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Contents

Analyzing the Performance of Gemini, ChatGPT, and Google Translate in Rendering English Idioms into Arabic

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This study examines the translation of 155 idioms by different machine and AI translation systems, namely Google Translate, ChatGPT, and Gemini. Various sources were utilized to collect the data, including books, magazines, interviews with native English speakers, and various websites dedicated to English idioms. This data was analyzed based on a framework built on the taxonomy of Baker (1992). The quantitative part examined the frequency of translation approaches each program used to render the idioms. The qualitative part focused on selected examples to highlight the potential issues of each approach in conveying the style and sense-based features of the idioms. The findings showed that idiom translations were done through three main approaches: literal, sense-based, and idiom-to-idiom translation. Google Translate had the highest percentage of literal translation at 76%, followed by ChatGPT at 53%, while Gemini had the lowest percentage at 21%. For sense-based translations that use nonfigurative language, Gemini was in the lead at 63%, followed by ChatGPT, with a wide gap at 35%. Google Translate had the least sense-based renditions at a mere 11%. When it came to translating idioms using figurative language, Gemini once again was in the lead with 16%, followed closely by ChatGPT at 13%, with Google Translate right behind at 12%. The study concludes that although there is vast improvement and advancement in technology, machine translation has yet to master nonliteral language such as idioms.

Keywords: Google Translate; ChatGPT; Gemini; Idioms; Arabic; English; Translation

Artificial intelligence and digital technology are reshaping all aspects of life, highlighting how technology now permeates every venue of our daily existence (Nasim, AlTameemy, Ali, & Sultana, 2022; Zia-ud-Din & Elhajraoui, 2023). Translation is a complicated task, and its quality is affected by both the properties of the text and the competencies of the translator. Additionally, translation is a prominent tool of communication, especially in this globalized age. Moreover, the advancement of technology also allowed for this process to be automated through machine and artificial intelligence translation (Farghal & Haider, 2024). While this was popularized due to its efficiency and simplicity, it is essential to ensure that its results show quality as well. Furthermore, this quality must not be limited to overly simplistic texts. Idiomatic expressions represent one area that could challenge machine translation and affect the quality of its outcomes. Since the meanings of idioms are nonliteral, they require certain strategies in their rendition, which differentiates their translation from general translation. Whether machine translation can properly apply these strategies has yet to be determined, and thus it is uncertain whether they are an adequate tool for communication.

Language is the most prominent form of communication between humans in which people structure their thoughts by syntactically arranging semantically meaningful utterances (Ellis, 1999; Kasirzadeh & Gabriel, 2023). While words are usually building blocks that are strung together to express a thought, some forms are fixed structures with pre-agreed-upon meanings. This is the case for idioms that carry a specific meaning that is usually unrelated to their linguistic constituents (Gehrke & McNally, 2019). Since idioms do not derive their sense from their words, and instead, their meaning is understood from culture, use, and familiarity, translating them from one

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language to another poses a challenge (Almrayat, Farghal, & Haider, 2024)

Translation is a cross-linguistic and cross-cultural tool of communication, but it is impacted by linguistic and cultural gaps (Haider & Shohaibar, 2024; Shuhaiber & Haider, 2023; Weld-Ali, Obeidat, & Haider, 2023). Translators must, therefore, work around these differences to convey the sense and sometimes style of the source text. Furthermore, due to these differences, exact equivalence is not possible. Therefore, one type of equivalence may have to be sacrificed to prioritize the other. Generally, sense-based equivalence is prioritized, but this can be affected by external factors like text type and target audience (Haider, Saideen, & Hussein, 2023). Thus, when translating idioms, it is ideal to balance style and sense, but sense should remain the priority when this balance is not possible (Farghal & Al-Hamly, 2015). While style has some significance, it is not equal to that of sense. This indicates that literal or word-for-word translations should be avoided (Farghal & Shunnaq, 1999).

Additionally, the translation of idioms is a complex process that begins with the recognition of idioms, after which the translator must decide on the proper strategies to best render the idiom in the target language (Farghal & Saeed, 2022). This is a challenging area of translation that indicates skill and knowledge, yet it is still expected from machine translations even though machines do not share the cognitive abilities of humans (Baziotis, Mathur, & Hasler, 2022). Machine translation has established itself as a useful and widely used tool (Zakraoui, Saleh, Al-Maadeed, & Alja'am, 2021). Recently, more tools have become available and are quickly spreading; many of these utilize artificial intelligence to synthesize more human-like translations (Wang, Wu, He, Huang, & Church, 2021). Despite the advancement of technology and the spread and increasing quality of these programs, they have yet to be perfected (Al-Salman & Haider, 2024).

Translating idioms is an issue of strategy. However, with machines, it becomes an issue of processes as even artificial intelligence sometimes may not make logical and informed choices (Baziotis, Mathur, & Hasler, 2022). Since the process of translating idioms begins with their recognition, if a phrase is not identified as an idiom, it cannot be translated properly. This is because translation is a linguistic and cultural form of communication that is concerned with transferring sense. Since idioms present sense as a unit and not something that can be analyzed and inferred by breaking down their constituents, a failure to recognize their idiomatic nature is a failure to recognize their sense. As a result, literal translation may be involved when it is not the ideal available process (Almahasees, 2021). In brief, due to its complexity, the translation of idioms is one of the areas where machine translation often falls short (Almahasees, 2021). This paper, therefore, by analyzing which strategies are employed by the different machine translators and their effectiveness in conveying meaning and style, attempts to answer the following research questions:

(1) How do machine translation tools (Google Translate) and AI systems (*ChatGPT* and *Gemini*) render English idioms into Arabic?
(2) What translation procedures are most common in each of the investigated systems (*Google Translate*, *ChatGPT*, and *Gemini)?*

The first question represents the qualitative area of this research and deals with pinpointing the employed translation strategies and analyzing their accuracy, style, and acceptability. The second question relates to the quantitative area of the research and determines the frequency at which each strategy was employed when each system rendered the data presented in the corpus.

Answering these questions will hopefully help provide the insights needed to improve the quality of machine and AI translation, which is becoming increasingly relevant both in practice and as a research topic.

Literature Review
This section includes previous research in the fields relating to this study. First, machine translation, its history, and properties are discussed. Studies on the translation of idioms, its challenges, and strategies are included as well. The final subsection highlights previous empirical studies focusing on the translation of idioms by both human and machine translators.

Machine Translation
Translation, in a traditional sense, is a process in which texts are transferred from one language to another. This process is mainly done by human translators who employ linguistic and cultural knowledge to strategically form

their renditions. The advancement of technology created a new type of translator that is easily accessible and provides translations in mere instants (Akasheh, Haider, Al-Saideen, & Sahari, 2024). This type of translation is known as machine translation and has been increasing in accuracy, competence, and popularity. Hutchins (2005) documented the inception and development of machine translation and stated it started out as a concept in the seventeenth century but only became an actual possibility in the twentieth century. Machine translation was pioneered in the late 1940s based on the coding developed during the Second World War. During this time, machine translation was processed as automatic bilingual dictionaries; however, there were issues in the program as it lacked systemic methods. Thus, the development of machine translation in the 1950s and 1960s focused on rule-based systemization in a manner that allowed machine translations to function as aids for human translators.

From the late 1960s to the 1980s, machine translation expanded as its uses expanded, and it began to include a wider variety of languages and areas. Then, in the 1980s, many machine translation types emerged from around the world and continually developed. Following is the 1990s, in which system-based statistical methods and corpus and example-based methods were further advanced. Additionally, translation memory systems were also developed at this time. In the late 1990s, instant machine translation through the internet became available but was characterized by low quality. In the 2000s, machine translation mainly took on the form of statistical machine translation and has since been improving based on the wider availability of corpora and different software. According to Wang, Wu, He, Huang, and Church (2021), corpora-based machine translation has dominated the field of machine translation since the 2000s. Additionally, corpus-based methods include three forms: example-based (EBMT), statistical (SMT), and neural machine translation (NMT). Neural machine translation works by mapping a semantic representation of a language and then employing an attention mechanism to provide translations. Zhang and Zong (2020) found that neural machine translation has become the modern-day standard for machine translation.

Although machine translation has improved vastly, it still contains some obstacles, resulting in issues in quality, which, as stated by Popović, Arcan, and Klubička (2016) increase with the difference between the source and target languages. Popović (2018) listed inflectional errors, rewordings, omission, addition, and mistranslation as errors that can be found in unrevised machine translations. According to Zakraoui, Saleh, Al-Maadeed, and Alja'am (2021), machine translation faces challenges stemming from linguistic issues such as gaps and discrepancies as well as technical issues. These technical issues may result from low resources, domain mismatch and specificity, vocabulary, sense disambiguation, sentence length, and word alignment. Other issues include dialectal variation, cultural nuance, and context.

Regarding AI translation, Khoshafah (2023) argued that programs like ChatGPT have made translation easier and more accessible, yet their capabilities in more specialized fields than general translation still require evaluation and improvement as they struggle with complexities. Furthermore, Jiao, Peng, Zong, Zhang, and Li (2024) argued that the prompt or instructions given to artificial intelligence effect the outcome of its translations.

Additionally, ElFqih and Monti (2024) also argued that though the translations of large language models and AI systems ChatGPT and Gemini have improved greatly, they have yet to perfect their renditions, especially in specialized fields and contexts. Finally, Manakhimova et al. (2023) found that the translation of idioms is one area where large language models (LLM) such as ChatGPT provide some of the weakest results.

Translation of Idioms

According to Tirkkonen-Condit (2002), translating metaphorical language is more demanding than the translation of literal language, as the two exist in different cognitive domains. On a similar note, Dankers, Lucas, and Titov (2022) described the non-compositional nature of idiomatic expressions as a challenging area in translation. This is because the literal meanings of an idiom's components do not align with the meaning of the idiom itself, although this is not the case with all idioms (Kovács, 2016). Instead, idioms can be classified on a spectrum of compositionality, with more opaque idioms being simpler to understand and translate. Furthermore, Mancuso, Elia, Laudanna, and Vietri (2020) argued that the literal plausibility or implausibility of an idiom affects its comprehensibility. In addition, Liontas (2002) found that idiom comprehension and transfer are affected by context and lexical idiomatic level as well as the opacity between the two languages. Since the meaning of idioms cannot be deducted from their constituents, Meryem (2010) stated that an idiom should be treated as a single translation unit for their sense to be conveyed. Contrarily, Min (2007) argued that literal translations should be prioritized to reflect the source culture, but other factors should be considered as well, such as context and target readers. Mustonen (2010) stated that the translation of idioms begins with their recognition; once they are identified, their meaning can be understood. After this, the translator must decide on the best method for their transfer. Sari and Jumanto (2018) argued that this method is informed by the nature and type of the idiom. Qiang et al. (2023) linked idiom comprehension with language proficiency and found that paraphrasing and

translation to non-idiomatic language aids in their understanding.

According to Volk and Weber (1998), the distinction of idiomatic language use is not only a challenge for human translators but an issue in machine translation as well. Fadaee, Bisazza, and Monz (2018) found that the translation of idioms is still a weakness in machine translation despite the vast improvement in the general translation quality. The non-compositionality of idioms may contribute to translation errors in machine translation, as stated by Shao, Sennrich, Webber, and Fancellu (2017), who noted that idioms may be rendered literally instead of reflecting their meaning. Baziotis, Mathur, and Hasler (2022) similarly found that machine translations of idioms tend to be literal. Gaule and Josan (2012) listed cultural problems and ambiguity in the sense of the word and phrase level as areas that could negatively impact the quality of machine translation.

Since the meanings of idioms are larger than their components, different strategies were suggested to adequately translate them. According to Baker (1992), idioms can be rendered with a target language idiom with a similar sense and form or one with a similar sense but a different form. Additionally, the rendition may be an unidiomatic paraphrase. Finally, in a few cases, omission is a valid option. Ahmadi and Ketabi (2011) listed similar strategies in addition to literal translation and loan translation. Furthermore, Chen (2009) described some tactics to translate idioms. These include literal translation, free translation, explanation translation, compensatory translation, borrowing, and an integrated approach.

Empirical studies

This section includes previous studies on machine translation as well as the translation of idiomatic expressions and fixed or figurative language. By having speakers of three languages assess the analyzability of idioms, Bortfeld (2003) examined the comprehensibility of literal translations of idioms and found this was affected by the analyzability of the source text idiom. In the same vein, Carrol, Conklin, and Gyllstad (2016) examined the role of exposure and familiarity in the understanding of idiomatic expressions and formulaic language and found that they increase comprehension even among non-native speakers who typically find such language challenging. With a focus on metonymy, Zibin, Altakhaineh, and Hussein (2020) also found that comprehension of non-literal items is affected by conceptual and linguistic knowledge with exposure and conventionalization improving comprehension as well. Abu-Ssaydeh (2004) examined the strategies used in the translation of English idiomatic expressions into Arabic and reached conclusions related to their significance and effectivity. Regarding frequency, paraphrasing was the most employed strategy. Other significant strategies included literal translation, semantic equivalence, and omission. Literal translation proves to be faulty as it results in foreign and often nonsensical language. However, the use of literal translation has resulted in the acquisition of some foreign idioms that have become part of the recognized lexicon.

Motallebzadeh and Tousi (2011) examined how translators deal with idiomatic expressions in novels by comparing the language employed in the source and target texts and found that they may render the source text idiom through a target text idiom or paraphrase to convey the meaning with nonidiomatic language. To compensate for the level of idiomaticity in the text, nonidiomatic phrases were translated with idioms in the target language.

Salamah (2015) argued that the complexity of translating idioms begins with the difficulty in understanding them but found that translation students may struggle with their transfer even after understanding their meaning. Likewise, Ali and Sayyiyed Al-Rushaidi (2017), through a translation test along with a short survey found that issues in translating idioms can be a result of a failure to recognize an idiom and understand its meanings, a failure to convey said meanings and reliance on literal translation and omission without compensation.

By comparing human translations with the translations of four prominent LLMs, Li and Chen (2019) found that despite their improvement, AI translations have yet to achieve the quality found in human translation, indicating they still require additional development. Yet, Wang (2023) found that many still rely on AI translation even if its capabilities do not match those of human translators. Additionally, Khasawneh (2023) found that while AI can play a role in intercultural communications it is still restricted by drawbacks and limitations.

Hidayati and Nihayah (2024) investigated whether students preferred employing ChatGPT, Gemini, or Google Translate and found they preferred and often relied on artificial intelligence systems. The study also argued that these AI systems provided more nuanced and context-driven translations in comparison to Google Translate renditions, which tended to be more literal. Putera and Sujana (2024), however, suggested that Google Translate outperformed Gemini when it came to the translation of journal abstracts. This indicates that AI does not always surpass traditional machine translation and the outcomes may be affected by the type and qualities of the source text. Li (2024) on the other hand, argued that there are no significant differences between the translation quality of LLM and NMT, yet found that the

quality of the translation may be affected by the type of text, the language pair, and the direction of the translation in this language pair.

Since it has become common to employ machine translation and artificial intelligence in the field of translation it is essential to properly reflect on the quality of its renditions. This gauges its proficiency and reliability while highlighting areas that would benefit from further development. Additionally, it is relevant to explore areas that are both commonly found in language and considered a challenging aspect of translation to ensure that the capabilities of machine translation are not limited to general or straightforward translation. This study, therefore, explores the subtle differences between various websites, namely *Google Translate, ChatGPT, and Gemini*, in how they render idiomatic expressions. In addition to assessing the accuracy of the translations generated by these tools, the research carries out an extensive examination to identify and contrast the common methods that are used by each of these well-known machine translators when processing idioms.

Method

This research quantitatively and qualitatively examines the translation of idioms by inputting more than one hundred and fifty examples into three translation programs, namely *Google Translate, ChatGPT,* and *Gemini*. The following prompt was used with *ChatGPT* and *Gemini*: "*Translate the following English idiomatic expressions and proverbs into Arabic. Avoid literal translation*".

In the quantitative section, we calculate the frequencies and percentages of translation strategies used by each system. This contributes to highlighting each program's tendencies and provides insights into expected results. Additionally, the qualitative section examines the potential positive and negative issues resulting from each approach, assessing acceptability in sense and form. Some of these issues are related to shifts in meaning and style. The categorization is based on the taxonomy proposed by Baker (1992) which was then divided into further subcategories as elaborated in the framework below.

Framework
The idioms are aligned with their different renditions, and the translation process employed is examined. The translations are thus categorized based on the process followed by the investigated systems. For the quantitative section, the categorizations are counted to see which is more prominent for each program. These categories are:

(1) literal and word-for-word translations,
(2) paraphrasing the sense with a common language, and
(3) translation through figurative language.

These categories are further divided into subcategories. For *literal translation,* this includes (1A) senseless word-for-word translations that retain the original idioms' lexical components, (1B) word-for-word translations that use literal translation but mistake homograms and provide incorrect equivalents, (1C) literal translations that use reduction and omission of some of the source text components, (1D) literal translations with other translation errors, and finally (1E) literal translations that still make sense in the target language. *Sense-based translations* that use common language are classified based on accuracy as (2A) accurate translation, (2B) translations with slight inaccuracies, and (2C) mistranslations that do not relate to the meaning of the idiom. The use of *figurative language* in translation also falls into three categories: (3A) the rendition of an idiom through a target language idiom with a similar sense and phrasing, (3B) the rendition through an idiom with a similar sense but different phrasing and (3C) the use of non-idiomatic figurative language.

Investigated Translation Tools/ Websites
Google Translate
Google Translate has long stood at the front of machine translation as the most widely used tool globally. The tool was launched in 2006 and provides quick, accessible, and user-friendly translation services in over a hundred languages. The system relies on neural machine translation and improves quality and accuracy with deep learning models. While the program can provide accurate translations of good quality for common straightforward language use, it has yet to master cultural nuances and figurative aspects of communication.

Chat GPT
ChatGPT, developed by OpenAI, is a versatile language model that may provide translation as one of the many language processing tasks it performs. While ChatGPT possesses some translation capabilities, it is not dedicated

to this field. This may limit its proficiency, especially in specialized contexts.

Gemini

The final examined program is the still lesser-known *Gemini*, which was formerly known as *Bard*. Unlike the previously mentioned fully automated programs, *Gemini* combines machine translation with human review and modification. The hybrid collaborative approach increases the quality of translation by emphasizing linguistic diversity and competence as well as cultural sensitivity.

Corpus of the Study

A diverse range of sources was utilized to compile a comprehensive list of idiomatic expressions for this study. These sources included books, magazines, interviews with native English speakers, and various websites dedicated to English idioms. A primary source that significantly contributed to the compilation of idioms was the EF English Resources website, specifically the section on English idioms (https://www.ef.edu/english-resources/english-idioms/). This online resource provided an extensive list of idioms, categorized by usage frequency and familiarity to native English speakers. These categories were instrumental in selecting idioms for the research, and they helped establish a clear framework for classifying the idioms based on their commonality in everyday conversation.

The collected idioms comprise 155 idioms that are extremely common in everyday conversation and often heard in movies, TV shows, and daily interactions. This category serves as the primary focus of the study, aiming to investigate how AI programs handle these frequently used idioms.

The compilation of idiomatic expressions involved a multi-pronged approach. The selection combined random sampling with expert evaluation to ensure a diverse and representative dataset that represents broader linguistic and cultural nuances and patterns despite its limited size. Nine Native speakers of English from some of the most prominent variants (3 Americans, 3 British, and 3 Australians) were also consulted to ensure the idioms selected for the study genuinely resonated with common conversational usage. Additionally, the resources available on the EF English Resources website provided a structured foundation, categorizing idioms according to their frequency of use. The inclusion of idioms from books and magazines added further diversity to the collection.

Results

The following section includes two parts. The first is a quantitative analysis where the translations are categorized, after which the frequency of each categorization is gauged. The second involves a qualitative analysis of the renditions where the translation approach is examined and discussed.

Quantitative Analysis

The translation of idioms was done through three main processes: *literal translation, sense-based translation,* and *translation through idioms*. While *literal translation* translates based on wording and the constituents of the phrase, the other two types of translation deal with the phrase's idiomatic sense (Table 1).

Table 1
Translation process statistics

Category	No.	Sub-Category	Google Translate %	GPT %	Gemini %
Literal And Word for Word Translations	1	Word for word (senseless)	50%	35%	9%
	2	Word for word (mistaken sense)	12%	1%	1%
	3	literal reduction	2%	2%	2%
	4	literal miscellaneous errors	0%	2%	0%
	5	Literal makes sense	13%	13%	9%
Total			**77%**	**53%**	**21%**
Paraphrasing the Sense with Common Language	6	Sense for sense	9%	27%	53%
	7	Sense for sense but inaccurate	1%	4%	5%
	8	Sense for sense mistranslation	1%	4%	5%
Total			**11%**	**35%**	**63%**
Translation Through Figurative Language	9	Idiom for the same idiom	10%	11%	11%
	10	Idiom for different idioms	2%	1%	5%
	11	Figurative language	0%	1%	0%
	Total		**12%**	**13%**	**16%**

These results, in Table 1, show that *Google Translate* had the highest tendency for literal translations and equivalence errors. *ChatGPT* had the highest rate of errors based on altering the source text, with *Google Translate* making the least changes and, therefore, the least errors in this area. Among the three programs, *Google Translate* had the highest percentage of literal translation at 77%, followed by *ChatGPT* at 53%. Finally, *Gemini* had the lowest percentage at 21%. The majority of *Google's Translate* literal translations were senseless and followed a word-for-word approach. These included literal word-for-word translations at 50% and an additional 12% in which the chosen equivalent did not represent the intended meaning of the wording in a literal sense, as polysemic words and holograms were confused. This was the highest recorded percentage of this type of error among all the programs. Such mistakes indicate that the program typically translates by word and has an issue with context. However, since the program followed the wording of the source text closely, it was less likely to make other errors, which were found in the renditions of the other programs, with only 2% of its renditions containing improper use of reduction. Not all of the program's literal translations were senseless, as 13% of the overall translations were literal but conveyed the sense of the source text. This is only possible in compositional idioms if the literal translation contains no errors or mistranslations. Although it did not reach the same extent, *ChatGPT* also showed a high rate of literal translation. 35% of *ChatGPT's* translations were senseless word-for-word translations. Only 1% of the renditions contained translation errors based on mistaken sense. Reduction errors were at a similar rate of 2%, but it must be noted that since *ChatGPT* provided multiple renditions for each idiom, there is a higher number of renditions with this error. The renditions also contained an additional 2% of various translation errors. Finally, 13% of the renditions were literal but represented the meaning of the idiom properly. *Gemini* showed the least inclination towards literal translation. Only 9% of the renditions were literal and senseless. Moreover, only 1% contained mistaken sense errors, and 2% contained reduction errors. These rates are similar to those of *ChatGPT*. Finally, since the literal translation was not as frequently employed, only 9% of the translations were senseful and literal.

For sense-based translations that use nonfigurative language, *Gemini* was in the lead at 63%, followed by *ChatGPT*, with a wide gap at 35%. *Google Translate* had the least sense-based renditions at a mere 11%. *Gemini* had the highest rate of accurate sense-based renditions at 35% but also had the most instances of sense-based translation errors, with 5% inaccurate translations and 5% mistranslations. This is marginally over the rates of *ChatGPT*, in which both categories represent 4% each. Accurate sense-for-sense renditions were rare in *Google Translate's* renditions, as only 9% of the translations were rendered this way. *Google Translate's* unlikeliness to employ sense-based paraphrasing also resulted in the least errors in this field, with only two inaccurate renditions and two mistranslations representing 1% each.

When it came to translating idioms with figurative language, this was mostly done as idioms through idioms in the target language. *Gemini* once again is in the lead with 16%, followed closely by *ChatGPT* at 13%, with *Google Translate* right behind at 12%. Yet, it must be mentioned once again that due to the difference in the number of provided renditions, although the percentages are similar, the idiomatic translations provided by *Google Translate* only present about half of the number of provided idiomatic translations by the other two programs. The majority of the idiom replacements were translating the source language idiom as an idiom with similar phrasing in the target language. Using a different idiom was employed mostly by Gemini at 5%, followed by ChatGPT and Google, which each used this process three times, representing 1% and 2% of the renditions. Finally, *ChatGPT* contained figurative translations that were not idioms at 1% and was the only program to do so.

Qualitative Analysis

This section examines the translation processes used to translate the idioms and their effectiveness in rendering their meaning. Some examples are chosen to showcase the strengths and weaknesses of the rendition types.

Google Translate is one of the most popular machine translation services, and until recently, it had no real competitors. Despite this and the fact it has existed for nearly two decades, its translations are still flawed. While *Google Translate* has been the go-to translation program, more alternatives have recently become available and are increasing in popularity. The AI program *ChatGPT* has a wide range of uses and a growing user base. Although its main purpose is for chatting, it also has translation options and capabilities. As evidenced in the data, *ChatGPT's* translation of idioms differs from that of *Google Translate*. *ChatGPT* is not the only AI chatbot that provides translation services. Like the previously discussed program, Gemini has the ability to translate through multiple languages. Unlike the other machine translators discussed here, when it comes to idioms, Gemini's translations do not gravitate to a literal word-for-word approach. Instead, most examined examples conveyed the sense of the idiom instead of its wording.

Literal and Word-for-Word Translations

A major issue in machine translation is a lack of capability to understand and correctly render idiomatic expressions, which results in a reliance on literal translation, as shown in Tables 2, 3, and 4.

Table 2
Literal and Word-for-Word Translations by Google Translate

No.	Literal Translation	Idiomatic Expressions	Meaning	Google Translate	Literal Translation
1	**word for word (senseless)**	On the ball	Doing a good job	على الكرة	On the ball
2	**word for word (with mistaken sense)**	Take a rain check	Postpone a plan	خذ فحص المطر	Take the rain test
3		Cutting corners	Doing something poorly in order to save time or money	زوايا القطع	Cutting (adj) corners
4	**meaningful literal translations (*Literal, but Makes Sense*)**	No pain, no gain	You have to work for what you want	لا ألم, لا ربح	No pain, no gain
5		Time flies when you're having fun	You don't notice how long something lasts when it's fun	الوقت يطير عندما تحظي بالمرح	Time flies when you're having fun

Table 2 contains just a few examples that highlight *Google Translate's* tendency for literal word-for-word translation. This strategy typically results in renditions that do not reflect the meaning or function of the original idiomatic phrase, with some renditions being completely nonsensical. Example 1 is translated literally, with each source text element represented by its equivalent in Arabic. Regardless of the one-to-one lineup of the elements, there is no equivalence in meaning. From a literal standpoint, a ball is a physical object, and the preposition of place "on" indicates that there is something above its surface. This is the sense conveyed by the target text but is not the sense conveyed or intended by the source text. Instead, the desired sense is one of affirmation, which cannot be derived from this rendition.

Table 2 also includes examples of *word-for-word translation* by Google with *mistaken sense*. Examples 2-3 indicate that the issues with the program's word-for-word translations may go deeper than misrepresenting the function of the idioms. Example 4 showcases shortfallings where "*take a rain check*," which refers to postponing plans, is rendered as "*take a rain test*." Once again, the program failed to distinguish between homographs and selected the wrong equivalent, leading to two layers of mistranslation. These renditions contain a misrepresentation of both intended meaning and literal meaning and can, therefore, be classified as neither functional nor formal equivalence. In example 3, the program misclassified parts of speech in its literal rendition. "*Cutting corners*" refers to taking shortcuts instead of fully completing a task. In this phrase, "cutting" is a verb, and "corners" is its object. The gerund is mistranslated as an adjective that modifies the noun "corners." This results in a rendition that represents "corners for cutting," another failed attempt at formal equivalence. These examples show how machine translation can fail at "word-for-word translation" by misconstruing the sense of a word and not differentiating between homographs.

Table 2 illustrates how not all literal translations are nonsensical and may even convey the meaning of the source text (examples 4-5). The phrasing in example 4 is straightforward. Additionally, the simplified structure, which is unconcerned with grammar, leaves little room for confusion. The meaning is also direct and can be inferred from the linguistic elements of the saying alone. Thus, by just knowing the meanings of the words "pain" and "gain" and having knowledge of negation, one can understand the message that states, "Without effort and sacrifice, there is no achievement. This simple wording can easily be transferred into Arabic directly without modification to reflect the same sense. In example 5, the idiom expresses through metaphor how it feels as if time passes quicker when the person is enjoying themselves. This metaphor of "time flying" is a universal one and can thus be transferred into another language like Arabic. Confusion is further avoided since the referent exists explicitly in the figurative language as time is evoked directly through its word form.

Although it does not reach the degree of the previous program's tendency, *ChatGPT* also has an issue of providing nonsensical literal word-for-word translations, as shown in Table 3.

Table 3

Literal and Word-for-Word Translations by ChatGPT

No.	Literal Translation	Idiomatic Expressions	Meaning	Chat GPT	Literal Translation
1	Word for Word (Senseless)	Speak of the devil	The person we were just talking about showed up!	تحدث عن الشيطان	Speak of the devil
2	Mistaken Sense	You can't have your cake and eat it too	You can't have everything	لا يمكنك الحصول على الكعكة وأكلها	You can't get your cake and eat it too
3	Literal Reduction	Once in a blue moon	Rarely	مرة في القمر	Once in a moon
4	Literal Miscellaneous Errors	Barking up the wrong tree	To be mistaken, to be looking for solutions in the wrong place	ينبغي عليك التوجه للشجرة الصحيحة	You should head to the right tree
5	Literal Makes Sense	Your guess is as good as mine	I have no idea	تخمينك مثل تخميني	Your guess is like yours

Examples 1 shows an instance where *ChatGPT* transferred the meanings of the words individually and not as a whole meaningful unit that expresses something larger than the sum of its parts. The idiom "speak of the devil" is a reduced form of the expression "speak of the devil, and he shall appear." This expression is used when someone arrives unexpectedly, coinciding with their mention and discussion. This expression is used to refer to a person and not the literal devil. In this example, *ChatGPT* renders the words entered into it and thus provides a word-for-word translation of the half expression. Since this saying is not used by Arabs, Arabic speakers are unlikely to automatically complete the utterance and understand its meaning. Instead, the rendition only invokes the literal sense " which lacks relevance. Example 2 shows how the meaning can differ based on the wording, even if no true alterations are made in the literal translation process. The idiom "you can't have your cake and eat it too" indicates that one must choose between two exclusive options. The literal meaning states one cannot physically possess a cake after it has been eaten. Therefore, one can either keep the cake or consume it, as the two options cannot be fulfilled simultaneously. This idiom is allegorical in a sense, as the cake can symbolize bigger things and other choices in life. Yet, the wording of the original expression contains some ambiguity as the word "have" has multiple senses, including eating, which is not what is intended in this case. Although *ChatGPT* does not mistakenly represent this sense. "Have" is translated as "get," which makes the line nonsensical as one must first "get" or acquire a cake in order to consume it later.

Example 3 shows how the program uses the translation strategy reduction. Reduction is a shortening and simplifying tool where the translator retains only the most essential information and removes excess filler words. The example contains the phrase "once in a blue moon" to describe something as rare. A "blue moon" is the second full moon of a month and thus can be seen as a measurement of time. In reality, this stretch of time is not as long as the expression suggests. Since it is an idiom, the meaning need not be precise. *ChatGPT* renders this expression in a literal way but omits the adjective blue. This rendition does not accurately represent the sense of the idiom, and the slight modification further removes the sense of the rendition from that of the source text. The phrase "once in a moon" is not only one that is not used by Arabic speakers, but it also neither aligns with the wording of an idiom in a foreign language nor contains anything that indicates rarity. If meaning were to be analyzed from the provided words alone, "moon" could be seen as a metonymy for the night. The resulting meaning would imply that something happens "once a night," a frequency that is extremely common, the opposite of the rarity implied by the original idiom. Example 4 shows a rendition of the literal sense of the phrase "barking up the wrong tree." It takes a literal yet not word-for-word approach. The translation is based on the implicatures of the idiom's components. The existence of a "wrong" tree suggests the existence of a "correct" tree. Thus, the line is changed to instruct the person to search for said correct tree. This rendition fails to recognize that the trees in question are metaphorical and do not actually exist.

Example 5 shows that literal translations can potentially reflect the meaning of the source idiom. The idiom states, "Your guess is as good as mine," to express a lack of knowledge. This line is typically used as an answer to a question. Questions are often an expression of a lack of knowledge on a subject; this reflects the state of the asker. By equating their knowledge with that of the asker, the answerer indicates that they, too, lack the desired information. This meaning is thus clear through the wording, which enables the literal rendition to make sense.

Although Gemini did not rely on literal renditions to the same extent as Google Translate, it still employed this

technique in several examples. Table 4 includes examples that show the different levels of acceptability in Gemini's application of literal translation.

Table 4
Literal and Word-for-Word Translations by Gemini

No.	Literal Translation	Idiomatic Expressions	Meaning	Gemini	Literal Translation
1	**Word for Word (Senseless)**	Don't beat a dead horse	Move on; this subject is over	لا تضرب حصاناً ميتاً	Don't beat a dead horse
2		Every dog has his day	Everyone gets a chance at least once	كل كلب له يومه	Every dog has his day
3	**Literal Reduction**	The best thing since sliced bread	A really good invention	أفضل شيء منذ اختراع الخبز	The best thing since sliced bread
4	**Literal Makes Sense**	Shape up or ship out	Work better or leave	عدل أو ارحل	Modify or leave
5		Ignorance is bliss	You're better off not knowing	الجهل نعيم	Ignorance is bliss
6		It is a poor workman who blames his tools	If you can't do the job, don't blame it on others	العامل السيء يلوم أدواته	The bad worker blames his tools
7		Look before you leap	Take only calculated risks	فكر قبل أن تقفز	Think before you leap

Examples 1 and 2 show how this program relied on literal translation in a few cases, which resulted in meaningless renditions. Both examples reference animals, which do not relate to the meaning of the idiom. If the sense was to be transferred, the mention of the animals should not appear. However, that was not the case, as shown above. Example 3 not only relies on a meaningless literal rendition but also omits a key element of the original expression. The removal of the adjective changes the referent as it specifies a certain type and not the generic that existed long before. Since the idiom relates to time, altering the referent on the timeline alters its meaning. Moreover, since the expression is completely idiomatic, its sense does not relate to its content, and since formal equivalence was chosen, all elements should have been retained to maintain the link with the source text.

The idioms in the first two examples are phrased simply and straightforwardly. In example 4, "shape up" means improve, and "ship out" means leave. Thus, the literal meanings of the idiom's components align exactly with its meaning, even if they are not the most common expressions. This is also the case with example 5, where "ignorance" means "not knowing" and "bliss" means "something good." Therefore, "ignorance is bliss" can be paraphrased into "Not knowing is something good." Since the idioms can be intralingually translated through paraphrase and synonym substitution, direct interlingual translation is possible. Thereby, the word-for-word translation provided by Gemini can also function as a sense-for-sense translation. The nature of example 6 is metaphorical and allegorical. This means that although the meaning is not expressed directly in the phrase's components, it can still be inferred from them. This suggests that a direct translation that does not reflect the larger sense more directly may still be adequate in delivering the text's intended message. Example 7 advises thinking and evaluating before taking risks. This is done through the metaphor "look before you leap," where jumping stands in for the risky action and looking represents the evaluation. Since this symbolism can easily be inferred, there is no issue in retaining it for the target audience, as was done in this rendition.

Paraphrasing
While the majority of *Google Translate* renderings relied on literal word-for-word substitution, there were cases where the function was rendered instead of the individual components. Table 5 shows examples of sense-based translations using a common language.

Table 5
Sense-based translations by Google Translate

No.	Sense-based Translations	Idiomatic Expressions	Meaning	Google Translate	Literal Translation
1	Sense for sense	Spill the beans	Give away a secret	أفش السر	tell the secret
2		Let the cat out of the bag	Give away a secret	إباحة السر	Reveal the secret
3		It's raining cats and dogs	It's raining hard	انها تمطر بغزارة	It's raining heavily
4		Break a leg	Good luck	حظا موفقا	Good luck

5	Sense for sense but inaccurate	Call it a day	Stop working on something for the day.	أوقف العمل	Stop the work
6		When it rains, it pours	Everything is going wrong at once	عندما يصيبك شئ قد يشتد	When something happens to you, it may intensify
7	Sense for sense mistranslation	Bite the bullet	To get something over with because it is inevitable	تحمل الالم	Endure the pain

Examples 1 and 2 both refer to telling secrets without containing the words "tell" or "secret" or any of their synonyms and near-synonyms. Yet both are translated as "tell the secret," reflecting the meaning that cannot be found in their linguistic components. Example 3 contains the word cat, though the meaning is unrelated to the animal. The idiom also references dogs, but since neither animal is connected to the phrase's meaning, neither should appear in a rendition of its sense. Therefore, the sense-based rendition states, "It's raining heavily." In the rendition of "break a leg" in example 4, the unpleasant literal meaning is put aside as the positive intention of the saying is portrayed.

Straying from the original wording may have its risks, as the provided renditions may result in inaccuracies (examples 5 and 6). The rendition of example 5 as "*stop the work*" reflects the intended meaning of the source text and not its individual words; this rendition, however, leaves out an element of the sense. Thus, this rendition is not entirely accurate as it excludes the temporal area included in the original sense. Example 6 states, "*When it rains, it pours*," which means that when bad things happen, the unfortunate situation is taken to the extreme. The Arabic rendition does not follow the original wording and does not reference rain, but it does not accurately reflect the meaning either. Instead, the translation states, "When something happens to you, it may increase," with no reference to whether this something is bad or good.

The last two examples in Table 5 show how some minor errors can result in mistranslation and nonequivalence. Example 7 means to power through something difficult. The Arabic translation simply states, "*endure the pain*," which does not accurately represent the wording nor its meaning.

Although *ChatGPT* frequently employs literal translation, it conveys sense at a nearly similar rate, as shown in Table 6.

Table 6
Sense-based translations by ChatGPT

No.	Sense-based Translations	Idiomatic Expressions	Meaning	Chat GPT	Literal Translation
9	**Sense-based Translations**	He's a chip off the old block	The son is like the father	هو مثل والده	He is like his father
10		To get bent out of shape	To get upset	ينفعل أو يثور	reacts and overflows
11	**Sense-based Rendition, but Inaccurate**	Pull someone's leg	To joke with someone	تهكم على شخص	Taunt someone
12		Make a long story short	Tell something briefly	قصّة قصيرة	Short story
13		Let someone off the hook	To not hold someone responsible for something	أعطه فرصة أخرى	Give him another chance
14	**Sense for Sense Mistranslation**	That ship has sailed	It's too late	ذاهب بعيدًا	Going far
15		On the ball	Doing a good job	على اطلاع	In the know

ChatGPT provided renditions for examples 9 and 10, each of which properly conveyed their sense instead of their wording. Example 9 provides a rendition related to time even if it was not directly mentioned in the idiom and does not needlessly refer to boats or travel, which are present in the original wording. Likewise, example 9 connects the sense with familial relations and the inheritance of qualities without making false allusions to carpentry. The rendition of example 10 means "reacts and overflows" (related to strong emotions), which is associated with "losing control."

For idioms 11-15, *ChatGPT* strayed from the wording of the source text in the translation process. If translating components is not the goal, it can be assumed that the aim is to translate sense. This was not always a

successful process. As the examples highlight, the program at times provided proper translations of the idiom's meanings but also provided inaccurate renditions at others. In example 11, the idiom was translated as "taunt someone." The rendition does not fully represent the connotations of the source text, where the nature of the interpersonal relation is more friendly, while the translations give off slightly malicious connotations. In example 12, an inaccurate translation was provided based on reduction once again. "To make a long story short" was translated as "short story," which does not reflect the meaning. Furthermore, it cannot even be classified as a full or meaningful sentence. Example 13 means to let someone go unpunished for a misdeed they committed. The rendition states, "Give him another chance". It does not follow the original wording nor convey the exact meaning of the idiom. However, through implicature, it reflects its meaning indirectly. To clarify, "give him another chance" can represent "Do not punish him and give him another chance."

Idiom 14, "that ship has sailed," is used to express the meaning of a missed chance by comparing the opportunity with a ship that the person was too late to board and thus has left without them. Therefore, the meaning is not related to traveling by sea but instead to time and opportunity. Neither the literal nor functional meaning was reflected in the rendition of the phrase as "going far away." Example 15 is another instance of mistranslation where neither the literal nor functional senses are reflected. The idiom includes a preposition and references a ball but is used as an assessment and assertation of the quality and accuracy of one's work or thoughts. The translation, however, describes a person as knowledgeable, which is a meaning that is not connoted with the source idiom.

In *Gemini*, Table 7, is a reminder that not all renditions are equal in equivalence, even within the same approach. The Table highlights different levels of accuracy and acceptability within sense based or paraphrasing strategies.

Table 7
Sense-based translations by Gemini

No.	Sense-based Translations	Idiomatic Expressions	Meaning	Gemini	Literal Translation
16	**Sense for Sense**	Wrap your head around something	Understand something complicated	فهم شيء ما	Understand something
17	**Sense for Sense but Inaccurate**	Cut somebody some slack	Don't be so critical	أنظر إليه بعين العطف	Look at him through the lens of compassion
18		Under the weather	Sick	غير مرتاح	Uncomfortable
19	**Sense for Sense Mistranslation**	Get something out of your system	Do the thing you've been wanting to do so you can move on	التخلص من شيء ما	Get rid of something.

The idiom example 16 uses unrealistic imagery of wrapping one's head around a concept to represent understanding it. This meaning behind this idea was represented directly by Gemini as "understand something." This example thus illustrates that Gemini has the potential to adequately represent the sense of an idiom through regular language and paraphrase.

Examples 17 and 18 also contain issues of accuracy in one of their provided renditions. For example, the phrasing in 17 is changed entirely in the rendition: "Look at him through the eye (lens) of compassion," but the meaning of forgiveness can still be inferred. Similarly, example 18 is translated as "uncomfortable," which is removed from the context and is only vaguely related.

Example 19 shows that the issues in translation may go beyond vagueness and inaccuracy and may be classified as mistranslations. The rendition did not align with the meaning or wording of the source idiom. Instead, a new, unrelated meaning is provided. In example 19, the idiom advises performing an act to quench the desire to do it, while the rendition alludes to getting rid of a physical object.

Translation Through Figurative Language
While literal translation retains the form of the original idioms but loses its sense, paraphrasing using regular language portrays the desired meaning but removes the figurative qualities of the idiom. Replacing the source language idiom with target language idioms of the same meaning may retain both the sense and style of the original idioms. Table 8 contains idioms that are similar in the source and target languages.

Table 8

Translation Through Figurative Language by Google Translate

No.	Figurative Language	Idiomatic Expressions	Meaning	Google Translate	Literal Translation
1	Similar Idioms in the Source and Target Language	That's the last straw	My patience has run out	هذا هو القشة الأخيرة	That's the last straw
2		bird in the hand is worth two in the bush	What you have is worth more than what you might have later	عصفور في اليد خير من اثنين على الشجرة	bird in the hand is worth two in the bush
3		Kill two birds with one stone	Get two things done with a single action	ضرب عصفورين بحجر واحد	Hit two birds with one stone
4		An ounce of prevention is worth a pound of cure	You can prevent a problem with little effort. Fixing it later is harder.	درهم وقاية خير من قنطار علاج	An ounce of prevention is worth a pound of cure.
5		Birds of a feather flock together	People who are alike are often friends (usually used negatively)	الطيور على أشكالها تقع	Birds of similar shapes fall
6	Different Idioms that Portray the Same Sense	Add insult to injury	To make a bad situation worse	يزيد الطين بله	Increases the wetness of the mud
7		To make matters worse	Make a problem worse	لزيادة الطين بلة	To increase the wetness of the mud
8		Haste makes waste	You'll make mistakes if you rush through something	في العجلة الندامة	In haste, there is regret

Another way literal translations can be meaningful is when the same or at least a similar idiom is used in both languages (examples 1-5). Example 1 contains the idiom "the last straw," which is a shortened form of the saying "the last straw that broke the camel's back," an expression that exists in both English and Arabic. As the longer phrase is commonly used by Arabic speakers, the shorter phrase's meaning can be inferred. Yet, the rendition still contains grammatical errors based on gender agreement, using masculine terms where feminine terms are needed. This affects the acceptability of the rendition but does not influence the understanding of its meaning. Example 2 is the idiom used to indicate that what one has for sure is better than future possibilities, even if they seem greater as they are not ensured. The English idiom is "a bird in the hand is worth two in the bush," while the Arabic states that "a bird in the hand is better than ten on the tree." Google renders the English idiom "a bird in the hand is better than two on the tree." This rendition retains the number of the English idiom but changes some aspects to align with the Arabic idiom. This makes this rendition a combination of literal translation and cultural adaptation. Example 3 is similar in that it replaces "kill" with "hit" to better match what is used in Arabic. This is also the case with example 4, where measurements of weight are substituted with measurements of money. In example 5, the renditions begin to stray from literal translation as while the meaning is the same, the phrasing differs. Both idioms express how likes gather by comparing them to birds of one kind gathering, yet the sentence formations differ. This indicates that this rendition may be literal in terms of sense but is not a word-for-word translation.

Some idioms express certain concepts that can be conveyed through idioms in other languages. Unlike examples 1-5, while the concept is one in both languages, the idioms differ. This suggests the fact that the program here is translating the sense of the idioms and not their form (examples 6-8). Examples 6 and 7 are different ways to express the same concept of worsening an already bad situation. Though they convey the same meaning, the two phrases do not overlap in their linguistic content. Yet both phrases were rendered the same by the program, with a third phrase that does not linguistically overlap with either of the source texts. This rendition is the Arabic idiom "increase the wetness of the mud." Example 8 renders the idiom "*haste makes waste*" as the second half of the Arabic idiom "in caution there is peace, and in haste there is regret."

The idioms in Table 9 exist in both English and Arabic and are used to express the same meaning.

Table 9

Translation Through Figurative Language by ChatGPT

No.	Figurative Language	Idiomatic Expressions	Meaning	Chat GPT	Literal Translation
9	**Idiom for the Same Idiom**	You can't judge a book by its cover	This person or thing may look bad, but it's good inside	لا يمكنك الحكم على كتاب من غلافه	You can't judge a book by its cover
10		Curiosity killed the cat	Stop asking questions	الفضول قتل القط	Curiosity killed the cat
11	**Figurative Language**	Out of the frying pan and into the fire	Things are going from bad to worse	من مصيدة إلى مصيدة	From trap to trap
12		A dime a dozen	Something common	كأوراق الشجر	Like leaves

In both languages and cultures, example 9 is used to state that judgments should not be made based on superficial appearances. Example 10 is used to discourage intrusiveness in both cultures as well. Example 11 uses metaphor to express going from one bad situation to another. In the idiom, this is done by the equation with fire. The translation expresses this sense by equating bad situations with traps. This expression is not a common or traditional one; thus, it is only metaphorical and not idiomatic. Example 12 also replaces the metaphor in the idiom with a new one without relying on established expressions. Idioms are considered a source of challenge in translation as their semantics complicate the relation between linguistic content and meaning. Thus, translators must navigate linguistic and cultural differences to decide between equivalence types and translation strategies, including domestication and foreignization. The manner in which idioms are handled reflects the translator's understanding, competence, and skills. With machine translation, the employed processes are not a result of choice and strategy. Instead, the equivalences are extracted from the machine translator's database. With artificial intelligence chatbots, this database grows based on language use patterns, which could result in multiple equivalents. However, AI does not have a full grasp of context and, therefore, may face issues in identifying idiomatic language. This results in issues in accuracy and consistency as well, which means an idiom may be rendered properly at times but mistranslated at others without guaranteed results for the user.

As discussed above, literal translations and explanations of meaning are not the only approaches to translating idioms. Sense-for-sense renditions may also include the use of idioms and not just direct language, as Table 10 shows.

Table 10

Translation Through Figurative Language by Gemini

No.	Figurative Language	Idiomatic Expressions	Meaning	Gemini	Literal Translation
13	**Idiom for the Same Idiom**	Curiosity killed the cat	Stop asking questions	الفضول قتل القطة	Curiosity killed the cat
14		Calm before the storm	Something bad is coming, but right now, it's calm	الهدوء قبل العاصفة	The calm before the storm
15	**Idiom for Different Idioms**	A stitch in time saves nine	Fix the problem now because it will get worse later	درهم وقاية خير من قنطار علاج	A dirham of prevention is better than a pound of treatment
16	**Figurative Language**	A dime a dozen	Something common	مثل الرمل على شاطئ البحر	Like sand on the beach

Examples 13 and 14 combine word-based and sense-based equivalence by rendering the source text idioms as their exact target text counterparts. This is only possible since the same idiom is used in both languages. In example 15 the program provided a sense-based rendition. This rendition did not follow the original wording but did not use casual language either. Instead, the source language idiom was rendered with a different target language idiom, which is used in similar contexts. The rendition is idiomatic and has equal acceptability and accuracy regarding meaning but differs stylistically. In example 16, the rendition uses figurative language, comparing the abundance of the thing to the great number of sand grains on a beach. Unlike the previous examples, this figurative language is metaphorical but is not an idiom or proverb.

Discussion

The quantitative analysis regarding literal translation showed that the results of Google Translate aligned with expectations, indicating a strong tendency towards literal translation. This agrees with the findings of Baziotis, Mathur, and Hasler (2022). Although ChatGPT and Gemini did not employ literal translation to the same extent as Google Translate, it was still found in their renditions, it was especially evident in ChatGPT. Therefore, ChatGPT, like Google Translate, displays the connection between machine translation and literal translation despite its employment of AI technologies. The lesser tendencies of Gemini toward literal translation align with Hidayati and Nihayah (2024) suggestion that AI can provide more nuance and creativity compared to the literalness associated with traditional machine translation.

However, since all programs were able to provide some accurate translations following recommended strategies like paraphrase and the use of target language idioms it is evident that the misuse of literal translation is a result of a failure to recognize or identify the idiomatic nature of the source texts. This affirms the arguments of Almahasees (2021) and Farghal and Saeed (2022) who suggested that a proper translation of an idiom begins with its recognition, thus posing the identification of idioms as the first challenge of this task.

The quantitative analysis also indicated that among the nonliteral translations, there was a tendency to paraphrase rather than employ figurative or creative language. This falls in line with the assessments of Baziotis, Mathur, and Hasler (2022) and Li and Chen (2019) who found that machine translation has yet to match the capabilities and creativity of human translators.

When it came to the qualitative analysis, the results indicated that the choice of strategy or approach alone is insufficient in determining the acceptability of a rendition. For instance, a common belief is that literal renditions should be avoided (Farghal & Shunnaq, 1999). While this aligned with many examples, there were some, though few, in which literal renditions were able to portray the desired sense. However, the results do align with the suggestions of Liontas (2002) and Sari and Jumanto (2018) who stated that the transfer of idioms is affected by their content and form. Furthermore, while it is often agreed upon that paraphrasing is useful in the clarification of idioms (Sari & Jumanto, 2018), the analysis highlighted that machine translations may not provide the intended meaning of an idiom in their paraphrasing. This again highlights that accuracy is based on the proper retention of sense rather than the choice of strategy as errors can be found even when the recommended strategies are applied.

Finally, it should be noted that Gemini yielded the best results in this study despite other programs surpassing it in others. This emphasizes that the capabilities of machine translations are greatly affected by many factors, including language pairs, translation direction, and text type, to name a few. This shows that it cannot truly be said that one program is superior, as each has its own strengths and weaknesses in different areas. This also suggests that the improvement of AI must be targeted to fit various needs and cannot be generalized.

Conclusion

Translating idioms is an issue of strategy. However, with machines, it becomes an issue of processes as even artificial intelligence cannot make logical and informed choices. The process of translating idioms begins with their recognition. If a phrase is not identified as an idiom, it cannot be translated properly. This is because translation is a linguistic and cultural form of communication that is concerned with transferring sense (Al-Khalafat & Haider, 2022; Debbas & Haider, 2020). Since idioms present sense as a unit and not something that can be analyzed and inferred by breaking down their constituents, a failure to recognize their idiomatic nature is a failure to recognize their sense. This creates the first issue in machine translation. As a result, literal translation may be involved when it is not the ideal available process. Usually, the translation of idioms is classified as one of four processes: translating the idiom as an idiom with a similar sense and phrasing, translating an idiom with an idiom of similar sense and different phrasing, translating an idiom with regular language to convey its sense, and literal translation that reflects the wording. The first three strategies deal with sense, while the final deals with wording. With human translators, the choice between equivalents is a conscious decision informed by contextual factors based on understanding. Machine translation lacks this understanding; thus, the translations are based on either the wording or previous translations. The reference to previous translations and translation banks can align machine translation of idioms with their sense. Despite machine translations' ability to translate sense, this is not based on understanding, which results in two problems: a lack of distinction between when a phrase is being used in its literal or idiomatic sense and a lack of consistency in the translation of AI programs that are constantly expanding and "learning." These issues intermingle and result in AI programs providing multiple renditions of different levels of accuracy for one idiom without any logical basis.

Furthermore, the lack of logic results in other translation issues that separate human and machine translation. Since machine translation is not strategic, the translations should be classified by result and not process. This creates three main categories: literal translations, regular language translations that reflect sense, and figurative translations. Literal translations can be further classified as senseless or meaningful word-for-word translations, word-for-word mistranslations and nonequivalence, reduction-based erroneous literal translations, and other flawed literal translations. Regular language translations that reflect sense can be categorized based on accuracy as accurate translations, slightly inaccurate translations, and mistranslations. Finally, there is the use of figurative language in which an idiom is translated as an idiom with a similar sense, either of a similar or different wording, or the use of nonidiomatic figurative language such as metaphor.

Additionally, since the renditions are nonstrategic, it is difficult to determine if meaningful literal translations or if renditions, where the idiom exists in both languages, differ from senseless literal translations. Finally, translation programs based on AI chatbots are more likely to employ nonliteral translation. The issue remains in accuracy as the results do not go under sufficient quality evaluations. This showcases that although there are vast improvements and advancements in technology, machine translation has yet to master nonliteral language, such as idioms.

The results, therefore, imply that machine translation remains unreliable as a translation service. Thus, its usage should be limited or otherwise supplemented with human interference. This indicates that the capabilities of machine translation have yet to meet its demands and expectations. Therefore, this paper recommends that AI machine translation be enriched with further targeted training that emphasizes the different areas of language and communication, such as the strategies available for the translation of idioms. While AI systems are capable of evolving with little interference, providing specific guidance could guarantee that their evolution is one of improvement that meets expectations, which is vital in these early stages. The paper also recommends that further studies be made in more specific areas of idiom translation, such as studies based on specific cultures or the influence of context and text type on the products of machine translation in comparison to human translation.

References

Abu-Ssaydeh, A.-F. (2004). Translation of English idioms into Arabic. *Babel. Revue internationale de la traduction / International Journal of Translation, 50*(2), 114-131. doi:https://doi.org/10.1075/babel.50.2.03abu

Ahmadi, S., & Ketabi, S. (2011). Translation Procedures and Problems of Color Idiomatic Expressions in English And Persian: Cultural Comparison in Focus. *Journal of International Social Research, 4*(17), 9-39.

Akasheh, W. M., Haider, A. S., Al-Saideen, B., & Sahari, Y. (2024). Artificial intelligence-generated Arabic subtitles: insights from Veed. io's automatic speech recognition system of Jordanian Arabic. *Texto Livre, 17*, e46952-e46952. doi:10.1590/1983-3652.2024.46952.

Al-Khalafat, L., & Haider, A. S. (2022). A Corpus-Assisted Translation Study of Strategies Used in Rendering Culture-Bound Expressions in the Speeches of King Abdullah II. *Theory and Practice in Language Studies, 12*(1), 130-142. doi:https://doi.org/10.17507/tpls.1201.16

Al-Salman, S., & Haider, A. S. (2024). Assessing the accuracy of MT and AI tools in translating humanities or social sciences Arabic research titles into English: Evidence from Google Translate, Gemini, and ChatGPT *International Journal of Data and Network Science, 8*(4), 2483-2498. doi:https://doi.org/10.5267/j.ijdns.2024.5.009

Ali, H., & Sayyiyed Al-Rushaidi, S. M. (2017). Translating idiomatic expressions from English into Arabic: Difficulties and strategies. *Arab World English Journal 1*(3), 22-31 doi:https://doi.org/10.24093/awejtls/vol1no3.2

Almahasees, Z. (2021). *Analysing English-Arabic Machine Translation: Google Translate, Microsoft Translator and Sakhr*. London: Routledge.

Almrayat, O., Farghal, M., & Haider, A. S. (2024). Translating Idioms in Political Discourse: Translation Strategies and Semantic Categories. *International Journal of Arabic-English Studies, 25*(1), 187-210. doi:https://doi.org/10.33806/ijaes.v25i1.672

Baker, M. (1992). *A coursebook on translation*. London and New York: Routledge.

Baziotis, C., Mathur, P., & Hasler, E. (2022). *Automatic evaluation and analysis of idioms in neural machine translation.*

Paper presented at the Proceedings of the 17th Conference of the European Chapter of the Association for Computational Linguistics, Dubrovnik, Croatia.

Bortfeld, H. (2003). Comprehending idioms cross-linguistically. *Experimental psychology, 50*(3), 217.

Carrol, G., Conklin, K., & Gyllstad, H. (2016). Found in translation: The influence of the L1 on the reading of idioms in a L2. *Studies in Second Language Acquisition, 38*(3), 403-443.

Chen, L. (2009). On Literal Translation of English Idioms. *English language teaching, 2*(2), 164-166.

Dankers, V., Lucas, C. G., & Titov, I. (2022). *Can transformer be too compositional? analysing idiom processing in neural machine translation.* Paper presented at the Proceedings of the 60th Annual Meeting of the Association for Computational Linguistics, Dublin, Ireland.

Debbas, M., & Haider, A. S. (2020). Overcoming Cultural Constraints in Translating English Series: A Case Study of Subtitling Family Guy into Arabic. *3L: Language, Linguistics, Literature®, 26*(1), 1-17. doi:https://doi.org/10.17576/3l-2020-2601-01

ElFqih, K., & Monti, J. (2024). *Large Language Models as Legal Translators of Arabic Legislatives: Does ChatGPT and Gemini Care for Context and Terminology?* Paper presented at the Proceedings of The Second Arabic Natural Language Processing Conference, Bangkok, Thailand.

Ellis, D. G. (1999). *From language to communication.* New York and London: Routledge.

Fadaee, M., Bisazza, A., & Monz, C. (2018). *Examining the tip of the iceberg: A data set for idiom translation.* Paper presented at the the Eleventh International Conference on Language Resources and Evaluation (LREC), Miyazaki, Japan.

Farghal, M., & Al-Hamly, M. (2015). Arabic proverbs in fiction translation: Girls of Riyadh as an example. *Jordan Journal of Modern Languages and Literatures, 7*(1), 1-20.

Farghal, M., & Haider, A. S. (2024). Translating classical Arabic verse: human translation vs. AI large language models (Gemini and ChatGPT). *Cogent Social Sciences, 10*(1), 2410998. doi:https://doi.org/10.1080/23311886.2024.2410998

Farghal, M., & Saeed, A. T. (2022). Proverbial Use of Fauna in Arabia: A Theoretical, Thematic and Translational Account. *Journal of Southwest Jiaotong University, 57*(6), 453–465. doi:https://doi.org/10.35741/issn.0258-2724.57.6.42

Farghal, M., & Shunnaq, A. (1999). *Translation with reference to English and Arabic.* Irbid: Dar Al-Hilal for Translation.

Gaule, M., & Josan, G. S. (2012). Machine translation of idioms from english to Hindi. *International Journal of Computational Engineering Research, 2*(6), 50-54.

Gehrke, B., & McNally, L. (2019). Idioms and the syntax/semantics interface of descriptive content vs. reference. *Linguistics, 57*(4), 769-814.

Haider, A. S., Saideen, B., & Hussein, R. F. (2023). Subtitling Taboo Expressions from a Conservative to a More Liberal Culture: The Case of the Arab TV Series Jinn. *Middle East Journal of Culture and Communication, 16*(4), 363-385. doi:https://doi.org/10.1163/18739865-tat00006

Haider, A. S., & Shohaibar, R. S. (2024). Netflix English subtitling of idioms in Egyptian movies: challenges and strategies. *Humanities & Social Sciences Reviews, 11*(1), 949. doi:https://doi.org/10.1057/s41599-024-03327-4

Hidayati, N. N., & Nihayah, D. H. (2024). Google Translate, ChatGPT or Google Bard AI: A Study toward Non-English Department College Students' Preference and Translation Comparison. *Inspiring: English Education Journal, 7*(1), 14-33.

Hutchins, J. (2005). *The history of machine translation in a nutshell.* Retrieved from https://www.kdnuggets.com/2021/05/machine-translation-nutshell.html

Jiao, H., Peng, B., Zong, L., Zhang, X., & Li, X. (2024). Gradable ChatGPT Translation Evaluation. *arXiv preprint arXiv:2401.09984.*

Kasirzadeh, A., & Gabriel, I. (2023). In conversation with Artificial Intelligence: aligning language models with human values. *Philosophy and Technology, 36*(2), 1-24.

Khasawneh, M. A. S. (2023). The Potential of Ai in Facilitating Cross-Cultural Communication Through Translation. *Journal of Namibian Studies: History Politics Culture, 37*, 107-130.

Khoshafah, F. (2023). ChatGPT for Arabic-English translation: Evaluating the accuracy. *Research Square.* doi:https://doi.org/10.21203/rs.3.rs-2814154/v2

Kovács, G. (2016). About the definition, classification, and translation strategies of idioms. *Acta Universitatis Sapientiae, Philologica, 8*(3), 85-101.

Li, H., & Chen, H. (2019). Human vs. AI: An assessment of the translation quality between translators and machine translation. *International Journal of Translation, Interpretation, and Applied Linguistics (IJTIAL), 1*(1), 1-12.

Li, X. (2024). Comparison of Translation Quality between Large Language Models and Neural Machine Translation Systems: A Case Study of Chinese-English Language Pair. *International Journal of Education and Humanities, 4*(2), 121-128.

Liontas, J. (2002). Context and idiom understanding in second languages. *EUROSLA yearbook, 2*(1), 155-185.

Manakhimova, S., Avramidis, E., Macketanz, V., Lapshinova-Koltunski, E., Bagdasarov, S., & Möller, S. (2023). *Linguistically Motivated Evaluation of the 2023 State-of-the-art Machine Translation: Can ChatGPT Outperform NMT?* Paper presented at the Proceedings of the Eighth Conference on Machine Translation, Singapore.

Mancuso, A., Elia, A., Laudanna, A., & Vietri, S. (2020). The role of syntactic variability and literal interpretation plausibility in idiom comprehension. *Journal of Psycholinguistic Research, 49*, 99-124. doi:https://doi.org/10.1007/s10936-019-09673-8

Meryem, M. (2010). *Problems of idioms in translation, case study: First year master*. Mentouri University: Constantine.

Min, F. (2007). Cultural issues in Chinese idioms translation. *Perspectives: Studies in Translatology, 15*(4), 215-229.

Motallebzadeh, K., & Tousi, S. (2011). Employing compensation strategy in Translation of Idioms: A case study of the Translation of Mark Twain's Adventures of Huckleberry Finn in Persian. *International Journal of Linguistics, 3*(1), 1-9. doi:https://doi.org/10.5296/ijl.v3i1.1206

Mustonen, S. (2010). *Translating idioms: A case study on Donna Tartt's The Secret History and its Finnish translation.* (Master's thesis). University in Jyväskylä, Finland.

Nasim, S. M., AlTameemy, F., Ali, J. M. A., & Sultana, R. (2022). Effectiveness of digital technology tools in teaching pronunciation to Saudi EFL learners. *FWU Journal of Social Sciences, 16*(3), 68-82.

Popović, M. (2018). Error classification and analysis for machine translation quality assessment. In M. C. S. F. G. D. S. Joss (Ed.), *Translation quality assessment: From principles to practice* (pp. 129-158). Germany: Springer

Popović, M., Arcan, M., & Klubička, F. (2016). *Language related issues for machine translation between closely related South Slavic languages.* Paper presented at the Proceedings of the Third Workshop on NLP for Similar Languages, Varieties and Dialects (VarDial3).

Putera, L. J., & Sujana, I. M. (2024). A comparative analysis of accuracy between Google Translate and Bard in translating abstracts of scientific journals. *Didaktik: Jurnal Ilmiah PGSD STKIP Subang, 10*(1), 35-44.

Qiang, J., Li, Y., Zhang, C., Li, Y., Zhu, Y., Yuan, Y., & Wu, X. (2023). Chinese idiom paraphrasing. *Transactions of the Association for Computational Linguistics, 11*, 740-754.

Salamah, D. A. (2015). An investigation of idiom comprehension and translation by translation students at KSU. *Arab World English Journal, 6*(3), 293-308.

Sari, D. N., & Jumanto, J. (2018). A Contrastive Analysis between English Idioms and Their Indonesian Translations in the Novel The Girl on the Train by Paula Hawkins (2015). *E-Structural, 1*(01), 88-100.

Shao, Y., Sennrich, R., Webber, B., & Fancellu, F. (2017). Evaluating machine translation performance on Chinese idioms with a blacklist method. *arXiv preprint arXiv*.

Shuhaiber, R., & Haider, A. S. (2023). Strategies of Subtitling Egyptian Idiomatic Expressions and Proverbs into English. *Language Value, 16*(2), 60-99. doi:https://doi.org/10.58256/sptxps94

Tirkkonen-Condit, S. (2002). Metaphoric expressions in translation processes. *Across languages and cultures, 3*(1), 101-116.

Volk, M., & Weber, N. (1998). The automatic translation of idioms. machine translation vs. translation memory systems. In N. Weber (Ed.), *Machine translation: theory, applications, and evaluation. An assessment of the state of the art* (pp. 167-192). St. Augustin: : Gardez!-Verlag.

Wang, H., Wu, H., He, Z., Huang, L., & Church, K. W. (2021). Progress in machine translation. *Engineering, 18*, 143–153. doi:https://doi.org/10.1016/j.eng.2021.03.023

Wang, L. (2023). *The impacts and challenges of artificial intelligence translation tool on translation professionals.* Paper presented at the SHS Web of Conferences.

Weld-Ali, E. W., Obeidat, M. M., & Haider, A. S. (2023). Religious and Cultural Expressions in Legal Discourse: Evidence from Interpreting Canadian Courts Hearings from Arabic into English. *International Journal for the Semiotics of Law-Revue internationale de Sémiotique juridique, 36*(6), 2283–2301. doi:https://doi.org/10.1007/s11196-023-10016-z

Zakraoui, J., Saleh, M., Al-Maadeed, S., & Alja'am, J. M. (2021). Arabic Machine Translation: A Survey With Challenges and Future Directions. *IEEE Access, 9*, 161445-161468.

Zhang, J., & Zong, C. (2020). Neural machine translation: Challenges, progress and future. *Science China Technological Sciences, 63*(10), 2028-2050.

Zia-ud-Din, M., & Elhajraoui, F. E. (2023). Role of Artificial Intelligence in Legal Education in the 21 st Century. *FWU Journal of Social Sciences, 17*(2), 62-77. doi:http://doi.org/10.51709/19951272/Summer2023/5

Zibin, A., Altakhaineh, A. R. M., & Hussein, E. T. (2020). On the comprehension of metonymical expressions by Arabic-speaking EFL learners: A cognitive linguistic approach. *Topics in Linguistics, 21*(1), 45-61. doi:https://doi.org/10.2478/topling-2020-0003

Bridging the Third-Level Digital Divide: Socio-Demographic Determinants of the Digital Outcomes in Thailand

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The rapid evolution of digital technologies has transformed modern society, yet significant disparities in digital engagement persist. This study explores the third-level digital divide in Thailand, focusing on how sociodemographic factors shape digital engagement across economic, social, educational, and institutional domains. Using logistic regression analyses on a nationwide 2022 survey with 43,465 respondents, this research offers novel insights by identifying how gender, age, region, income, education, employment status, urban residency, and Internet confidence specifically affect different types of digital engagement. Key findings reveal that men are less likely to engage in online activities compared to women, while younger adults demonstrate higher digital participation. Notably, older adults rely more on institutional digital services, revealing an age-specific pattern. The study also highlights regional disparities, with the northeastern region showing higher engagement and the southern region lower across all domains. A novel finding is the contrasting role of income, which boosts economic engagement but reduces participation in institutional activities. Furthermore, this study underscores the strong role of education and Internet confidence in driving digital engagement across all areas. These findings offer crucial evidence for designing targeted interventions to bridge the digital divide, such as gender-equality-focused digital literacy programs, initiatives for older adults, regional infrastructure enhancements, financial subsidies, integrating digital literacy into education, and building digital confidence through practical, hands-on national campaigns.

Keywords: digital engagement, digital outcomes divide, Internet benefits, Thailand, Third-level digital divide

The emergence of digital technologies has profoundly transformed numerous dimensions of human life, including economic activities, social connections, educational prospects, and accessibility to government services. However, the persistent digital divide—a disparity between individuals who can access digital technologies and those who cannot—continues to pose a significant global challenge (OECD, 2001). This concept, as outlined by van Dijk (2020), comprises three distinct levels: the divide in Internet access (first level), the divide in digital skills (second level), and the divide in digital outcomes (third level).

The digital divide concept originated in the 1990s, initially emphasizing disparities in Internet access. The primary focus during this period was on the unequal availability of physical access to computers and the Internet. Policymakers and researchers recognized that access to technology was becoming a crucial determinant of social and economic opportunities (Servon, 2002). As technologies became more widespread in the early 2000s, the focus shifted the digital outcomes divide underscores inequalities in converting access to and use of information and communication technologies (ICTs) into significant economic, social, educational, personal, and institutional benefits. This aspect of the

digital divide is especially pertinent as it focuses on the concrete advantages individuals can achieve through proficient use of digital technologies. Economic opportunities, social inclusion, educational attainment, and improved access to government services are some of the critical outcomes influenced by digital engagement (Bravo & Libaque-Saenz, 2019). However, the third-level digital divide has been relatively underexplored compared with the first and second levels (Scheerder et al., 2017), especially in the context of developing countries (Setthasuravich & Kato, 2020, 2022).

Thailand presents a unique context for studying the digital outcomes divide. The country faces a pronounced digital divide, both nationally and internationally. Fixed infrastructure underdevelopment has led to a low Internet penetration rate, especially at the household level; however, mobile penetration rates are higher due to widespread mobile network coverage and subscriptions (Setthasuravich et al., 2024). This disparity highlights the challenges in achieving digital inclusion across different regions of the country. Moreover, the aged society in Thailand faces unique challenges in digital inclusion (Robru et al., 2024). Many older individuals, particularly in rural areas, lack Internet access and smartphones, placing them at risk of being left behind in the digital transformation. According to 2022 data from the International Telecommunication Union (ITU), 88% of individuals in Thailand used the Internet, which is higher than the world average of 67.4% in 2023. However, less than 27.7% of people aged 75 years or older have access to the Internet. A significant urban–rural divide is also reported, with Internet usage in urban areas at 91.7% compared with 84.9% in rural areas (ITU, 2023). Urbanc–rural disparities further exacerbate the digital divide in Thailand. Investments in smart cities and digital parks are concentrated in urban areas, and rural regions often lag in digital infrastructure and access. This urban–rural divide is evident in the education sector, with schools in rural areas frequently lacking access to electricity, computers, and the Internet, which impedes students' ability to engage in e-learning (ITU, 2022).

In response to these challenges, the Thai government launched the Thailand Digital Economy and Society Development Plan for 2018–2037, presenting a comprehensive strategy to leverage digital technology for the nation's development. It aims to enhance the global competitiveness of Thailand, create equal opportunities, reform public sector operations, and develop human capital for the digital age. The plan is structured into four phases, focusing on building a digital foundation, inclusion, full transformation, and global digital leadership. The plan proposes six key strategies: enhancing high-efficiency digital infrastructure, leveraging digital technology to drive economic growth, fostering an inclusive and equitable society, transitioning to a digital government, strengthening the workforce, and establishing trust in digital technology. Additionally, it emphasizes the need for urgent action, institutional restructuring, integrated resource allocation, and policy follow-up mechanisms to prepare Thailand for the digital age. Key projects include expanding broadband access, promoting e-commerce, and fostering a digital workforce. The ultimate goal is to eliminate the digital divide, ensuring that all citizens can fully benefit from digital advancements (Ministry of Digital Economy and Society, 2016).

Digital technologies bring a wide range of positive outcomes, including enhanced economic opportunities, social inclusion, educational advancement, and improved access to government services (van Dijk, 2020). Economically, digital engagement allows individuals to participate in online commerce, conduct financial transactions, and access job opportunities. Socially, it fosters improved communication, social networking, and community engagement. Educationally, digital technologies provide access to online learning resources, virtual classrooms, and digital tools that enhance learning outcomes. Institutionally, digital engagement facilitates access to e-government services, public information, and civic participation. However, digital engagement also presents challenges, such as digital addiction, privacy concerns, cyberbullying, and the risk of exacerbating socioeconomic disparities (Boerkamp et al., 2024; Scheerder et al., 2019). Digital addiction can negatively impact productivity and mental health, while privacy concerns arise from the extensive personal data shared online (Hidayatullah et al., 2023). Cyberbullying remains a significant issue, particularly among younger users. Moreover, without careful management, digital technologies can widen the gap between those with access and those without, intensifying existing socioeconomic disparities. Despite these challenges, this study focuses on the positive impacts of digital engagement. The primary goal is to understand how digital technologies can enhance socioeconomic opportunities and improve quality of life in Thailand. By concentrating on the beneficial effects, this research aims to identify how digital technologies can be leveraged to foster inclusive growth and development. This approach allows for a comprehensive analysis of how digital engagement can drive economic growth, promote social inclusion, advance education, and improve access to government services, providing valuable insights for policymakers and stakeholders aiming to promote digital inclusivity in Thailand.

Furthermore, the third-level digital divide—disparities in translating digital access into meaningful outcomes—has been underexplored, particularly in developing countries (Scheerder et al., 2017; Setthasuravich & Kato, 2020). While previous studies have examined this divide in developed countries, there is limited empirical evidence from Southeast Asia, especially Thailand, where regional, socioeconomic, and infrastructural challenges are unique (Setthasuravich et al., 2024). This study addresses this gap by offering a comprehensive analysis of Thailand's third-level digital divide, using data from a 2022 nationwide survey. Unlike earlier research focused primarily on the first and second levels of the digital divide (van Dijk, 2020; Wei et al., 2011), this study seeks to answer the key question: ***How do sociodemographic factors influence digital engagement across economic, social, educational, and institutional domains in Thailand?***

To address this question, the study sets the following objectives:

1. Examine the impact of sociodemographic factors on digital engagement in Thailand.
2. Identify the key predictors of positive digital outcomes across various domains.
3. Provide insights for policymakers and stakeholders to develop targeted interventions that promote digital inclusion in Thailand.

This study offers several important contributions. Empirically, it provides detailed insights into the third-level digital divide in Thailand, highlighting how sociodemographic factors influence digital engagement. This comprehensive examination identifies specific barriers and facilitators of digital engagement in the Thai context. From a policy perspective, the study provides valuable information for developing targeted interventions to promote digital inclusion and equitable access to digital opportunities across the country.

The paper is structured as follows: Section 2 provides a comprehensive literature review on the digital divide, including its theoretical foundations and empirical evidence. Section 3 details the methodology employed in this study. Section 4 presents the estimation results, highlighting key findings. Section 5 offers an in-depth discussion of the results and their implications. The conclusion is presented in the final section.

Literature Review
Theorizing the Digital Divide

The term "digital divide" refers to the gap between individuals, households, businesses, and geographic regions at different socioeconomic levels in terms of their access to ICTs and ability to utilize the Internet. This concept is multifaceted, encompassing three primary dimensions: the access divide, the usage divide, and the benefit divide. Recognizing these dimensions is essential for crafting effective strategies to address the digital divide and promote equitable access to technology. The concept gained prominence in the 1990s, initially centered on the access divide, with a focus on the unequal availability of physical access to computers and the Internet. During this period, policymakers and researchers identified technology access as a critical factor influencing social and economic opportunities (Servon, 2002).

As technologies became more widespread in the early 2000s, the focus shifted toward the usage divide. It became clear that simply providing access to technology was insufficient; individuals needed the skills and knowledge to use these technologies effectively. Digital literacy programs and initiatives aimed at increasing digital skills became a priority (van Dijk & Hacker, 2003). In recent years, the emphasis has further shifted to the benefit divide. Policymakers and researchers now recognize that the ultimate goal is not access and usage but ensuring that individuals can derive meaningful benefits from digital technologies. This includes economic advancement, improved health and education outcomes, and enhanced civic and social participation (Wei et al., 2011). The digital divide is a complex phenomenon consisting of three distinct levels: the Internet access divide (first level), the digital skills divide (second level), and the digital outcomes divide (third level).

The first-level digital divide, often termed the "Internet access divide," highlights the inequality between individuals with consistent access to digital technologies and those with limited or no access. This level emphasizes the physical availability of computers, Internet connectivity, and other ICT infrastructure. Several factors contribute to this divide. Economic inequalities enable wealthier individuals and families to afford devices like computers, smartphones, and high-speed Internet, whereas lower-income households often face challenges in acquiring these technologies, creating substantial access gaps (van Deursen & van Dijk, 2019). Additionally, geographic location significantly influences access: urban areas generally benefit from superior ICT infrastructure and faster, more reliable Internet

connectivity compared to rural regions. Rural and remote regions often face challenges such as limited or no Internet connectivity due to the high cost of infrastructure development in less populated areas (Gonzales et al., 2020). Education is another critical factor: individuals with higher levels of education are generally more likely to have access to digital technologies. Educational institutions often provide access to computers and the Internet, which can help bridge the gap for students from less privileged backgrounds (Friemel, 2016). Moreover, age can influence access: younger generations, who have grown up with digital technologies, are more likely to have access to and use these technologies. Older adults may face barriers due to a lack of familiarity or comfort with new technologies (Nain & Chaudhary, 2022; Yu et al., 2018). Finally, people with disabilities may encounter additional barriers to accessing digital technologies, including the need for assistive technologies and accessible design to ensure that they can effectively use ICTs (Helsper & Eynon, 2013; Phochai et al., 2024).

The second level of the digital divide is called the "digital skills divide." Despite having access to digital technologies, the ways in which individuals use and interact with these technologies can differ significantly. The usage divide considers variations in individual digital skills. Digital skills encompass the capacity to utilize digital technologies efficiently. These include fundamental abilities like navigating the Internet and operating standard software applications, alongside more advanced competencies such as coding, data analysis, and knowledge of cybersecurity practices (Scheerder et al., 2017). Those with higher digital literacy are more likely to use technology effectively. In addition, socioeconomic status plays a role; individuals from higher socioeconomic backgrounds exhibit more advanced usage patterns and online engagement. They are more likely to use the Internet for activities such as online banking, e-commerce, and accessing information and services that enhance their quality of life (Robinson et al., 2015). Next, age differences contribute to the usage divide: younger individuals tend to be more proficient in using digital technologies and participating in diverse online activities. In contrast, older adults often use the Internet less frequently and for more restricted purposes, which can limit their ability to fully utilize digital resources (van Deursen & Helsper, 2015). Higher levels of education correlate with more sophisticated use of digital technologies. Educated individuals are more likely to seek information, engage in online learning, and use digital tools for professional development (Tsetsi & Rains, 2017).

The third level of the digital divide, known as the benefit divide or "digital outcomes divide," emphasizes the disparity in the ability to transform access to and usage of ICTs into meaningful economic, social, educational, personal, and institutional benefits. This level focuses on leveraging digital technologies to enhance various aspects of life. Numerous factors contributing to the digital outcomes divide have been studied. For instance, economic opportunities play a crucial role; individuals equipped with the skills and resources to utilize digital technologies can secure better job prospects, engage in e-commerce, and participate in the digital economy, whereas those lacking these capabilities may miss out on significant economic advantages (Ritzhaupt et al., 2013). Educational attainment is another key factor, as access to online learning resources and e-learning platforms can improve educational outcomes and open doors to academic and professional advancement. However, those without the necessary access and skills may be unable to take advantage of these resources (Warschauer & Matuchniak, 2010). Moreover, health outcomes can be improved through digital technologies that provide access to telemedicine, health information, and online support communities. Those without access to these technologies may face barriers to obtaining timely and accurate health information and care (Mitchell et al., 2014). Civic engagement is another area where the benefit divide is evident; the Internet provides a platform for civic engagement, allowing individuals to participate in political discussions, access government services, and advocate for social causes. The digital outcomes divide means that those without digital access and skills are less likely to engage in these activities, which can impact their ability to influence decisions that affect their lives (van Deursen & van Dijk, 2014). Finally, the ability to leverage digital technologies for personal development, social connections, and accessing information can significantly enhance overall well-being (Zillien & Hargittai, 2009).

In sum, the digital divide is a multifaceted and complex issue encompassing disparities in access, usage, and digital outcomes. Each dimension presents unique challenges that must be addressed to promote equitable access to digital technologies. The access divide centers on the physical availability of ICTs, shaped by factors such as income, geographic location, education, age, and disability. The usage divide focuses on differences in digital literacy, skills, and patterns of Internet use, influenced by socioeconomic status, education, and age. Lastly, the digital outcomes divide highlights the ability to convert digital access and usage into significant economic, social, and personal benefits, including improved job opportunities, educational achievements, health outcomes, civic participation, and overall quality of life.

Empirical Evidence of the Third-Level Digital Divide

The third-level digital divide refers to the unequal social benefits individuals can derive from effectively using digital technologies in both professional and personal contexts. Unlike the first and second levels, this divide focuses on the tangible results of Internet use, such as economic growth, social inclusion, educational progress, and enhanced access to government services (Bravo & Libaque-Saenz, 2019). This dimension is particularly significant because it highlights inequalities in the benefits associated with digital technology use, emphasizing the need for not just access and skills but also the meaningful application of these technologies to achieve impactful outcomes. Furthermore, the third-level digital divide has notable implications for education, as disparities in digital skills and usage can influence knowledge acquisition and academic advancement (Çağlayan-Akay & Oskonbaeva, 2022). Despite its importance, this aspect of the digital divide has received less attention in research compared to the first and second levels (Scheerder et al., 2017).

The empirical evidence on the third-level digital divide provides a comprehensive understanding of the barriers and outcomes associated with digital engagement across different socioeconomic contexts. Foundational works by Hargittai (2002) and Wei et al., (2011) provide critical insights into the evolution and impact of the digital divide. Hargittai (2002) critiqued the binary classification of technology use and highlighted the differences in online skills, suggesting that age negatively correlates with Internet skills, whereas experience impacts them positively. Wei et al., (2011) conceptualized the digital divide into three levels: access, capability, and outcomes, demonstrating how these layers interrelate and affect student learning outcomes.

The third-level digital divide has been explicitly recognized by the work of Van Deursen and Helsper (2015), which offered a nuanced understanding of digital inclusion, moving from skills and usage to tangible outcomes. Their study showed that individuals with higher social status benefit more from digital engagement, not in the extent of use but in the achieved outcomes, which exacerbates existing offline inequalities. Scheerder et al., (2019, 2020) further elucidated how sociocultural contexts influence beneficial Internet use and negative outcomes. Their qualitative research indicates that higher educational levels correlate with more positive outcomes, and the way different educational groups cope with negative outcomes varies significantly. In addition, the work by Ogbo et al., (2021) extended this understanding to sub-Saharan Africa, emphasizing that the welfare effect of technology hinges not only on adoption but also on the type of use, highlighting distinct classifications and predictors of Internet activities and outcomes. Furthermore, a recent study also highlighted the myriad benefits of Internet provision, particularly for socioeconomically disadvantaged groups. Boerkamp et al., (2024) conducted a systematic literature review that identified improved employability, enhanced economic standards, better school achievements, and strengthened social capital as significant positive outcomes of Internet use.

The effect of socioeconomic status on the third-level digital divide is well-documented. The third-level digital divide is a crucial aspect of digital inequality that focuses on the tangible benefits of using digital technologies and is influenced by economic, social, technological, and policy-related factors. Economic disparities are a significant contributor to the digital divide. The development index of a country affects all three levels of the digital divide (Chang et al., 2015). Financial disparities between regions and socioeconomic groups further exacerbate this issue. Higher income levels typically correlate with better access to digital resources and the ability to derive greater benefits from digital engagement (Nielsen, 2018). Additionally, social determinants, such as age, gender, education level, and employment status, significantly impact digital engagement. Younger individuals and those with higher education levels tend to benefit more from digital technologies, whereas older adults and less educated individuals often lack the digital literacy needed to leverage these resources effectively (Scheerder et al., 2017). These disparities highlight the critical need to address sociodemographic factors to close the digital divide. Furthermore, the availability and quality of Internet connectivity and access to digital devices are essential for narrowing this gap. Regions with robust digital infrastructure facilitate more effective digital engagement, contributing to improved economic, educational, and social outcomes. In contrast, areas with inadequate Internet connectivity and limited access to digital devices encounter significant challenges in utilizing digital technologies for personal and professional advancement. Government policies and interventions also play a pivotal role in mitigating the digital divide. Policies aimed at improving digital infrastructure, enhancing digital literacy, and promoting inclusive digital practices can significantly reduce the third-level digital divide. Effective e-government initiatives, for instance, can enhance access to government services and improve civic engagement among all demographic groups.

The COVID-19 pandemic has brought significant disparities in online learning outcomes into sharper focus. Research by Wang et al., (2024) and Guo and Wan (2022) underscores the critical role of socioeconomic factors and the quality of digital infrastructure in influencing educational achievements. Students from wealthier backgrounds, with greater access to digital devices and supportive learning environments, are better positioned to excel in online education. In contrast, students from lower-income households encounter challenges such as insufficient access to essential technology and unreliable Internet connectivity, which impede their academic progress. Badiuzzaman et al., (2021) and Yu (2018) emphasized that despite physical access to ICT, many students, particularly from disadvantaged backgrounds, struggle with online learning due to high data costs, poor network infrastructure, and a lack of digital literacy, resulting in a significant utility gap.

Moreover, the third-level digital divide manifests uniquely among different demographic groups. Calderon Gomez (2021) explored how economic, cultural, and social capital convert into digital capital and vice versa among young people in Madrid, highlighting that economic capital imposes material barriers while cultural and social forms of capital facilitate effective digital engagement. This underscores the importance of integrating sociocultural contexts into digital inclusion strategies. Similarly, studies by Park and Chun (2024) and Tőkés (2022) examined the digital divide among older adults in Korea and Romania, respectively, revealing that older adults often possess lower digital capital, which is influenced by regional disparities and socioeconomic factors. Tailored digital literacy programs and supportive environments are essential for enhancing digital engagement among older populations. Additionally, Cho and Kim (2021) explored the disparity in Internet use outcomes between individuals with disabilities and those without disabilities in South Korea. The study found significant gaps in Internet access, skills, motivation, and outcomes, emphasizing the need for government programs to promote digital skills and accessibility for persons with disabilities, ensuring equitable digital engagement.

Furthermore, Nam and Sayogo (2011) and Van Deursen (2020) emphasized the influence of sociodemographic factors on e-government adoption. Younger individuals and those with socioeconomic advantages are more likely to utilize e-government services. Perceived usefulness and trust in government were identified as key determinants of e-government engagement, highlighting the importance of improving the accessibility and value of these services to address the digital divide. Meanwhile, Van Deursen (2020) examined digital inequality during the COVID-19 pandemic, revealing that socioeconomic status, health conditions, and digital literacy significantly impacted the benefits people derived from online resources. The study underscores the need for tailored interventions to support vulnerable populations, ensuring equitable access to digital health information and services.

Despite the growing body of research on the third-level digital divide, several gaps remain. Most studies have been conducted in specific geographical and socioeconomic contexts in developed countries. Further research in diverse settings, particularly in developing countries like Thailand, is required to understand the unique challenges and opportunities in these regions. Specifically, studies often fail to investigate the mechanisms through which socioeconomic status and educational backgrounds affect different digital outcomes in Thailand. To address these gaps, this study provides an in-depth analysis of the factors shaping the third-level digital divide in Thailand. By examining economic, social, educational, and institutional outcomes, it seeks to enrich the existing literature on the digital divide and offer detailed insights into the unique barriers and enablers of digital engagement within the Thai context. The findings aim to guide policymakers and stakeholders in implementing effective measures to foster digital inclusion and ensure equitable digital outcomes across all segments of the Thai population.

Method

Categorizing the Outcomes and Hypotheses

In examining the third-level digital divide, it is essential to categorize the digital outcomes divide into distinct domains that encapsulate the varied benefits and challenges individuals experience from digital engagement. Building on the fivefold categorization of activity domains suggested by van Dijk (2005) and Van Deursen and Helsper (2015)—economic, social, political, institutional, and educational fields—this study focuses on four critical areas: economic (commerce and labor), social, educational, and institutional outcomes. The political domain is not included due to the lack of available data. Each of these domains represents a unique facet of how digital technologies influence and shape the lives of Internet users in Thailand.

Economic outcomes refer to the tangible benefits that individuals derive from engaging in online commercial and labor activities. Economic commerce encompasses activities such as purchasing goods and services online, booking accommodations or hotels, and conducting online banking transactions. These activities highlight the role of digital technologies in facilitating commercial transactions and enhancing financial management. Economic labor includes searching for job information, applying for jobs online, and selling goods and services. The ability to buy and sell goods and services online can significantly enhance economic opportunities, particularly for small business owners and entrepreneurs (Lawrence, 2011; Pestek & Hadzijamakovic, 2024). Furthermore, digital engagement in the labor market can affect an individual's ability to access job opportunities, enhance their employability, and achieve career advancement (Dihan, 2024; Khurshid & Baig, 2024). In the context of Thailand, understanding how different socioeconomic groups engage with and benefit from these economic activities is crucial for identifying potential disparities and promoting inclusive economic growth. Accordingly, **Hypothesis 1** posits that sociodemographic factors, including gender, age, region of residence, income, education level, occupation status, urban residency, and confidence in using the Internet, significantly influence the likelihood of individual engagement in economic activities online. This hypothesis aims to explore the primary determinants that shape digital economic engagement and identify areas where targeted interventions can help bridge the digital divide and promote equitable economic opportunities.

Social outcomes pertain to the ways in which digital technologies influence social interactions, relationships, and community engagement (Erhardt & Freitag, 2021). This includes the use of social media (e.g., Facebook, Instagram, and Twitter), communicating via applications like LINE and Facebook Messenger, and engaging in online dating. Social outcomes of digital engagement can significantly impact an individual's social capital, sense of belonging, and overall well-being (Karabchuk & Shomotova, 2021). In Thailand, where social media use is highly prevalent, examining the social outcomes of digital engagement is essential for understanding how digital technologies affect social cohesion and identifying any existing social disparities. Thus, **Hypothesis 2** posits that sociodemographic factors, including gender, age, region of residence, income, education level, occupation status, urban residency, and confidence in using the Internet, significantly affect the likelihood of individual engagement in social activities online. This hypothesis aims to investigate the primary determinants that shape digital social engagement and identify areas where interventions can promote more inclusive social participation through digital means.

Educational outcomes refer to the influence of digital technologies on learning, knowledge acquisition, and academic achievement. This includes access to online learning materials, participation in virtual classrooms, and the use of digital tools for educational purposes (Bala, 2024). The digital divide in educational outcomes can significantly affect academic performance and future opportunities (Cochrane, 2020). Digital technologies offer unparalleled access to educational resources, fostering lifelong learning and skill development. Engaging in online educational activities is essential for personal and professional advancement, especially in today's fast-paced digital economy. In the Thai context, it is vital to examine how digital engagement shapes educational outcomes across various socioeconomic groups and regions. Accordingly, **Hypothesis 3** posits that sociodemographic factor—such as gender, age, region, income, education level, employment status, urban or rural residency, and Internet confidence—play a critical role in determining individual participation in online educational activities. Understanding these dynamics is essential for designing targeted policies and interventions that ensure equitable access to digital educational resources and opportunities. Such measures support lifelong learning and skill development across diverse socioeconomic groups in Thailand.

Institutional outcomes pertain to the engagement in and benefits derived from digital government services and other institutional digital platforms. This includes access to e-government services, online public information, and digital participation in civic activities. Effective digital interaction with institutional services can enhance citizens' access to government resources, increase transparency, and promote civic participation (Zhao et al., 2024). Successful engagement with digital government services ensures that individuals are well-informed and adequately supported by public resources. In the context of Thailand, analyzing institutional outcomes can provide valuable insights into how effectively digital government initiatives are reaching and benefiting various population segments. This analysis can also identify areas for improvement in public digital services. Accordingly, **Hypothesis 4** posits that sociodemographic factors, including gender, age, region of residence, income, education level, occupation status, urban residency, and confidence in using the Internet, significantly influence the likelihood of individual use of the Internet for institutional outcomes. This hypothesis underscores the importance of understanding the diverse factors that affect digital

engagement with government services, aiming to enhance the accessibility and effectiveness of these services for all citizens.

The exclusion of the political domain is due to the lack of available data from Thailand. Although political outcomes are undoubtedly important, the absence of robust data limits the ability to conduct a thorough analysis in this study. Nevertheless, categorizing digital outcomes into economic, social, educational, and institutional domains provides a structured framework for examining the third-level digital divide. This categorization highlights the multifaceted nature of digital engagement and its impact on various aspects of individual lives. By focusing on these four domains, this study aims to contribute to a deeper understanding of digital inequalities and inform the development of effective policies and interventions to promote digital inclusion in Thailand.

Data Source and Sample Selection

This study utilized data from the "Thailand Internet User Behavior Survey 2022," conducted by the Electronic Transactions Development Agency. This extensive survey captures a diverse representation of Internet users across Thailand, encompassing a wide range of socioeconomic backgrounds, age groups, and regions. The sampling process was carefully controlled and weighted to account for the uneven distribution of Internet users nationwide, as highlighted in the "Household Information and Communication Technology Use Survey 2021" by the National Statistical Office. Data collection took place between April and July 2022, involving 46,348 voluntary respondents. The survey was conducted online, with questionnaires distributed via email using the Electronic Transactions Development Agency's database and promoted through websites and social media platforms such as Facebook, LINE@, and Instagram. Sponsorship from various government and private organizations further enhanced access and participation. For this study, the final sample comprised 43,465 respondents aged 18 and above, ensuring the inclusion of adult Internet users who are more likely to engage in diverse online activities and experience varied digital outcomes.

Independent Variables

Table 1 presents a comprehensive classification, and operational definitions of the independent variables employed in this study.

Table 1

Categories and Operational Definitions of Independent Variables

Independent Variables	Categories/Operational Definitions
Gender	0: Female
	1: Male
Age	1: 18–25 years (young adults)
	2: 26–44 years (adults)
	3: 59–59 years (middle-aged adults)
	4: 60+ years (older adults)
Region	1: Northern
	2: Northeastern
	3: Central
	4: Southern
	5: Western
	6: Eastern
Income	0: Less than 15,000 THB
	1: 15,000 THB and above
Education Level	0: Below primary school
	1: Lower primary school
	2: Upper primary school
	3: Junior high school
	4: High school/vocational certificate
	5: Associate degree, vocational certificate/diploma
	6: Bachelor's degree
	7: Master's degree
	8: PhD
Occupation	0: Unemployed
	1: Employed
Residence	0: Rural area
	1: Urban area
Degree of Confidence in Using the Internet	0: Not confident at all
	1: Slightly confident

Independent Variables	Categories/Operational Definitions
	2: Very confident
	3: Most confident

Dependent Variables

The dependent variables in this study were organized into several primary outcome domains, each represented by a series of binary (Yes/No) questions (Table 2). For each domain, a summary scale was created based on these dichotomous items. Following the approach recommended by Van Deursen and Helsper (2015), the summary scale was then converted into a binary format: if at least one of the questions within a domain was answered "Yes," the factor was assigned a value of 1; if all responses were "No," the factor was assigned a value of 0.

The dependent variables and their corresponding questions are outlined in Table 2. The table also includes the percentage of respondents who answered "Yes" to each question, along with the actual number of affirmative responses in parentheses. The economic outcomes were divided into two categories: economic commerce and economic labor. Economic commerce included activities such as purchasing goods and services online (24.82%, $n = 10,787$), booking accommodations or hotels online (4.65%, $n = 2,020$), and conducting online banking transactions (32.13%, $n = 13,966$). Economic labor encompassed searching for job information or applying for jobs online (8.11%, $n = 3,525$) and selling goods and services online (4.48%, $n = 1,947$).

Social outcomes were measured by questions related to using social media platforms including Facebook, Instagram, and Twitter (35.99%, $n = 15,645$), chatting via applications such as LINE and Facebook Messenger (64.94%, $n = 28,226$), and engaging in online dating (0.81%, $n = 352$). Educational outcomes were assessed through questions on online learning (11.08%, $n = 4,818$), attending online training courses (7.46%, $n = 3,242$), searching for academic information (10.92%, $n = 4,748$), and applying to schools or universities online (1.90%, $n = 824$). Institutional outcomes involved following government news, such as COVID-19 reports (10.37%, $n = 4,508$), and registering for or checking the eligibility of government programs (17.03%, $n = 7,403$).

Table 2
Dependent Variables and Corresponding Questions

Outcomes	Questions	Yes %
Economic Commerce 1	Did you use the Internet to purchase goods and services online?	24.82 (10,787)
Economic Commerce 2	Did you use the Internet to book accommodations/hotels online?	4.65 (2,020)
Economic Commerce 3	Did you use the Internet to conduct online banking transactions (e.g., transfers, top-ups)?	32.13 (13,966)
Economic Labor 1	Did you use the Internet to search for job information/apply for jobs online?	8.11 (3,525)
Economic Labor 2	Did you use the Internet to sell goods and services online?	4.48 (1,947)
Social 1	Did you use social media such as Facebook, Instagram, Twitter?	35.99 (15,645)
Social 2	Did you use the Internet to chat via applications such as LINE, Facebook Messenger?	64.94 (28,226)
Social 3	Did you use the Internet for online dating?	0.81 (352)
Educational 1	Did you use the Internet for online learning?	11.08 (4,818)
Educational 2	Did you use the Internet to attend online training courses?	7.46 (3,242)
Educational 3	Did you use the Internet to search for academic information?	10.92 (4,748)
Educational 4	Did you use the Internet to apply for schools/universities?	1.90 (824)
Institutional 1	Did you use the Internet to follow government news (e.g., COVID-19 reports)?	10.37 (4,508)
Institutional 2	Did you use the Internet to register/receive/check eligibility for	17.03

government programs (e.g., We Win Scheme)?	(7,403)

Note: Numbers of samples are in parentheses.

Data Analyses

This study employed the procedure of data analysis proposed by Van Deursen and Helsper (2015). The principal axis factoring (PAF) method was initially used to assess the dependent variables, followed by varimax rotation to establish the factor structure of the 14 outcome items. It offers significant benefits in measuring dependent variables. PAF is particularly useful for identifying underlying factor structures when the assumption of multivariate normality is violated, as is the case with binary items. This method aids in identifying the latent constructs underlying the observed variables, providing a clear and accurate representation of the data (Costello & Osborne, 2005). This study used PAF to effectively group related activities, such as economic, social, educational, and institutional outcomes, enhancing the reliability and validity of the measurement model and ensuring robust, interpretable results.

To examine the relationship between the independent variables and the outcomes across four domains (economic, social, educational, and institutional government), logistic regression analysis was employed. Adjusted odds ratios (AOR) with robust standard errors were calculated to account for clustering effects within the data. The analysis, conducted using STATA, provides results with 95% confidence intervals (CIs) and significance levels (p-values). This analysis aimed to identify the sociodemographic factors influencing the likelihood of Internet users in Thailand engaging in and deriving benefits from digital activities within these domains. Significant predictors are highlighted, and the implications of these findings are discussed concerning digital inclusion and policy recommendations.

Results

Before examining the detailed logistic regression analysis results, we conducted a PAF test with varimax rotation was conducted to establish the factor structure of the 14 outcome items related to digital engagement. Since the Internet outcomes were measured using binary items, the multivariate normality assumption was not met, making PAF the most suitable method. The analysis identified a five-factor structure aligned with the theoretical concepts determined a priori, which provided the best fit for the data. Following the recommendation of Tabachnick and Fidell (2019), a factor loading threshold of 0.32 was used as the minimum acceptable loading for an item. All 14 items exceeded this threshold, contributing to a robust five-factor structure (see Table 3).

The Kaiser–Meyer–Olkin (KMO) measure of sampling adequacy was calculated at 0.7001, categorized as "middling" (Kaiser, 1974). According to Netemeyer et al., (2003), a KMO value above 0.60–0.70 is deemed sufficient, further confirming that the sample size was appropriate for factor analysis. Additionally, Bartlett's test of sphericity produced a significant chi-square value of 15,480.579 (p < 0.001), indicating that the correlation matrix was not an identity matrix and confirming the suitability of the data for factor analysis (Bartlett, 1950). These findings affirm the appropriateness of using PAF and validate the five-factor structure for analyzing the digital outcomes in this study. The strong loadings of the items of each factor underscore the robustness of the identified structure in capturing the underlying theoretical constructs. This factor structure provided a clear delineation of digital outcomes, facilitating a nuanced analysis of how various sociodemographic factors influence each domain.

Table 3

Subscale loadings of the Digital Outcomes

Subscale	Factors				
	1 Economic Commerce	2 Economic Labor	3 Social	4 Educational	5 Institutional
Did you use the internet to purchase goods and services online?	0.843				
Did you use the internet to book accommodations/hotels online?	0.577				
Did you use the internet to conduct online banking transactions (e.g., transfers, top-ups)?	0.821				
Did you use the internet to search for job information/apply for jobs online?		0.778			
Did you use the internet to sell goods and services online?		0.778			

Subscale	Factors				
	1 **Economic Commerce**	**2** **Economic Labor**	**3** **Social**	**4** **Educational**	**5** **Institutional**
Did you use social media such as Facebook, Instagram, Twitter?			0.707		
Did you use the internet to chat via applications such as LINE, Facebook Messenger?			0.716		
Did you use the internet for online dating?			0.402		
Did you use the internet for online learning?				0.778	
Did you use the internet to attend online training courses?				0.749	
Did you use the internet to search for academic information?				0.806	
Did you use the internet to apply for schools/universities?				0.605	
Did you use the internet to follow government news (e.g., COVID-19 reports)?					0.881
Did you use the internet to register/receive/check eligibility for government programs (e.g., We Win)?					0.881

Table 4 shows the results from the logistic regression analyses. These results indicate significant associations between various sociodemographic factors and the likelihood of engaging in different online activities across economic, social, educational, and institutional domains.

Table 4

Estimation Results of Logistic Regression Analyses for the Digital Outcomes

Factors	Economic Commerce		Economic Labor		Social		Educational		Institutional	
	AOR (Robust SE)	95% CI	AOR (Robust SE)	95% CI	AOR (Robust SE)	95% CI	AOR (Robust SE)	95% CI	AOR (Robust SE)	95% CI
Gender (ref. Female)										
Male	0.806*** (0.018)	0.771 - 0.842	0.863*** (0.028)	0.809 - 0.920	0.883*** (0.021)	0.844 - 0.925	0.829*** (0.024)	0.784 - 0.878	0.855*** (0.022)	0.813 - 0.899
Age (ref. 18-25 years (young adults))										
26-44 years (adults)	0.935* (0.028)	0.880 - 0.992	0.704*** (0.030)	0.648 - 0.765	0.981 (0.034)	0.916 - 1.050	0.189*** (0.007)	0.177 - 0.203	1.468*** (0.056)	1.361 - 1.583
45-59 years (middle-aged adults)	0.583*** (0.020)	0.545 - 0.624	0.367*** (0.020)	0.331 - 0.408	0.881** (0.033)	0.818 - 0.948	0.136*** (0.006)	0.125 - 0.148	1.686*** (0.070)	1.554 - 1.829
60+ years (older adults)	0.275*** (0.015)	0.247 - 0.306	0.191*** (0.021)	0.155 - 0.236	0.825*** (0.040)	0.751 - 0.906	0.072*** (0.006)	0.061 - 0.085	1.807*** (0.096)	1.628 - 2.005
Region (ref. Northern)										
Northeastern	0.901* (0.038)	0.830 - 0.978	1.604*** (0.102)	1.416 - 1.817	2.099*** (0.098)	1.916 - 2.300	1.564*** (0.088)	1.400 - 1.747	2.192*** (0.106)	1.994 - 2.409
Central	1.134** (0.045)	1.050 - 1.225	1.330*** (0.079)	1.184 - 1.493	1.043 (0.044)	0.960 - 1.134	1.589*** (0.084)	1.433 - 1.761	1.335*** (0.062)	1.218 - 1.462
Southern	0.328*** (0.016)	0.299 - 0.360	0.960 (0.068)	0.837 - 1.103	0.321*** (0.015)	0.294 - 0.351	0.654*** (0.043)	0.574 - 0.745	0.514*** (0.032)	0.456 - 0.581
Western	0.562*** (0.034)	0.499 - 0.634	1.275** (0.114)	1.070 - 1.518	0.649*** (0.038)	0.579 - 0.727	0.709*** (0.065)	0.593 - 0.849	0.615*** (0.051)	0.524 - 0.723
Eastern	0.990 (0.053)	0.892 - 1.099	0.844 (0.073)	0.712 - 1.001	0.984 (0.055)	0.882 - 1.098	1.554*** (0.108)	1.356 - 1.781	0.976 (0.064)	0.858 - 1.109
Income (ref. Below average)										
Above average	1.426*** (0.036)	1.357 - 1.499	1.889*** (0.076)	1.746 - 2.043	1.010 (0.028)	0.957 - 1.065	0.785*** (0.026)	0.735 - 0.838	0.900*** (0.027)	0.849 - 0.954
Education Level (ref. Below primary school)										
Lower primary school	1.895*** (0.239)	1.479 - 2.427	0.793 (0.154)	0.542 - 1.162	1.483*** (0.108)	1.287 - 1.710	0.912 (0.159)	0.649 - 1.283	1.609*** (0.175)	1.299 - 1.991
Upper primary school	1.486** (0.180)	1.172 - 1.885	0.713 (0.127)	0.503 - 1.011	1.706*** (0.116)	1.492 - 1.950	0.822 (0.132)	0.601 - 1.126	1.743*** (0.181)	1.423 - 2.137
Junior high school	2.870*** (0.335)	2.283 - 3.608	0.710* (0.123)	0.506 - 0.997	2.377*** (0.162)	2.080 - 2.716	1.147 (0.176)	0.849 - 1.549	2.270*** (0.232)	1.858 - 2.774
High school/vocational certificate	4.436*** (0.503)	3.551 - 5.540	1.346 (0.214)	0.986 - 1.838	2.856*** (0.187)	2.513 - 3.246	1.879*** (0.272)	1.415 - 2.494	2.153*** (0.214)	1.771 - 2.617
Associate degree, vocational certificate/diploma	4.323*** (0.498)	3.449 - 5.419	1.526** (0.247)	1.112 - 2.094	3.068*** (0.213)	2.678 - 3.515	1.501** (0.222)	1.123 - 2.006	1.628*** (0.169)	1.329 - 1.995
Bachelor's degree	6.626*** (0.754)	5.302 - 8.282	2.347*** (0.373)	1.719 - 3.204	3.705*** (0.249)	3.247 - 4.227	4.040*** (0.586)	3.040 - 5.369	2.752*** (0.276)	2.261 - 3.350
Master's degree	12.586*** (1.598)	9.813 - 16.141	3.403*** (0.573)	2.447 - 4.732	4.444*** (0.416)	3.699 - 5.339	12.902*** (1.990)	9.536 - 17.458	5.932*** (0.665)	4.762 - 7.389
Ph.D.	7.309*** (1.406)	5.014 - 10.655	2.922*** (0.775)	1.738 - 4.912	1.722** (0.286)	1.243 - 2.386	17.769*** (3.882)	11.579 - 27.266	6.629*** (1.258)	4.570 - 9.617

Factors	Economic Commerce		Economic Labor		Social		Educational		Institutional	
	AOR (Robust SE)	95% CI	AOR (Robust SE)	95% CI	AOR (Robust SE)	95% CI	AOR (Robust SE)	95% CI	AOR (Robust SE)	95% CI
Occupation (ref. Unemployed)										
Employed	1.755*** (0.198)	1.406 - 2.190	0.656** (0.095)	0.494 - 0.871	0.825 (0.087)	0.670 - 1.015	2.725*** (0.428)	2.003 - 3.707	0.945 (0.106)	0.758 - 1.178
Residence (ref. Rural area)										
Urban area	1.696*** (0.040)	1.620 - 1.775	1.333*** (0.047)	1.244 - 1.428	1.505*** (0.038)	1.432 - 1.580	1.244*** (0.038)	1.171 - 1.321	1.293*** (0.035)	1.226 - 1.363
Degree of Confidence in Using the Internet (ref. Not confident at all)										
Slightly confident	3.448*** (0.257)	2.980 - 3.990	1.465*** (0.148)	1.201 - 1.786	1.891*** (0.108)	1.690 - 2.115	1.952*** (0.181)	1.626 - 2.342	2.633*** (0.226)	2.226 - 3.114
Very confident	4.992*** (0.362)	4.330 - 5.754	1.829*** (0.178)	1.511 - 2.214	2.472*** (0.137)	2.218 - 2.754	2.303*** (0.208)	1.929 - 2.749	3.093*** (0.259)	2.625 - 3.643
Most confident	2.629*** (0.191)	2.280 - 3.032	1.126 (0.111)	0.928 - 1.367	1.916*** (0.105)	1.722 - 2.133	1.133 (0.104)	0.947 - 1.355	1.797*** (0.151)	1.523 - 2.120
Wald (Chi - Square)	6913.62***		2667.89***		4190.71***		6016.25***		2479.11***	
Pseudo R2	0.169		0.106		0.097		0.206		0.064	

Note: *N*= 43,465, Robust standard errors in parentheses, *** p<0.001, ** p<0.01, * p<0.05

Economic Commerce Outcomes

The analysis revealed significant sociodemographic influences on economic commerce activities, including online purchasing, booking accommodations, and online banking. Men were less likely than women to engage in these activities (AOR = 0.806, 95% CI: 0.771–0.842). Age was also critical, with older adults showing a lower likelihood of participation compared to young adults (e.g., AOR = 0.275 for 60+ years, 95% CI: 0.247–0.306). Regional disparities were noted, with the southern region showing the lowest engagement (AOR = 0.328, 95% CI: 0.299–0.360), while the central region had the highest (AOR = 1.134, 95% CI: 1.050–1.225). Higher income (AOR = 1.426, 95% CI: 1.357–1.499) and education levels were strong predictors of increased online commerce, particularly for those with a master's degree (AOR = 12.586, 95% CI: 9.813–16.141). Employment status also played a role, with employed individuals more likely to engage in online commerce (AOR = 1.755, 95% CI: 1.406–2.190). Urban residents were significantly more engaged than rural residents (AOR = 1.696, 95% CI: 1.620–1.775). Internet confidence strongly influenced participation, with those "very confident" having a higher likelihood of engagement (AOR = 4.992, 95% CI: 4.330–5.754).

Economic Labor Outcomes

The analysis showed significant sociodemographic influences on economic labor activities, such as job searching and selling goods online. Men were less likely to engage in these activities compared to women (AOR = 0.863, 95% CI: 0.809–0.920), and older adults had progressively lower engagement than young adults (e.g., AOR = 0.191 for 60+ years, 95% CI: 0.155–0.236). Regionally, individuals in the northeastern region were more likely to participate in economic labor activities (AOR = 1.604, 95% CI: 1.416–1.817), while the southern and eastern regions showed no significant differences. Higher income (AOR = 1.889, 95% CI: 1.746–2.043) and education levels were associated with increased engagement, especially for those with a master's degree (AOR = 3.403, 95% CI: 2.447–4.732). Interestingly, employed individuals were less likely to engage in economic labor activities (AOR = 0.656, 95% CI: 0.494–0.871). Urban residents had a higher likelihood of participating (AOR = 1.333, 95% CI: 1.244–1.428). Confidence in using the Internet also played a key role, with those "very confident" more likely to engage (AOR = 1.829, 95% CI: 1.511–2.214).

Social Outcomes

The analysis revealed significant sociodemographic influences on social activities such as social media use, chatting, and online dating. Men were less likely to engage in online social activities than women (AOR = 0.883, 95% CI: 0.844–0.925). Older adults had lower engagement compared to young adults, with middle-aged adults (AOR = 0.881, 95% CI: 0.818–0.948) and older adults (AOR = 0.825, 95% CI: 0.751–0.906) showing decreased participation. Regional differences were notable, with the northeastern region having higher engagement (AOR = 2.099, 95% CI: 1.916–2.300), while the southern region showed the lowest (AOR = 0.321, 95% CI: 0.294–0.351). Income did not significantly impact online social engagement, but education played a crucial role. Higher educational attainment, such as a master's degree (AOR = 4.444, 95% CI: 3.699–5.339), led to increased social engagement. Urban residency significantly increased the likelihood of engaging in social activities (AOR = 1.505, 95% CI: 1.432–1.580). Confidence in using the Internet was also a key factor, with those "very confident" more likely to participate in online social activities (AOR = 2.472, 95% CI: 2.218–2.754).

Educational Outcomes

The analysis showed significant sociodemographic influences on educational activities such as online learning and searching for academic information. Men were less likely than women to engage in these activities (AOR = 0.829, 95% CI: 0.784–0.878). Engagement decreased with age, with adults aged 26–44 years (AOR = 0.189, 95% CI: 0.177–0.203) and older adults aged 60+ (AOR = 0.072, 95% CI: 0.061–0.085) showing the lowest participation. Regionally, the northeastern (AOR = 1.564, 95% CI: 1.400–1.747) and central regions had higher engagement, while the southern region had the lowest (AOR = 0.654, 95% CI: 0.574–0.745). Higher income reduced the likelihood of engagement (AOR = 0.785, 95% CI: 0.735–0.838), but education significantly increased it, especially for individuals with a PhD (AOR = 17.769, 95% CI: 11.579–27.266). Employment status positively influenced engagement (AOR = 2.725, 95% CI: 2.003–3.707), as did urban residency (AOR = 1.244, 95% CI: 1.171–1.321). Confidence in using the Internet strongly impacted participation, with "very confident" individuals having higher engagement (AOR = 2.303, 95% CI: 1.929–2.749).

Institutional Outcomes

The analysis showed that gender significantly influenced engagement in institutional government activities, with men being less likely than women to participate (AOR = 0.855, 95% CI: 0.813–0.899). Age had a notable effect, as older age groups were more likely to engage, particularly those aged 60+ (AOR = 1.807, 95% CI: 1.628–2.005). Regional differences were pronounced, with the northeastern region showing the highest engagement (AOR = 2.192, 95% CI: 1.994–2.409), while the southern region had the lowest (AOR = 0.514, 95% CI: 0.456–0.581). Higher income reduced participation (AOR = 0.900, 95% CI: 0.849–0.954), while higher education increased it, especially for those with a PhD (AOR = 6.629, 95% CI: 4.570–9.617). Employment status did not significantly affect engagement. Urban residency increased the likelihood of participating (AOR = 1.293, 95% CI: 1.226–1.363). Confidence in using the Internet was a key factor, with "very confident" individuals more likely to engage (AOR = 3.093, 95% CI: 2.625–3.643).

The comparative analysis revealed nuanced impacts across economic, social, educational, and institutional domains. Gender was consistently significant, with men less likely to engage in online activities than women, as shown by lower AORs across all domains. Age had a clear influence, with younger adults showing the highest engagement, while older adults, particularly those 60+, demonstrated higher participation in institutional activities. Regional disparities were evident, with the northeastern region leading in social and institutional engagement, while the southern region had the lowest across most domains. Income positively impacted economic commerce and labor but was associated with lower institutional engagement. Educational attainment strongly enhanced engagement in all domains, with those holding higher degrees showing the highest participation. Employment status positively influenced economic commerce and education but negatively affected economic labor. Urban residency was a strong predictor of higher engagement due to better digital access. Confidence in Internet skills significantly boosted engagement across all activities, with "very confident" individuals showing the highest likelihood of participation.

Discussion

Summary of the Main Findings

The results of this study elucidate the complex dynamics of the third-level digital divide in Thailand, encompassing economic, social, educational, and institutional domains. Each domain reveals distinct patterns influenced by various sociodemographic factors, highlighting the multifaceted nature of digital inequality and its implications for policy and intervention strategies.

Economic outcomes in this study are bifurcated into economic commerce and labor. The findings reveal significant gender disparities in digital economic engagement, with men less likely to participate in online commerce, such as purchasing and financial transactions. This aligns with research suggesting that consumer behaviors differ by gender, with women often engaging more actively in online shopping for household needs (Dai et al., 2019). However, these results diverge from Van Deursen and Helsper's (2018) study in the Netherlands, which showed men achieving greater economic outcomes online. This contrast underscores the importance of cultural and contextual differences in shaping digital engagement patterns, suggesting that gender dynamics in digital commerce are not universal and must be understood within local socio-cultural frameworks. The pronounced age-related decline in economic commerce participation among older adults highlights the persistent barriers they face in navigating digital platforms, reinforcing the need for targeted digital literacy programs tailored to their specific needs (van Deursen & van Dijk, 2019). Additionally, regional disparities are evident, with residents in the central region more likely to engage in economic commerce compared to those in other regions. This likely reflects the uneven distribution of digital infrastructure and economic development across Thailand (Gonzales et al., 2020; Setthasuravich et al., 2024), suggesting that addressing regional infrastructure gaps is crucial for promoting equitable digital participation. Socioeconomic status also plays a critical role, as individuals with higher income and educational attainment are more likely to engage in digital commerce. This emphasizes the intersection between socioeconomic advantage and digital engagement, wherein those with more resources are better positioned to benefit from digital platforms. Similarly, economic labor outcomes reflect these patterns, with men, older adults, and lower-income individuals less likely to participate in online job searches and selling activities. Education emerges as a pivotal factor in enhancing digital skills and facilitating access to vocational training and job platforms (Pestek & Hadzijamakovic, 2024). Moreover,

regional differences in labor outcomes further indicate the necessity of localized economic policies and digital infrastructure improvements to bridge the digital divide and foster inclusive economic participation.

Social outcomes pertain to the ways digital technologies influence social interactions and relationships. The study reveals that men are less likely to engage in social activities online, such as using social media and chat applications. This gender disparity in social digital engagement may be linked to different social behaviors and communication preferences between genders (Theophilou et al., 2023). Age is another significant factor, with older adults less likely to participate in social activities online. This finding emphasizes the need for inclusive digital literacy programs that cater to older populations to enhance their social connectedness through digital means (Karabchuk & Shomotova, 2021; White, 2023). Regional disparities are stark in social outcomes, with the northeastern region showing higher engagement compared with the other regions. This could reflect regional cultural differences in social media usage and community engagement. Income did not significantly impact social digital engagement, which may suggest that social media and chat applications are relatively accessible across different income groups in Thailand; this aligns with the findings of Van Deursen and Helsper (2015, 2018). However, education levels were strongly associated with social digital engagement, indicating that higher education correlates with a greater use of social platforms. This aligns with the notion that education enhances digital literacy and the ability to leverage social technologies effectively (del Rocío Bonilla et al., 2020).

Educational outcomes are significantly influenced by digital technologies, providing unprecedented access to learning resources and opportunities for skill development. The results indicate that men, older adults, and individuals from lower-income households were less likely to engage in online educational activities. This trend highlights the persistent barriers faced by these groups in accessing and benefiting from digital educational resources (Cochrane, 2020). Regional differences were notable, with individuals in the northeastern and central regions more likely to engage in online educational activities compared with those in the southern and western regions. This finding suggests that regional disparities in educational infrastructure and Internet connectivity need to be addressed to promote equitable access to digital education (Friemel, 2016). Higher income levels and educational attainment were positively associated with online educational engagement, reinforcing the critical role of socioeconomic status in accessing and using digital educational resources. In addition, employment status significantly affected educational outcomes, with employed individuals more likely to participate in online learning. This underscores the importance of workplace digital literacy programs and support for continuous learning (Tsetsi & Rains, 2017).

Institutional outcomes were associated with engagement with digital government services and other institutional platforms. The study found that men and individuals from lower-income households are less likely to engage with digital government services. This gender and income disparity in institutional digital engagement highlights the need for inclusive e-government initiatives that cater to the needs of all demographic groups (Zhao et al., 2024). Age significantly influenced institutional outcomes, with older adults more likely to engage with digital government services. This may reflect the increased need for government-related information and services among older populations. Moreover, the regional disparities in institutional outcomes were pronounced, with the northeastern region showing higher engagement compared with the other regions. This finding suggests that regional efforts to improve digital literacy and access to e-government services are crucial for promoting civic participation and transparency (Nam & Sayogo, 2011). Education and confidence in using the Internet were strong predictors of institutional digital engagement. Higher educational attainment and greater confidence in using digital technologies were associated with an increased use of digital government services. This underscores the importance of digital literacy programs and initiatives that build confidence in using digital platforms, particularly for government-related activities (Van Deursen, 2020).

The results of this study align with key theories and concepts of the digital divide, particularly the third-level digital divide, which focuses on disparities in digital outcomes. According to Van Dijk's (2020) framework, the digital divide extends beyond access and usage, encompassing the ability to derive tangible benefits from digital technologies. This study reveals how sociodemographic factors influence economic, social, educational, and institutional outcomes, underscoring the multifaceted nature of digital inequality.

Implications for Policy and Practice

The findings of this study carry important implications for both policy and practice, particularly in tackling Thailand's third-level digital divide. Drawing on benchmarks from the Thailand Digital Economy and Society Development Plan (2018–2037) and international frameworks, the following detailed policy recommendations are proposed:

First, gender-sensitive digital literacy programs are essential. The persistent gender disparities in digital engagement across domains highlight the need for policies that support gender equality in technology use, in line with UN SDG 5 (gender equality). These programs must be tailored to address the specific barriers that women and men face when engaging with digital commerce, labor, social, educational, and institutional activities. Targeted interventions will ensure that both genders are equally empowered to participate fully in the digital economy and society.

Second, the gaps in digital engagement among older adults call for inclusive digital literacy programs. Policies should prioritize lifelong digital learning through senior-focused digital inclusion programs that provide user-friendly training and accessible devices. These programs could mitigate the digital exclusion of older populations and should be delivered through local community centers, leveraging existing infrastructures like public libraries, in line with Thailand's smart aging strategies.

Third, addressing regional digital infrastructure disparities is crucial. The study highlights the need for localized strategies that align with Thailand's Smart Cities initiative and ITU standards for digital inclusion. Investment in broadband infrastructure in underserved regions must be prioritized. Additionally, subsidies for digital devices and Internet services in rural areas, coupled with region-specific digital literacy programs, will help close the regional digital divide and ensure more equitable access to digital opportunities.

Fourth, financial and educational barriers to digital engagement must be reduced. Given the strong influence of income and education on digital participation, policies should focus on providing subsidies for low-income households to make digital technologies more affordable. Furthermore, the integration of digital literacy into the formal education system, along with vocational training aligned with labor market demands, will foster greater economic participation and enhance digital fluency. These efforts will contribute to achieving Thailand's digital workforce development goals.

Finally, building digital confidence is essential for greater engagement. National digital literacy campaigns, modeled on the "OECD Framework for Digital Talent and Skills in the Public Sector", should emphasize practical, hands-on training. Programs that include ongoing mentorship and peer learning opportunities can help individuals build confidence in their digital skills, ensuring that they are equipped to participate effectively in the digital economy and society.

Study Limitations, Strengths, and Directions for Future Research

While this study provides valuable insights into the third-level digital divide in Thailand, several limitations must be acknowledged. A key limitation is the reliance on an online survey, which excludes individuals without Internet access or those less comfortable with digital technologies. This likely skews the sample toward more digitally literate individuals, underrepresenting marginalized groups such as older adults, rural residents, and those from lower socioeconomic backgrounds. As a result, the study may not fully capture the experiences of these populations. Additionally, the study's cross-sectional design limits the ability to establish causal relationships between sociodemographic factors and digital engagement outcomes. Future research should adopt longitudinal designs to track changes over time and explore causal pathways.

Moreover, the study focuses primarily on positive outcomes, such as economic opportunities and educational advancements, without examining potential negative impacts like digital addiction, online harassment, or data privacy concerns. These issues, along with political participation, were not covered due to data limitations and should be addressed in future research. Unmeasured variables, such as individual motivations and local policies, were also excluded, which could further shape digital engagement.

Despite these limitations, this study has several strengths. Unlike surveys conducted by survey institutions, which often focus on descriptive statistics, this study provides a nuanced analysis by examining the interaction of multiple sociodemographic factors across economic, social, educational, and institutional domains. The study offers critical policy implications by highlighting the intersection of gender, age, region, and socioeconomic status in shaping digital engagement, contributing to a more comprehensive understanding of the third-level digital divide in Thailand.

Conclusion

This study significantly contributes to understanding the third-level digital divide in Thailand by providing nuanced insights into how sociodemographic factors influence digital engagement across economic, social, educational, and institutional domains. It highlights the disparities in digital engagement based on gender, age, region, income, education, employment status, urban residency, and Internet confidence. This study provides policymakers and stakeholders with valuable information by focusing on these specific domains and identifying key predictors of digital outcomes. With this information, they can develop targeted interventions aimed at promoting digital inclusion and equitable access to digital opportunities, ultimately fostering more inclusive socioeconomic growth in Thailand. Theoretically, this study broadens the comprehension of the third-level digital divide by integrating sociodemographic factors with digital engagement outcomes, particularly within the context of developing countries in which this level of digital divide has been less explored. It enhances the existing models and debates in the digital divide literature by identifying multiple factors influencing digital engagement in Thailand, thereby offering a comprehensive framework for future research on digital inequalities and their socioeconomic implications.

Acknowledgement

References

Badiuzzaman, M., Rafiquzzaman, M., Rabby, M. I. I., & Rahman, M. M. (2021). The latent digital divide and its drivers in e-learning among Bangladeshi students during the COVID-19 pandemic. *Information, 12*(8), 287. https://doi.org/10.3390/info12080287

Bala, P. (2024). Internet use and educational outcomes–a cross-country panel study. *Applied Economics Letters*, 1-5. https://doi.org/10.1080/13504851.2024.2332555

Bartlett, M. S. (1950). Tests of significance in factor analysis. *British Journal of Psychology, 3*, 77–85.

Boerkamp, L. G., van Deursen, A. J., Laar, E. V., van der Zeeuw, A., & van der Graaf, S. (2024). Exploring barriers to and outcomes of internet appropriation among households living in poverty: A systematic literature review. *SAGE Open, 14*(1), 21582440241233047. https://doi.org/10.1177/21582440241233047

Bravo, E. R., & Libaque-Saenz, C. F. (2019). Digital Divide's Three Tiers Interaction: A Conceptual Model from The Perspective of Task-Technology Fit. *Issues Inf. Syst, 20*, 188-197.

Çağlayan-Akay, E., & Oskonbaeva, Z. (2022). Analyzing the effect of economic and demographic factors on digital divide: The case of transition economies. *Economic Computation and Economic Cybernetics Studies and Research, 56*(2), 225-238. https://doi.org/10.24818/18423264/56.2.22.15

Calderon Gomez, D. (2021). The third digital divide and Bourdieu: Bidirectional conversion of economic, cultural, and social capital to (and from) digital capital among young people in Madrid. *New Media & Society, 23*(9), 2534-2553. https://doi.org/10.1177/1461444820933252

Chang, Y., Kim, H., Wong, S. F., & Park, M. C. (2015). A comparison of the digital divide across three countries with different development indices. *Journal of Global Information Management (JGIM), 23*(4), 55-76. DOI: 10.4018/JGIM.2015100103

Cho, M., & Kim, K. M. (2021). Exploring the disparity in tangible outcomes of internet use between persons with disabilities and persons without disabilities in South Korea. *Disability and Health Journal, 14*(3), 101101. https://doi.org/10.1016/j.dhjo.2021.101101

Cochrane, J. (2020). Factors affecting access to digital technologies and the resulting impact for students in a P-12 context. *Australian Educational Computing, 35*(1). Retrieved from https://www.journal.acce.edu.au/index.php/AEC/article/view/225

Costello, A. B., & Osborne, J. W. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research, and Evaluation, 10*(1), 7. https://doi.org/10.7275/jyj1-4868.

Dai, W., Arnulf, J. K., Iao, L., Wan, P., & Dai, H. (2019). Like or want? Gender differences in attitudes toward online shopping in China. *Psychology & Marketing, 36*(4), 354-362. https://doi.org/10.1002/mar.21183

del Rocío Bonilla, M., Perea, E., del Olmo, J. L., & Corrons, A. (2020). Insights into user engagement on social media. Case study of a higher education institution. *Journal of Marketing for Higher Education, 30*(1), 145-160. https://doi.org/10.1080/08841241.2019.1693475

Dihan, F. N., Setyaning, A. N. A., & Saputro, F. I. (2024). Strengthening Work Engagement through Digital Human Resources Management. In *Digital Technology and Changing Roles in Managerial and Financial Accounting: Theoretical Knowledge and Practical Application* (Vol. 36, pp. 355-363). Emerald Publishing Limited. https://doi.org/10.1108/S1479-351220240000036032

Erhardt, J., & Freitag, M. (2021). The Janus-face of digitalization: The relation between internet use and civic engagement reconsidered. *Social Science Computer Review, 39*(3), 315-334. https://doi.org/10.1177/0894439319861966

Friemel, T. N. (2016). The digital divide has grown old: Determinants of a digital divide among seniors. *New Media & Society, 18*(2), 313-331. https://doi.org/10.1177/1461444814538648

Gonzales, A. L., McCrory Calarco, J., & Lynch, T. (2020). Technology problems and student achievement gaps: A validation and extension of the technology maintenance construct. *Communication Research, 47*(5), 750-770. https://doi.org/10.1177/0093650218796366

Guo, C., & Wan, B. (2022). The digital divide in online learning in China during the COVID-19 pandemic. *Technology in Society, 71*, 102122. https://doi.org/10.1016/j.techsoc.2022.102122

Hargittai, E. (2002). Second-level digital divide: Differences in people's online skills. *First Monday, 7*(4). https://doi.org/10.5210/fm.v7i4.942

Helsper, E. J., & Eynon, R. (2013). Distinct skill pathways to digital engagement. *European Journal of Communication, 28*(6), 696-713. https://doi.org/10.1177/0267323113499113

Hidayatullah, A., Naz, F., & Niazi, S. (2023). Internet Addiction: Predictor of Disturbed Emotion Regulation, Sleep quality and General Health in University Students. *FWU Journal of Social Sciences, 17*(2).78-89. http://doi.org/10.51709/19951272/Summer2023/6

International Telecommunication Union (ITU). (2023). Individuals using the Internet. ITU DataHub. Retrieved from https://datahub.itu.int/data/?e=THA&c=701&i=11624

International Telecommunication Union (ITU). (2022). E-learning in Thailand: Mapping the Digital Divide. International Telecommunication Union.

Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika, 39*(1), 31-36. https://doi.org/10.1007/BF02291575

Karabchuk, T., & Shomotova, A. (2021). Digitization, social capital, and subjective well-being across the globe. *First Monday*. https://doi.org/10.5210/fm.v26i11.12359

Khurshid, T., & Baig, F. (2024). Relationship of Smartphone Use and Job Performance: Insights from Electronic Media Industry in Pakistan. *FWU Journal of Social Sciences, 18*(2), 26-35. http://doi.org/10.51709/19951272/Summer2024/3

Lawrence, J. E. (2011). The growth of e-commerce in developing countries: an exploratory study of opportunities and challenges for SMEs. *International Journal of ICT Research and Development in Africa (IJICTRDA), 2*(1), 15-28. DOI: 10.4018/jictrda.2011010102

Ministry of Digital Economy and Society. (2016). Thailand Digital Economy and Society Development Plan — 1st edition. Ministry of Digital Economy and Society. https://onde.go.th/assets/portals/1/files/DE-EN%20BOOK%20FINAL.pdf

Mitchell, S. J., Godoy, L., Shabazz, K., & Horn, I. B. (2014). Internet and mobile technology use among urban African American parents: Survey study of a clinical population. *Journal of Medical Internet Research*, *16*(1), e2673. https://doi.org/10.2196/jmir.2673

Nain, H., & Chaudhary, M. (2022). Internet Usage by Young Kids in India. *FWU Journal of Social Sciences, 16*(3). 120-131. http://doi.org/10.51709/19951272/Fall2022/9

Nam, T., & Sayogo, D. S. (2011, September). Who uses e-government? Examining the digital divide in e-government use. In *Proceedings of the 5th International Conference on Theory and Practice of Electronic Governance* (pp. 27-36). https://doi.org/10.1145/2072069.2072075

Netemeyer, R. G., Bearden, W. O., & Sharma, S. (2003). *Scaling procedures: Issues and applications*. Sage Publications.

Nielsen, M. M., Rohman, I. K., & Lopes, N. V. (2018, April). Empirical analysis of the current digital divides since 2010. In *Proceedings of the 11th international conference on theory and practice of electronic governance* (pp. 616-625). https://doi.org/10.1145/3209415.3209493

OECD. (2001). Understanding the digital divide, OECD Digital Economy Papers No. 49. https://doi.org/10.1787/236405667766

Ogbo, E., Brown, T., Gant, J., & Sicker, D. (2021). When being connected is not enough: An analysis of the second and third levels of the digital divide in a developing country. *Journal of Information Policy, 11*, 104-146. https://doi.org/10.5325/jinfopoli.11.2021.0104

Park, S., & Chun, D. (2024). Comparative analysis of third-level digital divide among Korean older adults: Capital-based approach. *Technological Forecasting and Social Change, 204*, 123381. https://doi.org/10.1016/j.techfore.2024.123381

Pestek, A., & Hadzijamakovic, N. (2024, March). Challenges of Using E-commerce in Bosnia and Herzegovina from the Perspective of Online Store Owners. In *World Conference on Information Systems and Technologies* (pp. 99-109). Cham: Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-60328-0_10

Phochai, T., Setthasuravich, P., Pukdeewut, A., & Wetchakama, S. (2024). Bridging the Digital Disability Divide: Determinants of Internet Use among Visually Impaired Individuals in Thailand. *Disabilities, 4*(3), 696-723. https://doi.org/10.3390/disabilities4030043

Ritzhaupt, A. D., Liu, F., Dawson, K., & Barron, A. E. (2013). Differences in student information and communication technology literacy based on socio-economic status, ethnicity, and gender: Evidence of a digital divide in Florida schools. *Journal of Research on Technology in Education*, *45*(4), 291-307. https://doi.org/10.1080/15391523.2013.10782607

Robinson, L., Cotten, S. R., Ono, H., Quan-Haase, A., Mesch, G., Chen, W., & Stern, M. J. (2015). Digital inequalities and why they matter. *Information, Communication & Society, 18*(5), 569-582. https://doi.org/10.1080/1369118X.2015.1012532

Robru, K., Setthasuravich, P., Pukdeewut, A., & Wetchakama, S. (2024). Internet Use for Health-Related Purposes among Older People in Thailand: An Analysis of Nationwide Cross-Sectional Data. *Informatics, 11*(3), 55. https://doi.org/10.3390/informatics11030055

Scheerder, A. J., Van Deursen, A. J. A. M., & Van Dijk, J. A. G. M. (2020). Taking advantage of the Internet: A qualitative analysis to explain why educational background is decisive in gaining positive outcomes. *Poetics, 80*, 101426. https://doi.org/10.1016/j.poetic.2019.101426

Scheerder, A. J., Van Deursen, A. J. A. M., & Van Dijk, J. A. G. M. (2019). Negative outcomes of Internet use: A qualitative analysis in the homes of families with different educational backgrounds. *The Information Society, 35*(5), 286-298. https://doi.org/10.1080/01972243.2019.1649774

Scheerder, A. J., Van Deursen, A. J. A. M., & Van Dijk, J. A. G. M. (2017). Determinants of Internet skills, uses and outcomes. A systematic review of the second-and third-level digital divide. *Telematics and Informatics, 34*(8), 1607-1624. https://doi.org/10.1016/j.tele.2017.07.007

Servon, L. J. (2002). Bridging the digital divide: Technology, community, and public policy. *Wiley-Blackwell*. https://doi.org/10.1002/9780470773529

Setthasuravich, P., & Kato, H. (2020). The mediating role of the digital divide in outcomes of short-term transportation policy in Thailand. *Transport Policy, 97*, 161–171. https://doi.org/10.1016/j.tranpol.2020.07.008

Setthasuravich, P., & Kato, H. (2022). Does the digital divide matter for short-term transportation policy outcomes? A spatial econometric analysis of Thailand. *Telematics and Informatics, 72*, 101858. https://doi.org/10.1016/j.tele.2022.101858

Setthasuravich, P., Sirikhan, K., & Kato, H. (2024). Spatial econometric analysis of the digital divide in Thailand at the sub-district level: Patterns and determinants. *Telecommunications Policy*, 102818. https://doi.org/10.1016/j.telpol.2024.102818

Tabachnick, B. G., & Fidell, L. S. (2019). *Using Multivariate Statistics* (7th ed.). Boston, MA: Pearson.

Theophilou, E., Hernández-Leo, D., & Gómez, V. (2023). Gender-based learning and behavioural differences in an educational social media platform. *Journal of Computer Assisted Learning*. https://doi.org/10.1111/jcal.12927

Tőkés, G. E. (2022). The third-level digital divide among elderly Hungarians in Romania. *Acta Ethnographica Hungarica, 66*(1), 241-259. https://doi.org/10.1556/022.2021.00005

Tsetsi, E., & Rains, S. A. (2017). Smartphone Internet access and use: Extending the digital divide and usage gap. *Mobile Media & Communication, 5*(3), 239-255. https://doi.org/10.1177/2050157917708329

Van Deursen, A. J. A. M. (2020). Digital inequality during a pandemic: Quantitative study of differences in COVID-19–related internet uses and outcomes among the general population. *Journal of Medical Internet Research, 22*(8), e20073. https://doi.org/10.2196/20073

Van Deursen, A. J. A. M., & Helsper, E. J. (2015). The third-level digital divide: Who benefits most from being online?. In *Communication and Information Technologies Annual (Vol. 10, pp. 29-52)*. Emerald Group Publishing Limited. https://doi.org/10.1108/S2050-206020150000010002

Van Deursen, A. J. A. M., & Helsper, E. J. (2018). Collateral benefits of Internet use: Explaining the diverse outcomes of engaging with the Internet. *New Media & Society, 20*(7), 2333-2351. https://doi.org/10.1177/1461444817715282

Van Deursen, A. J. A. M., & Van Dijk, J. A. G. M. (2014). The digital divide shifts to differences in usage. *New Media & Society, 16*(3), 507-526. https://doi.org/10.1177/1461444813487959

Van Deursen, A. J. A. M., & Van Dijk, J. A. G. M. (2019). The first-level digital divide shifts from inequalities in physical access to inequalities in material access. *New Media & Society, 21*(2), 354-375. https://doi.org/10.1177/1461444818797082

Van Dijk, J. A. G. M. (2020). *The Digital Divide*. Cambridge, Polity Press.

Van Dijk, J. A. G. M. (2005). *The deepening divide: Inequality in the information society*. Sage Publications. https://us.sagepub.com/en-us/nam/the-deepening-divide/book225985

Van Dijk, J. A. G. M., & Hacker, K. (2003). The digital divide as a complex and dynamic phenomenon. *The information society*, *19*(4), 315-326. https://doi.org/10.1080/01972240309487

Wang, P., Li, Z., Wang, Y., & Wang, F. (2024). Unveiling the Dynamics of Educational =Equity: Exploring the Third Type of Digital Divide for Primary and Secondary Schools in China. *Sustainability, 16*(11), 4868. https://doi.org/10.3390/su16114868

Warschauer, M., & Matuchniak, T. (2010). New technology and digital worlds: Analyzing evidence of equity in access, use, and outcomes. *Review of Research in Education, 34*(1), 179-225. https://doi.org/10.3102/0091732X09349791

Wei, K. K., Teo, H. H., Chan, H. C., & Tan, B. C. (2011). Conceptualizing and testing a social cognitive model of the digital divide. *Information Systems Research, 22*(1), 170-187. https://doi.org/10.1287/isre.1090.0273

White, Z. (2023). Re-envisioning digital equity and connection literacy for older adults. *North Carolina Medical Journal, 84*(2). https://doi.org/10.18043/001c.73013

Yu, Z. (2018). Third-level digital divide in English teaching and learning. *International Journal of Information and Communication Technology Education (IJICTE), 14*(3), 68-80. DOI: 10.4018/IJICTE.2018070106

Zhao, B., Cheng, S., Schiff, K. J., & Kim, Y. (2023). Digital transparency and citizen participation: Evidence from the online crowdsourcing platform of the City of Sacramento. *Government Information Quarterly, 40*(4), 101868. https://doi.org/10.1016/j.giq.2023.101868

Zillien, N., & Hargittai, E. (2009). Digital distinction: Status-specific types of internet usage. *Social Science Quarterly, 90*(2), 274-291. https://doi.org/10.1111/j.1540-6237.2009.00617.x

Strategic Visionary Leadership and Sustainable Governance: Navigating Higher Education Reforms for Optimal Performance in the Age of Disruptive Technologies

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This study examines the influence of disruptive technologies on higher education institutions (HEIs) in Pakistan, with a particular emphasis on the importance of visionary leadership and sustainable governance in driving educational transformations and enhancing performance. This study employs a quantitative methodology by conducting surveys among academics and researchers from various universities to gather data on pertinent parameters. The questionnaires employ a five-point Likert scale. This study employed Structural Equation Modeling (SEM) to assess the impact of leadership, technology, and governance on student accomplishment. The results indicate that institutions derive significant advantages from visionary leadership since it strongly promotes innovation in higher education. These advancements are driven by sustainable governance to ensure adaptability and strategic alignment with global educational standards. Educational reforms facilitate the connection between enhanced institutional performance and the integration of disruptive technologies like AI and robotics, underscoring the necessity for Higher Education Institutions (HEIs) to adapt to technological advancements. The study reveals that in order to thrive in the current technologically-driven educational landscape, higher education institutions (HEIs) need to adopt innovative and forward-thinking approaches to governance, considering the intricate relationship between leadership, governance, and technology in educational settings.

Keywords: disruptive technologies, Higher Education performance, visionary leadership, sustainable Governance, educational reforms, Structural equation modeling.

The billionaire person and entrepreneur of the century Bill Gates says I believe in innovations and that the way you get innovation is you fund research and you learn the basic facts (Carleton & Cockayne, 2023). No doubt the research generates facts and knowledge, and with the combination of logical reasoning, it is regarded as the most successful approach to the discovery of truth. The world is now on the threshold of research, innovation and discoveries, and this is a knowledge revolution driven by the knowledge (Chaithanapat et al., 2022). The knowledge revolution has drastically emerged and gone beyond the transformation of societies and aspects of life. For the knowledge-driven economy, knowledge is distinguished as a very powerful factor for economic growth. Simultaneously, other global forces in the shape of disruptive technologies have entered into our society, life and business. The disruption is a very intensified and powerful and changing world beyond expectation. Currently, skills and competency are required to closely work with evolving machines, artificial intelligence, robotics and expert systems. Disrupting technologies aregripping all countries, sectors, businesses, and increasingly, workers and the environment are beyond our expectations (Woetzel, 2019). As per the Mckinsey report, the twelve (12) disruptive technologies will bring a significant impact on the global economy by 2025, transforming life and business (Tarr, 2021). Developed countries are already working with these disruptive technologies, and convincing efforts and proper strategies are required to deal with these forces in higher education in Pakistan.

Now, the economic center of any country is dependent on the educational system and the factors influencing it (Mirazchiyski et al., 2024). In such a scenario, higher education is also challenged by the disruptive forces that demand skilled graduates, high-value research and innovations, modern pedagogies methods and improved governance of universities (Sharma & Sharma, 2021). Disruptive technologies like advanced robotics, next-generation genomics, and energy-storage devices have the potential to drive massive economic transformations. HEIs can support the adoption and development of these technologies, ensuring they contribute positively to the economy. In this way, as a reaction to the difficulties of supportability. Advanced education Foundations (HEIs) have taken a few drives to address the difficulties and looking for arrangements, HEIs all through the world arranged and began a few endeavors to change and reengineer their exercises (for example scholastic, research, regulatory and monetary). HEIs are often at the forefront of research in new technologies, contributing to innovation and the development of new applications that can drive economic growth (Jayabalan et al., 2021). HEIs can also contribute to policy discussions on how to integrate new technologies into society in a way that maximizes benefits and minimizes disruptions(Siddhpura et al., 2020). HEIs often support entrepreneurship through incubators and accelerators, helping to transform innovative ideas into economic opportunities (Tierney & Lanford, 2016). Additionally, HEIs provide the necessary training and education to prepare students for the evolving job market, ensuring that there is a pool of qualified individuals who can work with and advance these technologies.

In the global competitive battle of the knowledge-based economy, the countries rapidly bringing reforms in the structure and policies for betterment of higher education. However, the powerful forces of disruptive technologies, the system of higher education is experiencing a series of contextual changes and to see disruption as a source of innovation, intellectual mindset, visionary leadership, and continuous development of faculty is required (Rehman et al., 2024)). Due to rapid expansion, the sector needs more resources like skilled faculty, infrastructure and finances. Furthermore, universities are facing serious challenges and issues like good governance, scarcity of funds, modern infrastructure, quality of research. Within universities in Pakistan, also some governance issues lead to poor institutional reforms and academic excellence. Murtaza and Hui (2021) stated that, the apex body of the majority of universities lacks autonomy and is put under the external and internal influence which making policy decisions., knowledge transfer, commercialization and academic excellence. At the one side the higher education sector in Pakistan facing serious challenges, on the other side the intensified powerful forces of disruptive technologies have created more gaps in academia (Inayat, 2022). current study aims to identify the deficits contribution to building a knowledge-based society and, the universities in Pakistan can surely find a new means of adding high value to society and the economy to deal with disruptive technology. Following are the research question of the study:

RQ1: What is the critical role of visionary leaders to develop and implement HEIs policy?
RQ2: Does sustainable good governance stimulus HEIs policy?

RQ3: How universities in Pakistan can contribute to society and the economy by addressing the challenges of disruptive technology.

This study contributes in several ways. First, it highlights the necessity for innovation and visionary leadership within higher education to navigate the challenges posed by disruptive technologies. Second, it discusses the governance issues within Pakistani universities that hinder institutional reforms and academic excellence. Third, the text emphasizes the growing need for resources such as skilled faculty, infrastructure, and finances due to the rapid expansion of the higher education sector. Fourth, it acknowledges the widening gaps in academia due to the powerful forces of disruptive technologies. Finally, it serves as a reflection on the current state and future directions for educational institutions in a rapidly changing technological landscape.

The paper is organized as follows: Section 2 summarizes the body of research, and Section 3 presents a thorough examination of the study's data and methodology. Section 4 discusses the research results, and Section 5 includes the study's discussion and conclusion.

Study Framework
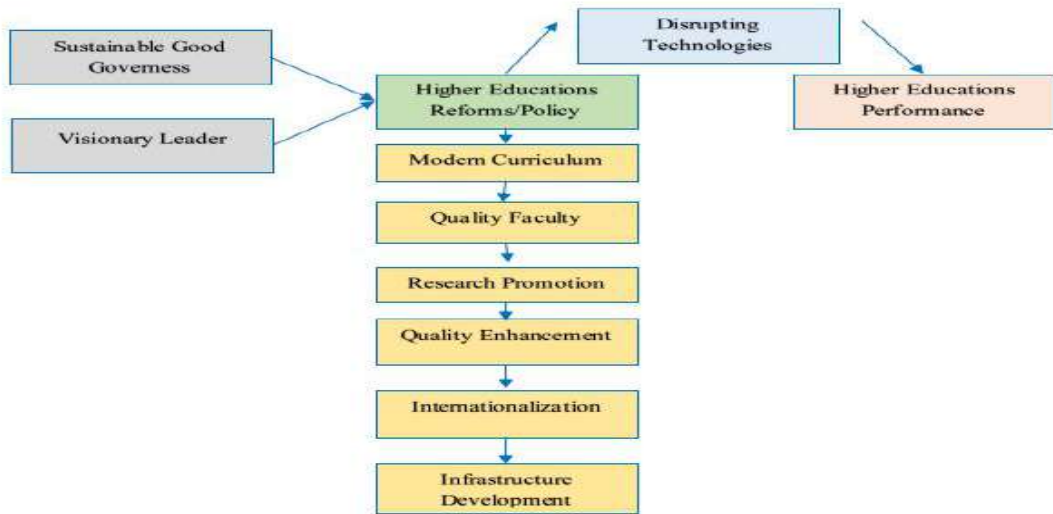
Literature Review
Higher Education Performance

In every facet of human existence, education has played an essential and far-reaching role. When it comes to intellectual capital, business acumen, and societal problem-solving, HEIs and universities play a special and crucial role (Raza et al., 2023). They collaborate in several aspects of life, particularly in the field of education, which is advantageous for enhancing future educational exchanges between nations. Hinduja et al. (2023) find out It has been determined that sustainability is a worldwide issue that prompts academics and educators to include sustainability considerations into educational curriculum. The rapid growth of private higher education institutions in Pakistan, while enhancing access, has raised concerns about quality, mirroring trends in other developing countries. Poor quality and lack of government oversight are highlighted, suggesting a need for stronger regulatory mechanisms to ensure educational standards (Zheng et al., 2024). higher education in Pakistan is at a crossroads with numerous challenges, but also with multiple opportunities for reform and improvement to meet the demands of a growing knowledge economy. Addressing these issues is essential for enhancing educational outcomes and economic development in the country.

Hypothesis Development
Sustainable Good Governess and Higher Education Reforms

Education is a fundamental need and imperative for every human. Higher education has a pivotal role in fostering the growth of students and learners by enhancing their competencies and capabilities. An administration of higher education is essential and indispensable for the implementation of management strategies and the development of learning prospects. Various civilizations exhibit distinct educational paradigms that need the implementation of laws and regulations tailored to their unique social dynamics (Al-Kubaisi et al., 2023). The Higher Education Commission of Pakistan operates under the guidance of the Ministry of Education and maintains both worldwide and national partnerships with esteemed organizations and institutions to foster educational advancement. Khan et al. (2019) identify Examine the broader historical framework and cultural aspects of Pakistan's public sector, with a specific focus on higher education. These viewpoints have a significant impact on both the functioning of the government and the formulation of policies and development efforts. The comprehension of context plays a crucial role in elucidating the complexities and obstacles linked to the formulation and execution of policies. Higher education is a crucial component of the government and has a significant impact on the attainment of national objectives in the era of knowledge-based economic growth. Consequently, it is imperative to formulate and execute well-designed policies that consider both international standards and domestic requirements and resources. As Andrews (2008) He highlights that policies and plans may not accurately reproduce in other settings due to the varying environmental and cultural constraints. Attempting to mimic them may result in changes that are incongruous and contradictory, similar proverbs that are not suitable for the incorrect context. In the preceding conversation, we put out the following hypothesis:

H_1: Sustainable Good Governess has a positive impact on Higher Education Reforms.

Visionary Leadership and Higher Education Reforms

The relationship between visionary leadership and higher education reforms is a significant topic of discussion in the field of educational administration and policy development. Visionary leadership is often seen as a crucial driver of higher education reforms (Candrasari et al., 2023). Leaders with a clear vision can foresee future challenges and opportunities in the education sector, enabling them to pioneer reforms that are timely and relevant. They possess the ability to guide organizations through periods of change that align with the changing demands of society, improvements in technology, and worldwide patterns. Forward-thinking executives have a crucial impact on the development and execution of strategic plans and changes. They possess expertise in establishing objectives for the future, determining the necessary actions to accomplish these objectives, and efficiently coordinating resources. The individual's capacity for strategic thinking contributes to the seamless execution of reforms, guaranteeing that modifications are not only conceptual but are efficiently incorporated into the institutional structure. Higher education modifications often want inventive methodologies and imaginative resolutions to intricate issues. Visionary leaders are characterized by their forward-thinking mindset and willingness to embrace novel concepts, fostering a culture of innovation inside organizations. This setting promotes scholarly and investigative superiority, resulting in more influential educational changes. The successful implementation of changes in higher education requires the active support and commitment of diverse stakeholders, including academic members, students, administrative personnel, and external collaborators. Visionary leaders has the skill to establish agreement and promote cooperation, guaranteeing that innovations are endorsed and accepted by the broader academic community (Sarnkhaowkhom & Suwathanpornkul, 2022). This collaborative approach increases the likelihood of successful and sustainable reforms. In the context of higher education reforms, accountability and quality assurance are paramount. Visionary leaders are often at the forefront of establishing robust mechanisms for monitoring and evaluating the impact of reforms, ensuring that the changes made lead to improved educational outcomes and greater institutional accountability. The rapid pace of technological change poses both challenges and opportunities for higher education. Visionary leaders are key to navigating these changes, integrating new technologies into the educational experience, and preparing students for a digitally-driven world. Above discussion can be hypothesized as:

H₂: Visionary leadership has a significant impact on higher Education Reforms.

Higher Education Reforms and Higher Education Performance

Higher Education policy contains multiple factors. The following are the elements that assure the relationship with education performance.

Modern Curriculum and Higher Education Performance

Modern curriculum extends beyond textbooks, it shapes students' learning experiences, integrates diverse resources, and aligns with educational goals. The relationship between modern curriculum and higher education performance is multifaceted and crucial for shaping the learning experiences of students (Shafait et al., 2021). A well-structured and coherent curriculum enhances student learning outcomes by providing a clear path for knowledge acquisition and skill development that enhance HE performance. High-quality curriculum plays a pivotal role in improving student performance. Effective teaching practices, such as goal setting, peer tutoring, formative assessment, and evidence-based feedback, are integral components of quality curriculum (Irons & Elkington, 2021). When curriculum design aligns with evidence-based teaching strategies, it contributes to positive student outcomes. a well-designed, coherent, and responsive curriculum significantly impacts higher education performance, fostering student success and preparing them for the challenges of the future. It is hypothesized as:

H₃: Modern Curriculum has a significant impact on Higher Education Performance.

Quality Faculty and Higher Education Performance

The relationship between Quality Faculty and Higher Education Performance is pivotal in shaping the overall effectiveness of educational institutions (Iqbal et al., 2021). The author examines potential approaches to address the fundamental obstacles and endeavors to emphasize significant issues linked to higher education in Pakistan. Education has a pivotal role in the transformation of society, the cultivation of human capital, the promotion of political stability, and the facilitation of economic progress within a nation. The ability of Higher Education Institutions (HEIs) to generate graduates who are productive, talented, and competent is contingent upon their ability to provide education of standard and quality. This is contingent upon several factors, including their financial resources, faculty resources, favorable atmosphere, education delivery system, and policies (Arnhold & Bassett, 2021). Quality faculty members significantly impact student engagement and learning outcomes. Quality faculty members significantly impact student engagement and learning outcomes that influence HE performance (Qureshi et al., 2023). Students benefit from faculty who are passionate about their subject matter and committed to student success. quality faculty members play a central role in

shaping higher education performance. Their commitment to teaching, research, student interaction, and continuous improvement directly impacts student success and institutional excellence. This discussion is hypothesis as:

H4: Quality Faculty has a significant impact on Higher Education Performance.

Research Promotion and Innovation Culture and Higher Education Performance

Muksin and Avianto (2021) identify aims to adopt a governance innovation policy that is new in current practice by One-Stop Integrated Services. Research promotion initiatives within universities encourage faculty members to engage in scholarly activities.When universities actively promote research through funding, grants, and incentives, faculty members are motivated to conduct high-quality research. Increased research productivity leads to a positive impact on the institution's reputation and academic standing (Khan et al., 2018; Lunag Jr et al., 2024). An innovation culture fosters creativity, risk-taking, and novel approaches to problem-solving.When universities cultivate an environment that values innovation, faculty members are more likely to explore new ideas, collaborate across disciplines, and seek unconventional solutions (Morawska-Jancelewicz, 2022). Research output and innovation contribute to an institution's reputation. High-quality research publications, patents, and successful innovation initiatives enhance the university's global standing. Positive rankings attract talented faculty, students, and research funding. a symbiotic relationship exists between research promotion, an innovation culture, and higher education performance. When universities prioritize both, they create an ecosystem that benefits faculty, students, and the institution as a whole. This can hypothesis as:

H5: Research Promotion and Innovation Culture has a significant impact Higher Education Performance.

Quality Enhancement and Higher Education Performance

Khan et al. (2024) analyze Effective governance has a crucial role in enhancing and improving the well-being, quality of life, and overall standard of living of individuals within a society. However, regrettably, this issue has been a significant worry in Pakistan since its establishment. The presence of an interrupted democratic system, a dearth of accountability, pervasive corruption, and a lack of adherence to the rule of law have posed significant obstacles to the achievement of effective government in Pakistan. Furthermore, the lack of competence among politicians and bureaucrats, an unjust recruiting system, and a general absence of responsibility have had a detrimental impact on the effective provision of services to the general population. Pakistan is unable to achieve its future objectives due to this predicament (Hussain et al., 2023). Hence, it is imperative for Pakistan to implement tangible measures to guarantee political stability, transparency, expeditious public service provision, and responsiveness within its governmental institutions. In order to address the issue of corruption, abuse of power, and injustice in its institutions, it is imperative to establish a robust system of openness and accountability. This can hypothesis as:

H6: Quality Enhancement has a significant impact on Higher Education Performance

Internalization and Higher Education Performance

Internalization refers to the process by which institutions of higher education engage with global perspectives, cultures, and practices. It involves integrating international dimensions into various aspects of university life, including research, teaching, student experiences, and institutional policies. Abbasi et al. (2021) exploring and highlighting the role of higher education commission in promoting higher education in Pakistan in the global perspective. Internalization fosters collaboration across borders, leading to joint research projects, knowledge exchange, and innovation. Exposure to diverse perspectives enhances the quality of research and contributes to breakthroughs. Exposure to international contexts enriches students' learning experiences.

Interaction with peers from different backgrounds improves critical thinking, adaptability, and intercultural skills (de Hei et al., 2020). Students become better prepared for a globalized workforce. internalization positively influences higher education performance by enhancing research, student experiences, and institutional reputation. However, it requires thoughtful planning, inclusivity, and a commitment to global citizenship. This discussion hypothesized as:

H7: Internalization has a significant impact on Higher Education Performance.

Infrastructure Development and Higher Education Performance

Infrastructure in HEIs includes buildings, classrooms, laboratories, libraries, and equipment. A well-designed and maintained infrastructure creates a conducive learning environment. High-quality facilities enhance student experiences, facilitate better instruction, and contribute to improved learning outcomes (Asiyai, 2022; Osman et al., 2024). Higher education and economic development are strongly interlinked, with HEIs contributing to economic

growth by fostering education, skills, innovation, and production. This relationship underscores the importance of building technological capabilities within the educational sector to support economic development. State-of-the-art research facilities are essential for HEIs. Well-equipped labs, research centers, and technology infrastructure support faculty research (Qadoos & Atta, 2023). Cutting-edge facilities attract top researchers and foster innovation. Infrastructure must evolve to accommodate technological changes. High-speed internet, smart classrooms, and digital libraries are essential for modern education. HEIs with adaptable infrastructure stay relevant in a dynamic educational landscape surly uplift the HE performance. In summary, infrastructure development directly influences HEIs' performance by shaping the learning environment, supporting research, and contributing to institutional success.

H$_8$: Infrastructure Development has a significant impact on Higher Education Performance

Disrupting Technology Mediate the Relationship between Higher Education Reforms and Higher Education Performance

The mediation of disruptive technology in the relationship between higher education reforms and higher education performance highlights several key arguments, emphasizing the transformative and often disruptive nature of technology in HEIs. Technological changes have a significant and positive impact on academic performance, mediated through increased student engagement. This suggests that the introduction of new and disruptive technologies in higher education institutions can foster an environment that enhances learning outcomes by engaging students more effectively (Lin et al., 2023). Disruptive technologies, while not initially designed for educational purposes, hold considerable potential for enhancing learning and teaching. These technologies can significantly alter traditional educational practices, suggesting a need for higher education institutions to adapt to these changes to improve educational outcomes (Osman et al., 2024). There is a notable discrepancy between the technologies provided by higher education institutions and those actually used by students and staff. This implies that individuals prefer to use simpler and more convenient technologies, often external to the institution's offerings, to support their learning and teaching activities. Such behavior underscores the importance of institutions recognizing and integrating disruptive technologies that align with the actual preferences and practices of their communities (Hamed et al., 2022).

H$_9$: Disrupting Technology Mediate the Relationship between Higher Education Reforms and Higher Education Performance.

Method

Research Approach

This study follows the post-positivism theory and deductive approach. This study examines Higher Education Performance in the era of disrupting technologies. A quantitative approach is used in this research. However, the study population consists of research scholars and faculty members of different universities, due to which a convenience sampling technique has been used. The sample size is calculated using Taro Yamane's formula as the estimated number of research scholars and faculty members of different universities is about 1600, so the sample size should be around 240 to obtain reliable data (at a 95% confidence level and a 5% error level) (Luanglath & Rewtrakunphaiboon, 2013) .

Data Collection

The quantitative data collection method includes the survey of research scholars and faculty members of different universities. Moreover, an online questionnaire is also used to gather data. The link to that questionnaire was emailed to the research scholars and faculty members of different universities with a formal request to participate. The questionnaire used in the study is the adapted version to survey the research scholars and faculty members of different universities in Karachi. The questionnaire was divided into two parts; one consists of the respondents' demographic information, while the other consists of the five-point Likert scale questions that measure the variables used in the paper. However, responses were taken through google.docs for primary data collection.

Instrument

Data was collected through questionnaires composed by researchers mentioned in Table 01. The questionnaire consists of 5 variables, namely Sustainable Good Governance (SGG); Visionary Leaders (VL), Higher Education Reforms (HER); Higher Education Performance (HEP); Disrupting Technology (DT).

Table 1
Measures of Questionnaire

S.no	Variables	Items	Author
1-	Sustainable Good Governance	3	Ramzy et al. (2019)
2-	Visionary Leaders	3	Manning and Robertson (2002)

3-	Higher Education Reforms	8	Bibi et al. (2021)
4-	Higher Education Performance	3	Amin and Khan (2009)
5-	Disrupting Technology	3	Bower and Christensen (1995)

Data Analysis

The statistical technique used in this study was Smart PLS (3), which utilizes partial least squares modeling (PLS-SEM) to analyze the data. The rationale for selecting this analytical methodology is based on the specific attributes of the data and sample, as well as the study of moderation and mediation. This technique has gained significant recognition in the realm of research pertaining to human resource management, marketing, and other associated domains. The use of PLS-SEM was suggested by Hair Jr et al. (2021) as a means to forecast the impact of the dependent variable. In a similar vein, Moon and Russell (2008) argued that the technique is appropriate for forecasting the set of equations in the proposed research model and establishing connections between variables simultaneously. PLS-SEM is used in this work as a verified methodology for doing comprehensive analysis in the area of management science. Structural Equation Modeling (SEM) is a multifaceted data exploration approach that has been theoretically created to investigate linear and additive random correlations. This enables researchers to examine the interconnections among various components. SEM is often regarded as the most effective method for quantifying both direct and indirect routes due to its ability to assess latent structures that are challenging to investigate and cannot be directly seen. Structural Equation Modeling (SEM) encompasses both inner and outer model techniques, which are used to investigate the associations between independent and dependent variables, as well as between latent factors and their observable indicators. PLS primarily emphasizes the examination of variation that may be conducted using Smart PLS. Hence, this methodology has been selected for our research.

Results

Descriptive Statistics

The research findings begin with a brief demographic profile of respondents regarding gender, age, and qualification. Respondents collected a total of 240 data. Of the gender, 144 respondents (60 percent) were male, whereas 96 were female (40 percent). However, in the age, 84 of the respondents (35 percent) belonged to the age of 25-30 years, 83 respondents (34.6 %) were aged between 30-35 years, 59 respondents (26.6 %) belonged to the 36-40 age group, and only 14 respondents (5.8%) belong to above 40 years of age group. In the current qualification, 211 of the respondents (88.3 percent) were doctorate, 29 of the respondents (11.7 %) were post graduates.

Path Modeling

When structural equation modeling (SEM) software is employed, "path Models" are assumed to be utilized to ostensibly demonstrate the hypothesis and variables under evaluation (Hair, Ringle & sarstedt, 2011). In this study, we provide a second-order construct model. In order to generate higher-order models or hierarchical models of components (HCMs), PLS-SEM often necessitates the examination of second-order models that include two-layer building structures (Becker, 2012). In structural equation analysis, a second-order structure may be used to get the fit-to-data model instead of excluding multidimensional measurements. Multidimensional measures that were established prior to the emergence of structural equation analysis may be effectively used via the application of structural equation testing (David & Gerbing, 1994).

Figure: 2 Structural Model of the study
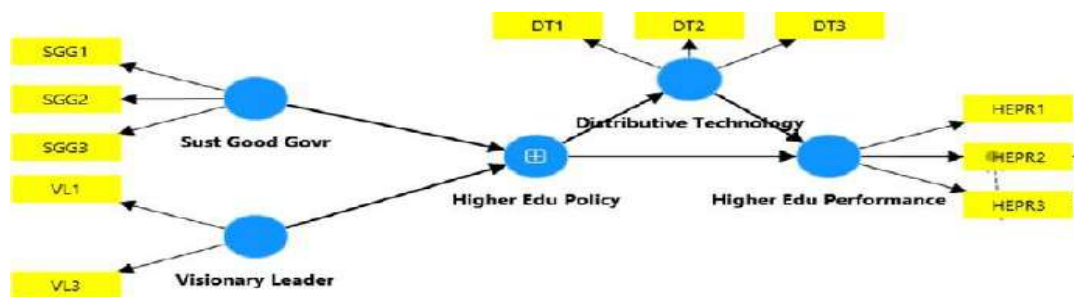
Measurement Modeling

CFA was used in the present study to assess the measurement model (Hair, 2012). The measuring (outer) model was first evaluated by an examination of content, convergence, and discernment. The Cronbach Alpha coefficient may be used to evaluate the reliability, validity, and average variance (AVE) obtained, hence assessing internal consistency reliability. The Likert scale is the most precise measure of dependability. According to (Robinson & Henderson, 2019), the minimum acceptable internal consistency value is 0.07. Table 1 illustrates that the Cronbach Alpha values for all indicators above the threshold of 0.7, providing clear evidence that the dependability of consistency remains intact. Composite reliability is a method used to assess the overall dependability of a set of elements that are loaded onto a latent construct. The value is somewhere between 0 and 1. As a result, zero is the lowest value, and one is the highest.

Table 2
Confirmatory Factor Analysis (CFA)

Construct	Items	Loadings	AVE	CR	CB alpha
Sustainable Good Governance	SGG1	0.65			
	SGG2	0.75	0.52	0.72	0.77
	SGG3	0.71			
Visionary Leaders	VL1	0.68			
	VL2	0.75	0.57	0.75	0.80
	VL3	0.77			
Higher Education Reforms	HER1	0.61			
	HER2	0.79			
	HER3	0.81			
	HER4	0.532	0.50	0.71	0.76
	HER5	0.403			
	HER6	0.832			
	HER7	0.758			
	HER1				
Higher Education Performance	HEP1	0.66			
	HEP2	0.65	0.51	0.71	0.76
	HEP3	0.71			
Disrupting Technology	DT1	0.72			
	DT 2	0.77	0.56	0.75	0.80
	DT3	0.69			

Table 2 also shows the value of composite reliability, which is above 0.70, which indicates there is no issue regarding the composite reliability

Table 3
Fornell-Larcker Criterion

	Sustainable Good Governance	Visionary Leaders	Higher Education Policy	Higher Education Performance	Disrupting Technology
Sustainable Good Governance	*0.71*				
Visionary Leaders	0.65	*0.74*			
Higher Education Policy	0.54	0.39	*0.71*		
Higher Education Performance	0.49	0.51	0.54	*0.74*	
Disrupting Technology	0.43	0.45	0.39	0.65	*0.75*

For example, the assessment of the dependability of concepts and indicators involves the use of convergent validity and consistent reliability. The Average Variance Extracted (AVE) was introduced by Fornell and Larker in 1981. Convergent validity is often used for assessment purposes. The cutoff value for the average variance extracted is 0.50. In convergent validity, the square root of the average variance extracted (AVE) is compared to the inter-construct

correlation. The value of the AVE should exceed 0.50. The average variance extracted (AVE) for each construct must exceed the predetermined variance of 0.50 in order to account for the measurement error associated with that particular construct. The AVE values shown in Table 2 exceed the threshold of 0.6, indicating that the convergent validity of the data remains unaltered.

Figure 3 Measurement Model
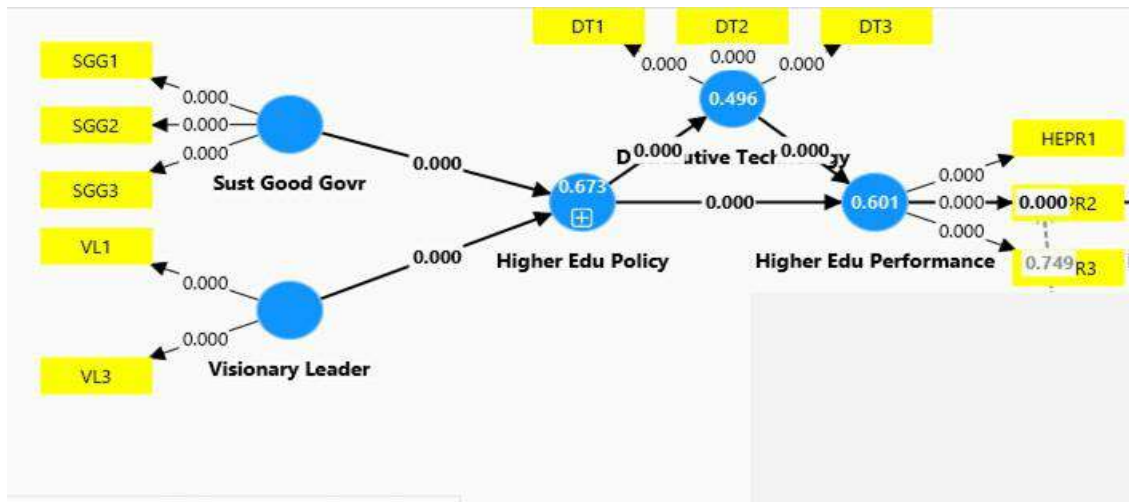
Structural Model Analysis

The structural model was subjected to analysis in order to investigate and evaluate the association between the components. This section facilitates the examination of the impact of relationships on constructs. The psl-sem-sam approach is used to partition the data into sub-samples and ascertain the significance level by calculating pragmatic T-values and P-values. Hair (2012) argues that in order to draw an impartial and accurate conclusion, it is essential to have a large sample size. Failure to do so may lead to erroneous and specious findings. Furthermore, he suggested use bootstrapping for a subsampling of 5000. For this study, 5000 sub-samples were used in bootstrapping with a significance threshold of 5%. The findings are shown below the Table 4:

Table 4

Path Analysis

	Original Sample (o)	Sample Mean (M)	Standard Deviation (STDVE)	P Values	Alternate Hypothesis
Direct Effect					
SGG -> HER	0.263	0.224	0.081	0.006	supported
VL -> HER	0.156	0.543	0.052	0.021	Supported.
MC -> HEP	0.104	0.103	0.052	0.012	supported
QF -> HEP	0.442	0.636	0.085	0.000	supported
RP -> HEP	-0.080	-0.040	0.189	0.003	supported
QE -> HEP	0.175	0.189	0.138	0.000	supported
Internalization -> HEP	0.256	0.443	0.012	0.001	supported
ID -> HEP	0.130	0.432	0.172	0.031	supported
Indirect Effect					
DT x HER -> HEP	0.009	0.035	0.175	0.002	supported

Bootstrapping determines empirical T-values and P-values using the two-tailed method when the significance level is 5%. Rejecting the null hypothesis requires a T-value more than 1.96 at the 5% level of significance, which is considered significant, and a P-value lower than 0.05, according to the standard measurement of T-values. As noted in section 2 of this article, all null hypotheses indicated a positive association between the constructs. Accordingly, if P-values are less than 5%, the null hypothesis will be rejected, and the alternative hypothesis will finally be accepted.

Discussion

Every person has an inherent and fundamental need for education. The goal of higher education is to help students and learners enhance their strengths, competencies, and abilities. This study set out to investigate sustainable good governess and visionary leadership on higher education performance through higher education reforms at universities located in Karachi, Pakistan.

First Hypothesis of the study stated that Sustainable Good Governess has a positive significant relationship with the Higher Education Reforms. According to the above results, hypothesis is supported as significant value shows 0.006 (P < 0.05). A variety of studies have proven the strength of the relationship between organizational commitment and performance, however it varies. According to Pizzutilo and Venezia (2021) , Flexibility, accountability, and a forward-thinking mindset are key components of sustainable good governance, since they enable higher education establishments to quickly adjust to the fast evolving global knowledge economy. Institutions adopting these forms of governance will be in a better position to adjust their research agendas, curriculum, and operational strategies in order to match international standards and tackle modern issues. The perception and integration of sustainability in educational institutions are greatly influenced by governance, which also has an impact on management choices and institutional activities. Second Hypothesis of the study stated that Visionary Leadership has a positive significant relationship with the Higher Education Reforms. According to the above results, hypothesis is supported as significant value shows 0.021 (P < 0.05). scholar validated the relationship as, Forward-thinking leaders understand the value of a creative curriculum that tackles today's problems and job concerns. Higher education may experience major transformations via visionary leadership, including the introduction of new programs, teaching pedagogies, and technology that are crucial for equipping students for the future (Miller & Ives, 2023).

Third Hypothesis of the study stated that Modern Curriculum has a positive significant relationship with the Higher Education Performance. According to the above results, hypothesis is supported as significant value shows 0.012 (P < 0.05). Higher education that incorporates a contemporary curriculum encourages a profound engagement with knowledge that stresses the learning experience as much as information acquisition. Modern curricula strive to cultivate in students desirable dispositions and abilities like creativity, flexibility, and critical thinking by including them in the process of learning (Lin et al., 2023). Fourth Hypothesis of the study stated that Quality Faculty has a positive significant relationship with the Higher Education Performance. According to the above results, hypothesis is supported as significant value shows 0.012 (P < 0.05). Employers place a high value on the personal traits of graduates, but excellent faculty provide the groundwork for these qualities to flourish via effective mentorship and instruction. This emphasizes how important faculty members are in guaranteeing student happiness as well as equipping students with employability skills and making a positive impact on society (Tang, 2019). As a result, higher education institutions perform better in terms of graduate employability and societal contribution.

Five Hypothesis of the study stated that Research Promotion and Innovation Culture has a positive significant relationship with the Higher Education Performance. According to the above results, hypothesis is supported as significant value shows 0.003 (P < 0.05). The establishment of an innovative culture at public higher education institutions is crucial for tackling institutional and management obstacles in research and development (R&D). A supportive atmosphere for research is cultivated by factors including creativity, adaptability, and resources for innovation in addition to mentorship and training (Akour & Alenezi, 2022). This culture helps overcome obstacles related to research and development (R&D) activities, which greatly improves HEI performance in terms of research productivity and the creation of new knowledge. Six According to the study's hypothesis, there is a positive and statistically significant association between quality enhancement and the performance of higher education. Given that the significant value is 0.000 (P < 0.05), the hypothesis is supported by the findings shown above. Improving learning materials and employing innovative teaching approaches are two examples of quality improvement projects that higher education institutions may undertake to boost their reputation and gain a competitive edge. Institutions may increase their marketability and attractiveness by embracing a culture of continual quality improvement, which will enable them to better fulfill the changing demands of both employers and students. In turn, this improves the school's performance by attracting more qualified teachers and pupils (Murtaza & Hui, 2021).

According to the study's seven hypotheses, there is a positive and statistically significant association between internalization and academic performance in higher education. Given that the significant value is 0.001 (P < 0.05), the hypothesis is supported by the findings shown above. Internationalization in higher education makes it easier for teacher and student mobility, academic cooperation, and knowledge exchange—all of which are essential for improving the quality of education. By promoting intercultural competence and integrating global perspectives into the curriculum, schools may provide their pupils a richer and more well-rounded education (Zheng et al., 2024). Eight Hypothesis of the study stated that Infrastructure Development has a positive significant relationship with the Higher Education

Performance. According to the above results, hypothesis is supported as significant value shows 0.031 (P < 0.05). Modern labs, research centers, and classrooms are examples of the physical infrastructure that has been developed. These facilities have a direct impact on the quality of education provided and the institution's capacity to draw in top-tier staff and students. In addition to facilitating efficient learning and teaching, well-planned and furnished physical spaces also create an atmosphere that is favorable for academic research and innovation (Bibi et al., 2021).

Nine Hypothesis of the study stated that Disrupting Technology Mediate the Relationship between Higher Education Reforms and Higher Education Performance. According to the above results, hypothesis is supported as significant value shows 0.031 (P < 0.05). Artificial intelligence, blockchain, and cloud computing are examples of disruptive technologies that improve institutional agility and expedite administrative procedures. Higher education institutions may use these technologies to automate repetitive operations, manage resources more effectively, and enhance decision-making by using insights from data. Institutions may improve the student experience, reallocate resources to core educational activities, and react faster to market needs and new trends in education by reorganizing their operational procedures to include these technologies (Bower & Christensen, 1995). Adopting disruptive technologies boosts operational efficiency and agility, which in turn boosts the overall performance of the organization. Among these benefits are more flexibility, more financial security, and a more formidable position in the competitive higher education market (Charnitski, 2002).

This paper identified the possibility for universities to use disruptive technology as a transforming tool in social impact and educational innovation. Although the focus of this research was on visionary leadership and sustainable governance as enablers of higher education reform, we also considered how the adoption of disruptive technologies such as artificial intelligence (AI), blockchain, and virtual/augmented reality could fundamentally change the educational environment. This research technique showed that colleges may foster a culture of ongoing innovation by including disruptive technologies in their curricula. This not only gets students ready to succeed in a fast-paced environment but also gives them the tools they need to drive society's effect, therefore matching educational objectives with more general social and economic demands.

Practical Implication

This research proposed some modifications to enhance academic achievements in higher education. In order to effectively respond to the ever-changing global knowledge economy, higher education institutions (HEIs) should prioritize the development of governance frameworks that place a strong emphasis on accountability, flexibility, and innovation. Furthermore, educational institutions should proactively identify and assist upcoming leaders who possess the ability to stimulate progress in the development of curriculum, teaching methods, and the incorporation of technology. Consequently, pupils will be more prepared to tackle forthcoming possibilities and problems. Additionally, it is imperative for higher education institutions to consistently update their curricula to incorporate novel subjects and pedagogical methods that promote innovation, adaptability, and critical thinking. The educational process will be improved, and students will be more adequately equipped to meet the requirements of the contemporary labor market. HEIs should promote international collaboration and mobility to enhance the educational experience by fostering intercultural skills and global views. The quality of education will increase, resulting in pupils being more prepared for a global society.

Institutions of higher learning need to set up structures for the best possible distribution of resources. Institutions may effectively manage infrastructure, money, and human resources by using data-driven models, guaranteeing growth without going over budget. Learning and innovation are supported by maintaining modern physical and digital infrastructure, such as research laboratories and smart classrooms. A flexible learning environment that satisfies modern needs may be produced with strategic investments in these areas. Financial stability may be ensured by creating policies that emphasize varied income sources, such as grants, collaborations, and technology commercialization, which will allow institutions to finance expansion plans in a sustainable manner.

Conclusion

This research sought to enhance the performance of universities by integrating sustainable good governance, visionary leadership, and reforms, despite the constant impact of disruptive technologies. Visionary leaders are essential in the development and execution of HEI policies due to their ability to stimulate innovation and offer strategic direction. They have a crucial role in drawing attention to unforeseen concerns, delineating explicit objectives, and obtaining financial support and endorsement for policy efforts. Leaders with a visionary approach at Higher Education Institutions (HEIs) not only encourage a mindset focused on growth and a dedication to constant enhancement, but they also ensure that the institution's policies align with its purpose and values, so significantly boosting its overall performance.

Moreover, the research supports the idea that higher education institutions (HEIs) may enhance their policies by implementing sustainable good governance, which involves enhanced openness, accountability, and adaptability. Strong governance mechanisms ensure that policies have a significant and enduring influence, allowing for an effective reaction to evolving global trends and educational requirements. HEIs can have influence on policymakers by prioritizing long-term aims and ethical issues through their emphasis on sustainability in governance. Moreover, the current study has shown that Pakistani institutions have the ability to enhance society and the economy by adopting cutting-edge technologies like blockchain, artificial intelligence (AI), and cloud computing. By incorporating these technologies into their curriculum and research, colleges might potentially improve students' job prospects and foster their innovation by providing them with the necessary skills for the digital economy. In order to enhance social welfare and promote economic progress, universities can engage in partnerships with companies to offer technologically advanced solutions to address societal challenges.

Limitations and Future Direction

This study has some drawbacks. Firstly, examining methods by which universities might utilize disruptive technologies to drive educational innovation and have a significant influence on society. Furthermore, this paper examines the strategies for implementing a culture of research and innovation. However, it is crucial to investigate efficient approaches for managing resources, such as finances, infrastructure, and human resources, in order to facilitate the growth of the higher education sector. Further research is necessary to determine the methods through which universities might contribute to the advancement of a knowledge-driven society in Pakistan while also tackling social and economic concerns. The utilization of convenience sampling in this study may restrict the capacity to apply the findings to a wider community of research researchers and faculty members. Additionally, the computation of the sample size relies on an approximation, and the actual rate of response may impact the dependability and accuracy of the findings. The study's cross-sectional design may not adequately represent the dynamic fluctuations in higher education performance over time.

Reference

Abbasi, M. U. R., Al-Azhari, Z. U., Bukhari, S. A. G., Awan, T. A., Akhtar, S., & Khokhar, M. F. (2021). Role of Higher Education Commission in promotion of Education in Global Perspective: Analytical Study of Higher Education System of Pakistan. *Multicultural Education*, *7*(6).

Akour, M., & Alenezi, M. (2022). Higher education future in the era of digital transformation. *Education Sciences*, *12*(11), 784.

Al-Kubaisi, H., Shahbal, S., Batool, R., & Khan, A. (2023). Artificial intelligence as Revolutionary Era in Handling Financial Burden in Education Field-A Meta-Analysis Based Study. *Journal of Population Therapeutics and Clinical Pharmacology*, *30*(8), 172-182.

Amin, H. U., & Khan, A. R. (2009). Acquiring knowledge for evaluation of teachers performance in higher education using a questionnaire. *arXiv preprint arXiv:0906.4663*.

Andrews, M. (2008). The good governance agenda: Beyond indicators without theory. *Oxford development studies*, *36*(4), 379-407.

Arnhold, N., & Bassett, R. M. (2021). Steering Tertiary Education: Toward Resilient Systems That Deliver for All. *World Bank*.

Asiyai, R. I. (2022). Best practices for quality assurance in higher education: implications for educational administration. *International Journal of Leadership in Education*, *25*(5), 843-854.

Bibi, N., Safder, M., Alvi, G. F., Jamshid, N., & Jamshid, I. (2021). Relationship of Organizational Structure with Job Satisfaction and Task Performance of Teaching Faculty at Universities in Punjab. *Ilkogretim Online*, *20*(5).

Bower, J. L., & Christensen, C. M. (1995). Disruptive technologies: Catching the wave.

Candrasari, R., Yorman, Y., Mayasari, N., Yulia, R., & Lake, F. (2023). Visionary leadership in education management: leading toward optimal achievement in the era of independent learning. *Indonesian Journal of Education (INJOE)*, *3*(3), 451-467.

Carleton, T., & Cockayne, W. (2023). *Building moonshots: 50+ ways to turn radical ideas into reality*. John Wiley & Sons.

Chaithanapat, P., Punnakitikashem, P., Oo, N. C. K. K., & Rakthin, S. (2022). Relationships among knowledge-oriented leadership, customer knowledge management, innovation quality and firm performance in SMEs. *Journal of Innovation & Knowledge*, *7*(1), 100162.

Charnitski, C. W. (2002). *Gauging the readiness of an institution of higher education to implement change in its distance education program in ways that are consistent with the paradigm of organizational agility*. Drexel University.

de Hei, M., Tabacaru, C., Sjoer, E., Rippe, R., & Walenkamp, J. (2020). Developing intercultural competence through collaborative learning in international higher education. *Journal of Studies in International Education*, *24*(2), 190-211.

Hair Jr, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Danks, N. P., & Ray, S. (2021). *Partial least squares structural equation modeling (PLS-SEM) using R: A workbook*. Springer Nature.

Hamed, S., Jamil, S., & Rafiq, H. A. (2022). University Branding And Student Satisfaction: The Emerging Landscape of Universities in Pakistan. *Pakistan Journal of Educational Research*, *5*(2).

Hinduja, P., Mohammad, R. F., Siddiqui, S., Noor, S., & Hussain, A. (2023). Sustainability in Higher Education Institutions in Pakistan: A Systematic Review of Progress and Challenges. *Sustainability*, *15*(4), 3406.

Hussain, M., Yousafzai, A. U. R., & Naseem, F. (2023). Challenges and Opportunities to the Foreign Policy of Pakistan in the Contemporary Era. *Annals of Human and Social Sciences*, *4*(1), 56-65.

Inayat, A. (2022). *Bridging Gaps: Faculty Perspectives on Enhancing Their Teaching and Their Ideas for High Quality Faculty Teaching Development Programs in Pakistan*. The University of Wisconsin-Madison.

Iqbal, S., Bilal, A. R., Nurunnabi, M., Iqbal, W., Alfakhri, Y., & Iqbal, N. (2021). It is time to control the worst: testing COVID-19 outbreak, energy consumption and CO 2 emission. *Environmental Science and Pollution Research*, *28*, 19008-19020.

Irons, A., & Elkington, S. (2021). *Enhancing learning through formative assessment and feedback*. Routledge.

Jayabalan, J., Dorasamy, M., & Raman, M. (2021). Reshaping higher educational institutions through frugal open innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, *7*(2), 145.

Khan, A., Khan, G., & Iqbal, J. (2018). A qualitative study on the newly initiated foreign-funded teachers' preparation programs in Northern Pakistan. *FWU Journal of Social Science, 12 (1)*, 96-108.

Khan, A., Khan, S. H., Saif, M., Batool, A., Sohail, A., & Waleed Khan, M. (2024). A Survey of Deep Learning Techniques for the Analysis of COVID-19 and their usability for Detecting Omicron. *Journal of Experimental & Theoretical Artificial Intelligence*, *36*(8), 1779-1821.

Khan, M. A., Zubair, S. S., & Malik, M. (2019). An assessment of e-service quality, e-satisfaction and e-loyalty: Case of online shopping in Pakistan. *South Asian Journal of Business Studies*, *8*(3), 283-302.

Lin, W., Zaman, S. I., Jamil, S., & Khan, S. A. (2023). Students engagement in distant learning: How much influence do the critical factors have for success in academic performance? *Psychology in the Schools*, *60*(7), 2373-2394.

Luanglath, P., & Rewtrakunphaiboon, W. (2013). Determination of a minimum sample size for film-induced tourism research. Silpakorn 70th anniversary international conference,

Lunag Jr, M. N., Posadas, C. L., Lamadrid, R. L., Ducas, A. G., Teehankee, A., De Guzman, M. K. B., . . . Clemente, M. C. B. (2024). Building sustainable research and innovation ecosystem in Philippine higher education institutions. *Educational Research for Policy and Practice*, *23*(1), 63-88.

Manning, T., & Robertson, B. (2002). The dynamic leader–leadership development beyond the visionary leader. *Industrial and commercial training*, *34*(4), 137-143.

Miller, G. E., & Ives, K. S. (2023). *Leading the eLearning transformation of higher education: Leadership strategies for the next generation*. Taylor & Francis.

Mirazchiyski, E. K., Bezjak, S., & Mirazchiyski, P. V. (2024). INCLUSIVE EDUCATIONAL SYSTEMS AROUND THE GLOBE. *The Routledge International Handbook of Equity and Inclusion in Education*, 162.

Moon, S., & Russell, G. J. (2008). Predicting product purchase from inferred customer similarity: An autologistic model approach. *Management Science*, *54*(1), 71-82.

Morawska-Jancelewicz, J. (2022). The role of universities in social innovation within quadruple/quintuple helix model: Practical implications from polish experience. *Journal of the Knowledge Economy*, *13*(3), 2230-2271.

Muksin, A., & Avianto, B. N. (2021). GOVERNANCE INNOVATION: ONE-STOP INTEGRATED SERVICE TO ENHANCE QUALITY SERVICE AND PUBLIC SATISFACTION. *Theoretical & empirical researches in urban management*, *16*(1).

Murtaza, K. G., & Hui, L. (2021). Higher education in Pakistan: challenges, opportunities, suggestions. *Education Quarterly Reviews*, *4*(2).

Osman, M. A., Omar, A. M., & Mohamed, M. J. M. (2024). Lecturers' Adoption of E-Learning from the TAM Perspective: Transitioning from Lecture Halls to Virtual Classrooms. *FWU Journal of Social Sciences*, 56-72.

Pizzutilo, F., & Venezia, E. (2021). On the maturity of social responsibility and sustainability integration in higher education institutions: Descriptive criteria and conceptual framework. *The International Journal of Management Education*, *19*(3), 100515.

Qadoos, A., & Atta, M. A. (2023). Drawing A Comparison of Research Facilities In Higher Education Institution of Quetta. *Journal of Education And Humanities Research (JEHR), University of Balochistan, Quetta*, *16*(2), 92-100.

Qureshi, M. A., Khaskheli, A., Qureshi, J. A., Raza, S. A., & Yousufi, S. Q. (2023). Factors affecting students' learning performance through collaborative learning and engagement. *Interactive Learning Environments*, *31*(4), 2371-2391.

Ramzy, O., El Bedawy, R., Anwar, M., & Eldahan, O. H. (2019). Sustainable development & good governance. *European Journal of Sustainable Development*, *8*(2), 125-125.

Raza, H., Ali, A., Rafiq, N., Xing, L., Asif, T., & Jing, C. (2023). Comparison of higher education in Pakistan and China: A sustainable development in student's perspective. *Sustainability*, *15*(5), 4327.

Rehman, S., Khan, S. H., & Akhtar, S. (2024). Implementation of the Bachelor of Studies (BS) Program in Government Colleges of Khyber Pakhtunkhwa: Prospects and Challenges. *FWU Journal of Social Sciences*, *18*(1).

Robinson, E. J., & Henderson, C. (2019). Public knowledge, attitudes, social distance and reporting contact with people with mental illness 2009–2017. *Psychological Medicine*, *49*(16), 2717-2726.

Sarnkhaowkhom, C., & Suwathanpornkul, I. (2022). Designing and Implementing of a Learning Management Process for Enhancing Health Literacy among Nursing Students: An Application of Design-Based Research. *FWU Journal of Social Sciences*, *16*(4), 57-72.

Shafait, Z., Khan, M. A., Sahibzada, U. F., Dacko-Pikiewicz, Z., & Popp, J. (2021). An assessment of students' emotional intelligence, learning outcomes, and academic efficacy: A correlational study in higher education. *Plos one*, *16*(8), e0255428.

Sharma, M. K., & Sharma, R. (2021). Innovation framework for excellence in higher education institutions. *Global Journal of Flexible Systems Management*, *22*(2), 141-155.

Siddhpura, A., Indumathi, V., & Siddhpura, M. (2020). Current state of research in application of disruptive technologies in engineering education. *Procedia Computer Science*, *172*, 494-501.

Tang, K. N. (2019). Beyond Employability: Embedding Soft Skills in Higher Education. *Turkish Online Journal of Educational Technology-TOJET*, *18*(2), 1-9.

Tierney, W. G., & Lanford, M. (2016). Conceptualizing innovation in higher education. In *Higher education: Handbook of theory and research* (pp. 1-40). Springer.

Woetzel, J. B. a. J. (2019). *Navigating a world of disruption*. M. G. Institute. https://www.mckinsey.com/featured-insights/innovation-and%20growth/navigating-a-world-of-disruption

Zheng, L., Umar, M., Safi, A., & Khaddage-Soboh, N. (2024). The role of higher education and institutional quality for carbon neutrality: Evidence from emerging economies. *Economic Analysis and Policy*, *81*, 406-417.

How does religious tolerance interact with non-violence attitude among Muslims in Indonesia?

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This study investigates how local wisdom and nationalism influence the relationship between religious tolerance and a nonviolent attitude in Indonesia. Due to Indonesia's diverse religions and cultures, fostering tolerance and nonviolence is essential for social stability. According to this study, nationalism and respect for local wisdom are related to tolerance and nonviolence itself. It is, moreover, testing the effectiveness of these roles in the relationship of tolerance and religious nonviolence among pluralistic Indonesians. This study uses a quantitative approach to test the theoretical mediation model. It investigates whether nationalism and respect for local wisdom serve as mediators between religious tolerance and religious nonviolence. The study included 1936 Muslims in Indonesia, with a mean age of 32.40 (SD=7.754) and a range from 17 to 48 years. The sample consisted of 1497 (77.3%) men and 439 (22.7%) women. Other characteristics were that 1040 (53.7%) of the sample had undergraduate education, 107 (5.5%) postgraduate, and 789 (40.8%) high school. This study found a significant relationship between religious tolerance and religious nonviolence; both were mediated by nationalism and respect for local wisdom as essential mediators. The findings suggest that those who are religiously tolerant cannot stand alone in their relationship with nonviolence; instead, they must be accompanied by their own nationalism and respect for local wisdom.

Keyword: tolerance, nonviolence attitude, nationalism, respect local wisdom, structural equation modeling.

On October 12th, 2002, bombs exploded in two popular bars in Bali, Indonesia, the Sari Club and Paddy's Bar, killing 202 people, of whom 88 were Australian (Ramakrishna & Tan, 2003). Muhlas, one of the attackers, justified his role in this attack as "an act of revenge for American tyranny against Muslims in the Middle East" (Rees, 2006). Although not directly linked to Al-Qaeda, the attackers attacked the local community in an attempt to "purify" it of its ugliness and to avenge the deaths of Muslims in Afghanistan. The victims and attackers have no personal relationship. The victims are considered suitable as extrapersonal and symbolic projections of hostility (Lucien, 2009). Since then, the Indonesian government has again begun to emphasize the importance of religious tolerance and an anti-religious violence stance (Reuter, 2009).

However, the conditions in the field are still not going well. The Wahid Institute report states that there have been 192 cases of violations of freedom of religion and belief. This case involved 138 state actors and 148 non-state actors. An attitude of religious tolerance is key in suppressing the possibility of cases that lead to religious violence (Gusnanda & Nuraini, 2020). Religious tolerance and religious non-violence are two very important concepts for building a harmonious and peaceful society. These two concepts are interconnected, as religious tolerance can reduce the likelihood of conflict and violence stemming from religious differences (Goncalves et al., 2023). Religious tolerance

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is the main basis for creating a peaceful environment. It includes an attitude of appreciation and respect for religious differences, which allows different groups to coexist peacefully (Verkuyten et al., 2019). This tolerance also reduces the likelihood of conflicts and tensions that can arise due to different beliefs (Grossman et al., 2023). When people take religious differences for granted, they are more likely to engage in constructive discussions and seek peaceful solutions to conflicts. The root of religious tolerance is moderation in religion (Pajarianto et al., 2022). This moderate attitude provides scope for harmonization between religions. In his study, the local wisdom values of kasiuluran (kinship), tengko situru (togetherness), and karapasan (tenacity) have been formed in the family institution, which is the most important place for acculturating moderate religion.

In addition, religious non-violence prevents conflict and violence perpetrated on religious grounds. Religious extremism often triggers violence that exacerbates social tensions and damages relations between people (Iannaccone & Berman, 2006). Rejection of all forms of religious violence protects people from violence and also helps resolve conflicts in a more peaceful and just way (Pape, 2003). Consequently, an attitude of religious non-violence is essential for maintaining societal stability and supporting interfaith harmony. The Religious Harmony Index (KUB Index) in Indonesia year 2024 has been measured at 76.47, a 0.45-point improvement from 2023. The KUB Index is regularly surveyed by the Ministry of Religious Affairs' Research and Development Agency for Education and Training. The Deputy Minister of Religious Affairs, emphasized that the KUB Index has been trending upward. In 2022, the index was 73.09; in 2023, it was 76.02; and in 2024, it was 76.47 (Muthiariny, 2024).

Figure 1. The hypothesized structural model

Therefore, how does religious tolerance affect anti-religious violence attitudes? To address this question, we created two tests to see if religious tolerance can significantly influence religious non-violence attitudes directly without the need for other variables, which we call the first hypothesis (H1), and the next test we want to find out if religious tolerance does not directly influence anti-violence attitudes. Thus, we determined nationalism and respect for local wisdom as mediator variables supported by our comprehensive reading of the literature that we consider to be related to this study as the second hypothesis (H2), whether religious tolerance affects non-violence through one nationalism. As well as, whether religious tolerance affects non-violent attitudes through respect for one's local wisdom which is the third hypothesis (H3).
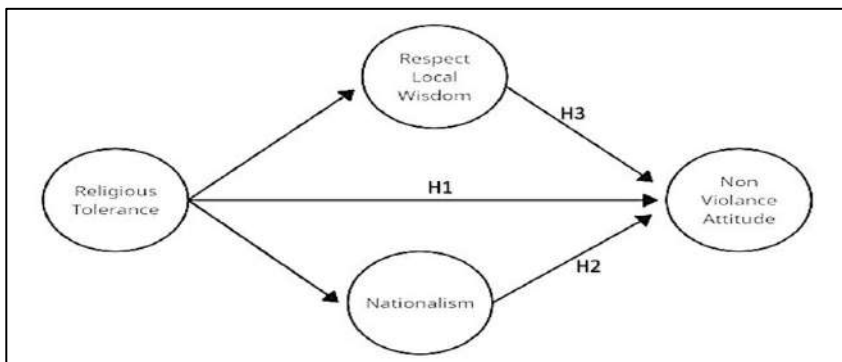
of the three on the Indonesia, it considers religious provide an formation of in Indonesia.

Furthermore, hypotheses, we focus majority religion in namely Islam, because the size of the community that can overview of the non-violent attitudes

Theoretical and conceptual considerations

Non-violence attitude in religion

In its definition, attitude is a disposition to respond positively or negatively to an object, person, institution, or event (Ajzen, 2005). Attitude is an evaluation process, and like self-perception, can be influenced by cognitive and affective factors (Conner et al., 2013). According to theoretical and empirical research on the nature of attitudes and their relationship with behavior, attitudes that support violence are correlated with violent behavior (Craven et al., 2017). For instance, Polaschek et al., (2004) found that violent offenders who were currently incarcerated had more violence-supportive attitudes than violent offenders who were not convicted.

The World Health Organization defines violence as the intentional use of physical force or power, whether threatened or actual, against oneself, another person, or a group or community that results in or has the potential to result in injury, death, psychological harm, or deprivation (Wellman & Tokuno, 2004). Violence or acts of violence involve threats or actions that can cause physical, emotional, or psychological harm to a person or group of people (Cavanaugh & Cottle, 2014). Violence in the sphere of diversity, then, is specifically defined as violence motivated by or in reaction to religious teachings, texts, or doctrines. This includes violence against religious institutions, individuals, or objects, or when some religious aspect of the target or the aggressor's teachings drives the violence. Religious violence includes acts committed by religious groups alone, but also acts committed by secular groups against religious groups (Sulaiman, 2016).

All religions have certain philosophical beliefs. Each has a wealth of specially-held literature that addresses historical topics relating to the truth of its doctrines and methods of propagation (Tanner, 2007). However, due to lack of deep understanding, ignorance, misinterpretation, or carelessness, scriptural texts have been interpreted in bizarre and capricious ways to achieve specific goals. Sulaiman (2016) found that some of the sources of religious violence are religious intolerance, religious fanaticism, uncontrolled media actions, aggressive or military evangelism, poverty, wrong religious orientation, literacy level of religious adherents, selfishness of religious figures, and external influences from religion. From the above explanation, non-violence is an attitude that actively opposes and seeks to prevent, reduce, or eliminate acts of violence through various means, such as support, intervention, education, and advocacy. One has the belief that violence is harmful and unacceptable, and that it is important to encourage non-violent alternatives and solutions.

Religious tolerance

Tolerance is an attitude that allows freedom of expression, peaceful coexistence, and makes allowances for people who differ in religion, race, caste, or customs (Galeotti, 2001; Pasamonik, 2004). Since one of the variables in this paper is religious tolerance, it is important to consider this concept. Religious tolerance is defined as tolerance of religious beliefs, religious acts, or people who hold religious beliefs and perform religious acts (Newman, 1978). Or in more detail, when a person dislikes, disagrees with, or rejects an object because of its connection to their religious beliefs and practices, as well as their spiritual powers, they demonstrate religious tolerance, which means they choose to accept and deal with what they dislike or reject for the purpose of peaceful coexistence (Al Sadi & Basit, 2013).

Religious tolerance increases understanding and respect among people of different religions, which results in better relationships (Yazdani, 2020). According to Falcasantos (2022), lack of religious tolerance has historically led to significant conflict and violence. This shows how important inclusivity is in a community. Religious tolerance is essential, especially in multi-religious societies where different beliefs live together (Bangwayo-Skeete & Zikhali, 2011). Social stability and resistance to extremism are higher in communities that recognize diversity (Ellis & Abdi, 2017). Tolerance also reduces prejudice and misunderstandings that can lead to discord, allowing for constructive conversations between different religious groups (Dallmayr, 2012).

On the other hand, Islam also has a concept called Washatiyah Islam, which refers to the concept of moderation in Islam, which emphasizes the middle way, justice, and balance in living religious life. At the root of this concept are the teachings of the Qur'an and hadith, which instruct Muslims not to be too extreme or excessive in their worship and social life, but also not too weak or unprincipled. In dealing with differences, Washatiyah Islam emphasizes tolerance, mutual respect and wisdom (Helmy et al., 2021). This can explain where the difference is between religious moderation and Washatiyah Islam which still prioritizes tolerance, and mutual respect for social society.

Nationalism

Nationalism is an ideology that explains that every member of a nation should be loyal to their nation (Ahlerup & Hansson, 2011). Nationalism can be interpreted in various ways, such as individual political orientation, movements, ideologies, and the process of nation and nation-state building (Dekker et al., 2003). On the other hand, nationalism can also be interpreted as a sense of identity with one's own nation (Kumar, 2019), and as According to Harrison and Boyd (2018), nationalism has proven to be one of the most powerful political ideologies over the past two centuries. It is likely to continue to persist until the end of this century. Worldviews are shaped by nationalism. It is a collection of ideas and principles that are important to a community. Nationalism is the attitude and consciousness of the people about their nation (Soekarno, 1959), so loyalty to the nation precedes other political and social loyalties. People may place their religious or moral beliefs above their national identity, but nationalism makes way for loyalty to the nation in conflict situations (Harrison & Boyd, 2018).

Nationalism in the Big Indonesian Dictionary (KBBI) is defined as a person's conscious attitude towards a nation that has similarities in maintaining and achieving national spirit and integrity, perpetuating identity, prioritizing prosperity, and maintaining national strength (*Nasionalisme - KBBI VI Daring*, n.d.) In the Indonesian context, nationalism is closer to constructive patriotism as it refers to Indonesia's unique culture (Baydhowi et al., 2023). Constructive patriotism is defined as a bond with a country demonstrated by support and a critical attitude to question and criticize state practices aimed at producing positive change (Schatz et al., 1999).

Respect for local wisdom

Indonesia has tremendous religious and cultural diversity. Indonesian society continues to maintain local wisdom to maintain national unity and integrity. Local wisdom is an important social asset to build moderate religious perspectives, attitudes, and behaviors. The culture of gotong royong, which comes from the words "gotong" meaning lifting or carrying, and "gotong royong" meaning gathering together, is one of the community's social assets. The culture of deliberation is also a social asset (Pesurnay, 2018).

The purpose of the cultural approach is to improve human traits or develop human attitudes and behavior (Hidayat, 2013). Every community based on religion, race or ethnicity always expresses their culture through a value system. Survival requires a unique interaction with its environment. In simple terms, local wisdom is the ability to use, manage, and cultivate natural resources for the common good (Pesurnay, 2018). Myths, legends and traditions are sometimes associated with local wisdom. However, local wisdom also develops along with human creativity and innovation (Effendy, 2011). Local wisdom consists of three main components: a) thoughts, attitudes, and actions in language, art, and literature, such as philosophical and original literature; b) thoughts, attitudes, and actions in various cultural artifacts, such as krises, ornaments, paintings, and so on; and c) thoughts, attitudes, and actions in society, such as unggah-ungguh and manners. Ultimately, these three components form the roots of the nation's culture. Local wisdom, derived from traditional values, has shaped the nation's personality (Supriyanto et al., 2017).

Method

Participant and Procedure

The study included 1936 Muslims in Indonesia, with a mean age of 32.40 (SD=7.754) and a range from 17 to 48 years. The sample consisted of 1497 (77.3%) men and 439 (22.7%) women. Other characteristics were that 1040 (53.7%) of the sample had undergraduate, 107 (5.5%) postgraduate, and 789 (40.8%) high school education. The procedure of this study was conducted using an online form, where participants were asked to fill out a pre-provided consent form. The consent form contained an agreement to participate voluntarily without compensation and had the right to stop at any time. Then with the agreement that personal participant data must be kept confidential, and only characteristic data is reported for research purposes. For transparency and other testing needs, we present the raw data at this link https://doi.org/10.5281/zenodo.13888411 , although we still adhere to the confidentiality of respondents' personal data by not publishing it.

Structural Equation Modeling (SEM) was used to analyze this research sample, which follows certain rules regarding adequate sample size. For ordinal data, it is recommended to reach 200-500. Estimation accuracy, model, data, and empirical context should be considered when sizing the sample (Wirth & Edwards, 2007; Wolf et al., 2013). In inferential statistical power testing, it is very common to find the probability associated with rejecting the tested hypothesis if it is wrong. And to measure the power of the test, SEM requires four things: model, alternative model, targeted significance level, and sample size (Van de Vijver, 2011). Thus, the sample in this study was adequate.

Results

SEM analyzes the covariance structure of latent variables as well as the structural relationships between each indicator of latent variables; this method is more inclined towards confirmatory analysis than exploratory approaches (Fan et al., 2016). There are two approaches in SEM, namely covariance-based SEM (CB-SEM) and partial least squares SEM (PLS-SEM) (Hair et al., 2017); in other words, covariance (CB-SEM) is the most suitable approach if you want to test and verify the theory that has been formulated (Dash & Paul, 2021). This study aims to test and verify the formulated theory, which qualifies the use of CB-SEM as the best approach.

Then using SEM, this study investigates the hypothesis built from the previous explanation, that there is a relationship model between tolerance and non-violent attitudes. Not only that, that another assumption is that there are other variables, namely nationalism and Respect for local wisdom, which enter the relationship pattern. Such a model is called a "mediational relationship" where the third variable (B) is between the independent variable (A) and the outcome variable or dependent variable (C), which also has a predictive relationship as a mediator variable (M). The mediator variable explains the relationship between the independent and dependent variables, or the outcome variable (Baron & Kenny, 1986).

We used several indices to assess model fit: comparative fit index (CFI) and Tucker-Lewis index (TLI) > 0.90 are considered good and values > 0.80 as acceptable (Browne & Cudeck, 1993; Kline, 2005). Standardized mean square residuals (SRMR) < 0.080 (Pavlov et al., 2021), and root mean square error of estimates (RMSEA) < 0.080 as models with good performance (MacCallum et al., 1996). Furthermore, as suggested by Stevens(2002) Stevens (2002), we will eliminate items that have a loading factor with a threshold of less than 0.40. The weighted least square mean and variance adjusted (WLSMV) estimator was used in all analyses as it is considered the best choice for modeling categorical data and is effective in predicting data that may not be normally distributed (Brown, 2006). In analyzing the relationship patterns, this study used SPSS 27 software as well as Mplus 8.4.

Measures

The questions in the survey aimed to measure non-violence attitude in religion, tolerance, nationalism and respect for local wisdom. The survey was created in Bahasa Indonesia, based on the authors' conceptualization of the constructs to be measured. Confirmatory factor analysis was conducted on all instruments, along with model testing in the concept of a one-step SEM approach (Bollen & Long, 1993). In the measurement of latent variables in this study, the Average Variance Extracted (AVE) value is also presented, which is above or close to the value of 0.50 (Fornell & Larcker, 1981; Hair et al., 2011) with the condition that the AVE value close to 0.50 has a Composite Reliability (CR) score that is above 0.70 (Hair et al., 2012).

Non-violence attitude in religion

Non-violence attitude in religion was measured with 10 items that took the basic concept of religion-based violence from Sulaiman (2016). The items were created with a 5-point Likert agreement format (1: "strongly disagree" vs. 5: "strongly agree"). The items contained statements consisting of favorable items for example: "Violence in the name of religion must be dealt with firmly by law enforcement officials", as well as unfavorable items: "Islamic Sharia must be enforced even with violence". The reliability (CR) of this instrument is 0.922 and the AVE is 0.542.

Religious Tolerance

The concept of religious tolerance from Al Sadi and Basit (2013) has been utilized in this study in item generation. It consists of 10 desired items measuring religious tolerance, which uses a 5-point Likert agreement format (1: "strongly disagree" vs. 5: "strongly agree"). The items consist of favorable items: "Maintaining the security of worship and places of worship of all religions is an obligation of Indonesian citizens", and unfavorable items: "Islam prohibits non-Muslims from becoming president and regional heads". The reliability (CR) of this instrument is 0.918 and the AVE is 0.529.

Nationalism

The items measuring nationalism are based on Soekarno's (1959) ideas. As is known, Soekarno's version of nationalism refers to the concept of patriotism itself. Soekarno's nationalism is a nationalism that rejects all forms of

colonization and oppression (Baydhowi, Purwono, Siswadi, & Ali, 2022). Consists of 10 items that measure a person's nationalism, starting from unfavorable items: "The khilafah system of government is suitable for Indonesia", and favorable items: "Loving the homeland is a must for every citizen". All items in the nationalism instrument were measured with a statement model and a 5-point Likert agreement format (1: "strongly disagree" vs. 5: "strongly agree"). The reliability (CR) of the instrument is 0.923 and the AVE is 0.547.

Respect for local wisdom

The measurement of Respect for local wisdom was obtained from the concept of Supriyanto et al., (2017). It consists of 9 items with a 5-point Likert agreement format (1: "strongly disagree" vs. 5: "strongly agree"). The items consist of favorable items: "I feel that Islam can develop because it respects and maintains cultural traditions", and unfavorable items: "I feel that Islam must be clean from local culture in Indonesia because it can bring shirk". The reliability (CR) of this instrument is 0.934 and the AVE is 0.587.

Findings

Model Fit

Model testing in this study began with the feasibility of a model reported by $\chi^2 = 4805.637$ (df = 696, p = 0.000), CFI = 0.889, TLI = 0.882, RMSEA = 0.055, 90% CI (0.054 - 0.057), SRMR = 0.047. Then, all items have a loading factor (λ) with a range of 0.656 - 0.852 (see table 1). From the description of the model obtained with a good fit index, as well as the item scores that become factor loadings with values above the recommended cut off, it can be concluded that the model is feasible and each item provides an overview of its factor.

The Structural Model and Hypotheses Testing

From the measurement model we have determined, we test the well-tested full structural model. Then, the next step was path analysis for our hypothesis testing. The regression analysis results show that tolerance has a relationship with nationalism (β=0.946, p=0.000) and has a relationship with respect for local wisdom (β=0.946, p=0.000). However, tolerance in this study does not impact the relationship with non-directly with violance attitude ($\beta = 0.110$, p = 0.733), so hypothesis 1 cannot be accepted. Meanwhile, nationalism has a significant direct relationship with non violance attitude in religion ($\beta = 0.539$, p = 0.010), and respect for local wisdom also has a significant and positive direct relationship with non violance attitude in religion ($\beta = 0.321$, p = 0.033). Although there is no significant direct relationship between tolerance and non violance attitude in religion, from the mediation path there is a significant relationship between tolerance and non violance attitude in religion through nationalism and respect for local wisdom. In table 5, it can be seen that the description of the Tolerance -> Nationalism -> Non Violance relationship gives a value of 0.529 [p = 0.010, 95% CI = 0.191-0.868]. This indicates that nationalism significantly mediates the relationship between tolerance and non-violence attitude. Then, the Tolerance -> respect for local wisdom -> Non Violance relationship provides a value of 0.304 [p = 0.030, 95% CI = 0.073-0.535], it can be indicated that respect for local wisdom significantly mediates the relationship between tolerance and non violance attitude.

Table 1.
Standardized Loading Factor

Construct	Item	Loading Factor	Standard Error	T-value	P-Value	Composite Reliability	AVE
Nationalism	A1	0.725	0.034	21.538	0.000	0.923	0.547
	A2	0.754	0.031	24.327	0.000		
	A3	0.793	0.033	23.897	0.000		
	A4	0.708	0.038	18.642	0.000		
	A5	0.801	0.030	26.501	0.000		
	A6	0.823	0.027	30.568	0.000		
	A7	0.850	0.020	41.687	0.000		
	A8	0.715	0.038	18.957	0.000		
	A9	0.780	0.030	26.291	0.000		
	A10	0.794	0.032	24.511	0.000		
Tolerance	B1	0.781	0.036	21.778	0.000	0.918	0.529
	B2	0.816	0.028	28.902	0.000		

	B3	0.710	0.041	17.116	0.000		
	B4	0.837	0.031	27.441	0.000		
	B5	0.756	0.032	23.601	0.000		
	B6	0.734	0.038	19.223	0.000		
	B7	0.772	0.031	25.016	0.000		
	B8	0.679	0.037	18.125	0.000		
	B9	0.771	0.029	26.426	0.000		
	B10	0.759	0.034	22.327	0.000		
Non Violance	C1	0.815	0.025	32.451	0.000	0.922	0.542
	C2	0.809	0.023	35.454	0.000		
	C3	0.786	0.029	26.772	0.000		
	C4	0.791	0.025	31.875	0.000		
	C5	0.772	0.027	29.021	0.000		
	C6	0.694	0.039	17.788	0.000		
	C7	0.784	0.033	23.551	0.000		
	C8	0.761	0.033	23.299	0.000		
	C9	0.742	0.034	21.882	0.000		
	C10	0.757	0.029	26.023	0.000		
Respect for Local Wisdom	D1	0.756	0.038	19.859	0.000	0.897	0.493
	D2	0.657	0.037	17.708	0.000		
	D3	0.798	0.029	27.586	0.000		
	D4	0.777	0.031	24.882	0.000		
	D5	0.757	0.031	24.410	0.000		
	D6	0.807	0.027	30.017	0.000		
	D7	0.832	0.028	29.665	0.000		
	D8	0.776	0.030	25.950	0.000		
	D9	0.812	0.029	27.953	0.000		

Table 2
Hypotheses test results.

Hypothesis	β	S.E.	p	t	Result
H1 Tolerance -> Non Violance	0.110	0.321	0.733	0.341	Rejected
Nationalism -> Non violance	0.539	0.209	0.010	2.581	-
Local Wisdom -> Non violance	0.321	0.151	0.033	2.136	-
Tolerance -> Nationalism	0.946	0.005	0.000	21.535	-
Tolerance -> Local Wisdom	0.946	0.015	0.000	65.124	-
The Mediation Analysis					
Path	CI 95%		p	*Indirect effect*	Result
	Low	Up			
H2 Tolerance -> Nationalism -> Non Violance	0.191	0.868	0.010	0.529	Accepted
H3 Tolerance -> Local Wisdom -> Non Violance	0.073	0.535	0.030	0.304	Accepted

Figure 2. FinalModel
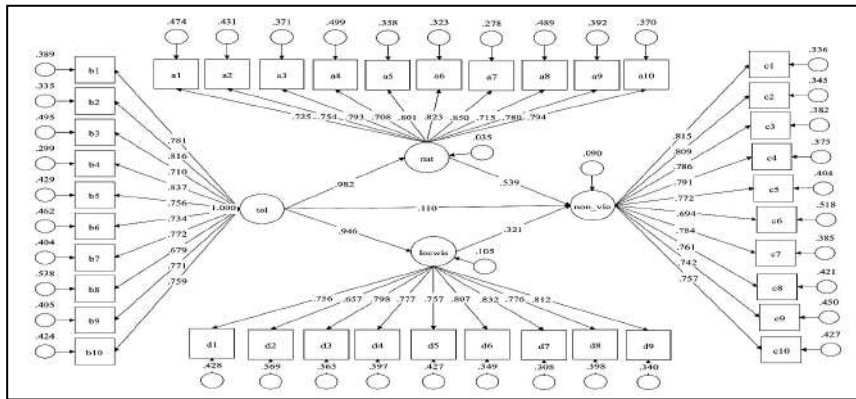
Discussion

This study provides new knowledge for us regarding the relationship patterns that include religious tolerance and nonviolence attitude. Religious tolerance can be defined as accepting everyone to embrace their religious beliefs freely without being harassed or abused. It helps people understand each other and coexist with people of different religious backgrounds (Awang & Khareng, 2012; Osuri, 2012). Tolerance in Islam is emphasized as a way to interact with non-Muslims and protect Muslims from other beliefs and ideologies. This concept is not explicitly applied in the Quran or Sunnah, but is practiced through examples from the lives of the Prophet Muhammad and Muslim rulers (Fatkhudin et al., 2016).

Religious tolerance is increasingly considered essential for good coexistence in a diverse society (Van der Walt, 2016). According to many studies, religiously diverse communities tend to have lower levels of conflict and violence (Putnam, 2007). The fostering of mutual respect and understanding among people of different religions is often attributed to this correlation (Verkuyten, 1997). Research suggests that religious tolerance reduces the likelihood of a person engaging in or supporting violent behavior (Reychler, 1997). This can be attributed to the psychological benefits of empathy and perspective-taking that result from accepting different beliefs (Batson et al., 1993). In addition, it has been shown that educational programs that encourage discussion between religions increase community cohesion and reduce prejudicial attitudes (Lutmar, 2019).

In this study, religious tolerance does not have a significant direct effect on nonviolent behavior. In contrast to previous studies that provide evidence of the direct influence of religious tolerance on nonviolent behavior, this study explains that the relationship between religious tolerance and nonviolent behavior is bridged by other variables, namely nationalism and respect for local wisdom. Before discussing the new understanding of the relationship. We try to illustrate that nationalism and local wisdom have a relationship with nonviolent behavior.

Nationalism is often associated with hostility, violence and exclusion. However, its relationship with nonviolence is complex and important. Nationalism, defined as a political belief that emphasizes the interests and culture of a particular nation, can drive movements for independence or self-determination (Dekker et al., 2003; Fenton, 2011). These efforts are usually expressed non-violently. This was evident in the Indian independence movement led by Mahatma Gandhi. Gandhi's Satyagraha philosophy advocated non-violent resistance to colonial rule and demonstrated peaceful means to achieve nationalist aspirations (*Satyagraha | Gandhi's Nonviolent Resistance, Civil Disobedience | Britannica*, n.d.) (Gandhi, 1993). Non-violent nationalism often emphasizes unity and social justice over division and conflict, in contrast to more aggressive types of nationalism. This was evident in the United States civil rights movement, where figures such as Martin Luther King Jr. used nationalist fervor to push for equality and justice through non-violent demonstrations (King, 1963). King (1963) also used American national identity as a basis for supporting civil rights and showed how nationalism can be used for peaceful activism.

In Indonesia, nationalism was demonstrated by Soekarno (1959) without physical violence or intimidation of other nations. Nationalism according to Soekarno (1959) must be in favor of humanity, rational, not chauvinistic, and not superior. Otherwise, nationalism can distinguish and even oppose colonialism (Baydhowi, Purwono, Siswadi, Syahputra, et al., 2022). The study of how respect for local wisdom correlates with nonviolent attitudes is critical to understanding cultural dynamics and conflict resolution processes. Traditional knowledge, practices, and values that have been held for generations in a particular community are often part of local wisdom (Mulyadi et al., 2022). This wisdom is critical to creating social behaviors and standards that can cause or reduce conflict (Foster, 2022).

A sense of belonging and identity will emerge among community members who respect and uphold their local wisdom (Gartzke & Gleditsch, 2005). A sense of identity is essential for fostering social cohesion, which reduces the likelihood of violent conflict (Haran Diman & Miodownik, 2022). The communities that have a strong connection to their cultural wisdom are less prone to internal violence. This is due to the fact that these customs often emphasize conflict resolution and justice restoration (Nepstad, 2011).

From this description, it appears that there is an interrelated relationship between tolerance and nationalism, respect for local wisdom and non-violence in religion. The relationship is established not through a direct relationship, but with the bridge of other variables to connect the relationship. In this study's sample, tolerance is indicated to be insufficient as a variable that has a direct relationship with non-violence in religion. Coexistence, mutual respect, and harmony must be accompanied by an attitude of maintaining harmony in the nation, an attitude of maintaining unity, and a role to prioritize the public interest. Tolerance must also have everything to do with accepting diverse cultures, and maintaining the nobility of existing traditions. This is a duty for individuals, which is manifested in behavior, where tolerance is consciously recognized, has positive judgments and beliefs about appropriate behavior, empathy, and respect for others based on equality (Witenberg, 2019).

According to Ismail (2019), tolerance in Indonesia cannot be separated from nationalism based on Pancasila as the basis of the state which emphasizes mutual respect and unity in diversity. From here, it can be seen that nationalism based on the Pancasila philosophy has the value of believing in God Almighty, fair and civilized humanity, Indonesian unity, democracy, and social justice, which are referred to as the five precepts. On the other hand, Arifin and Saepudin (2021) explain that tolerance is not only related to the political context in the form of nationalism, but also in the form of respect for culture that is formed in maintaining and appreciating local wisdom in any form. This preservation is an expression of tolerance, which in essence will link it to non-violence in religion. This study also serves as a comparison that in other locations, such as in Punjab (Kiran & Chawla, 2020) which is largely a non-sectarian society, where religious tolerance and harmonization are relatively applicable. This is certainly supported by state policies that can support religious tolerance.

Conclusion and Recomendation

Tolerance and non-violence in religion are important issues that are always fresh in all angles of discussion. Discussing these issues and the impact they have is also very important in order to maintain harmony in Indonesia's diverse society. In Indonesia, a rich tradition of coexistence among various ethnic and religious groups still exists. However, problems such as discrimination, intolerance and violence still occur frequently. Tolerance is promoted by the principles of Pancasila, which is considered the basic essence of nationalism itself, as well as respect for local wisdom that gives Indonesian society the color of tolerance. However, this requires active action and commitment from individuals, communities and the government.

In line with the context of this study, tolerance cannot be seen to have a direct impact on non-violence. There must be active learning to further understand the importance of nationalism and respect for local wisdom. Tolerance is not just about coexistence; it refers to a desire to actively participate, to respect one another, and to want to know and appreciate differences. A non-violent approach encourages peaceful conversation and conflict resolution, which are essential components of a stable society. As a result, building a culture that exhibits tolerance and non-violence is critical to Indonesia's future.

In addition, Indonesia is a small piece where tolerance needs to be fostered and preserved along with local wisdom and nationalism that does not lead to the denigration of other nations. This should be linked to the Sustainable

Development Goals (SDGs), especially in the issue of reducing inequality. Anti-violence in religion is mandatory for each individual, and understanding how anti-violence in religion emerges is very crucial in order to become a reference in human development and policy making for the government.

Reference

Ahlerup, P., & Hansson, G. (2011). Nationalism and government effectiveness. *Journal of Comparative Economics*, *39*(3), 431–451. https://doi.org/https://doi.org/10.1016/j.jce.2011.05.001

Ajzen, I. (2005). *Attitudes, Personality and Behaviour*. McGraw-Hill Education.

Al Sadi, F. H., & Basit, T. N. (2013). Religious tolerance in Oman: addressing religious prejudice through educational intervention. *British Educational Research Journal*, *39*(3), 447–472. https://doi.org/https://doi.org/10.1080/01411926.2011.652071

Arifin, A., & Saepudin, D. (2021). Political and cultural Islam: A historical phenomenon in Indonesia. *Bul. Al-Turas*, *27*(2), 345–360. https://doi.org/10.15408/bat.v27i2.21137

Awang, J., & Khareng, M. (2012). Cultural Socialization and Its Relation to the Attitude of Religious Tolerance among Muslim and Buddhist Students in Prince of Songkhla University. *International Journal of Islamic Thought*, *2*, 12–22. https://doi.org/10.24035/ijit.02.2012.002

Bangwayo-Skeete, P. F., & Zikhali, P. (2011). Social tolerance for human diversity in Sub-Saharan Africa. *International Journal of Social Economics*, *38*(6), 516–536. https://doi.org/10.1108/03068291111131382

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173–1182. https://doi.org/10.1037//0022-3514.51.6.1173

Batson, C. D., Schoenrade, P., & Ventis, W. L. (1993). Religion and the individual : a social-psychological perspective. In *Oxford University Press*. Oxford University Press.

Baydhowi, ., Purwono, U., Siswadi, A. G. P., & Ali, M. M. (2022). Developing National Identity Scale: As Indonesian Case. *The Open Psychology Journal*, *15*(1). https://doi.org/10.2174/18743501-V15-E2202031

Baydhowi, B., Purwono, U., Prathama Siswadi, A. G., Ali, M. M., Syahputra, W., & Iskandar, T. Z. (2023). Perception of threat and national identity: Investigation of the mediating role of collective self esteem. *Heliyon*, *9*(6), e17207. https://doi.org/10.1016/j.heliyon.2023.e17207

Baydhowi, B., Purwono, U., Siswadi, A. G., Syahputra, W., & Iskandar, T. B. Z. (2022). Pengaruh Percieved Self-Efficacy terhadap Nasionalisme yang Dimediasi oleh Identitas Nasional. *J. DIVERS.*, *8*(1), 100–109. https://doi.org/10.31289/diversita.v8i1.6003

Bollen, K. A., & Long, J. S. (1993). *Testing Structural Equation Models* (Issue v. 154). SAGE Publications. https://books.google.co.id/books?id=FvIxxeYDLx4C

Brown, T. A. (2006). Confirmatory factor analysis for applied research. In *Confirmatory factor analysis for applied research.* The Guilford Press.

Browne, M. W., & Cudeck, R. (1993). Alternative Ways of Assessing Model Fit. *Sociological Methods & Research*, *21*(2), 230–258. https://doi.org/10.1177/0049124192021002005

Cavanaugh, W., & Cottle, B. (2014). The myth of religious violence : secular ideology and the roots of modern conflict. *BYU Studies Quarterly*, *53*(4), 176. https://scholarsarchive.byu.edu/byusq/vol53/iss4/15

Conner, M., Godin, G., Sheeran, P., & Germain, M. (2013). Some feelings are more important: cognitive attitudes, affective attitudes, anticipated affect, and blood donation. *Health Psychology : Official Journal of the Division of Health Psychology, American Psychological Association*, *32*(3), 264–272. https://doi.org/10.1037/a0028500

Craven, R. G., Seaton, M., & Yeung, A. S. (2017). Attitude to Non-Violence Scale: Validity and Practical Use. *Journal of Interpersonal Violence*, *32*(13), 2018–2045. https://doi.org/10.1177/0886260515590785

Dallmayr, F. (2012). Dialogue among faiths: The dignity of religious difference. In *Towards the Dignity of Difference?* (1st Editio, pp. 115–126). Routledge.

Dash, G., & Paul, J. (2021). CB-SEM vs PLS-SEM methods for research in social sciences and technology forecasting. *Technological Forecasting and Social Change*, *173*, 121092. https://doi.org/10.1016/J.TECHFORE.2021.121092

Dekker, H., Malová, D., & Hoogendoorn, S. (2003). Nationalism and Its Explanations. *Political Psychology*, *24*(2), 345–376. https://doi.org/10.1111/0162-895X.00331

Effendy, B. (2011). *Islam dan negara: Transformasi gagasan dan praktik politik Islam di Indonesia*. Democracy Project: Yayasan Abad Demokrasi.

Ellis, B. H., & Abdi, S. (2017). Building community resilience to violent extremism through genuine partnerships. *American Psychologist*, *72*(3), 289–300. https://doi.org/10.1037/amp0000065

Falcasantos, R. S. (2022). Review: Religious Violence in the Ancient World: From Classical Athens to Late Antiquity, edited by Jitse H. F. Dijkstra and Christian R. Raschle. *Studies in Late Antiquity*, *6*(4), 742–746. https://doi.org/10.1525/sla.2022.6.4.742

Fatkhudin, A., Surarso, B., & Subagio, A. (2016). Item Response Theory Model Empat Parameter Logistik Pada Computerized Adaptive Test. *Jurnal Sistem Informasi Bisnis*, *4*(2), 121–129. https://doi.org/10.21456/vol4iss2pp121-129

Fenton, S. (2011). The sociology of ethnicity and national identity. *Ethnicities*, *11*(1), 12–17. https://doi.org/10.1177/1468796811011001020

Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, *18*(1), 49–56.

Foster, G. (2022). Indigenous participation in resource development: the promise and limitations of international safeguards. In *Research Handbook on the International Law of Indigenous Rights* (pp. 202–225). Edward Elgar Publishing. https://doi.org/10.4337/9781788115797.00022

Galeotti, A. E. (2001). Do We Need Toleration as a Moral Virtue? *Res Publica*, *7*(3), 273–292. https://doi.org/10.1023/A:1012217012310

Gartzke, E., & Gleditsch, K. (2005). Identity and Conflict: Ties That Bind and Differences That Divide. *European Journal of International Relations*, *12*(1), 53–87. https://doi.org/10.1177/1354066106061330

Goncalves, J. P. de B., Lucchetti, G., Maraldi, E. de O., Fernandez, P. E. L., Menezes, P. R., & Vallada, H. (2023). The role of religiosity and spirituality in interpersonal violence: a systematic review and meta-analysis. *Revista Brasileira de Psiquiatria (Sao Paulo, Brazil : 1999)*, *45*(2), 162–181. https://doi.org/10.47626/1516-4446-2022-2832

Grossman, A. N., Nomikos, W. G., & Siddiqui, N. A. (2023). Can Appeals for Peace Promote Tolerance and Mitigate Support for Extremism? Evidence from an Experiment with Adolescents in Burkina Faso. *Journal of Experimental Political Science*, *10*(1), 124–136. https://doi.org/10.1017/XPS.2022.1

Gusnanda, G., & Nuraini, N. (2020). Menimbang Urgensi Ukhuwah Wathaniyah dalam Kasus Intoleransi Beragama di Indonesia. *Jurnal Fuaduna : Jurnal Kajian Keagamaan Dan Kemasyarakatan*, *4*(1), 1. https://doi.org/10.30983/fuaduna.v4i1.3237

Hair, J. ., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-SEM or CB-SEM: updated guidelines on which method to use. *International Journal of Multivariate Data Analysis*, *1*(2), 107. https://doi.org/10.1504/IJMDA.2017.087624

Hair, J. F., Sarstedt, M., Pieper, T. M., & Ringle, C. M. (2012). The Use of Partial Least Squares Structural Equation Modeling in Strategic Management Research: A Review of Past Practices and Recommendations for Future Applications. *Long Range Planning*, *45*(5–6), 320–340. https://doi.org/10.1016/J.LRP.2012.09.008

Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2011). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the Academy of Marketing Science 2011 40:3*, *40*(3), 414–433. https://doi.org/10.1007/S11747-011-0261-6

Haran Diman, A., & Miodownik, D. (2022). Social Cohesion and Collective Violence: Latent Variable Approach to Explaining Riots in East Jerusalem. *Studies in Conflict & Terrorism*, 1–28. https://doi.org/10.1080/1057610X.2022.2074394

Harrison, K., & Boyd, T. (2018). *Understanding political ideas and movements*. Manchester University Press.

Helmy, M. I., Jumadil Kubro, A. D., & Ali, M. (2021). The understanding of Islamic Moderation (wasatiyyah al-Islam) and the hadiths on inter-religious relations in the Javanese pesantrens. *Indones. J. Islam Muslim Soc.*, *11*(2), 377–401. https://doi.org/10.18326/ijims.v11i2.351-376

Hidayat, S. (2013). Urgensi cultural approach sebagai metodologi keilmuan dalam pendidikan islam kontemporer. *Al-Hikmah*, *7*(1), 51–61. https://doi.org/10.24260/al-hikmah.v7i1.53

Iannaccone, L. R., & Berman, E. (2006). Religious extremism: The good, the bad, and the deadly. *Public Choice*, *128*(1), 109–129. https://doi.org/10.1007/s11127-006-9047-7

Ismail, F. (2019). Religion, state, and ideology in indonesia: a historical account of the acceptance of pancasila as the basis of indonesian state. *Indonesian Journal of Interdisciplinary Islamic Studies (IJIIS)*, *1*(2 SE-Articles), 19–58. https://doi.org/10.20885/ijiis.vol1.iss2.art2

King, M. L. (1963). *I have a dream*. The Avalon Project. https://doi.org/10.2319/0003-3219-90.6.881

Kiran, N., & Chawla, M. (2020). Countering Sectarian Extremism in Pakistan: A Study of Lashkar-e-Jhangvi. *FWU Journal of Social Sciences*, *14*(2), 1–13. http://sbbwu.edu.pk/journal/FWU_Journal_july2020/1. Countering Sectarian Extremism in Pakistan.pdf

Kline, R. B. (2005). Principles and practice of structural equation modeling, 2nd ed. In *Principles and practice of structural equation modeling, 2nd ed.* Guilford Press.

Kumar, S. (2019). Nationalism In Literature. *International Journal of Multidisciplinary Educational Research*, *8*(12).

Lucien, V. L. (2009). Patterns of violence : religion and the framing of differences. *Scriptura : Journal for Contextual Hermeneutics in Southern Africa*, *102*(1), 471–481. https://doi.org/10.10520/EJC100508

Lutmar, C. (2019). *Resolving Intractable Conflicts: The Importance of Interfaith Dialogue* (pp. 1–29). https://doi.org/10.4018/978-1-5225-7585-6.ch001

MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods*, *1*(2), 130–149. https://doi.org/10.1037/1082-989X.1.2.130

Mulyadi, A., Dede, M., & Widiawaty, M. A. (2022). The role of tradisional belief and local wisdom in forest conservation. *J. Geogr. Gea*, *22*(1), 55–66. https://doi.org/10.17509/gea.v22i1.43702

Muthiariny, D. (2024). *Govt: Religious Harmony Index Reaches New Heights in 2024*. Tempo. https://en.tempo.co/read/1910358/pope-francis-visit-to-promote-respect-for-religious-freedom-ambassador-says?tracking_page_direct

Nasionalisme - KBBI VI Daring. (n.d.). Retrieved December 18, 2024, from https://kbbi.kemdikbud.go.id/entri/nasionalisme

Nepstad, S. E. (2011). Review of Violence, Nonviolence, and the Palestinian National Movement, by W. Pearlman. *Perspectives on Politics*, *10*(4), 993–995. http://www.jstor.org/stable/23326930

Newman, J. (1978). The Idea of Religious Tolerance. *American Philosophical Quarterly*, *15*(3), 187–195.

Osuri, G. (2012). *Religious freedom in India*. Routledge. https://doi.org/10.4324/9780203117064

Pajarianto, H., Pribadi, I., & Sari, P. (2022). Tolerance between religions through the role of local wisdom and religious moderation. *HTS Teol. Stud.*, *78*(4). https://doi.org/10.4102/hts.v78i4.7043

Pape, R. A. (2003). The Strategic Logic of Suicide Terrorism. *American Political Science Review*, *97*(3), 343–361.

https://doi.org/DOI: 10.1017/S000305540300073X

Pasamonik, B. (2004). The Paradoxes of Tolerance. *The Social Studies*, *95*(5), 206–210. https://doi.org/10.3200/TSSS.95.5.206-210

Pavlov, G., Maydeu-Olivares, A., & Shi, D. (2021). Using the Standardized Root Mean Squared Residual (SRMR) to Assess Exact Fit in Structural Equation Models. *Educational and Psychological Measurement*, *81*(1), 110–130. https://doi.org/10.1177/0013164420926231

Pesurnay, A. J. (2018). Local wisdom in a new paradigm: Applying system theory to the study of local culture in Indonesia. *IOP Conf. Ser. Earth Environ. Sci.*, *175*, 12037. https://doi.org/10.1088/1755-1315/175/1/012037

Polaschek, D. L. L., Collie, R. M., & Walkey, F. H. (2004). Criminal attitudes to violence: Development and preliminary validation of a scale for male prisoners. *Aggressive Behavior*, *30*(6), 484–503. https://doi.org/10.1002/ab.20081

Putnam, R. D. (2007). E Pluribus Unum: Diversity and Community in the Twenty-first Century The 2006 Johan Skytte Prize Lecture. *Scandinavian Political Studies*, *30*(2), 137–174. https://doi.org/https://doi.org/10.1111/j.1467-9477.2007.00176.x

Ramakrishna, K., & Tan, S. S. (2003). *After Bali: The Threat of Terrorism in Southeast Asia*. Institute of Defence and Strategic Studies and World Scientific.

Rees, P. (2006). *Dining with Terrorists: Meetings with the World's Most Wanted Militants*. Pan Books. https://books.google.co.id/books?id=aFsm8OMJ1eAC

Reuter, T. (2009). Globalisation and Local Identities: The Rise of New Ethnic and Religious Movements in Post-Suharto Indonesia. *Asian Journal of Social Science*, *37*(6), 857–871. https://brill.com/view/journals/ajss/37/6/article-p857_3.xml

Reychler, L. (1997). Religion and conflict. *International Journal of Peace Studies*, *2*(1), 19–38. http://www.jstor.org/stable/45037971

Satyagraha | Gandhi's Nonviolent Resistance, Civil Disobedience | Britannica. (n.d.). Retrieved December 18, 2024, from https://www.britannica.com/topic/satyagraha-philosophy

Schatz, R. T., Staub, E., & Lavine, H. (1999). On the varieties of national attachment: Blind verus constructive patriotism. *Political Psychology*, *20*(1), 151–174. https://doi.org/10.1111/0162-895X.00140

Soekarno. (1959). *Dibawah Bendera Revolusi*. Yayasan Bung Karno.

Stevens, J. P. (2002). Applied multivariate statistics for the social sciences, 4th ed. In *Applied multivariate statistics for the social sciences, 4th ed.* Lawrence Erlbaum Associates Publishers.

Sulaiman, K.-D. O. (2016). Religious violence in contemporary Nigeria: Implications and options for peace and stability order. *J. Study Relig.*, *29*(1), 85–103. https://www.scielo.org.za/scielo.php?script=sci_arttext&pid=S1011-76012016000100004

Supriyanto, Ikhsan, M., Wekke, I., & Alimin, F. (2017). *Islam and Local Wisdom: Religious Expression in Southeast Asia* (1st ed.). Deepublish Digital.

Tanner, R. E. S. (2007). *Violence and Religion: Cross-cultural Opinions and Consequences*. Concept Publishing Company. https://books.google.co.id/books?id=3xQXYpfe0cYC

Van de Vijver, F. (2011). Capturing bias in structural equation modeling. In E. Davidov, P. Schmidt, & J. Billiet (Eds.). In *Cross-cultural analysis: Methods and applications* (pp. 3–34). Routledge. https://doi.org/10.4324/9781315537078-1

Van der Walt, J. L. (2016). Religious tolerance and intolerance: 'Engravings' on the soul. *In Skriflig/Luce Verbi*, *50*(1). https://doi.org/10.4102/ids.v50i1.2016

Verkuyten, M. (1997). Intergroup evaluation and self-esteem motivations: Self-enhancement and self-protection. *European Journal of Social Psychology*, *27*(1), 115–119. https://doi.org/10.1002/(SICI)1099-0992(199701)27:1<115::AID-EJSP794>3.0.CO;2-E

Verkuyten, M., Yogeeswaran, K., & Adelman, L. (2019). Intergroup Toleration and Its Implications for Culturally Diverse Societies. *Social Issues and Policy Review*, *13*(1), 5–35. https://doi.org/10.1111/sipr.12051

Wellman, J. K., & Tokuno, K. (2004). Is religious violence inevitable? *Journal for the Scientific Study of Religion*, *43*(3), 291–296. https://doi.org/10.1111/j.1468-5906.2004.00234.x

Wirth, R. J., & Edwards, M. C. (2007). Item factor analysis: current approaches and future directions. *Psychological Methods*, *12*(1), 58–79. https://doi.org/10.1037/1082-989X.12.1.58

Witenberg, R. (2019). *The Psychology of Tolerance: Conception and Development*. Springer. https://doi.org/10.1007/978-981-13-3789-5

Wolf, E. J., Harrington, K. M., Clark, S. L., & Miller, M. W. (2013). Sample Size Requirements for Structural Equation Models: An Evaluation of Power, Bias, and Solution Propriety. *Educational and Psychological Measurement*, *76*(6), 913–934. https://doi.org/10.1177/0013164413495237

Yazdani, A. (2020). La cultura de la paz y la tolerancia religiosa desde una perspectiva islámica. *Veritas*, *47*, 151–168. https://doi.org/10.4067/S0718-92732020000300151

Quality Dynamics in Tertiary Education of Pakistan: Investigating the Role of Governance and Financial Resources in Affiliated Colleges

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This research study aims to assess the impact of governance on the quality of tertiary education and the moderating role of financial resources. Data were collected from the principals of public sector affiliated colleges. Regression analysis was applied for hypothesis testing. Results demonstrate that governance has a significant and positive impact on the quality of education. Financial resources have a moderating effect on the relationship between governance and education quality. This study provides theoretical implications and practical recommendations to diverse interested parties, such as educational policymakers, institutional leaders, and administrators, who should try their best to distinguish the diversity of affiliated colleges and modify governance structures, management practices and the mechanisms for quality assurance to address the needs of each institution accordingly.

Keywords: Governance, higher education, financial resources, quality of tertiary education, affiliated colleges.

Tertiary education in Pakistan has experienced noteworthy growth and diversification, shaped by an intricate interaction of socio-economic, historical, and policy dynamics. It incorporates various institutions, including universities, degree-awarding institutes, and affiliated colleges. These institutions collectively accommodate the academic objectives of Pakistan's increasing population (Qazi & Javid, 2023; Shoaib, Siddique & Younis, 2024; World Bank, 2021).

The origins of Pakistan's tertiary education can be traced back to British colonial times when the University of Punjab was established in 1882 as the first formal institute of tertiary education. With time, the tertiary education system expanded, spreading affiliated colleges and universities throughout the country. In particular, affiliated colleges have played a dynamic role in intensifying access to tertiary education by offering undergraduate programs in several disciplines (Khan, Ali & Arain, 2022; Rehman, Khan & Akhtar, 2024).

However, the extensive growth of higher education in Pakistan has caused several issues and challenges, predominantly from the affiliated colleges' perspective. These include the concerns associated with standardization, financial resources, governance, and quality assurance (Aslam, Imran & Perveen, 2023; Dove & Douglas, 2023). Although the affiliated colleges significantly contribute to the availability and accessibility of tertiary education, questions have arisen about their adherence to governance mechanisms and quality standards. The Higher Education Commission (HEC) of Pakistan, established in 2002, has been to regulate and oversee higher education institutions, including the affiliated colleges (Iqbal, Moosa & Taib, 2024). In this context, HEC has laid down various frameworks for the affiliated colleges. However, these institutions have received limited scholarly attention, and their governance and financial resource complexities still need to be noticed. This research, therefore, attempts to address the void by focusing on governance and financial resource dynamics specific to the affiliated colleges in Pakistan. In this context, Resource-Based Theory (RBT) has been applied to understand the effects of the above two variables on the quality of education.

The existing literature predominantly focuses on governance and quality assurance issues in universities and degree-awarding colleges (Dove & Douglas, 2023). Although these institutions are undoubtedly essential components of Pakistan's higher education system, their dynamics and unique challenges have received limited scholarly attention. Affiliated colleges often operate within an intricate structure. These colleges are usually affiliated with universities or degree-awarding institutions, whereas the regulating oversights rest with the provincial or federal education departments.

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The research has witnessed that higher education institutions operating within countries linked with remarkable governance practices have better accountability indicators and, consequently, have advanced quality of education (Hénard & Mitterle, 2010). According to Leal Filho et al., (2021), governance positively impacts sustainable development at universities. The study of Heaton, Teece and Agronin (2023) points out that governance influences the financial performance of the higher education sector. There is also research on whether national governance impacts education quality (Gerged & Elheddad, 2020). The research study by Manuhutu, Rahardjo and Nurtjahjono (2024) has examined the role of governance in enhancing teacher performance. Fan and Zhang (2020) have witnessed the relationship between education governance and school autonomy. Shira (2023) has assessed the linkage between governance and performance.

Furthermore, the research by Dwipananda et al., (2024) has analysed the effect of good governance on the quality of university teaching. However, research on governance and quality of tertiary education in affiliated colleges, particularly from Pakistan's perspective, is still being conducted. A few studies have examined the role of governance in higher education institutions in the Pakistani context. For example, Babbar et al., (2024) have witnessed the relationship between governance and the learning environment in the context of higher education institutions in Pakistan. The impact of governance on the quality of education in the context of public and private universities was assessed by Usman (2014). In their research paper, Khan and Azhar (2024) analysed educational governance and its effect on quality from the perspective of higher education institutions. Mangi, Chachar and Shah (2019) examined the effect of governance on education quality. However, the relationship between governance and the quality of tertiary education has yet to be explored from the perspective of affiliated colleges of Pakistan. Most studies focus on larger universities or provide a generalized view of higher education governance. This lack of research also highlights the originality and novelty of this research study. Moreover, the moderating role of financial resources on the relationship between governance and the quality of education has yet to be explored in previous research studies.

The current study, therefore, addresses this substantial research gap by accompanying a quantitative examination of governance mechanisms, financial resources, and the dynamics of the quality of tertiary education, particularly in affiliated colleges of Pakistan. By investigating the detailed issues, challenges, and opportunities faced by affiliated colleges in Pakistan, the present research contributes worthwhile insights and valuable understanding to the broader discussion on governance structure, financial resources, and tertiary education quality. It provides valuable insight for the strategic leadership, administrators, academics and administrators to enhance the quality of education.

Two research objectives have been outlined for this research study. The first objective is to examine the governance mechanisms in affiliated colleges and assess their influence on the quality of tertiary education in affiliated colleges of Pakistan. The second objective is to look into the moderating role of financial resources in the association between the quality of the tertiary nature of education with governance. The novelty of this research lies in investigating the dynamics of affiliated colleges and using Resource-Based Theory (RBT) to analyse how the availability or absence of financial resources enhances or curtails the governance of these institutions.

Literature Review

This section comprises theoretical orientation, literature review, and the study's conceptual framework. The literature review synthesizes research findings to substantiate the current study, while the theoretical framework lays the foundation for understanding variable relationships. The formulated hypotheses guide data analysis in subsequent parts.

Resource – Based Theory

This study is anchored on Resource-Based Theory, which posits that the competitive advantage of organizations is largely determined by the resources they control. According to Barney (1991), values, rare, inimitable and non-substitutable resources are critical for sustaining organizational success. Resources can be grouped into three categories, namely physical capital resources, human capital resources and organisational capital resources (Barney, 1991). In the context of affiliated colleges of Pakistan, governance mechanisms and financial resources are viewed as critical internal resources directly influencing the quality of education.

Governance

Tertiary education governance has been a part of a significant investigation by academic scholars. However, there is not a common definition for this term. The Code of Governance of Irish Universities 2012 defines governance in tertiary education as "the systems and procedures under which organizations are directed and controlled. A robust system of governance is vital in order to enable organizations to operate effectively and to discharge their responsibilities as regards transparency and accountability to those they serve" (Governance of Irish Universities, 2012).

Governance may be defined as "overall, institution-wide aims or policy, versus those specific to a particular unit or topical focus' within the context of tertiary education" (Vaughter et al., 2016, p. 25).

The Organization for Economic Cooperation and Development (OECD) defines governance as "Governance encompasses the structures, relationships and processes through which, at both national and institutional levels, policies for tertiary education are developed, implemented and reviewed. Governance comprises a complex web including the legislative framework, the characteristics of the institutions and how they relate to the whole system, how money is allocated to institutions and how they are accountable for the way it is spent, as well as less formal structures and relationships which steer and influence behaviour" (OECD, 2008, p. 68). Within the contemporary study, governance is the decision-making, administration, and leadership process. In Pakistan, the dual accountability or distribution of functions and responsibilities – to both affiliating universities and provincial/federal authorities creates a complex environment that differs from the contexts examined in various international studies. However, governance and financial resources have a strong interplay in affiliated colleges.

Financial Resources

Financial resources cover funds, capital and assets, which are indispensable to executing activities, making investments, and meeting the financial requirements of an organization (Gitman, Juchau & Flanagan, 2015). Financial resources are imperative for businesses to address financial requirements, support operations, and pursue development and growth prospects comprising bank accounts, cash, lines of credit, loans, and several fiscal mechanisms (Das & Mahapatra, 2023; Kieso, Weygandt, & Warfield, 2011). They provide funding to maintain facilities, provide scholarships, recruit qualified faculty, and support student services from the perspective of tertiary education institutions. Adequate financial resources are a cornerstone for ensuring the quality and sustainability of educational programs within an evolving educational landscape (Alcaraz, 2020). Public sector affiliated colleges in Pakistan experience the availability of scarce financial resources that impede the effective governance and quality of education. Limited budgetary allocation causes regression in faculty development programs, modern teaching, research, and academic infrastructure, weakening governance initiatives.

Quality of Tertiary Education

Tertiary education denotes all formal post-secondary education, encompassing private and public universities, vocational schools, technical training institutes, and colleges (World Bank, 2021). Tertiary education is influential in boosting shared prosperity, reducing poverty, and fostering growth. Highly skilled people, along with ultimate access to a solid post-secondary education, are essential for growth and innovation because well-educated individuals are more likely to be more productive, have more employability opportunities, can cope with economic shocks, and earn higher salaries. In higher education institutions, faculty members are urged to follow the course outline (Abbas, 2020). They are also urged to plan their lessons carefully before delivering the lectures to the students (Latif, 2017). The administration of these institutions demonstrates dutiful and polite behaviour to the teachers and the students (Petreska, Prodanova & Kocarev, 2024). Rules and regulations must be implemented in true letter and spirit to run the educational activities smoothly (Ogunode et al., 2024).

Quality encompasses various dimensions in higher education. LeBlanc and Nguyen (1997) recognized seven quality dimensions from an education perspective: reputation, physical evidence, contact personnel/faculty, curriculum, access to facilities, responsiveness, and contact personnel/ administration. Latif (2017) gives quality dimensions such as attitudes, specific skills, and knowledge service. El Alfy and Abukari (2020) present four quality dimensions: administrative services, academic facilities, academic services, and student service roles. Abbas (2020) provides facets of quality, such as teacher quality, curriculum, infrastructure, management and support staff, employment quality, safety and security, and students' skill development. In the present study, quality dimensions include teacher quality, administrative services, knowledge services, activities, academic programs, and quality of students. Teacher quality exhibits the extent to which students are satisfied with the quality of teachers at the institute (Latif et al., 2019). The quality of teachers, encompassing their expertise, qualifications, and instructional approaches, significantly influences students' learning experience and outcomes (Canales & Maldonado, 2018; Lapcharoen, 2021). Assessing and ensuring teacher performance through evaluation mechanisms and feedback loops is essential in maintaining and enhancing an institution's overall quality of education (Yada et al., 2022). While emphasizing the pivotal role of teachers, it is essential to maintain a balanced perspective, acknowledging that teacher quality is just one facet of a comprehensive approach to achieving high-quality education (Wächter et al., 2024).

The administrative services dimension defines the responsibility and accountability of the administration (Teeroovengadum et al., 2016). A logical understanding of administration is a key dynamic influencing academic

development. The first contact a student has with the academic institution is through the admission services (Kitchroen, 2004); therefore, providing high-quality service to the students is more likely to contribute to the constructive valuation of the institute. The administrative staff must be able to provide service in a friendly and rapid manner, work for defined working hours, and be capable of guiding the students (Arena, Arnaboldi & Azzone, 2013; Bukhari, Khan & Bukhary, 2023). Trained administrative staff, who can deliver comprehensive information, should be employed. Kuo and Ye (2009) have observed that administrative service quality, which is directly associated with pedagogic implementation, predicts student satisfaction.

Knowledge services are an approach to managing an organization's knowledge. It is done by converging information management, knowledge management (KM), and strategic learning into a single enterprise-wide discipline. Its main goal is to ensure the highest levels of knowledge sharing within the organization (Mikolajuk, 2019). From the perspective of the education sector, the dimension of knowledge services highlights whether the institute is taking all essential steps for imparting knowledge by providing up-to-date courses, access to research facilities, and constructing a strong theoretical foundation (Latif et al., 2019).

The activities facet of quality highlights the aspects related to co-curricular and extra-curricular activities at the institute. The quality of the academic program factor highlights that academic programs and subjects are compatible with international purposes of students' survival and will be helpful in graduates' employability. The quality of students' dimension shows that they have learning outcomes, follow professional ethics, and lead successful lives after completing their degree (Abbas, 2020).

Governance and Quality of Tertiary Education in Affiliated Colleges
The relationship between governance and the quality of tertiary education within the context of affiliated colleges is a multifaceted and critical dimension of higher education management and policy. Governance structures play a pivotal role in shaping the quality of educational experiences for students (Neave, 2012).

The resource-based view (RBV) is considered an appropriate overarching theory within the given relationship of governance and education quality. According to Barney (1991), the resource-based view theory highlights the necessity of structured approaches to organizational transitions. In the tertiary educational system, the governance structures of these institutions are tasked with managing and overseeing the processes of resource management aimed at enhancing educational excellence.

Previous research has exhibited that governance plays a key role in higher education. For example, the research by Hénard and Mitterle (2010) has witnessed that governance is more likely essential for the sustainability and progress of education quality in higher institutions. Yirdaw (2016) recognized the governance and leadership in educational institutions of Ethiopia to conclude that the associated institutions are frequently dignified in a challenging situation (underfunding, poor infrastructure, lack of qualified teachers, etc.) to balance stakeholder requirements with the government's demands. Dao (2015) examines the principal concerns of reform regarding governance, financial resources, and insurance quality in higher education in Vietnam. The scholar determines that reforms at the tertiary level are slow, and impediments at institutional and national levels are restrictive in the education quality in the state. The inferences of Dao (2015) are mostly consistent with Logli (2016) from the viewpoint of higher education in the country. In addition, the study of Asongu and Odhiambo (2020) has examined the relevance of good governance in increasing education in a panel of 49 sub-Saharan African countries.

The policy and regulatory framework set by higher education authorities also intersects with governance, influencing quality assurance practices within affiliated colleges. Governance structures must align with national policies and regulations to ensure compliance and the delivery of education that meets established standards (Farooqi & Forbes, 2020). According to Gerged and Elheddad (2020), the national governance structure is positively and substantially associated with the quality of education. Moreover, the national standards related to governance play a key role in enhancing education quality within higher education. Chien and Thanh (2022) explored that enterprises with robust governance structures display well-organized administrative systems, which might lead to improved delivery of services along with proper allocation of resources. Alimbekova et al., (2018) examined the role of governance practices in contributing to the development of different activities and improving the growth of students. The study by Al-Kassem, Aguenza and Alghurabli (2022) observed that organizations with robust governance frameworks are more likely to display academic program quality because these organisations involve stakeholders in decision-making. The study by Naylor et al., (2021) witnessed that institutions practising robust and effective governance practices are more likely to attract students with calibre and exercise policies and practices enhancing student success and supporting academic

excellence. Considering these arguments, it can be hypothesized that governance positively affects the quality of tertiary education in affiliated colleges. Accordingly, the following hypothesis can be developed:

Hypothesis 1: Governance is positively related to the quality of tertiary education in affiliated colleges.
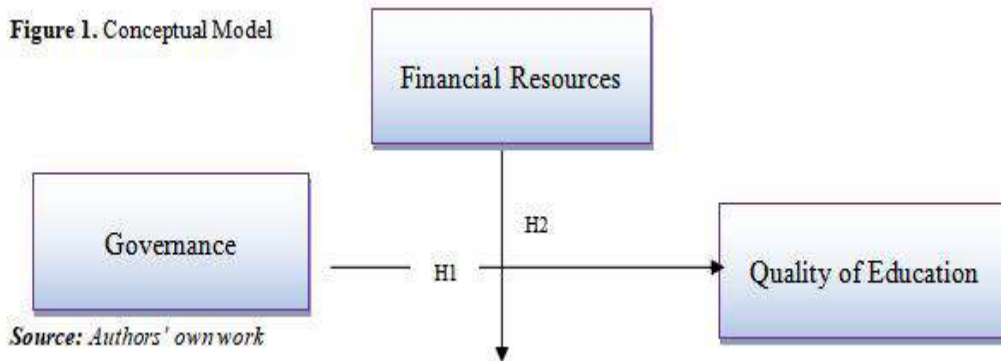
Moderating Role of Financial Resources

Financial resources moderate the relationship between governance and the quality of tertiary education in affiliated colleges. In order to support the perspective about financial resources, which is a moderator of this study, earlier studies have established the significant values of financial resources. Lonbani, Sofian and Baroto (2015) and Tran et al., (2024) provide evidence on the moderating role of financial resources in various organizational contexts suggesting that adequate funding can reinforce the positive effects of governance to achieve a high quality of education. Mubarik et al., (2020) observed the moderator impact of financial resources on financial satisfaction and inclusion. Furthermore, Tran et al., (2024) elaborated on the moderation role of financial type resources within the competitiveness of the organizations and international integration.

Additionally, the work by Adomako and Ahsan (2022) examined the moderatory impact of financial resources on SMEs' performance and entrepreneurial passion. Considering the conclusions of the above-highlighted works, it is likely hypothesized that financially valuable resources have a moderator impact on the quality of tertiary education and governance and that the availability of financial resources in the organization makes the intensive relationship. Thus, the following hypothesis has been developed:

Hypothesis 2: Financial resources moderate the association between governance and the quality of tertiary education in affiliated colleges.

Figure 1. Conceptual Model

Source: Authors' own work

Conceptual Model

Figure 1 depicts the proposed model of this research study. It is obvious from the figure that governance is an independent variable of this study. The quality of tertiary education is the dependent variable. Financial resources have been taken as a moderating variable. It is anticipated that financial resources play a moderating role in the relationship between governance and education quality in such a way that the presence of financial resources makes this relationship strong and positive. Literature support for the hypothesized relationships among these variables has already been provided in the previous section.

Method

The methodology section depicts the comprehensive structure employed to examine the valuable governance' dynamics, financial type resources, and the excellence of tertiary education, particularly in Pakistan, within colleges affiliated with other institutions. In this segment, the research design, data collection procedure, sampling method and sample size, and considerations about ethical issues that support the observed investigation have been illuminated. By setting up a quantitative approach, the present work has been carried out to understand the principals' perceptions of these institutions comprehensively. The sections below provide a comprehensive overview of the technique, confirming transparency and flexibility in this study's research process.

Research Design

Exploratory and descriptive research designs have been incorporated into the current study. Concepts related to financial resources, education quality, governance, the theory of resource-based view, and affiliated colleges fall in the domain of exploratory research design. Conversely, demographic analysis of the respondents, validity and reliability, and hypotheses testing fall in descriptive research.

Participants

In the present research study, participants were selected utilizing a purposive sampling technique focusing on the respondents' experience and perspectives related to governance, financial resources, and the quality of tertiary education in the affiliated colleges. The specific positions and roles of the participants linked to the research questions of this study were also considered. Principals of public sector affiliated colleges were chosen as the respondents for this study, assuming they have considerable knowledge about management practices in the institutions for which they are responsible. Moreover, their perceptions and perspectives are valuable in highlighting these institutions' governance mechanisms, financial resources, and quality dynamics. Seven hundred questionnaire-based survey forms were distributed among the respondents through Google Forms. Four hundred ninety-nine participants responded well in time. In this way, 71% of respondents received a response. Out of these respondents, 27 respondents were from the federal government institutions, 119 were from Khyber Pakhtunkhwa (KPK), 169 from Punjab, 25 from Balochistan, 121 from Sindh, 15 from Gilgit Baltistan (GB), and 23 were from Azad Jammu and Kashmir (AJK). Two hundred forty-four respondents worked in rural areas, whereas 255 worked in affiliated colleges located in urban areas. Moreover, 175 respondents were from boys' colleges, and 324 rendered their services in girls' colleges.

Measurement and Scale

In this research study, a self-administered questionnaire was used for data collection. This questionnaire consisted of two parts. The primary part incorporated questions about the participants' demographics. The second part consisted of statements about variables, i.e., governance and quality of education.

Franco-Santos et al., (2017) used the scale to measure governance. This scale includes coverage of elements of governance and reveals well-built psychometric characteristics. However, this measurement scale includes a set of intentionally technical statements designed to capture various aspects falling in governance, particularly in academic institutions. The respondents had to explain disagreement or agreement with all the given items on a Likert scale consisting of five points, where 1 = "Strongly Disagree", 2 = "Disagree", 3 = "Neutral", 4 = "Agree", and 5 = "Strongly Agree." Illustration items are, "Your institution has key performance indicators (KPIs) for monitoring of performance", "Your institution is fostering a culture of diversity and inclusiveness", and "Your institution provides freedom of action to adopt best management practices". In this study, the scale utilized for the governance measurement consisted of thirteen items.

Roxas and Chadee (2012) used the scale to measure financial resources. In the current work, the respondents were asked to rate the adequacy of their institution's financial resources on a 5-point scale where 1 = "Not Adequate", 2 = "Fairly Adequate", 3 = "Neutral", 4 = "Adequate", and 5 = "Very Adequate". A few illustration items of this scale are, "Your institution has different sources of funds such as government funds, tuition fees, donations and grants", and "Your institution has adequate financial resources to support institution activities".

The scale developed by Abbas (2020) and Latif (2017) was utilized to measure the quality of education. Some example statements are: "Faculty follow the course outline and plan the lessons before delivering the lectures," "The administration shows respectful behaviour towards teachers and students," and "Rules and regulations are in place for smooth operation of academic activities."

Common Method Biases

This research study collected data from a single source (principals of affiliated colleges). Therefore, it became imperative to examine the potential common method biases. Procedural and statistical steps were taken to minimize this bias arising from single-source data (Podsakoff et al., 2003). The researcher tried his best to ensure the anonymity and confidentiality of the respondents' data provided as a procedural modality. Herman's single-factor test was used for the statistical procedure. The threshold value for this test should be less than 50%. The results show a score of 33.145%, indicating no issue regarding common method biases in the current research study.

Results

The contemporary research study used Analysis of Moment Structures (AMOS) software to perform confirmatory factor analysis (CFA). Statistical Package for Social Sciences (SPSS) was used for descriptive statistics and correlation analysis. Moreover, SPSS was used to test hypotheses while applying regression analysis. Results have been presented in the following sections.

Descriptive Analysis

Table 1 presents descriptive statistics results, including Std. Deviation, Mean, and Correlation among the study constructs. The results indicate that all the constructs are significantly and positively correlated with each other.

Table 1

Results of Descriptive Statistics and Correlations among Study Constructs

	Mean	**Std. Deviation**	**GOV**	**FR**	**QE**
GOV	4.0322	.69217	-		
FR	4.0647	.71860	.528**		
QE	3.8516	.67247	.757**	.567**	-

*Note: **. Correlation is significant at the 0.01 level (2-tailed).*
GOV, Governance; FR, Financial Resources; QE, Quality of Tertiary Education

Normality of Data

Skewness and Kurtosis are most commonly used in research studies to assess the normality of data. Skewness is considered a measure of symmetry prevailing in the collected data. The data distribution is considered symmetric if it is witnessed as the same to the right and left of the centre point. According to Hair et al., (2010), in the case of normal distribution, the value of Skewness is zero or near zero. Meanwhile, Kurtosis measures whether the collected data is light-tailed or heavy-tailed to a normal distribution. In other words, the collected data with high Kurtosis will likely have heavy tails or outliers.

Meanwhile, the data showing low Kurtosis is more likely to have light tails or a deficiency of outliers. In the case of normal distribution, the value of Kurtosis is near zero, just like the value of Skewness. Furthermore, the value of Kurtosis and Skewness falling between +2.00 and -2.00 is considered acceptable (Hair et al., 2010). Results detailed in Table 2 demonstrate that the values of Skewness and Kurtosis are within acceptable range and that the data is normally distributed.

Table 2

Values of Mean, Std. Dev, Kurtosis and Skewness

Items		Mean	Std. Dev	Skewness	Kurtosis
		Statistic	Statistic	Statistic	Statistic
Governance	G1	3.853	0.986	-0.889	0.577
	G2	4.194	0.996	-1.487	2.074
	G3	4.252	0.898	-1.552	1.823
	G4	3.994	0.938	-1.099	1.491
	G5	3.923	0.943	-0.871	0.607
	G6	4.126	0.906	-1.324	1.189
	G7	4.062	0.964	-1.042	0.859
	G8	4.144	0.852	-1.297	1.549
	G9	4.178	0.860	-1.148	1.588
	G10	4.166	0.884	-1.189	1.604
	G11	4.038	0.952	-1.138	1.347
	G12	3.367	1.237	-0.511	-0.690
	G13	4.116	0.908	-1.115	1.651
Financial Resources	FR1	2.803	1.280	0.026	-1.190
	FR2	3.158	1.243	-0.284	-1.012
	FR3	2.382	1.243	0.455	0.899
	FR4	2.401	1.290	0.415	-1.052
	FR5	2.502	1.280	0.282	-1.128
	FR6	2.724	1.282	0.111	-1.190
	FR7	2.661	1.283	0.075	-1.119
Quality of Education	QE1	4.220	0.857	-1.477	1.923
	QE2	3.705	1.050	-0.776	0.113
	QE3	3.743	1.206	-0.901	-0.097
	QE4	4.404	0.814	-1.808	1.164
	QE5	4.212	0.849	-1.328	2.029
	QE6	4.200	0.893	-1.454	2.003
	QE7	4.112	0.948	-1.304	1.799

QE8	4.124	0.929	-1.078	1.031
QE9	4.058	0.863	-1.221	2.001
QE10	4.090	0.912	-1.293	2.006
QE11	3.839	0.936	-0.779	0.586
QE12	4.485	0.841	-2.007	1.159
QE13	4.378	0.837	-1.918	1.698
QE14	4.250	0.911	-1.634	1.986
QE15	3.801	1.117	-0.991	0.425
QE16	4.140	0.878	-1.384	2.005
QE17	3.531	1.060	0-.649	-0.067
QE18	3.609	1.100	-0.615	-0.278
QE19	4.026	0.894	-1.233	1.916
QE20	2.511	1.330	0.329	-1.137
QE21	4.042	0.992	-1.150	1.119
QE22	3.775	1.059	-0.875	0.291
QE23	4.046	0.924	-1.269	1.975
QE24	4.370	0.867	-1.871	1.194
QE25	3.352	1.126	-0.387	-0.562
QE26	3.731	1.000	-0.784	0.408
QE27	3.735	1.007	-0.766	0.394
QE28	3.458	1.054	-0.618	-0.124
QE29	3.743	0.972	-0.822	0.612
QE30	4.080	0.885	-1.236	2.009
QE31	3.771	0.967	-0.786	0.488
QE32	3.446	1.042	-0.611	0.054
QE33	2.511	1.362	0.388	-1.226

Reliability and Validity Testing

Cronbach's Alpha is a coefficient that shows the reliability of study items. The value of Cronbach's Alpha falls between 0 and 1. This measure's most acceptable threshold value is 0.70 (Hair et al., 2011). The results of Cronbach's Alpha are exhibited in Table 3. The results depict that all the Cronbach's Alpha are above 0.70; therefore, these items are considered reliable for this research study.

Table 3

Results of the Reliability and Validity Test

Variable	CA	AVE	CR
Governance	0.925	0.59	0.92
Financial Resources	0.888	0.53	0.84
Quality of Education	0.861	0.53	0.75

Note: CA, Cronbach's Alpha; AVE, Average Variance Extracted; CR, Composite Reliability

Validity denotes how exactly a process measures what it is projected to measure. If research has high validity, it is more likely to produce results corresponding to real characteristics, properties, and variations in the physical or social world. Validity testing was carried out through confirmatory factor analysis (CFA). The results of CFA are exhibited in Table 3. The values of composite reliability (CR) for the constructs have also been presented in Table 3. The CR values for each construct have ranged from 0.75 to 0.92. All the values of CR are above the threshold value of 0.70, indicating satisfactory convergent consistency (Fornell & Larcker, 1981).

Moreover, the average variance extracted (AVE) values are also presented. The values for AVE for each construct are also above 0.50, which is an acceptable threshold value indicating adequate convergent validity of items in each construct (Fornell & Larcker, 1981). Overall, the results indicate adequate validity of this study.

Hypothesis Testing

The current research study used SPSS for hypothesis testing while performing regression analysis. Table 4 exhibits the model summary of regression analysis. The results reveal that R Square is .573, representing that predictors show 57.3% variation in the quality of tertiary education in affiliated colleges.

Table 4

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.757[a]	.573	.570	.44078

Note: a. Predictors: FR X GOV, GOV, FR

Table 5 presents the results of regression coefficients. It is apparent from the results that governance is positively and significantly related to the quality of education, where the Beta value is .501, and the t value is 25.156. In this way, hypothesis 1 is supported. The results show that financial resources are positively and significantly related to the quality of education (Beta=.525, t=26.548). It is evident from the results that the interaction term of financial resources x governance is positively and significantly associated with the quality of education (Beta=.111, t=14.102). In this way, hypothesis 2 is supported, i.e. financial resources moderate the relationship between governance and quality of tertiary education.

Table 5
Regression Coefficients

Construct	Standardized Coefficients Beta	t	Sig.
Governance	.501	25.156	.000
Financial Resources	.525	26.548	.000
FR X GOV	.111	14.102	.000

Note: FR X GOV is the interaction term; Quality of education is the dependent variable

Discussion

This section examines the significance and implications of the study findings by presenting a comprehensive exploration of the association between the governance landscape and the quality of education along with the moderating role of financial resources in affiliated colleges of Pakistan. It also triangulates the findings of the previous research studies in this area with the findings of this study's framework and the underpinning theories.

The resource-based view has been taken as the underpinning theory in this research study. This theory demonstrates that an organization or institution is well equipped to present quality products or services owing to its unique, inimitable, valuable resources and assets (Barney, 991). The results of this research study posit that governance has been taken as a valuable resource for affiliated colleges. Governance has been witnessed to directly influence the decision-making and other activities related to the implementation of policies in the context of affiliated colleges. By triangulating the theory of resource-based, it is inferred that the finding is well aligned with this theory. In this regard, this study postulates that governance can be taken as a resource, which can be used for competitive differential advantage by these institutions, and can eventually enhance the quality of tertiary education (Hénard & Mitterle (2010).

The findings exhibit a significant positive association between education quality and governance structures. A valuable governance structure has been witnessed as a self-motivated force for improvements in the excellence of tertiary education systems. This research study's findings align with the findings of previous studies. In this regard, a few research studies are being referred here for comparison. The relationship between governance and the quality of education has been examined by Khan and Azhar (2024). George and Elheddad (2020) have observed how governance influences the quality of education. Rabbani and Chowdhury (2014) have analysed the governance and quality of higher education.

Similarly, the effect of governance on education quality has been investigated by Ahmed, Ali and Taha (2023). These research studies advocate that the governance landscape, such as transparency, responsibility, and accountability, are key players in the development of higher education institutions. It can be inference the system is more likely to improve the quality of tertiary education. An effective governance system can improve the quality of education while sustaining other conditions, such as transparency and accountability in the education industry (Machin & Vignoles, 2018; Yingqiang & Yongjian, 2016). Similarly, the study by Verger et al., (2019) demonstrates that governance

significantly influences the quality of education. The contemporary research study proposes that introducing effective governance reforms and improving governance dynamics can lead to improved quality in the education sector.

Effective governance in the affiliated colleges is more likely to contribute to high-quality teachers' training, recruitment, and support (Hendra, Kurnianto & Endrawijaya, 2024). Well-governed academic institutions are more likely to offer access to technology, information, and resources enhancing learning experiences and teaching skills (Rees, 2021). Processes of effective decision-making, mechanisms for accountability, and clear policies are more likely to contribute to the overall efficiency of an academic institution (Bukhari, Khan & Bukhary, 2023; Carstensen & Ibsen, 2021). Although governance plays a key role in forming different facets of institutes, its direct effect on the quality of academic programs might be more indirect and manifold and needs more exploration.

Financial resources have been observed as significantly and positively moderating the association between education quality and governance. Financial resources also as a resource play a key role in this perspective, supporting the assertion of resource-based theory. The moderator mechanism of financial resources in this association has yet to be found in previous works. It is a considerable value addition to this research work. The accessibility of financial resources proceeds as a moderator, fortification of the relationship linking governance with the excellence of the tertiary education system. Institutions with adequate funding can effectively leverage their governance practices to drive educational excellence. The availability of more financial resources is more likely to facilitate students and teachers by providing them with an atmosphere (Amin & Soomro, 2021; Prasad & John, 2022) which is very favourable for their learning as well as teaching. Financial resources support the assertion of resource-based views that facilitate affiliated colleges to invest in collaboration, teamwork, and partnership (Núnez Chicharro et al., 2024). These resources are more likely to favour academic institutions in research activities. All these aspects facilitate the enhancement of education quality.

In this study, resource-based theory was integrated as an underpinning theory. Resource-based theory within academic institutions plays a key role in enhancing education quality. Well-planned initiatives, including infrastructure enhancement, faculty development, and curriculum updates, are more likely to influence education quality positively. These discoveries resound with resource-based theory, highlighting the importance of organized resources in the institutions (Barney, 1991). There is a dire need to focus on stakeholder involvement, ongoing evaluation, and resource allocation to implement constructive resource management approaches aligned with the objectives of academic institutions.

Conclusions

Contemporary studies have witnessed the association between governance and education quality within Pakistani-affiliated colleges. Data were collected from the principals of affiliated colleges. Regression analysis was performed for hypothesis testing. The results exhibit the key role of governance in influencing and improving the quality of tertiary education. These findings align with previous studies on the role of governance dynamics in higher education (Babbar et al., 2023). The results also reveal the moderation effect of financial resources on the relationship between governance and quality of education. The governance structures in public sector affiliated colleges underscore the requirement for tailored practices considering the challenges of each college. The current study contributes to the governance, financial resources and education quality dynamic within the tertiary education system of Pakistan. The results offer helpful perceptions and views informing policies, practices, and recommendations for the enrichment of the excellence of tertiary education mainly within these colleges.

Theoretical Implications

The present study confirms the relationship between governance and education quality. This outcome is well aligned with Hendra, Kurnianto and Endrawijaya (2024) finding. Most earlier studies observed the association between governance in diverse perspectives and contexts (Couture, Jarzabkowski & Lê, 2023; Shira, 2023). However, this research study has assessed the linkage between governance and the quality of tertiary education from the context of affiliated colleges. The perspective has been overlooked in previous studies. In addition, the moderation effect of financial resources on the association between governance and tertiary education quality has been tested in the contemporary study. The study's outcome about moderation infers that the presence and availability of adequate funds can make the linkage between governance and quality positive and more robust (Núnez Chicharro et al., 2024). The moderation effect of financial resources is a noteworthy contribution of the present research study.

The resource-based theory has been taken as an overarching theory in the present study. This theory is likely to play an important role in improving the quality of tertiary education in the context of educational institutions and academic colleges. It also obliquely indicates the need for quality assurance mechanisms to deliberate the pedagogy and

curriculum as well as governance practices underpinning the delivery of education. Contemporary research enriches existing theories. It underlines the importance of governance and management practices, the role of financial resources, and the integration of resource-based theory to comprehend the dynamics and aspects, which are more likely to play their key role in determining the education quality, predominantly in the context of affiliated colleges and institutions. These theoretical implications offer the basis for more examination and improvement of theoretical outlines in higher education systems.

Practical Implications

This study's findings have several implications for administrators and educational policymakers. It highlights the significance of nurturing governance practices, prioritizing stakeholder engagement, transparency, and adherence to quality standards. It underscores resource management's critical role in ensuring institutions can maximize educational output through innovative resource articulation. Educational policymakers and administrators should try their best to distinguish the diversity of affiliated colleges and modify governance structures, management practices and the mechanisms for quality assurance so that the needs of each institute may be addressed accordingly (Creswell & Poth, 2016).

Policymakers in Pakistan can learn from the successful practices of Finland and South Korea and adopt decentralized and transparent governance models to improve responsiveness in affiliated colleges and enhance quality education. A multi-dimensional strategy should be pursued to improve the quality of education. It entails a framework of short and long-term comprehensive reforms. Grant of autonomy in financial and human resource management and introduction of a clear system of checks and balances should be followed. A transparent auditing process and regular evaluation of the colleges in connection with continuous quality improvement, which refers to the ongoing process of identifying and implementing improvements to the education system, must underpin it. Reduction of bureaucratic inertia and delays will be the mainstay of these initiatives. From a long-term perspective, the focus should be on decentralized governance, creating a national governance framework like HEC, capacity building of college leadership, and robust faculty development, which must attract the serious attention of those at the helm of affairs.

After the 18th amendment in the 1973 constitution of Pakistan, the responsibility for higher education is confused and shared between the federal and provincial governments (Shah, Shah & Shah, 2021). In Punjab and Sindh, the Higher Education Commissions have been established on a provincial basis. However, KPK and Balochistan still need to establish higher education commissions. Secondary and higher secondary education have been transferred to the provincial government. Overall, higher education is still available to the federal government affiliated whereas affiliated colleges mostly fall in the domain of provincial administration. The core issue is that the provinces must be in harmony with the federal government.

Some independent universities need to be established to be affiliated with affiliated colleges, taking the lead from the United Kingdom Higher Education System. These universities should be responsible for controlling and focusing on these institutions' capacity building. The federal and provincial governments should collaborate to fund these colleges. Furthermore, privately affiliated colleges may also be allowed to establish this model based on set criteria.

A cluster should be developed for a few affiliated colleges at the district level to regulate their issues. KPIs should be developed, and the principals' performance should be assessed according to these KPIs. Moreover, the principals should be given autonomy and accountability. The involvement of local government in their grooming and development will play a key role in this regard. Similarly, posting and transferring the faculty should be done on a divisional basis at the provincial level. In addition, the appointment of teachers should be on a contract basis to reduce the financial burden on the government.

A governing board at the municipality level should regulate the issues of affiliated colleges. At the strategic level, education policy should lay down the objectives of education and define what is desired from these colleges. It is also suggested that the governance of affiliated colleges be transformed into a private-public partnership model.

Financial resources are key to efficient and effective governance in affiliated colleges. Policymakers should adopt a targeted approach by increasing funds allocation for the institution, particularly in underdeveloped and marginalized areas. The focus should be on improving academic infrastructure, faculty development and technology. Funding should be driven by incentivizing better-performing colleges in the domain of effective governance practices, transparency and accountability. Policymakers should devise a need cum performance-based model for the allocation of financial resources with a strong audit system, ensuring transparency and accountability at every step. Public-private partnerships should be encouraged to provide colleges with access to more funds, faculty development and

technology—a well-resourced institution is more likely to carry out research activities, which can facilitate innovation and research. The involvement of stakeholders, including parents, students, teachers, the local community, and policymakers in the governance and allocation of financial resources, can contribute to the quality of education in affiliated colleges

The study can be beneficial for faculty members in providing them with opportunities for professional development. The findings of the present research study can facilitate affiliated colleges by allocating adequate financial resources, investing in workshops and training opportunities, enhancing the skills of teachers and preparing them to modify themselves according to the needs of the evolving education system.

Limitations and Directions for Future Study

Despite having valuable insights and imperative strengths, the current study has several limitations. This research study employed a quantitative method. The context of this study also has a limitation. It was carried out in Pakistan; its findings may not be fully applied to other settings and contexts. A mono-method was used for data collection, which may need to capture qualitative insights into governance and financial resources in the tertiary education system.

Furthermore, the current study involves cross-sectional data, which were collected once. In addition, a single independent variable, governance, was used. Lastly, this study investigated the moderating role of only one variable, financial resources, on the relationship between governance and the quality of education.

To overcome these limitations, future studies can use a qualitative approach to incorporate different institutions, such as private-sector ones. Future research should be carried out in countries with different contexts and cultures. Cross-cultural study is also one of the promising avenues for future study. Using mixed methods for data collection can provide a more comprehensive view of this area. The longitudinal study is recommended for future investigation, where the data can be collected at different intervals to understand the subject comprehensively. More variables can be used as independent variables in future studies. Strategic alignment, academic infrastructure, leadership and human resources are promising dynamics for future research. Lastly, multiple mediating or moderating variables, such as institutional culture, evaluation mechanism, self-efficacy curriculum, etc., can be considered for a comprehensive understanding of the governance and management of affiliated colleges.

References

Abbas, J. (2020). HEISQUAL: A modern approach to measuring service quality in higher education institutions. *Studies in Educational Evaluation*, *67(2020)*, 100933. https://doi.org/ 10.1016/j.stueduc.2020.100933.

Adomako, S., & Ahsan, M. (2022). Entrepreneurial passion and SMEs' performance: Moderating effects of financial resource availability and resource flexibility. *Journal of Business Research*, *144*, 122-135. https://doi.org/ 10.1016/j.jbusres.2022.02.002

Ahmed, A. A. S., Ali, F. E., & Taha, M. M. (2023). Academic Governance Strategies and their Impact on the Quality of Educational Performance. *Academy of Strategic Management Journal*, *22*(1), 1-6.

Alcaraz, M. (2020). Beyond financial resources: The role of parents' education in predicting children's educational persistence in Mexico. *International Journal of Educational Development*, *75*(2020), 102188. https://doi.org/10.1016/j.ijedudev.2020.102188

Alimbekova, A., Abildina, S., Utebayev, I., & Atemova, K. (2018). Student Self-Governance as a Factor for Professional Leadership Development in the System of Higher Education. *Revista ESPACIOS*, *39*(35), 1-18. https://www.revistaespacios.com/a18v39n35/18393501.html

Al-Kassem, A. H., Aguenza, B. B., & Alghurabli, Z. E. (2022). Accreditation of Academic Programs: Implications on Quality Governance and Administration of Taguig City University. *Journal of Positive School Psychology*, *6*(4), 3908-3923. https://journalppw.com/index.php/jpsp/article/view/3992

Amin, R. U., & Soomro, K. A. (2021). Decentralization of education: The affective role of fiscal decentralization in Pakistani education system (s). *FWU Journal of Social Sciences*, *15*(1), 41-51. http://doi.org/10.51709/19951272/spring2021/15-4

Arena, M., Arnaboldi, M., & Azzone, G. (2010). Student perceptions and central administrative services: the case of higher education in Italy. *Studies in Higher Education*, *35*(8), 941-959. https://doi.org/10.1080/03075070903420708

Aslam, S., Imran, M., & Perveen, Q. (2023). Curriculum of Higher Education for Fostering Economic Development in Pakistan. *FWU Journal of Social Sciences*, *17*(3). 59-73. http://doi.org/10.51709/19951272/Fall

Asongu, S. A., & Odhiambo, N. M. (2020). The role of governance in quality education in sub-Saharan Africa. *International Social Science Journal*, *70*(237-238), 221-238. https://doi.org/10.1111/issj.12253

Babbar, A. W., Ullah, N., Mahmood, F., & Ahsan, M. (2023). Comparative Analysis of Institutional Vision, Mission, and Goals Alignment with National Education Policies in Pakistani Affiliated Colleges. *International Research Journal of Management and Social Sciences*, *4*(3), 546-565. http://irjmss.com/index.php/irjmss/article/view/43

Babbar, D. S. A., Anam, M., Khan, M. I. M., Muhammad, B., & Sultan, A. (2024). Comparative Analysis of Organizational Governance, Management Practices, and Learning Environments in Higher Education Institutions across Different Provinces. *Remittances Review*, *9*(1), 1301-1325. http://irjmss.com/index.php/irjmss/ article/view/43

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, *17*(1), 99-120. https://doi.org/10.1177/014920639101700108

Bukhari, S. A., Khan, M. S., & Bukhary, S. Z. (2023). A Predictive Relationship between Academic Resilience and Stress of University Students. *FWU Journal of Social Sciences*, *17*(4), 149-161. http://doi.org/10.51709/19951272/Winter2023/11

Canales, A., & Maldonado, L. (2018). Teacher quality and student achievement in Chile: Linking teachers' contribution and observable characteristics. *International journal of educational development*, *60*, 33-50. https://doi.org/10.1016/j.ijedudev.2017.09.009

Carstensen, M. B., & Ibsen, C. L. (2021). Three dimensions of institutional contention: Efficiency, equality and governance in Danish vocational education and training reform. *Socio-Economic Review*, *19*(3), 1037-1063. https://doi.org/10.1093/ser /mwz012

Chien, N. B., & Thanh, N. N. (2022). The impact of good governance on the people's satisfaction with public administrative services in Vietnam. *Administrative Sciences*, *12*(1), 35. https://doi.org/10.3390/admsci12010035

Choi, S. J., Liu, H., Yin, J., Qi, Y., & Lee, J. Y. (2021). The effect of political turnover on firms' strategic change in the emerging economies: The moderating role of political connections and financial resources. *Journal of Business Research*, *137*(2021), 255-266. https://doi.org/10.1016/j.jbusres.2021.08.034

Creswell, J. W., & Poth, C. N. (2016). *Qualitative inquiry and research design: Choosing among five approaches*. London: Sage Publications. https://d1wqtxts1xzle7. cloudfront.net/55010759

Couture, F., Jarzabkowski, P., & Lê, J. K. (2023). Triggers, traps, and disconnect: How governance obstacles hinder progress on grand challenges. *Academy of Management Journal*, *66*(6), 1651-1680. https://doi.org/10.5465/amj.2020.1716

Dao, K. V. (2015). Key challenges in the reform of governance, quality assurance, and finance in Vietnamese higher education–a case study. *Studies in higher education*, *40*(5), 745-760. https://doi.org/10.1080/03075079.2013.842223

Das, S., & Mahapatra, S. K. (2023). The Big Three of Financial Literacy: Analyzing its Influences on Financial Well-being. *FWU Journal of Social Sciences*, *17*(2), 1-23. http://doi.org/10.51709/19951272/Summer2023/1

Dove, E. S., & Douglas, C. (2023). Ethics governance in Scottish universities: How can we do better? A qualitative study. *Research Ethics*, *19*(2), 166-198. https://doi.org/ 10.1177/17470161221147801

Dwipananda, R. F., Aswirawan, M. Y. M. S., Jufri, M., Rahim, R., & Nursyafitri, A. (2024). The Relationship of Good University Governance and Student Satisfied at Institut Teknologi Batam. *Maqdis: Jurnal Kajian Ekonomi Islam*, *9*(1), 25-42. https://ejournal.uinib.ac.id/febi/index.php/maqdis/article/view/1147

El Alfy, S., & Abukari, A. (2020). Revisiting perceived service quality in higher education: Uncovering service quality dimensions for postgraduate students. *Journal of Marketing for Higher Education*, *30*(1), 1-25. https://doi.org/10.1080/ 08841241.2019.1648360

Farooqi, S., & Forbes, T. (2020). Enacted discretion: policy implementation, local government reform and education services in Pakistan. *Public Management Review*, *22*(8), 1217-1239. https://doi.org/10.1080/14719037.2019.1630134

Fan, G., & Zhang, L. (2020). Education Governance and School Autonomy: The Progressive Reform of K–12 School in China. *Handbook of Education Policy Studies: School/University, Curriculum, and Assessment, Volume 2*, 55-93. Springer, Singapore https://doi.org/10.1007/978-981-13-8343-4_3

Fornell, C. & Larcker, D.F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18(1*), 39-50. https://doi.org/10.1177/002224378101800104

Franco-Santos, M., Nalick, M., Rivera-Torres, P., & Gomez-Mejia, L. (2017). Governance and well-being in academia: negative consequences of applying an agency theory logic in higher education. *British Journal of Management*, *28*(4), 711-730. https://doi.org/ 10.1111/1467-8551.12249

Gerged, A., & Elheddad, M. (2020). How can national governance affect education quality in Western Europe? *International Journal of Sustainability in Higher Education*, *21*(3), 413-426. https://doi.org/10.1108/IJSHE-10-2019-0314

Gitman, L. J., Juchau, R., & Flanagan, J. (2015). *Principles of managerial finance*. Pearson Higher Education AU. www.pearson.com.au

Governance of Irish Universities. (2012). *Governance of Irish Universities*, 1-67. Irish Universities Association.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). Multivariate data analysis: International version. *Pearson, New Jersey*.

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, *19*(2), 139-152. https://doi.org/10.2753/MTP1069-6679190202

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, *19*(2), 139-152. https://doi.org/10.2753/MTP1069-6679190202

Heaton, S., Teece, D., & Agronin, E. (2023). Dynamic capabilities and governance: An empirical investigation of financial performance of the higher education sector. *Strategic Management Journal*, *44*(2), 520-548. https://doi.org/10.1002 /smj.3444

Hénard, F., & Mitterle, A. (2010). Governance and quality guidelines in Higher Education. *A review of governance arrangements and quality assurance. Berlim: OECD*. https://etico.iiep.unesco.org/sites/default/files/2018-05/46064461.pdf

Hendra, O., Kurnianto, B., & Endrawijaya, I. (2024). Collaborative governance for aviation approved training organisation: an adapted model for multi-stakeholder collaboration. *Higher Education, Skills and Work-Based Learning*, *14*(2), 418-434. https://doi.org/10.1108/HESWBL-06-2023-0164.

Iqbal, S., Moosa, K., & Taib, C. A. B. (2024). Optimizing quality enhancement cells in higher education institutions: analyzing management support, quality infrastructure and staff training. *International Journal of Quality & Reliability Management*. *41*(6), 1572-1593.https://doi.org/ 10.1108/IJQRM-01-2021-0007

Kieso, D. E., Weygandt, J. J., & Warfield, T. D. (2011). *Intermediate Accounting, Working Papers* (Vol. 2). John Wiley & Sons.

Kitchroen, K. (2004). Literature review: Service quality in educational institutions. *ABAC Journal*, *24*(2), 14-25. http://www.assumptionjournal. au.edu/index.php/abacjournal/ article/view/630/563

Lonbani, M., Sofian, S., & Baroto, M. B. (2015). Linking balanced scorecard measures to SMEs' business strategy: Addressing the moderating role of financial resources. *International Journal of Research Granthaalayau*, *3*(12), 92-99. https://doi.org/10.29121/granthaalayah.v3.i12.2015.2893

Khan, S., Ali, R., & Arain, S. S. (2022). Quality Education in Pakistan: A case study of Abdul Wali Khan University, Mardan and its affiliated colleges. *Indian Journal of Economics and Business*, *21*(2), 73-83. http://www.ashwinanokha.com/IJEB.php

Khan, M. K., & Azhar, M. M. (2024). Advancing Sustainable Development Goals through Educational Governance in Higher Education Institutions: Bridging Policy and Practice for Punjab, Pakistan. *Orient Research Journal of Social Sciences*, *9*(1), 119-132. https://ojs-orjss.gcwus.edu.pk/journal/article/view/50

Kuo, Y. K., & Ye, K. D. (2009). The causal relationship between service quality, corporate image and adults' learning satisfaction and loyalty: A study of professional training programmes in a Taiwanese vocational institute. *Total Quality Management*, *20*(7), 749-762. http://www.tandfonline.com/action/ showCitFormats?doi=10.1080/ 14783360903037085

Lapcharoen, S. (2021). Twenty-First Century Competencies: How Can Teacher Education Programs Prepare Teacher Candidates for Successful Teaching Career Paths?. *FWU Journal of Social Sciences*, *15*(4), 20-33. http://doi.org/10.51709/19951272/Winter-2021/

Latif, A. (2017). Developing Curriculum of Bachelor in ELT Program Based on the Indonesian National Qualification Framework (KKNI). *Premise: Journal of English Education and Applied Linguistics*, *6*(1), 85-101. https://dx.doi.org/10.24127 /pj.v6i1.857.

Latif, K. F., Latif, I., Farooq Sahibzada, U., & Ullah, M. (2019). In search of quality: measuring higher education service quality (HiEduQual). *Total Quality Management & Business Excellence*, *30*(7-8), 768-791. https://doi.org/10.1080/14783363. 2017.1338133

Leal Filho, W., Salvia, A. L., Frankenberger, F., Akib, N. A. M., Sen, S. K., Sivapalan, S., ... & Emblen-Perry, K. (2021). Governance and sustainable development at higher education institutions. *Environment, Development and Sustainability*, *23*, 6002-6020. https://doi.org/10.1007/s10668-020-00859-y

Leblanc, G., & Nguyen, N. (1997). Searching for excellence in business education: an exploratory study of customer impressions of service quality. *International Journal of Educational Management*, *11*(2), 72-79. https://doi.org/10.1108/09513549710163961

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. California: Sage Publications.

Logli, C. (2016). Higher education in Indonesia: Contemporary challenges in governance, access, and quality. *The Palgrave Handbook of Asia Pacific Higher Education*, 561-581. Palgrave Macmillan, New York. https://doi.org/10.1057/978-1-137-48739-1_37

Machin, S., & Vignoles, A. (2018). *What's the Good of Education?: The Economics of Education in the UK*. Princeton University Press.

Mangi, S. N., Chachar, A. A., & Shah, N. (2019). Quality of Governance in Pakistan: An Investigation through Public Trust in National Institutions. *International Research Journal of Arts and Humanities*, *47*(47), 73.

Manuhutu, M., Rahardjo, K., & Nurtjahjono, G. E. (2024). Enhancing Lecturer Performance: The Power of Leadership, Culture, and Governance. *Profit: Jurnal Adminsitrasi Bisnis*, *18*(2), 202-216. https://doi.org/10.21776/ub.profit.2024.018.02.5

Mikolajuk, Z. (2019). A Tool for Creating Community Knowledge Objects. In *Handbook of Research on the Evolution of IT and the Rise of E-Society* (pp. 49-66). IGI Global. https//doi.org/10.4018/978-1-5225-7214-5.ch003

Mubarik, F., Rehman, M. Z. U., Baig, S. A., Hashim, M., & Shafaqat, S. (2020). Financial inclusion and financial satisfaction: Moderating role of the financial self-efficacy. *RADS Journal of Business Management*, *2*(2), 111-123. http://www.jbm.juw.edu.pk/index.php/jbm/article/view/31

Naylor, R., Dollinger, M., Mahat, M., & Khawaja, M. (2021). Students as customers versus active agents: Conceptualising the student role in governance and quality assurance. *Higher Education Research & Development*, *40*(5), 1026-1039. https://doi.org/10.1080/07294360.2020.1792850

Núnez Chicharro, M., Mangena, M., Alonso Carrillo, M. I., & Priego De La Cruz, A. M. (2024). The effects of stakeholder power, strategic posture and slack financial resources on sustainability performance in UK higher education institutions. *Sustainability Accounting, Management and Policy Journal*, *15*(1), 171-206. https://doi.org/10.1108/SAMPJ-07-2022-0375

Neave, G. (2012). *The evaluative state, institutional autonomy and re-engineering higher education in Western Europe: The prince and his pleasure*. New York: Palgrave.

OECD (2008). *Tertiary Education for the Knowledge Society*, Vol. 1, OECD, Paris. https://www.academia.edu/download/107666864/353-Texto_del_articulo-693-1-10-20110602.pdf

Ogunode, N. J., Tsevenda, M., & Atim, G. (2024). The Role of Tertiary Institutions in Combating Gender-Based Violence in Nigeria. *Central Asian Journal Of Social Sciences and History*, *5*(1), 7-17. https://cajssh.centralasianstudies.org/index.php/ CAJSSH/article/view/1027

Petreska, N., Prodanova, J., & Kocarev, L. (2024). The Importance of Higher Education Quality for Mobility Intentions. Evidence from a Western Balkan Country. *Eastern European Economics*, 1-19. https://doi.org/10.1080/00128775.2024.2343476

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of applied psychology*, *88*(5), 879. https://psycnet.apa.org/doi/ 10.1037/0021-9010.88.5.879

Prasad, G. R., & John, B. (2022, May). Financial literacy levels among teachers in higher learning institutions in Hyderabad. In *AIP Conference Proceedings* (Vol. 2393, No. 1, p. 020056). AIP Publishing LLC. https://doi.org/10.1063/5.0074241

Qazi, M. H., & Javid, C. Z. (2023). Educational parlance of equity and inclusivity and students' gendered national identity constructions in public schools in Islamabad, Pakistan. *International Journal of Inclusive Education*, *27*(12), 1319-1335. https://doi.org/10.1080/13603116.2021.1889051

Rabbani, G., & Chowdhury, S. (2014). Quality of higher education in Bangladesh: Governance framework and quality issues. *Beykent Üniversitesi Sosyal Bilimler Dergisi*, *7*(1). https://doi.org/10.18221/bujss.86058

Rees, S. (2021). Re-imagining employability: an ontology of employability best practice in higher education institutions. *Teaching in Higher Education*, *26*(5), 663-678. https://doi.org/10.1080/13562517.2019.1670637.

Rehman, S., Khan, S. H., & Akhtar, S. (2024). Implementation of the Bachelor of Studies (BS) Program in Government Colleges of Khyber Pakhtunkhwa: Prospects and Challenges. *FWU Journal of Social Sciences*, *18*(1), 135-151. http://doi.org/10.51709/19951272/Spring2024/10

Rjoub, H., Odugbesan, J. A., Adebayo, T. S., & Wong, W. K. (2021). Sustainability of the moderating role of financial development in the determinants of environmental degradation: evidence from Turkey. *Sustainability*, *13*(4), 1844. https://doi.org/10.3390/su13041844

Roxas, B., & Chadee, D. (2012). Environmental sustainability orientation and financial resources of small manufacturing firms in the Philippines. *Social Responsibility Journal*, *8*(2), 208-226. https://doi.org/10.1108/17471111211234842

Shah, S. A. A., Shah, H., & Shah, B. S. S. A. (2021). The Eighteenth Amendment and its Impact on Functionability of Provinces. *FWU Journal of Social Sciences*, *15*(1), 67-80. http://doi.org/10.51709/19951272/spring2021/15-6

Shira, R. K. (2023). Nexus between Credit Risk, Liquidity Risk, Corporate Governance and Bank Performance during Times of Crisis. *FWU Journal of Social Sciences*, *17*(3). http://doi.org/10.51709/19951272/fall2023/8

Shoaib, S., Siddique, M., & Younis, S. (2024). Ethical Dilemmas: A Perspective from Pakistani Higher Education Institutions. *FWU Journal of Social Sciences*, *18*(3), 90-110. http://doi.org/10.51709/19951272/Fall2024/9

Teeroovengadum, V., Kamalanabhan, T. J., & Seebaluck, A. K. (2016). Measuring service quality in higher education: Development of a hierarchical model (HESQUAL). *Quality Assurance in Education*, *24*(2), 244-258. https://doi.org/ 10.1108/QAE-06-2014-0028

Tran, D. T. P., Dang, H. T. M., Luong, T. T., Pham, D. T., & Cao, P. T. (2024). Enhancing the Competitiveness of Vietnamese SMEs in the Context of International Integration: Moderating Role of Financial Support. *Cuadernos de Economía*, *47*(133), 73-81. https://doi.org/10.32826/cude.v47i133.1308

Usman, S. (2014). Governance and Higher Education in Pakistan: What Roles Do Boards of Governors Play in Ensuring the Academic Quality Maintenance in Public Universities versus Private Universities in Pakistan? *International Journal of Higher Education*, *3*(2), 38-51. https://eric.ed.gov/?id=EJ1067565

Vaughter, P., McKenzie, M., Lidstone, L., & Wright, T. (2016). Campus sustainability governance in Canada: A content analysis of post-secondary institutions' sustainability policies. *International Journal of Sustainability in Higher Education*, *17*(1), 16-39. https://doi.org/10.1108/IJSHE-05-2014-0075

Verger, A., Fontdevila, C., & Parcerisa, L. (2019). Reforming governance through policy instruments: How and to what extent standards, tests and accountability in education spread worldwide. *Discourse: Studies in the Cultural Politics of Education*, *40*(2), 248-270. https://doi.org/10.1080/01596306.2019.1569882

Wächter, T., Gorges, J., Apresjan, S., & Lütje-Klose, B. (2024). How can inclusion succeed for all? Children's well-being in inclusive schools and the role of teachers' inclusion-related attitudes and self-efficacy. *Teaching and Teacher Education*, *139*, 104411. https://doi.org/10.1016/j.tate.2023.104411

World Bank, (2021). *Higher Education*. Retrieved March 24, 2024, from https://www.worldbank.org/en/topic/tertiaryeducation#1.

Yada, A., Leskinen, M., Savolainen, H., & Schwab, S. (2022). Meta-analysis of the relationship between teachers' self-efficacy and attitudes toward inclusive education. *Teaching and Teacher Education*, *109*(2022), 103521. https://doi.org/10.1016/j.tate.2021.103521

Yingqiang, Z., & Yongjian, S. (2019). Quality assurance in higher education: Reflection, criticism, and change. In *External Higher Education Quality Assurance in China* (pp. 7-19). Routledge.

Yirdaw, A. (2016). Quality of education in private higher institutions in Ethiopia: The role of governance. *SAGE Open*, *6*(1), 1-12. https:///doi.org/10.1177/2158 244015624950

The Geopolitical and Economic Impact of BRICS on the Middle East

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The recent expansion of BRICS into Middle Eastern countries signifies an important shift in global power. The research is aimed at comprehensively exploring various aspects of such influence concerning the geopolitical and economic dynamics of the Middle East. The first part of the article focuses on how BRICS membership brings about a shift in the regional power balance that could be detrimental to the long-standing dominance of Western powers and therefore alter the US-Middle East relations. The second part of the paper highlights the role of BRICS in presenting itself as the mediator both in cases of stability and conflict resolution in the region and draws attention as well to the possible limitations and difficulties arising from the existence of different aims within the group. The case study of Iran, Saudi Arabia, and UAE has been discussed in this article to investigate the relations between BRICS countries are explained by their importance in the contemporary global geopolitical and economic context. All these countries have a significant influence on regional and international affairs and therefore are valuable to analyzing the external relations of BRICS. It is concluded that the BRICS membership destabilizes the traditional balance of power in the Middle East, dethroning the Western powers and restructuring the US-Middle East relations. BRICS' influence on the Middle East is geopolitical and economic, with the transformative shift in global power dynamics, offering both opportunities and challenges for regional stability, economic growth, and international relations.

Keywords: BRICS, Emerging Economies, Middle East, Economic Alliance, Financial Challenges

BRICS represents an association of five leading developing economies (Brazil, Russia, India, China, and South Africa) (Kahn 2020); it was established in 2009 and is a distinguished geopolitical and economic group whose emergence attracted attention for its potential to restructure global power dynamics(Pant 2013). BRICS is a powerful group of countries, which individually have great economic potential and influence, so BRICS collectively challenge the traditional power of the West in international affairs(Armijo & Roberts 2014). The main objective of BRICS is to ensure the partnership and cooperation of its member states in different areas, such as economic, political, and strategic(Laidi 2012). Through the progress of closer relations and mutual understanding, BRICS is designed to increase the importance and impact of emerging economies in global affairs(Vom Hau, Scott et al., 2012); BRICS identifies and addresses common challenges and jointly pursues common interests, which cover economic development and poverty reduction, geopolitical stability, and reform of the global governance institutions (Mielniczuk 2013). Economically, BRICS countries make up a considerable proportion of the world's GDP and population, which give them the role of the main engines of global economic growth and development (Siddiqui 2016). The organization pursues these goals through initiatives such as increased trade, investment, and technological cooperation that intend to use the combined power of the member states to promote economic prosperity and reduce inequalities.

The BRICS aspires to strengthen financial collaboration and explore alternative financing systems that decrease the dependence on Western-effected financial institutions and currencies (Kiely 2015, Nayyar 2018). BRICS goes beyond economic interaction; it is also a forum for diplomatic engagement and strategic discussion among its members. Through organizing summits, meetings, and exchanges regularly, BRICS provides its members with an opportunity to synchronize their views on crucial international issues, voice their concerns and defend their interests, and contribute to the creation of a multipolar world with more diversity and inclusivity in the decision-making processes on the global arena(Armijo & Roberts 2014). Recently, BRICS has expanded its reach to include four Middle Eastern countries: Egypt, Iran, Saudi Arabia, and the United Arab Emirates (UAE)(Kazelko & Semeghini 2024); this expansion is a major

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milestone for the BRICS' geopolitical and economic influence that is now extended into the sphere of engagement beyond the original member states in Latin America, Asia, and Africa(Das & Mahapatra 2023, Rubina 2024). This move by BRICS nations highlights their rising prominence and aspiration not only to expand their presence but also to gain strategic significance in the world. The inclusion of Egypt, Iran, Saudi Arabia, and the UAE in BRICS is an attempt to create an in-depth engagement with the major players in the Middle East which is a region of geopolitical complexities, economic significance, and cultural diversity(Özekin & Sune 2023). This development highlights the BRICS's understanding of the Middle East's importance in world affairs, especially in domains like energy, commerce, security, and regional stability. BRICS countries aspire to strengthen bilateral relations with the Middle Eastern nations to bring about cooperation on a wide range of issues such as economic growth, energy security, infrastructure investment, and political dialogue(Abdenur 2017). Hence, the membership of Egypt, Iran, Saudi Arabia, and the UAE in BRICS also represents a global geopolitical realignment and ongoing diversification of partnerships in the international landscape (Chaziza 2020).

With the transformation of traditional power structures and new centers of influence coming to the fore, BRICS attempts to adjust and expand its membership according to the changing geopolitical map and support the multipolar world order (Stuenkel 2017). Middle Eastern nations are welcomed into the BRICS membership, expanding its geopolitical power and reach. BRICS is strengthening its position as a powerful global faction, which can change the balance of power and create a multipolar world order, through its enlargement of the membership. Planning to include the Middle Eastern countries in BRICS, enriches partnerships beyond its original member states, and creates a way to the new markets, resources, and strategic opportunities(Sun 2021); Middle Eastern countries could look at BRICS as a means to diversify their geopolitical alliances and lessen their dependency on traditional Western powers(Antony 2023). By allying with the BRICS bloc, these countries can acquire additional sources of political, economic, and strategic counterbalance, growing in influence and autonomy. In economic terms, BRICS membership enables Middle Eastern countries to attract foreign investment, technological transfer, and infrastructure development(Asongu, Akpan et al. 2018); this gives rise to varying social and economic levels, job creation, and development that cuts across the board. This is done to counteract the volatile nature of such activities in the region. The prime objective of BRICS on dialogue, diplomacy, and peaceful negotiation provide an avenue for Middle Eastern countries to solve regional issues and secure the region, with all the actors actively participating in the process(Lee & Sims 2024). BRICS, as the forum, is a tool that Middle Eastern countries use to be part of peace-building efforts, conflict reduction, and security measures, thus building trust and cooperation in the region(Brosig 2019, Brosig 2024).

This edge-cutting study covers the research gap of new trends in relations between BRICS and Iran, Saudi Arabia, and UAE that have been trade and investments as a basis for further development of economic cooperation of these countries. Because the literature shows that, in the past few years, China and India, which are part of BRICS, have focused and invested in these regional economies, thus expanding infrastructure and energy sectors. China has invested significantly in FDI in the UAE and Saudi Arabia where it has invested in infrastructural projects such as seaports and industrial areas. All these investments have gone further to increase sectoral contribution to the national GDP and contributed to the stabilization and diversification of the economy of these nations from oil-based economies to part of the global economy. The net impact of these trade and investment activities is a closer and stronger economic coordination between BRICS and the Middle East as significant actors in the global economy.

The research is aimed at comprehensively exploring various aspects of such influence concerning the geopolitical and economic dynamics of the Middle East. The main focus of article is;
I.   To highlight the geopolitical and economic impact of BRICS on the Middle East in the contemporary era
II.   To discuss the case studies of different BRICS countries to investigate the relations between BRICS economies.
III. To focus on how BRICS membership brings about a shift in the regional power balance.
IV.   To highlight the role of BRICS in presenting itself as the mediator for conflict resolution in the region.

Prior Investigation and Arguments
The Middle East's present geopolitical and economic balance is a complicated mix of various factors that govern the region(Amanat 2012). In the geopolitical environment, the Middle East is marked by a high level of conflicts, historical disputes, and rivalries between different states and non-state actors. This area is home to a diverse ethnic, religious, and cultural population that forms a connecting line to political and economic factors, thus, creating a difficult and unstable environment. The foremost regional problems in the Middle East are the political uncertainties caused by leaders who are not willing to work with others, the lack of institutions that can keep a country together, and the social unrest that is often associated with such things (Sela 2012). Conventional conflicts, like those in Syria, Yemen, and Libya, aggravate instability and humanitarian crises, forcing millions to flee and putting regional security to the test

(Ahram 2020). Economies of many countries in the Middle East still have to contend with the problem of over dependence on oil revenues and limited progress in stepping up the building of diversified and sustainable economies(Kubursi 2015). Furthermore, resource dependence brings countries to the instability of global oil prices and geopolitical risks. In the past, the Western powers were the main ones who were influential in the Middle East, and therefore they were the ones who shaped the alliances, economic policies, and security arrangements (Halliday 2005). Western interventionism, colonial legacy, and political interests of some countries had shaped regional dynamics for decades which often resulted in resentment and anti-Western sentiments in some populations (Clesse, Cooper et al., 2023). Nevertheless, the dynamics of the influence are in a process of shift, with the emergence of new powers like China, Russia, and BRICS countries that are aiming at increasing their presence and influence in the region through economic investments, diplomatic engagements, and strategic partnerships. Such transformations could question the old hierarchies of the West and consequently lead to a more multipolar geopolitical context in the Middle East. With the emergence of new powers in the area, Middle Eastern countries would feel the need to look for new cooperation and partnership opportunities, consequently having their alliances diversified and getting more independence while planning their political, economic, and security future (Chaziza 2020). In other words, the political and economic transformations in the Middle East are evolving and that makes the region both a place of turmoil and of opportunity for peace, prosperity, and security (Cammett 2018).

BRICS and the Middle East: Geopolitical Impact

The BRICS participating countries give a new dimension to the geopolitical scenario of the Middle East, foretelling a multipolar and diversified future for regional politics (Moch 2024). The BRICS countries (Brazil, Russia, India, China, and South Africa) coming into the Middle East change the old power structures at play and thus modify the strategic calculations of these regional and global players. The most noteworthy aspect of the BRIC's membership is the fact that these countries are considered to be the leading powers in the Middle East, which rejects the false standard previously held by Western countries. The significance of the BRICS, especially in terms of economy, politics, and military activities, led to a rebalance of power and gave many Middle Eastern countries more maneuvering space for international decision-making(Juutinen 2019). This shift in policy grants the region an opportunity to break free from the reliance on Western alliances and open access to the creation of new diplomatic initiatives and partnerships. On the other side, by BRICS membership, new economic cooperation and development possibilities in the Middle East were opened. The BRICS member countries have ample resources for investment and regional knowledge technologies, which in turn stimulate economic growth and diversification. This economic partnership replaces the traditional trade relations with many countries in the Middle East and enhances trade and investment opportunities by making them less dependent on those economic partnerships(Henry and Springborg 2010). Also, the participation of BRICS in diplomacy and the dialogues of the region bring this to a whole new level. The BRICS nations, using their growing power and ambition to go global, are playing more important roles in mediating local conflicts, promoting stability, and supporting multilateralism(Larionova and Kirton 2018). Their engagement in the affairs of the Middle East offers new avenues for diplomacy and conflict resolution, completing the efforts of the existing ones by regional and global actors. Nevertheless, BRICS membership brings about some problems for the Middle East as well. The variety of BRICS countries' interests and priorities might cause competition and tensions within the region that could aggravate the current fault lines and make the diplomatic process more difficult (Khorbaladze 2021). Additionally, the resurgence of new geopolitical patterns and partnerships emerging in the BRICS context may lead to a higher level of rivalry and increase regional instability.

US-Middle East Relations and Regional Power Dynamics

BRICS's membership in the Middle East region can result in shifts in US-Middle East relations and regional power distribution (Kowner, Evron et al., 2023). The existence of the BRICS countries gives Middle Eastern countries an alternative to the United States' economic and political partnerships, which could in turn decrease dependence on the United States (Glosny 2010). This might result in the review of US policies and adjustment of engagement approaches to keep the influence. Moreover, BRICS' appearance in the Middle East will help create a multipolar geopolitical outlook where different power centers compete for their influence. This might result in a greater level of competition and game-playing that would be between the US and BRICS nations for regional domination and control over key resources and geopolitical issues.

Intra-Regional Relations and Potential for Conflict Resolution

BRICS participation in the Middle East can be seen as a factor affecting intra-regional connections and conflict-resolution activities (Paul 2020). The bloc's policy focus on non-interference and multilateralism offers an alternative way of dealing with regional conflicts compared to the traditional Western intervention (Brosig 2023). The BRICS members may reaffirm their mediator role in intra-regional disputes, using their diplomatic power to promote

dialogue and negotiation processes. Nevertheless, the divergent interests among BRICS nations and the countries within the Middle East could impede conflict resolution efforts. Moreover, BRICS in the region can make current conflicts and rivalry worse as countries explore new alliances and power balances(Laidi 2012, Jones 2014).

BRICS aims at the maintenance of stability and security in the Middle East through diplomatic interaction, economic cooperation, and conflict settlement initiatives (Jones 2014). The bloc's joint resources and its diplomatic weight enable it to undertake regional issues such as terrorism, extremism, and political instability (Burton 2015). BRICS members can undertake development projects, peace building activities, and capacity-building projects to stabilize the region and promote security and socioeconomic well-being. Nevertheless, the capability of the BRICS to stabilize the global political situation is conditioned by its capacity to negotiate complicated geopolitical realities, overcome its internal differences, and obtain support from regional stakeholders. The role of the bloc in the Middle East is supportive of the existing regional and international initiatives, which through additional paths of cooperation and partnership may help to tackle common security challenges(Gause III 2014).

Contemporary Economic Relations of the Middle East Countries

The addition of these Middle Eastern countries into BRICS is a histrionic shift in the balance, as it is an indication of a growing multipolarity in the world's economic pattern (Klieman 2015). For example, China has deepened its economic cooperation with many Middle Eastern countries, especially in the energy sector(Kemp 2012). Currently, Saudi Arabia and UAE are some of the key oil exporting countries for China, which heavily relies on the import of oil to support its rapidly growing economy. Saudi Arabia and China have a pivotal role in energy cooperation, with Saudi Arabia exporting 61.2 million tons of oil to China and China representing the largest oil export market, absorbing 14.4% of Saudi oil exports in 2018 (Chen 2020). China's Belt and Road Initiative complements this, where Beijing plans to establish a new Silk Road line through infrastructure investment for Asia to connect with Europe and Africa(Afzal, Afzal et al., 2023, Xu, Afzal et al., 2023). It has brought substantial amounts of direct Chinese investments in the development of infrastructure such as ports, railways, and energy facilities in the Middle East countries hence increasing bilateral relations as well as trade.

India, on the other hand, has been forging ahead with its improvement efforts in its economic relations with the Middle East, with sectors such as medicines, information technology, and renewable energy in mind. India's economic relations with the Middle East include oil imports, bilateral trade, and millions of Indian migrants seeking jobs in the region (Nandy 2020). Many Indian companies are expanding their stakes in energy sectors, exploring and establishing oil and gas production facilities in countries such as Saudi Arabia and the UAE. This growing economic interdependence is clear evidence of India's strategic turn towards the Middle East given its desire for energy and its quest for markets.

Russia has extended its interests towards the Middle East mostly based on energy and military dealings with Iran. The two countries have had bilateral cooperation, especially within the context of the OPEC+ agreement, where they manage oil production levels to stabilize global oil prices(Mann 2009). Russia has sold Iran military equipment, which strengthens the bilateral relations between the two countries (Freedman 2006). However, Russia has somewhat different relations with other Middle Eastern countries including Saudi Arabia because it cannot afford to jeopardize its interests in the region.

Although Brazil and South Africa have not maximized the opportunities for trade and investment within the Middle East, there are emerging opportunities. Brazil, as a country that specializes in agricultural exports, should be able to complement the food security of countries such as Egypt, who import most of its foods (Woertz & Keulertz 2015). South Africa in particular has a diverse economy and has opportunities in sectors such as mining and renewable energy, which are relevant to the Middle Eastern region.

These Middle Eastern countries when included in BRICS have its advantage and disadvantages. On one hand, it permits the enhancement of FDI (Foreign Direct Investment) and technology imports, especially in strategic sectors such as infrastructure and energy(Kumari, Kumar et al., 2024). The possibility of developing joint projects can contribute to increased economic growth and progress of the region. At the same time, the struggle for resources and markets can cause geopolitical tensions between the members of BRICS, making the economic environment more complicated(Balcilar, Bonato et al., 2018). The member countries of BRICS have different economic policies, governance structures, and levels of development this may lead to conflicting interests, which may harm the collective interests of the countries in the bloc. The geopolitical context in which these economic relations progress cannot be ignored; there are many coalitions and competitions within the Middle East and the entrance of BRICS into this region

makes it even more challenging(Laidi 2012). For example, the conflict between Saudi Arabia and Iran creates challenges for BRICS as it tries to facilitate dialogue and subtleties among its members. Another layer to the equation is the political reasons, such as historical relations between Middle Eastern countries and Western countries, and the shifting of commitments as these countries try to balance relations with both the BRICS and the traditional Western partners.

Geopolitical Influence of BRICS

Divergent National Interests: As a major issue affecting BRICS' geopolitical influence, the divergent national interests and priorities among the member states play a key role. The BRICS countries have different geopolitical aspirations, economic targets, and regional interests. These differences usually create different opinions on the most important global problems, and this is very much to the disadvantage of the bloc because it cannot face the world as one(Li & Carey 2014).

Geopolitical Rivalries: Another complicating factor in the geopolitical influence of the BRICS bloc is geopolitical rivalries among the members(Nuruzzaman 2022). The struggle for regional dominance, access to resources, and strategic influence may not be conducive to integration and coordination within the BRICS. As an illustration, competition between China and India in South Asia or between Russia and China in Central Asia may hinder cooperative endeavors and diminish the influence of the bloc on regional issues.

Internal Disputes and Conflicts: Domestic disagreements and conflicts within the BRICS member countries can reduce the bloc's capability to influence geopolitics; instability in socio-political spheres, ethnic conflicts, and territorial disputes in India, Russia, and South Africa drain resources necessary for them to actively engage in international diplomacy and regional cooperation. The internal challenges may turn the attention to internal affairs and redirect the resources away from the joint efforts to increase the collective geopolitical influence of BRICS(Van Noort 2019).

External Skepticism and Resistance: The geopolitical might of the BRICS attracts skepticism and resistance from the established global powers and international organizations (Öniş & Kutlay 2020). The Western powers such as the United States and the European Union tend to regard the rise of BRICS with suspicion and they often perceive the latter's growing influence as a threat to their domination. This implies the BRICS members have difficulties in integrating the bloc into global governance structures and decision-making processes and that is why it undermines the BRICS capability to shape the international norms and institutions.

Economic Vulnerabilities: Economic Vulnerabilities: However, the BRICS countries are additionally challenged economically by the existing vulnerabilities within the bloc and this makes the block underrated geo politically. In case a BRICS member country pursues a recession, currency fluctuations, and trade imbalances the problem of insufficient engagement in the world is likely to be faced. In addition, the external economic pressure in the form of trade sanctions, financial crisis, and market volatility might aggravate the economic vulnerability of BRICS countries, and hamper their efficiency to go about their geopolitical goals (Roberts 2019).

Limited Institutional Framework: BRICS is an informal grouping and has neither a mechanism for decision-making, nor coordination, and enforcement(Arapova & Isachenko 2019). In contrast with the UN or NATO which are the usually formal international organizations, BRICS summits, and bilateral meetings are normally used to implement its agenda. The lack of an institutional system and legal frameworks may prevent the bloc from adopting coordinated policies and initiatives, which will eventually diminish its geopolitical influence and its function in dealing with global challenges(Cooney, du Toit et al., 2015).

BRICS and the Middle East: Economic Impact

BRICS membership has a stunning potential to bring up a new set of challenges, risks, and interactions in regional trade, investments, and development discourse in the Middle East. Analyzing the effects of BRICS membership on the Middle East's economic impact involves various factors such as:

Trade and Investment Opportunities: BRICS membership presents trade and investment gates between the Middle East and new trade and investment partners like Brazil, Russia, India, China, and South Africa(Prabhakar, Azam et al., 2015). The enhanced economic links create the channels for the movement of goods, services, and capital that feed off economic growth and diversification in the region. Middle Eastern countries can explore new export markets while benefiting from foreign investment and technology transfer from BRICS nations, thus creating jobs and stimulating industrial development.

Infrastructure Development and Connectivity: BRICS countries, especially China, are well-known for their large-scale infrastructure development ventures in other countries (Batista, 2021). In the Middle East, BRICS membership can become an engine for infrastructure investment in sectors like transportation, energy, telecommunications, and urban development. The expansion of ports, roads, railways, and energy pipelines facilitates regional integration, and the movement of goods, people, and services through borders, hence, creating economies of scale and promoting competitiveness.

Energy Cooperation and Resource Management:
The Middle East is an essential energy hub that has plenty of oil and gas reserves which are a source of the world's energy markets. BRICS membership assists energy cooperation and resource management in the area, developing partnerships in energy exploration, production, and distribution (Sun 2014). Technology transmission, skills, and investment from BRICS nations to the countries of the Middle East help the latter to develop their energy sector, improve its efficiency, and diversify fuel types.

Diversification of Economic Partnerships:
Being a part of the BRICS membership provides an incentive for Middle Eastern countries to diversify their economic alliances beyond the traditional Western allies. The Middle East region achieves diversification by being a trade partner to emerging economies and this ensures that the region is not subject to geopolitical tensions or economic fluctuations in the Western markets. Through the BRICS membership, Middle Eastern countries have more room and capacity to respond to global economic instability (Stuenkel 2020).

Challenges and Competition: Although, BRICS membership brings advantages it also has the elements of competition and challenges for the Middle East. The intensified economic cooperation with the BRICS countries may lead to the disruption of existing trade patterns and industries, thereby creating disturbances to local businesses and labor markets. As well, the competition for resources, markets, and strategic assets between BRICS countries and other regional players will be further aggravated, which may result in geopolitical tensions and rivalries in economic fields (Nuruzzaman 2022).

Diversification of Trade Partners
Growing trade and investment relationships between the Middle Eastern countries and the BRICS nations mark the emergence of new dynamics in the global economy(Cousins & Borras Jr et al., 2018). This rise in trade and investment is an outcome of the economic clout of BRICS nations, i.e. Brazil, Russia, India, China, and South Africa, and their need to penetrate the strategic markets and resources of the Middle East. An increasing trend in trade and investment is determined by several factors. As the BRICS economies, particularly China, have taken the role of major trading partners for the Middle East, the growing demand for energy resources, infrastructure projects, and consumer goods in these countries have been the key drivers behind this trend (Gusarova 2019). While BRICS countries seek access to the Middle Eastern markets for their exports, the latter also look to the BRICS market to sell their oil, natural gas, petrochemicals, and other commodities. One more important point to be highlighted is that the diversification of trade partners is a crucial part of BRICS membership in the Middle East. They have been from time to time relying on Western markets to trade their commodities. Now they are diversifying their economic alliances to reduce dependency and manage risks of unpredictable fluctuations in Western economies. BRICS members serve as an alternate setting for markets and investment opportunities, which opens up new opportunities for Middle Eastern countries to explore their development on the economic front. The opportunity to use BRICS development funds not only helps economic cooperation between the Middle East and BRICS nations but also provides it with an additional boost. Initiatives like the BRICS New Development Bank (NDB) and the Asian Infrastructure Investment Bank (AIIB), which involve the BRICS countries as major players, provide funding for infrastructure projects, renewable energy programs, and other development projects in the Middle East(Zhu 2019). These funds provide an additional source of financing, which in turn is complementary to other traditional sources, including multilateral development banks and foreign direct investment.

Infrastructure Development and Technological Collaboration
The Middle East and BRICS nations' interconnection in infrastructure development and tech sharing through joint efforts are vital in the growth of their economic partnership, which is evident through innovation, connectivity, and development in various sectors.

Infrastructure Development: Infrastructure development collaboration includes the planning, financing, as well as construction of key physical structures and facilities. Particularly China with its vast knowledge of infrastructure

development is an important partner for the Middle East among the BRICS countries. Infrastructure projects are about transportation networks (i.e. roads, railways, ports, and airports) energy facilities (including power plants; pipelines, and renewable energy installations), telecommunications systems, and urban development initiatives (Basoli & Ricceri 2018).

Technological Collaboration: Technological cooperation stands for the transfer of information, skills, and resources in different technological areas. BRICS countries have significant technological potential across multiple domains, such as information technology, telecommunications, renewable energy, healthcare, and agriculture(Gu, Renwick et al., 2018). Technology collaboration includes joint research and development activities, technology transfer agreements, capacity-building initiatives, and the creation of centers of research and innovation.

Benefits of Infrastructure Development and Technological Collaboration

Infrastructure development helps to grow the economy by creating jobs, increasing productivity, and drawing investors. Technological cooperation stimulates innovation and competitiveness, the engines of economic diversification and sustainable growth. Infrastructure projects are aimed at improving connectivity within the MENA region and with BRICS nations, which will favor trading, tourism, and cultural exchange. Improved connectivity provides a solid basis for regional integration and cross-border collaboration. Investments in infrastructure for energy, water, and transportation can enhance resource efficiency and environmental sustainability. Technological partnerships to promote the use of green technologies and environmentally friendly practices lead to a reduction in carbon emissions and environmental impacts(Khattak, et al., 2021, Nile, et al., 2024). Projects of an infrastructural nature, like schools, hospitals, and community centers, aid in social development and human capital formation. Technological collaboration is the main driver of access to healthcare, education as well as information services, which in turn empower communities and improve their quality of life.

Challenges and Mitigation

Egypt and Iran are the most affected countries by debts in the Middle East region, as debts place severe constraints on their growth and development(Safwat, et al., 2021). Egypt's debt has increased in recent years, driven by a combination of external borrowing and domestic fiscal pressures. This situation demands a strategic approach to foreign investment and economic partnerships especially with great powers like China, India, and Russia, which present both risks and opportunities. China has been quite active in the Middle East. Being one of the largest investors globally, China has been involved in infrastructure development in the region investing its money in projects such as those in Egypt. Since 2015, Egypt has been a key country in the BRI, which has led to large Chinese investments in infrastructure projects, particularly transport and energy(Shaaban and Moneim 2020). While these investments can encourage economic growth and create jobs, they also raise concerns about debt sustainability(Abdul-Rahman, et al., 2024). The inflow of Chinese loans can lead to a cycle of dependency, where countries may struggle to repay their debts, possibly resulting in a loss of control over critical infrastructure. This dynamic is especially applicable to Egypt as the country is at a crossroads as to how it can use Chinese investments for development without falling into the Chinese debt trap. India offers a different kind of opportunity to the Middle Eastern countries. Being an emerging economic power with an expanding demand for energy resources, India has focused on expanding its cooperation with the countries of the region in energy, technology, and trading spheres. To Egypt, India provides an opportunity for expansion of economic relations and can be a counterbalance to Chinese dominance. However, the problem is that India is still struggling to challenge China and find a consistent strategy to improve its advantage in the region. India has a history of cooperation with Iran, especially in the energy field and this can be valuable for Iran now, as the country is experiencing economic problems because of sanctions(Suresh & Ramesh 2015). However, due to its efforts to balance its strategic interests and political relations with Iran on one hand and with the Gulf Cooperation Council (GCC) on the other, the position of India is a bit tricky in the region. Russia's contribution to the Middle East is categorized by its strategic alliances, particularly with Iran and, to a lesser extent, Egypt. Russia's military and political support for Iran, especially in the context of the Syrian conflict, has strengthened its role as a key ally for Tehran(Keshk 2021). But this relationship is far from smooth sailing as Russia's interests may not always be in line with Iran's, especially regarding energy and security. Assuming that Egypt is a key player in the region, Russia can provide it with military and energy cooperation; however, this does not seem to be deep in comparison with the multiple connections Egypt has with China and the Gulf states.

Financial Constraints:
Financial requirements for large-scale infrastructure projects may cause concern about the issue of debt sustainability and fiscal responsibility. Besides, technological collaboration can be accompanied by high costs for research and development, infrastructure improvements, and skills upgrades.

Regulatory Frameworks:

Regulatory frameworks, legal systems, and bureaucratic practices between the Middle East and BRICS nations may hinder infrastructure development and technology partnerships. Alignment of regulations and increasing transparency are vital to creating trust and cooperation(Poskitt, et al., 2016).

Technological Transfer: It is of utmost importance to provide equal opportunities for technology and knowledge transfer to reach the peak of benefits from collaboration. Intellectual property rights, technology license agreements, and skill development programs must be strategically negotiated to prevent unevenness and to promote inclusive growth.

Financial Cooperation and Alternative to US Dollar Dependence

Financial cooperation between the Middle East and BRICS nations offers opportunities for expanding economic policies and decreasing reliance on the US dollar (Stuenkel 2013). This partnership offers a sustainable way of maintaining financial stability and progress in the region. Cooperation brings about diversification of currency reserves away from the US dollar so that they are not exposed to its fluctuations and at the same time diminishing the risk of changes in US monetary policy. Trading settlement in local currencies or through other options decreases the need for the US dollar in Middle East-BRICS trade. Formal currency swap arrangements and regional clearinghouses facilitate trade operations and reduce foreign exchange risks. Collaboration mostly leads to the region's financial infrastructure development which can comprise payment systems, clearing mechanisms, and financial institutions among others. The BRICS (New Development Bank and Asian Infrastructure Investment Bank) are among the initiatives that have been created for investing in infrastructure projects and economic development (Chin 2014). Partnerships are built upon the Middle East's expertise in Islamic finance, and BRICS countries' concern about Sharia-compliant banking products. Joint schemes, Islamic bonds, and investment funds that serve the Islamic preferences of the Muslim-majority countries are also a way of developing Islamic finance. Collaboration increases the resilience of Western financial institutions and markets by reducing dependence on them (Larionova & Shelepov 2022). It also reduces the external pressures and geopolitical risks. This leads to greater resilience through global economic turbulence or financial crises. Financial cooperation with BRICS countries has geopolitical dimensions, as it may change economic influence from Western-controlled structures. This increases a more multilateral world order and gives greater weight to the Middle East in the international financial markets.

Competition between BRICS Members

Within BRICS, competition among the members for influence and resources is a key driving force, which is based on the differences in national interests, strategic priorities, and economic aspirations. This competition reveals the intricate geopolitical landscape and power relations among the five permanent member countries, Russia, India, China, and South Africa. BRICS member states constantly compete with each other for consumer markets, raw materials, and capital within their regions as well as beyond the region. Concerns about the market and being in various sectors are the effects of China as a dominant partner of the BRICS countries (Pant 2013). Other countries, however, are worried about the competition and the trade imbalance. Similarly, in the manufacturing, technology, and infrastructure development sectors, China is in competition with Brazil and India for both market share and investment choices. The BRICS members are trying hard to get geopolitical influence, especially in areas where their interests overlap or diverge(Chaturvedi & Saha 2017). For instance, Russia is sometimes seen as being too belligerent in Eastern Europe and the Middle East while China is mounting economically and India is being more emphatic in their region. Such competition for influence may be reflected in diplomatic games, strategic alliances, and proxy conflicts which can influence regional dynamics and global governance structure. The rivalry of BRICS members for access to energy reserves, natural resources, and strategic assets is another facet of the competition. BRICS economies which are in the process of development as well as increasing energy consumption act as competing parties for the control of crucial resources like oil, natural gas, minerals, and agricultural land. This competitiveness may create geopolitical tensions, resource conflicts, and strategic rivalries in the regions where there are plenty of natural resources. The BRICS countries are fighting for technological leadership and innovation to enhance their economic competitiveness and strategies(Cassiolato & Lastres 2011). The progress of China in the field of technology, for example, artificial intelligence, telecommunications, and renewable energy caused worries to other BRICS nations about technology dependency and security risks (Armijo & Roberts 2014). India is thriving with technology and Brazil's efforts to innovate also add to intra-BRICS competition in this sector. The emerging powers of the BRICS countries aim to gain the status of the regional hegemony in their respective areas of influence and in the course of this struggle for the leadership they seek the alliances with other powers. China's rise and assertiveness in Asia-Pacific, Russia's actions in Eastern Europe, and India's ambitions in South Asia are, on the other hand, indicative of their struggle to be regional leaders and to keep the external powers in check.

Concerns over Human Rights and Governance

Issues related to lack of transparency, accountability, institutional effectiveness and governance systems within BRICS have gained prominence as a major concern, showing that the political systems, cultural values, and historical backgrounds of member states are different. The BRICS bloc encompasses different countries with different governance models and ideologies.

Corruption and Lack of Transparency: Corruption and transparency still pose a big problem in BRICS countries, which results in a decline of public trust, deterioration of institutional integrity, and preservation of sustainable development projects. Corruption Perceptions Index from Transparency International shows various levels of corruption among BRICS countries, and this shows the requirement for comprehensive anti-corruption measures and governance reforms(Nguyen & Duong 2021).

Accountability and Institutional Effectiveness: The failure of accountability mechanisms, institutional performance, and oversight mechanisms to function properly leads to governance problems in the countries of BRICS. Power concentration, lack of accountability, and immunity for human rights violations are among the most prominent concerns, which underline the need for the development of democratic institutions, transparency, and public oversight.

Limited Capacity to Absorb Investment

The limited absorptive capacity of some Arab countries to endure the investment reflects various structural, institutional, and socio-economic obstacles that prevent them from using foreign capital efficiently and promoting sustainable economic development. Infrastructure deficits are widespread in Middle Eastern countries, including inadequate transport systems, electricity supply networks, and telephone/communication systems. The lack of well-established infrastructure hinders the ability to pull in and retain investment because it is the reliable infrastructure that investors need to do business and facilitate trade and commerce. Weak regulatory regimes, bureaucratic inefficiencies, and legal uncertainties usually play a part in dissuading investment and slowing economic development(Afzal and Yongmei 2023, Yongmei & Afzal 2023). The regulatory framework which is complex, opaque (Afzal 2024, Afzal 2024), and with ambiguous laws and inconsistent enforcement of laws is an investment challenge, negative to investor confidence, and inhibits entrepreneurship and innovation(Afzal 2024, Afzal 2024). The limited institutional capacity, manifested in weak governance structures, local administrative inefficiencies, and pervasive institutional corruption, makes it impossible for Middle Eastern countries to utilize investment efficiently. Deficient governance structures undermine investor confidence, exacerbate regulatory issues, and block the implementation of investments and policy reforms. Shortage of skills, insufficient educational systems, and ineffective labor markets impede the ability of the countries of the Middle East to absorb investment and accelerate economic development (Manimala & Wasdani 2015). The skills of the workforce mismatch with market demand, thus, adversely affects the productivity, innovation, and competitiveness that are necessary for the capacity to fully capitalize on investment opportunities and realize sustainable development outcomes. Political instability, regional conflicts, and security risks are factors that undermine the confidence of investors and hinder investments in many Middle Eastern countries. Uncertainty and volatility, stemming from the protracted geopolitical tensions, social unrest, and security threats, have become the major reasons for the discouragement of long-term investment and the hindrance of economic diversification and development. The macroeconomic imbalances, fiscal constraints, and external vulnerability in some Middle Eastern countries challenge the ability to absorb investments. High government debt, exchange rate volatility, and reliance on commodity markets make for increased economic risks and constrain the ability to absorb investments productively(Chin 2016).

Israel-Palestine Conflict

The Israel-Palestine conflict has had significant economic repercussions on Middle Eastern countries, affecting trade, tourism, energy prices, and investment flows in the region(Khan 2024). The conflict has led to interruptions in regional supply chains, as tensions affect transportation routes and border operations. Egypt and Jordan, which have peace agreements with Israel, may face strained trade flows and economic pressures to balance relations between different regional players. Cross-border trade, particularly with Lebanon, Jordan, and Egypt, faces potential disruptions. This can hinder exports and imports, especially for goods that rely on road or sea transport near contested areas. Conflict in the Middle East often leads to speculation about oil supply risks, particularly when tensions arise close to oil-producing countries(Ahram 2020). This speculation can drive up oil prices, directly benefiting oil-exporting countries like Saudi Arabia, the UAE, and Kuwait. This risk can impact global energy markets and raise shipping costs for all Middle Eastern countries dependent on secure sea routes. Investors tend to be cautious during periods of conflict, and an escalation in Israel-Palestine tensions can cause a ripple effect across the region, where investor sentiment may turn pessimistic. Countries like the UAE and Saudi Arabia, which are heavily invested in diversification and attract

significant foreign investments, could see a decline in FDI as investors wait for stability. If the conflict intensifies, there could be further displacement of Palestinian populations, putting strain on these countries and increasing the need for humanitarian aid, health, and housing services(Alameddine, Fouad et al., 2019).

The Israel-Palestine conflict has significant implications for both Iran and Egypt, as each country plays a unique role in Middle Eastern politics and has distinct interests in the outcome of the conflict. Iran has historically provided political, financial, and military support to groups opposing Israel, including Hamas in Gaza and Hezbollah in Lebanon(El Husseini 2010). This support is part of Iran's strategy to project influence in the region and position itself as a champion of Palestinian resistance against Israel, aligning with its ideological stance against Western influence in the Middle East. Escalation of the conflict often leads to heightened tensions between Iran and Israel, especially along Israel's northern borders with Lebanon and Syria. Egypt has long served as a mediator in the Israel-Palestine conflict; Egypt's strategic geographic position, sharing a border with Gaza, allows it to act as a channel between Palestinian groups and Israel. Egypt has a vested interest in regional stability, which is essential for its economic growth, especially in tourism and foreign investment(Ikram 2007). Conflict escalation can harm investor confidence and tourism flows to Egypt, impacting its economy.

Case Studies
The selection of Iran, Saudi Arabia, and UAE as the cases for studying the relations between BRICS countries is explained by their importance in the contemporary global geopolitical and economic context. All these countries have a significant influence on regional and international affairs and therefore are valuable to analyze the external relations of BRICS. Iran with its large energy reserves and geographical location plays an important role in the Middle East. Its distribution of energy is important for countries such as China and India within BRICS, which are major energy consumers. The relations between Iran and the BRICS countries present the efforts of the association to overcome geopolitical barriers such as sanctions and develop the energy sector. Saudi Arabia is the largest oil-exporting country and constitutes a great influence on the international markets, and has expanded its political and economic relations diversifying them such as enhancing cooperation relations with the BRICS countries. This shift corresponds to the kingdom's diversification policy of decreasing reliance on traditional Western partners and increasing its role in world politics. Finally, the UAE can be considered as one of the strategic regions that play a significant role in the development of the Middle East as a large number of economic infrastructure projects and investments are attracted by BRICS countries. Due to the UAE's aim of diversification, accumulation of technology, and competent shift from relying on the Western market, it is a strategic partner to BRICS in terms of trade, investment, and security in the region. These countries were selected based on their economic significance, geographical position, and how their relations with BRICS are shaping new power relations in the Middle East and other regions to explain how BRICS is shaping and responding to the geopolitics of the Middle East and the world.

BRICS and the Islamic Republic of Iran
The BRICS-Iran relations are varied and determined by geopolitical interests, economic factors, and regional power dynamics. Iran, being one of the principal oil and gas producers, occupies a key position in the world of energy. The BRICS countries, particularly China and India, which have the most energy demands, Iran can provide the hydrocarbons needed to meet the increasing energy needs. Bilateral agreements and energy partnership programs between Iran and BRICS countries provide energy security by increasing energy supply diversity and reducing dependence on traditional energy exporters. BRICS countries, among them China and Russia, have been striving to keep diplomatic and economic relations with Iran despite the internationally imposed sanctions and geopolitical tensions(Khanmohammadi & Sun 2022). These relations are proof of the efforts to keep the balance of geopolitical interests and achieve strategic objectives in the Middle East and even beyond. Iran's geostrategic position and energy resources are reasons that this country plays a significant role in the regional geopolitics that affect BRICS countries' relations with Iran and form the approaches of BRICS countries to regional security and stability. The relations between BRICS and Iran have regional security and stability implications, especially concerning the Persian Gulf and the Middle East. Economic and energy relationships between Iran and BRICS countries may have an impact on regional power distribution, alliances, and rivalries. The economic partnerships of the BRICS countries with Iran can help Iran to integrate into the global economy, and this can bring about regional economic cooperation and development and, as a result, can reduce tensions and promote peace and stability in the region. The International sanctions, geopolitical rivalries, and security risks hamper Brics-Iran relations and regional energy security. The sanctions the Western powers imposed on Iran have narrowed Iran's access to global markets and restricted its potential for full-scale energy cooperation with the BRICS countries (Murugesan 2018). Geopolitical tensions and security threats in the Persian Gulf region, including maritime insecurity issues and military conflicts, could lead to disruption of energy supplies and weakening of regional security, affecting BRICS-Iran relations and global energy markets. Multilateral forums such as

the BRICS summit and the Shanghai Cooperation Organization (SCO) create venues for talks and partnerships on energy security and regional stability issues that involve Iran and other regional partners(Valizadeh and Houshialsadat 2013). Through their collective strength and diplomatic channels, the BRICS countries can help in promoting dialogues, confidence-building measures, and conflict resolution mechanisms that will ensure the energy security of the region, and build cooperation among regional actors.

BRICS and the Kingdom of Saudi Arabia

The BRICS-Saudi Arabia partnership and its impact on US-Saudi relations constitute a complex game of geopolitics, economy, and strategy that determines the character of the interaction between these major actors in the world arena. The BRICS bloc, which includes Brazil, Russia, India, China, and South Africa, is made up of emerging economies that have huge economic might and a growing presence in the world markets. Saudi Arabia, being the leading oil exporter and a main economic force in the Middle East, aspires to diversify its economic relations with non-Western partners and investment projects (Ramady 2010). Increased economic partnership between Saudi Arabia and BRICS countries is particularly beneficial for the development of trade, investments, and technology transfer with China and India. This leads to economic growth and development in both regions. The energy requirements of BRICS nations, especially China and India, which are two of the largest energy consumers in the world, are in line with Saudi Arabia's strategic significance as a major oil producer and exporter (Sultan 2016). Energy cooperation and investment partnerships between Saudi Arabia and BRICS countries create a safety net for energy security and supply stability for both sides. BRICS-Saudi Arabia partnership in the energy sector helps to diversify the sources of energy supply and reduces the dependence on traditional suppliers of energy, changing the global distribution of energy and challenging the dominance of the Western energy markets. The US-Saudi partnership is influenced geopolitically by the BRICS-Saudi partnership, with a particular focus on the changing global power dynamics and realignment of international alliances. Saudi Arabia's involvement with the BRICS nations is an indication of its attempts to broaden its geopolitical allies and cut down on its reliance on the Western powers(Kamin & Langhammer 2024). The mutual development of economic and strategic relations between Saudi Arabia and BRICS countries in the face of conflicting interests and priorities can increase the pressure that the US-Saudi relations are under and may even affect the US foreign policy as well in terms of the Middle East. The BRICS-Saudi Arabia partnership could be challenging traditional US-Saudi relations if strategic cooperation has been the only thing characterizing the relations in areas of defense, security, and energy. The expansion of Saudi Arabia's ties with the BRICS group of nations might be read as a reconfiguration of its foreign policy priorities and a move away from the past dependence on Western allies. US-Saudi ties might also experience tensions and competition in areas where BRICS countries and Saudi Arabia overlap, such as energy, infrastructure, and regional security projects. The US could see the Saudi Arabian engagement with BRICS countries as a threat to its regional dominance and objectives, prompting changes in US foreign policy approaches in the Middle East(Özekin & Sune 2023). The partnership between BRICS and Saudi Arabia spotlights shifts in global power dynamics and the emergence of multilateralism in world affairs. Saudi Arabia's engagement with BRICS countries reflects the dynamics of the geopolitics of the day, which includes not only the emergence of non-Western actors but also the reshaping of global alliances and partnerships. The strategic impact of the BRICS-Saudi Arabia dialogue on US-Saudi relations underlines the necessity for adaptability and diplomacy in the face of changing geopolitical realities and the development of mutually beneficial cooperation among the main actors in the global arena(Gouvea & Gutierrez 2023).

BRICS and the United Arab Emirates

The participation of BRICS in the UAE's infrastructure projects is a manifestation of a close collaboration between emerging economies and a regional superpower, which has a lot of consequences for both BRICS nations and the UAE. BRICS investments provide an EV with the necessary funds to implement the infrastructure projects that are fundamental to economic development. The investments support UAE's oil and gas diversification efforts, with a focus on transport, renewable energy, real estate, and tourism. In the UAE, investments in BRICS allow the development of the country's infrastructure networks, which in turn increase connectivity, efficiency, and sustainability. The emerging projects such as transportation hubs, ports, airports, roads, and utility infrastructure make the UAE a pivot for global logistics and trade, ensuring the movement of goods, services, and people. BRICS investments bring with them the technical know-how and the technology transfer opportunities to the UAE which is needed to promote innovation and knowledge transfer; the UAE benefits from collaboration in infrastructure projects by working with BRICS nations which are equipped with advanced technology in the field of renewable energy, smart cities, and digital infrastructure, which in turn contribute to the long-term growth and competitiveness of the UAE's economy. BRICS investments offer the UAE an alternative to Western investors thereby reducing dependency and hedging the risk associated with fluctuations in global markets. Deepening relations with the BRICS countries broadens the horizons for trade, investment, and partnerships, which can facilitate the development of a more balanced and resilient economic

environment for the UAE. BRICS investments magnify UAE's global influence and appeal as a destination for investments, portraying the country as the hub of the MENA region. The BRICS nations partnering with the UAE, the latter strengthen its position as a regional development initiative and get a good name as a friendly and futuristic economy. Investing in UAE infrastructure projects provides BRICS countries with direct entry to major markets in the Middle East and enables them to diversify their investments and obtain a global reach (Kamel 2018). It also underpins economic collaboration and geopolitical partnership between BRICS countries and the MENA region, thus enabling the BRICS bloc to pursue its broader agenda of fostering South-South cooperation and a multipolar world order. These BRICS investments, however, reinforce the previous partnerships, but they might affect the UAE-US relations too. Developed collaborative economic ties with BRICS countries will widen UAE's alliances and diplomatic engagements, thus making it possible to influence its relationship with the United States. Yet the depth of such implications depends on several geopolitical and economic determinants among which are US priorities, regional dynamics, and UAE's strategic interests.

Comparative Analysis of BRICS Relations with Iran, Saudi Arabia, and the UAE

All these countries have a significant impact in defining the geopolitical politics of the Middle East and are hence vital in the study of the BRICS system and its operating model towards regional integration and strategic standing. Iran is one of the world's major energy exporters with considerable oil and gas reserves that are important for BRICS countries, particularly China and India. Bearing international sanctions, Iran has shared a comprehensive economic and diplomatic relationship with the BRICS due to its strategic location and energy resources. This further demonstrates the strategic intent of BRICS as a group to diversify energy imports and decrease dependence on Western sources. Related to this is the relationship with Iran where BRICS has signed cooperation deals while at the same time enjoying access to energy needed to fuel growth despite the sanctions that characterize the global political system and the instability surrounding the Middle East.

Saudi Arabia being one of the most important oil producers in the world is of equal importance in the context of relations between BRICS countries. The kingdom's increasing interaction with BRICS countries – in energy, infrastructure development, and technology transfer – is indicative of its shifting course from the West. It was pointed out that the BRICS-Saudi Arabia partnership is a direct reaction to the shifting structure of the global energy market, where BRICS countries, especially China and India, are trying to diversify their energy sources. Saudi's joining BRICS intensifies the historical relation between KSA and USA as it is a clear sign of shifting of its foreign policy towards strengthening its relations with the new world powers instead of relying on traditional allies.

Another reason to consider BRICS relations is the UAE, which has an advanced infrastructure and increased its role in the Middle East economy. Based on the above analysis it is clear that the UAE is an important partner for the BRICS countries that are seeking to establish a strong foothold in the Middle East and North Africa as a trade and financial center, and technology and innovation hub. The UAE's policies of moving away from oil and gas and attracting foreign investments dovetail well with BRICS' general goals of South-South cooperation and multi-polarity in the world. Also, UAE stands at the crossroads between the East and West which makes it a strategic partner to BRICS in addressing issues to do with regional security, business, and technology.

These countries were chosen not only for their economic and geopolitical significance but also because their relationships with BRICS provide a better insight into how BRICS is refashioning global relations and balancing multipolarity. These features underscore some emergent regional and global dynamics that shape BRICS' external environment and its strategy in the search for energy, infrastructure, and investment cooperation in the world becoming more multipolar. Through the analysis of these cases, it is possible to learn more about the various ways that the members of the BRICS act toward key actors in the region with specific geopolitical and economic factors influencing the behavior of each member.

The analysis of BRICS' partnerships with Iran, Saudi Arabia, and UAE reveals both similarities, and differences in the bloc's regional strategies, and further demonstrates the shifts in its function and role in global governance and international relations. Even though each of the partnerships is developed in the context of specific geopolitical interests and goals – from energy security in the case of Iran, through the diversification of Saudi Arabia's economy, to the development of infrastructure in the UAE – such partnerships as a whole indicate a more general tendency of BRICS gradually beginning to present itself as an option to the post-WEST world order. These partnerships are indicative of new trends within the bloc's drive for multipolarity, economic sovereignty, and the security of regionalization through diverse partnerships. However, there is still divergence in the way BRICS operates in the different regions, due to the specific characteristics of the areas and the priorities of the countries therein. For instance,

Iran has abundant energy resources, and its geopolitics complement BRICS' requirement of energy security, Saudi Arabia is interested in economic diversification, and the UAE is keen on infrastructure development, this shows that BRICS has flexibility in its strategy to help its partners. The strategic implications of these partnerships are profound. They are involved in remodeling energy security for the world, providing new prospects for economic development, and questioning current international relations, especially with the U.S. and traditional Western countries. Finally, the BRICS' regional strategies reflect the transition to a more polycentric world in which emerging countries are the dominant drivers of economic and geopolitical processes.

Conclusion

The accession of four Middle Eastern countries to the BRICS group is clear evidence of the new world order where power relations are changing and the geopolitical and economic landscape of the region is undergoing a radical transformation. Through the presented research, it is concluded that the BRICS membership destabilizes the traditional balance of power in the Middle East, dethroning the Western powers and restructuring the US-Middle East relations. Together with BRICS as a main player in maintaining stability and solving conflicts in the area, they are faced with difficulties from the different objectives within the group. In terms of economic benefits, BRICS provided opportunities for Middle East trade, investments, and technology collaboration, but it also faces internal rivalry, the Israel-Palestine issue, and addresses human rights and governance matters. Nevertheless, the analysis reveals that BRICS offers alternative funding channels and routes to lessen the dependence on the US dollar, giving the Middle East new directions for economic transformation and strategic cooperation. As we conclude, BRICS' influence on the Middle East is geopolitical and economic, with the transformative shift in global power dynamics, offering both opportunities and challenges for regional stability, economic growth, and international relations.

References

Abdenur, A. E. (2017). "Can the BRICS cooperate in international security." *International Organisations Research Journal* **12**(3): 73-93.

Abdul-Rahman, M., S. Iftikhar & Khan, A. U. I. (2024). "Asymmetric Effects of Economic Growth, Fossil Fuel Consumption, and Financial Development on Carbon Emissions in Ghana." *FWU Journal of Social Sciences* **18**(2).

Afzal, J. (2024). Execution of Bilateral Digital Law. *Implementation of Digital Law as a Legal Tool in the Current Digital Era,* Springer**:** 79-93.

Afzal, J. (2024). Future of Legal Tools and Justice. *Implementation of Digital Law as a Legal Tool in the Current Digital Era,* Springer**:** 155-177.

Afzal, J. (2024). Implementation of Digital Law as a Legal Tool in the Current Digital Era, Springer.

Afzal, J. (2024). Legal challenges regarding digital operations. *Implementation of Digital Law as a Legal Tool in the Current Digital Era*, Springer**:** 23-45.

Afzal, J., M. A. Afzal & Nishtar, Z. (2023). "Completion of the ten years of the China-Pakistan Economic Corridor (CPEC) and its economical goals." *Inverge Journal of Social Sciences* **2**(4): 23-29.

Afzal, J. & Yongmei, C.(2023). "Federal and provincial legislation regarding 'Right to Information'for good governance in Pakistan." *Discover Global Society* **1**(1): 12.

Ahram, A. I. (2020). *War and conflict in the Middle East and North Africa,* John Wiley & Sons.

Alameddine, M., F. M. Fouad, K. Diaconu, Z. Jamal, G. Lough, S. Witter & Ager, A. (2019). "Resilience capacities of health systems: accommodating the needs of Palestinian refugees from Syria." *Social Science & Medicine* **220**: 22-30.

Amanat, A. (2012). Is there a Middle East?: The evolution of a geopolitical concept, Stanford University Press.

Antony, S. (2023). "Diversification of BRICS: Emerging Economic and Geopolitical Shift." *Strategic Analysis* **47***(6): 565-570.

Armijo, L. E. & C. Roberts (2014). The emerging powers and global governance: Why the BRICS matter. *Handbook of emerging economies,* Routledge**:** 503-524.

Arapova, E. Y. & T. M. Isachenko (2019). "Russian trade policy: Main trends and impact on bilateral trade flows." *International Journal of Economic Policy in Emerging Economies* **12(1**): 26-48.

Asongu, S., U. S. Akpan & Isihak, S. R. (2018). "Determinants of foreign direct investment in fast-growing economies: evidence from the BRICS and MINT countries." *Financial Innovation* **4**(1): 1-17.

Balcilar, M., M. Bonato, R. Demirer & Gupta, R. (2018). "Geopolitical risks and stock market dynamics of the BRICS." *Economic Systems* **42**(2): 295-306.

Basoli, G. & Ricceri, M. (2018). "Transport Dimension of the BRICS Penetration in the Mediterranean Region."*IEMed: Mediterranean yearbook*(2018): 52.

Batista Jr, P. N. (2021). *The BRICS and the financing mechanisms they created,* Anthem Press.

Brosig, M. (2019). *The role of BRICS in large-scale armed conflict*, Springer.

Brosig, M. (2023). "More Than Just Productive? Evaluating Germany's Term at the UN Security Council 2019–2020." *International Peacekeeping* **30**(3): 308-333.

Brosig, M. (2024). "Has BRICS lost its appeal? The foreign policy value added of the group." *International Politics* **61**(1): 106-124.

Burton, A. M. (2015). *The trouble with empire: challenges to modern British imperialism*, Oxford University Press.

Cammett, M. (2018). *A political economy of the Middle East*, Routledge.

Cassiolato, J. E. & H. M. M. Lastres (2011). *Science, technology and innovation policies in the BRICS countries: an introduction,* London, Anthem Press.

Chaturvedi, S. & S. Saha (2017). "Competing imperatives of global governance and national interests within BRICS: an Indian perspective." *Rising Powers Quarterly 2*(3): 167-183.

Chaziza, M. (2020). *China's Middle East diplomacy: the belt and road strategic partnership*, Liverpool University Press.

Chen, M. (2020). "Reflections on New Trends in the Oil Market and China-Saudi Arabia Energy Cooperation." *Asian Journal of Middle Eastern and Islamic Studies 14*(4): 505-515.

Chin, G. (2016). Mediating Financial Instability: China, the BRICs, and Continuing Rise. *Global Financial Crisis,* Routledge**:** 89-108.

Chin, G. T. (2014). "The BRICS-led development bank: Purpose and politics beyond the G20." *Global policy 5*(3): 366-373.

Clesse, A., R. Cooper & Sakamoto (2023). T*he International system after the collapse of the east-west order,* Martinus Nijhoff Publishers.

Cooney, S., D. du Toit, R. Fragale, R. Ronnie & Sankaran, K. (2015). Building BRICS of success? *Comparative Labor Law*, Edward Elgar Publishing**:** 440-474.

Cousins, B., S. M. Borras Jr, S. Sauer & Ye,J. (2018). "BRICS, middle-income countries (MICs), and global agrarian transformations: internal dynamics, regional trends, and international implications." *Globalizations 15(*1): 1-11.

Das, S. & S. K. Mahapatra (2023). "The Big Three of Financial Literacy: Analyzing its Influences on Financial Well-being." FWU *Journal of Social Sciences 17*(2).

El Husseini, R. (2010). "Hezbollah and the axis of refusal: Hamas, Iran and Syria." *Third World Quarterly 31*(5): 803-815.

Freedman, R. O. (2006). *Russia, Iran and the nuclear question: The Putin record,* Strategic Studies Institute, US Army War College.

Gause III, F. G. (2014). "Beyond sectarianism: The new Middle East cold war." *Brookings Doha Center Analysis Paper 11*: 1-27.

Glosny, M. A. (2010). "China and the BRICs: A real (but limited) partnership in a unipolar world." *Polity 42*(1): 100-129.

Gouvea, R. and M. Gutierrez (2023). "“BRICS Plus”: A New Global Economic Paradigm in the Making?" *Modern Economy 14(*5): 539-550.

Gu, J., N. Renwick & L. Xue (2018). "The BRICS and Africa's search for green growth, clean energy and sustainable development." *Energy Policy 120*: 675-683.

Gusarova, S. (2019). "Role of China in the development of trade and FDI cooperation with BRICS countries." *China Economic Review 57*: 101271.

Halliday, F. (2005). *The Middle East in international relations: power, politics and ideology,* Cambridge University Press.

Henry, C. M. & R. Springborg (2010). *Globalization and the Politics of Development in the Middle East*, Cambridge University Press.

Ikram, K. (2007). *The Egyptian economy, 1952-2000: Performance policies and issues*, Routledge.

Jones, B. (2014). *Still ours to lead: America, rising powers, and the tension between rivalry and restraint,* Brookings Institution Press.

Juutinen, M. (2019). "Emerging powers and new global politics? An Indian perspective on the BRICS paradox." *Third World Thematics: A TWQ Journal 4*(6): 489-506.

Kahn, M. (2020). "A significant part of the growth potential of the world economy for the coming decades resides in large emerging economies. Brazil, Russia, India, China and South Africa (BRICS) have such potential." *Financing Innovation: BRICS National Systems of Innovation:* 201.

Kamel, M. S. (2018). "China's belt and road initiative: Implications for the Middle East." *Cambridge Review of International Affairs 31*(1): 76-95.

Kamin, K. & Langhammer, R. J.(2024). "From BRICS to BRICS+: Sheer More Members is not a Challenge to G7." *The Economists' Voice 20*(2): 259-265.

Kazelko, A. & Semeghini, U. S. (2024). "Expansion of brics: Implications for global energy markets." *BRICS Journal of Economics 5*(1): 53-67.

Kemp, G. (2012). *The East Moves West: India, China, and Asia's Growing Presence in the Middle East*, Brookings Institution Press.

Keshk, A. M. (2021). "Iranian–Russian Rapprochement and Its Impact on Regional Security." *The Syrian Crisis: Effects on the Regional and International Relations*: 87-103.

Khan, H. U. (2024). "An analytical investigation of consequences of terrorism in the Middle East." J*ournal of Economic Criminology 4*: 100067.

Khanmohammadi, S. & Sun, D. (2022). "China-Iran strategic cooperation agreement in the changing international system." *Asian Journal of Middle Eastern and Islamic Studies 16*(1): 27-45.

Khattak, S. I., M. Ahmad, S. Khan & H. Li (2021). "The cyclical and asymmetrical impact of green and sustainable technology research (GSTR) on carbon dioxide emissions (CO2) in BRICS economies: role of renewable energy consumption, foreign direct investment, and exports."

Khorbaladze, E. (2021). "BRICS development strategy-priority areas of cooperation for gaining a foothold in a Multipolar World Order." *BRICS Law Journal 8(*4): 4-30.

Kiely, R. (2015). *The BRICs, US 'decline'and global transformations*, Springer.

Klieman, A. (2015). "Conclusions: Towards a New Equilibrium." *Great Powers and Geopolitics: International Affairs in a Rebalancing World*: 253-264.

Kowner, R., Y. Evron & Kumaraswamy (2023). *East-West Asia Relations in the 21st Century: From Bilateral to Interregional Relationships*, Taylor & Francis.

Kubursi, A. (2015). *Oil, industrialization & development in the Arab gulf states (RLE Economy of Middle East)*, Routledge.

Kumari, J., J. Kumar & D. Kumar (2024). "Political Determinants Influencing Foreign Direct Investment Inflow in Pakistan." *FWU Journal of Social Sciences 18(*2).

Laidi, Z. (2012). "BRICS: Sovereignty power and weakness." *International Politics* 49: 614-632.

Larionova, M. & Kirton, J. (2018). *BRICS and global governance,* Routledge New York.

Larionova, M. and A. Shelepov (2022). "BRICS, G20 and global economic governance reform." International Political Science Review **43**(4): 512-530.

Lee, B. T. F. and J. P. Sims (2024). "Legitimacy through Diversity: China's Leadership in the BRICS+ Expansion for Global Balance." *Fudan Journal of the Humanities and Social Sciences*: 1-38.

Li, X. and R. Carey (2014). "The BRICS and the international development system: Challenge and convergence?".

Manimala, M. J. and K. P. Wasdani (2015). Emerging economies: muddling through to development. *Entrepreneurial ecosystem: Perspectives from emerging economies*, Springer**:** 3-53.

Mann, J. (2009). "Russia's Policy towards OPEC." *Middle Eastern Studies* **45**(6): 985-1005.

Mielniczuk, F. (2013). "BRICS in the Contemporary World: changing identities, converging interests." *Third World Quarterly* **34**(6): 1075-1090.

Moch, E. (2024). "The Economic and Geopolitical Significance of the Brics Nations: A Comparative Analysis of Their Global Influence in the 21st Century." *East African Journal of Business and Economics* **7**(2): 86-100.

Murugesan, S. (2018). "New perspectives on China's foreign and trade policy." A*sian Journal of German and European Studies* **3**(1): 12.

Nandy, D. (2020). "India's policy options in middle-east: challenges and opportunities." *Journal of Historical Archaeology & Anthropological Sciences* **5**(3): 87-93.

Nayyar, D. (2018). BRICS, developing countries and global governance. *Rising Powers and South-South Cooperation*, Routledge**:** 19-35.

Nguyen, D. V. and M. T. H. Duong (2021). "Shadow economy, corruption and economic growth: an analysis of BRICS countries." *The Journal of Asian Finance, Economics and Business* **8**(4): 665-672.

Nile, I. V. E., E. S. Udo, A. E. Jack and I. P. Abner (2024). "Green Finance and Sustainable Development Nexus in Sub-Saharan Africa." *FWU Journal of Social Sciences* **18**(2): 78-90.

Nuruzzaman, M. (2022). "Conflicts, strategic divergences and the survival of economic groupings: Will China–India rivalry make BRICS obsolete?" *Asian Journal of Comparative Politics* **7**(4): 1025-1044.

Öniş, Z. and M. Kutlay (2020). "The new age of hybridity and clash of norms: China, BRICS, and challenges of global governance in a postliberal international order." *Alternatives* **45**(3): 123-142.

Özekin, M. K. and E. Sune (2023). "Contesting Hegemony: The Rise of BRICS and the Crisis of US-led Western Hegemony in the MENA Region." *The Korean Journal of International Studies* **21**(3): 409-446.

Pant, H. V. (2013). "The BRICS fallacy." *The Washington Quarterly* **36**(3): 91-105.

Paul, A. (2020). "Regional cooperation in South Asia: Exploring the three pillars of regionalism and their relevance." *The Journal of Indian and Asian Studies* **1**(02): 2050008.

Poskitt, A., A. Shankland and K. Taela (2016). "Civil society from the BRICS: Emerging roles in the new international development landscape." *IDS Evidence Report* **173**.

Prabhakar, A. C., M. Azam, B. Bakhtyar and Y. Ibrahim (2015). "Foreign direct investment, trade and economic growth: A new paradigm of the BRICS." *Modern Applied Science* **9**(12): 32-42.

Ramady, M. A. (2010). "The Saudi Arabian economy: *Policies, achievements, and challenges*."

Roberts, C. (2019). "The BRICS in the era of renewed great power competition." *Strategic Analysis* **43**(6): 469-486.

Rubina, V. (2024). "BRICS EXPANSION. THE NEW PROSPECTS & CHALLENGES." *Вестник науки* **2**(7 (76)): 337-342.

Safwat, A., A. Salah and M. El Sherif (2021). "The impact of total foreign debt on the economic growth of Egypt (1980-2018)." *Open Journal of Social Sciences* **9**(10): 130-151.

Sela, A. (2012). T*he decline of the Arab-Israeli conflict: Middle East politics and the quest for regional order,* State University of New York Press.

Shaaban, S. and Y. A. Moneim (2020). "The impact of COVID-19 on the strategic belt and road initiative in the light of cultural convergences and divergences between Egypt and China: a systematic review." *Open Journal of Social Sciences* **8**(9): 84-105.

Siddiqui, K. (2016). "Will the growth of the BRICs cause a shift in the global balance of economic power in the 21st century?" *International Journal of Political Economy* **45**(4): 315-338.

Stuenkel, O. (2013). "The financial crisis, contested legitimacy, and the genesis of intra-BRICS cooperation." *Global governance:* 611-630.

Stuenkel, O. (2017). *Post-Western world: How emerging powers are remaking global order*, John Wiley & Sons.

Stuenkel, O. (2020). *The BRICS and the future of global order*, Rowman & Littlefield.

Sultan, B. (2016). "China's Role in BRICS & Relevance to GCC-China Relations: Complementarities & Conflicting Interests." *Journal of Middle Eastern and Islamic Studies (in Asia)* **1**0(2): 71-98.

Sun, D. (2021). China's partnership diplomacy in the Middle East. *Routledge Handbook on China–Middle East Relations,* Routledge**:** 299-311.

Sun, S.-y. (2014). "Dilemmas and obstacles: Multilateral energy cooperation among BRICS countries." *Fudan Journal of the Humanities and Social Sciences* **7**(3): 395-410.

Suresh, V. and K. Ramesh (2015). "India Iran relations: Prospects and challenges." *African Journal of Political Science and International Relations* **9**(10): 379-385.

Valizadeh, A. and S. M. Houshialsadat (2013). "*Iran and the BRICS:* The energy factor."

Van Noort, C. (2019). "The Construction of Power in the Strategic Narratives of the BRICS." *Global Society* **33**(4): 462-478.

Vom Hau, M., J. Scott and D. Hulme (2012). Beyond the BRICs: Alternative strategies of influence in the global politics of *development, Springer.* **24:** 187-204.

Woertz, E. & M. Keulertz (2015). Conference summary: Tropical Agriculture as 'Last Frontier'? Food Import Needs of the Middle East and North Africa, Ecological Risks and New Dimensions of South-South Cooperation with Africa, Latin America and South-East Asia (Barcelona, 29–30 January 2015), Taylor & Francis.

Xu, Z., M. A. Afzal, J. Afzal and M. R. Islam (2023). "China-Pakistan Cultural Exchanges and Cooperation under Belt & Road Initiative." *Siazga Research Journal* *2*(3): 186-191.

Yongmei, C. & J. Afzal (2023). "Impact of enactment of 'the prevention of electronic crimes act, 2016'as legal support in Pakistan." Academy of Education and Social Sciences Review **3**(2): 203-212.

Zhu, J. (2019). "Borrowing Country-Oriented or Donor Country-Oriented? Comparing the BRICS New Development Bank and the Asian Infrastructure Investment Bank." *International Organisations Research Journal **14(2**): 128-146.*

English Self-Efficacy and Gender Differences Among Saudi EFL Learners: A Focused Study on Confidence Across Language Skills

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English self-efficacy significantly influences learners' success, confidence, and performance in essential language tasks. In Saudi Arabia, where English proficiency is becoming increasingly crucial, numerous EFL learners encounter challenges in developing self-confidence, resulting in discrepancies between their perceived abilities and their actual performance. This study examined Saudi EFL learners' self-efficacy levels across four core language skills–listening, speaking, reading, and writing–while investigating gender differences in their self-perceptions. A descriptive quantitative research design was employed, involving a cross-sectional survey of 477 university students selected through stratified random sampling to ensure broad representation. The participants completed the 'Questionnaire of English Self-Efficacy,' which was designed to measure their confidence in performing various language tasks. Descriptive and inferential statistical analyses were used to identify the critical patterns and gender-based differences. The results revealed moderate overall self-efficacy among learners, with reading identified as the skill with which they demonstrated the highest confidence, while speaking exhibited the lowest confidence levels. Both listening and writing skills showed moderate self-efficacy, indicating potential for targeted improvement. Notably, significant gender differences emerged, with female learners reporting higher self-efficacy in speaking than their male counterparts. These findings emphasize the necessity of targeted pedagogical approaches to enhance verbal communication, particularly for male students, alongside structured support to strengthen listening and writing skills. Integrating authentic language tasks and interactive classroom activities is essential to enhance self-efficacy in all language skills. Future research should investigate self-efficacy across diverse educational settings, and conduct longitudinal studies to monitor its progression.

Keywords: EFL pedagogy; English self-efficacy; gender differences in language learning; Saudi EFL learners; speaking self-efficacy.

In English as a Foreign Language (EFL) instruction, learners' beliefs about their capabilities, known as self-efficacy, have emerged as a critical determinant of success (Alkhalifah, 2022; Yasmin & Yasmin, 2023). Defined as the belief in one's capacity to execute tasks and achieve specific goals, self-efficacy profoundly influences learners' motivation and persistence, and their actual performance in language learning (Al-Abyadh & Azeem, 2022). The relationship between self-efficacy and language proficiency was particularly pronounced when examining four fundamental listening, speaking, reading, and writing skills. For Saudi EFL learners, understanding self-efficacy in these domains is indispensable for shaping effective instructional practices and fostering language mastery (Al-khresheh & Alruwaili, 2024; Almohammadi, 2021).

In Saudi Arabia, English proficiency is fundamental for academic achievement, professional advancement, and global communication. Despite significant investments in English language education, many learners struggle with a persistent gap between their language abilities and perceived competence (Al-Otaibi & Alshaikhai, 2023;

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Alharbi, 2021; Nasim & Mujeeba, 2024). This gap, closely tied to self-efficacy, directly affects learners' motivation, engagement, and overall progress in acquiring language skills (Almuhammadi et al., 2020). Learners with lower self-efficacy often find it difficult to navigate challenges in language learning. Simultaneously, those with more vital self-beliefs tend to approach these challenges with greater resilience and persistence.

Although self-efficacy is widely recognized as a critical factor influencing academic performance and motivation, there is limited research focusing on how Saudi EFL learners perceive their abilities in crucial language skills, such as listening, speaking, reading, and writing (Al-Seghayer, 2022; Al-Abyadh & Azeem, 2022; Almohammadi, 2021). Understanding these perceptions is crucial because these skills are essential for academic and professional success. Bridging this gap requires targeted teaching strategies that enhance learners' competence and confidence, ultimately fostering a more effective and meaningful English-language learning experience.

This study addresses this gap by examining Saudi EFL learners' self-efficacy across the listening, speaking, reading, and writing language skills. Through exploring learners' self-assessed confidence in performing a range of language tasks, this study aims to reveal significant patterns that can inform more targeted, skill-specific instructional strategies. Furthermore, this study investigates whether statistically significant differences exist in self-efficacy across these skills, thereby identifying areas where learners perceive themselves as more or less competent.

A good understanding of self-efficacy across these distinct skills is particularly relevant in the Saudi context, where English is increasingly being perceived as a societal and economic advancement mechanism. This study contributes to the growing knowledge of EFL instruction by offering essential perspectives on the psychological aspects that shape language-learning outcomes. In particular, it emphasizes the role of self-efficacy as a critical factor in developing EFL learners who are self-assured, skilled, and effective. This study addressed the following research questions:

1. What is the overall level of English self-efficacy among Saudi EFL learners?
2. What are the levels of self-efficacy in listening, speaking, reading, and writing skills among Saudi EFL learners? (Which language skills exhibited the highest self-efficacy?)
3. Are there significant differences in English self-efficacy levels across genders (male versus female) among Saudi EFL learners?

`Literature review
Theoretical Framework
Self-efficacy, a core idea in social cognitive theory, is the belief in one's ability to plan and perform actions to achieve specific goals (Cheng, 2020). It is not just about having the necessary skills, but also about feeling confident enough to use them effectively in different situations, which directly impacts how people behave, how much effort they put in, and how they handle challenges (Chen, 2020; Patricio-Gamboa et al., 2021). As a self-regulatory tool, self-efficacy helps individuals set goals, stay motivated, and bounce back from setbacks (Al-Abyadh & Azeem, 2022). However, low self-efficacy can lead to avoiding difficult tasks, feeling anxious, and disengaging altogether, especially in demanding areas such as learning a second language (Livinți et al., 2021). Since confidence can differ based on the task, self-efficacy plays a vital role in language learning, influencing how learners approach essential skills, such as listening, speaking, reading, and writing (Al-khresheh & Alkursheh, 2024).

According to Goetze and Driver (2022), self-efficacy plays a decisive role in language learning, determining how learners engage with the target language and adopt learning strategies. Language learning differs from other academic disciplines because of its real-time, often unpredictable, nature, particularly in communicative settings. Learners with strong self-efficacy are more likely to participate in classroom activities actively, seek opportunities for authentic language use, and persist through challenges even when initial attempts result in errors or setbacks (Ortlieb & Schatz, 2020). In EFL contexts, where learners often face limited exposure to native speakers and authentic linguistic environments, self-efficacy becomes even more crucial as anxiety and self-doubt can significantly impede progress (Fidan & Tuncel, 2021).

The influence of self-efficacy is not uniform across all the domains. Beatson et al., (2020) posit that learners frequently report varying confidence levels in listening, speaking, reading, and writing tasks. Productive skills such as speaking and writing are often perceived as more challenging because of their immediacy and apprehension about committing errors in real-time interactions (Ortlieb & Schatz, 2020). This variability indicates that self-

efficacy is a subtle construct that fluctuates depending on skill and learning contexts. Developing strategies to enhance self-efficacy in each skill is crucial for addressing learners' confidence gaps and promoting balanced language acquisition (Chen, 2020).

Moreover, learners' prior experiences and ability to manage academic tasks significantly influence their self-efficacy beliefs. Beatson et al., (2020) stress that positive prior learning experiences foster stronger self-efficacy, contributing to improved academic performance. Al-Abyadh and Azeem (2022) highlight that effective academic self-management practices, such as time management and self-discipline, are critical in bolstering self-efficacy, leading to enhanced achievement. Howell and Hickman (2022) argued that integrating self-efficacy-building practices into instructional design can assist learners in navigating the uncertainties of language learning, particularly in technology-mediated environments.

Finally, as noted by Fidan and Tuncel (2021), self-efficacy in language learning is closely associated with learners' motivation to engage in challenging tasks and persist through difficulties. The ability to believe in one's capacity to succeed directly influences how learners approach increasingly complex language requirements, from basic comprehension to advanced production skills. This belief is central to improving learners' performance, as evidenced by Ortlieb and Schatz's (2020) study, which accentuates the importance of connecting self-efficacy theory to practical classroom interventions, particularly reading and speaking tasks.

Self-Efficacy in EFL Contexts

Self-efficacy is vital in EFL learning, primarily because of learners' unique challenges in non-native contexts. Unlike in immersive environments, EFL learners often encounter linguistic, cognitive, and sociocultural barriers, along with limited opportunities for authentic language use, which can undermine their confidence and engagement with the target language (Cabillon, 2023; Fan & Cui, 2024; Li & Wang, 2024). In these settings, self-efficacy is more than just a predictor of academic success; it shapes how learners approach language tasks, handle challenges, and respond to feedback (Wang & Sun, 2020; Zahra & Rosheen, 2022). Confidence levels can vary across the four listening, speaking, reading, and writing skills, influenced by factors such as past experiences, learning environment, and task difficulty (Milliner & Dimoski, 2024; Yang et al., 2024). Studies have shown that EFL learners often have lower self-efficacy than those in immersive settings due to reduced exposure to authentic interactions (Goetze & Driver, 2022). This makes self-efficacy critical in determining whether learners actively participate in class, seek opportunities to practice beyond formal instruction, and persist despite challenges (Yang et al., 2024). To succeed in these contexts, maintaining strong self-efficacy is essential for learners to confidently engage in language learning and to overcome its inherent complexities (Li & Wang, 2024).

Several studies have consistently indicated that self-efficacy is intricately linked to learners' language proficiency, which influences their academic performance and affective experiences in language learning. For example, Wang and Sun's (2020) meta-analysis found that self-efficacy positively correlates with language proficiency, albeit with varying effect sizes depending on cultural context. Similarly, Goetze and Driver (2022) identified a moderate positive correlation between self-efficacy and second language achievement, further underscoring the importance of self-belief in successful language learning. Learners with greater confidence in their language abilities are more inclined to take risks in communicative tasks, experiment with language production, and engage in spontaneous conversations (Chen, 2020). By contrast, those with lower self-efficacy are more likely to experience heightened anxiety, which can manifest as avoidance of speaking opportunities, reluctance to participate in discussions, and overall disengagement from the learning process (Mulyanto et al., 2022). This dynamic highlights EFL teachers' need to cultivate an instructional environment promoting self-efficacy and linguistic competence (Fan & Cui, 2024).

The complexity of self-efficacy in EFL settings is compounded by its skill-specific nature. While learners may exhibit high levels of self-efficacy in receptive skills, such as reading or listening, they often report significantly lower self-efficacy in productive skills, such as speaking and writing (Yang et al., 2024). Montaño-González and Cancino (2020) identified a strong positive correlation between language learning strategies and self-efficacy, particularly in productive skills, where learners who employed effective strategies demonstrated higher self-efficacy. However, the discrepancy between high self-efficacy in reading and listening, and low self-efficacy in speaking remains pronounced. Speaking is frequently regarded as the most anxiety-inducing skill because of its real-time, interactive nature and apprehension about committing errors in the presence of peers

(Mulyanto et al., 2022). Although less immediate, writing can also elicit low self-efficacy because of the challenges of producing coherent, grammatically accurate text in a foreign language. These findings suggest that self-efficacy is not a uniform construct but varies considerably across different linguistic competencies, necessitating targeted interventions to address specific areas of weakness (Sari & Han, 2024).

The nature of self-efficacy constantly evolves in response to learners' experiences and feedback. Positive experiences, such as completing a task or receiving constructive feedback, can enhance self-efficacy, increasing motivation and effort for future challenges (Lu et al., 2022). Conversely, repeated failures or negative feedback can weaken learners' beliefs about their abilities, creating a cycle of disengagement and low achievement (Chen, 2020). This highlights the importance of formative assessment and teacher support in EFL classrooms, where learners often have limited exposure to the target language outside formal instruction. Teachers play a critical role in fostering self-efficacy by creating a supportive environment for language practice, providing timely feedback, and designing appropriately challenging tasks that learners can achieve (Graham, 2022). Additionally, incorporating authentic materials, such as real-world texts and conversations, offers meaningful exposure to the language, reinforcing learners' confidence in their ability to understand and effectively use English (Kim et al., 2024).

To summarize, self-efficacy in EFL settings is a complex construct that affects students' language performance and emotional reactions to the learning process. It is essential to comprehend how self-efficacy interacts with various language skills, particularly noting the varying confidence levels across listening, speaking, reading, and writing abilities to create effective teaching strategies (Chen, 2020). EFL teachers can significantly improve students' capacity to attain language proficiency by targeting their specific self-efficacy requirements and cultivating a classroom atmosphere that promotes linguistic and psychological development (Yang et al., 2024).

Gender and Self-Efficacy in Language Learning
Research on gender differences in self-efficacy among EFL learners elucidates the relationship between sociocultural factors, learning environments, and instructional approaches to language learning (Kutuk et al., 2021; Liu et al., 2022; Yu & Deng, 2022). A recurrent theme in the literature is that female learners exhibit higher levels of self-efficacy, particularly in language tasks that require active participation and engagement. Namaziandost and Çakmak (2020) observed that female students demonstrated more significant gains in self-efficacy, especially in productive skills such as speaking, within the flipped classroom model. This aligns with the findings of Kutuk et al., (2021), who posited that gender stereotypes influence language-learning outcomes with self-efficacy as a mediating factor. Their study revealed that female students, when empowered through enhanced self-efficacy, exhibited superior performance in language tasks, suggesting that addressing gender stereotypes and fostering self-confidence can significantly enhance their language proficiency.

Liu et al., (2022) further examined the influence of the educational context on gender differences in self-efficacy, determining that female learners in mono-gender educational settings generally reported higher self-efficacy. These results suggest that gender differences in self-efficacy may be amplified in environments that promote female learners' confidence, underscoring the significance of culturally sensitive pedagogical approaches to language learning.

However, not all studies have reported significant gender-based differences. Hoesny et al., (2023), for instance, found no substantial gender differences in self-efficacy within an English for specific purposes context, indicating that the influence of gender on self-efficacy may vary depending on the specific learning environment or the nature of the language task. Similarly, Yuehua and Qiumei (2023) observed minimal gender differences in overall self-efficacy among translation students. However, female learners outperformed males in self-regulated learning, suggesting that gender differences may manifest in specific skill areas rather than across the board.

A wide-ranging perspective on gender differences in self-efficacy was provided by Kheder and Rouabhia (2023), who reviewed multiple studies and concluded that while some research identifies gender-related differences in self-efficacy, other studies show no significant impact. This inconsistency highlights the variability in how gender influences language learning, depending on context and specific learning tasks. This variability was corroborated by Liu et al., (2022), who found that female students typically exhibited higher self-efficacy in language learning. In contrast, male learners demonstrated greater confidence in STEM-related subjects such as mathematics and science. Generally, research suggests that gender differences in language learning self-efficacy are context-dependent (Kheder & Rouabhia, 2023). Female learners frequently display higher self-efficacy in

communicative and language-based tasks, particularly in environments that foster confidence. However, these differences may be less pronounced in more structured or specialized language learning settings such as English for specific purposes (Hoesny et al., 2023).

Self-Efficacy in Saudi EFL Learners

The eminence of English in Saudi Arabia has grown substantially in recent years, reflecting its significance in academic achievement, professional advancement, and international engagement (Alkhalifah, 2022; Al-Seghayer, 2022; Massri, 2022). English has become an integral component of the Saudi education system, introduced at earlier stages of schooling and prioritized at the tertiary level, particularly in disciplines such as science, technology, and business (Almohammadi, 2021; Zhang, 2022). Despite this institutional emphasis, numerous Saudi EFL learners have encountered persistent challenges in terms of their proficiency in crucial language skills. These challenges are attributed to external factors, such as limited exposure to authentic English use beyond the classroom, and internal factors, including motivation and self-confidence (Al-Otaibi & Alshaikhai, 2023; Mohammed, 2021). Self-efficacy, defined as learners' belief in their capability to succeed in specific tasks, has emerged as a crucial variable for understanding the barriers to English language acquisition within this context. This influences how Saudi learners engage with the language and the extent to which they persist in developing proficiency (Alharbi, 2021; Altumigah & Alkhaleefah, 2022).

Although still developing, research on self-efficacy in the Saudi EFL setting provides critical insights into learners' self-perceptions of different language skills. For instance, Almohammadi (2021) found that self-efficacy beliefs among Saudi EFL learners in their preparatory years are significantly shaped by their perceptions of English attainment, the expectations of others, and the level of academic and emotional support they receive. Similarly, Altumigah and Alkhaleefah (2022) highlighted the positive correlation between reading self-efficacy and metacognitive reading strategies. Their findings suggested that learners with higher self-efficacy in reading are more inclined to adopt effective strategies, ultimately enhancing their performance. This aligns with Alharbi's (2021) research, which underscores the role of self-efficacy as a primary factor in reading comprehension, influenced by teacher support and competitive learning environments.

Existing studies indicate that Saudi EFL learners generally exhibit higher levels of self-efficacy in receptive skills, such as reading and listening, where tasks are more structured and less reliant on immediate spontaneous language use. In contrast, productive skills such as speaking and writing pose greater challenges. Mohammed (2021) highlights that many learners report lower levels of confidence and increased anxiety when required to engage in real-time communicative tasks. This tendency is consistent with global EFL trends, where learners often find the unpredictability of spoken language more challenging than the controlled nature of reading and listening tasks. Alharbi (2021) further reinforces this observation, suggesting that external factors such as teacher support significantly bolster self-efficacy in receptive skills, but may not translate as effectively to productive ones.

The learning environment and instructional practices in Saudi Arabia play crucial roles in shaping self-efficacy. Massri (2022) highlights that traditional teacher-centred classrooms, emphasizing rote memorization over communicative competence, reduce self-efficacy, particularly in speaking and writing. The lack of engagement in communicative tasks and limited opportunities for constructive feedback often reinforce a cycle of low self-efficacy. Learners' perceptions of their abilities impede their attempts at or persistence in challenging tasks, ultimately hindering their overall language development. In this context, Al-Otaibi and Alshaikhai (2023) discussed how cultural attitudes towards EFL can further diminish learners' motivation, which is often perceived as less essential in daily life, contributing to lower self-efficacy.

Limited exposure to English outside of the classroom exacerbates these issues. Saudi learners often lack authentic language practice opportunities, which can intensify anxiety in spontaneous communicative situations, mainly speaking and listening, where tasks demand immediate response. Zhang (2022) points out that integrating educational technology into language learning can help bridge this gap by promoting online interaction and self-assessment, fostering a more growth-oriented mindset that improves learners' self-efficacy.

Educational practices in Saudi Arabia also contribute to self-efficacy. Reliance on teacher-centred approaches, which prioritize linguistic accuracy over fluency and communication, can impede the development of self-efficacy. Al-Seghayer (2022) highlights that many Saudi EFL teachers exhibit low self-efficacy in technology-

assisted language learning, primarily due to limited training in integrating digital tools into their pedagogical practices. This technological gap affects teachers' confidence and limits their engagement with English outside of traditional classroom methods. Almuhammadi et al., (2020) stressed the importance of professional development for teachers, noting that mentoring and training programs significantly enhance self-efficacy among Saudi EFL teachers, leading to more effective teaching and improved student outcomes.

Furthermore, the high-stakes nature of assessments in Saudi education, where errors are penalized, fosters a performance-driven environment that discourages risk-taking, an essential element in language learning. This environment perpetuates a low self-efficacy cycle, in which learners' apprehension about making errors leads to disengagement from language tasks, particularly those involving communicative proficiency. Zhang (2022) accentuates the role of educational technology in disrupting this cycle, demonstrating that technology-enhanced learning can enhance self-efficacy by encouraging learners to take risks, interact online, and develop a growth mindset through self-assessment tools.

Despite increasing scholarly interest in self-efficacy among Saudi EFL learners, significant lacunae persist in the extant literature. A substantial portion of the existing research focuses on issues such as learner anxiety or general motivation without adequately addressing the task-specific nature of self-efficacy across various language skills. Alkhalifah (2022) posits that more comprehensive studies are required to explore Saudi learners' challenges in developing self-confidence, particularly in productive skills such as speaking and writing. Furthermore, the impact of instructional practices on self-efficacy across diverse language domains, especially in teacher-centred environments, necessitates further investigation.

This study addresses these gaps by providing a focused analysis of the self-efficacy of Saudi EFL learners across four core language skills: listening, speaking, reading, and writing. Through the identification of patterns of self-efficacy in each skill area and examination of the factors influencing these patterns, this research offers valuable insights for educators and policymakers. Understanding these dynamics will facilitate the development of targeted interventions to enhance learners' self-efficacy and ultimately contribute to improved language proficiency and more effective educational outcomes.

Method

Research Design
This study employed a descriptive quantitative research design to investigate Saudi EFL learners' self-efficacy across the four primary language skills. A cross-sectional survey was conducted to collect data simultaneously, facilitating precise measurement and analysis of participants' self-reported self-efficacy. This design was particularly appropriate for examining patterns and variations in self-efficacy across different language skills, without experimental manipulation. The quantitative approach facilitated the statistical analysis of the data, ensuring that the findings were reliable and generalizable. It provides valuable insights into enhancing pedagogical practices in language education (Fischer et al., 2023).

Participants
The study sample comprised 477 participants selected through stratified random sampling to ensure a well-adjusted representation of critical subgroups. The participants were male and female Saudi EFL learners from diverse university majors, reflecting the heterogeneity of the target population. While the specific majors of the participants were not collected, this was because the primary focus of the study was on language learning factors rather than disciplinary backgrounds. Future research should consider including this information to provide further context. All participants were recruited from a single higher education institution in Saudi Arabia and enrolled in programs where English was a core subject and a mandatory requirement for university graduation. This indicates that the students were enrolled in programs in which Arabic was the primary medium of instruction, but English courses were compulsory as part of their academic curriculum. Arabic was identified as the native language for all participants. Table 1 presents a detailed breakdown of the participants by gender and age. Female learners constituted the majority of the sample, accounting for 68.8% of the participants, whereas male learners represented 31.2%. The higher percentage of female participants aligns with the broader national trend in Saudi Arabia, where women increasingly outnumber men in tertiary education. This shift is driven by enhanced educational opportunities for women and progressive policies that promote gender equity in higher education. Societal changes have also played a pivotal role in expanding women's access to university programs, contributing to their higher representation. Furthermore, female students often have a higher representation in university programs, which may

explain the gender disparity in the sample. Regarding age distribution, 97.1% of the participants were under 20 years of age, and 2.9% were over 20. This age distribution aligns with the typical demographics of undergraduate students in Saudi Arabia, as most learners enter university immediately after completing their secondary education.

Table 1

Participant Characteristics.

Variables	Sub-variables	Frequency	Percentage
Gender	Male	149	31.2%
	Female	328	68.8%
Age	Less than 20	463	97.1%
	More than 20	14	2.9%
Total		477	100%

Instruments

The 'Questionnaire of English Self-Efficacy,' developed by Wang et al., (2013), was utilized to assess the self-efficacy levels of participants across the four core language skills: listening, speaking, reading, and writing. The questionnaire comprised 32 items, each requiring students to evaluate their perceived ability to accomplish specific tasks in English. Participants were instructed to rate their perceived competence on a 5-point Likert scale, ranging from very low to very high.

The questionnaire was structured according to four distinct factors.

- Listening Efficacy (Items 1, 3, 9, 10, 15, 22, 24, and 27)
- Speaking Efficacy (Items 4, 6, 8, 17, 19, 20, 23, and 30)
- Reading Efficacy (Items 2, 12, 16, 21, 25, 26, 29, and 32)
- Writing Efficacy (Items 5, 7, 11, 13, 14, 18, 28, and 31)

A pilot study involving 36 participants was conducted to evaluate the reliability and validity of this questionnaire. The instrument demonstrated strong psychometric properties with an overall internal consistency (Cronbach's alpha) of 0.89, reflecting a high level of reliability. Although the sample size was limited, it was sufficient for a preliminary reliability assessment in the exploratory phase, as supported by the guidelines for pilot studies (Hertzog, 2008; Kang, 2021). Cronbach's alpha coefficients for the four subscales were as follows: Listening Efficacy (0.85), Speaking Efficacy (0.87), Reading Efficacy (0.88), and Writing Efficacy (0.86), indicating consistent reliability across all areas (, 2024).

Content validity was assessed by two experts specializing in applied linguistics. While only two experts were involved, their high level of specialization ensured a focused and precise evaluation. Their evaluation ensured that the questionnaire items accurately represented the targeted constructs and adhered to established best practices in language testing. The experts had no further involvement in the study, beyond their role in reviewing the instrument. On the basis of their feedback, minor revisions were made to enhance the clarity and alignment of the items, ensuring the questionnaire's suitability for measuring English self-efficacy across the four language skills.

Data Collection

Data collection for this study was conducted during the first academic term of the 2024-2025 academic year. The primary instrument used was an online questionnaire disseminated through a web-based platform. The participants were recruited from a single Saudi university following the acquisition of ethical approval. Utilizing an online format facilitated broad participation, while ensuring both convenience and participant anonymity. The questionnaire was distributed via social media platforms managed by faculty members, enabling the efficient and timely collection of responses. All participants were thoroughly informed of the study objectives and were assured of the confidentiality of their data. Informed consent was obtained electronically before participation. Participation was voluntary and no payments or incentives were provided to the respondents. The participants were informed of the study objectives and were assured of data confidentiality. Informed consent was obtained electronically, as detailed in Section 3.5.

Data Analysis

Data obtained from the English self-efficacy questionnaire were analyzed using both descriptive and inferential statistical methodologies.

1. Descriptive Statistics Descriptive statistics were employed to provide a comprehensive overview of the participants' self-efficacy levels across the four key language skills: listening, speaking, reading, and writing. Measures, including the mean, standard deviation, minimum, maximum, and median, were calculated for each skill, offering insights into central tendencies and variability within the dataset. Furthermore, self-efficacy levels were categorized into four groups based on the calculated mean scores to facilitate interpretation: low (mean < 2.30), moderate (mean ≥ 2.30 and < 3.30), high (mean ≥ 3.30 and < 4.30), and very high (mean ≥ 4.30). This approach provided a systematic framework for analyzing participants' confidence in their English language proficiency.

2. Item-level Analysis: A thorough item-level analysis examined the specific self-efficacy items within each language skill category. This approach provided a detailed understanding of learners' self-perceived competence in distinct tasks related to listening, speaking, reading, and writing. Through an analysis of individual items, the study elucidated the specific strengths and weaknesses of participants' self-efficacy across various language tasks.

3. Inferential Statistics: Independent sample t-tests were performed to investigate potential gender differences in self-efficacy across the four language skills. These tests compared the mean self-efficacy scores of male and female participants for each skill (listening, speaking, reading, and writing) and overall English self-efficacy. Statistical significance was determined using a threshold of 0.05, enabling the study to identify whether the observed differences in self-efficacy levels between genders were statistically significant. Although multiple t-tests were conducted, the Bonferroni correction was not applied. This approach was chosen to retain statistical power because the analysis was exploratory. Using a correction may increase the risk of missing meaningful patterns. Future research could apply such adjustments to reduce the potential for Type I errors.

Ethical Considerations

This study adhered to stringent ethical protocols to safeguard the rights and well-being of all participants. Before data collection, ethical approval was obtained from the university's ethics committee to ensure that the study complied with the requisite guidelines for conducting studies involving human subjects. The purpose and objectives of the study were explicitly delineated at the start of the questionnaire, providing participants with a comprehensive understanding of the research and its aims. Participation was voluntary, and informed consent was obtained after the completion of the survey. Participants were assured of the complete protection of their anonymity and confidentiality, with all data exclusively utilized for academic research and publication purposes. No personally identifiable information was collected, and the participants retained the right to withdraw without penalties. Through adherence to these ethical principles, the study ensured a respectful and transparent approach to data collection.

Results

This section presents the results of both descriptive and inferential analyses, focusing on English self-efficacy across the four language skills of listening, speaking, reading, and writing. To interpret the data, the mean scores were categorized into four levels: low (mean < 2.30), moderate (mean ≥ 2.30 and < 3.30), high (mean ≥ 3.30 and < 4.30), and very high (mean ≥ 4.30). This revised categorization ensures a consistent and precise evaluation of participants' perceived confidence in their English language proficiency and provides a systematic framework for interpreting the results.

Descriptive Statistics of English Self-Efficacy

Table 2 presents the descriptive statistics for English self-efficacy across the four essential language skills: listening, speaking, reading, and writing. The results indicated that participants demonstrated varying levels of perceived competence in their abilities across these skills.

Table 2

Descriptive Statistics of English Self-Efficacy Levels.

English self-efficacy	Mean	Std	Min	Max	Level
Listening Efficacy	2.45	0.58	1	5	Moderate
Speaking Efficacy	2.20	1.29	1	5	Low

Reading Efficacy	3.94	0.93	1	5	High
Writing Efficacy	2.60	0.15	1	5	Moderate
Overall	2.80	0.85	1	5	Moderate

The table shows that listening efficacy demonstrated a mean score of 2.45 (SD = 0.58), which falls within the moderate range, indicating that learners exhibit reasonable confidence in their listening abilities. However, there remains the potential for enhancement. Speaking efficacy recorded the lowest mean score at 2.20 (SD = 1.29), placing it in the low category, suggesting that participants experienced diminished confidence in their speaking abilities, thus highlighting the need for targeted instructional interventions. Reading efficacy exhibited the highest mean score of 3.94 (SD = 0.93), classified as high, indicating that learners had substantial confidence in their reading skills. Writing efficacy yielded a mean score of 2.60 (SD = 0.15), which was also categorized as moderate, reflecting an average level of confidence in writing. Overall, the mean score for English self-efficacy across all skills was 2.80 (SD = 0.85), which was moderate. This suggests that while learners generally demonstrate confidence in their language abilities, certain areas such as speaking may require more focused support to enhance their self-efficacy.

Table 3 summarizes the participants' self-efficacy in various listening tasks. The overall mean score for listening efficacy was 2.45 (SD = 0.65), which was classified as low. This indicates that learners generally demonstrate lower confidence in their listening abilities.

Table 3

Descriptive Statistics of English Listening Efficacy.

Listening Efficacy items		Mean	Std	Min	Max	Level
1	Can you understand stories told in English?	2.78	0.48	2	5	Moderate
3	Can you understand American English TV programs?	2.52	0.54	2	5	Moderate
9	Can you understand radio programs in English-speaking countries?	2.52	0.53	2	5	Moderate
10	Can you understand English TV programs?	2.52	0.54	2	5	Moderate
15	If your teacher gives you an audio-recorded English dialogue about school life, can you understand it?	2.46	0.55	1	3	Moderate
22	Can you understand English movies without Arabic subtitles?	2.27	0.86	1	5	Low
24	Can you understand English songs?	2.27	0.87	1	5	Low
27	Can you understand telephone numbers spoken in English?	2.26	0.86	1	5	Low
	Total	2.45	0.65	1.5	4.75	Moderate

At the item level, participants reported moderate self-efficacy in comprehending narratives presented in English (M = 2.78, SD = 0.48) and understanding American English television programs (M = 2.52, SD = 0.54). Similarly, their capacity to comprehend radio programs in English-speaking countries and English television programs was also assessed as moderate, with a mean score of 2.52 for both tasks. However, more specific and challenging tasks such as understanding English-language films without subtitles (M = 2.27, SD = 0.86), English songs (M = 2.27, SD = 0.87), and telephone numbers articulated in English (M = 2.26, SD = 0.86) received lower self-efficacy ratings, indicating a diminished sense of confidence in these areas. Overall, participants demonstrated moderate self-efficacy in broader listening tasks, but their confidence decreased significantly when confronted with more complex listening activities. This suggests that, while learners perceive themselves as reasonably capable in general listening scenarios, they experience more difficulty and reduced confidence when engaging in more advanced or context-specific listening tasks.

Table 4 analyzes the participants' self-efficacy across various speaking tasks. With an overall mean score of 2.20 (SD = 1.39), which is classified as low, the findings indicate that learners generally lack confidence in speaking English fluently and effectively.

Table 4

Descriptive Statistics of English Speaking Efficacy.

Speaking Efficacy items	Mean	Std	Min	Max	Level

4	Can you introduce your university in English?	2.14	1.44	1	5	Low
6	Can you tell the directions to your classroom from your home/dormitory in English?	2.19	1.38	1	5	Low
8	Can you tell a story in English?	2.05	1.35	1	5	Low
17	Can you ask questions to your teachers in English?	2.22	1.41	1	5	Low
19	Can you introduce your English teacher in English?	2.12	1.39	1	5	Low
20	Can you discuss in English with your classmates some topics assuming all of you are interested?	2.03	1.41	1	5	Low
23	Can you answer your teachers' questions in English?	2.36	1.33	1	5	Moderate
30	Can you introduce yourself in English?	2.45	1.38	1	5	Moderate
	Total	2.20	1.39	1	5	Low

The participants primarily reported low self-efficacy in their speaking abilities, as reflected in their overall mean score of 2.20 (SD = 1.39). Tasks such as introducing one's university (M = 2.14, SD = 1.44) and giving directions from home to the classroom (M = 2.19, SD = 1.38) demonstrated a lack of confidence even for relatively straightforward tasks. Similarly, posing questions to instructors (M = 2.22, SD = 1.41) and responding to their inquiries (M = 2.36, SD = 1.33) were rated low, highlighting the challenges in classroom interactions. However, some tasks showed slightly higher confidence levels, with answering teachers' questions (M = 2.36, SD = 1.33) and introducing oneself to English (M = 2.45, SD = 1.38) categorized as moderate. More complex tasks, such as narrating a story in English (M = 2.05, SD = 1.35), engaging in discussions with classmates (M = 2.03, SD = 1.41), and introducing an English instructor (M = 2.12, SD = 1.39) received the lowest ratings, reflecting significant challenges. These results suggest that speaking remains a key area in which learners lack confidence and would benefit from targeted practice and instructional support.

Table 5 presents an analysis of participants' self-efficacy in reading tasks. The overall mean score was 3.94 (SD = 1.04), which was categorized as high. This finding indicates that the learners collectively exhibited substantial confidence in their English reading proficiency across diverse tasks.

Table 5
Descriptive Statistics of English Reading Efficacy.

Reading Efficacy items		Mean	Std	Min	Max	Level
2	Can you finish your homework of English reading independently?	4.08	1.02	1	5	Very High
12	When you read English articles, can you guess the meaning of unknown words?	3.97	1.02	1	5	High
16	Can you understand the English news on the Internet?	3.92	1.05	1	5	High
21	Can you read English short novels?	3.96	1.02	1	5	High
25	Can you read English newspapers?	3.89	1.06	1	5	High
26	Can you find the meaning of new words by using English-English dictionaries?	3.91	1.05	1	5	High
29	Can you understand English articles about German culture?	3.93	1.02	1	5	High
32	Can you understand new reading materials (e.g., news from the Time magazine) selected by your	3.88	1.04	1	5	High
	Total	3.94	1.04	1	5	High

The highest-rated item was the ability to independently complete English reading assignments, with a mean score of 4.08 (SD = 1.02), which was categorized as very high. This finding suggests that participants perceived themselves as proficient in managing academic reading tasks. Similarly, high levels of self-efficacy were reported for inferring the meaning of unknown words in English articles (M = 3.97, SD = 1.02) and for comprehending short English novels (M = 3.96, SD = 1.02), reflecting learners' overall perceived competence in these areas. Other tasks, such as comprehending English news on the Internet (M = 3.92, SD = 1.05) and utilizing English-English dictionaries to interpret unfamiliar words (M = 3.91, SD = 1.05), were also rated highly, reinforcing participants' confidence in their reading skills. More specialized tasks, including the comprehension of

English articles about German culture (M = 3.93, SD = 1.02) and reading materials such as Time magazine (M = 3.88, SD = 1.04), also fell within the high range. Overall, the participants exhibited consistently high self-efficacy across a range of reading tasks, indicating that reading is an area in which they perceive themselves as remarkably self-assured in their English language skills.

Table 6 outlines the participants' self-efficacy in the various writing tasks. The overall mean score of 2.60 (SD = 0.15) was in the moderate range. This indicates that learners generally feel somewhat confident in their English writing skills, but there is room for improvement.

Table 6
Descriptive Statistics of English Writing Efficacy.

	Writing Efficacy items	Mean	Std	Min	Max	Level
5	If you have access to internet, can you release news on the Internet (e.g., facebook, twitter, blogs)?	2.49	0.81	1	5	Moderate
7	Can you write English compositions assigned by your teachers?	2.46	0.77	1	5	Moderate
11	Can you leave a message to your classmates in English?	2.8	0.74	1	5	Moderate
13	Can you make new sentences with the words just learned?	2.57	0.8	1	5	Moderate
14	Can you send emails in English?	2.74	0.76	1	5	Moderate
18	Can you make sentences with English idiomatic phrases?	2.74	0.75	1	5	Moderate
28	Can you write diaries in English?	2.58	0.82	1	5	Moderate
31	Can you write an article in about two pages about your English teacher in English?	2.4	0.80	1	5	Moderate
	Total	2.60	0.15	1	5	Moderate

When examining specific tasks, the participants consistently reported moderate levels of confidence. For instance, their ability to disseminate news on social media platforms such as Facebook, Twitter, and blogs had a mean score of 2.49 (SD = 0.81), and composing English assignments given by instructors scored similarly at 2.46 (SD = 0.77). Communicating messages to classmates in English was rated slightly higher, with a mean of 2.80 (SD = 0.74), indicating that learners experience relatively greater comfort with informal everyday writing. Participants also demonstrated moderate confidence in constructing new sentences using recently acquired vocabulary (M = 2.57, SD = 0.80) and composing emails in English (M = 2.74, SD = 0.76). However, more complex tasks, such as writing an article about their English instructor (M = 2.40, SD = 0.80), received slightly lower scores, although they still fell within a moderate range. These findings suggest that learners perceive themselves as adequately capable of engaging in various writing tasks ranging from casual communication to more structured assignments. Nevertheless, additional support may enhance confidence levels, particularly in more complex writing activities.

Gender Differences in English Self-Efficacy

Table 7 delineates the gender-based disparities in self-efficacy across the four fundamental English language competencies of listening, speaking, reading, and writing. The findings elucidated substantial distinctions between male and female participants, with statistically significant differences manifesting in specific domains.

Table 7
Gender Differences in English Self-Efficacy Across Language Skills.

English self-efficacy	Gender	Mean	SD	DF	T	Sig
Listening Efficacy	Male	2.41	0.56	477	-0.95	0.342
	Female	2.46	0.59			
Speaking Efficacy	Male	1.76	0.95	477	-5.08	< 0.001*
	Female	2.39	1.37			
Reading Efficacy	Male	3.8	0.93	477	-1.94	0.054
	Female	3.98	0.94			
Writing Efficacy	Male	2.67	0.70	477	1.57	0.116
	Female	2.57	0.63			
Overall	Male	2.66	0.45	477	-4.06	< 0.001*

	Female	2.85	0.50

is significant at the 0.05 level

Table 7 presents the t-test results for gender differences in English self-efficacy across the four language skills and the overall scores. The analysis highlights the following significant and non-significant findings:

- Speaking Efficacy: A statistically significant difference was observed, with females reporting a mean score of 2.39 (SD = 1.37) compared to 1.76 (SD = 0.95) for males (t = -5.08, p < 0.001). This result indicates higher self-efficacy in speaking among females.
- Overall English Self-Efficacy: Females demonstrated a significantly higher overall mean score of 2.85 (SD = 0.50) compared to 2.66 (SD = 0.45) for males (t = -4.06, p < 0.001).

- Non-Significant Results: For listening, reading, and writing efficacy, no statistically significant differences were found between males and females. For example, in listening efficacy, males reported a mean score of 2.41 (SD = 0.56), while females scored 2.46 (SD = 0.59), with a t-test result of t = -0.95, p = 0.342. Similarly, no significant differences were observed between reading (p = 0.054) and writing (p = 0.116).

Discussion
What is the overall level of English self-efficacy among Saudi EFL learners?

The overall level of English self-efficacy among Saudi EFL learners was moderate. This finding suggests that, while learners demonstrate a reasonable degree of confidence in managing various language tasks, there remains substantial room for improvement, particularly in tasks requiring advanced proficiency or spontaneous language use. Although the study's descriptive nature does not establish causality, the observed moderate self-efficacy levels can be considered in light of the contextual factors related to English instruction in Saudi Arabia. The structured, teacher-centred nature of classroom practices, which prioritize formal instruction and controlled exercises, may contribute to learners' confidence in predictable, familiar tasks while limiting their ability to engage with more dynamic or less rehearsed language activities. Saudi EFL learners are primarily exposed to formal classroom-based learning, which tends to foster confidence in controlled and predictable tasks. However, this environment provides limited opportunities for authentic language use, such as spontaneous speaking and writing, which likely accounts for the moderate self-efficacy observed among learners. This interpretation aligns with previous research by Al-Seghayer (2022) and Massri (2022), who pointed out that the emphasis on rote learning and grammatical accuracy in Saudi EFL classrooms often results in a focus on familiarity and correctness, rather than fluency and adaptability. While these contextual factors provide a plausible explanation for the findings, further research is required to confirm the relationship between instructional practices and self-efficacy outcomes.

Moreover, the lack of opportunities for exposure to English outside formal academic settings may be associated with the challenges in developing higher levels of self-efficacy. Goetze and Driver (2022) noted that EFL learners in contexts such as Saudi Arabia often face reduced opportunities for authentic language interaction, which can impede the development of robust self-efficacy. This is corroborated by Al-Otaibi and Alshaikhai (2023), who revealed the critical role of authentic language practice in building learner confidence, particularly in environments where exposure to English outside the classroom is limited. The emphasis on linguistic accuracy over fluency, a characteristic of many Saudi EFL programs, might influence moderate self-efficacy levels, as suggested by previous studies. According to Beatson et al., (2020), this focus can constrain learners' ability to engage confidently in more interactive and communicative tasks because the emphasis on error avoidance overshadows the development of practical expressions. This pattern aligns with previous research, which suggests that structured academic tasks often foster higher confidence, whereas tasks requiring real-time language production or less-structured communication present additional challenges.

The findings of this study align with those of previous research on self-efficacy in EFL contexts. Both Cheng (2020) and Goetze and Driver (2022) accentuate the significant impact of the learning environment on shaping self-efficacy beliefs. In environments such as Saudi Arabia, where instruction is predominantly classroom-based, and opportunities for real-world language practice are limited, learners are more likely to develop moderate levels of self-efficacy, as evidenced in this study. Furthermore, Alharbi (2021) and Altumigah and Alkhaleefah (2022) affirm the task-specific nature of self-efficacy. Saudi EFL learners tend to exhibit higher confidence in routine, predictable tasks, but their self-efficacy decreases when confronted with spontaneous or interactive

language use. The moderate self-efficacy levels observed in this study align with prior research suggesting that learners in structured environments often exhibit higher confidence in routine tasks, but face challenges with less predictable or interactive language use.

What are the levels of self-efficacy in listening, speaking, reading, and writing skills among Saudi EFL learners? (Which language skills exhibited the highest self-efficacy?)

The study revealed varying levels of self-efficacy across the four critical language skills: listening, speaking, reading, and writing. Among these, learners demonstrated the highest self-efficacy in reading, indicating a strong confidence in comprehending written texts. Conversely, speaking emerged as a skill with the lowest self-efficacy, highlighting learners' challenges in verbal communication. Listening and writing fell between moderate levels of self-efficacy. A high level of self-efficacy in reading could be associated with the structured nature of academic reading tasks, as suggested by previous studies. Reading tasks allow learners to process information at their own pace, enhancing their confidence. This aligns with the findings of Beatson et al., (2020) and Alharbi (2021), who found that learners often exhibit greater confidence in receptive skills, such as reading and listening, as these tasks offer opportunities for reflection and revision. The predictability and structured nature of reading tasks also contribute to higher self-efficacy, as learners can apply familiar strategies to decode and comprehend text more effectively.

By contrast, low self-efficacy in speaking reflects the inherent challenges of real-time language production. Mulyanto et al. (2022) noted that speaking is frequently the most anxiety-inducing skill for EFL learners due to the apprehension of making errors and the unpredictability of conversations. In Saudi EFL classrooms, where emphasis tends to be on rote learning and grammatical accuracy rather than communicative fluency (Massri, 2022), learners may lack the practical experience necessary to develop confidence in spontaneous speaking. Al-Otaibi and Alshaikhai (2023) revealed limited opportunities for authentic conversational practice, further impeding learners' ability to build fluency and confidence in verbal interactions.

The moderate self-efficacy levels in listening and writing align with the findings of previous studies, which identify varying levels of confidence across these skills in structured learning environments. Listening, although also a receptive skill, necessitates processing spoken language in real-time, which can present challenges without the ability to pause or revisit information, as one can in reading. This may explain why learners exhibit slightly lower listening confidence than reading. Similarly, writing involves the production of accurate and coherent text, which can elicit anxiety due to concerns regarding grammar and organization. Alharbi (2021) posited that writing, while less immediate than speaking, still demands significant cognitive effort, which may reduce learners' confidence.

These findings are consistent with existing research on self-efficacy in language learning. Cheng (2020) and Goetze and Driver (2022) reported that learners tend to exhibit higher self-efficacy in receptive skills such as reading and listening compared to productive skills such as speaking and writing. The results of this study also support those of Mulyanto et al. (2022), who identified speaking as the most anxiety-inducing skill, leading to lower self-efficacy among learners. Likewise, Fidan and Tuncel (2021) noted that learners in EFL contexts often experience difficulties with productive skills because of limited opportunities for authentic practice, which contributes to lower self-efficacy in speaking and writing.

Are there significant differences in English self-efficacy levels across genders (male versus female) among Saudi EFL learners?

The study revealed substantial gender disparities in overall English self-efficacy among Saudi EFL learners, with female participants demonstrating significantly higher levels of self-efficacy than their male counterparts, mainly speaking. Nevertheless, no statistically significant gender differences were observed in listening, reading, or writing self-efficacy.

The higher self-efficacy observed among female learners in speaking aligns with the findings from prior research, which indicates that female learners may experience greater confidence in productive language tasks in supportive educational environments. This aligns with the findings of Namaziandost and Çakmak (2020), who noted that female learners exhibit more significant improvements in self-efficacy, particularly in productive language tasks such as speaking. This phenomenon may be attributed to the more supportive classroom

environments that female learners often experience, and their heightened motivation to succeed in language learning. As claimed by Kutuk et al. (2021), self-efficacy plays a mediating role between gender stereotypes and language attainment, frequently benefiting female learners who may feel encouraged to engage actively in language use. As noted by Liu et al. (2022), sociocultural and educational contexts that prioritize language learning may play a role in fostering higher self-efficacy among female learners in mono-gender settings, which could provide a context for the observed differences in this study. This could explain the greater confidence exhibited by female learners in Saudi EFL settings, particularly in tasks that require active participation, such as speaking.

The absence of significant gender differences in listening, reading, and writing self-efficacy is corroborated by Hoesny et al., (2023), who observed no notable gender disparities in overall self-efficacy despite a strong correlation between self-efficacy and speaking proficiency. Correspondingly, Yuehua and Qiumei (2023) reported minimal gender differences in self-efficacy among translation major undergraduates, except for self-regulated learning, in which females exhibited higher self-efficacy. Furthermore, the lack of gender differences in receptive and structured tasks, such as reading and listening, may align with the findings of Kheder and Rouabhia (2023), who noted that while gender differences may exist in motivation and self-efficacy, structured tasks tend to demonstrate fewer variations between genders due to the uniform instructional approaches in language learning environments.

These findings are consistent with broader research, such as Namaziandost and Çakmak (2020) and Liu et al. (2022), who observed that female learners frequently reported higher levels of self-efficacy, particularly in language tasks requiring active engagement. The absence of significant gender differences in listening, reading, and writing aligns with the findings of Yuehua and Qiumei (2023) and Hoesny et al., (2023), who observed minimal gender disparity.

Pedgagoical Implications

The findings of this study elucidate how teachers can more effectively support Saudi EFL learners in developing self-efficacy across the four primary language skills. Learners demonstrated the highest confidence in reading, indicating greater comfort when engaging in a written text. To reinforce this strength, teachers should continue to provide structured reading exercises while progressively introducing more complex texts to assist students in maintaining and enhancing their reading proficiency.

On the other hand, speaking emerged as a skill in which learners exhibited the least confidence, highlighting the necessity of specific strategies to enhance their self-assurance in verbal communication. Teachers can foster more interactive and communicative classroom environments by incorporating activities such as role-play, group discussions, and debates. These low-stakes, real-time speaking opportunities enable students to practice without apprehension of errors, gradually facilitating the development of confidence in their speaking abilities.

There remains potential for improvement in listening and writing, where learners demonstrate moderate self-efficacy. The utilization of multimedia resources such as podcasts, videos, and authentic conversations can help expose students to natural language use, enhancing their ability to comprehend spoken English in diverse contexts. Writing proficiency can be enhanced through a process-oriented approach encompassing drafting, receiving feedback, and implementing revisions, which not only improves writing skills but also bolsters students' confidence as they observe tangible improvements in their work.

This study also revealed gender disparities, with female learners reporting higher self-efficacy, particularly in speaking. This finding suggests that teachers should be cognizant of the different needs of male and female students, offering targeted support to assist all learners, regardless of gender, in building confidence in areas where they feel less secure. Teachers can nurture self-efficacy more effectively by cultivating a learning environment that addresses students' diverse needs.

Finally, integrating authentic language tasks into the classroom enhanced overall self-efficacy. Activities such as collaborative projects, virtual exchanges with native speakers, or community-based language use allow students to apply their skills in authentic situations. These experiences bridge the gap between theoretical learning and practical application, enhancing students' confidence and rendering language learning more engaging and relevant to their daily lives.

Limitations and recommendations for further research

While this study provides valuable insights into gender differences in self-efficacy among Saudi EFL learners, several limitations warrant consideration. Although widely utilized in self-efficacy research, relying on self-reported data may not fully capture the discrepancy between learners' perceived and actual abilities. Learners may overestimate or underestimate their self-efficacy, potentially skewing their results. To address this limitation, future research should integrate objective performance-based assessments with self-reported data to accurately reflect learners' confidence and language proficiency. Furthermore, the study's focus on formal academic settings limits our understanding of how self-efficacy manifests in informal, real-world contexts. Learners may experience different confidence levels when using English outside a structured classroom environment, particularly in spontaneous or unplanned interactions. Exploring self-efficacy in everyday social and professional scenarios offers a more comprehensive perspective on learners' true language capabilities. Moreover, the study's focus on the Saudi educational context with its unique cultural and gender dynamics may limit the generalizability of the findings to other regions. Future research could expand this scope by examining gender-based differences across cultural and educational environments. This would help determine whether the patterns observed in Saudi EFL learners are consistent or vary based on the context. Expanding this investigation to include diverse cultural backgrounds and non-academic settings will enhance our understanding of the complexities of self-efficacy in language learning.

Conclusion

This study has provided significant insights into Saudi EFL learners' self-efficacy levels across four core language skills. The findings indicate that learners generally display moderate self-efficacy, with reading identified as the area in which learners demonstrate the highest confidence. In contrast, speaking was identified as the skill with the lowest self-efficacy, suggesting a need for targeted interventions to enhance students' confidence in verbal communication. Moderate levels of self-efficacy in listening and writing further underscore the importance of adopting tailored pedagogical strategies to improve learner performance.

A salient aspect of the findings was the notable gender difference in self-efficacy. Female learners consistently reported higher self-efficacy, particularly in speaking, while male learners demonstrated lower confidence in productive tasks, such as speaking and writing. These results emphasize the need to nurture a learning environment that is inclusive and supportive for all students, ensuring that both male and female learners are provided with tools and encouragement to succeed, especially in areas with low confidence.

The pedagogical implications of this study highlight the importance of implementing communicative and interactive teaching methods. Teachers can create engaging learning experiences that promote stronger self-efficacy in all language skills by incorporating authentic language tasks and encouraging active participation. Activities that simulate real-world language use, such as discussions, role-play, and collaborative projects, can assist learners in developing greater confidence in their abilities.

Future research should build on these findings by examining self-efficacy in diverse educational contexts and among various learner populations. Longitudinal studies would also be valuable in tracking changes in learners' confidence over time, offering profound insights into the relationship between self-efficacy and language learning success. This will further inform the development of teaching strategies that effectively support and enhance learner self-efficacy in EFL contexts.

Funding

References

Al-Abyadh, M., & Azeem, H. (2022). Academic achievement: Influences of university students' self-management and perceived self-efficacy. *Journal of Intelligence*, *10*(3), 2-18. https://doi.org/10.3390/jintelligence10030055.

Alharbi, M. (2021). Self-efficacy sources and reading comprehension of L2 undergraduate learners. *Journal of Language and Linguistic Studies, 17*(2), 924-940. https://doi.org/10.52462/jlls.64.

Alkhalifah, Z. (2022). The impact of self-efficacy, learning preferential, learning motivation and academic achievement on EFL students in Saudi Arabia. *World Journal of English Language, 13*(1), 225-233. https://doi.org/10.5430/wjel.v13n1p225.

Al-khresheh, M. H., & Alkursheh, T. O. (2024). An integrated model exploring the relationship between self-efficacy, technology integration via Blackboard, English proficiency, and Saudi EFL students' academic achievement. *Humanities and Social Sciences Communications*, *11*(287), 1-12.https://doi.org/10.1057/s41599-024-02783-2

Al-khresheh, M. H., & Alruwaili, S. F. (2024). Metacognition in listening comprehension: Analyzing strategies and gender differences among Saudi EFL university students. *Cogent Social Sciences, 10*(1), 2291954. https://doi.org/10.1080/23311886.2023.2291954

Almohammadi, M. (2021). A qualitative study of influences affecting EFL learners' self-efficacy beliefs in preparatory year. *Proceedings of The 3rd International Conference on Advanced Research in Education, Oxford – United Kingdom*. https://doi.org/10.33422/3rd.educationconf.2021.03.227.

Almuhammadi, K., Assalahi, H., & Madini, A. (2020). Saudi female EFL instructors' perceptions of the effects of professional development on their self-efficacy. *English Language Teaching, 13(*10), 74-84. https://doi.org/10.5539/ELT.V13N10P74.

Al-Otaibi, S., & Alshaikhai, A. (2023). The effect of emotional intelligence and self-efficacy awareness on EFL teachers' pedagogical practices: A qualitative study in the Saudi EFL context. *Journal of Language Teaching and Research, 14(6), 1581-1589*. https://doi.org/10.17507/jltr.1406.16.

Al-Seghayer, K. (2022). Saudi EFL teachers' self-efficacy in technology-assisted language learning (TALL). *International Journal of Applied Linguistics and English Literature, 11*(2), 53-64. https://doi.org/10.7575/aiac.ijalel.v.11n.2p.53.

Altumigah, E., & Alkhaleefah, T. (2022). The relationship between reading self-efficacy and perceived use of reading strategies among Saudi EFL students. *International Journal of Linguistics, 14*(6), 48-76. https://doi.org/10.5296/ijl.v14i6.20037.

Beatson, N., Berg, D., & Smith, J. (2020). The influence of self-efficacy beliefs and prior learning on performance. *Accounting & Finance*, *60*(2),1271-1294. https://doi.org/10.1111/ACFI.12440.

Cabillon, M. (2023). Language learning strategies and social media use as determinants of English language skills self-efficacy. *EPRA International Journal of Multidisciplinary Research, 9*(4), 28-32. https://doi.org/10.36713/epra12834.

Chen, Y. (2020). Correlation between Self-Efficacy and English Performance. *International Journal of Emerging Technologies in Learning*, *15*(8), 223-234. https://doi.org/10.3991/ijet.v15i08.13697.

Cheng, Y. (2020). Academic self-efficacy and assessment. *Educational Psychology*, *40*, 389 - 391. https://doi.org/10.1080/01443410.2020.1755501.

Fan, L., & Cui, F. (2024). Mindfulness, self-efficacy, and self-regulation as predictors of psychological well-being in EFL learners. *Frontiers in Psychology*, *15*, 1332002.

Fidan, M., & Tuncel, M. (2021). Developing a self-efficacy scale towards physics subjects for lower-secondary school students. *Journal of Baltic Science Education*, *20*, 38-49. https://doi.org/10.33225/JBSE/21.20.38.

Fischer, H. E., Boone, W. J., & Neumann, K. (2023). Quantitative research designs and approaches. In *Handbook of research on science education* (pp. 28-59). Routledge.

Forero, C. G. (2024). Cronbach's alpha. In *Encyclopedia of quality of life and well-being research* (pp. 1505-1507). Cham: Springer International Publishing.

Goetze, J., & Driver, M. (2022). Is learning really just believing? A meta-analysis of self-efficacy and achievement in SLA. *Studies in Second Language Learning and Teaching, 12*(2),233-259. https://doi.org/10.14746/ssllt.2022.12.2.4.

Graham, S. (2022). Self-efficacy and language learning – what it is and what it isn't. *The Language Learning Journal*, *50*, 186 - 207. https://doi.org/10.1080/09571736.2022.2045679.

Hertzog, M. A. (2008). Considerations in determining sample size for pilot studies. *Research in nursing & health, 31*(2), 180-191.

Hoesny, M., Setyosari, P., Praherdhiono, H., & Suryati, N. (2023). The correlation of speaking self-efficacy, speaking proficiency and gender in ESP context. *Pegem Journal of Education and Instruction, 13*(2),191-199. https://doi.org/10.47750/pegegog.13.02.23

Howell, S., & Hickman, C. (2022). *Self-Efficacy*. EdTechnica: The Open Encyclopedia of Educational Technology. https://doi.org/10.59668/371.6509.

Kang, H. (2021). Sample size determination and power analysis using the G* Power software. *Journal of educational evaluation for health professions, 18*(17). https://doi.org/10.3352/jeehp.2021.18.17

Kheder, K., & Rouabhia, R. (2023). Gender differences in learning languages. *European Journal of Applied Linguistics Studies, 6*(2), 96-111. https://doi.org/10.46827/ejals.v6i2.456.

Kim, D. H., Wang, C., & Truong, T. N. N. (2024). Psychometric properties of a self-efficacy scale for English language learners in Vietnam. *Language Teaching Research*, *28*(4), 1412-1427.https://doi.org/10.1177/13621688211027852

Kutuk, G., Putwain, D., Kaye, L., & Garrett, B. (2021). Relations between gender stereotyping and foreign language attainment: The mediating role of language learners' anxiety and self-efficacy. *British Journal of Educational Psychology*, *92*(1), 212-235. https://doi.org/10.1111/bjep.12446.

Li, J., & Wang, C. (2024). Measuring Chinese English as a foreign language learners' self-efficacy in vocabulary learning: Instrument development and validation. *Education Sciences*, *14*(6), .https://doi.org/10.3390/educsci14060671

Liu, L., Saeed, M., Abdelrasheed, N., Shakibaei, G., & Khafaga, A. (2022). Perspectives of EFL learners and teachers on self-efficacy and academic achievement: The role of gender, culture and learning environment. *Frontiers in Psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.996736.

Livinţi, R., Gunnesch-Luca, G., & Iliescu, D. (2021). Research self-efficacy: A meta-analysis. *Educational Psychologist*, *56*(3), 215 - 242. https://doi.org/10.1080/00461520.2021.1886103.

Massri, R. (2022). Psychology of EFL learners in Saudi Universities: A literature review. *British Journal of Education, Learning and Development Psychology, 5*(1), 21-44. https://doi.org/10.52589/bjeldp-40fwsi7u.

Milliner, B., & Dimoski, B. (2024). The effects of a metacognitive intervention on lower-proficiency EFL learners' listening comprehension and listening self-efficacy. *Language Teaching Research*, *28*(2), 679-713. https://doi.org/10.1177/13621688211004646

Mohammed, A. (2021). Students' speaking proficiency and self-efficacy theory. *Advances in Social Sciences Research Journal*, *8*(2), 318-325. https://doi.org/10.14738/ASSRJ.82.9660.

Montaño-González, J., & Cancino, M. (2020). Exploring the relationship between language learning strategies and self-efficacy of Chilean university EFL students. *TESOL Journal*, *44*(2), 1-16.

Mulyanto, H., Azizam, E., & Jusoh, J. (2022). Self Efficacy of Indonesian English foreign language learners in speaking English. *International Journal of English and Applied Linguistics, 2*(3),459-468. https://doi.org/10.47709/ijeal.v2i3.1884.

Namaziandost, E., & Çakmak, F. (2020). An account of EFL learners' self-efficacy and gender in the Flipped Classroom Model. *Education and Information Technologies*, *25*, 4041 - 4055. https://doi.org/10.1007/s10639-020-10167-7.

Nasim, S. M., & Mujeeba, S. (2024). Arab EFL students' and instructors' perceptions of errors in mechanics in second language paragraph writing. *FWU Journal of Social Sciences*, *18*(1), 87-103. http://doi.org/10.51709/19951272/Spring2024/7

Ortlieb, E., & Schatz, S. (2020). Student's self-efficacy in reading – connecting theory to practice. *Reading Psychology*, *41*(7), 735 - 751. https://doi.org/10.1080/02702711.2020.1783146.

Patricio-Gamboa, R., Alanya-Beltran, J., Acuña-Condori, S., & Poma-Santivañez, Y. (2021). Perceived self-efficacy geared towards education: Systematic review. *Espirales Revista Multidisciplinaria de investigación, 5*(2),31-42. https://doi.org/10.31876/er.v5i37.791.

Sari, E., & Han, T. (2024). The impact of automated writing evaluation on English as a foreign language learners' writing self-efficacy, self-regulation, anxiety, and performance. *Journal of Computer Assisted Learning, 40*(5), 2065–2080. https://doi.org/10.1111/jcal.13004

Wang, C., & Sun, T. (2020). Relationship between self-efficacy and language proficiency: A meta-analysis. *System*, *95*, 102366. https://doi.org/10.1016/J.SYSTEM.2020.102366.

Wang, C., Schwab, G., Fenn, P., & Chang, M. (2013). Self-efficacy and self-regulated learning strategies for English language learners: Comparison between Chinese and German college students. *Journal of Educational and Developmental Psychology*, *3*(1), 173-191. https://doi.org/10.5539/jedp.v3n1p173

Yang, K., Gan, Z., & Sun, M. (2024). EFL students' profiles of English reading self-efficacy: Relations with reading enjoyment, engagement, and performance. *Language Teaching Research*, 13621688241268891. https://doi.org/10.1177/13621688241268891

Yasmin, F., & Yasmin, N. (2023). Teaching of English at secondary level: A comparative study of public schools and madaris of district Mianwali. *FWU Journal of Social Sciences*, *17*(2),107-119. http://doi.org/10.51709/19951272/Summer2023/8

Yu, Z., & Deng, X. (2022). A Meta-Analysis of Gender Differences in e-Learners' Self-Efficacy, Satisfaction, Motivation, Attitude, and Performance Across the World. *Frontiers in Psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.897327.

Yuehua, H., & Qiumei, W. (2023). Assessing the English speaking self-efficacy of translation-major undergraduates: A current perspective. *International Journal of English Literature and Social Sciences, 8*(3), 269-277. https://doi.org/10.22161/ijels.83.45.

Zahra, S., & Rosheen, S. (2022). Perceived stress and self esteem: Mediating role of self efficacy among IELTS test takers abstract. *FWU Journal of Social Sciences*, *16*(1), 122-134. http://doi.org/10.51709/19951272/Spring2022/8

Zhang, Y. (2022). The effect of educational technology on EFL learners' self-efficacy. *Frontiers in Psychology*, *13*. https://doi.org/10.3389/fpsyg.2022.881301.

Prevalence and Correlates of Mental Health Stigma among Pakistani Adolescents and Young Adults

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Stigma significantly hinders the effective management of mental illness in Pakistan, particularly among adolescents and young adults. Given that stigmatizing beliefs can vary across different socioeconomic and demographic groups, it is crucial to study these variations within the Pakistani context, as most existing empirical evidence comes from Western contexts. This paper aims to investigate the prevalence of stigmatizing attitudes and explore the relationship between the socioeconomic and demographic characteristics of adolescents and young adults and their personal and perceived public stigmatic attitudes towards mental illness in Pakistan. A cross-sectional survey was conducted with 1328 adolescents aged 15-24 from twelve public colleges in Layyah. The survey assessed personal and perceived public stigmatic attitudes using instruments that measure social distancing, stigma beliefs, and services stigma. Descriptive statistics and Multiple Classification Analysis (MCA) were employed to evaluate differences in mean scores and determine the statistical significance of the observed variations in the scales. The findings indicate that nearly half of the participants perceived a high level of public social distancing, reflecting a prevalent sense of social avoidance among adolescents in Pakistan. Similarly, a substantial portion exhibited stereotypical attitudes towards mental illness, both personally and publicly. Notably, over 40% of the participants displayed stigmatizing attitudes toward utilizing professional psychiatric services. Factors such as gender, residential area, and father's occupation significantly influenced these attitudes, with females, rural residents, and children of farmers experiencing heightened stigma. The study underscores the discrepancy between perceived public and personal stigmatic attitudes, reveals high levels of stigma associated with using professional psychiatric services, and illustrates variation in attitudes by socioeconomic and demographic factors.

Keywords: mental illness, **m**ental health stigma, gender, socioeconomic characteristics, adolescents, young Adults, personal and Perceived Public Stigma.

Adolescence, a critical transition stage, involves significant changes that affect mental well-being (Orben et al., 2020). Societal norms influence adolescents' values, and misconceptions about mental illness lead to internalized shame (Husain et al., 2020). Understanding stigma is essential for designing studies on societal attitudes toward mental illness in Pakistani youth.

Mental illness among adolescents and young adults is a significant public health concern in Pakistan, a country with one of the highest proportions of youth (Pasha, 2023). Adolescents make up 20% of the population (UNODC, 2022) and face mental health stigma from socioeconomic disparities, violence, and discrimination. However, comprehensive data on their mental health is lacking. A study in Karachi found that 20% of adolescents suffer from psychiatric problems (Farooq et al., 2023), with anxiety and depression being the most common (Bibi et al., 2020). Pakistan's mental health infrastructure is inadequate (WHO, 2017), and stigma deters individuals from seeking help (Ahmad & Koncsol, 2022).

In Pakistan, societal pressure from *'log kya kahenge'* (What will people say?) (Abidi, 2021) reflects stigma and fosters discrimination and prejudice. This leads to pessimism and viewing mental illness as dangerous and incurable.

Labelling mental illness as dangerous triggers adverse societal reactions, hindering social integration and causing isolation (Kilian et al., 2021; Ran et al., 2021).

Stigma in Pakistani Adolescents

Stigma is a set of discriminatory attitudes that isolate individuals, associating them with moral transgressions and limiting their community life (Minhas et al., 2015). It manifests as perceived public stigma, the negative beliefs held by the public, and self-stigma, where individuals internalize these beliefs. Both forms involve stereotypes, prejudice, and discrimination. Stereotypes are socially constructed notions, prejudice is a cognitive response, and discrimination is the resulting behaviour (Corrigan & Watson, 2002).

Mental health stigma includes negative societal attitudes (Colman et al., 2021) and significant barriers to seeking psychiatric services, known as 'services stigma' (Rüsch et al., 2010). Studies on Pakistani youth reveal prevalent stigma due to limited mental illness education and misconceptions about the causes of mental illness. Poverty and religious beliefs also contribute to stigmatizing behaviour (Farooq et al., 2023).

Religion influences mental illness perceptions, offering comfort but potentially fostering stigma by linking mental illness to moral failings, affecting treatment choices and access to care. Understanding this dual impact is crucial for culturally appropriate mental health strategies. Mental illnesses are often seen as curses or divine punishment (Ahmad & Koncsol, 2022; Anriani et al., 2022). Stigma views individuals with mental illness as dangerous, less intelligent, and aggressive.

While religious and spiritual beliefs shape attitudes towards mental illness, there is a lack of research on how socioeconomic and demographic factors relate to mental health stigma among Pakistani adolescents and young adults. Recognizing these factors is essential for understanding population diversity, identifying health disparities, and developing tailored interventions.

Socioeconomic and demographic characteristics and stigma

Area deprivation highlights how socioeconomic and demographic factors shape health behaviours and attitudes towards mental illness (Ingram et al., 2019; Guerin, 1994). Socioeconomic disparities, such as poverty and lack of education, exacerbate stigma and barriers to mental illness care (Mohan & Barlow, 2023; Shafiq, 2020). Adolescents and young adults from disadvantaged backgrounds face restricted access to mental health professionals, increasing their vulnerability to psychological issues and reinforcing stigmatizing attitudes due to misconceptions and stereotypes (Tseliou & Ashfield-Watt, 2022).

In Pakistan, mental illnesses are more pronounced among adolescents and young adults in socially deprived areas compared to urban centers. Lower parental education and socioeconomic status contribute to stigmatizing attitudes. Individuals with lower education and income, or those facing unemployment or homelessness, are more likely to encounter stigma and discrimination (Husain et al., 2020).

Limited psychiatric services in Pakistan, especially in rural or deprived areas, make mental illness care costly and inaccessible. Consequently, individuals from lower socioeconomic backgrounds often resort to traditional healing methods due to the inaccessibility and unaffordability of formal psychiatric services (Begum et al., 2020). This reliance on traditional healing underscores the barriers faced by socioeconomically disadvantaged groups in accessing formal mental illness care.

Gender Differences

Gender norms significantly affect mental health in Pakistan. Women face double stigma from societal expectations and mental illness, leading to harsher judgment and discrimination, while men often underreport issues due to norms of stoicism (Akbar & Ghazal, 2023; Sherazi et al., 2023). Addressing these gender-specific challenges is crucial for tackling mental health stigma among Pakistani youth.

A study highlights that individuals from lower sociodemographic groups who also face mental illness experience higher levels of discrimination. This intersectional approach emphasizes the need to consider multiple identity and disadvantage factors, such as gender, socioeconomic status, and education, in addressing mental health stigma in Pakistan (Perry et al., 2022).

Research Gap

Our study represents a novel endeavour in examining mental health stigma among adolescents and young adults in Pakistan. For over two decades, the debate surrounding mental illness and stigma has been prominent in

Pakistan. However, there remains a significant lack of reliable data that specifically addresses the prevalence of mental health stigma among adolescents and young adults (Begum et al., 2022). The majority of the available literature in Pakistan has concentrated on the perspective of healthcare practitioners, medical students, and patients, with a focus primarily on stigma associated with specific disabilities within hospital settings. This approach limits the understanding of stigma in the broader societal context. Despite the prevalence of mental health discussions, a notable void exists in the exploration of stigma among adolescents and young adults. A meta-analysis by Choudhry et al., (2023) underscores this gap, indicating that in the past two decades, only a handful of empirical studies have specifically investigated the prevalence of stigma related to mental illness, thus leaving a significant aspect of Pakistani society understudied. In addressing these gaps, our study provides a comprehensive analysis of the prevalence and characteristics of mental health stigma among adolescents and young adults in Pakistan. By expanding the focus beyond the clinical setting to include the societal perspective, we aim to enrich the understanding of mental health stigma in this crucial demographic segment, thus offering new insights and contributing to the broader discourse on mental health in Pakistan.

Aim

Given the context, we aim to explore the prevalence of stigmatic attitudes towards mental illness and to describe the association between various sociodemographic characteristics such as gender, residential area, family system, parents' education and occupation, and personal and perceived public mental health stigmatic attitudes of adolescents and young adults in Layyah, Punjab, Pakistan.

Method

Study Setting and Design

This study utilized data from a cross-sectional survey conducted in Layyah, northeast Pakistan, which has a population of 1.824 million (PBS, 2021).

To investigate mental health stigma, clinical vignettes depicting two students with identical depression symptoms (see Appendix A) but different genders were employed. These vignettes provide a standardized framework for examining mental health stigma by presenting realistic scenarios. This method enhances the reliability of findings and facilitates cross-sectional comparisons, offering a comprehensive understanding of mental health stigma (Poulou, 2001). The vignettes were randomly distributed among students, and the entire questionnaire, including the vignettes, was translated into Urdu with the assistance of a local language expert and validated by an academician teaching Sociology in Pakistan.

Sampling

The study targeted public college students aged 15 to 24, as these institutions typically have larger enrolments due to low fees and serve lower socioeconomic classes. At the time of the survey, the total enrolment in public colleges in Layyah was 23664, comprising 12869 male (54.38%) and 10795 female (45.62%) students. A consolidated enrolment list was obtained from the deputy director of colleges in Layyah. A multistage cluster sampling technique was employed to select participants. In the first stage, colleges were purposely selected based on their higher enrolment levels from the total number of public colleges in Layyah. In the second stage, classes within these colleges were randomly chosen. Finally, students from the selected classes were invited to participate in the study. A total of 1800 students (1300 higher secondary and 500 BS level) from 12 colleges (4 from each tehsil) were invited to participate, with 1450 agreeing, resulting in a response rate of 80.5%. After excluding 122 poor-quality questionnaires, the final analysis included 1328 students. Data collection occurred in a classroom setting.

Assessments/Measurements

Our study utilized a questionnaire from the "Red Nose: Stigma Project" (Saelens et al., 2024), originally designed for Flemish adolescents, to measure participants' perceptions and attitudes towards mental illness and stigma.

Data Collection Procedure

Data were collected between November 2021 and February 2022. Ethical approval was granted by Ghent University's ethical committee, and formal permission was obtained from the Assistant Director of Colleges in Layyah. Written consent was obtained from all participants.

Variables
Dependent Variables

The study assessed personal and perceived public stigma using the Social Distance Scale, Stigma Beliefs Inventory, and Service Stigma Scale, all translated into Urdu (see Table II supplementary material).

Social Distance Scale: This 6-item scale, from the "Stigma in Global Context – Mental Health Study" (Pescosolido et al., 2013), measured social distancing attitudes on a 5-point Likert scale from 'No, definitely not' to 'Yes, definitely.' It included four positive items (scored in reverse) and two negative items, with Cronbach's alpha of 0.87 for personal social distance and 0.89 for perceived public social distance.

Stigma Beliefs Inventory: This 5-item scale assessed stereotypical beliefs, with four items from the Eurobarometer 64.4 and one additional item (i.e., danger to oneself) (Evans-Lacko et al., 2012). Responses were on a 5-point Likert scale, with higher scores indicating stronger stigmatizing attitudes. Cronbach's alpha was 0.78 for personal stigma and 0.74 for perceived public stigma beliefs.

Service Stigma Scale: Developed by Martin et al., (2007), this 3-item scale measured stigma related to psychiatric service use, with responses on a 5-point Likert scale. Higher scores indicated higher stigma, with a Cronbach's alpha of 0.56.

In Table 2, the percentages were derived by combining 'yes, definitely' and 'yes, probably' responses to indicate agreement with the statements, helping to identify stigmatic attitudes among adolescents and young adults. The cutoff mean scores were set at 15 for social distancing, 13 for stigma beliefs, and 8 for service stigma, representing the points where 50% of participants lean towards stigmatic attitudes in each category.

Independent Variables
Socio-demographic characteristics assessed included gender, residential area, religious attachment, parents' education, father's profession, and age categorized into adolescents (15-17) and young adults (18-24 years).

Control Variables
The study controlled for family system (nuclear, joint, extended), housing type (own, rented), and housing situation (*Kacha, Semi-pakka, Pakka*) to predict the association between socioeconomic and demographic characteristics and stigmatic attitudes.

Analysis
Socio-demographic characteristics were described using frequencies and percentages (Table 1). Descriptive statistics of stigmatic attitudes are in Table 2. Multiple classification analysis (MCA) evaluated associations among variables, with adjusted mean values and p-values in Table 3. Significance levels were set at 0.05, 0.01, and 0.001. Data analyses were performed using SPSS 27.0.

Results

The socioeconomic and demographic characteristics of the adolescents and young adults in the study sample provide insights into the context within which mental health stigma is examined. The majority of participants were aged 18-24 years (56.7%), predominantly male (55.1%), from rural areas (49.3%), and belonged to nuclear families (62.8%). Additionally, a large proportion of participants expressed strong religious attachment (80.1%).

Regarding economic factors, a substantial portion of the sample owned their house (93.4%) and resided in *Pakka* (cemented) houses (67.8%). The father's education level was up to the 10th grade for 55.5% of participants, while 45.0% reported that their mothers had no formal education. Furthermore, farming was a major source of livelihood, with 38.3% of participants falling into this category (Table 1).

Table 1
Socioeconomic and demographic characteristics of adolescents and young adults (N=1328)

Characteristics		N	%
Demographic Information			
Age	Adolescents (15-17)	575	43.3
	Young Adults (18-24)	753	56.7
Gender	Male	732	55.1
	Female	596	44.9
Residential Area	Rural	655	49.3
	Semi-Urban	330	24.8
	Urban	343	25.8
Religious attachment	Not Strong	122	9.2
	Moderate	142	10.7

	Strong	1064	80.1
Family System	Nuclear	834	62.8
	Joint	324	24.4
	Extended	170	12.8

Socioeconomic Situation			
	No education	264	19.9
Father's Education	Schooling Up to 10th Grade	737	55.5
	Schooling Up to 12th Grade	159	12.0
	Some University education	168	12.7
	No education	597	45.0
Mother's Education	Schooling Up to 10th Grade	593	44.7
	Schooling Up to 12th Grade	68	5.1
	Some University education	70	5.3
	Self-employed	295	22.2
	Farmer	508	38.3
Father's Profession	Government Job	224	16.9
	Private Job	109	8.2
	Working on daily wages	192	14.5
Housing Type	Own House	1241	93.4
	Rented House	87	6.6
	Kacha (Adobe, made of clay/mud)	82	6.2
Housing Situation	Semi Kacha (walls are coated by cement and floor is of clay/mud)	345	26.0
	Pakka (Cemented)	901	67.8

n=number of observations, %=percentage

Table 2
Description of personal and perceived public stigma attitude in adolescents and young adults (N=1328)

Descriptives	Stigma				
	Personal		Perceived Public		Services
	Social Distance	Stigma Beliefs	Social Distance	Stigma Beliefs	
N (%)	328 (24.7)	706 (53.2)	600 (45.2)	671 (50.7)	563 (42.4)
Mean	14.43	15.94	18.11	15.41	9.06
SD	6.71	4.89	6.87	4.80	2.80
Minimum	6.00	5.00	6.00	5.00	3.00
Maximum	30.00	25.00	30.00	25.00	15.00
Range	24.00	20.00	24.00	20.00	12.00

The study revealed high levels of stigmatizing attitudes among participants, encompassing both personal and perceived public stigma. However, some interesting differences emerged. Firstly, a higher prevalence of perceived public social distancing was observed compared to personal social distancing attitudes, with about half of the participants reporting perceived public social distancing. Secondly, variations were identified in stigmatic beliefs. For instance, over half of the participants held stereotypical attitudes towards mental illness. For perceived public stigma, participants believed that 53.2% of people in society exhibited stereotypical attitudes towards mental illness. Thirdly, participants displayed a high stigmatic attitude towards service stigma, with around 42.4% expressing a stigmatic attitude if they knew someone at their college was receiving treatment for mental illnesses (Table 2).

Table 3 presents the mean differences among adolescents and young adults based on their socioeconomic and demographic groups. We calculated the mean scores for each scale used in this study (Table I in the supplementary section).

Furthermore, the results from the multiple classification analysis (MCA) revealed variations in mental health stigma based on socioeconomic and demographic groups of adolescents and young adults. Significant differences were observed in perceived social distancing attitudes for mental illness. A higher prevalence of perceived public social distancing attitudes was noted among female adolescents and young adults. Residents of rural areas also reported higher

levels of perceived public social distancing, along with participants whose fathers were engaged in farming. Adolescents and young adults whose mothers had a higher education level reported more perceived social distancing attitudes.

Table 3

Mean difference by socioeconomic and demographic groups of adolescent and young adult's personal and perceived public stigma attitude (*N=1328*)

| | | Stigma | | | | |
| | | Personal | | Perceived Public | | |
Characteristics		**Social Distance**	**Stigma Beliefs**	**Social Distance**	**Stigma Beliefs**	**Services Stigma**
		Demographic Information				
Age	Adolescents (15-17)	2.38	3.19	3.05	3.14	3.00
	Young Adults (18-24)	2.42	3.19	3.00	3.04	3.04
Gender	Male	2.29*	3.12*	2.89***	2.94***	3.03*
	Female	2.54*	3.27*	3.17***	3.26***	3.01*
Residential Area	Rural	2.64***	3.31***	3.10***	3.17***	3.14***
	Semi-Urban	2.20***	3.26***	3.08***	3.05***	2.99***
	Urban	2.15***	2.88***	2.80***	2.95***	2.82***
Religious attachment	Not Strong	2.54	3.16	3.16*	3.26*	3.10
	Moderate	2.39	3.18	3.02*	2.99*	2.98
	Strong	2.39	3.19	3.00*	3.07*	3.02
		Socioeconomic Situation				
Father's Education	No education	2.40**	3.25***	3.04	3.14	3.19***
	Schooling Up to 10th Grade	2.40**	3.20***	3.03	3.12	2.98***
	Schooling Up to 12th Grade	2.50**	3.19***	3.06	3.00	2.94***
	Some University education	2.34**	3.03***	2.89	2.91	3.00***
Mother's Education	No education	2.44	3.18	3.06**	3.06**	3.03
	Schooling Up to 10th Grade	2.40	3.19	2.98**	3.07**	2.99
	Schooling Up to 12th Grade	2.25	3.19	2.72**	2.99**	2.95
	Some University education	2.27	3.21	3.26**	3.47**	3.26
Father's Profession	Self-employed	2.28***	3.15***	2.78***	3.06	2.83***
	Farmer	2.65***	3.33***	3.25***	3.13	3.18***
	Government Job	2.13***	2.91***	2.83***	3.08	2.84***
	Private Job	2.25***	3.13***	2.65***	3.04	3.01***
	Working on daily wages	2.38***	3.22***	3.21***	3.01	3.11***

Not significant, $P \leq$ *0.05, **0.01. ***0.001

Regarding personal stigma beliefs, it was evident that personal stereotypical attitudes towards mental illness were more prevalent in the study sample, as presented in Table 3. The data identified higher personal stigma beliefs among female participants. Higher levels of personal stigma beliefs were noted in the rural sample, with the highest mean score for personal stigma beliefs reported by adolescents and young adults whose fathers worked in farming.

Interestingly, perceived public stigmatic beliefs were primarily reported by participants whose mothers had attained some university-level education. Participants with lower religious attachment were more prone to perceived public stigma beliefs (Table 3).

Moreover, service stigma was more prevalent among male participants. Stigma related to acquiring mental health services was highest among participants residing in rural areas and whose fathers had a lower level of education. Adolescents and young adults whose fathers were engaged in farming displayed higher stigmatic attitudes towards service stigma (Table 3).

Discussion

This descriptive study investigated personal and perceived public stigmatic attitudes toward mental illness among college adolescents and young adults in Layyah, Punjab, Pakistan. Using a cross-sectional survey with clinical vignettes, the study explored the non-clinical population's approach to mental illness. By focusing on college students, an understudied group in Pakistan, and using culturally adapted, standardized tools, the study added rigor and internal consistency to measuring stigmatic attitudes. Notably, this is the first study to translate the social distance, stereotypical attitudes, and services stigma scales into Urdu.

However, the study has limitations. The vignettes focused only on depression symptoms, limiting the generalizability to individuals with multiple or more severe mental illnesses, such as psychotic disturbances (Sai & Furnham, 2013). Therefore, while our findings enhance understanding of stigma associated with depression, further research is needed to explore stigma in more severe mental health conditions. Selective dropout introduced bias, potentially skewing our results and reducing representativeness. The impact of the pandemic may have also altered participants' perceptions and experiences of stigma, potentially increasing anxiety and mental illness, or changing societal attitudes toward mental illness. This is a critical limitation to consider. Lastly, the self-reported nature of stigma is susceptible to socially desirable answers, particularly among college students, reflecting societal norms.

Personal and Perceived Public Social Distancing

Our analysis found differences in reporting personal and perceived public social distancing among adolescents and young adults. The sample showed higher perceived public social distancing towards mental illness than personal social distancing. This may be due to students' affiliation with different social strata, with younger cohorts being more aware of ethical norms surrounding mental illness. These findings align with the "Red Nose: Stigma Project" in the Flemish context, which also observed higher public social distancing compared to personal stigma (Saelens et al., 2024). Female adolescents and young adults reported significantly higher perceived public social distancing attitudes. This aligns with Zolezzi et al., (2018), who found that women face higher perceived social distancing due to stereotypes casting mental illness as shameful and embarrassing, leading to societal stigmatization and marriage challenges in Pakistan.

Variations were also found based on residential area and father's profession. Adolescents from rural areas reported greater perceived public social distancing, likely due to limited awareness and the absence of psychiatric services (Jones-Bitton et al., 2020). Participants with fathers engaged in farming reported higher perceived public social distancing, influenced by traditional beliefs and lack of mental health awareness in rural farming communities (Park et al., 2019).

Personal and Perceived Public Stigma Beliefs

Our study revealed that over half of the adolescents and young adults reported personal stigma beliefs. These findings align with other Pakistani (Naeem et al., 2006) and western studies (Bracke et al., 2019), highlighting the predominance of personal stigma over perceived public stigma. Young females exhibited higher personal stigma, likely due to associations of mental illness with shame and guilt, leading to isolation and hopelessness. Gender-based discrimination in Pakistan exacerbates these challenges, contributing to low self-confidence and societal pressure.

Additionally, participants from rural areas and those with fathers involved in farming reported higher stereotypical attitudes, likely due to a lack of understanding of mental illnesses and cultural beliefs fostering negative self-image and low self-esteem (Ahmad & Koncsol, 2022).

An interesting finding of the study was that the perceived public stigmatic beliefs were predominantly reported by participants whose mothers had attained some level of university education. Adolescents and young adults with well-educated mothers might encounter different cultural and social norms and values compared to those whose mothers have lower levels of education. These well-educated mothers typically hold progressive views and are more inclined to openly discuss mental illness with their children, promoting awareness and encouraging them to seek necessary help. While this can be beneficial in reducing stigma, seeking help might cast negative consequences on them and their families. Additionally, participants with no religious beliefs reported more perceived public stigma than others because they are a minority themselves. Once again, no study was found to substantiate this claim. Nevertheless, various factors, such as lack of moral guidance, isolation, and lower community involvement, could partially support our assertion.

Services Stigma

The study found that over half of the adolescents and young adults reported service stigma when someone they knew was receiving psychiatric treatment. These findings align with a study among Asian Americans in the U.S., highlighting limited access to mental health services as a factor in fostering misconceptions and stigma (Pedersen & Paves, 2014). The taboo surrounding mental illness exacerbates negative perceptions and stigmatizing attitudes.

Stigma related to mental illness was prevalent among females, rural residents, and adolescents from farming families, consistent with research from various countries. For example, Ribeiro et al., (2023) found stigma among young women in the UK, and Chan et al., (2016) reported stigmatic attitudes among highly educated young females in China. This research highlights that stigma persists among adolescents and young adults due to deprivation and inequitable resource distribution.

Study Implications

The findings of this study offer several important implications for understanding and addressing mental health stigma among adolescents and young adults in Layyah, Punjab, Pakistan.

Targeted Policy Interventions: This study highlights a higher prevalence of stigma among adolescents and young adults, particularly among females, rural residents, and those from farming families. This reflects the influence of patriarchy (Latif, 2021), unequal resource distribution (Shah et al., 2022), and poverty (Insan et al., 2022) in Pakistan. This underscores the need for policy interventions to ensure psychiatric services at the Basic Health Unit (BHU) level. Integrating these services into primary healthcare can increase accessibility and help normalize mental health care, reducing stigma.

Awareness Raising: The discrepancy in reporting stigma, especially in perceived public social distancing and personal stigma beliefs, highlights the need for awareness initiatives. Integrating mental health awareness into college curricula can reduce societal stigma and improve mental well-being among adolescents and young adults.

Conclusion

It is evident that personal, perceived public, and service stigma towards mental illness were present among adolescents and young adults. Socioeconomic and demographic characteristics, such as gender, residential area, religious attachment, mother's education, and father's occupation, were significantly associated with mental health stigmatic attitudes. However, we noted some variations in personal and perceived public stigmatizing attitudes. Personal stigma beliefs and perceived public social distancing were noticeable in females and participants whose fathers were employed in farming. Additionally, higher perceived public stigmatic beliefs were particularly evident in participants whose mothers had attained some level of university education, and in participants with no religious beliefs. Higher service stigma was reported by participants from rural areas. These findings could offer valuable and practical clues into the prevalence of stigma in socially disadvantaged groups. Based on this information, targeted and collaborative strategies can be formulated to reduce mental health stigma.

References

Abidi, M. (2021). *Why we don't talk about mental health in Pakistan.* from https://assembly.malala.org/stories/why-we-dont-talk-about-mental-health-in-pakistan#:~:text=Talking%20about%20mental%20health%20isn,are%20afraid%20of%20being%20judged. Accessed 3 March 2022.

Ahmad, S. S., & Koncsol, S. W. (2022). Cultural Factors Influencing Mental Health Stigma: Perceptions of Mental Illness (POMI) in Pakistani Emerging Adults. *Religions*, *13*(5), 2-21. https://doi.org/10.3390/rel13050401

Akbar, S., & Ghazal, P. (2023). The mental health of working women after the COVID-19 pandemic: an assessment of the effect of the rise in sexual harassment during the pandemic on the mental health of Pakistani women using DASS-21. *Frontiers in Psychiatry*, *14*, 1-13. https://doi.org/10.3389/fpsyt.2023.1119932

Anriani, H. B., Sari, H., Junaidi, J., & Hamka, H. (2022). Investigating the relationship between moral and ethical: Does extrinsic and intrinsic religiosity improve people's mental health?. *FWU Journal of Social Sciences*, *16*(3), 52-67. https://doi.org/10.51709/19951272/Fall2022/4

Begum, R., Choudhry, F. R., Khan, T. M., Bakrin, F. S., Al-Worafi, Y. M., & Munawar, K. (2020). Mental health literacy in Pakistan: a narrative review. In *Mental Health Review Journal*, *25*(1), 63–74. Emerald Group Holdings Ltd. https://doi.org/10.1108/MHRJ-08-2019-0026

Bibi, A., Lin, M., Zhang, X. C., & Margraf, J. (2020). Psychometric properties and measurement invariance of Depression, Anxiety and Stress Scales (DASS-21) across cultures. *International Journal of Psychology*, *55*(6), 916–925. https://doi.org/10.1002/ijop.12671

Bracke, P., Delaruelle, K., & Verhaeghe, M. (2019). Dominant Cultural and Personal Stigma Beliefs and the Utilization of Mental Health Services: A Cross-National Comparison. *Frontiers in Sociology*, *4*, 1-12. https://doi.org/10.3389/fsoc.2019.00040

Chan, S. K. W., Tam, W. W. Y., Lee, K. W., Hui, C. L. M., Chang, W. C., Lee, E. H. M., & Chen, E. Y. H. (2016). A population study of public stigma about psychosis and its contributing factors among Chinese population in Hong Kong. *International Journal of Social Psychiatry*, *62*(3), 205–213. https://doi.org/10.1177/0020764015621941

Choudhry, F. R., Khan, N., & Munawar, K. (2023). Barriers and facilitators to mental health care: A systematic review in Pakistan. *International Journal of Mental Health*, *52*(2), 124–162. https://doi.org/10.1080/00207411.2021.1941563

Colman, L., Delaruelle, K., Luypaert, C., Verniest, R., & Bracke, P. (2021). Burdens in mental health recovery: Causal beliefs and their relation to stigma and help seeking recommendations. In *International Journal of Social Psychiatry*, 67(8), 992–1004. SAGE Publications Ltd. https://doi.org/10.1177/0020764020973249

Corrigan, P. W., & Watson, A. C. (2002). The paradox of self-stigma and mental illness. *Clinical Psychology: Science and Practice*, *9*(1), 35–53. https://doi.org/10.1093/clipsy.9.1.35

Evans-Lacko, S., Brohan, E., Mojtabai, R., & Thornicroft, G. (2012). Association between public views of mental illness and self-stigma among individuals with mental illness in 14 European countries. *Psychological Medicine*, *42*(8), 1741–1752. https://doi.org/10.1017/S0033291711002558

Farooq, S., Yousaf, T., & Shahzad, S. (2023). Prevalence of emotional and behavioural problems among adolescents in pakistan: a cross-sectional study. *Journal of Pakistan Psychiatric Society,* *20*(01), 22-26. https://doi.org/10.63050/jpps.20.01.230

Guerin, B. (1994). Attitudes and beliefs as verbal behavior. *The behavior analyst*, *17*, 155-163. https://doi.org/10.1007/BF03392661

Husain, M. O., Zehra, S. S., Umer, M., Kiran, T., Husain, M., Soomro, M., Dunne, R., Sultan, S., Chaudhry, I. B., Naeem, F., Chaudhry, N., & Husain, N. (2020). Stigma toward mental and physical illness: attitudes of healthcare professionals, healthcare students and the general public in Pakistan. *BJPsych Open*, *6*(5), 1-6. https://doi.org/10.1192/bjo.2020.66

Ingram, E., Jones, R., Schofield, P., & Henderson, C. (2019). Small area deprivation and stigmatising attitudes towards mental illness: a multilevel analysis of Health Survey for England (2014) data. *Social psychiatry and psychiatric epidemiology*, *54*, 1379-1389. https://doi.org/10.1007/s00127-019-01722-w

Insan, N., Weke, A., Rankin, J., & Forrest, S. (2022). Perceptions and attitudes around perinatal mental health in Bangladesh, India and Pakistan: a systematic review of qualitative data. *BMC Pregnancy and Childbirth*, *22*(1), 1-13. https://doi.org/10.1186/s12884-022-04642-x

Jones-Bitton, A., Best, C., MacTavish, J., Fleming, S., & Hoy, S. (2020). Stress, anxiety, depression, and resilience in Canadian farmers. *Social Psychiatry and Psychiatric Epidemiology*, *55*(2), 229–236. https://doi.org/10.1007/s00127-019-01738-2

Kilian, C., Manthey, J., Carr, S., Hanschmidt, F., Rehm, J., Speerforck, S., & Schomerus, G. (2021). Stigmatization of people with alcohol use disorders: An updated systematic review of population studies. *Alcoholism: Clinical and Experimental Research*, *45*(5), 899–911. https://doi.org/10.1111/acer.14598

Latif, H. (2021). *Patriarchy and Contemporary Women Health in Pakistan: An Insight.* https://www.marham.pk/healthblog/patriarchy-and-contemporary-women-health/. Accessed 2 February 2023.

Martin, J. K., Pescosolido, B. A., Olafsdottir, S., & Mcleod, J. D. (2007). The Construction of Fear: Americans' Preferences for Social Distance from Children and Adolescents with Mental Health Problems. *Journal of Health and Social Behavior*, 48(1), 50-67. https://doi.org/10.1177/002214650704800104

Minhas, A., Vajaratkar, V., Divan, G., Hamdani, S. U., Leadbitter, K., Taylor, C., Aldred, C., Tariq, A., Tariq, M., Cardoza, P., Green, J., Patel, V., & Rahman, A. (2015). Parents' perspectives on care of children with autistic spectrum disorder in South Asia - Views from Pakistan and India. *International Review of Psychiatry*, *27*(3), 247–256. Taylor and Francis Ltd. https://doi.org/10.3109/09540261.2015.1049128

Mohan, G., & Barlow, P. (2023). Area-level deprivation, neighbourhood factors and associations with mental health. *PLoS ONE*, *18*(1), 1-18. https://doi.org/10.1371/journal.pone.0281146

Naeem, F., Ayub, M., Javed, Z., Irfan, M., Haral, F., & Kingdon, D. (2006). Stigma and psychiatric illness. A survey of attitude of medical students and doctors in Lahore, Pakistan. *Journal of Ayub Medical College Abbottabad, 18*(3), 48-49.

Orben, A., Tomova, L., & Blakemore, S. J. (2020). The effects of social deprivation on adolescent development and mental health. In *The Lancet Child and Adolescent Health, 4*(8), 634–640. Elsevier B.V. https://doi.org/10.1016/S2352-4642(20)30186-3

Park, S., Kim, S. K., Kim, J. Y., Lee, K., Choi, J. R., Chang, S. J., Chung, C. H., Park, K. S., Oh, S. S., & Koh, S. B. (2019). Exposure to pesticides and the prevalence of diabetes in a rural population in Korea. *NeuroToxicology, 70*, 12–18. https://doi.org/10.1016/j.neuro.2018.10.007

Pasha, H. A. (2023). *The youth bulge*. https://www.brecorder.com/news/40250873. Accessed 24 August 2023.

Pedersen, E. R., & Paves, A. P. (2014). Comparing perceived public stigma and personal stigma of mental health treatment seeking in a young adult sample. *Psychiatry Research*, *219*(1), 143–150. https://doi.org/10.1016/j.psychres.2014.05.017

Perry, B. L., Felix, E., Bolton, M., Pullen, E. L., & Pescosolido, B. A. (2022). Public Stigma and Personal Networks: Confronting the Limitations of Unidimensional Measures of Social Contact. *Journal of Health and Social Behavior*, *63*(3), 428–445. https://doi.org/10.1177/00221465211072311

Pescosolido, B. A., Medina, T. R., Martin, J. K., & Long, J. S. (2013). The "backbone" of stigma: identifying the global core of public prejudice associated with mental illness. American journal of public health, 103(5), 853-860. https://doi.org/10.2105/AJPH

Poulou, M. (2001). The role of vignettes in the research of emotional and behavioural difficulties. *Emotional and behavioural difficulties*, *6*(1), 50-62. https://doi.org/10.1080/13632750100507655

Punjab bureau of statistics (PBS). (2021). Layyah District at a Glance. Retrieved June, 27, 2022, from https://www.pbs.gov.pk/sites/default/files/tables/district_at_glance/Layyah.pdf

Ran, M. S., Hall, B. J., Su, T. T., Prawira, B., Breth-Petersen, M., Li, X. H., & Zhang, T. M. (2021). Stigma of mental illness and cultural factors in Pacific Rim region: a systematic review. *BMC Psychiatry*, *21*(1), 1-16. https://doi.org/10.1186/s12888-020-02991-5

Ribeiro, W. S., Romeo, R., King, D., Owens, S., Gronholm, P. C., Fisher, H. L., Laurens, K. R., & Evans-Lacko, S. (2023). Influence of stigma, sociodemographic and clinical characteristics on mental health-related service use and associated costs among young people in the United Kingdom. *European Child and Adolescent Psychiatry*, *32*(8), 1363–1373. https://doi.org/10.1007/s00787-022-01947-2

Rüsch, N., Corrigan, P. W., Todd, A. R., & Bodenhausen, G. V. (2010). Implicit self-stigma in people with mental illness. *Journal of Nervous and Mental Disease*, *198*(2), 150–153. https://doi.org/10.1097/NMD.0b013e3181cc43b5

Saelens, L., Bockstal, M., Bracke, P., Buffel, V., Delaruelle, K., D'hondt, F., ... & Ceuterick, M. (2024). Designing the first culturally-sensitive stigma survey tailored for adolescents: RN-CSS. *Scandinavian Journal of Public Health*, 1-9. https://doi.org/10.1177/14034948241255717

Sai, G., & Furnham, A. (2013). Identifying depression and schizophrenia using vignettes: A methodological note. *Psychiatry Research*, *210*(1), 357-362. https://doi.org/10.1016/j.psychres.2013.05.004

Shafiq, S. (2020). Perceptions of Pakistani community towards their mental health problems: a systematic review. *Global Psychiatry*, *3*(1), 28–50. https://doi.org/10.2478/gp-2020-0001

Shah, S. M., Sun, T., Xu, W., Jiang, W., & Yuan, Y. (2022). The mental health of China and Pakistan, mental health laws and COVID-19 mental health policies: a comparative review. *General Psychiatry*, *35*(5), 1-9. BMJ Publishing Group. https://doi.org/10.1136/gpsych-2022-100885

Sherazi, N., Najam, N., & Jabeen, S. (2023). Social Exclusion and Mental Health Issues of Transgender Community in Lahore City. *FWU Journal of Social Sciences*, *17*(1), 1-17. https://doi.org/10.51709/19951272/Spring2023/1

Tseliou, F., & Ashfield-Watt, P. (2022). The association between resilience resources, contextual factors and mental health status: a national population-based study. *BMC Public Health*, *22*(1), 1-13. https://doi.org/10.1186/s12889-022-13013-2

UNODC (2022). Pakistan: Country Profile. https://www.unodc.org/pakistan/en/country-profile.html. Accessed 24 September 2023.

WHO. (2017). Mental Health Atlas 2017 Country Profile: Pakistan. Retrieved September 3, 2022 from https://www.who.int/publications/m/item/mental-health-atlas-2017-country-profile-pakistan

Zolezzi, M., Alamri, M., Shaar, S., & Rainkie, D. (2018). Stigma associated with mental illness and its treatment in the Arab culture: A systematic review. *International Journal of Social Psychiatry*, *64*(6), 597–609. SAGE Publications Ltd. https://doi.org/10.1177/0020764018789200

Appendix A: *Example Vignette of Ali/Ayesha*

The vignettes of student(s) indicating signs of mental health illness was as follows: Ayesha/Ali is a 19-year-old girl/boy. She/He is living with her/his parents in a village. She/He has been sad for the last couple of days. She/He has abandoned her/his usual routine of going to college, attending classes, playing games with friends, and following scheduled activities. She/He stopped seeing her/his friends. She/He wakes up in the morning with a passive feeling and remains sad all day.

She/He has lost interest in the surroundings and does not enjoy anything that she/he normally does. She/He does not want to go to college and tries to stay alone every time. She/He becomes sensitive and gets annoyed easily.

She/He finds it difficult to concentrate on her/his studies. Even the easiest topics are difficult for her/him to memorize. Her/His position and the marks are dropping day by day in the class. Ayesha/Ali finds it difficult to execute normal tasks and life for her/him became meaningless. She/He develops a negative approach towards everything as she/he always tries to criticize everything. She/He feels worthless and guilty.

Although Ayesha/Ali feels tired all the time, she/he has trouble sleeping at night. Her/His behavior is unusual for her/his family. Her/His family has noticed that Ayesha/Ali is barely eating and has lost weight. Her/His family and friends are worried about her/him.

Appendix B:
Table I
Personal and perceived public stigma attitude in adolescents and young adults (*N=1328*)

Scales	Statements	No, Definitely not	No, Probably Not	Neutral	Yes Probably	Yes Definitely	M	SD
		f (%)	f (%)	f (%)	f (%)	f (%)		
Personal Stigma								
Social Distance								
	I would use nicknames	552 (41.6)	324 (24.4)	114 (8.6)	205 (15.4)	133 (10.0)	2.28	1.39
	I would not have lunch with Ali/Ayesha.	227 (17.1)	417 (31.4)	188 (14.2)	176 (13.3)	320 (24.1)	2.96	1.45
	I would laugh at Ali/Ayesha if they were not there.	665 (50.1)	268 (20.2)	96 (7.2)	175 (13.2)	124 (9.3)	2.12	1.39
	I would not invite Ali/Ayesha to play games.	519 (39.1)	326 (24.5)	100 (7.5)	180 (13.6)	203 (15.3)	2.41	1.49
	I would not suggest doing combine study with Ali/Ayesha.	544 (41.0)	317 (23.9)	114 (8.6)	170 (12.8)	183 (13.8)	2.35	1.46
	I could not become close friends with Ali/Ayesha.	556 (41.9)	322 (24.2)	102 (7.7)	172 (13.0)	176 (13.3)	2.31	1.45
Stigma Beliefs								
	I would think that the Ali/Ayesha ...							
	… danger to oneself	192 (14.5)	240 (18.1)	154 (11.6)	489 (36.8)	253 (19.1)	3.28	1.35
	… danger to others	144 (10.8)	361 (27.2)	248 (18.7)	383 (28.8)	192 (14.5)	3.09	1.25
	… unpredictable his/her reactions	140 (10.5)	221 (16.6)	293 (22.1)	478 (36.0)	196 (14.8)	3.28	1.21
	… owes the problem to him/herself	128 (9.6)	189 (14.2)	253 (19.1)	510 (38.4)	248 (18.7)	3.42	1.22
	… cannot overcome these problems	196 (14.8)	275 (20.7)	154 (11.6)	419 (31.6)	284 (21.4)	3.24	1.38
Perceived Public Stigma								
Social Distance								
	They would use nicknames	311 (23.4)	288 (21.7)	127 (9.6)	394 (29.7)	208 (15.7)	2.93	1.44
	They would not have lunch with Ali/Ayesha.	112 (8.4)	333 (25.1)	250 (18.8)	248 (18.7)	385 (29.0)	3.35	1.35
	They would laugh at Ali/Ayesha if they were not there.	346 (26.1)	194 (14.6)	186 (14.0)	414 (31.2)	188 (14.2)	2.93	1.44
	They would not invite Ali/Ayesha to play games.	213 (16.0)	402 (30.3)	150 (11.3)	262 (19.7)	301 (22.7)	3.03	1.43
	They would not suggest doing combine study with Ali/Ayesha.	274 (20.6)	356 (26.8)	146 (11.0)	240 (18.1)	312 (23.5)	2.97	1.49
	They could not become close friends with Ali/Ayesha.	293 (22.1)	333 (25.1)	170 (12.8)	261 (19.7)	271 (20.4)	2.91	1.46
Stigma Beliefs								
	Other students at my college would think that the Ali/Ayesha ...							
	…danger to oneself	249 (18.8)	278 (20.9)	150 (11.3)	437 (32.9)	214 (16.1)	3.07	1.39
	…danger to others	366 (27.6)	193 (14.5)	250 (18.8)	340 (25.6)	179 (13.5)	2.83	1.42
	…unpredictable his/her reactions	215 (16.2)	177 (13.3)	331 (24.9)	410 (30.9)	195 (14.7)	3.15	1.29
	…owes the problem to him/herself	211 (15.9)	115 (8.7)	232 (17.5)	506 (38.1)	264 (19.9)	3.37	1.33
	…cannot overcome these problems	313 (23.6)	206 (15.5)	219 (16.5)	351 (26.4)	239 (18.0)	3.00	1.44
Services Stigma								
	If the students at my college knew that the person(s) in vignette(s) was treated by a psychiatrist							
	it would matter to them.	108 (8.1)	241 (18.1)	194 (14.6)	457 (34.4)	328 (24.7)	3.49	1.26
	they would avoid him/her	184 (13.9)	444 (33.4)	214 (16.1)	351 (26.4)	135 (10.2)	2.86	1.24
	they would drop him	283 (21.3)	410 (30.9)	203 (15.3)	269 (20.3)	163 (12.3)	2.71	1.33

f=frequency, %=percentage, M=Mean, SD=Standard Deviation

Supplementary Material

Table I. Sociography, factor Summary and Goodness of fit model of adolescents personal and perceived public stigmatic attitude (*N=1328*)

Characteristics		Personal				Perceived Public				Services Stigma	
		Social Distance		Stigma beliefs		Social Distance		Stigma beliefs			
		OM	β	OM	β	OM	β	OM	β	OM	β
Mean		2.40		3.19		3.02		3.08		3.02	
SD		1.12		0.98		1.15		0.96		0.93	
Minimum		1.00		1.00		1.00		1.00		1.00	
Maximum		5.00		5.00		5.00		5.00		5.00	
Range		4.00		4.00		4.00		4.00		4.00	
Demographic Information											
Age	Adolescents (15-17)	2.36	0.02	3.18	0.003	3.03	0.02	3.12	0.05	3.01	0.02
	Young Adults (18-24)	2.44		3.19		3.01		3.06		3.03	
Gender	Male	2.34	0.11*	3.15	0.08*	2.93	0.12***	2.97	0.16***	3.07	0.01*
	Female	2.48		3.24		3.12		3.22		2.97	
Residential Area	Rural	2.73		3.33		3.15		3.15		3.19	
	Semi-Urban	2.16	0.21***	3.27	0.19***	3.06	0.11***	3.05	0.10***	2.98	0.14***
	Urban	2.02		2.84		2.73		2.99		2.74	
Religious attachment	Not Strong	2.59		3.22		3.20		3.28		3.17	
	Neutral	2.39	0.04	3.17	0.01	3.01	0.04	3.00	0.07*	2.95	0.03
	Strong	2.39		3.19		3.00		3.07		3.01	
Socio-Economic Situation											
Father's education	No education	2.62		3.38		3.22		3.13		3.33	
	Schooling up to 10th grade	2.42	0.04**	3.22	0.06***	3.04	0.04***	3.12	0.08	2.99	0.09***
	Schooling up to 12th grade	2.38		3.12		2.95		3.01		2.86	
	Some university	2.02		2.81		2.67		2.93		2.84	
Mother's education	No education	2.55		3.28		3.15		3.10		3.14	
	Schooling up to 10th grade	2.35	0.05	3.15	0.01	2.94	0.09**	3.06	0.10**	2.93	0.07
	Schooling up to 12th grade	2.10		3.03		2.58		2.92		2.77	
	Some university	1.90		2.89		2.96		3.28		3.00	
Father's Profession	Self-employed (Own business)	2.17		3.09		2.73		3.03		2.78	
	Farmer	2.77		3.39		3.28		3.16		3.25	
	Government Job	2.02	0.18***	2.82	0.15***	2.79	0.21***	3.03	0.05	2.78	0.17***
	Private Job	2.17		3.10		2.62		3.02		2.93	
	Working on Daily Wages (Laborer)	2.37		3.30		3.24		3.04		3.14	

OM=observed mean, **β**=Beta value, p≤ *0.05, **0.01, ***0.001

Table II. *Urdu Translation of the Scales*

Social Distance	
میں / وہ مزاحیہ نام سے اسے بلائیں گے (مثال کے طور پر مینٹل، پاگل، سائیکو، مخلوط الحواس، بے وقوف، جھلا، چپل، عقل سے پیدل)۔	1
میں / وہ کالج میں علی / عائشہ کے ساتھ دوپہر کا کھانا کھائیں گے۔	2
میں / وہ علی / عائشہ پر ہنسیں گے اگر وہ وہاں موجود نہ ہو۔	3
میں / وہ علی / عائشہ کو اپنے ساتھ کھیلنے کے لیے مدعو کریں گے۔	4
میں / وہ علی / عائشہ کے ساتھ مشترکہ مطالعہ کی تجویز دیں گے۔	5
میں / وہ علی / عائشہ کے قریبی دوست بن سکتے ہیں۔	6
Stigma Beliefs	
میں / دوسرے طلباء / طالبات میرے کالج میں سوچتے ہیں کہ علی / عائشہ۔۔۔۔	
۔۔اپنے آپ کے لیے خطرہ ہے۔	1
۔۔دوسروں کے لیے خطرہ ہے۔	2
۔۔ناقابل اعتماد ہے (اس کے رد عمل کا اندازہ لگانا مشکل ہے)۔	3
۔۔لاحق مسئلہ ذاتی ہے۔	4
۔۔ان مسائل کا تدارک نہیں کر سکتا / سکتی۔	5
Social Services	
اگر میرے کالج کے طلباء / طالبات کو یہ معلوم ہو کہ علی / عائشہ کا علاج ماہر نفسیات کے پاس چل رہا ہے تو	
اس سے انہیں کوئی فرق نہیں پڑے گا۔	1
اس سے دور رہیں گے۔	2
اسے چھوڑ دیں گے۔	3

Sustainable Preservation of Vernacular Architecture for Enhancing Urban Cultural Welfare in Vietnamese Ethnic Minority Communities

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The architectural heritage of Vietnam's ethnic minorities, particularly exemplified by the Hmong people, embodies centuries-old cultural values and traditions intricately adapted to their natural and social environments. This heritage, however, faces significant challenges from globalization, urbanization, and the rapid pace of modernization, which threaten the sustainability of traditional architectural practices and the cultural identity they support. This study explores the current state of traditional architectural practices among Vietnam's ethnic minorities, assesses the impacts of modernization, and identifies sustainable preservation strategies. By integrating modern needs with traditional values, this research aims to enhance urban social and cultural welfare by preserving the architectural heritage crucial for cultural diversity and socio-economic development. Through a mixed-methods approach involving qualitative data from interviews and focus groups, and quantitative data from field observations, this study provides a comprehensive understanding of these issues. The findings underscore the necessity of elevating awareness, enhancing state management, and integrating modern needs with traditional values for the sustainable preservation of ethnic architectural heritage.

Keywords: Cultural preservation, Ethnic minority, Sustainable development, Urban Cultural Welfare, Vernacular architecture, Vietnam.

Vietnam's ethnic minorities possess a rich architectural heritage, prominently represented by groups such as the Hmong, Thai, Muong, and Ede people. This heritage, shaped through centuries of ecological and societal adaptations, reflects a harmonious blend of cultural values and traditions. From earth-walled residences in highland terrains to communal structures fostering social and cultural exchanges, these architectural forms serve not only as physical shelters but also as enduring symbols of ethnic and cultural identity (Nguyen & Nguyen, 2024; Phung et al., 2024).

However, these distinctive architectural traditions face growing threats amid the forces of globalization, urbanization, and shifting socio-economic landscapes. Similar challenges are observed globally, where modernization often introduces new building materials and techniques that jeopardize traditional practices. These dynamics are compounded by the diminishing connection between younger generations and their cultural roots, risking the sustainability of this architectural legacy (Almansuri & Alkinani, 2023; Nguyen, 2023; Thi Quyet Nguyen et al., 2023; Pham & Truong, 2017; Shah et al., 2023).

The XIII Congress of the Communist Party of Vietnam underscored the critical importance of "protecting and promoting the good, sustainable values in the Vietnamese cultural tradition" (Communist Party of Vietnam, 2021). Within this framework, preserving the architectural and cultural values of ethnic minorities is identified as a fundamental task. This preservation not only safeguards cultural heritage for future generations but also unlocks its potential as a resource to enrich the material and spiritual lives of ethnic communities. Moreover, such efforts play a pivotal role in fostering socio-economic growth, reducing regional income disparities, and aligning with state strategies for developing ethnic minority areas (Nguyen & Nguyen, 2024).

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Contemporary transformations have led to physical changes in ethnic minority living spaces, with the commodification of traditional homes for tourism and the shift to modern housing solutions contributing to a gradual dilution of intangible cultural values. These trends weaken the cultural identity and sustainable living practices embedded in vernacular architecture (Thi & Nguyen, 2021). For example, among the K'Ho ethnic group, urbanization and economic diversification have disrupted traditional practices and architectural forms, posing challenges to their cultural continuity (Nguyen & Nguyen, 2024).

Global parallels can be drawn, as highlighted by studies on green finance and sustainable development in Sub-Saharan Africa. Similar principles apply to Vietnam, where sustainable practices in agriculture and architecture can mitigate the cultural and environmental impacts of modernization (Edet et al., 2024). The need to balance traditional architectural values with contemporary development demands underscores the urgency of integrating these values into modern housing solutions to ensure cultural preservation and sustainable living practices.

Against this backdrop, the aims and objectives of this study are to investigate the current state of traditional architectural practices among Vietnam's ethnic minorities, with a focus on the Hmong people, to identify factors contributing to the decline of these cultural assets. The study also assesses the impact of modernization, globalization, and urbanization on preserving traditional architectural forms and cultural values. Additionally, it explores sustainable approaches and strategies for preserving and promoting the architectural heritage of ethnic minorities within contemporary socio-economic development. Finally, the study advocates for integrating traditional architectural values into modern housing solutions to ensure the continuity and revitalization of ethnic minorities' cultural heritage   .

This inquiry aims to navigate the complex interplay between tradition and modernity, striving to protect and rejuvenate Vietnam's ethnic minorities' architectural and cultural legacies for future generations.

Literature Review

This analytical review explores the evolving discourse on the interplay between Vietnam's ethnic groups' architectural traditions and environmental sustainability, spotlighting the adaptive strategies of the Hmong, Muong, Thai, and Ede communities. The synthesis of research across these ethnic groups uncovers a multifaceted narrative on balancing cultural heritage with modernization's exigencies and environmental resilience.

Vernacular architecture and environmental sustainability. Do's (2021) exploration of the Hmong's earth-wall (*trình tường*) houses exemplifies how traditional construction methods, utilizing stone and earth, embody cultural values and offer climatic resilience, highlighting a symbiotic relationship between architecture and environment. This architectural response to environmental challenges contrasts markedly with Giang's (2018) findings, where the shift from traditional fokienia wood to modern materials among the Hmong in Dien Bien reflects a nuanced adaptation to deforestation, showcasing the environmental pressures reshaping architectural choices (Nguyen & Nguyen, 2024).

Similarly, Nguyen et al., (2011) emphasize the energy efficiency and environmental adaptability of vernacular designs, aligning them with sustainability imperatives. Subsequent research by Nguyen et al., (2022) and Na et al., (2024; 2022) extend this dialogue, focusing on thermal comfort and the use of local materials in ethnic minority housing, further cementing vernacular architecture's relevance in addressing climate challenges (Ed.daran & Malik, 2024; Nguyen & Nguyen, 2024).

Cultural preservation and modernization. The architectural traditions of the Black Thai and Hmong communities, as observed by Xuan Lam (2019) and Hoang (2024), underscore the cultural depth inherent in these practices. Despite modernization pressures, these groups exhibit a steadfast commitment to preserving their architectural heritage, as it is integral to their cultural identity. Nguyen and Nguyen (2024) discuss similar trends among the K'Ho, where traditional practices are being repurposed to align with tourism and urban development without fully abandoning their heritage. Doan Duc (2023) further explores how the Hmong, Muong, and Thai communities in Ha Giang successfully integrate traditional elements into contemporary designs, achieving a balance between modern functionality and cultural preservation. This harmonization highlights the potential for architectural adaptation strategies that respect heritage while accommodating modern needs.

Architectural diversity and cultural identity. The comparative analysis by Hoang and Nguyen (2023) of Black Thai and White Thai houses showcases Vietnam's ethnic diversity, emphasizing architecture as a central element of cultural identification. Such studies reveal the rich tapestry of Vietnam's ethnic architecture, offering

insights into how these communities preserve their identities through distinct spatial and structural designs (Nguyen & Nguyen, 2024).

Global context and sustainability. Expanding the lens beyond Vietnam, Nguyen et al., (2019), Ly et al. (2010), T. Q. Nguyen et al., (2023), Luu and Dinh (2015), and Le and Cao (2024) explore the sustainable attributes of vernacular architecture globally, advocating for its integration into eco-friendly design practices. These studies align with the global push for sustainable development, illustrating vernacular architecture's utility in cultural preservation and climate adaptation (Ed.daran & Malik, 2024).

Cultural transformation and policy implications. Nguyen and Nguyen (2024) illustrate the pressures of modernization on Vietnam's K'Ho ethnic minority. Traditional practices, such as the New Rice Celebration, are eroded by urbanization and economic shifts. Government interventions have proven to be both supportive and adaptive, advocating education and sustainable tourism as strategies to maintain cultural integrity (Nguyen & Nguyen, 2024). Similarly, Ed.daran and Malik (2024) emphasize the role of international frameworks like UNESCO in safeguarding cultural heritage, underscoring the need for robust legal mechanisms to protect such assets globally   .

The evolving discourse around vernacular architecture in Vietnam reflects a convergence of cultural, environmental, and economic factors. While significant progress has been made in understanding the interplay between tradition and modernity, gaps remain in quantifying the environmental benefits of these practices and scaling them for broader adoption. Further research could explore integrating traditional architectural principles with advanced sustainability technologies to address both local and global challenges.

This review consolidates the body of knowledge on Vietnam's vernacular architecture, emphasizing its dual role in cultural preservation and environmental sustainability. By bridging traditional practices with contemporary needs, vernacular architecture emerges as a critical medium for fostering resilient, identity-affirming, and sustainable built environments. Future research must deepen this integration, leveraging vernacular traditions to inform global sustainable design practices.

Method

This study employs a mixed-methods approach, integrating both qualitative and quantitative research techniques to investigate the preservation and promotion of cultural values in the architecture of ethnic minority housing in Vietnam, with a particular focus on the Hmong people. The methodology is designed to provide a comprehensive understanding of the current state of traditional architectural practices among Vietnam's ethnic minorities and to identify sustainable strategies for preserving these cultural assets amidst modernization and socio-economic development pressures.

Data Collection: Qualitative Data

Semi-structured interviews were conducted with community leaders, architects specializing in traditional Vietnamese architecture, government officials, and members of the ethnic communities, especially the Hmong, Muong, Thai, and Ede communities. These interviews aim to gather insights into the challenges and opportunities in preserving ethnic architectural heritage.

Focus Groups were organized with residents from ethnic minority villages to discuss the impact of modernization on traditional housing and explore community attitudes toward the preservation of architectural heritage.

Field Observations were carried out in selected ethnic minority villages in Ha Giang and other regions known for their distinct architectural traditions. The observations focused on construction techniques, materials used, and the condition of traditional houses to assess the degradation and modifications made over time.

Sample

The study focuses on a sample population from the Hmong, Muong, Thai and Ede communities, selected based on their geographical diversity and the distinctiveness of their architectural heritage. Villages known for their commitment to maintaining traditional architectural practices are prioritized. The selection process involves consultations with local cultural departments to ensure a representative sample encompassing a range of preservation states – from well-preserved to significantly modernized communities.

Data Analysis

Qualitative data from interviews and focus groups are transcribed and analyzed thematically to identify common themes related to the challenges of preservation, community engagement, and the impact of external pressures.

Ethical Considerations

All participants are provided with informed consent forms detailing the study's purpose, their voluntary participation, anonymity, and the right to withdraw at any time. The research methodology adheres to ethical standards prescribed by the Vietnam Academy of Social Sciences, ensuring that the study respects participants' cultural sensitivities and privacy.

Results and Discussion

Diverse Architectural Vernacular Heritage of Vietnam's Ethnic Minorities: Traditions, Challenges, and Preservation

Ethnic minorities, in conquering nature and exploring life, have continuously created typical, distinctive cultural values that reflect their unique psychology, lifestyle, and character to survive and adapt to their living environment. The culture and architecture of Vietnam's ethnic minorities' housing (Fig. 1) are integral parts of the national cultural identity, encompassing material cultural values that include motifs, patterns, layouts, and arrangements in accordance with each ethnic group's customs, traditions, and practices.
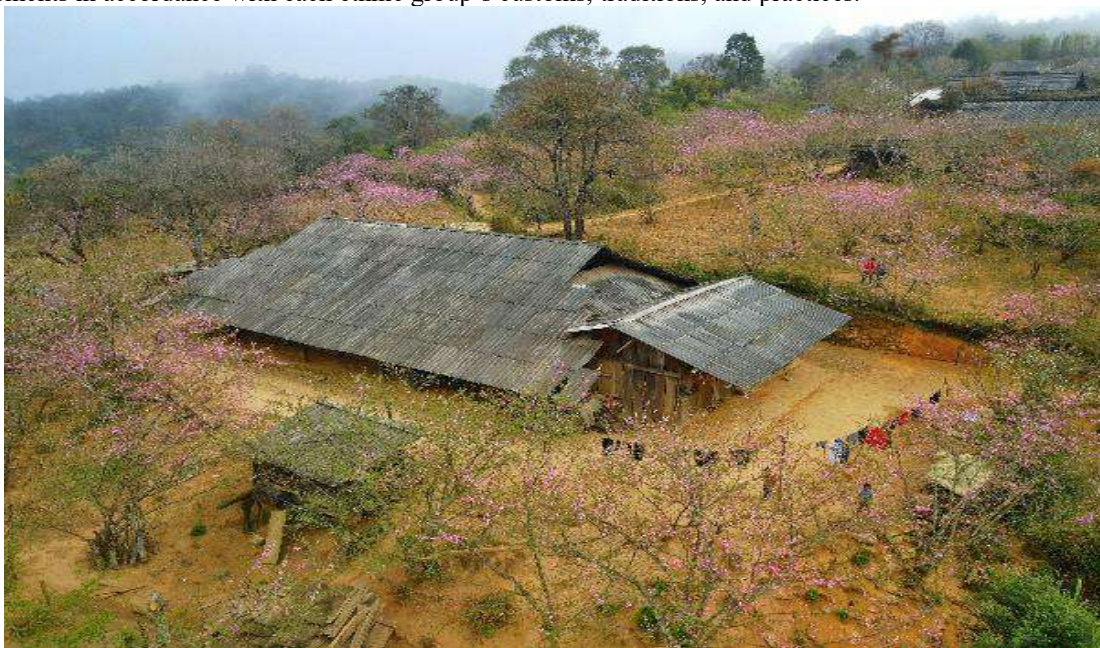

Fig. 1: A springtime dwelling in Cao Bang province
Source: authors

The culture and architecture of the housing of ethnic minorities also contain spiritual culture, expressing the desires and aspirations for a prosperous, sufficient life of each ethnic group in a developing, changing society today. Discussing the culture and architecture of the housing of ethnic minorities refers to the methods and ways of choosing terrain and house orientation for each ethnic group, creating unique, distinctive features to differentiate the housing of one ethnic group from another. Each ethnic group, in the course of their life, chooses an appropriate area and terrain for labor and production, preserving and enhancing the cultural values of their housing. The cultural and architectural value of the housing of ethnic minorities is an important constant that cannot be mixed with any other ethnic group. The cultural architecture of the housing of ethnic minorities, though not as elaborate or ornate as that of the Kinh people, still exudes national characteristics, deep traditional values, and subtlety in every line and pattern. Preserving and enhancing the cultural and architectural values of the housing of Vietnam's ethnic minorities today is an overall method and measure of the party committees, local government at all levels, and the active, proactive nature of the ethnic minorities in transmitting and implementing programs, projects for the conservation of the culture of ethnic minorities to promote socio-economic development, improve the quality of life of ethnic minorities, aiming for a wealthy people, a strong country, democracy, equity, and civilization. Accordingly, the content of preserving and

enhancing the cultural and architectural values of the housing of Vietnam's ethnic minorities today needs to focus on Preserving and enhancing the house design suitable for the soil and climatic conditions of each area, living region, convenient for exchange and trade activities. Preserving and enhancing the way of arranging household items of each ethnic group. Preserving and enhancing the use of materials in constructing traditional houses of ethnic minorities.

The Hmong ethnic group

When examining the cultural fabric of Vietnam's ethnic minorities, the architectural practices of the Hmong people stand out as a pivotal element. The architecture of Hmong traditional houses serves as a physical shelter and a manifestation of their cultural identity. In Hmong villages, a noticeable consistency in architectural design underscores a collective adherence to a specific blueprint. Characterized by their single-story construction and modestly pitched roofs, Hmong dwellings reflect a harmonious blend of functionality and tradition. Despite variations in size, these structures universally incorporate a tripartite layout complemented by dual entrances and a minimum of two windows, maintaining a connection to their cultural heritage.

The spatial organization within Hmong houses is meticulously planned. The division into three main compartments facilitates distinct domestic functions: the left for culinary activities and the couple's private quarters, the right dedicated to warmth and hospitality, and the central space reserved for ancestral veneration and communal gatherings. The bedrooms for the couple and children are arranged separately. The Hmong typically sleep on wooden platforms or bamboo mats. This layout not only delineates the physical spaces but also embodies the social and spiritual values of the Hmong community.

Moreover, selecting a housing site among the Hmong is imbued with cultural significance, emphasizing the interplay between auspiciousness and environmental harmony. The construction process, particularly wall erection, is governed by cultural norms restricting access to the construction site, underscoring house-building's communal and sacral aspects. Erecting the walls is a meticulous process among the Hmong people, with regulations such as strangers, especially women, not being allowed into the area where the walls are being erected. To erect the walls, the people use wooden molds that are 1.5 meters long and 0.45 to 0.5 meters wide. They fill the molds with soil during wall construction and compact it firmly. The soil must be free of tree roots, large stones, and weeds. Several strong young men from the village are mobilized to help with the process, continuing from one mold to the next until completion. After erecting the walls, the homeowner selects an auspicious day, by the owner's age, to go into the forest to cut down trees for the main pillars and the roof ridge. Utilizing wooden molds for wall construction, the community engages in a collective effort, showcasing the communal spirit and technical ingenuity in utilizing natural materials to create durable and comfortable living spaces.

Fig. 2: A Hmong ancient house in Thien Huong village in Dong Van, Ha Giang
Source: Doan Duc, 2023

The defensive stone fences encircling Hmong homes not only provide protection but also symbolize the robustness and resilience of the Hmong cultural identity (Fig. 2). To have a complete stone fence surrounding the house and land of about 200 to 300 square meters, the homeowner and relatives spend months gathering broken stones around the house to build the fence. Stones of different sizes and shapes are tightly fitted together to form a

solid and smooth wall without the need for any adhesive material. The meticulous assembly of stone fences and the symbolic wooden gate adorned with red paper represent a fusion of aesthetic considerations with practicality, creating a welcoming yet fortified domestic environment.

This analytical exploration into Hmong housing architecture reveals a complex tapestry of cultural expression, environmental adaptation, and communal solidarity. The architectural principles underlying Hmong dwellings serve as a testament to their rich cultural heritage, reflecting broader themes of identity, belonging, and sustainability within Vietnam's ethnic minority communities.

The Muong ethnic group

The Muong ethnic group's architectural practices, particularly their stilt houses, reflect their harmonious integration with nature and the symbolic dimensions embedded in their living spaces. Constructed from an array of natural materials, including wood, bamboo, rattan, and thatch, these structures are emblematic of the Muong's resourcefulness and deep-rooted connection to their environment. The distinct turtle shell-shaped roofs are not merely functional in design but also carry cultural significance, echoing the group's reverence for nature.

Pillars, whether round or square, with diameters ranging from 16 to 25 cm and elevated approximately 2.5 meters above ground, serve a dual purpose (Fig. 3). Beyond safeguarding the dwelling from wildlife and facilitating ventilation, these pillars elevate the house to a realm that transcends the mundane, offering a physical and symbolic threshold that separates the human habitat from the untamed nature below.

Fig. 3: A 100-year-old stilt house in Lap Thang village, Thach Lap commune, Thanh Hoa province
Source: Quynh Tram, 2021

In a vivid depiction of cultural expression, the gable ends of these houses feature carved wooden panels illustrating five-pointed stars and the sun. This iconography is a testament to the Muong people's aspirations for divine protection and prosperity, embodying a celestial guardianship that oversees the household. Such adornments do more than decorate; they embed the living space within a cosmological framework, reinforcing the cultural lineage and the communal ethos that venerates celestial bodies.

The stilt house's spatial organization, governed by the principle of odd numbers in the arrangement of rooms and staircases, signifies a cultural affinity for growth and prosperity. This numerological consideration extends to the architectural layout, where the altar's placement at the periphery of the domicile not only designates a sacred space but also delineates the hierarchical sleeping arrangements across generations, from the elders to the youngest members.

Using wood or bamboo crafted into plank-like formations, floor construction further illustrates Muong's adeptness at creating durable and comfortable living spaces from available resources. The singular staircase, adhering to the cultural preference for odd numbers, accentuates the household's unity, leading from the communal space beneath the stilt house to the private quarters above.

Underneath the stilt house, a multifunctional area serves as a repository for firewood, a storage space for corn and rice, and a shelter for agricultural tools, encapsulating the agrarian lifestyle of the Muong people. The kitchen, an essential household domain, is integrated into this architectural ensemble by adding a secondary stilt structure, facilitating a seamless connection between culinary practices and the broader living space.

The Thai ethnic group

Unlike the stilt houses of the Muong people, the architectural embodiment of the Thai ethnic group's tradition presents a vivid narrative of environmental symbiosis and cultural perpetuity, distinctively illustrated through their stilt houses. Constructed predominantly from eco-friendly materials like wood, bamboo, rattan, palm, reed, thatch, and nipa, these structures showcase a deep-rooted connection to nature. The meticulous preparation of wood, a cornerstone of the stilt house's structural integrity, highlights the community's commitment to sustainability and durability. The selection of high-quality, termite-resistant timber for critical architectural elements such as pillars, rafters, beams, and joists underscores the intricate blend of craftsmanship and environmental stewardship. The wood for the pillars is usually large trees, cut down in the winter to avoid termites. This communal labor, underscored by Man On and Sung Dinh (2023), not only fortifies the structural foundation of these homes but also reinforces social cohesion within the village community.

The Thai stilt house, emerging from a millennia-long tradition, encapsulates a comprehensive lifestyle philosophy of "Eating sticky rice. Drinking tube wine. Wearing traditional clothes. Living in stilt houses." This ethos, deeply ingrained in the Thai identity, portrays the stilt house as a dwelling and cultural hallmark. Its architecture, a harmonious integration of function and aesthetics adapted to the mountainous terrain, symbolizes the Thai people's resilience and cultural pride.

The architectural layout, requiring three to five compartments and extensions, with adherence to odd numbers for windows, doors, and staircases, reflects a cosmological significance attached to numbers. Two staircases at either end of the house also have an odd number of steps, 9 or 11, where the "*tang chan*" (right staircase) is for women, and the "*tang quan*" (left staircase) is for men. The division of the house into three distinct levels serves practical purposes while encapsulating the Thai's cosmological views, with each level representing different aspects of domestic life and spiritual beliefs (Fig. 4-5). The house is divided into three floors: the first floor is the underfloor (*lang*) used for storing firewood and agricultural tools; the second floor is the living floor (*han huon*) for family activities; and the third floor is the attic (*khu huon*) for storing valuable items. Hence, the Thai ethnic people have the saying, "A house with an attic, a floor with pillars."

Fig. 4-5: A typical Thai ethnic group house

There are two floor plan types for the traditional Thai stilt house: one with an integrated kitchen inside the house and another with a separate kitchen connected to the main house at the end (the main house still has a kitchen, but it's mainly used to keep warm in winter). The main house typically has a floor plan of 3 compartments, three compartments – 2 extensions, or four compartments. Each compartment ranges from 2.7 to 3.2 meters wide. However, there are also houses with larger compartment sizes, over 3.5 meters. The Thai stilt house has only one main staircase located at the end, leading up to a small porch in front of the house. If the house has a separate kitchen, then only one common staircase is used, and from the porch, there is a path down to the kitchen or into the main house. There is usually a water jar on the porch for washing feet before entering the house.

A main house typically has six rows of pillars (rarely, some smaller houses have only four rows of pillars). To expand the interior space, homeowners sometimes employ the technique of hiding pillars. The staircase leading up to the house is made of wood, usually with 7 or 9 steps. The floor of the house is typically raised from 1.8 to 2.2 meters above the ground. The traditional house's floor was initially just compacted earth. However, many houses

have cement or concrete floors, which are convenient for living, storing farming tools, or other family assets. The compartments and extensions are divided into separate functional areas on the house floor. For the Thai people, the ancestral altar is usually placed in the innermost compartment, facing the same direction as the house's main beam and facing the door. It is rare for some families to place the altar parallel to the house's width. The house floor is usually divided into two levels. The area between the central and porch pillars is a step higher than the rest of the house by about 7 to 10cm (called "*dang*"). The upper "*dang*" is usually reserved for guests in front of the house. The lower "*dang*" is behind the house, where kitchen items and agricultural products are kept. Bedrooms and other sleeping areas are also typically arranged within the boundaries of these "*dang*" and on both sides of the house extensions.

In this constructed landscape, the Thai stilt house stands as a testament to architectural ingenuity. The elevated floor safeguards against dampness and wildlife. The robust construction endures the harsh mountainous climate, preserving these structures across generations. As described, the sustainable use of natural materials speaks to a legacy of environmental harmony and community collaboration, with each house forming a nucleus around which communal and familial life orbits.

The traditional Thai stilt house is positioned within a carefully curated natural tableau, surrounded by vegetable gardens, fruit trees, or fish ponds and enclosed by eco-friendly bamboo and rattan fences. This proximity to water sources and the utilization of natural defensive measures like stone embankments further exemplify the Thai's adeptness in crafting a living environment that is both protective and porous to the natural world.

The spatial organization within the stilt house, including the decision to integrate or separate the kitchen space, illustrates a nuanced understanding of domestic functionality and social interaction. The singular staircase leading to a communal porch underscores the importance of communal space in Thai architecture, facilitating social interaction and a transition from the external environment to the interior sanctum.

Ede Ethnic Group

In the verdant tapestry of Vietnam's Central Highlands, the architectural landscape is punctuated by the iconic Rong house, serving as a linchpin of communal life and a beacon of unity for the ethnic groups that inhabit this region. This structure starkly contrasts with the communal houses of the Kinh people in the Northern Delta, which embody a different constellation of cultural values and social organization. Through the analytical lens of Hoang and Nguyen (2023), a detailed examination unfolds, revealing how architectural forms are intrinsically linked to the cultural identity and communal ethos of their creators.

At the heart of village dynamics in the Central Highlands, the Rong house emerges as the quintessential communal space strategically positioned to enhance communal cohesion. Hoang and Nguyen (2023) explore its architectural nuances, emphasizing its construction from natural materials and its signature curved roof, which stand as testaments to the environmental harmony and traditional craftsmanship of the Central Highlands' ethnic communities. The absence of metal in its construction and reliance on sophisticated joinery underscores a remarkable ingenuity, showcasing a rich heritage of architectural creativity deeply entwined with the region's cultural fabric. The architectural
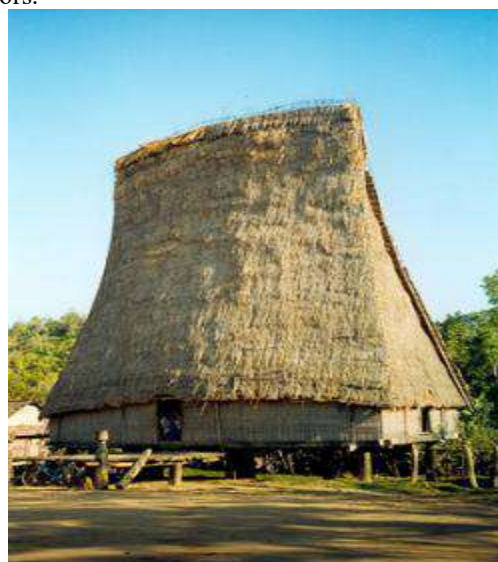

Fig. 6: The Rong house
Source: Nguyen, Thuc Hao, 2023

choice in the Rong communal houses is a profound expression of their respective environmental contexts and social realities. The Rong house (Fig. 6), usually about 10 meters long, 4 – 6 meters wide, and 15 – 16 meters tall, with its thatched roof derived from the forest's bounty, is a harmonious adaptation to the ecological resources of the Central Highlands.

The house is often built on a spacious plot of land facing North-South, cool in the dry season, warm in the rainy season, and avoiding the harsh sunlight from the West. The floor is made of wooden planks or bamboo slats, with fireplaces at both ends for warmth during winter days and for festival ceremonies. Both sides are woven with bamboo, rattan, or bamboo slats, creating a unique and eye-catching pattern. The main door is located in the middle of one wall, with a secondary door to the right of the main door. The staircase, carved from large trees, usually has 7 or 9 steps. Additionally, the Central Highlands people decorate with buffalo horns and carve intricate eight-pointed stars, simple geometric shapes, birds, and human figures on the central pillar with exquisite detail. The structure of the Rong house in the Central Highlands involves pillars connected in a post-and-lintel system, supporting the entire floor and roof with a base consisting of 10 to 14 lifting pillars, including eight main pillars and 2 to 6 auxiliary house pillars where the staircase is located.

Another unique aspect of the Rong house structure in the Central Highlands is the two roofs forming a narrow-angle at the top but creating two elliptical curves missing about 1/8 of the circle at the bottom. This design rationale suggests that when the wind blows into the roof, it creates a pathway similar to blowing across a bottle, significantly reducing the wind load on the roof. However, if the width of the Rong house is increased further, the elliptical gap between the two roofs narrows, meaning the wind load on the roof increases. These architectural features not only address practical concerns, such as reducing wind load, but also carry symbolic meanings, representing sacred spaces and the soul of the community.

The role of these structures in fostering community solidarity is paramount. The Rong house, as a communal nucleus, facilitates gatherings and ceremonies, cementing social bonds and collective identity. These spaces are not merely physical entities but vessels of communal memory and identity, embodying the spirit of unity and collective life.

Diverging from the communal living arrangements prevalent among other ethnic groups, the Ede people's unique architectural expression is manifested in their elongated houses, accommodating multiple (20 – 30) clan families under one roof. Their house is very long; for every newly formed family, one additional room will be added to the main house (in one direction), and it will continue to stretch out, possibly up to 30 rooms. This distinctive form of architecture, as noted by Hoang and Nguyen (2023), symbolizes not only the Ede people's communal living practices but also their adaptive architectural strategies, adding room for each new family unit and thus extending the house linearly. This practice illustrates a unique approach to community living and architectural expansion, reinforcing the centrality of family and clan within the Ede cultural paradigm.

The Rong house, therefore, is not merely an architectural artifact but a complex symbol of sacred space, community strength, and the enduring spirit of the Central Highlands villages. Positioned at the village's heart, it encapsulates the soul of its people, reflecting a deep connection to history, culture, and the natural environment. Through the detailed structural and decorative elements of the Rong house, the Central Highlands communities articulate their identity, values, and aspirations, crafting a living testament to their rich cultural heritage and collective spirit.

Contemporary Efforts in Preserving Architectural Cultural Values Among Vietnam's Ethnic Minorities

In recent years, under the management of the State and the determined involvement of the political system at all levels, significant achievements have been made in preserving and promoting the cultural values of the architecture of houses of ethnic minorities. The Communist Party of Vietnam has noted, "Many tangible and intangible cultural heritages have been preserved and restored. Many customs and practices of ethnic minorities have been researched, collected, and revived. Activities related to beliefs, religions, and cultural and spiritual life of the people have received attention" (Vietnam Communist Party, 2014). The political system at all levels, especially cultural officers, has thoroughly implemented and performed well in propaganda and education to enhance awareness and responsibility for preserving and promoting the culture of the architecture of houses of ethnic minorities. There is a continuous renewal in the content, form, and measures to preserve and promote the architectural culture, such as investing funds and supporting households that wish to maintain their traditional houses. Ethnic minorities actively and proactively preserve and promote the values of their traditional houses, using them carefully in all conditions and circumstances. They regularly restore and repair deteriorating or damaged parts, coordinating with skilled forces and architects in designing and preserving essential parts of the house.

The cultural values in the architecture of houses of ethnic minorities are always preserved and promoted at all times and places. The richness and diversity of the architectural culture of ethnic minorities have contributed to

making Vietnamese culture more vibrant and vital, serving as an essential resource for the country's socio-economic development.

In the current period, facing the trend of opening up and extensive international integration and the downsides of the market economy, many traditional houses of ethnic minorities no longer retain their original purity and simplicity, blending and resembling the houses of the Kinh people. Household items are purchased and invested more lavishly and modernly, especially the materials of traditional houses of ethnic minorities, which are made from readily available construction materials in the market, even concrete, no longer using precious woods or bamboo for flooring. A portion of the houses of ethnic minorities is severely degraded due to economic difficulties, lacking the funds for upgrades, repairs, or new construction. This also somewhat affects the preservation and promotion of the cultural values of the architecture of houses of ethnic minorities in Vietnam today. The requirements and tasks of Vietnam's current socio-economic development are very high, especially in resolving the harmonious relationship between economic development and ensuring social equity and progress, stable and sustainable development in various sectors and fields; along with this, many traditional cultural values, including the architectural culture of houses of ethnic minorities, are facing the risk of being diminished, forgotten, and adulterated. Resolution number 33-NQ/TW has affirmed, "The effectiveness of preserving and promoting the value of cultural heritage is not high, and the risk of diminishment has not been prevented" (Vietnam Communist Party, 2014). Therefore, preserving and promoting the cultural values of the architecture of houses of ethnic minorities is an objective necessity, posing challenges for all entities, forces, and ethnic minorities to continuously apply flexibly and creatively the Party's policies and directions on culture to local realities.

The cultural value of the architecture of a house is not only a communal living space or gathering place but also a living museum of the material and spiritual culture of ethnic minorities. However, over time, the cultural value of residential architecture has been fading, influenced by globalization, expanding foreign relations, international cooperation, and the increasing needs of ethnic minorities. Many houses are at risk of becoming commercialized, no longer retaining their traditional uniqueness in every detail and pattern. A segment of ethnic minorities has not fully realized the importance of preserving and promoting the cultural architecture of housing, which is still simplistic in thought and practice. As a result, many houses have been demolished and replaced with neat, clean, modern houses made with new advanced technology materials. There are also houses that have been built a long time ago and passed down through generations, but due to the difficult life, lack of resources, and economic constraints to redesign or repair some degraded items of ethnic minorities. Additionally, in the political system at all levels, especially at the grassroots political system, officials in charge of culture have not done well in propaganda and education among ethnic minorities; there are signs of reluctance, not being detailed and specific in grasping the situation of housing architecture of ethnic minorities. From there, advise and propose to higher levels according to the characteristics, situation, requirements, and tasks in each area.

The role and responsibility of organizations and forces in mobilizing resources to support and help ethnic minorities preserve and promote the cultural value of housing architecture has not been well played out. The grassroots political system has not been actively involved or decisive, lacking innovative thinking and approaches suitable for the characteristics, psychology, and traditional customs of ethnic minorities. The effectiveness of implementing some programs and projects of higher levels on preserving and promoting the cultural identity of ethnic minorities has not been good. There are still many poor households, and the life of a part of the population, especially in remote, distant, and secluded areas, is difficult. The traditional houses of Hmong, Thai, Muong, and Central Highlands people have been commercialized and serviced, not truly becoming a cultural value for generations to learn and remember. Some houses are too modernly decorated, not fitting the cultural space of ethnic minorities. Tourists have not found traditional cultural values in the houses of ethnic minorities; instead, they focus mainly on business and economic activities. The preservation and promotion of cultural heritage values have not been highly effective, and the risk of disappearance has not been prevented. The mass media system develops without scientific planning, wasting resources, and management not keeping up with development. Some media agencies show signs of commercialization, deviating from their principles and purposes. The mechanism and policies on economy in culture, culture in economy, and mobilizing and managing resources for culture are not specific or clear. The system of cultural institutions and the physical and technical infrastructure for cultural activities are still lacking and weak; some places are degraded, lack synchrony, and have low usage efficiency. This reality has, is, and will pose many problems for the preservation and promotion of the cultural identity of ethnic minorities in general and the cultural architecture of housing, in particular among ethnic minorities in Vietnam today.

Challenges and Strategies for Conservation and Preservation of Vernacular Architecture

The conservation and preservation of vernacular architecture in Vietnam's ethnic minority communities face numerous challenges amid rapid urbanization and modernization. These challenges threaten the sustainability of traditional architectural practices and the cultural identity they support.

Rapid urbanization is one of the primary challenges. The swift pace of urban development often prioritizes modern infrastructure over traditional architecture. This results in the displacement of historic structures to make way for new developments, leading to the erosion of cultural landscapes and the loss of intangible cultural heritage (Thi & Nguyen, 2021). Modernization pressures further exacerbate this issue. The allure of modern building materials and techniques poses a significant threat to traditional practices. Younger generations, influenced by contemporary architectural trends, may perceive traditional methods as outdated, leading to a decline in the use of traditional construction techniques and materials (Pham & Truong, 2017). Additionally, economic constraints severely hinder preservation efforts. Many ethnic minority communities, already facing economic hardships, struggle to allocate funds for the maintenance and restoration of traditional structures. This financial pressure results in the deterioration and eventual abandonment of heritage buildings (Hoang & Nguyen, 2023).

Addressing these challenges requires a multifaceted approach. Enhancing policy and governance is crucial. Government support is essential for the preservation of vernacular architecture. Developing and implementing robust policies that prioritize heritage conservation can provide a protective framework. Incentives for maintaining and restoring traditional structures, such as grants and tax benefits, can encourage community participation in preservation efforts (Communist Party of Vietnam, 2021).

Increasing public awareness about the value of vernacular architecture is also vital. Educational programs that highlight the cultural and historical significance of traditional buildings can foster a sense of pride and ownership among community members. Engaging local communities in preservation projects ensures that efforts are culturally sensitive and sustainable (Xuan Lam, 2019). Furthermore, combining traditional architectural knowledge with modern sustainability practices can ensure the relevance and continuity of vernacular architecture. Using eco-friendly materials and energy-efficient designs that respect traditional aesthetics can create a harmonious blend of old and new. This approach not only preserves the cultural heritage but also promotes environmental sustainability (Nguyen et al., 2019).

Comprehensive documentation of traditional architectural practices is vital for preservation. Research initiatives that record construction techniques, materials, and cultural significance can serve as valuable resources for future restoration projects. This knowledge base can also support educational programs and raise awareness about the importance of vernacular architecture (Do, 2021).

Lastly, international collaboration can bring new perspectives and resources to preservation efforts. Collaborating with international organizations and experts in heritage conservation can provide valuable insights and technical support, enhancing local capabilities to protect vernacular architecture (Nguyen et al., 2022).

Therefore, tackling the obstacles associated with the preservation of vernacular architecture necessitates a diverse strategy that integrates policy backing, community involvement, environmentally conscious methods, and global cooperation. Vietnam can guarantee the future generations' access to its rich architectural legacy by putting these strategies into practice.

Conclusion

In conclusion, this study highlights the urgent need to preserve the architectural heritage of Vietnam's ethnic minorities amidst the challenges posed by globalization and urbanization. Our research reveals a pressing need for innovative approaches that balance tradition with the demands of modern living. Communities exhibit a strong dedication to maintaining their cultural identity through architectural integrity, demonstrating the importance of preserving cultural heritage in urban development.

The study underscores the necessity of elevating awareness, enhancing state management, and integrating modern needs with traditional values for the sustainable preservation of ethnic architectural heritage. These efforts are pivotal not only for protecting cultural diversity but also for fostering national unity and sustainable socio-economic development.

We propose several strategies to address these challenges, including increasing public awareness, enhancing government policies and support for preservation, and developing sustainable practices that integrate modern living

needs with traditional architectural values. These strategies are essential for ensuring that the cultural and architectural heritage of ethnic minorities is preserved and enhanced, contributing to the overall social and cultural welfare in urban areas.

Overall, this study contributes to the broader discourse on urban social and cultural welfare by providing valuable insights into the preservation of cultural heritage. The findings serve as a reference for policymakers, urban planners, and researchers, highlighting the need for a holistic approach to urban development that respects and incorporates cultural and architectural values.

Author Contributions

Nhu Thi Nguyen conducted the literature review, analyzed and interpreted the data, and prepared the manuscript. *Nga Thi Khuat* contributed to the data analysis and interpretation, edited the manuscript, and provided supervision throughout the research process. Both authors have read and approved the final manuscript.

References

Almansuri, D. s., & Alkinani, A. S. (2023). Place Identity and Urban Uniqueness: Insights from the AlRusafa Area, Old Baghdad, Iraq. *ISVS e-journal*, *10*(12), 791-807. https://doi.org/10.61275/ISVSej-2023-10-12-53

Communist Party of Vietnam. (2021). *Document of the 13th National Party Congress*. Hanoi: National Political Publishing House

Do, T. (2021). *Unique walled house architecture of the H'Mong people*. Communist Newspaper. Retrieved Mar 25th, 2024 from https://dangcongsan.vn/van-hoa-vung-sau-vung-xa-bien-gioi-hai-dao-vung-dan-toc-thieu-so/tu-truyen-thong-toi-hien-dai/doc-dao-kien-truc-nha-trinh-tuong-cua-nguoi-mong-584410.html

Doan Duc. (2023). *Maintain and develop ancient and modern architecture in Ha Giang province*. Architecture Magazine of Vietnam Association of Architects. Retrieved Mar 20th, 2024 from https://www.tapchikientruc.com.vn/chuyen-muc/duy-tri-va-phat-trien-kien-truc-xua-va-nay-o-ha-giang.html

Ed.daran, D., & Malik, Z. (2024). The The International Legal Framework Governing the Protection of Cultural Heritage. *FWU Journal of Social Sciences*, *18*(3), 35-43. https://doi.org/10.51709/19951272/Fall2024/4

Edet, I. V., Udo, E., Jack, A. E., & Abner, I. P. (2024). Green Finance and Sustainable Development Nexus in Sub-Saharan Africa. *FWU Journal of Social Sciences*, *18*(2), 78-90. http://ojs.sbbwu.edu.pk/fwu-journal/index.php/ojss/article/view/2812

Hoang, H. L. (2024). Maintain and develop the traditional architectural space of the Black Thai ethnic group. *Architecture Magazine of Vietnam Association of Architects*, *2023*(11), 75-79. https://www.tapchikientruc.com.vn/chuyen-muc/duy-tri-va-phat-trien-khong-gian-kien-truc-truyen-thong-dan-toc-thai-den.html

Hoang, T. H., & Nguyen, Q. M. (2023). Decoding the genes of Vietnamese architectural culture: Part 1. *Architecture Magazine of Vietnam Association of Architects*, *2023*(1), 11-17. https://www.tapchikientruc.com.vn/chuyen-muc/giai-ma-gen-van-hoa-kien-truc-viet-nam-ky-1.html

Le, V. A., & Cao, D. S. (2024). Study on Vietnamese Design Methods of Traditional Vernacular Architecture and Discussion on Their Technical Origins. *International Journal of Architectural Heritage*, *18*(4), 622-651. https://doi.org/10.1080/15583058.2023.2177211

Luu, T. H., & Dinh, N. D. (2015). A study on passive design strategy of vernacular houses in Hoi An, Vietnam. *Journal of Science and Technology - University of Danang*, *2015*(11), 89-93. https://jst-ud.vn/jst-ud/article/view/3399

Ly, P., Birkeland, J., & Demirbilek, N. (2010). Applying environmentally responsive characteristics of vernacular architecture to sustainable housing in Vietnam. *Sustainable Architecture & Urban Development*, *4*, 287-306. https://www.irbnet.de/daten/iconda/CIB_DC22717.pdf

Man On, & Sung Dinh. (2023). *The stilt house of the Thai ethnic group*. Ethnicity and Development Newspaper. Retrieved Mar 17th, 2024 from https://baodantoc.vn/ngoi-nha-san-cua-nguoi-thai-1688112853105.htm

Minh Giang. (2018). *Transforming the traditional house architecture of the H'Mong people in Dien Bien*. DienBien Radio and Television. Retrieved Mar 22nd, 2024 from https://dienbientv.vn/tin-tuc-su-kien/van-hoa/201812/bien-doi-kien-truc-nha-o-truyen-thong-cua-nguoi-mong-dien-bien-5613735/

Na, L. T. H., Long, N. T. H., & Phuc, V. D. (2024). Proposing Solutions for Rural Housing Architecture to Adapt to Climate Change of Tien Giang Province in Vietnam. Proceedings of the Third International Conference on Sustainable Civil Engineering and Architecture,

Na, L. T. H., Park, J.-H., Jeon, Y., & Jung, S. (2022). Analysis of vernacular houses in southern Vietnam, and potential applications of the learned lessons to contemporary urban street houses. *Open House International*, *47*(3), 533-548. https://doi.org/10.1108/OHI-12-2021-0276

Nguyen, A.-T., Tran, Q.-B., Tran, D.-Q., & Reiter, S. (2011). An investigation on climate responsive design strategies of vernacular housing in Vietnam. *Building and Environment*, *46*(10), 2088-2106. https://doi.org/10.1016/j.buildenv.2011.04.019

Nguyen, A. T., Truong, N. S. H., Rockwood, D., & Tran Le, A. D. (2019). Studies on sustainable features of vernacular architecture in different regions across the world: A comprehensive synthesis and evaluation. *Frontiers of Architectural Research*, *8*(4), 535-548. https://doi.org/10.1016/j.foar.2019.07.006

Nguyen, T. N. T., & Nguyen, Q. T. (2024). Cultural Transformation and the Evolution of Festivals: The Impact of Modernization on the K'Ho Ethnic Minority in Vietnam. *Journal of Underrepresented and Minority Progress*, *8*(2), 62-88. https://doi.org/10.32674/p41bwp41

Nguyen, T. Q. (2023). Confucius' conception of the political being and its significance for building the political being in present-day Vietnam. *IKENGA International Journal of Institute of African Studies*, *24*(2), 1-23. https://doi.org/10.53836/ijia/2023/24/2/003

Nguyen, T. Q., Khuat, H. T., & Ho, T. P. (2023). Vernacular solutions for small houses in Ha Tinh City towards sustainable and adaptation to climate change. *E3S Web of Conferences*, *403*, 06011. https://doi.org/10.1051/e3sconf/202340306011

Nguyen, T. Q., Nguyen, V. T., & Nguyen, T. P. (2023). Ho Chi Minh's thoughts on the education of the young Vietnamese generation today. *Perspektivy nauki i obrazovania*, *62*(2), 562-577. https://doi.org/10.32744/pse.2023.2.33

Nguyen, V. T. A., Park, J.-H., & Jeon, Y. (2022). The spatial and environmental characteristics of Vietnamese vernacular houses in Vietnam's French colonial public buildings. *Open House International*, *47*(1), 122-134. https://doi.org/10.1108/OHI-04-2021-0078

Pham, T. L., & Truong, N. L. (2017). Modern Architecture in Vietnam or Vietnamese Modern Architecture? *Docomomo Journal*, *2017*(2), 75-81. https://www.docomomo.pt/wp-content/uploads/2019/04/DocomomoJournal57_2017_PTLoanTNLan.pdf

Phung, A. T., Nguyen, Q. T., & Le, C. Q. (2024). Changing trends of the peasantry under the impact of the current rural urbanization process in Vietnam. *ISVS e-journal*, *11*(2), 39-47. https://doi.org/10.61275/ISVSej-2024-11-02-03

Quynh Tram. (2021). *Awakening the value of stilt houses of the Muong ethnic group in Lap Thang (Thanh Hoa)*. Ethnicity And Development Newspaper. Retrieved Mar 27th, 2024 from https://baodantoc.vn/danh-thuc-gia-tri-nha-san-cua-dan-toc-muong-o-lap-thang-1640072877987.htm

Shah, A. A., Chanderasekara, D. P., & Naeem, A. (2023). Preserving the Past and Shaping the Future: An Articulation of Authenticity of Heritage within Urban Development. *ISVS e-journal*, *10*(12), 447-466. https://doi.org/10.61275/ISVSej-2023-10-12-31

Thi, H. L. V., & Nguyen, T. Q. (2021). Adaptive reuse of local buildings in Sapa, Vietnam for cultural tourism development towards sustainability. *IOP Conference Series: Earth and Environmental Science*, *878*(1), 012032. https://doi.org/10.1088/1755-1315/878/1/012032

Vietnam Communist Party. (2014). *Resolution No. 33-NQ/TW on Building and developing Vietnamese culture and people to meet the requirements of sustainable development of the country*. Hanoi

Xuan Lam. (2019). *Housing architecture of the H'Mong people*. Cao Bang Newspaper. Retrieved Mar 20th, 2024 from https://baocaobang.vn/-31404.html

Educational Reforms in Khyber Pakhtunkhwa: Impact on Out-of-School Children in Kolai Pallas, Hazara Division, Pakistan

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This is a study of the effects of government education reforms in District Kolai Pallas, Hazara Division of Khyber Pakhtunkhwa, on the dimensions of social and cultural, and institutional factors on educational access. Quantitative data was collected through surveys, then qualitative data was gathered through interviews using a mixed methods approach. The sample consisted of 40 Ministry of Education officials, 40 Tehsil school administrators, 40 parents, and 40 students, a total sample of 40 in each Tehsil. For qualitative data, it was analyzed using thematic analysis and for the quantitative data descriptive statistics (mean scores, standard deviation) were used. The findings show that even after the introduction of reforms a large proportion of children of District Kolai Pallas remain excluded from the school. The study identifies culturally specific barriers to educational access such as cultural practices and inefficiencies of institutional and economic systems. The significance of these findings is greatly enhanced by the reality that local factors play a critical role in shaping the educational sphere in the Hazara region. Finally, the research makes a valuable contribution in an additional way by showing the need for community engagement, better school facilities, and gender sensitive policy making. The study, therefore, suggests that educational reforms in Khyber Pakhtunkhwa be shaped to tackle such challenges on a regional basis ensuring effective and inclusive education to all children.

The introduction now has a more coherent structure, starting from the general picture of educational problems in Pakistan and progressing to problems in District Kolai Pallas. This lays a background to the study as it Pinpoints the government reforms as essential in solving the out-of-school children crisis. There is a lack of adequate qualitative education among the people of Pakistan, especially in rural provinces like Khyber Pakhtunkhwa (UNESCO, 2020). The District Kolai Pallas, in Hazara Division, has been reported to have many Out-of-School Children, thus affecting the future socioeconomic condition and equity (Pakistan Bureau of Statistics, 2020).

The Audit Report of the District Kolai Palas Kohistan shows that the district's literacy rate is 11.08. The Gross Enrollment Rate (GER) is 33.22 % at the Primary level and 7.53 % at middle, high, and higher secondary levels. The Net Enrollment Rate (NER) is 18.18 % at the primary level and 5.64% at middle, high, and higher secondary levels.

Many school-goers have encountered these challenges, especially in Khyber Pakhtunkhwa, where the government has sought to reform primary and secondary education sectors in many ways. This study seeks to evaluate the effectiveness of these reforms in District Kolai Pallas, Hazara Division, in increasing access to education for out-of-school children and the factors influencing the same and to make recommendations for future policies and practices based on the suggestions found in the works of Aslam and Kingdon (2012) and Bano (2018).

This study will be not only beneficial in understanding the current education system in Khyber Pakhtunkhwa province but also valuable for the policymakers and practitioners, and this burning issue of out-of-school children in this region would be effectively addressed (Andrabi et al., 2011; Siddiqui, 2020).

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Background and Context

Currently, Pakistan has a significant education problem as millions of children never attend school, especially in the rural regions (UNESCO, 2020). Literature has revealed that the education sector in Khyber Pakhtunkhwa province was suffering from deficient resources and facilities and social inequality (Khan & Khan, 2016). The Demographics section regards the Hazara Division, which encompasses the District Kolai Pallas, with large numbers of out-of-school children, escalating peculiarities concerning gender equity and economic development (Pakistan Bureau of Statistics, 2020).

Due to these challenges, the Government of Khyber Pakhtunkhwa has made several reforms to enhance ACCESS, QUALITY, and EQUITY in Primary and Secondary Education (Government of Khyber Pakhtunkhwa, 2021). However, studies reveal that it is difficult to ascertain the improvements these reforms have made to the issue of out-of-school children in the District Kolai Pallas (Bano, 2018).

This research intends to evaluate the effects of government changes on out-of-school children in District Kolai Pallas, Hazara Division, and to present advice on enhancing education in the area for policymakers and practicing educators (Siddiqui, 2020).

Aim and Scope of the Study

This study aims to determine the effect of the government's policies and structural adjustments in primary and secondary education on out-of-school children in the District Kolai Pallas, Hazara Division, Khyber Pakhtunkhwa (IDRC & Open University, UK, 2012). The scope of the study encompasses the following objectives:
Reflection on selected government policy reforms made in primary and secondary educational systems in Khyber Pakhtunkhwa in terms of executed policies, constructing facilities, and development of human resources for teachers (Khan & Khan, 2016).

Examine how such reforms have helped lower the number of out-of-school children in District Kolai Pallas, Hazara Division, and analyze what barriers still exist (Bano, 2018).

Explore the causes of out-of-school children problems in the context of the region from socioeconomic, cultural, or geographical perspectives and reflect on how the specifics of policy and measures can solve these aspects (Rugh & Bossert, 1998).

Find critical practices and successful examples from other regions/countries and suggest future educational reforms in Khyber Pakhtunkhwa (Siddiqui, 2020).

Thus, achieving the objectives above, this study aims to improve education knowledge in Khyber Pakhtunkhwa and contribute to the problem of out-of-school children in the region (Andrabi et al., 2011).

Research Questions

The following research questions will guide this study on government reforms in primary and secondary education in Khyber Pakhtunkhwa and their impact on out of school children in the District Kolai Pallas, Hazara Division:
1. What central government reforms were introduced in the primary and secondary education sector in Khyber Pakhtunkhwa?
1. How have these reforms impacted the out-of-school children issue in the District Kolai Pallas, Hazara Division?
2. Why do out-of-school children persevere in the region, and what are the possible policy and practice options for its elimination?
3. How can successful experiences, tips, and advisories of other regions or countries be utilized in future education reforms in Khyber Pakhtunkhwa?

Literature Review
Overview of Government Reforms in Primary and Secondary Education

Over the last several years, the Government of Khyber Pakhtunkhwa has embarked on some reforms to meet some of the challenges faced in the context of primary and secondary education in terms of access quality and equity (Government of Khyber Pakhtunkhwa, 2021). Some key reforms include:
1) Policy Changes: In 2021, the Government of Khyber Pakhtunkhwa launched the Education Sector Plan 2021-26: the strategic framework for education development in Khyber Pakhtunkhwa (Government of Khyber Pakhtunkhwa,

2021). New policies entail the provision of free and compulsory education, increased girls' education, and ECE (Khan & Khan, 2016).

2) Infrastructure Investments: This is evident under the head of Physical Resources, where effort has been made to extend School Capital, that is, construction of new school structures, adequate provision of sanitation facilities, and availability of these and other physical inputs for learning (Bano, 2018). Such investments include providing resources for learning and other factors to increase equity in learning (Khan & Khan, 2016).

3) Teacher Capacity Building: In light of the understanding of the teacher agency in improving Education and its outcomes, the government continues to adopt measures and policies towards improving teacher capabilities, such as pre-service and in-service training, merit, and performance-based hiring, amongst others, as noted by Bano (2018). These policies aim to enhance teacher quality, performance, satisfaction, and productivity (Siddiqui, 2020).

4) Decentralization and Community Involvement: Local decentralization and community participation in running education have also been fostered by the government through empowering the community and stakeholders to be able to participate in policy making and make school answerable to the community members (Rugh & Bossert, 1998). It is believed that such an approach will help improve transparency, responsibility, and efficiency in education (Siddiqui, 2020).

Factors Contributing to Out-of-School Children

Therefore, multiple triggers exist to assert that out-of-school children continue to remain unaddressed in the District Kolai Pallas, Hazara Division, even in reference to executive intentions to reform primary and secondary education in the country. These children can be classified in terms of socio-economic, cultural, and geographical characteristics.

1) Socioeconomic Factors: Lack of income is another factor that isolates children from school since needy families send their children to work instead of school (Aslam & Kingdon, 2012). Child labor, sometimes forced by compulsive economic reasons, may also lead to children not being in school (Lloyd et al., 2005).

2) Cultural Factors: Gender norms and traditions regarding gender roles in society can prejudice the girl child regarding schooling. Early marriages and entrenched cultural practices may deny the girl child an opportunity to go to school, as families may only educate the boy child and not the girl child (Lloyd et al., 2005). However, the fear of insecurity and the worth of education may affect parents' decisions to enroll or not enroll their children in school (Bano, 2018).

3) Geographical Factors: The District Kolai Pallas, Hazara Division, is a mountainous area with a sparse population. Far-off areas are not easily approachable, so proper access to education is difficult (Khan & Khan, 2016). Rugh and Bossert (1998) opine that when schools are few or poorly located, and there are few means of transportation to the schools, students have to cover long distances. Thus, they will not attend school.

4) Quality of Education: Several people believe that the perceived quality of education that is offered in schools is a factor that can help parents make their decision on whether to send their children to school or not. When parents get the impression that schools are providing very substandard education or are not even preparing their kids for the future, it is quite possible that parents may not place a high premium on education-related issues (Andrabi et al., 2011).

Previous Literature on Khyber Pakhtunkhwa and Hazara Division

Many researchers have looked at the issues and possibilities in the primary and secondary education sector of KPK with particular reference to the Hazara Division. Key research findings are highlighted below: Key research findings are highlighted below:

1) Education Reforms and Policy: The political realities towards education reform and the strategies into which they were placed are outlined in Bano's (2018) systematic review of Khyber Pakhtunkhwa's challenges and prospects. It also discussed the status of the local political environment, citizens' engagement, and the effects of decentralization on education.

2) Access to Education: Khan and Khan (2016) studied the appraisal of the governmental undertaking and policy measures concerning school education expansion in Khyber Pakhtunkhwa. In their study, they discovered areas of infrastructure, quality of teachers, and school availability, a problem that is evident mostly in the Hazara Division, especially in rural areas.

3) Gender and Socioeconomic Factors: In a 2005 study, Lloyd et al. looked at the impact of gender differences on school access, type, and quality in rural Pakistan and Khyber Pakhtunkhwa, particularly on enrollment choices. Main conclusions: Concerning the findings of their study, the effects of traditional attitudes towards gender and the

level of educational achievements that are influenced by the socioeconomic status of the population in the particular region were identified.

 4)   Community Involvement: According to Rugh and Bossert (1998), community engagement is the best approach to delivering education programs to communities. They state that community participation enhances attendance and equality in the delivery of education. Their research has implications for the Hazara Division, and participation in their community could assist in overcoming the issues affecting out-of-school children.

Theoretical Framework

This research applies a newer conceptual framework based on the latest theories and research in explaining the circumstances of out of school children in District Kolai Pallas, Hazara. The framework draws on several contemporary perspectives in educational reform, access and retention, to provide a very resourceful base for the analysis carried out in the thesis.

Human Capital Theory (Becker, 1964) and Contemporary Perspectives on Human Capital:

Traditional Human Capital Theory considers the economic benefits of education—skills and productivity—and more recent scholars (Heckman, 2006) have introduced the role of early education, social skills, and longer term community outcome. In acknowledging these modern perspectives, this study applies them to shed light on the ways educational reforms can expand human capital in District Kolai Pallas, focusing beyond economic productivity to the social and communities well being. Educational access is framed as a critical component of sustainable development and economic growth for the region using the theory.

Social Capital Theory (Putnam, 1995) and Community Engagement in Education:

Recently, the importance of networks, trust and community cooperation in the context of education is captured in Social Capital Theory. With more recent studies (e.g., Putnam 2000;and Woolcock 2010) of the importance of strong community ties for enhanced school attendance and educational achievement. In this study, the theory is applied to understand why and how local networks consisting of parents, teachers, and community leaders can address the needs of children who are at risk of dropping out and are able to advocate for more inclusive educational reforms in Kolai Pallas.

Gender and Education Framework (Connell, 2009; Unterhalter, 2014):

A modern interpretation of the Gender and Education Framework is used in the study and it looks at how cultural and gender norms can influence educational opportunities. More recent research (e.g. Unterhalter, 2014) stresses the need for gender sensitive educational policies which address gender based violence, discrimination and economic obstacles to girls taking up education. It will also allow to update this framework in order to explore how gender norms in District Kolai Pallas influence female student enrollment and retention and thereby determine if reforms can address these issues in a locally specific way.

Educational Policy Implementation Theory (Fullan, 2007) and Policy Feedback Theory (Schneider & Ingram, 1993):

Education Policy Implementation Theory explains how policies turn into actions where local context, resources and political will matter. This study extends Fullan's work with Policy Feedback Theory (Schneider & Ingram, 1993) that considers the effects of policies on not only proximate but also indirect political and social outcomes. This is a way to comprehend how the educational reforms in Khyber Pakhtunkhwa, particularly in the rural areas such as Kolai Pallas, could be sustained or failed from the perceptions of the policy planning institutions, donor and NGO involvement and support of the local communities.

Push-and-Pull Theory (Stearns & Glennie, 2006) and Recent Additions to Dropout Theories:

The Push-and-Pull Theory provides important insights into causes of dropout, but recent research (e.g., Rumberger, 2011) expands this conceptual framework to surface the significance of school climate, parental involvement and economic vulnerability in determining school retention. In this study, integrating these newer insights, the nature of how the combination of the school based (such as teaching quality or infrastructure) and external factors (such as economic hardship or child labor) affect high dropout rate rates will be explored. The research will also investigate ways to reform to address both the push and the pull factors with a view towards creating a more supportive educational environment.

This study is an attempt to integrate these updated theoretical perspectives to develop a comprehensive and contemporary analysis of barriers to education in District Kolai Pallas. This research will both elucidate the rationale

and policy context of education policy and local community dynamics and develop actionable recommendations for education policy interventions informed by current theories of educational access, equity, and community engagement.

Method

In this study, the authors have presented the limitations of their research quite effectively. Specifically, in the section on the methodology of the research article, the authors have discussed the research design adopted through which the impact of the government reforms on out-of-school children in the District Kolai Pallas, Hazara Division, has been measured. To investigate the issue, a mixed-methods research approach employing explanatory sequential design was adopted to collect data both quantitatively and qualitatively (Creswell, 2014). This approach makes it possible to assess the magnitude of the problem of out-of-school children as well as antecedents that contribute to this situation in the region. The participants for data collection included the Ministry of Education officials, school administrators, parents, and students. Convenient sampling technique was employed for the current study through which data was collected from EDO (Executive District Officer), DDEO (Deputy District Education Officer) (1 male, 1 female), ADEO (Assistant District Education Officer) (4 male & 4 female) head teachers (6 male, 6 female), teaches (6 male & 6 female) as well as 40 parents & students from each Tehsil. Interviews and questionnaire was used as data collection tools. Self-completed structured questionnaires were filled by households in District Kolai Pallas for socio-demographic investigative facts, educational level, and other associated reasons for children not attending school (Lloyd et al., 2005).

In-depth interviews were carried out with persons who have an interest in education, such as local government education officers, school leaders, teachers, and community representatives, to understand how current reforms in education are being enacted and felt in the selected region, as described by Bano (2018). Quantitative data was analyzed through descriptive statistics e.g. mean score and standard deviation whereas; qualitative data was analyzed by using thematic analysis. The data obtained from the interviews made textual and analyzed using thematic analysis since they were expected to expose patterns, trends, and other insights on the factors influencing out-of-school children and the efficiency of government reforms.The school mapping of District Kolai Pallas, Hazara Division, was depict the Education Reforms in Khyber Pakhtunkhwa. The quantitative and qualitative data analysis help understand the trends in out-of-school children by comparing them with the available literature reviews, government reports, and education statistics.

Limitations and Ethical Considerations

The research findings regarding governmental reform in primary and secondary schools in Khyber Pakhtunkhwa, including estimating out-of-school children in the District Kolai Pallas, Hazara Division, have some limitations and ethical issues that need to be considered.

Limitations:

a. Generalizability: The study's focus on only a selected district of the Hazara Division may limit its generalization to other areas in Khyber Pakhtunkhwa and Pakistan.
b. Selection Bias: The problem of sample bias may arise when choosing the households and key informants for data collection since they may not represent all the shades of reality in the region.
c. Reliability of Self-Reported Data: Surveys and interviews were based on data provided by the participants, which makes this form of data collection very erroneous and loaded with biases since participants hardly give out authentic information.

Ethical Considerations:

a. Informed Consent: Preemptively, one needs to make sure that participants' informed consent has been granted when data is being gathered. Participants should also be informed of the research objectives, possible dangers, and gains attached to the study and be assured that they can demographically withdraw from the study at any time.
b. Confidentiality and Anonymity: Since participants may be identified, their personal information should not be shared with other researchers or teachers, and any information that could identify the participant should not be used in analysis or reports.
c. Cultural Sensitivity: Researchers should be well informed of the cultural values and beliefs in the District Kolai Pallas and the Hazara Division so as to ensure that all research activities and participant interactions were conducted with due respect. (Anh, 2022)
d. Collaboration and Capacity Building: Offering local people and communities a voice and involvement opportunity can further help ethnically and culturally sensitive research activities. Engaging local researchers and professionals in data collection and analysis was also contributed to a better outcome and consequence because such a practice will enhance the local capacity.

Therefore, the research article was able to relate government reforms to out-of-school children with ethical limitations and considerations in the District Kolai Pallas, Hazara Division.

Government Reforms in Khyber Pakhtunkhwa's Education Sector

In this section, the author gives a broad description of the main government reformatory measures in relation to primary and secondary education in Khyber Pakhtunkhwa that were taken to increase the access, quality, and proportion of out-of-school children in the District of Kolai Pallas, Hazara Division.

Access to Education:

1. School Infrastructure Development: The government has spent Rs 138 billion constructing new schools and renovating old schools to provide a proper atmosphere for students (Education Sector Report of Khyber Pakhtunkhwa-2017-18: Government of Khyber Pakhtunkhwa, 2018).
2. Girls' Stipend Program: The female literacy rate in Khyber Pakhtunkhwa was low. Thus, to reduce the education gap, the Khyber Pakhtunkhwa government initiated the girls' stipend program for girls studying in low-income groups for secondary classes (Sathar et al., 2015).

The KP Girls Stipend Program is an initiative by the Khyber Pakhtunkhwa (KP) government in Pakistan, introduced in 2015. The program aims to provide financial assistance to girls studying in primary and secondary schools in the province. Under this program, girls from low-income families receive a monthly stipend of PKR 2,000 to PKR 4,000 to support their education expenses. The program aims to increase girls' enrollment and retention rates in schools, promoting education for girls in KP and reducing the gender gap in education.

Quality of Education:

1. Teacher Training and Development: The government of Pakistan, with the help of organizations like the Asian Development Bank, has started to launch capacity-building programs for teachers regarding their subject knowledge, teaching methods, and the incorporation of technology in teaching.

2. Curriculum Reforms: These reforms aim to improve KP's education system. The reforms focus on developing critical thinking, problem-solving, and communication skills. Introduced in 2010, the new curriculum emphasizes project-based learning, entrepreneurship, and STEM education. It also aims to reduce the emphasis on rote learning and examinations, instead promoting a holistic approach to learning. (Ali et al., 2024) The reforms have received mixed reviews, with some praising the shift towards a more practical and application-based education. In contrast, others express concerns about the lack of emphasis on traditional subjects. These concerted efforts have been made to innovate and promote curriculum relevance, coherence, effectiveness, inclusiveness, and learnability for students with the adequate knowledge and skills needed in the 21st century (UNESCO, 2017).

Governance and Accountability:

1. District Education Plans: The plan outlines a roadmap for education sector development, focusing on key areas such as curriculum reform, teacher training, infrastructure development, and community engagement. The goal is to provide quality education to all students, particularly in underprivileged areas. The roadmap also aims to increase access to education, enhance academic performance, and promote peace and social cohesion. The KP government and development partners work together to implement this comprehensive plan. In this regard, the government has initiated strategic plans for district education to manage education services at the district levels effectively, efficiently, and more plannedly (Bano, 2018).

2. Community Participation: A community participation plan is a strategic approach to engage stakeholders in the development and sharing of knowledge. The plan outlines the methods and processes for fostering collaboration, encouraging user-generated content, and building a community around a specific topic or project. (Kang et al., 2024) Effective KP community participation plans involve setting clear goals, identifying target audiences, and providing incentives for participation. By doing so, KP initiatives can harness collective intelligence, drive innovation, and amplify their impact. These measures have been taken, as most schools have Parent-Teacher Councils and School Management Committees, hoping they would act as watchdogs to increase accountability and responsivity in providing education facilities (Rahman et al., 2016).

The following government reforms are designed to tackle the problems of the primary and secondary education sector in Khyber Pakhtunkhwa and decrease the number of out-of-school children in the District of Kolai Pallas, Hazara Division.

 A. Policy and Legislation Reforms

These include providing free textbooks, conditional grant schemes, a major increase in the educational budget, merit-based teacher recruitment, and a teacher's induction program.

 B. Infrastructural Development & Resource Distribution

The KP government has launched several initiatives to improve education infrastructure, including the construction of modern schools, colleges, and universities. Additionally, the government has increased its allocation for education in the provincial budget, allowing for better resource distribution and accessibility to educational facilities. This has led to an increase in enrollment rates and improved education quality in the region (Zia-ud-Din & Elhajraoui, 2023).

 C. Teacher Education and Institution Building

Khyber Pakhtunkhwa (KP) is a province in Pakistan. As per the Annual Report 2023-24 by the Provincial Education Department, KP, a total of 11,432 government school teachers underwent further education or training, which includes teacher training programs, workshops, and courses. This training aims to enhance their teaching skills, pedagogy, and subject matter expertise. The department provides various opportunities for teachers to pursue further education, ensuring quality education for students in the province.

 D. Partnership with the Broader Community

Khyber Pakhtunkhwa (KP) has been engaging with broader communities to promote peace and stability in the region. Individuals and private organizations have been involved in this partnership, including non-governmental organizations (NGOs), community-based organizations (CBOs), and international organizations. For instance, the KP government has partnered with NGOs like CARE Pakistan and the International Rescue Committee to deliver humanitarian aid and support to affected communities. Additionally, private organizations like the Pakistan Centre for Philanthropy have also contributed to these efforts. This collaboration enables the sharing of resources, expertise, and knowledge to address the region's complex challenges.

Assessment of School Children in District Kolai Pallas

According to available data, a significant majority of children in the Kolai Palas district are out of school. Reports state that around 77% of children in the area are not attending school, making it one of the districts with the highest out-of-school rates in Pakistan.

Key points about out-of-school children in Kolai Palas:

- High percentage: Approximately 77% of children in Kolai Palas are reported to be out of school.
- Comparison with other districts: Upper Kohistan follows with around 70% out-of-school children.

It aimed and targeted out-of-school children in the District Kolai Pallas, Hazara Division, are analyzed regarding the factors causing the problem and the effects of government initiatives regarding both the primary and secondary education sectors of Khyber Pakhtunkhwa.

A. Prevalence and Trends of Out-of-School Children:

1. Enrollment Rates and Gender Disparities: Over transcriptions, the District Kolai Pallas has expressed the problem of out-of-school children, particularly girls, due to several social-cultural factors and the unavailability of resources (Lloyd et al., 2005).

 2. Regional Disparities: Hence, the education ministry notes disparities within a district's geographical areas in terms of access to education services, and children in remote areas to schools face more challenges in attending school (Khan & Khan, 2016).

B. Factors Contributing to Out-of-School Children:

1. Socioeconomic Factors: As Stearns and Glennie (2006) pointed out in their work, out-of-school children in the District Kolai Pallas are affected by factors such as poverty (33%), child labor (37%), and early marriage (30%).

 2. School-Level Factors: Factors hindering enrolment and participation in school include poor-quality school facilities, a lack of qualified teachers, and a curriculum that fails to respond to children's challenges (Bano, 2018).

C. Impact of Government Reforms:

1. Improved Access to Education: Having schools and adopting the Girls' Stipend Program (31%) through school faculty, school infrastructure development is among the reforms that have helped avail facilities for children in the District Kolai Pallas from school (Government of Khyber Pakhtunkhwa, 2018).

 2. Enhanced Quality of Education: Although these educational reforms, such as initiatives in teacher education and improvements in curriculum, have assisted in raising the quality of education in the region, there are still obstacles concerning the program's plans and provision of resources (UNESCO, 2017).

 Thus, the research article can illuminate the existing difficulties in this area and provide practical suggestions for further strategies by analyzing the rates, determinants, and effects of government reforms regarding out-of-school children in District Kolai Pallas.

Case Studies and Good Practices

This section includes the best practices and some successful cases in District Kolai Pallas and other regions to represent interventions and strategies that have been useful in coping with out-of-school children in Khyber Pakhtunkhwa.

A. Community-Based Schools:

1. Success in Afghanistan: For example, Burde et al. (2015) note that to increase enrolment figures, particularly in remote and conflict-ridden areas of Afghanistan, community-based schools have assisted in enhancing education and girls' education in particular.

2. Potential for Khyber Pakhtunkhwa: Facilitating community schools in the District Kolai Pallas, where traditional schools are out of reach, can bring down out-of-school children and help control regional educational disparities (Khan & Khan, 2016).

B. Public-Private Partnerships:

1. Punjab Education Foundation: Various forms of partnership have been proven to enhance the capacity of delivering quality education throughout the world but more so in low-income countries; for example, in Pakistan, the Punjab Education Foundation/Low-Cost Private Schools Programme has provided financial incentives, training opportunities and modest grants to low-cost private schools in a bid to enhance their performance and expand its coverage (Andrabi et al., 2013).

2. Relevance for Khyber Pakhtunkhwa: Implementing a similar model in the District Kolai Pallas will also increase the quality of education and general enrollment, including the socially disadvantaged populations associated with it (Bano, 2018).

C. Conditional Cash Transfers:

1. Success in Brazil: CC The Mexican government's social policy program of Oportunidades has helped most students attend school by subsidizing families in poor and marginalized areas. This has further helped them not drop out by paying them money, taking into consideration that their children should attend school (de Brauw et al., 2015).

2. Application in Khyber Pakhtunkhwa: Enhancing the Girls' Stipend Program in the District Kolai Pallas through CCCT can successfully overcome the socioeconomic determinants of education and contribute to increasing the rate of enrolment and retention among girls (Sathar et al., 2015).

These case studies and good practices may be worthy references for KP leadership, policymakers, and practicing educationists regarding future interventions regarding the 'out-of-school children problem ' in District Kolai Pallas, Hazara Division.

Implications

Based on the analysis of government reforms in primary and secondary education in Khyber Pakhtunkhwa and the assessment of out-of-school children in the District Kolai Pallas, Hazara Division, this study offers several key lessons learned and policy implications: Based on the analysis of government reforms in primary and secondary education in Khyber Pakhtunkhwa and the assessment of out of school children in the District Kolai Pallas, Hazara Division, this study offers several key lessons learned and policy implications:

1. Comprehensive Approach to Reforms: To resolve the problem of out-of-school children there is needed the improvement of access and quality of education policies must consider the aspirations of every group of people, including girls and other minorities (Bano, 2018; Khan & Khan, 2016).

2. Collaboration and Coordination: Education reforms involve applying funds (Rs. 120 million) and human and material resources to analyze the patterns of children's education within the school-going age populace (Andrabi et al., 2013).

3. Context-Specific Interventions: Concerning children's education in Khyber Pakhtunkhwa, the aforesaid cultural, social, and economic factors imply that it is imperative to develop culturally appropriate solutions, which are explained in the field-sensitive literature as culturally tailored, culturally endorsed, culturally grounded, culturally relevant, and culturally congruent (Lloyd et al., 2005).

4. Sustainability and Scalability: The positive pilot projects and initiatives should be assessed regularly and expanded for broader coverage to make the intervention's positive effects more lasting (Burde et al., 2015).

5. Capacity Building: Enhancing the capacity of local institutions and communities is vital to ensure that they can adequately participate in planning, executing, and evaluating the education reform processes and to promote ownership and continuation (UNESCO, 2017).

6. Data-Driven Decision-Making: High-quality and current information regarding out-of-school children and other vital learning statistics must be frequently gathered and employed in decision-making processes in policy execution and assessment (Sathar & Link, 2015).

Thus, comprehending these lessons learned and policy recommendations, Khyber Pakhtunkhwa policymakers can strengthen their actions to respond to the concerns of out-of-school children and promote the good practice of education for all.

Results and Discussion

The findings indicated that despite the numerous reforms aimed at improving enrolment and attendance in District Kolai Pallas, a significant number of children, particularly girls, remain out of school. This study resulted in the recognition of notable disparities in minority enrollment, as evidenced by the enrollment statistics. It highlighted the pronounced impact on girls, who were significantly influenced by social and cultural practices, including early marriages and prevailing cultural beliefs that favored boys' education over that of girls. The accessibility of enrollment exhibited notable inter-regional disparities, particularly impacting those areas characterized by significant geographical separation from the remainder of the district.

The research additionally revealed that external factors significantly contributed to the elevated incidence of out-of-school children in Kolai Pallas, predominantly influenced by their socioeconomic conditions. For families grappling with poverty, the sole recourse often involves enlisting their children in labor, thereby impeding the opportunities for the youth to pursue education. Culture fosters practices such as early marriages and a neglect of the education of the girl child, thereby exacerbating the issue. Interviews have indicated that a significant number of parents either undervalue the importance of education or lack the means to facilitate it for their daughters, leading to a concerning trend of female students discontinuing their schooling.

The aforementioned challenges have, nonetheless, been tackled by the government via the implementation of various measures, including the Girls' Stipend Program and the enhancement of physical infrastructure within educational institutions. Consequently, while initiatives like the establishment of new educational institutions and the allocation of stipends for girls have enhanced access to education in certain regions, the socio-cultural obstacles persist as significant and largely overlooked challenges. This study demonstrated that although these reforms have positively impacted enrollment rates, particularly in urban and semi-urban areas, they have simultaneously posed challenges in the more remote and rural districts.

Another area of concern that arose from the study was the quality of education provided to learners in the schools of District Kolai Pallas. The primary challenges confronting institutions encompass inadequately qualified personnel, substandard infrastructure, and an outdated curriculum that fails to address the needs of students. Through a thematic analysis of the responses collected during interviews, it becomes evident that these factors contribute to low student retention and elevated dropout rates. This phenomenon can be attributed to the perceived inadequacy of the education system as viewed by both parents and students, who regard the education provided to them as disconnected from their future aspirations.

Additional obstacles arise from geographical challenges; for example, the Kolai Pallas district, located in a mountainous area, presents significant difficulties in accessing education. It was also revealed that children residing in rural regions must traverse considerable distances and navigate challenging terrains to reach the nearest educational institution, resulting in prolonged journeys to and from school, which consequently leads to infrequent attendance. A considerable number of parents and guardians face inadequate transportation options, and the majority of the roads in these areas are in a state of disrepair; this significantly impedes children's consistent attendance in school.

The findings indicate that governmental reforms have made strides in enhancing educational access in District Kolai Pallas; however, certain limitations persist. The research indicates that forthcoming reforms must be situated within and responsive to the socio-cultural and geographical contexts of this district. A more comprehensive strategy is thus necessitated, one that transcends mere physical construction of institutions and the provision of financial incentives to parents. It is essential to engage stakeholders in a broader commitment to fostering education for girls and enhancing the quality of education overall.

Conclusion and Recommendations

The study articulates its findings and recommendations and stresses the necessity of implementing a complex context-sensitive approach to tackling the challenges faced by the district's education system. This research article compares government reforms in primary and secondary education in Khyber Pakhtunkhwa, focusing on the problem of out-of-school children in District Kolai Pallas, Hazara Division. Based on the conclusions made in this

paper, the following recommendations are suggested to mitigate the identified challenges and boost the effectiveness of government intervention strategies in the region.

This education reform policy should cover both the expansion and improvement of education for special categories of the population, such as girls or members of the marginalized section of society. Strengthen the 'early-warning' and 'quality-assurance' systems regarding how government reforms are being implemented and what corrective action is being taken.

Carry out educational information and publicity to educate the community on the importance of education, especially for the girl child, and to change negative perceptions and practices that limit children's chances to go to school (Lloyd et al., 2005). Extend the Girls' Stipend Program and incorporate such a conditional cash transfer system with low-income families to reduce poverty and related impacts on the education process and attendance (Sathar et al., 2015).

Enhance school structures by providing basic facilities like purified water for drinking and sanitation to enhance the learning environment and encourage the number of children going to school (Bano, 2018). Promote teacher capacity through training and support so that schools produce qualified, motivated human resources and relevant curricula that meet society's needs as specified in the UNESCO 2017 initiative.

Set up community-based schools in hard-to-reach areas to enhance literacy rates in the regions (Burde et al., 2015). Promote partnerships between the government and private institutions to increase the capability and availability of education services, as the Punjab Education Foundation's work has been quite successful (Andrabi et al., 2013). According to Bandura's theory, children learn from observing others in their social environment. Implementing community-based schools in remote areas and providing teachers with continuous professional development can be positive models for students. When children see educated role models, especially teachers from their communities, they are more likely to aspire to stay in school and achieve educational success. Fostering partnerships between public and private institutions can offer diverse examples of successful educational models.
By integrating these theoretical approaches, the education reforms in District Kolai Pallas and Khyber Pakhtunkhwa can address both the immediate challenges of out-of-school children and the long-term sustainability of educational improvements in the region

The above recommendations should be implemented to strengthen Khyber Pakhtunkhwa and the District Kolai Pallas, Hazara Division's commitment to fight the problem of out-of-school children and enhance the cause for enhancing quality education for children.

References

Ali, S., Raza, A., & Khan, M. F. (2024). Prisons as Pathways to Rehabilitation or Criminality? A Case of Haripur Jail. *FWU Journal of Social Sciences*, *18*(3).

Andrabi, T., Das, J., & Khwaja, A. I. (2013). Students today, teachers tomorrow: Identifying constraints on the provision of education. Journal of Public Economics, 100, 1-14.

Andrabi, T., Das, J., Khwaja, A. I., & Zajonc, T. (2011). Do value-added estimates add value? Accounting for learning dynamics. American Economic Journal: Applied Economics, 3(3), 29-54.

Anh, T. T. N., Phong, N. T., & Jan, A. (2022). Klews Chart's Contribution to Promoting Students' CreativityIn Stem Education with the Topic Optics. *FWU Journal of Social Sciences*, *16*(4), 73-88.

Asian Development Bank. (2016). Supporting Human Capital Development in Khyber Pakhtunkhwa. Asian Development Bank.

Aslam, M., & Kingdon, G. G. (2012). Parental education and child health—understanding the pathways of impact in Pakistan. World Development, 40(10), 2014-2032.

Bano, M. (2018). The politics of education reform in Pakistan: The case of Khyber Pakhtunkhwa province. In Pakistan's Political Economy (pp. 119–144). Palgrave Macmillan, Cham.

Becker, G. S. (1964). Human capital theory. Columbia, New York.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77–101.

Burde, D., Guven, O., Kelcey, J., Lahmann, H., & Al-Abbadi, K. (2015). What works to promote children's educational access, quality of learning, and well-being in crisis-affected contexts? Education Rigorous Literature Review. Department for International Development.

Creswell, J. W. (2014). Research design: Qualitative, quantitative, and mixed methods approaches (4th ed.). SAGE Publications.

de Brauw, A., Gilligan, D. O., Hoddinott, J., & Roy, S. (2015). The impact of Bolsa Família on schooling. World Development, 70, 303-316.

Fullan, M. (2007). The new meaning of educational change. Teachers College Press.

Government of Khyber Pakhtunkhwa. (2018). Khyber Pakhtunkhwa Education Sector Plan 2015-2020. Government of Khyber Pakhtunkhwa.

Government of Khyber Pakhtunkhwa. (2021). Khyber Pakhtunkhwa Education Sector Plan 2021-2026. Peshawar: Government of Khyber Pakhtunkhwa.

Kang, M. A., Saeed, A., & Shaheen, F. A. (2024). Exploring Teachers' Perspectives on Utilizing Local Resources to Address Substance Abuse within Schools. *FWU Journal of Social Sciences*, *18*(3).

Khan, R. M. A., & Khan, F. A. (2016). Government initiatives and policy options to increase access to education in Khyber Pakhtunkhwa, Pakistan. South Asian Studies, 31(2), 509-525.

Lloyd, C. B., Mete, C., & Sathar, Z. A. (2005). The effect of gender differences in primary school access, type, and quality on the decision to enroll in rural Pakistan. Economic Development and Cultural Change, 53(3), 685–710.

Moser, C. O. (1993). Gender planning and development: Theory, practice, and training. Routledge.

Pakistan Bureau of Statistics. (2020). Pakistan Social and Living Standards Measurement Survey 2019-2020. Islamabad: Pakistan Bureau of Statistics.

Putnam, R. D. (1995). Bowling alone: America's declining social capital. Journal of Democracy, 6(1), 65–78.

Rahman, T., Jafar, R., & Aziz, M. (2016). Community participation in education in Khyber Pakhtunkhwa: A case study. Journal of Elementary Education, 26(2), 95-110.

Rugh, A., & Bossert, T. (1998). Involving communities: Participation in the delivery of education programs. Washington, DC: Academy for Educational Development.

Sathar, Z., Wazir, A., & Sadiq, M. (2015). Struggling against the odds of poverty, access, and gender: Secondary schooling for girls in Pakistan. The Lahore Journal of Economics, 20, 51-74.

Siddiqui, S. (2020). Education reforms in Pakistan: Challenges and prospects. Journal of Educational Research, 23(1), 21–36.

Stearns, E., & Glennie, E. J. (2006). When and why dropouts leave high school. Youth & Society, 38(1), 29–57.

UNESCO. (2017). Education Policy Review: Khyber Pakhtunkhwa Province, Pakistan. UNESCO.

UNESCO. (2020). Global Education Monitoring Report 2020: Inclusion in Education: All Means All. Paris: United Nations Educational, Scientific and Cultural Organization.

Zia-ud-Din, M., & Elhajraoui, F. E. (2023). Role of Artificial Intelligence in Legal Education in the 21 st Century. *FWU Journal of Social Sciences*, *17*(2).

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