MSc Computer Science & Big Data Analytics

ChatGPT: The advancement of knowledge and incorporation for its users - Discussion

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Word Count – ???

# Discussion of Results

Now the results are elucidated above, this section evaluates results with the data collected, against the research questions and hypotheses, all to answer whether ChatGPT enhances user knowledge as well as incorporation into routine knowledge acquisition.

## Results from Research Objectives.

Findings from RQ1 indicate that not only has ChatGPT been widely used by most survey participants, but it also supports the theory and previous research indicating active usage by the public.

Regarding RQ2, the data indicates unanimous support among respondents for the theory that using ChatGPT enhances their knowledge. The analysis of RQ2 reinforces the significance found in RH1, indicating that ChatGPT usage increases the likelihood of improving user knowledge. Thus, the results provide evidence that participants perceive ChatGPT as a valuable tool for gaining deeper insights into subjects of their interest.

This insight, discovered in the current study, aligns with similar themes and findings observed in previous research conducted by Tlili et al. [10] and Haque et al. [31], who recorded user experiences of early adopters of ChatGPT.

Results from RQ3 and RH2 provide interesting insights regarding the incorporation of ChatGPT into routine knowledge acquisition. While approximately two-thirds of participants reported integrating ChatGPT into their knowledge acquisition process, the binomial test in RH2 did not show statistical significance (p > 0.05), with the p-value recorded at > 0.15. However, the Pearson's Correlation Coefficient revealed a moderately positive relationship (r = 0.620661) and statistical significance (p < 0.008) between users who found ChatGPT enhanced their knowledge and its incorporation into routine knowledge acquisition.

Hence, based on the information presented above, users show a willingness to incorporate ChatGPT further into their daily knowledge-gathering activities, provided they have experienced enhanced awareness through its use in the past.

**Findings from Supplementary Insights**

In addition to the outcomes evaluating the research objectives of this study, supplementary analyses were conducted on select remaining survey questions that were completed by the participants.

The analysis of question four, focused on user’s rating of the response received from ChatGPT based on the prompt entered, provides valuable insights into the perceived usefulness of the system's generated responses. As shown in Fig. 4, 9 of the 17 participants (52.94%) rated the response of ChatGPT at 4 or higher, suggesting a substantial proportion of users found ChatGPT's responses to be highly relevant and tailored to their queries, meeting their specific information requirements effectively. The high percentage of participants selecting rating 4 indicates a positive user experience, reflecting the system's ability to generate contextually appropriate and accurate responses.

The supplementary analyses on question nine, where participants compared ChatGPT with other tools for knowledge acquisition, revealed valuable insights. Fig. 5 shows approximately 76% of participants rated ChatGPT favourably, finding it efficient in acquiring knowledge compared to Google searches or browsing YouTube. These positive ratings suggest ChatGPT's promise as a valuable tool for gathering information on specific topics, leveraging its natural language processing capabilities to enhance the user experience. However, around 24% of participants gave lower ratings, indicating ChatGPT's limitations in certain instances. Further investigation into these contexts could offer valuable insights for future improvements.

**Limitations to Address**

### This section discusses the limitations encountered during the research on the user perspective of ChatGPT utilisation. These limitations warrant careful consideration to ensure the accuracy and reliability of the research outcomes and to identify opportunities for further investigations.

### Participation in Study

### One primary limitation of this study is the small number of survey submissions available for data collection, analysis, and insight generation. Only 17 participants volunteered to take part in the survey. While the data collected contributed to the findings, the limited sample size may impact the generalizability of the research. With a larger and more diverse participant pool, a broader understanding of the research questions and hypotheses could have been attained.

### Research Scope

The research aimed to explore the user perception of ChatGPT as a tool for knowledge enhancement and adoption. However, while survey questions were used to address the research objectives, additional questions in the survey data could have enriched the research measurements or expanded the scope further. For instance, analysing the relationship between the prompt entered in ChatGPT and the participant's rating of the response, or investigating the correlation between the rating of response and participant's rating of ChatGPT compared to other usable tools, could have provided valuable insights. Furthermore, exploring how industries or courses participants were involved in might have influenced the results could have offered a deeper understanding of the findings. Considering the scope of this research, it serves as a starting point for exploring numerous criteria related to ChatGPT user perception in future studies. The initial investigation has laid the groundwork for collecting and measuring various aspects of user perception.

### Methodology

The employed research methodology in this study was quantitative, chosen for its simplicity and efficiency in data collection and analysis, given the time and resource constraints of the research. However, adopting a mixed methods approach, combining a quantitative survey study with qualitative follow-up interviews, could have provided a more comprehensive understanding of how participants perceive ChatGPT and its usage, offering valuable contextual insights. Despite this limitation, the quantitative survey and its presented results represent an initial breakthrough in this research area, creating a foundation for future investigations to delve deeper into participants' perceptions.

Limitations - What cant the results tell us

* Acknowledge dissertation limitations to demonstrate credibility
* Provide accurate presentation of what can and cannot be concluded.
* Only mention limitation relevant to research and objectives and evaluate impact had on achieving aims of research
* After noting limitations reiterate why results are valid for the purpoe of answer research questions

List limitations: