Analyzing How Text Prediction Affects Mental Load and Decision-Making Styles in Young Adults

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The widespread use of Word Suggestion Features (WSF) in digital communication platforms has reshaped how individuals interact with text. While WSF improves efficiency by predicting input and reducing keystrokes, its psychological effects on cognitive load and decision-making remain underexplored. This study investigated 201 young adults from Chidambaram Taluk and Cuddalore District in Tamil Nadu to examine how WSF influences perceived cognitive load and decision-making styles. Standardized assessments revealed that frequent WSF use was linked to higher physical and temporal demands, greater frustration, and elevated cognitive load. Users also showed a stronger preference for Dependent and Avoidant decision-making, suggesting reduced cognitive autonomy. Gender variation appeared in Avoidant decision-making, while other styles were unaffected. These results support earlier findings, such as Bhat et al. (2023), who demonstrated that next-phrase suggestion systems subtly guide writing processes, and Levy et al. (2021), who showed automated tools influence decision-making subconsciously. Although WSF improves efficiency and reduces mental effort, heavy use also increases frustration and time pressure, indicating psychological costs. The correlation with Dependent and Avoidant decision-making further suggests a decline in independent analytical engagement. Overall, the study highlights a paradox: WSF enhances productivity but simultaneously shapes decision-making tendencies and increases cognitive demands. The findings emphasize the need for awareness of digital reliance and encourage further interdisciplinary research on its psychological implications.

Keywords: *Word Suggestion Feature, Cognitive Load and Decision-Making Styles.*

1. INTRODUCTION

The rise of digital communication has transformed how individuals interact with text, with features like predictive text, auto-correct, and word suggestion becoming integral to modern platforms. The Word Suggestion Feature (WSF) enhances typing efficiency by offering real-time predictions based on user input. While WSF improves speed and accuracy, its cognitive implications especially among young adults are less understood. Research suggests that WSF may reduce cognitive load by minimizing keystrokes, yet overreliance could hinder critical thinking and influence decision-making, creativity, and language use. This review explores how WSF impacts cognitive load and decision-making styles, aiming to shed light on its broader psychological effects in everyday digital communication.

2. WORD SUGGESTION FEATURE

The Word Suggestion Feature (WSF), also known as autocomplete or predictive text, is a digital tool designed to offer real-time suggestions of words or phrases as users' type, thereby enhancing communication efficiency (Karat et al., 2011). It performs several key functions, including saving time by minimizing keystrokes, improving typing accuracy by reducing errors (Shneiderman, 2016), and increasing overall efficiency by facilitating quicker word selection (White & Roth, 2009). Additionally, WSF reduces cognitive load by lowering the mental effort needed during typing and searching (Lazar et al., 2016), and often incorporates personalization by learning from user behavior to provide more tailored suggestions (Sullivan, 2013). The impact of WSF on users includes both advantages and disadvantages. On the positive side, it significantly saves time, enhances user experience through predictive accuracy, helps prevent spelling and grammatical mistakes, and adapts to user preferences over time through machine learning. However, there are notable drawbacks, such as concerns over privacy due to over-personalization, the potential for users to become overly reliant on the feature—leading to diminished spelling and grammar skills—and occasional inaccurate suggestions that can interrupt or mislead user input. Overall, while WSF improves convenience and efficiency in digital communication, it also raises important questions about its long-term cognitive effects.

3. COGNITIVE LOAD

Cognitive Load refers to the mental effort required to process information during learning or task performance. It is defined as "the mental effort that is imposed by the instructional task" (Paas & Van Merriënboer, 1993, p. 358). Cognitive load is typically categorized into three types: intrinsic, extraneous, and germane. Intrinsic cognitive load is inherent to the complexity of the material being learned and cannot be altered (Sweller, 1988; Paas & Van Merriënboer, 1994). Extraneous cognitive load arises from the way information is presented and can be minimized through effective instructional design (Sweller, 1988; Paas & Van Merriënboer, 1994). Germane cognitive load is the beneficial mental effort used for learning and building schemas (Paas & Van Merriënboer, 1994). Several factors influence cognitive load, including task complexity, prior knowledge and expertise, instructional design, working memory capacity, and emotional state (Sweller, 1988; Mayer, 2009; Miller, 1956; Eysenck, 1982). High task complexity and poor instructional design increase cognitive load, while greater prior knowledge and higher working memory capacity can help reduce it. Emotional factors such as stress and anxiety can further elevate cognitive load. The impact of cognitive load on human functioning is profound; excessive cognitive load can hinder learning, impair decision-making, and reduce performance efficiency (Sweller, 1988; Eysenck, 1982). It may also lead to frustration, decreased motivation, cognitive biases, poor judgment, and in long-term cases, burnout, and mental exhaustion (Schunk, 1991; Kahneman, 2011; Maslach & Jackson, 1981).

4. DECISION-MAKING STYLES

Decision-making is the cognitive process of selecting the most suitable course of action from multiple alternatives to achieve a desired goal or solve a problem (Simon, 1960; Mintzberg, 1973). Decision-making styles refer to the individual's characteristic approach to making decisions, which significantly influences how decisions are formulated and executed (Rowe & Mason, 1987). There are several recognized styles of decision-making. The intuitive style relies on instinct and gut feelings (Rowe & Mason, 1987), while the behavioral style considers social norms and interpersonal relationships (Mintzberg,

1973). The normative style emphasizes adherence to established rules and procedures (March & Simon, 1958), and the dependent style is marked by a reliance on others, such as experts or authority figures (Scott & Bruce, 1995). The spontaneous style involves impulsive, quick decisions without thorough evaluation (Thayer, 1988), whereas the systematic style follows a logical, analytical process with careful assessment of alternatives (Simon, 1960). The avoidance style, on the other hand, is characterized by procrastination or evasion due to fear of uncertainty or making wrong choices (Janis & Mann, 1977). The decision-making process typically follows a structured approach: identifying the problem, gathering relevant information, exploring alternatives, evaluating options, selecting the best alternative, implementing the decision, and reviewing the outcomes. This process ensures rationality and helps improve future decision-making. Decision-making is influenced by a range of internal and external factors. Internal factors include personality traits such as risk tolerance (Allport, 1961), attitudes towards uncertainty (Fishbein & Ajzen, 1975), emotional states like fear or excitement (Damasio, 2004), cognitive biases (Kahneman & Tversky, 1979), and personal values or beliefs (Rokeach, 1973). External factors include environmental elements such as culture and societal norms (Hofstede, 1980), social influences from peers and family (Cialdini, 2009), organizational structures and policies (Mintzberg, 1973), economic conditions (Samuelson & Nordhaus, 2009), time constraints (Maule & Edland, 1997), and technological advancements that support or shape decision-making through information access and data analysis (Kaplan & Haenlein, 2010). Together, these elements underscore the complexity of human decision-making and the multiple forces that shape it.

5. LITERATURE REVIEW

Advait Bhat et al., (2023) conducted a study on "Interacting with next-phrase suggestions: How suggestion systems aid and influence the cognitive processes of writing," investigates the interaction between amateur writers and next-phrase suggestion systems. The study involved a sample size of 14 participants who wrote two movie reviews each, resulting in a total of 28 sessions. Utilizing qualitative analysis through concurrent and retrospective think-aloud protocols, the research employed purposive sampling of non-native English speakers who had completed their K-12 education in English. The mixed-design qualitative experiment compared writing with and without suggestions, focusing on the degree of misalignment between the writer's sentiment and the suggestion system's bias. The findings revealed that writers engaged with suggestions in complex ways, using them for proposing ideas, translating language, and transcribing text, while also experiencing increased cognitive load due to the need for constant evaluation of suggestions. This often led to distraction and changes in writing plans, with writers abstracting themes and structures from suggestions even when they disagreed with the content. The degree of misalignment significantly influenced the evaluation and incorporation of suggestions, highlighting the intricate relationship between cognitive processes in writing and the influence of AI-powered suggestion systems, thus emphasizing the necessity for a more holistic understanding of writer-suggestion interactions.

Ariel Levy et al., (2021) conducted a study on "Assessing the Impact of Automated Suggestions on Decision Making: Domain Experts Mediate Model Errors but Take Less Initiative". A sample of 18 clinicians from 9 different medical institutions in the United States was studied. The research utilized purposive sampling to recruit participants with at least two years of medical school experience. Data analysis involved statistical methods such as the Aligned Rank Transform (ART) procedure, Mann-Whitney U test, and Kruskal-Walli's test. The study employed a mixed-methods design, consisting of two stages: one focusing on label recommendations and the other on pre-populated annotation suggestions. The findings revealed that while domain experts were generally adept at recognizing when to rely on automated suggestions, the presence of pre-populated suggestions led to a significant loss of agency, as users accepted incorrect annotations more readily and created fewer new annotations. This loss of initiative was not correlated with their prior competency, indicating that the cognitive load associated with automated suggestions can adversely affect decision-making processes, as users believed the pre-annotations made the task easier yet exhibited less critical engagement,

which is crucial for effective decision-making in clinical text annotation tasks.

Dvir. N. et al., (2022) conducted a study on "The Ways of Words: The Impact of Word Choice on Information Engagement and Decision Making". The study utilized a sample of 8,561 distinct participants, all of whom were undergraduate students at a large research university in the United States. The data analysis methods employed included ANOVA and t-tests to assess the differences in evaluation, selection, and retention rates among various word choices. The sampling technique used was snowball sampling, where participants were recruited via a listserv and asked to forward invitations to others. The research design was a quantitative survey administered through Qualtrics, focusing on the impact of word choice on information engagement (IE) and decision-making. The findings concluded that variations in phrasing, specifically word choice, significantly affect participation, perception, and perseverance, which are dimensions of IE. The study highlighted that cognitive load can be influenced by word suggestion features, as simpler and clearer language enhances engagement and reduces cognitive strain, ultimately leading to better decision-making outcomes.

Jozef Bavol'ár and Ol'ga Orosová (2015) conducted a study on "Decision-making styles and their associations with decision-making competencies and mental health," employs a quantitative research design to investigate the psychometric characteristics of the General Decision-Making Scale (GDMS) and its relationship with decision-making competencies and mental health. The data analysis method utilized is multiple linear regression, while the study does not explicitly mention the use of t-tests or ANOVA. Convenience sampling was employed to select participants from high schools and universities in Slovakia, with a non-probability sampling method used to recruit readily available individuals. The findings reveal low but significant relationships between decision-making styles and decision-making competencies, identifying the intuitive decision-making style as a protective factor for mental health and the avoidant style as a risk factor. The conclusion suggests that decision-making styles significantly influence decision-making competencies and mental health outcomes, highlighting the importance of

understanding cognitive processes in decision-making. The study discusses cognitive styles and decision-making styles as processes involved in decision-making, emphasizing the cognitive load associated with different decision-making approaches, and while the word suggestions feature is not explicitly mentioned, it can be inferred that enhancing decision-making competencies may involve tools or features that assist in decision-making processes.

Christian Criado-Perez et al., (2024) conducted a study on "Cognitive Reflection and Decision-Making Accuracy: Examining Their Relation and Boundary Conditions in the Context of Evidence-Based Management,". It employed an experimental research design across three studies, utilizing data analysis methods such as t-tests, ANOVA, and regression analysis. The sampling technique involved convenience sampling, with participants recruited through Prolific, specifically targeting adults with managerial experience. Participants were randomly assigned to conditions (high cognitive load vs control). The findings indicated that decision-making accuracy was higher in passive trials of evidence-based management (EBM) compared to active trials, and cognitive reflection was positively associated with decision-making accuracy. Additionally, cognitive load weakened the effect of cognitive reflection on evidence collection, while negative emotional load (anxiety) strengthened this relationship. The study concluded that cognitive reflection is a crucial predictor of decision-making accuracy, particularly when relevant evidence is presented, emphasizing the importance of minimizing cognitive load in environments where EBM is critical and suggesting that moderate levels of anxiety could enhance decision-making for individuals high in cognitive reflection. Key lines from the study include discussions on cognitive load as a taxation of cognitive resources impacting EBM processes, the characterization of cognitive reflection as a tendency to question intuitive responses in favor of systematic analysis, and the observation that individuals high on cognitive reflection may perform better under anxiety by increasing their evidence collection efforts.

Sayed Fayaz Ahmad et al., (2023) conducted a study on "Impact of artificial intelligence on human loss in decision making, laziness and safety in education," which examined the effects of artificial intelligence (AI) on

decision-making, laziness, and privacy concerns among university students in Pakistan and China. The study utilized qualitative methodology and employed PLS-Smart for data analysis, collecting primary data from 285 students through purposive sampling. The research design was primarily descriptive, focusing on the implications of AI in educational settings. The findings revealed that AI significantly contributes to a 68.9% increase in human laziness, 68.6% in privacy and security issues, and 27.7% in the loss of decision-making capabilities. The study argued for the necessity of preventive measures before implementing AI technology in education, emphasizing that unaddressed ethical concerns could lead to detrimental effects. The authors recommended justified design and deployment of AI in educational contexts to mitigate these issues, highlighting the importance of balancing technological benefits with ethical considerations.

6. CRITICAL ANALYSIS

Dvir N. et al. (2022) analyzed the impact of language simplicity on engagement and cognitive strain, concluding that simpler language can enhance decision-making outcomes. This finding suggests that when cognitive load is lower, users may adopt a more intuitive decision-making style, which allows for quicker and more effective responses. The implication is that word suggestion features that promote clarity and simplicity can facilitate this intuitive approach, leading to better engagement and decision-making.

In contrast, **Jozef Bavol'ár and Ol'ga Orosová (2015)** examined the relationship between cognitive load and decision-making styles, particularly focusing on intuitive versus avoidant styles. They found that intuitive decision-making thrives under lower cognitive load conditions, while avoidant styles may falter, especially in complex scenarios. This highlights the importance of managing cognitive load through effective word suggestion features, as a well-designed system can support intuitive decision-making by reducing unnecessary cognitive strain.

Christian Criado-Perez et al. (2024) emphasized the positive correlation between cognitive reflection and decision-making accuracy, particularly when cognitive load is minimized. Their findings suggest that when cognitive resources are not heavily taxed, users are more likely to engage in analytical thinking rather than relying on heuristics. This indicates that word suggestion features that effectively reduce cognitive load can enhance users' ability to reflect on their decisions, leading to more accurate outcomes.

A critical aspect of the effectiveness of word suggestions is their quality. The studies indicate that the relevance and accuracy of suggestions play a crucial role in determining their impact on cognitive load. Poorly designed suggestions can lead to increased cognitive strain, as users must sift through irrelevant options, which can hinder decision-making. This aligns with the findings of Advait **Bhat et al. (2023)**, where users reported increased cognitive load due to the need to evaluate suggestions, suggesting that while word suggestions can aid in idea generation, they may complicate the writing process if not thoughtfully designed.

The impact of cognitive load and decision-making styles is not uniform across all users. Factors such as prior experience, familiarity with technology, and personal decision-making styles can significantly influence how individuals interact with word suggestion features. For instance, **Sayed Fayaz Ahmad et al. (2023)** pointed out that AI's impact on decision-making and laziness varies based on individual characteristics. This suggests that a one-size-fits-all approach to word suggestion systems may not be effective; instead, systems should be adaptable to accommodate diverse user profiles and preferences.

7. METHODOLOGY

The present study employed a descriptive research design to examine the effects of the Word Suggestion Feature on Cognitive Load and Decision-Making Styles among young adults. A total of 201 participants were selected through simple random sampling from Chidambaram Taluk, Cuddalore District, Tamil Nadu. The sample included individuals aged 18 to 32 years, with varying demographic profiles in terms of gender, educational qualification, and marital status. Data were collected via an online Google Form survey distributed across digital platforms. The inclusion criteria required participants to be young adults residing in the study area and willing to provide informed consent, while individuals aged above 32 years were excluded due to lack of availability. Three standardized instruments were used for data collection: (1) RK's Assessment of Word

Suggestion Feature Usage (Rathina Kumari, 2025), a 12-item Likert scale with strong internal consistency (α = 0.858); (2) the NASA Task Load Index (Hart & Staveland, 1988), assessing six dimensions of cognitive workload rated on a 10-point scale; and (3) the General Decision-Making Style Questionnaire (Scott & Bruce, 1995), a 20-item measure that evaluates five distinct decision-making styles. The demographic distribution of variables was analyzed using descriptive statistics, including frequency, percentage, mean, and standard deviation. Inferential statistics such as t-tests, ANOVA, Pearson's correlation, and regression analysis were employed to test the hypotheses and examine relationships among variables. This comprehensive methodological framework ensured the reliability and validity of findings, laying the foundation for data analysis and interpretation in subsequent sections.

8. FINDINGS

The study explored how the Word Suggestion Feature (WSF) influences Cognitive Load and Decision-Making Styles among Young Adults.

The key findings are summarized below:

➢ **Demographic Variables:**

The use of the Word Suggestion Feature and levels of cognitive load did not significantly differ across demographic factors such as age, gender, education qualification, or marital status.

However, gender-based differences were observed in decision-making styles-specifically in the Avoidant style and total decision-making score-suggesting some influence of gender on decision-making behavior.

➢ **Relationship Between WSF and Cognitive Load:**

Significant positive relationships were found between the use of WSF and specific aspects of cognitive load, including Physical Demand, Temporal Demand, and Frustration. This indicates that increased reliance on WSF may be associated with higher perceived time pressure, physical strain, and frustration during tasks.

➢ **Relationship Between WSF and Decision-Making Styles:**

The WSF was positively associated with Dependent and Avoidant decision-making styles. This suggests that frequent use of predictive text features may foster hesitation or reliance on external guidance during decision-making processes.

➢ **Predictive Influence of WSF:**

Regression analysis showed that WSF significantly predicted certain components of cognitive load - namely, Physical Demand, Temporal Demand, and Frustration. It also significantly predicted Dependent and Avoidant decision-making styles. However, it did not show a predictive relationship with other cognitive load components or decision-making styles such as Systematic, Intuitive, or Spontaneous.

➢ **Interconnection Between Decision-Making and Cognitive Load:**

Some decision-making styles were found to be related to specific dimensions of cognitive load. For instance, the Intuitive style was positively associated with Mental Demand and Frustration, while the Avoidant style was linked to Temporal Demand. This suggests that certain decision-making tendencies may contribute to or be influenced by perceived cognitive strain during tasks.

9. DISCUSSION

This study underscores the dual impact of the Word Suggestion Feature (WSF). While designed to support cognitive ease, frequent WSF use is associated with increased frustration, temporal and physical demand, and a greater tendency towards passive decision-making (Avoidant and Dependent styles). These outcomes suggest that while WSF may reduce the need for active cognitive engagement, it could unintentionally diminish users' autonomous decision-making over time. Interestingly, systematic, intuitive, and spontaneous styles were not significantly influenced, which might imply that these styles are either more resilient to external tech-based interventions or are more reliant on internal cognitive schemas and personality factors. The gender-based difference in Avoidant styles points toward possible sociocultural or psychological variations in how different genders interact with decision-making in digital contexts.

10. CONCLUSION

The study concludes that the Word Suggestion Feature, although beneficial in easing certain cognitive demands, may contribute to dependent and avoidant decision-making patterns,

especially among young adults. This highlights the importance of critically examining the psychological consequences of everyday digital tools. Furthermore, the relationship between specific decision-making styles and cognitive load components signals that individual differences in decision-making are nuanced and may be influenced by both internal cognitive mechanisms and external digital environments.

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