

Navigating AI-Driven Translation in Saudi Arabia's Media: Challenges and Opportunities

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Abstract

This study investigates the integration of Artificial Intelligence (AI) in Saudi Arabia's media translation industry within the framework of Vision 2030. As AI increasingly supports global translation practices, Saudi Arabia faces a pressing challenge: how to adopt these tools without compromising linguistic precision and cultural fidelity, particularly in media content rich with idioms, religious references and traditional expressions. The study adopts a hybrid theoretical framework combining the Unified Theory of Acceptance and Use of Technology (UTAUT) by Venkatesh et al. (2003) and Cultural Adaptation Theory (CAT) by Kim (1988) to explore both technological usability and cultural sensitivity. A qualitative approach was employed, including semi-structured interviews, focus groups and document analysis of AI and human translations of Saudi cultural terms. Findings reveal that while AI tools improve translation speed and efficiency, they often fail to capture emotional tone and cultural context, necessitating human refinement. UTAUT highlighted usability factors and adoption barriers, while CAT exposed AI's limitations in handling culturally embedded language. The study concludes that AI should complement, not replace, human translators in culturally significant contexts. It recommends hybrid workflows, enhanced training data, translator involvement in AI design and improved post-editing infrastructure. These findings inform strategies for culturally competent AI integration in alignment with Saudi Arabia's socio-cultural and technological goals.

Keywords: AI-Driven Translation, Cultural Adaptation, Media, Vision 2030

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1. Introduction

The integration of Artificial Intelligence (AI) in the translation industry is reshaping practices worldwide (Benmansour & Hdouch, 2023), with Saudi Arabia standing out as a particularly dynamic example. This transformation is closely tied to the country's Vision 2030, a strategic framework aimed at economic diversification and technological advancement, which includes the growth of the media sector (Moshashai et al., 2020). As this sector expands, it increasingly leverages AI to enhance productivity and maintain high standards of accuracy, which are essential for effectively engaging both local and international audiences.

The translation industry in Saudi Arabia faces unique challenges and opportunities, as revealed by the literature available (e.g., Alkhatnai, 2021; Aldossary, 2023). While artificial intelligence has the potential to drive operational efficiencies and expand Saudi media offerings globally, maintaining linguistic accuracy and cultural authenticity remains a key issue (Dania & Melissa, 2023; Mohamed et al., 2024). These are most evident in the case of the media industry, where translations have to effectively transmit nuances, humor, idiomatic words, and cultural references to appeal to diverse audiences (Hallberg, 2024). Therefore, there is a need to determine how effectively artificial intelligence can be integrated while at the same time addressing challenges that would undermine its effectiveness.

The current study aims to investigate wide-ranging use of artificial intelligence in the translation field in Saudi Arabia, in its specific media context, as well as its challenges and opportunities. By analyzing challenges faced by translation specialists, such as linguistic nuances and cultural references, and possible solutions to them, this research hopes to contribute to strategic goals envisioned in Vision 2030. In addition, it aims to provide suggestions on how to maximize use of AI in translation operations to make technological progress match cultural relevance and accuracy.

The expected outcomes of this study include a detailed examination of the impact of artificial intelligence on the development of translation practices in the media industry, highlighting both the benefits and drawbacks. This study will offer practical guidelines for the implementation of AI technologies in translation workflows with the objective of achieving a balance between business efficiency and the necessity of cultural sensitivity. Besides, it offers recommendations to policymakers and stakeholders in Saudi Arabia, suggesting an approach to the use of AI in translation practices that maintains respect for cultural differences while supporting the general economic and cultural objectives of the country.

To conclude, this study aims to answer these questions:

1. To what extent are AI translation systems effective in accurately translating culturally rich terms from Saudi media content into English?
2. What are the most common translation challenges AI systems face when handling idiomatic expressions, religious references, and traditional cultural concepts?
3. How do translation professionals in Saudi Arabia perceive the usability, reliability, and limitations of AI in their workflows?
4. What factors influence the acceptance and integration of AI tools by media translators in Saudi Arabia?
5. How can AI tools be optimized to better address cultural adaptation challenges in translation, and what role should human expertise play in this process?

2. Literature Review

The use of Artificial Intelligence (AI) has revolutionized translation services, mirroring a wider trend toward digitalization across different industries (Mohamed et al., 2024). Various studies have shown that AI has the potential to maximize translation efficiency by processing large amounts of text at incredible speeds and high levels of accuracy, qualities much valued in the fast-paced, ever-changing nature of current day's news environment (Nasser El Erafy, 2023; Cherepakhin, 2024). A study by Shah et al. (2019) and by Serag et al. (2019) confirms that translation tools supported by AI, such as by machine learning algorithms and neural networks, are recognized as being significantly cost-effective and as cutting down on turnaround times. However, these studies also unearth an underlying limitation: while AI is proficient at core translation tasks, it struggles with maintaining linguistic nuances and cultural subtleties, thereby requiring human intervention to plug these gaps.

The Vision 2030 program in Saudi Arabia is a driver for technological development in the country, specifically in terms of integrating artificial intelligence into translation services. Al-Sulaiti and Al-Khalifa (2020) analyze how this national master plan promotes modernization in efforts to improve economic diversification and promote cultural interchange through advanced translation technologies (Alshuwaikhat & Mohammed, 2017). The authors note that, despite the high use of AI technologies in ensuring efficiency in operations, major hindrances still exist when translating content with a considerable level of idiomatic expressions and cultural nuances, particularly in the media industry, where ensuring cultural authenticity is critical for engaging audiences efficiently.

The cultural dimension of AI translation poses serious challenges, most notably in terms of international media (Khasawneh, 2023; Falempin & Ranadireksa, 2024). The studies by AlKaabi et al. (2024) and Moriarty and O'Sullivan (2021) emphasize that successful translation of media requires not only linguistic accuracy, but also an in-depth cultural

context, as well as sensitivity to emotional and context-based nuances evoking resonance in diverse audiences (Li et al., 2023). These studies point out that modern AI capabilities fail to grasp delicate cultural nuances critical to translation needs in the media, thus reaffirming the need for an interactive system that marries computational power with human translators' cultural insight.

The development of artificial intelligence (AI) technologies has made their use increasingly vital in significant areas like Saudi media (Chan-Olmsted, 2019). The existing literature emphasizes the need for developing AI tools that have the flexibility to fit different environments in terms of culture, thus promoting a hybrid model where human minds augment the efficiency and effectiveness of AI (Kornacki & Pietrzak, 2024). Such a model is in line with Saudi Vision 2030, whose aim is to expand Saudi media's cultural impact without sacrificing its authenticity.

This study is unique in its focus on the Saudi Arabian media environment, tackling the challenges and opportunities that AI presents in this unique context. It aligns with Vision 2030's strategic plans by exploring how to maximize AI to balance productivity with sensitivity to cultural subtleties in translation practices, the subject that has been inadequately covered by past research. Diverging from more global assessments, this study presents a systematic review of the role that AI plays in translation work involving culturally sensitive sources, presenting strategic options for complimenting human efforts with AI. These strategies are meant to overcome limitations faced by AI when dealing with linguistic complexities regarding cultural references, while at the same time leveraging its capabilities for improved operational efficiency, thus filling an omission in past research.

3. Method

This study uses a qualitative approach to investigate the effectiveness of AI in generating culturally sensitive expressions used in Saudi media, while also investigating professionals' perspectives, behavioural intentions and challenges faced in the translation field. This approach is in line with its key aim of focusing on five fundamental research questions, which include both technological applicability and cultural adaptability aspects pertaining to translation supported by an expanded use of AI. The study is supported by a hybrid theoretical framework, drawn from the integration of UTAUT and CAT (More explanation is given in the next subsection). This integration allows this exploration not only into how people use and perceive AI, but also how it is able to incorporate cultural and context-based nuances that are critical to making correct and efficient translations.

For data collection, the study uses three combined qualitative methods: semi-structured interviews, focus group discussions and document analysis. The semi-structured interviews serve as a tool for data collection and were conducted on ten purposely selected participants, including professional translators, project managers and media content editors. They have firsthand experience with the use of AI tools in the field of media

translation in Saudi Arabia. The interviews' main aim is to gather information on the current role and effectiveness of AI in translating terms specific to Saudi Arabia, considering its usability and reliability and the translation issues specifically related to idiomatic sayings, religious terms and concepts with traditional cultural meanings. Additionally, the interviews aim to offer suggestions on how to improve cooperation with human contributors. The interview questions were framed following the UTAUT model, including performance expectancy, effort expectancy, social influence and facilitating conditions, and were combined with CAT concepts relating to cultural interpretation and context sensitivity.

To expand the data set and promote collective reflection, two focus group sessions were integrated in the study. Three participants took part in each group to articulate and reflect on experiences with AI tools in translation. The conversations promote collective insight into practical issues faced by translation methodologies with the aid of AI, focusing on cultural sensitivities and maintaining fidelity in communication through different media. Participants were asked to note prevailing strategies, best practices and possible avenues toward innovating the use of AI-based systems within culturally sensitive translation parameters.

This study, alongside interviews and group discussions, looks at ten machine-generated English translations of Saudi cultural vocabulary found in published articles in Saudi newspapers. This document analysis compares the translations produced by a machine with human translations in order to evaluate them in terms of accuracy, suitability of translation to culture, as well as semantic appropriateness. The study focuses on how consistently strong and weak points are exhibited in how machine translations handle culturally ingrained phrases, such as folk proverbs, religious utterances, idiomatic expressions and customary practices. This part of the study is directly driven by CAT and is meant to provide supporting qualitative findings garnered from participants' experiences.

For data analysis, a blend of deductive and inductive coding approaches was utilized: deductive coding was guided by UTAUT and CAT theories, while inductive coding allowed for new context-specific findings. The iterative nature of the analysis ensures that obtained findings provide an extensive and unbiased representative picture of advantages and limitations of AI translation in Saudi media.

Throughout the study process, ethical principles were maintained at all times. Informed consent was obtained from all participants, with centralized information distributed on the aims of the study, participants' confidentiality rights and their right to withdraw at any stage without providing a reason. The compiled data was kept confidential and kept in safe locations where only the researcher had access, ensuring participants' sensitivities while maintaining data integrity. This qualitative research method is also most suited to investigate the complexities involved in introducing artificial intelligence into translation

procedures in Saudi Arabia. It allows for extensive examination of both technological and cultural elements involved in translation and is directly applicable to enhancing adoption rates as well as translation quality.

3.1. Theoretical Framework

This study utilizes a composite theory framework that integrates Venkatesh et al.'s (2003) Unified Theory of Acceptance and Use of Technology (UTAUT) with the Cultural Adaptation Theory (CAT) proposed by Kim (1988). This is with a view to developing an overarching model for measuring the use of artificial intelligence (AI) in the field of media translation in Saudi Arabia. This is an approach best suited to address the dual goals of this research: measuring acceptance levels for AI technologies by translation experts and determining how effectively AI can handle culturally sensitive materials. The two theoretical frames bring different insights to the analysis, thus ensuring an extensive examination of both technological and cultural factors in AI translation.

The Unified Theory of Acceptance and Use of Technology (UTAUT) provides an indispensable framework for exploring the adoption, functionality, and acceptance of artificial intelligence (AI) technologies by professionals within the translation industry. UTAUT outlines a series of factors affecting technology adoption, such as performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh et al., 2003). These can be directly used in research to interpret the motivations behind the adoption or rejection of AI tools by translators as well as other stakeholders in this line of business. For instance, coding results gathered through interviews and focus groups with translation practitioners against these UTAUT constructs at analysis helps identify both perceived benefits and limitations of AI tools from an insider's perspective. The perceptions of usefulness of AI (performance expectancy) and ease with which such technologies may be incorporated into preexisting workflows (effort expectancy) help reveal both the opportunity benefits as well as limitations of AI tools. Social influence explains how others' thoughts, management orders, and industry trends influence willingness to adopt AI, while facilitating conditions highlight how strong IT support and organization structures play a role in affecting acceptance of AI. This inquiry provides an integrative view on what factors drive acceptance of AI technologies, shedding both practical concerns as well as perceived opportunities for optimizing translation efficiency through adoption of AI.

Further, CAT highlights the capabilities of AI in coping with complexities involved in the translation of media materials in different cultural environments (Kim, 1988). CAT is most suited when considering how AI meets the translation needs in coping with cultural symbolism, idiomatic expressions, and subtleties specific to context, all crucial for appealing to both Saudi and foreign audiences. In this study's framework, CAT is used as a qualitative framework for analysing translation samples, along with translation experts'

judgments on how culturally authentic outputs are produced by AI. For example, document analysis saw translations produced by AI examined to identify points at which the AI successfully adapted culturally referenced material or failed to mean what was intended. Similarly, interviews with translators can provide insights into particular difficulties they have when AI attempts to translate culturally sensitive vocabulary. The use of CAT makes possible an in-depth analysis of both cultural sensitivity and quality in AI-aided translations, thus laying a platform on which human intervention remains key and suggesting how AI tools can be improved to better fit cultural sensitivities.

By combining UTAUT theory with CAT theory, this research successfully addresses both technological and cultural aspects involved in translation's adoption of AI. This holistic framework allows for an in-depth exploration of complexities involved with applying AI in real-life translation scenarios, in this case, in environments having an added need for cultural sensitivity. The UTAUT model serves as a theoretical framework for analysing pragmatic factors affecting adoption by translation professionals, such as usability and underlying social dynamics within workplaces, while CAT theory places analysis in context regarding cultural environments affecting translation procedures. The integration of these two theories allows for consideration of both opportunities and limitations involved with the use of AI and leads to actionable suggestions toward improving adoption as well as utilization of AI technologies by Saudi Arabia's translation industry. Knowledge from this integrated framework aids in strategies that balance technological efficacy with cultural applicability. This two-pronged approach makes this hybrid framework an ideal theoretical orientation with which to examine the intersection of new translation technologies and diverse audience expectations.

4. Results and their discussion

This section provides the findings of the current study as follows:

4.1. Traditional Dance in Saudi Arabia

Table 1: AI Translation of العرضة النجدية (Najdi Ardah)

Cultural Terms from the Saudi Media	AI Translation of Cultural Terms
وتعد العرضة النجدية الحاضرة الدائمة في كل المناسبات، التي يشارك فيها الملك والأمراء والمواطنون، على أصوات الطبول، ويجدون فيها تعبيراً عن الفرح والسلام، وأيضاً هي أشبه بتجديد الولاء للملك لأنها كانت رقصة الحرب في زمن الحروب. (صحيفة الجزيرة 13-2-2018 م)	The Najdi Ardah is a constant presence at all national occasions, where the king, princes, and citizens participate to the rhythm of drums. It is seen as an expression of joy and peace, and also as a renewal of allegiance to the king, since it was originally a war dance during times of conflict.

(*Al-Jazirah Newspaper*, 13 February 2018)

Proposed translation: The Najdi Ardah, a traditional war dance,

Based on CAT, AI translation systems show partial effectiveness in rendering culturally rich terms from Saudi media into English. In the example of “العرضة النجدية,” the AI translation successfully conveys surface-level meaning—describing it as a war dance associated with national occasions. However, it fails to capture the deeper cultural resonance of the term, which embodies national pride, tribal valor, and symbolic loyalty to the monarchy. While the basic message is preserved, the emotive and cultural intensity is diluted. CAT emphasizes that effective cross-cultural communication requires not only linguistic accuracy but also cultural and contextual sensitivity, areas where AI often underperforms. Human revision that reintroduces terms like “traditional war dance” provides a closer cultural fit, indicating that AI alone is insufficient for full cultural fidelity.

The main translation challenges AI systems face, as highlighted through this example, stem from their inability to process idiomatic and context-bound meanings. Phrases such as “تجديد الولاء للملك” are translated functionally but miss their ritualistic and symbolic undertones. AI tends to flatten stylistic and emotional richness into neutral, technical language, which limits audience engagement and cultural resonance. According to CAT, successful translation must consider how cultural terms function pragmatically within the source culture, something AI systems struggle to interpret. These limitations reveal a broader issue: while AI excels at literal transfer, it lacks the interpretive competence necessary to navigate the culturally embedded nature of Saudi media discourse, underscoring the ongoing need for human-AI collaboration.

4.2. Folk Proverb in Saudi Arabia

Table 2. AI translation of الله يا زمري (Obscure Saying)

Cultural Terms from the Saudi Media	AI Translation of Cultural Terms
أثناء جلسة عامة، كنت أبدي وجهة نظري من خلال مداخلة أردت أن أجعلها خفيفة على السمع وال خاطر، فقررت أن أقحم فيها مثلاً من الأمثال المعروفة، كنت أظن أن هذا المثل الذي سوف آتي على ذكره معروف لدى الجميع... وكان المثل الذي استعنت به هو «<u>الله يا رمزي</u>»!! صحيفة عكاظ (2009-7-21م)	During a public session, I was expressing my opinion through an intervention that I wanted to keep light on the ears and pleasant in tone. So, I decided to incorporate a well-known proverb, assuming it would be familiar to everyone. The proverb I chose to use was “<u>Lillah ya Ramzi!</u>” (<i>Okaz Newspaper</i>, 21 July 2009)
Proposed Translation: It is all lost now; we can only hope for divine compensation.	

Based on CAT, the AI translation of the Saudi folk expression “الله يا رمزي” demonstrates significant limitations in conveying culturally embedded meaning. The AI rendered the proverb as “Lillah ya Ramzi!”, a literal transliteration that neither clarifies the identity of “رمزي” nor interprets the intended sentiment of the phrase. In Saudi dialect, such expressions are often emotionally charged and context-specific, functioning more as cultural idioms than translatable phrases. CAT stresses the importance of communicative functionality over direct equivalence, highlighting that the AI output lacks pragmatic relevance and fails to resonate with non-Arabic audiences unfamiliar with this idiom. The researcher’s proposed translation, “It is all lost now; we can only hope for divine compensation”, offers a more culturally adapted version that conveys the original meaning and emotional weight, thus aligning better with CAT principles of functional and cultural equivalence.

The translation challenge here stems primarily from the proverb’s obscurity and embedded cultural connotation, which AI systems are currently unequipped to decipher. Folk sayings like “الله يا رمزي” are deeply rooted in shared social memory and regional vernacular, making them highly resistant to literal translation. The AI system, lacking access to sociolinguistic context and emotional framing, defaults to surface-level processing, resulting in a nonsensical output that obscures meaning rather than clarifying it. CAT identifies this as a failure of cultural decoding, where understanding requires both linguistic competence and cultural immersion. This case reinforces the idea that AI struggles most when dealing with idiomatic, emotionally expressive, and culturally loaded language, underscoring the indispensable role of human translators in ensuring cultural resonance and communicative impact.

4.3. Historical Reference in Saudi Arabia

Table 3. AI of سوق عكاظ (Ancient Cultural Market)

Cultural Terms from the Saudi Media	AI Translation of Cultural Terms
وكان سوق عكاظ أكبر أسواق العرب في الجاهلية والإسلام، وأشهر ملتقى للتجارة والفكر والأدب والثقافة المتنوعة للقبائل العربية، والوافدين إلى السوق من أنحاء الجزيرة العربية. صحيفة الاقتصادية (2018-6-27 م)	Souq Okaz was the largest marketplace of the Arabs during both the pre-Islamic and Islamic eras, and the most renowned gathering for trade, thought, literature, and the diverse culture of Arab tribes and visitors from across the Arabian Peninsula. (<i>Al-Eqtisadiyah Newspaper</i>, 27 June 2018)
Proposed Translation: Souq Okaz, the most famous pre-Islamic and early Islamic marketplace, was a vibrant hub for trade, poetry, debate, and cultural exchange among Arab tribes.	

Based on CAT, the AI translation of the historical reference “سوق عكاظ” demonstrates a reasonable grasp of surface content but underrepresents the cultural and historical depth the term conveys. The phrase “the largest marketplace” and “renowned gathering for trade, thought, literature...” are accurate but do not fully capture the profound cultural symbolism of Souq Okaz in Arab memory. In pre-Islamic and early Islamic history, this market was not only a site for commerce but a sacred arena for poetic contests, tribal diplomacy, and cultural identity, which CAT would classify as high-context meaning. The AI translation, while factually correct, lacks this cultural richness, reducing a historically symbolic institution into a mere trading venue. The proposed human translation enhances the text by including culturally resonant terms like “poetry,” “debate,” and “cultural exchange,” aligning more closely with CAT's focus on pragmatic and symbolic equivalence.

The main challenge for AI in this example lies in its inability to recognize or convey the multi-layered significance of cultural landmarks. CAT posits that successful translation must reflect how the source culture emotionally and symbolically perceives its institutions, which the AI fails to do here. The phrase “سوق عكاظ” is deeply embedded with notions of Arab heritage, oratory prestige, and intertribal unity, but the AI's neutral rendering misses these cultural cues. This points to a broader pattern in AI translation systems where historical and cultural terms are reduced to utilitarian definitions, stripping them of their narrative power and social relevance. Consequently, while AI can produce grammatically and semantically sound translations, it lacks the interpretive frameworks needed to contextualize and culturally adapt historically rich terms—highlighting once again the necessity of human intervention for full communicative effectiveness.

4.4. Hospitality Tradition

Table 4. AI translation of القهوة السعودية (Saudi Coffee Rituals)

Cultural Terms from the Saudi Media	AI Translation of Cultural Terms
كما عُرفت خطوات تقديم القهوة قديماً بمسميات محددة اندثرت اليوم، وارتبطت دلالاتها القديمة بالتراث المحلي، فمثلاً يُطلق اسم فنجان «الهيّيف» على الفنجان الذي يشربه المضيف أمام ضيوفه قبل التقديم لإثبات سلامة القهوة. أما فنجان «الكيف» فهو فنجان يحتسيه الضيف متلذذاً بطعم القهوة ويتبعه فنجان «الضيف» الذي يرمز للكرم ومكانة الضيف، ثم فنجان «السيف» الذي باحتسائه يتعاهد الضيف والمضيف على التأزر في الشدائد. صحيفة الشرق الأوسط (2023-10-1 م)	The traditional steps of serving coffee were once known by specific names that have faded over time, with their former meanings deeply rooted in local heritage. For instance, the “Fannjan al-Haif” is the cup the host drinks from in front of the guests to prove the coffee's safety. The “Fannjan al-Kayf” is enjoyed by the guest to savor the coffee's flavor, followed by the “Fannjan al-Dhayf”, symbolizing generosity and the guest's esteemed status. Lastly, the “Fannjan al-Sayf” represents a pledge between host and guest to stand

	together in times of hardship. (<i>Asharq Al-Awsat Newspaper</i>, 1 October 2023)
Proposed Translation: “Fannjan al-Haif (‘safety cup’), Fannjan al-Kayf (‘pleasure cup’), Fannjan al-Dhayf (‘guest cup’), and Fannjan al-Sayf (‘sword cup’) represent stages of hospitality reflecting trust, enjoyment, honor, and solidarity.”	

Using CAT as a lens, the AI translation of Saudi coffee rituals offers a structured and informative account but does not fully convey the symbolic richness and emotional resonance embedded in the original. While the translation clearly explains the function of each coffee cup, *Haif*, *Kayf*, *Dhayf*, and *Sayf*, it stops short of translating their cultural weight. These terms represent more than stages of serving; they are rituals of social bonding and tribal identity, deeply tied to values of trust, generosity, and solidarity. CAT emphasizes the need to translate not just the text but the cultural experience, which is achieved more effectively in the proposed human translation. By labeling each cup with functional cultural equivalents like "safety cup" or "sword cup," the improved version better captures the narrative structure and communal values underlying this hospitality tradition.

The core translation challenge for AI here is its inability to navigate culturally coded practices that depend on shared heritage and social rituals. CAT identifies this as a failure to engage with the pragmatic and affective dimensions of communication, AI describes what happens but not *why it matters* within the cultural context. Rituals like Saudi coffee serving are not only actions but performative affirmations of social cohesion and tribal ethics. The AI system, limited to literal equivalence, overlooks this ceremonial function. This example illustrates how AI may excel in descriptive accuracy but underperforms in communicating cultural intent, highlighting the ongoing need for human translators to ensure that such translations resonate across cultural boundaries with the intended depth and nuance.

4.5. Traditional Culture

Table 5. AI translation of مزاين الإبل (Camel Beauty Contest)

Cultural Terms from the Saudi Media	AI Translation of Cultural Terms
وبدأت مسيرة بن لبدان، في عالم الإبل منذ الصغر في منطقة «الحبل» في صحارى الشرقية، حيث كان يراقب جده ويتعلم من والده أساسيات التعامل معها وكيفية العناية بها وتمييز أماكن جمالها، الذي أخذ يزداد معه عبر متابعته المزيد من التنافس في <u>المزاينات</u> بين الأقارب وعلى مستوى	Bin Labdan's journey in the world of camels began at an early age in the "Al-Habl" region of the Eastern deserts, where he used to observe his grandfather and learn from his father the basics of camel handling, how to care for them, and how to

محدود. عكاظ (2021-12-8)	identify their points of beauty. His passion grew as he followed more beauty competitions (mazayen) among relatives and within a limited circle. (Okaz Newspaper, 8 December 2021)
Proposed Translation: “Camel beauty contests, locally known as <i>Mazayen</i> , are prestigious events celebrating camel lineage, appearance and Bedouin heritage.”	

Using CAT, the AI translation of “مزايين الإبل” (Camel Beauty Contest) demonstrates a reasonable literal rendering but misses the deeper socio-cultural significance of the term in the Saudi context. While the AI preserves factual information, referring to camel handling, observation, and beauty competitions, it fails to reflect the prestige, tradition, and tribal identity deeply embedded in these events. The phrase “beauty competitions (*mazayen*)” offers little cultural insight to a non-Arabic audience unfamiliar with the practice. In contrast, the human-enhanced version enriches the translation by framing *Mazayen* as “prestigious events celebrating camel lineage, appearance and Bedouin heritage,” which aligns more effectively with CAT’s call for functional, culturally adaptive translation.

The translation challenge here stems from AI’s inability to decode embedded cultural practices and values, such as those linked to Bedouin pride, generational knowledge, and social status symbolized in camel competitions. CAT emphasizes not only translating lexical meaning but also transmitting the cultural roles that concepts play in their native environments. AI, limited to surface-level semantics, fails to recognize the ceremonial and heritage-based nature of *mazayen*. This reflects a broader pattern in AI translations where culturally specific practices are oversimplified, underscoring the necessity of human translators to convey cultural prestige, symbolic weight, and community pride with the nuance they deserve.

4.6. Idiomatic Expressions

Table 6: AI of the idiomatic expression البندق العوجا وغيرها في سياق رياضي

Cultural Terms from the Saudi Media	AI Translation of Cultural Terms
قيل قديماً كلُّ يَغْنَى على ليلاه! نحن في فصل الصيف وقديماً أيضاً قيل هذه أخبار صيف! في اليوم والليلة نقرأ ونسمع أخبار اللاعبين مصحوبة بأحلام الجماهير... المشكلة أن هناك من يثق بكلامه، وبما أن المثل الشعبي القديم الذي يقول “البندق العوجا أحياناً فيها رمي”، فحين يصدق مرة وتتم معه الأمور في خبر ما.	It was said in the past, “Everyone sings of their own Layla!” And as we are in the summer season, another old saying goes, “These are summer tales!” Day and night, we read and hear news about players, accompanied by the dreams of fans. The problem is that some people trust these reports. As the old proverb says, “Even a crooked rifle sometimes hits

صحيفة عكاظ (2011-8-4)	the mark, ” so when such a source gets it right once, people start believing their news. <i>(Okaz Newspaper, 4 August 2011)</i>
Proposed Translation: “As the folk saying goes, ‘Even a crooked rifle sometimes hits the mark,’ suggesting that unreliable sources may occasionally get it right.”	

Applying CAT, the AI translation of the idiomatic expression “البندق العوجا أحياناً فيها رمي” shows a commendable attempt to retain figurative meaning by rendering it as “Even a crooked rifle sometimes hits the mark.” This version effectively conveys the intended message that unreliable sources may occasionally be right. However, from a CAT perspective, while the proverb is translated idiomatically rather than literally, indicating a higher level of linguistic adaptation, the cultural context and rhetorical tone embedded in the original are somewhat flattened. The metaphor of a “crooked rifle” in Arabic not only conveys unpredictability but also reflects a regional idiom rooted in Bedouin or rural oral culture, which carries connotations of skepticism mixed with ironic acceptance. The AI translation, though accurate, lacks a framing explanation to help non-Arabic audiences appreciate its cultural texture and pragmatics.

The primary challenge for AI in this case is capturing tone and contextual resonance in idiomatic language. CAT stresses that idioms function as cultural shorthand, evoking shared values, humor, or critique within a speech community. In this example, the expression sits within a sports journalism context, where satire and public commentary blend. The AI translation omits the playful sarcasm and societal commentary typical of Arabic idiomatic usage in media, reducing the proverb to a neutral phrase. This underscores a recurring issue in AI translation: it often lacks sensitivity to tone, register, and pragmatic nuance, particularly in culturally saturated expressions. Hence, while the AI output here is broadly effective in meaning, it still falls short of cultural adaptation, reinforcing the value of human contextualization in idiomatic translation.

4.7. Superstition and Belief

Table 7. AI of العين (Evil Eye)

Cultural Terms from the Saudi Media	AI Translation of Cultural Terms
قبل سنوات دعانا أحد زملائنا في العمل لزيارته في منزله.. حينما دخلنا المنزل وجدنا سيارتين فارهتين في فناء المنزل الواسع.. قال له زميل آخر: "ما شاء الله عندك هالسيارتين وتداوم على سيارة متهالكة؟! " ردّ بارتباك واضح: "لا تلوموني.. العين.. أخاف من عيون الناس".	A few years ago, one of our colleagues at work invited us to visit his home. When we entered, we saw two luxurious cars parked in the spacious courtyard. Another colleague said to him, “Masha’Allah, you have these two fancy cars yet you commute in a

جريدة الوطن السعودية (2012-5-21 م)	rundown one?" He replied, visibly flustered, "Don't blame me... <u>the eye</u> ... I'm afraid of people's envy." (<i>Al-Watan Newspaper, Saudi Arabia, 21 May 2012</i>)
Proposed Translation: "Do not blame me... it is the <i>evil eye</i> ; I fear people's envy might bring bad luck."	

From a CAT perspective, the AI translation of the phrase "العين" (the evil eye) demonstrates moderate effectiveness in conveying meaning but lacks the full cultural and emotional weight of the original. The phrase "the eye... I'm afraid of people's envy" identifies the referent, yet it does not fully communicate the depth of cultural belief surrounding the evil eye in Saudi and broader Arab culture, where it is not merely envy but a supernatural force feared to cause real harm. CAT stresses the importance of translating both explicit content and cultural connotation. The human-proposed version, "it is the evil eye, I fear people's envy might bring bad luck", enriches the translation by naming the concept explicitly and aligning it with the culturally rooted idea of envy causing misfortune, which better resonates with non-Arabic audiences.

The main translation challenge lies in AI's tendency to under-contextualize culturally embedded beliefs, particularly when they are tied to superstitions, religious concepts, or informal speech. In Arab societies, mentioning "العين" in conversation evokes a deeply felt, often religiously framed belief that connects envy with actual physical or material harm. AI treats it as a metaphorical statement rather than a commonly held worldview, thereby flattening the cultural intensity. CAT highlights that successful translation must not only communicate what is said, but why and how it is understood in the cultural setting. In this case, human intervention restores the pragmatic meaning and emotional resonance that AI misses, reinforcing the idea that idiomatic and belief-laden expressions require culturally informed translation strategies.

4.8. Religious Honorific

Table 8. AI translation of رحمه الله وجزاه الله خير الجزاء

Cultural Terms from the Saudi Media	AI Translation of Cultural Terms
وفي هذه المناسبة المجيدة، نستذكر سيرة القائد الملك عبد العزيز بن عبد الرحمن الفيصل آل سعود - رحمه الله وجزاه الله عنا خير الجزاء - الذي أفنى عمره في مواجهة المخاطر وتحديات الحياة في الجزيرة العربية. صحيفة البلاد (2023-9-23 م)	On this glorious occasion, we recall the legacy of the leader King Abdulaziz bin Abdulrahman Al Faisal Al Saud — <u>may Allah have mercy on him and reward him greatly on our behalf</u> — who devoted his life to confronting dangers and overcoming

	the challenges of life in the Arabian Peninsula. (<i>Al-Bilad Newspaper</i> , 23 September 2023)
Proposed Translation: "...may Allah have mercy on him and reward him abundantly, expressions of deep respect and gratitude in Islamic tradition."	

Using CAT, the AI translation of the religious honorific "رحمه الله وجزاه الله خير الجزاء" demonstrates strong semantic accuracy but falls short of conveying the cultural and spiritual connotations embedded in the expression. The AI-rendered phrase, "may Allah have mercy on him and reward him greatly on our behalf", accurately represents the lexical meaning; however, it omits the contextual depth and cultural function of this formulaic expression in Arabic, particularly within Islamic discourse. CAT emphasizes the need to translate not only words but cultural intent, especially when language functions as an act of religious reverence and collective memory, as seen in tributes to revered figures like King Abdulaziz. The improved translation, which adds "expressions of deep respect and gratitude in Islamic tradition," better fulfills CAT's principle of functional equivalence, making the cultural significance clear to non-Muslim or non-Arabic readers.

The main challenge here is that religious expressions in Arabic often serve dual purposes: literal invocation and social performance of respect. AI translations, while increasingly adept at rendering religious formulas, often miss these ritual and emotive dimensions that CAT identifies as crucial for meaningful cross-cultural communication. The expression "جزاه الله خير الجزاء" does not just mean "reward him greatly," but implies divine favour and ultimate spiritual gratitude, often used to honor a deceased person's lifetime of sacrifice or virtue. AI's literalism lacks this interpretive layer. This highlights a broader limitation of AI translation when dealing with religious honorifics, where human translators remain essential for restoring both the intended reverence and cultural resonance expected by target audiences.

4.9. Hejazi Idiom

Table 9. AI translation of "من قلة عقلك يا بدور خلّيتني في الحارة مشهور"

Cultural Terms from the Saudi Media	AI Translation of Cultural Terms
ولعل المثال الحجازي القديم "من قلة عقلك يا بدور خلّيتني في الحارة مشهور" هو خير مثال. إذ يبدو أن صاحب هذا المثل كان يمر بتجربة مريرة مع زوجته بدور، التي على الأرجح كانت (منكدة عليه عيشته). صحيفة عكاظ (7-2-2025 م)	Perhaps the old Hijazi proverb, (" Out of your lack of sense, Badour, you made me famous in the neighborhood "), is the most fitting example. It seems the man behind this saying was going through a bitter experience with his wife, Badour, who most likely was making his

	life miserable. (Okaz Newspaper, 7 February 2025)
Proposed Translation: "Thanks to your nonsense, Badour, now I am the talk of the town!"	

Using CAT, the AI translation of the Hejazi idiom “من قلة عقلك يا بدور خلّيتني في الحارة” captures the literal structure but fails to fully adapt the sarcastic tone and cultural texture of the original. The AI's rendering, “Out of your lack of sense, Badour, you made me famous in the neighborhood”, is grammatically correct yet misses the humorous, ironic edge that the idiom conveys in Saudi social contexts. In contrast, the improved version, “Thanks to your nonsense, Badour, now I am the talk of the town!”, better reflects the pragmatic intent and emotional flavor of the expression, aligning more effectively with CAT's principle of functional and affective equivalence. The idiom, rooted in everyday speech, is often used to express public embarrassment and frustration in a light, sarcastic tone, which AI struggles to convey without cultural contextualization.

The key translation challenge here lies in the intonation and implied social meaning carried by regional idioms. CAT highlights that idiomatic expressions often encode shared assumptions, humor, and interpersonal dynamics that do not directly translate across cultures. AI typically lacks sensitivity to these pragmatic cues, offering literal or awkwardly formal versions that may obscure the speaker's attitude. In this case, AI fails to recognize the performative sarcasm intended to portray emotional irony rather than factual complaint. The human translation, by choosing more colloquial and contextually resonant language, succeeds in adapting the phrase for an English-speaking audience while preserving its cultural identity and tone, illustrating the value of human insight in translating culturally dense idioms.

4.10. Pilgrims

Table 10. AI Translation of ضيوف الرحمن (“Guests of the Merciful”)

Cultural Terms from the Saudi Media	AI Translation of Cultural Terms
ووسط دعم ومتابعة مباشرة من خادم الحرمين الشريفين الملك سلمان بن عبد العزيز، ولي العهد رئيس مجلس الوزراء الأمير محمد بن سلمان، يتم استقبال <u>ضيوف الرحمن</u> بمرافق ذات جودة عالية، وبنية تحتية متقدمة، وخدمات رقمية، تساعد الجميع على أن ينعموا بتجربة إيمانية مميزة ستبقى في أذهانهم. صحيفة عكاظ (2024-5-13 م)	With the direct support and supervision of the Custodian of the Two Holy Mosques, King Salman bin Abdulaziz, and Crown Prince and Prime Minister Mohammed bin Salman, <u>the Guests of the Most Merciful (pilgrims)</u> are welcomed with high-quality facilities, advanced infrastructure, and digital services — all designed to ensure a unique spiritual experience that will remain in their memories.

(Okaz Newspaper, 13 May 2024)

Proposed Translation: “The pilgrims, honoured in Islamic tradition as *Guests of the Merciful*,....

From a CAT standpoint, the AI translation of “ضيوف الرحمن” as “Guests of the Most Merciful (pilgrims)” is semantically accurate but requires cultural deepening to fully resonate with non-Arabic audiences. While the AI correctly identifies the referent and even appends a clarifying parenthetical, it treats “Guests of the Most Merciful” as a neutral title, rather than as a spiritually elevated status bestowed upon pilgrims in Islamic culture. CAT stresses that translations must account for both the linguistic form and the socio-religious function of such expressions. In this case, the proposed translation, “The pilgrims, honored in Islamic tradition as Guests of the Merciful”, performs better by explicitly articulating the honorific and devotional dimension, aligning the phrase with the reverence it commands in Arabic discourse.

The challenge AI faces here lies in the symbolic interpretation of religious epithets. In Islamic cultures, calling pilgrims “Guests of the Merciful” implies a divine invitation and sanctified status, invoking not just hospitality, but a form of divine nearness and spiritual privilege. AI systems, trained to prioritize denotative meanings, often miss this connotative richness, presenting culturally sacred language in overly literal or generic ways. CAT highlights that such expressions carry identity-forming and ritual significance, which are essential to retain in cross-cultural translation. Thus, human intervention is necessary to contextualize and elevate the language to match its emotional, religious, and cultural weight, ensuring that the audience not only understands the term, but feels its intended spiritual magnitude.

4.12. Analysis of Interviews and Focus Groups

The adoption of artificial intelligence translation tools in Saudi Arabia's media industry presents a complexity with a mix of guarded optimism and skepticism, as studied from the perspective of UTAUT. In terms of usability and effort expectancy, most translators agree that AI translation tools have features that make them more user-friendly and also improve operational efficiency. Many participants, such as Participant 1 and Participant 5, noted that these tools are particularly advantageous during times of high demand, such as in cases involving breaking news. The tools support translators in generating quick initial drafts, which may then be manually edited. Participant 4 expressed that ease to use with respect to AI is not a barrier, but it is limitations in terms of output quality that discourage uncompromised integration of these tools. This is an insight that brings out an underlying difference between operational usability and functional reliability when adopting AI technologies.

Despite the wide acceptance for convenience, the reliability of AI translations, especially with regard to culturally rich or emotive text, still raises considerable skepticism. Participant 2 noted that AI technologies often create only a basic framework on which detailed translations are then produced by human laborers afterward. Participants 1, 4, and 8 explicitly mentioned religious text as high-level areas where AI has shortcomings with regard to respect and context sensitivity. In addition, Participant 3 reported that an emotive tone conveyed by condolences produced by AI systems is ranked as insincere or unemotional, pointing to a sharp contrast in syntactic accommodation and emotive sensitivity. Such an imbalance erodes performance expectations from AI systems, ruling in an appeal to human judgment to ensure high standards. Participant 9 succinctly summarized this view: “It is just faster, not better.” As such, translators recognize efficiency as improvable by applying AI, but they hesitate to outsource high-stakes or culturally dense material to these technologies.

The degree to which professionals take up and use artificial intelligence-based translation technologies is affected by several social and structural factors, as is in line with UTAUT principles with regard to social influence and facilitating conditions. Social pressures, most notably ones stemming from managerial and institutional structures, have been noted as key facilitators in AI technologies' integration. Participant 9 summarized that media houses promote AI-based tools as affordable means for delivering within tight deadlines, sometimes at the expense of quality. Similarly, Focus Group Participant A stated that translators' competence is often measured by how fast they translate, thus implicitly supporting materials produced by AI regardless of cultural fit. This is an instance where translators' practice is conditioned by institutional standards and rewards despite such standards colliding with tradition-based standards of quality.

The extent to which translators embrace or refuse AI tools is greatly impacted by the enabling conditions created by their respective organizations. Participants repeatedly cited the lack of post-editing training and the absence of feedback mechanisms integrated within AI systems. For instance, Participant 10 pointed out that many colleagues hold back from using AI because of a lack of training in how to edit its output effectively. Further, Focus Group Participant C stated that the integration of AI with CAT tools is obstructed by a lack of technical support. These findings suggest that while AI technologies are available, the infrastructure necessary to support competent and knowledgeable use is not consistently in place. Further, Participant 8 suggested that AI systems currently do not adjust based on corrections made by users, a drawback that discourages users and prevents continuous improvement. This lack of adaptability not only diminishes the effectiveness of the tool but also undermines user confidence in its possible future utility.

From the perspective of CAT, the most significant limitation of AI translation lies in its inability to handle culturally embedded meanings. Participants provided multiple examples where AI mistranslated idioms, traditional expressions, or religious honorifics. Participant

6, for example, criticized AI's rendering of Saudi heritage content, noting that it often reduces culturally significant festivals like "العرضة" to vague descriptions such as "folk events," thereby stripping them of their identity and historical significance. This issue reflects CAT's emphasis on the need for translation to preserve not just lexical meaning but also cultural symbolism, emotional resonance, and pragmatic function.

Colloquial and idiomatic expressions pose enormous challenges in translation contexts. Participant 7 gave an illustrative example where the colloquial sports idiom "دق خشمه" was literally translated as "hit his nose," creating a translation that missed out on competitive connotations of "defeated him badly." Such examples indicate limitations to artificial intelligence to comprehend pragmatic intentions behind figurative speech. In line with Cultural Adaptation Theory (CAT) principles, translation success hinges on an appreciation for context and social uses of words—areas where artificial intelligence still lags behind. A few participants (P1, P4, FG B) also mentioned that religious sayings like "جزاه الله خير الجزاء" and "رحمه الله" were watered down or deprived of sacred connotations, reflecting a failure in transmitting their spiritual and emotive appeal.

To maximize the effectiveness of AI in translating material that is rich in cultural nuances, many participants proposed the adoption of human-AI hybrid models. In this paradigm, AI generates first drafts that are then refined by professional translators. This approach would combine the speed of automation with the cultural intelligence that can be provided by human expertise, a synergy that aligns well with CAT's emphasis on flexible mediation between source and target cultures. Focus Group Participant C endorsed this model, noting that "the technology is fast, but not culturally aware." This type of hybridization not only reduces the possible risks of cultural insensitivity but also allows translators to regain editorial control over the final outputs.

Participants offered concrete suggestions toward improving artificial intelligence tools in order to enable cultural adaptation. One such notable suggestion involved developing localized databases for languages that give priority to dialects and religious terms, coupled with interactive learning features that adapt depending on users' inputs (FG B). In addition, a strong role was assigned to translators when building such systems, as Focus Group Participant B claimed that contemporary tools are built without users' input and thus yield outputs that do not answer real translation needs. Finally, education programs on post-editing techniques and tool integration for AI (FG C) were noted as key to ensuring higher acceptance and efficiency in translation with aid from AI.

In conclusion, while Saudi Arabian media professionals embrace the potential offered by artificial intelligence translation technologies to improve operational effectiveness and effectively manage critical communications, these remain hindered by trust, cultural sensitivity, and emotional connection challenges. The degree to which such technologies are accepted and integrated relies on social factors, training support, and system

adaptability. The best way to resolve such challenges related to cultural adaptation is through a holistic framework focusing on involving human translators at its core in technology design and considering cultural and practical facets with regards to language, as demonstrated by UTAUT and CAT models.

5. Conclusion

The study reveals a nuanced landscape in which AI translation tools are gaining traction in Saudi Arabia's media sector but face substantial limitations when dealing with culturally rich content. While an appreciation exists for AI's speediness and effectiveness when operating in high-stakes situations, such as news reporting, its inability to interpret idiomatic expressions, religious overtones, and local conceptions is a great shortfall. The respondents mentioned that the output provided by AI is often emotionally shallow and culturally inaccurate and thus needs human input to improve. The UTAUT model clarified that despite translators finding AI tools to be easy to use, these tools' limited reliability and context-specific comprehension hinder greater adoption. On the other hand, CAT highlighted shortcomings in AI's engagement with deeply rooted cultural values, particularly in expressions filled with symbolic, ritualistic, or historical values. The challenges expressed in the research justify that AI translation is inherently inadequate when dealing with contexts in which language is strongly rooted in cultural identity, emotion, and faith.

This study asserts that artificial intelligence can act as a supportive translation tool in Saudi Arabia, particularly for urgent or generic-type content. However, its capabilities at present are inadequate to translate words and phrases that have deep-seated cultural contexts. Human translators are still indispensable in maintaining cultural authenticity, richness, and expressive intention. The application of the UTAUT and CAT theoretical models is shown to effectively respond to both technological suitability and cultural complexities involved in translation scenarios. In conclusion, this research indicates that AI needs to be embraced as an augmentative device and not a replaceable agency for human translators, particularly where high levels of cultural interpretation and context are essential.

For optimizing the efficacy of AI translation in the Saudi Arabian media industry, several strategic suggestions are made here. Firstly, media outlets should utilize a hybrid model in which machine learning tools create initial drafts, later edited by human translators in order to ensure cultural consistency and contextual nuance. Second, it is critical to increase training datasets for AI tools by adding culturally specific corpora that incorporate local dialects, religious terminology, and historical reference. Having human translators involved at both design and evaluation phases ensures these tools precisely meet actual translation needs while also conforming to cultural conventions. Moreover, media businesses should engage in specialized post-editing training that equips translators

with autonomy to adjust AI-generated text without sacrificing tone, subtlety, and overall integrity. The integration of interactive learning capabilities into AI technologies is critical for ensuring improvements based on human feedback, progressively enhancing cultural sensitivity. Finally, strong institutional support and availability of requisite technologies are crucial for seamless adoption of AI tools into translation operations, making them pragmatic and ensuring long-term adoption. In conclusion, though greater efficiency is only one benefit provided by AI, precise translation of Saudi Arabian media is contingent on intentional human oversight and culturally based development, factors that will deeply impact ethical and communication implications of AI translation within Vision 2030.

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