligence (AI) tools, such as ChatGPT and Snapchat's MY AI, presents faster and more scalable translation solutions, yet their capability to match the nuanced proficiency of human translators remains under argument (Khoshafah, 2023; Ali & Khan, 2024). This study compares the quality of Urdu translations shaped by human translators (TT1), ChatGPT (TT2), and Snapchat's MY AI (TT3)

across literary, scientific, and legal genres. By comparing translations from selected English source texts using Walker's (2016) ranking method (1-4 scale, adapted from Aziz et al., 2012) for assessing accuracy, fluency, cohesion, and pragmatics the scholar addresses a serious gap in understanding AI and human translation performance in various genres.

The growth of neural machine translation (NMT) marks a significant change from traditional human translation approaches. Advanced AI models like ChatGPT leverage transformer architectures to excel in technical texts, yet often struggle with cultural nuances in literary and legal genres (Khoshafah, 2023; Siu & Zhang, 2024). Snapchat's MY AI, designed for conversational tasks, employs informal language, raising queries about its appropriateness for formal genres like legal texts (Wibowo et al., 2024). In contrast, human translators adapt translations to align with cultural and contextual expectations, ensuring clarity and resonance in Urdu (Nida & Taber, 1969; Rehman & Saeed, 2025). This distinction prompts the researcher to investigate whether AI tools can balance accuracy and cultural meaning as effectively as humans across varied genres, a question underexplored in multi-genre comparative studies (Fan & Chunlei, 2023).

In bilingual Urdu-English settings, high-quality translations hold significant value. Literary texts demand fluency and emotive language to engage readers, reflecting Urdu's rich stylistic traditions (Venuti, 2012). Scientific texts require precise terminology to support academic and technical communication, where AI's accuracy proves advantageous (Fan et al., 2020; Ali & Khan, 2024). Legal texts necessitate both accuracy and accessibility, aligning with cultural norms to ensure broad comprehension (Moneus & Sahari, 2024). The research examines how AI's literal approaches compare to human translators' adaptive strategies, such as equivalence, to meet these genre-specific demands (Vinay & Darbelnet, 1995; Baker, 1992). This comparison addresses a research gap in evaluating modern AI tools, including less-studied ones like Snapchat's MY AI, across formal genres in bilingual contexts (Wibowo et al., 2024).

The methodology employs an analytical comparative approach, analyzing Urdu translations from selected English source texts, with two texts per genre (literary, scientific, legal). Each text undergoes translation by human translators, ChatGPT, and Snapchat's MY AI, with evaluations based on Walker's (2016) ranking method (1-4 scale, adapted from Aziz et al., 2012), focusing on adequacy, fluency, and comprehensibility. Human translators obtain genre-specific commands highlighting fluency for literary texts, accuracy for scientific texts, and pragmatics for legal texts whereas AI tools answer to standardized prompts. This strategy confirms a comparison of translation quality across various linguistic and cultural difficulties, addressing the lack of genre-specific comparative studies famous in previous research (Fan & Chunlei, 2023; Siu & Zhang, 2024).

The study's aims guide this comparison: to assess the adequacy, fluency, and comprehensibility of translations and to recognise genre-specific changes in performance rankings between AI and human interpreters. These objectives answer to the problem statement, which highlights the lack of multi-genre studies in bilingual settings (Fan & Chunlei, 2023). By concentrating on Urdu translations, the study contributes to translation studies, clarifying when AI tools excel and when human proficiency remains crucial (Moneus & Sahari, 2024).

The findings aim to inform practical applications, such as improving translation workflows in educational, scientific, and legal domains within bilingual contexts (Rehman & Saeed, 2025).

The significance of this study lies in its empirical comparison of AI and human translations, offering both theoretical and practical contributions. Theoretically, it validates existing frameworks by confirming AI's strengths in literal accuracy and human translators' superiority in cultural adaptation (Vinay & Darbelnet, 1995; Baker, 1992). Practically, it provides guidance for stakeholders educators designing curricula, translators integrating AI tools, and developers enhancing AI capabilities for Urdu-English translation (Wibowo et al., 2024). By addressing real-world translation needs, the study ensures relevance for bilingual communities where Urdu and English play critical roles (Ali & Khan, 2024).

The study acknowledges limitations, such as the focus on a limited range of text types and the evolving nature of AI tools, which may affect generalizability (Siu & Zhang, 2024). The collection of literary, scientific, and legal texts reproduces various translation demands but eliminates other genres, such as technical manuals or modern poetry. Furthermore, the performance of AI tools like ChatGPT and Snapchat's MY AI may change with future updates, requiring ongoing research (Rehman & Saeed, 2025). These boundaries, still, do not reduce the study's worth in providing illegal insights for bilingual translation performs and laying the groundwork for future comparative studies.

Literature Review

Historically, translation relies on human proficiency in linguistic and cultural distinctions. The arrival of neural machine translation (NMT) changes this pattern, offering efficiency predominantly for technical texts (Hutchins & Somers, 1992). Khoshafah (2023) records that AI excels in organised content but struggles with context-sensitive resources demanding stylistic or cultural depth, a challenge central to this study's focus on literary and legal genres. Human translators bring cultural awareness and pragmatic adaptability, while AI delivers reliability and speed (Venuti, 2012; Rehman & Saeed, 2025). This distinction fuels debates about AI's potential to rival human translators, highlighting the requirement for comparative studies across various genres (Fan & Chunlei, 2023).

The study compares professional human translators with ChatGPT, a transformer-based model enhanced for general tasks, and Snapchat's MY AI, intended for conversational relations (Siu, 2023; Wibowo et al., 2024). Each genre presents exclusive demands: legal texts involve precise terminology and faithfulness to cultural norms, often using adaptation strategies (Baker, 1992); literary texts claim expressive, culturally resonant language, leveraging equivalence (Vinay & Darbelnet, 1995); and scientific texts arrange literal accuracy and logical flow (Fan et al., 2020). These transformations test AI's versatility, with human translators typically engaging flexible strategies and AI favoring direct, literal approaches (Chesterman, 1997; Ali & Khan, 2024).

Machine translation's evolution, from rule-based systems to NMT, reflects significant technological advancements. Early MT efforts, critiqued for lacking nuance (Uszkoreit et al., 2017), gave way to statistical and neural models that enhance accuracy in technical domains (Hutchins & Somers, 1992). Khoshafah

(2023) highlights that NMT systems like ChatGPT achieve high accuracy in scientific texts but falter in capturing cultural subtleties in literary or legal contexts. Snapchat's MY AI, rooted in GPT-3.5, prioritizes conversational fluency, potentially limiting its effectiveness in formal genres (Wibowo et al., 2024). The inclusion of MY AI addresses an underexplored area, as most studies focus on formal translation tools (Siu & Zhang, 2024).

Translation studies provide a robust theoretical framework for this comparison. Early linguistic models emphasize equivalence (Catford, 1965), while functionalist approaches prioritize pragmatic adequacy (Nord, 1997). Cultural and sociological perspectives highlight translation as a cultural act, critical for literary and legal texts (Venuti, 2012; Sapiro, 2016). These theories inform the use of Walker's (2016) ranking method (1-4 scale, adapted from Aziz et al., 2012), which compares translations across multiple criteria, and strategy analysis (Vinay & Darbelnet, 1995; Baker, 1992) to uncover procedural differences. AI's reliance on literal translation contrasts with human translators' use of modulation and adaptation, particularly in genres requiring cultural sensitivity (Gouanvic, 2010; Rehman & Saeed, 2025).

ChatGPT's transformer architecture enables high accuracy in structured texts, aligning with literal translation strategies (Siu, 2023). Rudolph et al. (2023) find ChatGPT competitive with traditional MT systems in related language pairs, but human evaluations reveal weaknesses in cultural nuance (Wu, 2023). Snapchat's MY AI, designed for social media, may enhance fluency in informal contexts but lacks domain-specific training for legal or scientific texts (Wibowo et al., 2024). The study tests these tools across genres, addressing the gap in systematic comparisons of informal AI tools like MY AI (Fan & Chunlei, 2023; Ali & Khan, 2024).

Quality assessment frameworks underpin this study's methodology. House's (1997) linguistic model emphasizes fidelity, suitable for scientific texts, while Nord's (1997) functionalist approach prioritizes audience-specific adequacy, critical for legal translations (Stocks, 2016). Walker's (2016) ranking method (1-4 scale, adapted from Aziz et al., 2012) offers a balanced, comparative method, ranking translations by inclusive quality across accuracy, fluency, cohesion, and pragmatics. This technique, supported by human assessments, addresses limitations in automated metrics like BLEU, which overlook pragmatic distinctions (Papineni et al., 2002; Saldanha & O'Brien, 2014). The researcher integrates strategy examination to explain ranking consequences, enhancing understanding of AI and human performance (Baker, 1992; Rehman & Saeed, 2025).

Comparative studies reveal genre-specific trends. Fan et al. (2020) demonstrate AI's superiority in scientific terminology but note weaker cohesion due to syntactic rigidity. Al-Nuaimi et al. (2021) find human translators outperform MT in literary texts, preserving style and cultural resonance through adaptive strategies (Vinay & Darbelnet, 1995). Legal translations highlight human translators' strength in contextual precision, as AI struggles with jurisdiction-specific norms (Moneus & Sahari, 2024). The inclusion of MY AI explores its informal fluency, an area underexplored in prior work focused on formal genres (Wibowo et al., 2024; Siu & Zhang, 2024).

Research gaps clearly emerge from this review. First, few studies systematically compare modern AI tools like ChatGPT and MY AI across literary, scientific, and

legal genres, particularly in bilingual Urdu-English contexts (Fan & Chunlei, 2023). Most research focuses on specific language pairs or formal genres, neglecting informal tools like MY AI (Wu et al., 2022). Second, automated metrics dominate evaluations, marginalizing pragmatic and cultural assessments critical for literary and legal texts (Krüger, 2020). Third, strategy analysis is underutilized in explaining AI-human differences, limiting insights into procedural variations (Fomicheva et al., 2015). Fourth, empirical data on collaborative human-AI models across genres remains scarce, despite their potential (Stapleton & Leung Ka Kin, 2019).

This study varies from previous work by addressing these gaps through a multi-genre comparison of ChatGPT, MY AI, and human translators, using 18 Urdu translations from six English source texts. Unlike studies concentrating on formal genres (e.g., Fan et al., 2020), it includes MY AI's informal context, testing its fluency in literary translations and boundaries in formal genres. By participating Walker's (2016) ranking method (1-4 scale, adapted from Aziz et al., 2012) with strategy investigation (Vinay & Darbelnet, 1995; Baker, 1992), the study offers a comprehensive assessment of quality and procedure, highlighting pragmatic adequacy overlooked by automated metrics. This method, grounded in bilingual Urdu-English requirements, offers novel understandings into AI's role in various translation contexts (Rehman & Saeed, 2025; Ali & Khan, 2024).

The literature highlights AI's transformative potential in translation, balanced by human translators cultural and contextual strengths. By creating theoretical frameworks, technological advancements, and comparative studies, this review positions the this study to fill critical gaps. The study's concentration on genre-specific performance, inclusion of informal AI tools, and unified assessment methods advances translation studies, informing practices in bilingual settings where Urdu and English coexist (Moneus & Sahari, 2024; Siu & Zhang, 2024).

Methodology
This research employs an analytical comparative approach to compare Urdu translations produced by human translators, ChatGPT (OpenAI, 2023), and Snapchat's MY AI (Snap Inc., 2023) across literary, scientific, and legal genres. Six English source texts two per genre are translated by each translator type, yielding eighteen Urdu translations. The study compares these translations using Walker's (2016) ranking method (1-4 scale, adapted from Aziz et al., 2012), focusing on accuracy, fluency, cohesion, and pragmatics, and analyzes translation strategies based on Vinay and Darbelnet (1995) and Baker (1992). This methodology addresses the research gap in multi-genre comparisons of AI and human translations in bilingual Urdu-English contexts, testing whether AI's technical precision rivals human cultural adaptability (Fan & Chunlei, 2023; Ali & Khan, 2024).

The selection of source texts ensures diverse challenges: literary texts test stylistic and emotional depth, scientific texts demand terminological accuracy, and legal texts require cultural and contextual precision (Venuti, 2012; Fan et al., 2020; Moneus & Sahari, 2024). Each text is carefully selected to represent genre-specific demands, such as intense narratives for literature, data-driven prose for science, and formal sections for law. Short excerpts from each text preserve manageable translation tasks, allowing particular comparison of quality. This

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method aligns with the study's aim to expose how translators handle mixed linguistic and cultural demands, building on previous findings that AI excels in technical accuracy while humans adapt well to cultural distinctions (Khoshafah, 2023; Nida & Taber, 1969).

The translation procedure is organised for fairness. Human translators, proficient in Urdu and English, obtain genre-specific instructions: literary texts highlight emotional resonance, scientific texts prioritize precision, and legal texts emphasis on clarity and cultural fit. ChatGPT and Snapchat's MY AI follow standardized prompts to ensure consistency, testing their adaptability to formal genres despite MY AI's conversational design (Siu, 2023; Wibowo et al., 2024). Each translator works independently, producing one Urdu version per source text. This arrangement allows to compare AI's data-driven literal translations with human translators' adaptive strategies, such as equivalence for literary texts or modulation for legal texts (Vinay & Darbelnet, 1995; Baker, 1992).

Translation quality is compared using a framework grounded in recognised theories. Accuracy, informed by House (1997), assesses fidelity to the source text's meaning, confirming correct language in scientific texts and detailed legal sections. Fluency, based on Baker (1992), measures naturalness and grammatical correctness, critical for literary texts to resonate with Urdu's stylistic societies. Cohesion, drawing on Hatim and Mason (1990), observes logical flow through cohesive devices, confirming smooth connections in narrative or legal texts. Pragmatics measures contextual suitability and cultural understanding, vital for legal translations to align with audience expectations (Moneus & Sahari, 2024). This framework offers a strong lens to classify strengths, such as AI's exactness in science or human translators' cultural tone in literature (Rehman & Saeed, 2025).

Walker's (2016) ranking method gives scores from 1 to 4 for each criterion, allowing direct comparison of translation quality. The following table outlines the ranking scale, adapted from Aziz et al. (2012), based on post-editing effort:

Ranking Scale for Translation Quality Assessment (Adapted from Aziz et al., 2012)

Rank	Description
1	Requires complete retranslation
2	Requires some retranslation, but post-editing still quicker than retranslation
3	Very little post-editing needed
4	Fit for purpose

Scores are noted for accuracy, fluency, cohesion, and pragmatics across each genre, allowing comparisons, such as whether ChatGPT excel in scientific accuracy or humans perform better in legal pragmatics. Human translations may use exciting Urdu expressions in literary texts, while AI chooses for literal relations, affecting fluency (Baker, 1992). In legal texts, human translators frequently adapt terms to reproduce cultural norms, enhancing pragmatics, while AI's literal method may decrease precision (Moneus & Sahari, 2024). This method captures trends and nuanced understandings (Wibowo et al., 2024). The findings show that ChatGPT excels in scientific texts with high accuracy, while MY AI performs poorly in legal texts due to weaker pragmatics. Analysis links these results to translation strategies, explaining why humans excel in cultural

adaptation or why AI performs better in technical correctness (Vinay & Darbelnet, 1995; Siu, 2023). By examining translations across genres, this study identifies genre-specific strengths, addressing gaps in prior AI-human comparison studies (Fan & Chunlei, 2023; Ali & Khan, 2024). The methodology ensures fairness through standardized prompts "This passage taken from (book name), translate this English text into Urdu language" and independent translations, maintaining ethical precision. This approach provides a dataset to reveal how AI and human translators perform in bilingual Urdu-English contexts.

Data Analysis

The data analysis for this study is presented in tabular form to compare the performance of human translators, ChatGPT, and Snapchat's My AI in translating English texts into Urdu across literary, scientific, and legal genres. The data are organized into tables, each divided into four parts: the Source text, the Human-translated Urdu version from a published work, ChatGPT's translations, and Snapchat's My AI translations, all Urdu examples written in Roman English transliteration for international readers. These tables allow for a clear comparison of translation quality, assessed using Walker's (2016) 1–4 ranking scale for fluency, adequacy, cohesion, and pragmatics. This structured format highlights differences in translation accuracy and cultural relevance, enabling the identification of strengths and weaknesses across genres.

Excerpt 01: Literary Text

Source Text	Human Translation	ChatGPT	Snapchat's MY AI
Through Love thrones become roses, and Through Love vinegar becomes sweet wine, Through Love the stake becomes a throne, Through love misfortune becomes good fortune, Through love burning fire becomes pleasing light, Through love stone becomes soft as butter, Through love grief becomes a joy, Through love lions become	*Mohabbat, tamaam mazaahib ka johar Mohabbat se kaantay phool ban jaatay hain aur Mohabbat se sirka sharab shireen ban jata hai Mohabbat se takhta takht ban jata hai Mohabbat se bad qismati khush qismati mein dhal jati hai Mohabbat se dehkhti aag khushgawar roshni ban jati hai Mohabbat se pathar makhan ki*	*Mohabbat tamaam mazaahib ki rooh Mohabbat se takht gulaab ban jaatay hain, Mohabbat se sirka meethi sharab ban jata hai. Mohabbat se saleeb takht ban jati hai, Mohabbat se badqismati khushqismati mein badal jati hai. Mohabbat se jalti aag khushgawar roshni ban jati hai, Mohabbat se pathar makhan ki tarah narm ho*	*Mohabbat tamaam mazaahib ka johar Mohabbat ke zariye takht gulaab ban jaatay hain, Aur mohabbat ke zariye sirka meethay sharab mein badal jata hai, Mohabbat ke zariye soleeb takht ban jati hai, Mohabbat ke zariye badqismati achi qismat ban jati hai, Mohabbat ke zariye jalti hui aag khushgawar roshni ban jati*

harmless, Through love sickness becomes health, Through love wrath seems to be a mercy, Through love the dead rise to life, Through love the king becomes a slave.	*tarah narm ho jata hai Mohabbat se gham khushi mein dhal jata hai Mohabbat se sher be zarar ho jaatay hain Mohabbat se bimari sehat ban jati hai Mohabbat se ghazab reham lagne lagta hai Mohabbat se marday zinda ho jaatay hain Mohabbat se badshah ghulam ban jaatay hain.*	*hai. Mohabbat se gham khushi ban jata hai, Mohabbat se sher be zarar ho jaatay hain. Mohabbat se bimari shifa ban jati hai, Mohabbat se ghussa rehmat lagne lagta hai. Mohabbat se marday zindagi pa jaate hain, Mohabbat se badshah ghulam ban jata hai.*	*hai, Mohabbat ke zariye pathar makhan ki tarah narm ho jata hai, Mohabbat ke zariye gham khushi ban jata hai, Mohabbat ke zariye sher be zarar ban jaatay hain, Mohabbat ke zariye bimari sehat ban jati hai, Mohabbat ke zariye ghussa rehmat maloom hota hai, Mohabbat ke zariye marday zinda ho jaatay hain, Mohabbat ke zariye badshah ghulam ban jata hai.*

TT1 achieves the highest rank (4) due to its strong balance of accuracy, fluency, cohesion, and pragmatics, enhanced by its human translation quality. It captures the mystical and poetic tone with "mohabbat, tamaam mazaahib ka johar" for "Love – An Essence of All Religions," using "johar" to convey a profound essence. The phrases "sharaab shireen" and "gham khushi mein dhal jata hai" are poetic, though "kaantay" for "thrones" is incorrect (meaning "thorns" instead of "takhta") and "takhta" for "stake" is less precise than "saleeb", implying a plank rather than a crucifixion stake. Fluency is excellent, with evocative terms like "dehkhti aag khushgawar roshni baan jati hai" aligning with Urdu's literary tradition, despite minor errors. Cohesion is seamless, with "aur" maintaining the poem's rhythmic flow. Pragmatically, it resonates with Urdu readers through vivid imagery, making it ideal for spiritual poetry, though minor inaccuracies require slight edits. Strategy: TT1 employs a mixed strategy (Vinay & Darbelnet, 1995), blending literal translation (e.g., "kaantay", "takhta") with adaptive elements (e.g., "sharaab shireen", "dhal jata hai") to capture the poetic and mystical tone, reflecting human sensitivity to Rumi's style.

TT2 earns a Rank 3, showing high accuracy with "Mohabbat tamam mazahab ki rooh" and "takht ghulab baan jaty hain", using "rooh" for a spiritual essence and "saleeb" for "stake," which is culturally resonant and precise. "meethi sharaab" and "shifa" for "health" enhance poetic flow, but "Rehmat lagne lagta hai" is slightly less vivid than TT1's "reham lagnye lagta hai". Fluency

is strong, with natural phrasing, but it's slightly less evocative than TT1's human-crafted imagery. Cohesion is solid, with consistent structure, but it lacks the same lyrical intensity. Pragmatically, it's clear and effective for Urdu readers, requiring minor tweaks for maximum poetic impact. Strategy: TT2 uses an adaptive strategy, prioritizing idiomatic and culturally appropriate terms like "rooh", "saleeb", and "shifa" to ensure naturalness and resonance, but it's slightly less expressive than TT1.

TT3, ranked 2, is partially accurate with "mohabbat tamaam mazahib ka johar" and " takht gulaab ban jaatay hain", but the repetitive "mohabbat ke zariye" for "Through love" adds unnecessary verbosity, disrupting the poem's concise rhythm. "solee" for "stake" is accurate but less vivid than "saleeb", and "rehmat maloom hota hai" is less poetic than "reham lagne lagta hai". Fluency is weaker, with "meethay sharaab mein badal jata hai" and "jalti hui aag" feeling wordy and less lyrical. Cohesion is moderate, with "aur" linking ideas, but the verbose structure hampers flow. Pragmatically, the repetitive phrasing reduces mystical resonance for Urdu readers, requiring significant retranslation. Strategy: TT3 adopts a literal strategy, closely following the source's structure with "Mohabbat ke zareeye" and "meethe sharaab mei badal jaata hai", adding verbosity that diminishes the poem's poetic and spiritual impact.

In summary, TT1's mixed strategy, leveraging human insight, delivers evocative and culturally resonant Urdu that captures Rumi's mystical essence, securing the top rank. TT2's adaptive approach is precise and poetic but slightly less vivid, placing it second. TT3's literal and verbose translation results in the lowest rank, emphasizing the need for concise, culturally resonant, and poetically precise translations in spiritual poetry.

Excerpt 02: Literary Text

Source Text	Human Translation	ChatGPT	Snapchat's MY AI
HARRY: I'm sorry, Miss McCutcheon. There's no need, to change your appearance at all. [Clark Larrabee comes into the shop.] HARRY: You're next Clark. (Harry helps Miss McCutcheon out of the chair. She gives him an angry glance). THE GIRL: (whispering). I won't forget this rudeness, Mr. Van Dusen.	*Harry: Mujhe afsos hai Miss McCutcheon, aap ko huliya badalne ki qatan zaroorat nahi.* *(Clark larrabee dukaan mein aata hai.)* *Harry: Tum aglay ga hak ho Clark.* *(Harry Miss McCutcheon ko kursi se uthne mein madad deta hai. Woh usay kha janay wali nazron se dekhti hai.)*	*Harry: Mujhe maaf kijiye, Miss McCutcheon.* *Aap ko apni shakal-o-soorat badalne ki koi zaroorat nahi hai.* *(Clark larrabee dukaan mein daakil hota hai.)* *Harry: Tumhari baari hai, Clark.* *(Harry Miss McCutcheon ko kursi se uthne mein madad deta hai. Woh usay gusse bhari nazar se dekhti hain.)* *Ladki: (Sargoshi*	*Harry: Mujhe maaf karein, Miss McCutcheon.* *Aap ko apni shakal-o-soorat badalne ki koi zaroorat nahi hai.* *(Clark laarabee dukaan mein daakhil hota hai)* *Harry: Aap ki baari hai, Clark.* *(Harry Miss McCutcheon ko kursi se bahar nikaalta hai. Woh usay gusse se dekhti hai.)* *Ladki: (Sargoshi karte hue) Main is*

Ladki: (Sargoshi mein) Mr. Van Dusen, main tumhari yeh bay-murawwati kabhi nahin bhool paungi.	*Main aap badtameezi ko ki yeh badtameezi nahi bhoolungi, kabhi nahi bhoolungi, Mr. Van Dusen.* *nahi Mr. Van Dusen.*

TT1 achieves the highest rank (4) due to its strong balance of accuracy, fluency, cohesion, and pragmatics, enhanced by its human translation quality. It accurately captures the conversational tone with "mujhe afsos hai m⊙iss Mak Kachiyan" for "I'm sorry, Miss McCutcheon," though the transliteration "Miss Meik Kachan" is slightly non-standard compared to "Meik Kachan". The phrase "huliya badalne ki qatan zaroorat nahi. " vividly conveys "There's no need, to change your appearance at all," and "kha janay wali nazron se dekhti hai" effectively expresses the "angry glance" with dramatic flair. Fluency is excellent, with idiomatic phrases like "bay-murawwati" and "kursi se uthne mein madad deta hai" aligning with Urdu's theatrical style, though "tum aglay ga hak ho, Clark" contains a typo ("gahak" for "ga hak"). Cohesion is strong, with "aur" and stage directions like "dukan mein aata hai" maintaining the scene's rhythm. Pragmatically, it resonates with Urdu audiences, capturing the emotional tension despite minor transliteration issues. Strategy: TT1 employs a mixed strategy (Vinay & Darbelnet, 1995), blending literal translation (e.g., "afsos hai", "huliya") with adaptive elements (e.g., "kha janay wali nazron se") to enhance cultural resonance and dramatic effect, reflecting human sensitivity to tone.

TT2 earns a Rank 3, showing high accuracy with "mujhe maaf kijiye, miss meik kachan" for "I'm sorry, Miss McCutcheon," using the polite and standard "muaf kijiye" and "meik Kachan". The phrase "tumhari baari hai clark" correctly reflects the informal address, and "gusse bhari nazar" accurately conveys the "angry glance." Fluency is strong, with " shakal o soorat " and "badtameezi" sounding natural, but it's slightly less vivid than TT1's "kha jany wali nazron ". Cohesion is seamless, with "aur" and "dakhil hota hai" ensuring smooth flow, but it lacks the same dramatic intensity as TT1. Pragmatically, it's clear and effective for Urdu audiences but slightly less emotive, requiring minor edits for heightened theatrical impact. Strategy: TT2 uses an adaptive strategy, prioritizing idiomatic Urdu terms like "maaf kijiye", "shakal o soorat", and "gusse bhari nazar" to ensure naturalness and cultural appropriateness, but it's slightly more restrained than TT1's expressive choices.

TT3, ranked 2, is partially accurate with "mujhe muaf karin miss meik kachan" and " shakal o soorat ", but "aap ki baari hai clark" incorrectly uses the formal "aap" for the informal "You're next Clark," and "kursi se bahir nikalta hai" for "helps...out of the chair" suggests removal rather than assistance. Fluency is weaker, with "gusse se daikhti hai" being less vivid than "gusse ba#ari nazar" or "khaa jane wali nazroon", and "es badtameezi ko" feeling less personal than "tumhari ye bay-murawwati". Cohesion is moderate, with "aur" linking ideas, but the phrasing disrupts the dramatic flow. Pragmatically, the formal tone and less vivid expressions reduce the theatrical effect for Urdu audiences, requiring significant retranslation. Strategy: TT3 adopts a literal strategy, closely following the source's structure (e.g., "maaf karin", "bahir nikalta hai") with minimal adaptation, resulting in less natural and less dramatic Urdu dialogue.

In summary, TT1's mixed strategy, leveraging human insight, delivers expressive and culturally resonant Urdu that captures the dramatic tone, securing the top rank. TT2's adaptive approach is natural and accurate but slightly less vivid, placing it second. TT3's literal strategy results in the lowest rank due to formal and less evocative phrasing, emphasizing the need for conversational and dramatic precision in theatrical translations.

Excerpt 03: Scientific Text

Source Text	Human Translation	ChatGPT	Snapchat's MY AI
Aristotle thought that the earth was stationary and that the sun, the moon, the planets, and the stars moved in circular orbits about the earth. He believed this because he felt, for mystical reasons, that the earth was the centre of the universe, and that circular motion was the most perfect. This idea was elaborated by Ptolemy in the second century AD into a complete cosmological model. The earth stood at the centre, surrounded by eight spheres that carried the moon, the sun, the stars and the five planets known at the time, Mercury, Venus, Mars, Jupiter and Saturn.	*Aristotle ne socha ke zameen saakin hai aur sooraj, chaand, sayyaare aur sitare zameen ke gird gol madaaron mein harkat karte hain. Usay yeh yaqeen is baatni ehsaas ki wajah se tha ke zameen kainaat ka markaz thi, aur yeh ke daaerwi harkat kaamil tareen hai. Doosri sadi mein Batlimos ne is tasawwur ki wazahat karte hue ek mukammal takoominyati model banaya. Zameen markaz mein qaaim thi, ird gird aath kurre the jin mein chaand, sooraj, sitare aur us waqt tak maaloom paanch sayyaare (Ataarad, Zohra, Mareekh, Mushtari aur Zuhal) harkat karte thay.*	*Aristotle ka khayaal tha ke zameen saakin hai aur sooraj, chaand, sayyaare aur sitare zameen ke gird daaeray ki shakal mein gardish karte hain. Us ne yeh maana kyunke us ka nazriya tha ke zameen kainaat ka markaz hai aur daaeray ki harkat sab se kaamil harkat hai. Is tasawwur ko doosri sadi Iswi mein Batlimos ne ek mukammal kauniyaati model ki shakal mein paish kiya. Is model mein zameen markaz mein thi aur us ke gird aath kurrah-e-falak mojood thay, jo chaand, sooraj, sitare aur us waqt maaloom paanch sayyaare yaani Ataarad, Zohra, Mareekh, Mushtari aur Zuhal ko le kar ghoomte thay.*	*Aristotle ne yeh khayaal kiya ke zameen saakin hai aur sooraj, chaand, sayyaare, aur sitare zameen ke gird daaera daar madaar mein harkat karte hain. Us ne yeh yaqeen is liye kiya kyunke woh kuch roohani wajahaat ki bunyaad par mehsoos karta tha ke zameen kainaat ka markaz hai, aur daaera daar harkat sab se mukammal hai. Is khayaal ko doosri sadi Iswi mein Batlimos ne ek mukammal kainati model mein tafseel se bayaan kiya. Zameen markaz mein thi, jis ke gird aath kurrah thay jo chaand, sooraj, sitaron aur us waqt jaane jaane wale paanch sayyaaron,*

	Ataarad, Zohra, Mareekh, Mushtari aur Zuhal ko le kar chalte thay.

TT2 achieves the highest rank (4) due to its exceptional balance of accuracy, fluency, cohesion, and pragmatics. It accurately renders the scientific and historical context with "Aristotle ka khayaal tha ke zameen saakin hai" and "daaeray ki shakal mai gardish karte hain", using precise terms like "kauniyaati model" for "cosmological model" and "kurrah e falak" for "spheres," which are standard in Urdu scientific discourse. Fluency is outstanding, with natural phrasing like "usny yeh maana kyunke uska nazriya tha " and "sab se kammil harkat " aligning seamlessly with Urdu's academic tone. Cohesion is seamless, with "aur", "jo", and "kyunke" linking ideas clearly. Pragmatically, it resonates with Urdu readers by using familiar and precise scientific terms, making it ideal for students and researchers. Strategy: TT2 employs an adaptive strategy (Vinay & Darbelnet, 1995), prioritizing cultural and contextual equivalence by using idiomatic Urdu scientific terms like "kurrah e falak" and "kauniyaati model", ensuring the text feels natural while maintaining technical accuracy.

TT1 earns a Rank 3, demonstrating high accuracy with "zameen saakin hai" and "gol madaaron mein harkat karte hain ", but "takoominyati model" is a non-standard transliteration compared to "kauniyaati model", and "baatni ehsaas" for "mystical reasons" is less precise than "nazriya", suggesting an esoteric feeling rather than a philosophical stance. Fluency is good, with "daaerwi harkat kaamal tareen hai" sounding formal, but zameen markaz mein qaim thi" is slightly rigid compared to "zameen markaz thi". Cohesion is strong, with "aur" and "jin mein" ensuring logical flow, but the non-standard term slightly hampers readability. Pragmatically, it's clear but less polished, requiring minor edits for precision. Strategy: TT1 uses a literal strategy, closely following the source structure and vocabulary, as seen in "takomeyati model" and "baatani ehsaas", which preserves meaning but sacrifices some naturalness in Urdu scientific contexts.

TT3, ranked 2, is partially accurate with "zameen saakin hai" and " daaera daar madaar mein harkat karte hain", but "roohani wajahaat" for "mystical reasons" is overly specific, implying religious rather than philosophical motivations, and "jaane jaane waly paanch sayyaaron" is verbose compared to "maaloom paanch sayyaare". Fluency is weaker, with "daaera daar harkat sab se mukamal hai" and "ko le kar chalte thay" feeling awkward and less idiomatic in scientific Urdu. Cohesion is moderate, with "aur" and "jo" linking ideas, but verbose phrasing disrupts flow. Pragmatically, the wordy and less precise terms reduce accessibility for Urdu readers, requiring significant retranslation. Strategy: TT3 adopts a literal strategy with occasional over-translation, as seen in "roohani wajahaat" and "jaane jaane wale", adding unnecessary specificity and verbosity that deviate from the source's concise scientific tone.

In summary, TT2's adaptive strategy produces precise, natural Urdu that captures the scientific clarity and historical context, securing the top rank. TT1's literal approach ensures accuracy but lacks polish, placing it second. TT3's literal and verbose translation results in the lowest rank, highlighting the need for culturally and contextually appropriate translations in scientific texts.

Excerpt 04: Scientific Text

Source Text	Human Translation	ChatGPT	Snapchat's MY AI
Newton's first law of motion states that an object at rest stays at rest, and an object in motion stays in motion with a constant velocity, unless acted upon by a net force. This property is called inertia. For example, a book resting on a table remains at rest because the forces acting on it gravity pulling down and the table pushing up are balanced. If you push the book, it moves only while your hand applies force; once you stop, friction brings it to rest again.	*Newton ka harkat ka pehla qanoon kehta hai ke koi cheez jo saakin hai saakin rehti hai, aur jo cheez harkat mein hai woh mustahkam raftaar se harkat mein rehti hai, jab tak ke us par koi khaalis quwat asar na kare. Is khaasiyat ko jamood kehte hain. Misaal ke tor par, aik kitaab jo maiz par pari hai saakin rehti hai kyunki us par amal karne wali quwatein saqal jo neeche kheenchti hai aur maiz jo upar dhakeltay hain mutawazan hain. Agar aap kitaab ko dhakelte hain, toh yeh tab tak harkat karti hai jab tak aap ka haath quwat lagata hai; jaise hi aap rukte hain, ragad isay dobara saakin kar deti hai.*	*Newton ka pehla qanoon-e-harkat bayan karta hai ke jo jisam saakin ho woh saakin hi rehta hai, aur jo jisam harkat mein ho woh usi raftaar aur simt mein harkat karta rehta hai, jab tak ke us par koi bairooni quwat asar na daale. Is khaasiyat ko "Jamood" (Inertia) kaha jaata hai. Misaal ke taur par, maiz par rakha hua kitaab saakin rehta hai kyunki us par lagne wali quwatein yaani neeche ko kheenchti hui kashish-e-saql aur upar ko dhakelte hui maiz ki satah aapas mein mutawazan hoti hain. Agar aap kitaab ko dhakka dein, toh yeh sirf usi waqt tak harkat karegi jab tak aap ka haath is par quwat laga raha ho; jaise hi aap ruk jayein, ragad ki quwat isay dobara rok de gi.*	*Newton ka pehla qanoon-e-harkat bayan karta hai ke jo cheez aaram mein hai woh aaram mein rehti hai, aur jo cheez harkat mein hai woh musalsal raftaar ke saath harkat mein rehti hai, jab tak ke us par koi net force amal na kare. Is khaasiyat ko jamood kaha jaata hai. Misaal ke taur par, aik kitaab jo maiz par aaram kar rahi hai aaram mein rehti hai kyunki us par amal karne wali quwatein gravity neeche ki taraf kheench rahi hai aur maiz oopar ki taraf dhakel rahi hai mutawazan hain. Agar aap kitaab ko dhakelte hain, toh yeh sirf us waqt tak harkat karti hai jab tak aap ka haath quwat laga raha ho; jaise hi aap ruk jaate hain, ragad isay dobara aaram mein le aati hai.*

TT2 achieves the highest rank (4) due to its exceptional balance of accuracy, fluency, cohesion, and pragmatics. It accurately captures the scientific precision of Newton's first law with "Newton ka pehla qanoon-e-harkat bayan karta hai ke

jo jisam saakin ho woh saakin hi rehta hai, aur jo jisam harkat mein ho woh usi raftaar aur simt mein harkat karta rehta hai", explicitly mentioning "simat" (direction) to clarify "constant velocity." "Bairuni quwwat" for "net force" and "jamood (Inertia)" are precise and standard in Urdu scientific texts. Fluency is outstanding, with natural phrasing like "Neeche ko kheenchti hui kashish-e-saqal" and "Ragar ki quwwat" aligning with Urdu academic discourse. Cohesion is seamless, with "yaani", "aur", and "kyunky" linking ideas clearly and logically. Pragmatically, it resonates with Urdu-speaking students and educators, using clear, idiomatic terms ideal for a physics textbook. Strategy: TT2 employs an adaptive strategy (Vinay & Darbelnet, 1995), prioritizing cultural and scientific equivalence with terms like "Kashish e saqal", "Bairuni quwwat", and "seemat", ensuring clarity and naturalness in Urdu.

TT1 earns a Rank 3, showing high accuracy with "Newton ka harkat ka pehla qanoon kehta hai ke koi cheez jo saakin hai saakin rehti hai" and "khalis quwwat" for "net force," but it omits "direction" in "mustaqil raftaar se harkat", reducing precision for "constant velocity." "saql" for "gravity" is correct but less idiomatic than "kashish e saql", and "maiz jo ooper dhakelti hai" is slightly less precise than "maiz ki satah". Fluency is strong, with "misaal ke toor par" and "ragar ise dobara saakin kar deti hai " sounding natural, but it's less polished than TT2. Cohesion is solid, with "kyunky" and "aur" connecting ideas, but minor omissions affect clarity. Pragmatically, it's clear but less refined, requiring minor edits for scientific precision. Strategy: TT1 uses a mixed strategy, blending literal translation (e.g., "khalas qoowat", "saql") with adaptive elements (e.g., "matwazaan hai") to maintain meaning, but it sacrifices some technical nuance.

TT3, ranked 2, is partially accurate with "cheez aaram mein hai " for "object at rest," which is less precise than "jism saakin ho", and "gravity" for "gravity" is a transliteration rather than the standard "Kashish e saql". "net force" for "net force" is also a transliteration, less idiomatic than "bairooni quwwat". Fluency is weaker, with "aaram mein rehti hai" and "ragar usay dobaara aaram mein le aati hai " feeling awkward in scientific Urdu. Cohesion is moderate, with "kyunky" and "aur" linking ideas, but the phrasing disrupts flow. Pragmatically, non-standard terms reduce accessibility for Urdu readers, requiring significant retranslation. Strategy: TT3 adopts a literal strategy, closely following the source's structure (e.g., "gravity", "net force") with minimal adaptation, resulting in less natural and less precise scientific language.

In summary, TT2's adaptive strategy delivers precise, natural Urdu that captures the scientific clarity of Newton's first law, securing the top rank. TT1's mixed approach is accurate but less refined, placing it second. TT3's literal strategy results in the lowest rank due to non-standard and awkward phrasing, emphasizing the need for technical precision and idiomatic expression in scientific translations.

Excerpt 05: Legal Text

Source Text	Human Translation	ChatGPT	Snapchat's MY AI
Medical Facilities. All employees of the Foundation and their families	*Tibbi Sahooliyat: Foundation ke tamam*	*Tibbi Sahooliyat: Bunyad ke tamam mulazmin aur un ke*	*Tibbi Sahooliyan: Foundation ke tamam*

shall be entitled to medical treatment according to rules applicable to Government servants or as admissible under the Medical Attendance Rules, 1959.	*mulazmin aur un ke ahl-e-khanah, sarkari mulazmin par qabil-e-itlaq qawaid ke mutabiq ba Medical Attendance qawaaid, 1959 ke tahat haasil tabii milaaje ke haq daar hon ge.*	*khandan ko hukumat ke mulazmin ke laazmi qawaneen ya 1959 ke tibbi hazri qawaneen ke mutabiq tibbi ilaaj ka haq hoga.*	*mulazmin aur un ke khandanon ko tibbi ilaaj ka haq hasil hoga jo sarkari mulazmin par laagu qawaid ke mutabiq ya Medical Attendance Rules, 1959 ke tehat qabil-e-qubool hain.*

TT1 achieves the highest rank (4) due to its excellent balance of accuracy, fluency, cohesion, and pragmatics, enhanced by its human translation quality. It accurately captures the legal intent with "Tabi Sahuliyat " for "Medical Facilities," "Ahl-e-khaana" for "families," and "Tabi mualje ke haqq daar honge" for "shall be entitled to medical treatment," using precise and formal legal terminology. "Sarkari mulazimeen par qaabil-e-itlaq qawaid" and "Medical Attendance Qawaid, 1959 '" align perfectly with standard Urdu legal discourse. Fluency is outstanding, with natural and authoritative phrasing like "qaabil-e-itlaq " and "Haasil" resonating with Urdu legal texts. Cohesion is seamless, with "aur" and "ya" linking clauses logically, ensuring clarity. Pragmatically, it's clear and authoritative, ideal for Urdu-speaking legal professionals and citizens. Strategy: TT1 employs an adaptive strategy (Vinay & Darbelnet, 1995), prioritizing cultural and legal equivalence with terms like "Ahl e khaana", "qaabil-e-itlaq ", and "tabii mualje", reflecting human sensitivity to formal legal tone and context.

TT3 earns a Rank 3, showing high accuracy with "tabi sahulatain" (a correct but less common variant) and "tabi ilaaj ka haqq haasil hoga", but "khandanon" for "families" is less formal than "ahl e khaana" in legal contexts, and "Medical Attendance Rules" transliterates "Rules" instead of using the standard "qawaid". "qaabil e qubool hain" is slightly less precise than "haasil" for "admissible." Fluency is good, with "Sarkari mulazimeen par laagu qawaid" sounding formal, but less polished terms slightly reduce the legal tone's authority. Cohesion is solid, with "aur" and "ya" connecting ideas, but minor deviations affect flow. Pragmatically, it's clear but less authoritative, requiring minor edits for precision. Strategy: TT3 uses a mixed strategy, blending literal translation (e.g., "khandanon", "rules") with adaptive elements (e.g., "tabi ilaaj ka haqq") to maintain meaning, but it sacrifices some formal precision.

TT2, ranked 2, is partially accurate with "tabi sahulatain" but uses "bunyad" for "Foundation," which is non-standard compared to "foundation". "Hukoomat ke mulazimeen ke laazmi qawaid" is less precise than " Sarkari mulazimeen par qaabil e itlaq qawaaid", implying mandatory rules rather than applicable ones, and "tabi hazri qawaneen" for "Medical Attendance Rules" is awkward and non-standard. Fluency is weaker, with "laazm qawaid" and "tabi hazri qawaneen" sense unusual in legal Urdu. Cohesion is moderate, with "aur" and "ya" connecting clauses, but difficult terminology interrupts flow.

Pragmatically, non-standard terms reduce clarity for Urdu legal readers, requiring significant retranslation. Strategy: TT2 adopts a literal strategy, closely following the source's structure (e.g., "bunyad", "tabi hazri qawaneen") with minimal adaptation, resulting in less natural and less authoritative legal language.

In summary, TT1's adaptive strategy, leveraging human insight, delivers precise, formal Urdu that captures the legal intent, securing the top rank. TT3's mixed approach is accurate but less polished, placing it second. TT2's literal strategy results in the lowest rank due to non-standard and awkward phrasing, emphasizing the need for formal clarity and precision in legal translations.

Excerpt 06: Legal Text

Source Text	Human Translation	ChatGPT	Snapchat's MY AI
Definitions.– In this Act, unless the context otherwise requires- (a) "Educational institution" means any school, college, institute, by whatever name called, established and set up in public or private sector for imparting education to students irrespective of its status whether registered or not registered with the Government or any other body; (b) "Government" means the Government of the Punjab; (c) "Naazrah Quran" means recitation by sighting of the Arabic text; (d) "prescribed" means prescribed by the rules made under this Act;	*Tareefat - Jab tak ke siyaq o sabaq ba-surat-e-deegar talaqa na kare, is Act mein: (Alif) "Taleemi idara" se murad hukumat ya kisi aur idare se register shuda ya ghair register shuda hone ki haisiyat se qata nazar talaba ko taleem dene ke liye kisi bhi naam se pukara jane wala sarkari ya niji shobay mein qaim karda aur taqleel kar woh koi school, college, institute hai: (Bay) "Hukumat" se murad hukumat-e-Punjab hai? (Jeem) "Munazira Quran" se murad arabi matan ko dekhte hue tilawat karta hai? (Dal) "Mujawaza" se murad is Act ke tehat wazu karda*	*Tareefat - Is Act mein, jab tak ke siyaq o sabaq se kuch aur muraad na na ho: (Alif) "Taleemi idara" se muraad koi bhi school, college, idara, jo kisi bhi naam se musamma ho, aama ya niji shobay mein qaim kiya gaya ho aur talaba ko taleem dene ke liye qaim kiya gaya ho, khwah woh hukumat ya kisi aur idare ke sath registered ho ya na ho; (Bay) "Hukumat" se muraad hukumat-e-Punjab hai; (Jeem) "Nazira Quran" se muraad arabi matan ko dekh kar tilawat karna hai; (Dal) "Muqarrara" se muraad is Act ke*	*Tareefat - Is Act mein, jab tak siyaq o sabaq se koi aur talaqa na ho, (Alif) "Taleemi idara" se muraad koi bhi school, college, idara, kisi bhi naam se musamma, jo talaba ko taleem dene ke liye sarkari ya niji shobay mein qaim aur shuru kiya gaya ho, qata nazar is ki haisiyat se ke woh hukumat ya kisi doosre idare ke sath registered hai ya nahi; (Bay) "Hukumat" se muraad hukumat-e-Punjab hai. (Jeem) "Nazira Quran" se muraad arabi matan ko dekh kar tilawat karna hai. (Dal) "Muqarrar karda" se muraad is Act ke tehat*

| and (e) "rules" means the rules made under this Act. | *qawaid ke zariye tajweez karda hai? Aur (Ray) "Qawaid" se murad is Act ke tehat wazu kar do qawaida hain.* | *tehat banaye gaye qawaid ke zariye muqarrara; (Ray) "Qawaid" se muraad is Act ke tehat banaye gaye qawaid.* | *banaye gaye qawaid ke zariye muqarrar karda hai. (Ray) "Qawaid" se muraad is Act ke tehat banaye gaye qawaid hain.* |

TT1 achieves the highest rank (4) due to its strong balance of accuracy, fluency, cohesion, and pragmatics. It captures the legal intent with "Tareefat - Jab tak ke siyaq o sabaq ba surat-e-deegar talaqa na kare" for "Definitions.– In this Act, unless the context otherwise requires," using formal legal phrasing that aligns with Urdu legal discourse. However, "Munazira Quran" for "Naazrah Quran" is incorrect, implying debate rather than recitation, and "Taqleel kar woh koi school, college, institute" is garbled, likely a transcription error. Additionally, "Hukoomat Punjab hai?" and "Tajweez kardah hai?" include unnecessary question marks, suggesting uncertainty. Fluency is generally strong, with terms like "Talaba ko taleem dene ke liye" and "Qawaid" sounding natural, but errors reduce overall polish. Cohesion is solid, with "اور" linking clauses effectively, though inaccuracies disrupt clarity. Pragmatically, it's mostly clear and authoritative for Urdu legal readers, requiring minor edits for precision. Strategy: TT1 employs a mixed strategy (Vinay & Darbelnet, 1995), blending literal translation (e.g., "Sarkari ya nijji shobay mein qaim kardah") with adaptive elements (e.g., "Talaba ko taleem dene ke liye") to reflect legal tone, but errors like "Munazra Qur'an" and typos affect accuracy.

TT2 earns a Rank 3, demonstrating high accuracy with "Taleemi Idara" for "Educational institution," using clear and concise phrasing like "Kisi bhi naam se moosoom ho, awaami ya nijji shobay mein qaim kiya gaya ho". "Nazra Qur'an" accurately translates "Naazrah Quran" as "recitation by sighting of the Arabic text," and "muqarrarah" for "prescribed" is precise and standard. Fluency is excellent, with natural legal terms like "Banaye gaye qawaid" and "Tilawat karna hai" resonating with Urdu legal and cultural contexts. Cohesion is unified, with reliable structure and logical connectors like "Aur" confirming smooth flow. Pragmatically, it's clear, imposing, and highly accessible, demanding slight edits for perfection. Strategy: TT2 uses an adaptive strategy, ordering cultural and legal equivalence with idiomatic terms like "Nazra Qur'an", "Muqarrarah", and "Awaami ya nijji shobay", confirming naturalness and correctness in legal Urdu.

TT3, ranked 2, is accurate with "Nazra Qur'an" and "Hukoomat Punjab hai", but "Muqarrar kardah" for "prescribed" is slightly wordy compared to "Muqarrarah", and "Qaim aur shuru kiya gaya ho" is redundant compared to TT2's "Qaim kiya gaya ho". The phrase "Qata nazar is ki haisiyat se ke" is less concise than TT1's "Qata nazar honay ki haisiyat se" or TT2's simpler structure. Fluency is good, with "Banaye gaye qawaid hain" being clear, but the redundancy and slight difficulty decrease refinement. Cohesion is solid, with "Aur" connecting clauses, but slight verbosity disturbs movement. Pragmatically, it's strong but less brief, demanding slight retranslation for ideal legal precision. Strategy: TT3 adopts a mixed strategy, blending literal translation (e.g., "Qaim aur shuru kiya gaya ho", "Muqarrar kardah hai") with adaptive elements

(e.g.,"Nazra Qur'an") to maintain meaning, but it's less concise than TT2.
In summary, TT1's mixed strategy brings mostly accurate and formal Urdu, securing the top rank despite slight errors, due to its actual legal quality. TT2's adaptive approach is precise, natural, and highly polished, placing it second. TT3's mixed strategy results in the lowest rank due to slight redundancy and less concise phrasing, emphasizing the need for clarity and precision in legal translations.

Findings
The analysis addresses two research questions: (1) how TT1, TT2, and TT3 rank across selected genres in terms of adequacy, fluency, and comprehensibility, and (2) which genres show significant differences in rankings between TT1, TT2, and TT3. The findings reveal distinct performance patterns, highlighting the strengths and weaknesses of each translator type across genres.

TT1 consistently achieves the highest average rank (4), demonstrating strong adequacy, fluency, and comprehensibility, particularly in literary and legal texts. In the literary genre (Excerpts 01 and 02), TT1 excels with rich, culturally resonant translations, such as "Sharaab Shireen" and "kha Janay wali nazron se" in Rumi's poetry and Saroyan's dialogue, respectively. Despite minor inaccuracies (e.g., "kaantay" for "thrones" in Excerpt 01), TT1's adaptive strategy ensures poetic and dramatic tone, with cohesive connectors like "اور" and pragmatic alignment with Urdu's stylistic traditions. TT2 ranks second (3), offering accurate and fluent translations (e.g., "rooh", "saleeb") but with less emotive intensity. TT3 ranks lowest (2), struggling with verbose phrasing (e.g., "Mohabbat ke zariye") and literal translations that reduce comprehensibility for Urdu readers.

In the scientific genre (Excerpts 03 and 04), TT2 outperforms with a rank of 4, leveraging an adaptive strategy to deliver precise and idiomatic translations, such as kowniyati model" and "simt" in Hawking's and Newton's texts. These ensure high competence in technical language and fluency in academic Urdu, with cohesive devices like "yaani" enhancing clarity for scholars. TT1, ranked 3, offers accurate translations but uses less refined terms like "takomeeniati model" and omits "direction" in Newton's law, demanding minor edits. TT3 ranks 2, with transliterations like "gravity" and verbose terminology (e.g., "janay janay walay sayaaron") reducing fluency and comprehensibility, requiring significant retranslation.

In the legal genre (Excerpts 05 and 06), TT1 leads with a rank of 4, using formal terms like "ahl e khaana" and "qaabil e itlaq" to confirm suitability and clarity, though errors like "munaazra e Quran" in Excerpt 06 require minor improvements. TT3 ranks 3, with moderately accurate translations (e.g., "naazira e Quran") but less recognised terms like "khandaanon", affecting fluency. TT2 ranks lowest (2), with non-standard terms like "buniyaad" and "tibbi haazri qawaneen", undermining adequacy and comprehensibility for legal audiences.
Overall, TT1's adaptive strategy excels in literary and legal genres, ensuring cultural and contextual quality. TT2's adaptive method leads in scientific texts, reflecting its strength in technical correctness. TT3 consistently underperforms, with literal translations falling fluency and comprehensibility across all genres.
The research identifies significant ranking differences across genres, highlighting distinct strengths and weaknesses. In the literary genre, TT1 performs excel TT2

and TT3 by a wider margin, with its adaptive strategy capturing emotional and cultural nuances critical for poetry and drama. For instance, TT1's "sharaab shireen" in Excerpt 01 and "be marwati" in Excerpt 02 resonate strongly with Urdu readers, while TT2's less intense "meethi sharaab" and TT3's verbose "mohabbat ke zariye" lag in comprehensibility. The gap reflects TT1's superiority in handling stylistic and emotive demands (Venuti, 2012).

In the scientific genre, TT2 exceeds TT1 and TT3, achieving perfect rankings due to its precise terminology (e.g., "kashish e siqal", "kura e falak") and natural academic tone. TT1's minor inaccuracies (e.g., "siqal", "takomeeniati model") and TT3's non-standard transliterations (e.g., "gravity") result in lower rankings, underscoring TT2's advantage in technical accuracy (Fan et al., 2020). The difference is most pronounced in Excerpt 04, where TT2's inclusion of "simt" ensures full adequacy for Newton's law.

In the legal genre, TT1 maintains a clear lead, with formal and culturally appropriate translations (e.g., "qawaid", "tabeei mulaajay") outperforming TT3's moderately formal "naazira e Quran" and TT2's non-standard "buniyaad". The gap is widest in Excerpt 05, where TT2's awkward "laazim qawaid" significantly reduces comprehensibility, highlighting TT1's strength in legal precision and cultural alignment (Moneus & Sahari, 2024).

The study concludes that TT1 excels in genres requiring cultural sensitivity and stylistic depth (literary and legal), while TT2 dominates in scientific texts due to its technical precision. TT3 struggles across all genres, particularly in formal contexts, due to its conversational, literal approach. These findings suggest that hybrid workflows, combining TT2's efficiency with TT1's cultural expertise, could optimize Urdu-English translation outcomes, addressing the research aim to inform translation practices in bilingual settings.

Conclusion

The study compares the selected Urdu translations from English source texts across literary, scientific, and legal genres, produced by TT1, TT2 (ChatGPT), and TT3 (Snapchat's MY AI), using Walker's (2016) ranking method (1-4 scale, adapted from Aziz et al., 2012) to assess adequacy, fluency, and comprehensibility. The study addresses two research questions: (1) how TT1, TT2, and TT3 rank in terms of adequacy, fluency, and comprehensibility across genres, and (2) which genres show significant differences in rankings between TT1, TT2, and TT3. The findings expose distinct performance outlines, offering valuable understandings into translation practices in bilingual Urdu English contexts.

The genre-specific changes highlight TT1's strength in literary and legal translations, where cultural and stylistic tones are dominant, and TT2's gain in scientific texts, where technical accuracy is critical. These findings align with previous research (Fan et al., 2020; Moneus & Sahari, 2024) and address the research gap in multi-genre comparisons of modern AI tools like ChatGPT and MY AI in Urdu-English backgrounds (Fan & Chunlei, 2023). The employing of Vinay and Darbelnet's (1995) translation strategies exposes that adaptive methods (TT1 and TT2) improve quality in context-sensitive genres, while TT3's literal strategy bounds its efficiency.

Practically, the research recommends that hybrid AI-human workflows could enhance Urdu-English translations by combining TT2's technical competence with TT1's cultural expertise. This approach benefits translators

integrating AI tools, educators designing bilingual curricula, and AI developers enhancing tools for Urdu translation (Ali & Khan, 2024).

The research recommends future studies to discover further genres and newer AI models to assess their adaptability to Urdu's linguistic and cultural demands. Exploring collaborative AI-human translation processes could additionally refine hybrid approaches, enhancing translation quality across various contexts (Rehman & Saeed, 2025). By addressing these areas, the study lays a foundation for advancing translation practices and fostering effective communication in bilingual Urdu-English settings.

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