Math 362: Mathematical Statistics II

Le Chen
le.chen@emory.edu
chenle02@gmail.com

Emory University
Atlanta, GA

Last updated on Spring 2021
Last compiled on January 15, 2023

2021 Spring

Chapter 13. Randomized Block Designs

§ 13.1 Introduction

§ 13.2 The *F* Test for a Randomized Block Design

§ 13.A Appendix: Some Discussions and Extensions

Plan

§ 13.1 Introduction

§ 13.2 The *F* Test for a Randomized Block Design

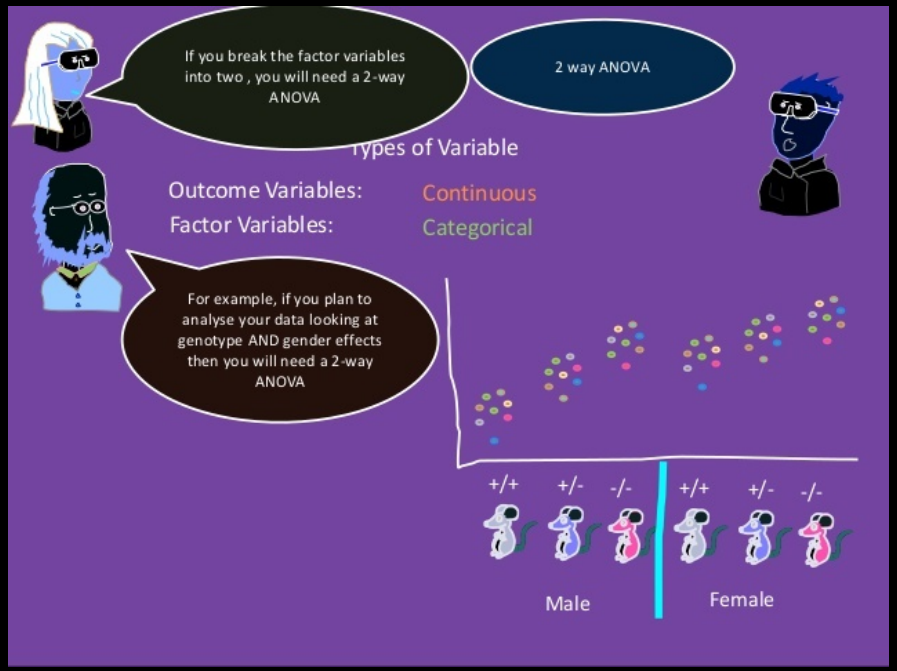
§ 13.A Appendix: Some Discussions and Extensions

Chapter 13. Randomized Block Designs

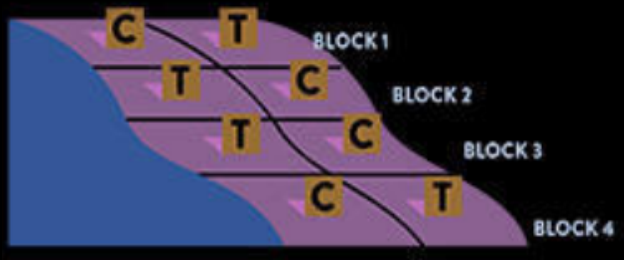
Rationale:

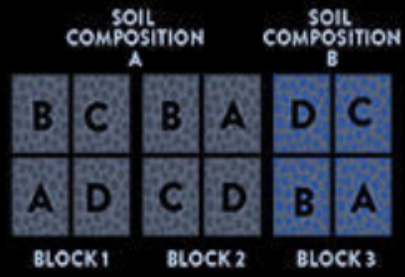
Reducing variability by blocking†

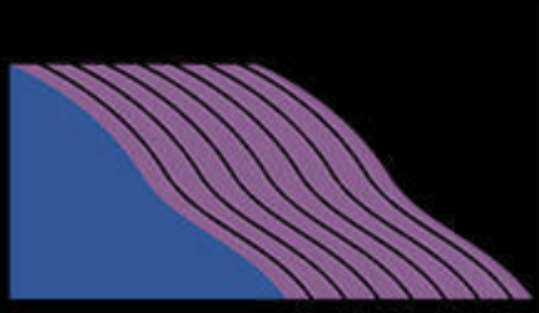
† *Blocking* is the arranging of experimental units in groups (blocks) that are similar to one another.



https://www.slideshare.net/KevinHamill2/experimental-design-cartoon-part-5-sample-size







Goal Reducing variability caused by

a *elevation*.

b *soil types*.

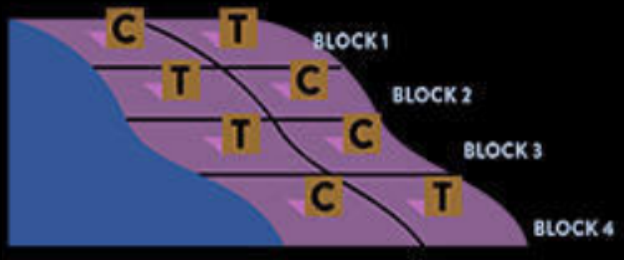
v.s.

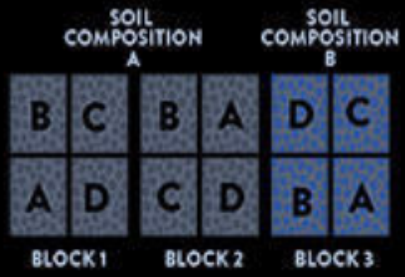
c *complete randomized design*

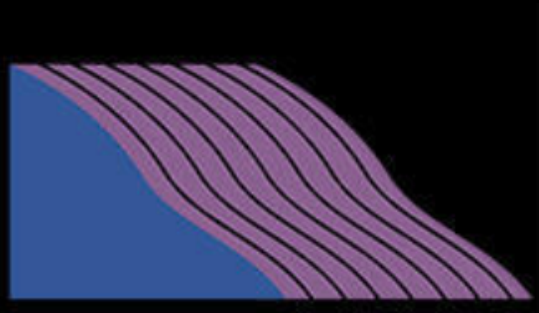
} One-way ANOVA

Two-way ANOVA

https://www.sare.org/Learning-Center/Bulletins/How-to-Conduct-Research-on-Your-Farm-or-Ranch/Text-Version/Basics-of-Experimental-Design







Goal Reducing variability caused by

a *elevation*.

b *soil types*.

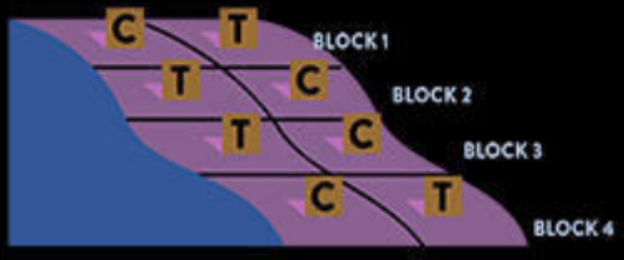
v.s.

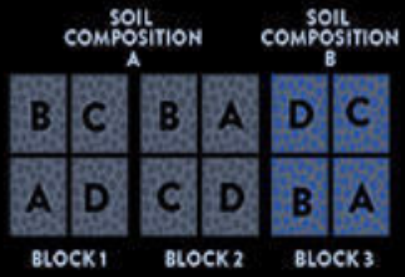
c *complete randomized design*

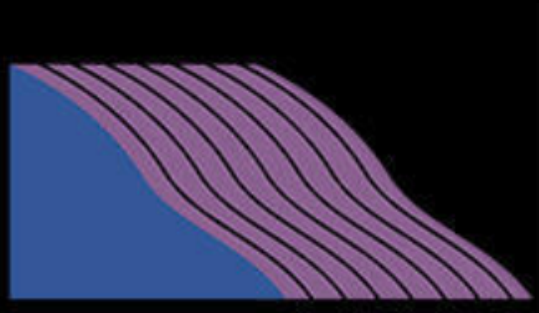
} One-way ANOVA

Two-way ANOVA

https://www.sare.org/Learning-Center/Bulletins/How-to-Conduct-Research-on-Your-Farm-or-Ranch/Text-Version/Basics-of-Experimental-Design







Goal Reducing variability caused by

a *elevation*.

b *soil types*.

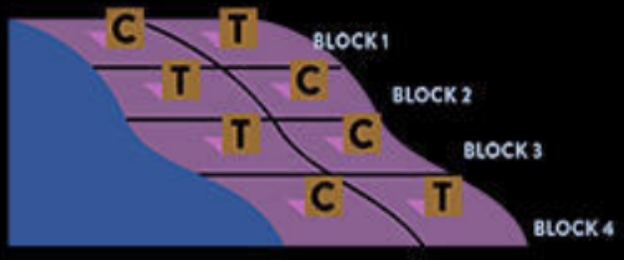
v.s.

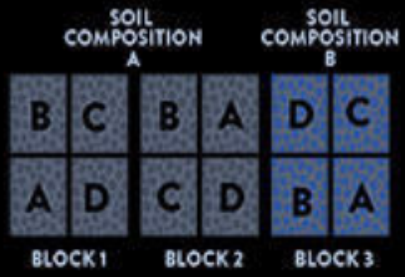
c *complete randomized design*

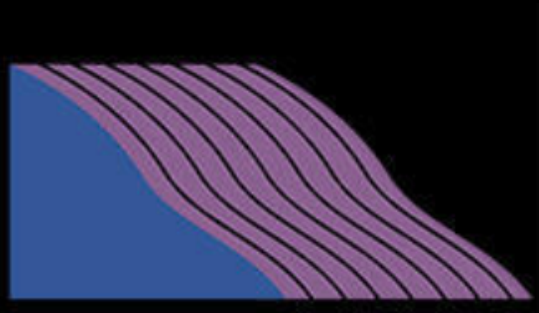
} One-way ANOVA

Two-way ANOVA

https://www.sare.org/Learning-Center/Bulletins/How-to-Conduct-Research-on-Your-Farm-or-Ranch/Text-Version/Basics-of-Experimental-Design







Goal Reducing variability caused by

a *elevation*.

b *soil types*.

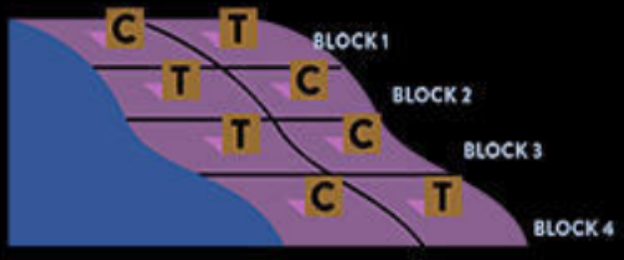
v.s.

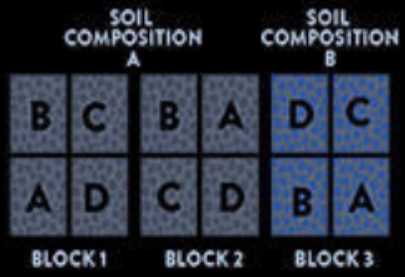
c *complete randomized design*

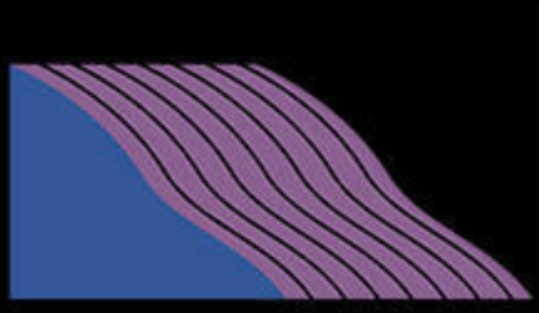
} One-way ANOVA

Two-way ANOVA

https://www.sare.org/Learning-Center/Bulletins/How-to-Conduct-Research-on-Your-Farm-or-Ranch/Text-Version/Basics-of-Experimental-Design







Goal Reducing variability caused by

a *elevation*.

b *soil types*.

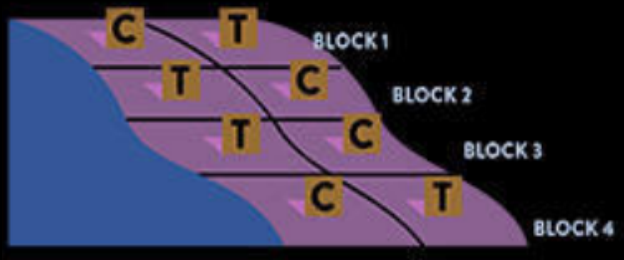
v.s.

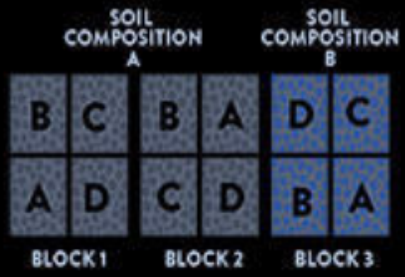
c *complete randomized design*

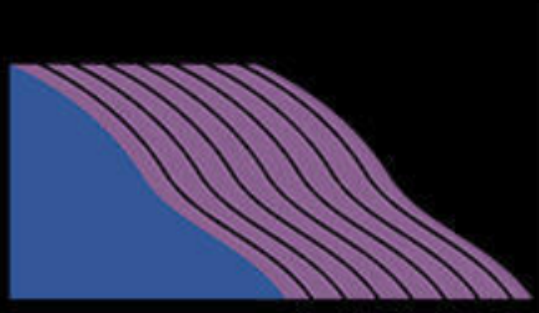
} One-way ANOVA

Two-way ANOVA

https://www.sare.org/Learning-Center/Bulletins/How-to-Conduct-Research-on-Your-Farm-or-Ranch/Text-Version/Basics-of-Experimental-Design







Goal Reducing variability caused by

a *elevation*.

b *soil types*.

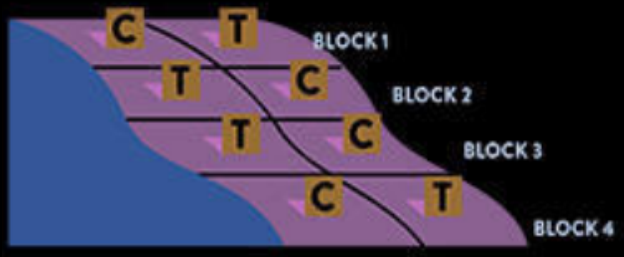
v.s.

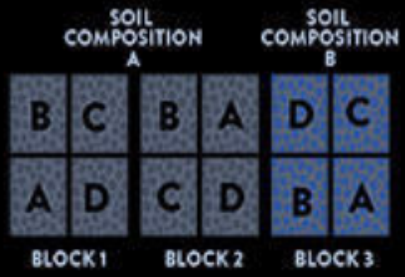
c *complete randomized design*

} One-way ANOVA

Two-way ANOVA

https://www.sare.org/Learning-Center/Bulletins/How-to-Conduct-Research-on-Your-Farm-or-Ranch/Text-Version/Basics-of-Experimental-Design





Goal Reducing variability caused by

a *elevation*.

b *soil types*.

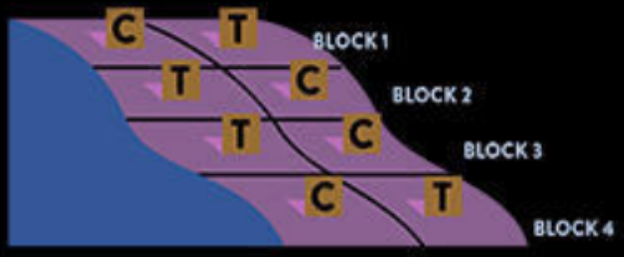
v.s.

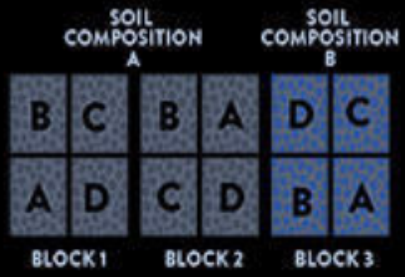
c *complete randomized design*

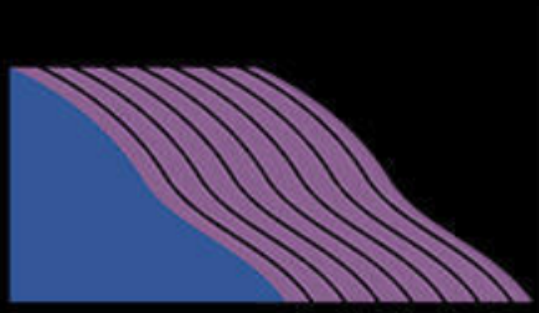
} One-way ANOVA

Two-way ANOVA

https://www.sare.org/Learning-Center/Bulletins/How-to-Conduct-Research-on-Your-Farm-or-Ranch/Text-Version/Basics-of-Experimental-Design







Goal Reducing variability caused by

a *elevation*.

b *soil types*.

v.s.

c *complete randomized design*

} One-way ANOVA

Two-way ANOVA

https://www.sare.org/Learning-Center/Bulletins/How-to-Conduct-Research-on-Your-Farm-or-Ranch/Text-Version/Basics-of-Experimental-Design