***Summary***

***By drawing in institutional theory and technological, organizational, and environmental (TOE) framework, this comparative study explores the varying contextual and institutional factors within developing and developed countries that significantly influence the adoption of ChatGPT within their respective higher education institutions. The research follows a qualitative approach, a combination of purposive and convenient sampling techniques to recruit 24 faculty members as research respondents from both public and private universities of selected developing and developed countries to participate in semi-structured interviews. The results of the study are presented and interpreted through using Word Cloud (WC) and thematic analysis. The comparative outcome of the research delineates the inconsistency between adoption patterns across developing and developed countries owing to their unique institutional contexts. Through the lens of institutional theory and TOE framework, the findings suggest that normative, coercive, and mimetic pressures along with TOE factors shape the adoption patterns across developing and developing countries. By providing a comparative perspective, it fulfils the existing gap in literature highlighting the institutional pressure or factors underexplored in previous studies.***

**RESEARCH TITLE: INTEGRATION OF CHATGPT IN THE HIGHER EDUCATION SECTOR: UNDERSTANDING THE ROLE OF INSTITUTIONAL CONTEXT THROUGH COMPARATIVE ANALYSIS OF DEVELOPING VS DEVELOPED ECONOMIES**

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* 1. ***Introduction***

***Artificial intelligence (AI) has tremendous potential to permeate in every business subdivision, and the higher education sector is no exception. It has the capability of driving efficiency and innovation to unprecedented levels, drawing the scholarly attention to further explore its multifaceted influences (Wang & Lin, 2023; Zhai et al., 2021; Dwivedi et al., 2023). ChatGPT (Chat Generative Pre-Trained Transformer), introduced by OpenAI in November 2022, stands out among these cutting-edge technologies due to its versatile natural language capabilities. To date, numerous studies have been conducted to study the concerns and hopes presented by AI tools such as ChatGPT in the realm of higher education (Budhathoki et al., 2024; Chan, 2023).***

***Although the impact of ChatGPT has been extensively studied, there remains a prospect of investigating adoption patterns, which may vary across different countries due to their unique technological, organizational, environmental, and institutional contexts. The literature signifies a gap in the research focusing on identifying the cultural and institutional factors that influence the widespread adoption of ChatGPT (Jafari & keykha (2023), Al-Mughairi & Bhaskar (2023), and Budhathoki et al (2024).***

***This gap is noteworthy as it affects the organizational ability to full leverage its benefits as low implementation hinders their capability to take full advantage of ChatGPT’s potential underscoring the call for further inquiry across countries having different institutional and contextual factors in their respective higher education sectors.***

* 1. ***Research Objectives***

***Objective#1: To understand the role of different institutional and contextual factors within developing and developed countries that influence the adoption of ChatGPT in higher education.***

***Objective#2: To analyze the how differences in institutional and contextual factors either hinder or facilitate the adoption of ChatGPT within developing and developed countries.***

* 1. ***Methodology***

***The research adopts exploratory perspective, and the authors relied on qualitative research approach to examine how institutional factors influence the adoption decision of higher education institutions across developing and developed countries. Since the study is qualitative in nature, data is collected through semi structured interviews. Owing to flexibility to identify, analyze, and report patterns within the data, thematic analysis is used (Braun & Clarke, 2006). The data analysis involves six steps as shown in the table below.***

**Table 1.** Steps of data analysis

|  |  |
| --- | --- |
| Steps involved | Description for data analysis |
| 1. Data familiarization
 | *Textual and audio data is transcribed by reading and listening the data multiple times to identify patterns and emerging themes.* |
| 1. Deriving initial codes
 | *Interview data is analysed and assigning meaningful phrases by considering individual unit equally to consider the respondents opinions.*  |
| 1. Generating primary themes
 | *The primary codes were generated according to research questions, and primary themes were developed.* |
| 1. Revisiting Themes
 | *The entire dataset is reviewed by merging the similar codes, ensuring sufficiency of codes, and consistency of patterns within coded data.*  |
| 1. Labeling Themes
 | *Assigning names to the final themes and defining narratives for them to address the research questions.* |
| 1. Report writing
 | *Final report writing by presenting results of thematic analysis as a summary of key findings and quotes from participants’ interviews for all themes.*  |

***To attain a comprehensive insight into the topic across various contexts, qualitative data is collected from the faculty members of universities from five developing countries- Pakistan, Oman, Saudi Arabia, China, and Thailand- as well as five developed countries i.e. Finland, Hongkong, Ireland, Portugal, and UAE from both public and private universities using convenience sampling technique. As this approach is feasible to gather data from researchers’ professional networks and online professional portals such as LinkedIn. For sample size, the research relied on the most prevalent recommendation of Baker and Edwards (2012), and a total of 24 respondents were selected with 12 faculty members representing developing countries, and 12 faculty members from developed countries. The interviews were conducted via face-to-interaction, and utilizing online platforms such as Zoom /Teams calls to record their answers. The interviews comprised of 11 open-ended questions, and each interview lasted between 30-45 minutes. The researcher recorded and taken notes during the interviews.***

* 1. ***Results***

***The research employed Word Clouds (WCs) to summarize critical points from the interview findings, leveraging the capability to visually represent the most recurring keywords in qualitative data. The more frequently a word appears, the larger it is displayed in the word cloud. The results of the study are presented through identifying four main themes, each represented by its corresponding world WC by Displayr analysis.***

* + 1. ***Themes-1:******Attitude towards the adoption of ChatGPT***

***The comparative analysis between the academic fraternity of both developing and developed countries presented both supportive and skeptical approaches reflecting range of diverse attitudes, concerns and institutional responses. Except Oman, about 90% of the respondents from developing countries such as China, Oman, Saudi Arabia, and Pakistan showed a cautious stance in the beginning of the fear of losing university quality reputation due to over-reliance on the tool affecting creativity and learning. As opposed to this, 70% faculty members from developed countries including Hong Kong and UAE demonstrated their enthusiasm and swift adoption of ChatGPT due to its inherent potential to assist with course deigning and students’ assessment. However, a moderate number of respondents from Portugal and Ireland indicated their cautious and worrisome approach on it potential harmful influence on traditional teaching methods.***



* + 1. ***Theme-2: Institutional Support***

***On institutional support in terms of proper guidelines or policies, nearly 80% of respondents from all the developing countries recorded their disillusionment and stated that they had no regulatory policies or guidelines in place whereas remaining 20% of either reported institutional guidelines on ethical use of ChatGPT while others were unsure of any such policies imposed by their respective universities. Developed countries, on the other hand, reported a comprehensive set of guidelines/policies governing the use of ChatGPT. 70% of the respondents from Hong Kong and Finland indicated that their universities have established comprehensive guidelines addressing the concerns related to biasness, fairness, and academic integrity. However, the lack of awareness of somehow reported across both developing and developed countries.***



* + 1. ***Theme-3: Technological proficiency***

***Among developing countries, only 15% of Omani and Saudi respondents stated that their universities are equipped with the best technological infrastructure, and strong IT department capabilities, and robust financial resources while other 60% from China, Pakistan, and Saudi recorded non-alignment of the tool with the existing infrastructure or institutional goals. Overall, 60% of respondents from the developed countries such as Finland and Hong Kong stated higher levels of technological proficiency and IT readiness, though there exist some financial and infrastructural challenges among few.***



* + 1. ***Theme-4: Competition Intensity***

***The competitive pressure for the adoption of ChatGPT within developing countries was low to non-existent as the universities in the region were more concerned about the harmful effects of ChatGPT. However, 40% of respondents from Thailand, Oman, and Saudi showed a palpable sense of enthusiasm to adopt ChatGPT following the footsteps of developed countries. On the contrary, 70% of the developed world countries such as Hong Kong, UAE, and Finland, as being the trend-setters in adopting novel technologies experienced intense pressure from their competitor universities to immediately adopt ChatGPT.***



* 1. ***Conclusion and Discussion***

***The research concludes that despite numerous opportunities that adoption of ChatGPT could offer to higher edcuation institutions, it has not seen substantial and uniform adoption across develping and developed countries. This is primarily due to their distinct institutional environments i.e. technological resources, competition intensity, environmental uncertainity, and regulatory environment. Overall, both developing and developed countries experience their own unique set of challneges, but having better technological infratstucre, faculty expertise, regulatory support, environmental certainity, alignment with their organizational gaols, and healthy competition enabled developed countries for smooth integration of ChatGPT is inline with the findings of (Agrawal, 2023) as opposed to their developing world counterparts. Meanwhile, lack of sound technological infrastructure, absenece of institutional regulatory gudielines, and environmental uncertainity resticted developing countries from full-fleged adoption of ChatGPT which corraborates the findings of Al-Mughairi & Bhaskar (2023), Chan (2023)******, Hidayat-ur-Rehman & Ibrahim (2023), Chan & Lee (2023). Nevertheless, there exist some exceptions where developing countries reposnded to the mimetic pressures and competition from other institution to adopt ChatGPT, as it supports their organziational goals and professional obejctives. Moreover, by theoretically grounding in institutional theory and TOE framework, this rseearch provides robust foundation to understand the dynamics of ChatGPT adoption in higher education insitutions. It also address the exisiting gap in the litertaure by crictically analzing the insitutional and contextual fcators across the developing and developed countries by offreing a compartive perspective- an aspect often overlooked in the previous studies. Lastly, the study proposes four rseearch propositions as under;***

***Research Proposition 1- Normative pressures are responsible for either supportive or opposing attitudes towards the adoption of ChatGPT within higher education of developing and developed countries.***

***Research Propostion 2- The regaulatory support in developing and developed countries may faciliate or hinder the adotip of ChatGPT within higher education sector.***

***Research Propostion 3- Technological infrastructure, staff readiness, resource proficiency, and insitutional support correlates to higher or lower adoption rates of ChatGPT within dveloping and devloped countries.***

***Research Propostion 4- Competitive pressures and environmetal uncertainty can have significant influence on the adoption rates of ChatGPT within developing and deveoped countries.***

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