

Worksheet for Homework #1

Identifying Variables and Constructing Research Questions/Statements

When an abstract to a journal article is clearly written, you should be able to easily identify the research question for a study and the variables studied, i.e., well-written abstracts should make these concepts apparent.

A research question/statement for an empirical study in which the researchers manipulate the independent variable should be worded as follows:

- Question Format: What is the effect of the independent variables (IVs) and moderator variables (MVs) on the dependent variables (DVs) given any control variables (CVs)?
- Statement Format: This study investigates the effect of the independent variables (IVs) and moderator variables (MVs) on the dependent variables (DVs) given any control variables (CVs).

Correlational studies will describe a problem as the relationship between two or more variables.

The tables below contain abstracts from published research articles.

- If you can find a clearly worded research question or statement, underline it or copy it into the righthand column. *Otherwise, try and write a clear research question or statement.*
- Identify and label the variables and their types (independent, dependent, control, moderator) in the rows below. Please identify any correlational studies as such (and then don't worry about the variables for those studies).

Abstract	Rogstadius, J., Kostakos, V., Kittur, A., Smus, B., Laredo, J., & Vukovic, M. (2011, May). An Assessment of Intrinsic and Extrinsic Motivation on Task Performance in Crowdsourcing Markets. In <i>ICWSM, 2011</i> . Crowdsourced labor markets represent a powerful new paradigm for accomplishing work. Understanding the motivating factors that lead to high quality work could have significant benefits. However, researchers have so far found that motivating factors such as increased monetary reward generally increase workers' willingness to accept a task or the speed at which a task is completed, but do not improve the quality of the work. We hypothesize that factors that increase the intrinsic motivation of a task—such as framing a task as helping others—may succeed in improving output quality where extrinsic motivators such as increased pay do not. In this paper we present an experiment testing this hypothesis along with a novel experimental design that enables controlled experimentation with intrinsic and extrinsic motivators in Amazon's Mechanical Turk, a popular crowd-sourcing task market. Results suggest that intrinsic motivation can indeed improve the quality of workers' output, confirming our hypothesis. Furthermore, we find a synergistic interaction between intrinsic and extrinsic motivators that runs contrary to previous literature suggesting "crowding out" effects. Our results have significant practical and theoretical implications for crowd work.			
Research Question or Statement				
Variables	Variable Type	Variable Name	Variable Type	Variable Name

Abstract	Hinckley, K., Cutrell, E., Bathiche, S., and Muss, T. Quantitative analysis of scrolling techniques, <i>Proceedings of Conference on Human Factors in Computing Systems, CHI 2002</i>. We propose a formal experimental paradigm designed to help evaluate scrolling interaction techniques. Such a method is needed by interaction designers to quantify scrolling performance, thereby providing a tool to evaluate and improve upon new techniques. We systematically vary the scrolling distance as well as the required tolerance of scrolling. Distance and tolerance are the parameters of Fitts' Law, which traditionally has been applied to the evaluation of pointing devices in tasks involving rapid, aimed movement to visible targets. Scrolling involves acquisition of targets well beyond the edges of the screen, yet Fitts' Law models our experimental data very well. We apply our paradigm to the IBM ScrollPoint and the IntelliMouse Wheel. Our experimental approach reveals a crossover effect in performance versus distance, with the Wheel performing best at short distances but the ScrollPoint performing best at long distances. We also demonstrate that the performance of the Wheel can be significantly improved using an acceleration algorithm. These results show that our approach yields a practical and rigorous method for the evaluation of scrolling techniques.			
Research Question or Statement				
Variables	Variable Type	Variable Name	Variable Type	Variable Name

Abstract	Scealy, Marita, Phillips, James G., Stevenson, Roger. Shyness and Anxiety as Predictors of Patterns of Internet Usage, <i>CyberPsychology & Behavior December, 2002, 5(6): 507-515</i>. The Internet has the potential to empower or isolate. Shyness and anxiety may potentially influence the extent to which people avail themselves of Internet services such as email, chat rooms, information searches, entertainment, and commerce. To understand how personality moderates Internet usage, 177 participants completed an Internet Use Survey, the Social Reticence Scale, and a Trait Anxiety Inventory. Shyness, anxiety, gender, and academic achievement were employed within separate multiple regressions to predict forms of Internet usage. The use of email and chat-rooms was not related to shyness or anxiety, suggesting that shyness or anxiety does not pose an obstacle to these Internet applications. Males were more likely to use the Internet for downloading entertainment. Shy males were more likely to use the Internet for recreation/leisure searches. Highly educated males were more likely to use the Internet for banking and paying bills. Although shyness or anxiety does not seem to modify the communicative functions of the Internet, it may influence people's use of other recreational applications.			
Research Question or Statement				
Variables	Variable Type	Variable Name	Variable Type	Variable Name

Abstract	Hong, W., Thong, J. Y., & Tam, K. Y. (2004). Does animation attract online users' attention? The effects of flash on information search performance and perceptions. <i>Information Systems Research</i>, 15(1), 60-86. The proliferation of information on the Internet poses a significant challenge on humans' limited attentional resources. To attract online users' attention, various kinds of animation are widely used on websites. Despite the ubiquitous use of animation, there is an inadequate understanding of its effect on attention. Focusing on flash animation, this study examines its effects on online users' performance and perceptions in both task-relevant and task-irrelevant information search contexts by drawing on the visual search literature and two theories from cognitive psychology. In the task-relevant context, flash is applied on the search target; while in the task-irrelevant context, flash is applied on a nontarget item. The results of this study confirm that flash does attract users' attention and facilitates quicker location of the flashed target item in tightly packed screen displays. ... These results have implications for website interface design, online product promotion, online advertising, and multimedia training systems, among others.			
Research Question or Statement				
Variables	Variable Type	Variable Name	Variable Type	Variable Name