

**WHAT DO YOU MEAN THERE'S
SOMETHING WRONG WITH MY
REGGIENET EXAM?**

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ILLINOIS STATE UNIVERSITY
TEACHING & LEARNING SYMPOSIUM, 2022



AGENDA

- **CBT Benefits**
- **Prior research**
- **Research model**
- **Testing during a pandemic**
- **Methodology and results**
- **Future research areas**
- **Questions?**

COMPUTER- BASED TEST ADVANTAGES

- **Adaptive testing**
- **Increased student performance**
- ★ - **Administrative efficiency**
- **Limits academic dishonesty**
- **Scheduling flexibility**

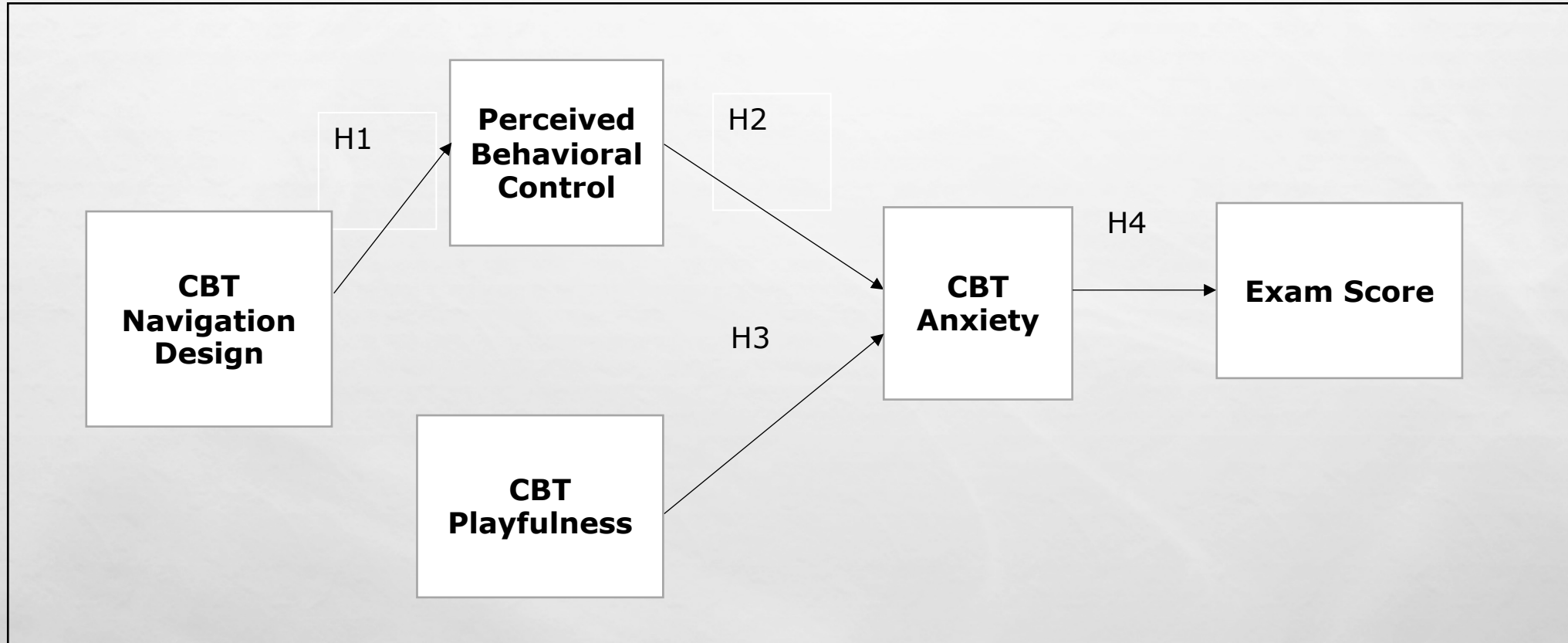
- **Khoshsima and Toroujeni (2017) found that CBT scores were significantly different than paper and pencil (PPT). Oz and Ozturan (2018) found no significant difference in test scores between CBT and paper-based tests (PBT). Pohto (2019) CBT vs. face-to-face.**
- **Istiyono, et. al. (2019) physics; Taufan, et. al. (2021) Braille literation; Tomasik, et. al. (2018)**

**SEVERAL
RESEARCH
EFFORTS FOCUS
ON DIFFERENCES
BETWEEN CBT
AND OTHER
TESTING MODES
OR CBT TEST
DEVELOPMENT**

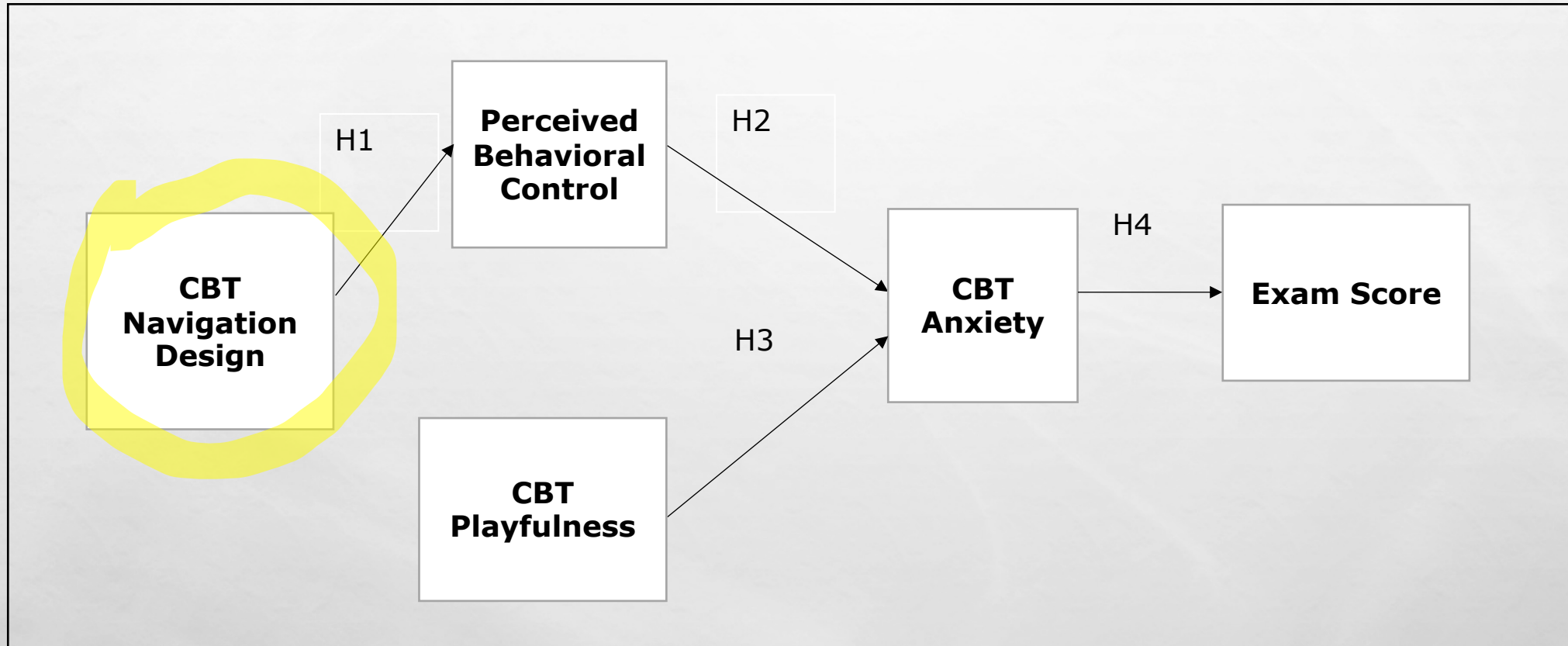
BROADER, FORWARD-THINKING LENS

- **Transdiscipline, enduring (B. Zmud, 1996)**
- **Are there common design features that impact CBT performance?**
- **Easy to control levers for instructors from all disciplines, regardless of exam content.**
- **Part of a more general study on CBT outcomes.**

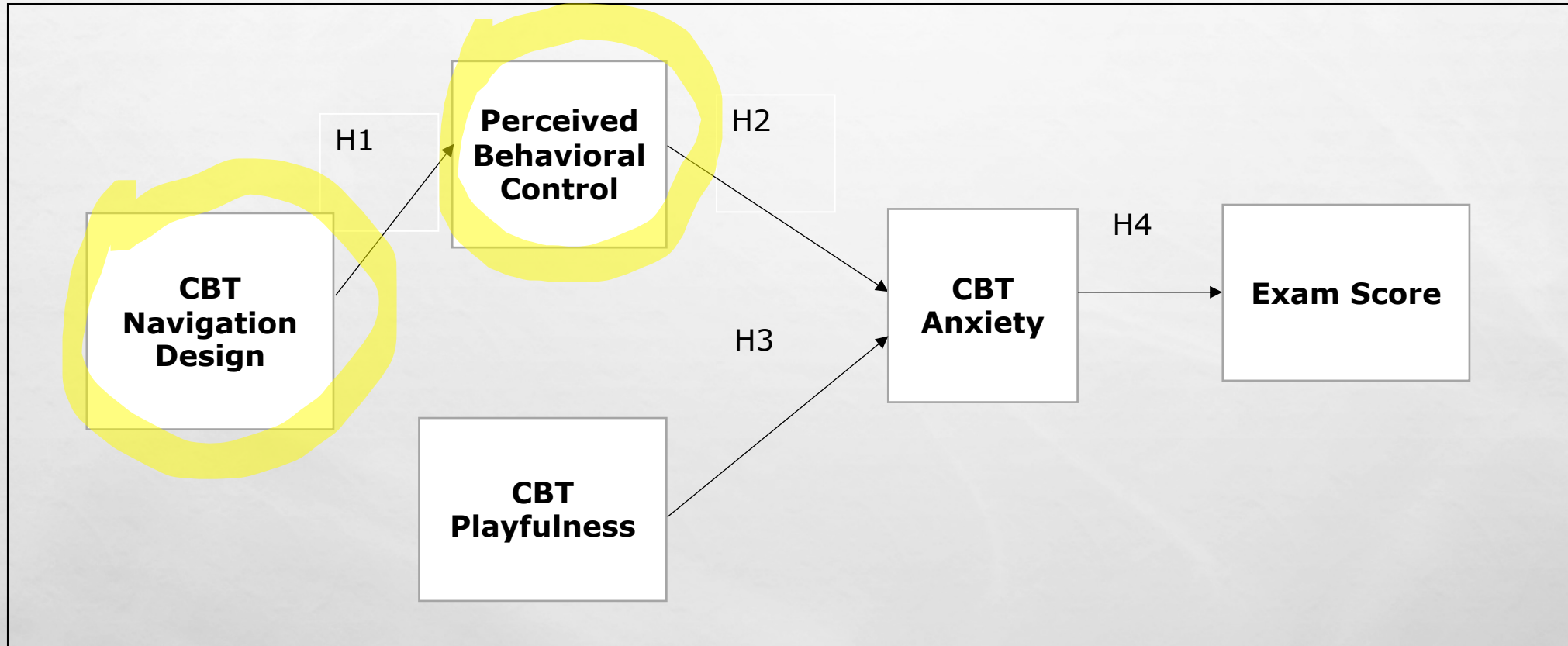
RESEARCH MODEL



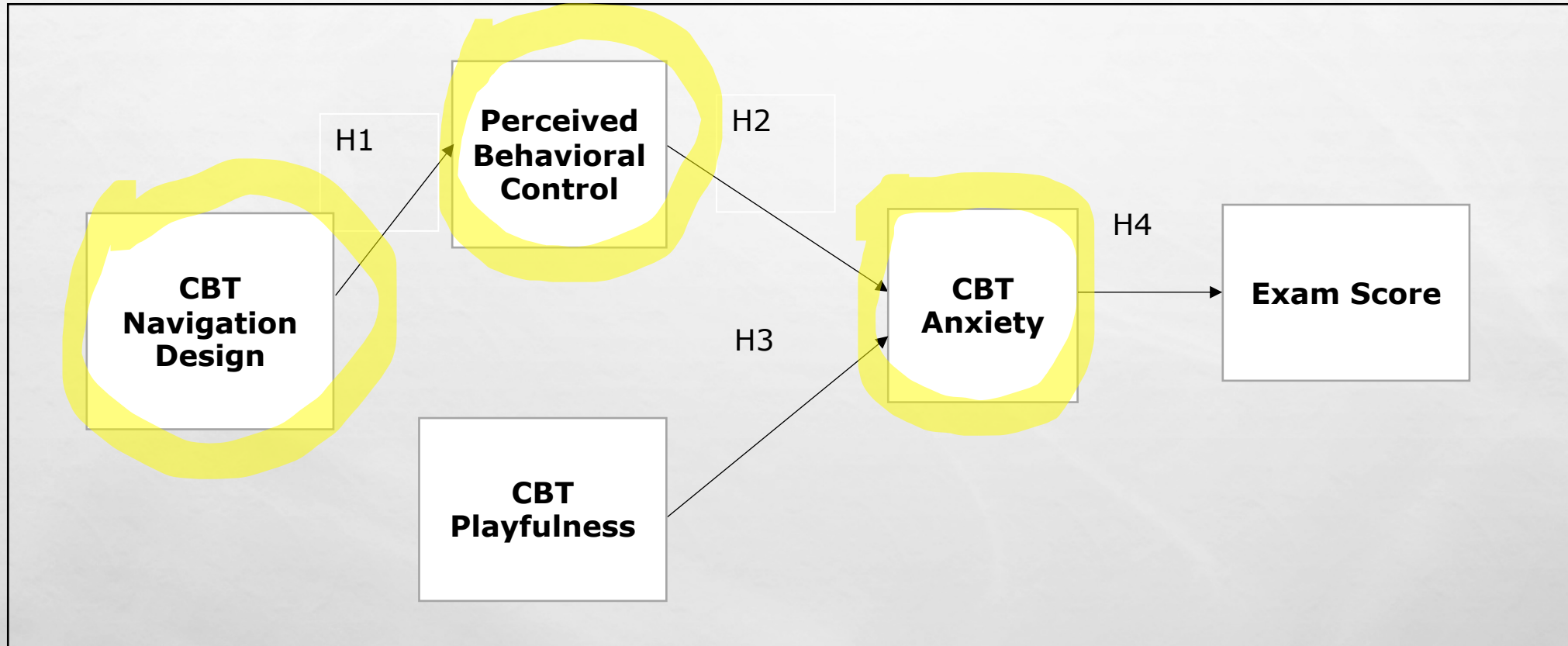
RESEARCH MODEL



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RESEARCH MODEL



CONSTRUCT ITEMS

Construct	Definition
CBT Navigation Design	A test taker's ability to navigate a CBT.
Perceived Behavioral Control	An individual's perception of their ability to perform a given behavior.
CBT Anxiety	The feelings of apprehension or anxiety while an individual takes a CBT exam.

CBT DURING PANDEMIC

- **Mandatory for all ISU classes from mid-spring 2020 through spring 2021**
- **Students taking exams from remote locations**
- **Large variance in computer equipment and connectivity**

Optimize Your Exam

Lengthy exams presented on one page can cause problems, especially if students' internet connections are not reliable. In the past, some students' testing scores have not been recorded properly and have shown "zero" even though they have completed an exam. If you are using the Tests & Quizzes tool for your final exam, take steps to ensure that students can complete and submit exams without technical difficulties:

- **Use multiple pages:** Use "Each Question is on a separate Web page" option when it's possible - if the one question per page option doesn't work for your instructional purpose, please break your assessment into parts and use "Each Part is on a separate Web page" option. This should help students save the answers frequently so that their assessment scores are recorded properly.
- **Be aware of time limits:** ReggieNet will time out after 2 hours. Also, students sometimes encounter connectivity issues. So, even if the time limit for your test

[Respondus LockDown Browser](#)

[Exam Proctoring Options](#)

Videos: [Tests & Quizzes Tutorials](#)

Handout: [PDF Tips for Creating and Taking Assessments](#)

CTLT GUIDANCE TO INSTRUCTORS FOR REGGIENET EXAMS (PRE- PANDEMIC)

<https://ctlit.illinoisstate.edu/technology/reggienet/testing/>

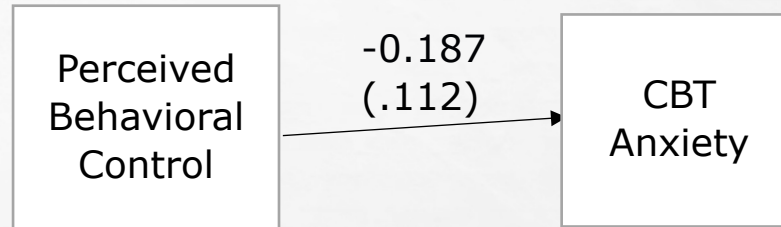
TREATMENT

- **Low navigation – one question per page**
- **High navigation – all questions on one page**

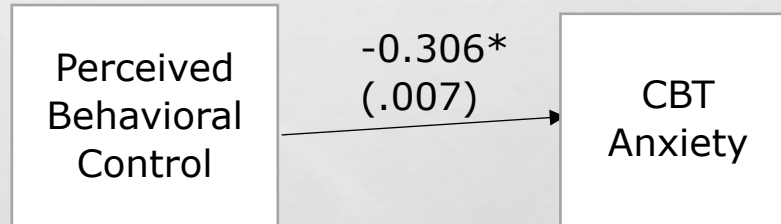
METHODOLOGY

- **Four sections of Systems Analysis class (2 instructors)**
- **One low-navigation text (Exam 1; n = 73); one high-navigation test (Exam 2; n = 85)**
- **No statistical difference in CBT anxiety or performance between instructors**
- **PCA with MLE and oblimin rotation, OLS regression, paired sample t-test**

RESULTS



Regression Path Model Estimation (Exam 1)



Regression Path Model Estimation (Exam 2)

CBT NAVIGATION

- **Paired sample t-test (n = 69) for difference in PBC between exams**
- **PBC higher (p = .000) for high-navigation exam**

FINDINGS

- **High navigation CBT leads to higher levels of perceived behavioral control**
- **Low navigation doesn't appear to lead to increased anxiety (through PBC), but high navigation reduces anxiety (via PBC).**
- **Implication:** If students are not experiencing stress from other sources, low navigation CBT may be okay.

FUTURE RESEARCH

- **Re-examine PBC effect on anxiety**
- **Consider other test designs in the middle**
- **Triangulate anxiety with biophysical data (GSR sensors)**
- **Develop construct for CBT anxiety**

QUESTIONS

