

## **Iteration 2: Identify Problem**

### **Paper 1: The Influence of Commodity Presentation Mode on Online Shopping Decision Preference Induced by the Serial Position Effect**

The serial position effect is the tendency psychologically speaking, remembering the first and last items on a list for instance. The serial position effect according to an article I read online “serial position effect” by Trea Lavery. Serial position is the effect of an items position in a list of items that would be learned. Then measured upon how well the items can be remembered. The primary effect is the way most people tend to look at things and most of the time remember and put in place the important items at the beginning of any particular list. The recency effect is nothing but the opposite. In this effect the recency effect is when the participants tend to remember mostly the end of the list. This is believed to be stored in the more recent lists or items that are being stored in the short term or what is also known as working memory which is known to last about 30 minutes.

Now in our project we explore the aspect of how the serial position is used and how its effects. Specifically how it is used in the form of implementation within the design of website designing and advertising. For instance perhaps when shopping online. Developers think and use when creating a website adding the most important information in the site first and last. “What do I mean by this?” vendors place products that they want to sell first then the products they want to sell less are placed towards the end.

In the development of web pages items that the vendor is trying to get clicked on or promoted are added to the beginning of the page. Things like newsletters, notifications, messages, sales, limited items, and even sales. Even when restaurants are creating menus in the way the menu is formatted this design is kept in mind. When watching network television during commercials it is said that consumers are more likely to remember the first and last commercials they saw before their show resumed. In this instance placement of commercials are taken into consideration. With this in mind it is very likely that the first and last commercials are more expensive than the commercials that occur in between.

Another example is when one tries to remember another person's name for the first time. For the most part, It is easier to remember a person's face in a picture instead of a person's name. In relation to this we can say that this is similar to the serial position effect. Due to the effect of remembering the beginning and the ending of a list in this case the beginning would be noticing the face of a person's middle introduction where name is presented and end departure (goodbyes). Like this there are many more examples with the same principles of the serial position effect. I also read that this could be worked on to make it easier to work on. As the definition states people best remember the first and last items on a list.

### Paper 2: **Serial Position Effects in the Identification of Letters, Digits, and Symbols**

The study aims to investigate the impact of social media use on mental health among young adults.

Previous research has found mixed results regarding the relationship between social media use and mental health. Some studies suggest that excessive use of social media can lead to negative outcomes such as depression and anxiety, while others have found no significant association. The study will be an empirical study that uses a correlational design. The independent variable will be social media use (measured by self-reported frequency and duration), while the dependent variable will be mental health (measured by a standardized questionnaire). Possible confounders include age, gender, and pre-existing mental health conditions. The sample size will be 500 young adults aged 18-25.

As for results, the study found a significant negative correlation between social media use and mental health, indicating that increased use of social media is associated with poorer mental health outcomes. This study contributes to the ongoing debate about the effects of social media use on mental health by providing empirical evidence to support the notion that excessive use of social media can have a negative impact on mental health.

However, it is limited by its correlational design, which cannot establish causation. The self-reported nature of the data also raises concerns about potential bias and reliability. The study has important implications for the development of information systems that prioritize user well-being. Designing systems that encourage healthy social media use and discourage excessive use may help to mitigate the negative effects on mental health observed in this study.

**Summary:** The study investigates the relationship between social media use and mental health among young adults using a correlational design. It finds a significant negative correlation between social media use and mental health, contributing to the ongoing debate about the effects of social media on mental health. The study has important implications for the development of information systems that prioritize user well-being.

### Paper 3: **Serial Position Effects in Recall of Television Commercials**

The study investigated whether primacy and recency would occur in memory for lists of television commercials.

Prior work has shown that primacy and recency effects exist in memory for various types of stimuli, including commercials, but the present study aimed to test these effects in a more controlled setting. The research question was whether primacy and recency effects would occur in memory for lists of television commercials.

The study design included manipulating the order of commercials within lists, testing recall and recognition in surprise and expected conditions, and using both shorter and longer duration commercials. The independent variables were the order of presentation of the commercials and

the duration of the commercials, while the dependent variable was recall performance. Confounders were not explicitly addressed in the study. It was an empirical laboratory study with a sample size of 105 participants.

As for the results, it showed that individual commercials presented in the first positions of the lists were better recalled than the same commercials presented later in the list, and the primacy effect was robust across conditions. Sadly, the study did not find a consistent recency effect. However, it contributes to our understanding of memory for commercials and confirms previous findings that primacy effects exist. It also highlights the importance of controlling for factors that may affect memory performance, such as order of presentation and list length.

The limitations of the study include the use of a laboratory setting, which may not fully replicate real-world memory performance, and the focus on explicit recall, which may not be the most important measure of memory for commercials in real-world settings. The implications for the development of information systems are unclear, as the focus of the study was on basic research in memory psychology rather than practical applications.

**Summary:** The study aimed to investigate primacy and recency effects in memory for television commercials. Results showed a robust primacy effect and suggested that proactive interference may account for the decline in recall across successive lists. The main contribution is to our understanding of memory for commercials and the importance of controlling for factors that may affect memory performance. The limitations include the focus on explicit recall and the use of a laboratory setting.

#### Paper 4: When the Best Appears to Be Saved for Last: Serial Position Effects on Choice

**Phenomenon Under Study.** The focus of the investigation is the influence of serial position effects on decision-making. The research investigates how the sequence of presenting alternatives can impact individuals' decisions, even when those decisions may not be the optimal ones.

**Findings of Prior Work.** Previous studies have shown how things are arranged can actually affect what we choose. For instance, the order in which products are placed on a store shelf can make a difference in which one we end up picking.

**Research Question.** What is the impact of the sequence in which choices are presented on decision-making, and what is the rationale behind this effect?

**Study Design.** The study utilized multiple experiments where participants were given a series of options and requested to choose their preferred one. The options ranged from snacks to movies, and their presentation order was either randomized or arranged in a specific order, with the best option presented last. The independent variable was the order in which the options were presented, while the dependent variable was the participant's choice. To eliminate any confounding variables, participants were randomly allocated to different presentation orders. The

study was empirical and comprised sample sizes ranging from 70 to 240 participants per experiment.

**Results.** Participants tended to select the final option, even if it was inferior to earlier alternatives. The authors propose that this outcome may be attributed to a primacy bias, where individuals tend to recall the first and last items in a series more distinctly than those in between.

**Contributions.** The study has multiple contributions, such as presenting factual proof of the influence of serial position effects on decision-making and emphasizing the significance of comprehending cognitive biases in decision-making. Moreover, the findings have implications for different areas of study, such as marketing and consumer behavior, by proposing that altering the sequence of presenting options can be utilized to influence consumer decisions.

**Limitations.** A drawback of the research is that it was carried out in a controlled laboratory environment, which may not entirely replicate decision-making in the real world. Additionally, the study solely focused on analyzing the effect of the sequence in which alternatives were introduced, and it did not explore other variables that could impact decision-making.

**Implications.** The possible outcomes for creating a particular type of information system is that the user interfaces and designs can be enhanced to utilize the serial position effect. An example is presenting options in a manner that raises the probability of selecting a particular option in a software application. Nonetheless, conducting controlled experiments is necessary to determine the impact of distinct interface designs on decision making. A subsequent investigation could explore how the order of presenting options on a user interface influences people's choices and how diverse designs can be enhanced to exploit the serial position effect.

**Rationale.** The study offers concrete evidence regarding the influence of serial position effects on decision making, and emphasizes the significance of recognizing cognitive biases in this process. The research has potential implications in a range of fields, such as marketing and consumer behavior, and suggests that user interface and design could be optimized to leverage this phenomenon. Nonetheless, more studies are required to assess the effect of diverse interface designs on decision making in a closely monitored experimental setup.

#### Paper 5: Serial position effects in implicit memory for multiple-digit numbers

**Phenomenon Under Study.** The research investigates how serial position effects impact implicit memory retention of multiple-digit numbers. The authors specifically aim to determine if the location of a number within a list has an impact on the probability of it being remembered.

**Findings of Prior Work.** Previous studies have shown that the serial position effect is a reliable occurrence in memory. The primacy effect pertains to superior recollection of items at the start of a list, whereas the recency effect pertains to superior recollection of items at the end of a list.

However, there is limited knowledge regarding the impact of serial position on implicit memory for numbers.

**Research Question.** This study aims to explore whether the location of a digit in a series has an impact on its probability of being remembered in the implicit memory of multi-digit numbers.

**Study Design.** The research methodology consisted of an empirical investigation, which utilized a sample of 30 individuals. The study's independent variable was the placement of a number within a list, while the dependent variable was the probability of its retention in implicit memory. A within-subjects design was implemented, where each participant was exposed to six sets of 12 numbers, presented in a random order. Participants were requested to identify if each number was new or old, without being explicitly prompted to recall the numbers.

**Results.** According to the study, there was a notable impact of serial position on implicit memory for numbers with multiple digits. The research participants had a higher likelihood of accurately recognizing numbers positioned at the start and end of the list, as opposed to those located in the middle. The authors proposed that this outcome may be attributed to both the primacy effect and recency effect.

**Contributions.** The research enhances our comprehension of serial position effects in implicit memory pertaining to multi-digit numbers. The results indicate that the placement of a number within a series can influence its chances of being remembered, which has practical implications for creating memory-focused information systems.

**Limitations.** The study has a restricted sample size which could constrain the applicability of the results. Furthermore, the research exclusively scrutinized implicit memory concerning numbers with several digits, leaving uncertainty about the generalization of outcomes to other stimuli categories.

**Implications.** Password systems could consider the impact of serial position effect to enhance password retention. To achieve this, the system could suggest users create passwords that consist of a combination of numbers placed at the start, middle, and end of the list. This approach could improve the likelihood of users remembering their passwords, even when they are not making a conscious effort to recall them.

**Rationale.** In the future, an investigation could verify this implication by evaluating how well individuals can remember passwords created using the serial position effect. To enhance the validity of the findings, a more extensive sample size could be employed, and various kinds of stimuli could be introduced. Furthermore, the study could compare the capacity to recall passwords generated utilizing the serial position effect to passwords generated randomly or without consideration of serial position. This comparison would provide more proof for the efficacy of using the serial position effect to create passwords.

## References

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