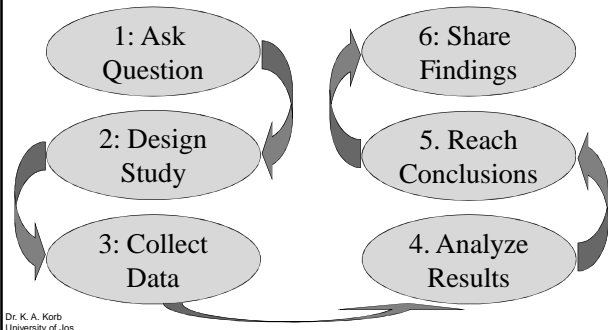


Descriptive Research Study

Investigation of Positive and Negative Affect of UniJos PhD Students toward their PhD Research Project

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Scientific Method



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1. Ask Question

- **General research question:** What is the attitude of PhD students at UniJos toward their PhD research project?
 - Specific research questions:
 - What is the level of positive affect that UniJos PhD students have toward their PhD research project?
 - What is the level of negative affect that UniJos PhD students have toward their PhD research project?

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2. Design Study

- **Participants:** UniJos PhD students who attend the Research Seminar on 29 February, 2008.
- **Instruments:** PANAS Questionnaire (see next slide)
 - Previously designed and validated by other researchers.
 - Published in *Journal of Personality and Social Psychology*
- **Procedure:** Administer questionnaire to PhD students before the Research Seminar begins.

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Questionnaire

Note the direction to circle the best response. Ticks can be confusing when trying to determine what was selected, but circling is unambiguous.

Part 1 requests demographic information.

Please circle the response that best represents you

1. Masters Student	PhD Student	Staff	Other							
2. Male	Female									
3. Age	20-29	30-39	40-49	50-59	60+					
4. For students: How many years have you been enrolled in your program?	1	2	3	4	5	6	7	8	9	10+

Part 2

This scale consists of a number of words that describe different feelings or emotions. Read each item and then record the appropriate answer in the space next to that word. Tick the one to what extent you feel this way when you think about working on your PhD Research Project. Use the following scale to record your answers.

1	2	3	4	5
very slightly or not at all	a little	moderately	quite a bit	extremely

Interested _____

Bored _____

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Part 2 is the PANAS scale of Positive and Negative Affect. Other researchers have developed and validated the PANAS (Watson, Clark, & Tellegen, 1988). Due to copyright, I cannot reproduce the entire questionnaire here, but it is free for anybody to use. See me and I can get the questionnaire to you if you are interested.

3: Collect Data

- Data was collected on 29 February 2008 when the questionnaire was administered.

4. Analyze Results

- Data was entered into an Excel Spreadsheet.
 - The next few slides outline how the results were analyzed.

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The blue rows are the column headers that describe what data each column contains.

This is the spreadsheet where I entered the data in Microsoft Excel.

Each row is one participant's data.

Each column is all of the responses for one question on the questionnaire. I have highlighted question 10.

Demographic				Questionnaire Items																			
Stu	Sex	Age	Years	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
2,3	2	4	4	4	3	4	4	4	3	3	4	3	3	4	4	3	4	3	4	5	4	4	4
2	2	3	5	1	4	1	4	1	2	1	4	3	1	3	1	3	2	4	4	1	3	2	
2	2	4	2	5	2	3	2	5	2	1	4	3	1	3	1	2	2	3	3	1	1	1	
2	2	3	3	5	3	3	2	5	2	2	1	4	3	2	4	1	4	2	4	5	2	3	2
2	1	3	1	5	2	4	2	4	1	2	2	5	1	2	4	1	4	2	5	3	2	4	2
2	9	3	1	3	4	2	2	2	1	5	1	3	1	3	4	1	3	2	4	3	2	4	2
2	2	3	1	5	2	3	2	3	4	2	1	4	3	3	4	1	3	4	5	4	4	3	2
2	2	3	1	5	2	3	2	3	4	2	1	4	3	3	4	1	3	4	5	4	4	3	2
2	1	3	3	5	2	3	1	3	1	1	2	4	5	1	2	1	3	1	4	5	2	4	1
2	1	3	3	5	2	3	1	3	1	1	2	4	5	1	2	1	3	1	4	5	2	4	1
2	2	3	4	5	2	4	2	3	1	5	1	4	3	1	4	1	3	4	4	4	2	4	3
2,3	2	5	3	5	5	5	4	3	2	3	1	4	2	1	5	1	3	2	5	5	5	4	2
2	2	4	4	4	2	3	2	3	4	4	1	3	1	2	3	5	3	2	5	4	2	3	3
2	2	4	99	5	5	5	4	3	4	4	2	3	2	4	3	2	4	4	4	3	3	3	4

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The highlighted columns are demographic characteristics. I used a code to ease analysis.

Student:
1 is Masters
2 is PhD
3 is Staff

Sex:
1 is Male
2 is Female

Age:
1 is 20-29
2 is 30-39
3 is 40-49
4 is 50-59
5 is 60+

Years enrolled in program:
I typed the response circled. No code was necessary.

This participant did not give a response. Leaving blank cells can be confusing, so 9 is the value I used for a missing value.

Demographic				Questionnaire Items																			
Stu	Sex	Age	Years	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
2,3	2	4	4	4	3	4	4	4	3	3	4	3	3	4	4	3	4	3	4	5	4	4	4
2	2	3	3	5	1	4	1	4	1	2	1	4	3	1	3	1	3	2	4	4	1	3	2
2	2	4	2	5	2	3	2	5	2	1	4	3	1	3	1	2	2	3	3	1	1	1	
2	2	3	3	5	3	3	2	5	2	1	4	3	1	3	1	2	2	1	4	3	2	4	2
2	1	3	1	5	2	4	2	4	1	2	2	5	1	2	4	1	4	2	5	3	2	4	2
2	2	3	1	3	4	2	2	1	5	1	3	1	3	4	1	3	2	4	3	2	4	2	
2	2	3	1	5	2	3	2	3	4	2	1	4	3	3	4	1	3	4	5	4	4	3	2
2	2	3	1	5	2	3	2	3	4	2	1	4	3	3	4	1	3	4	5	4	4	3	2
2	1	3	3	5	2	3	1	3	1	1	2	4	5	1	2	1	3	1	4	5	2	4	1
2	1	3	3	5	2	3	1	3	1	1	2	4	5	1	2	1	3	1	4	5	2	4	1
2	2	3	4	5	2	4	2	3	1	5	1	4	3	1	4	1	3	4	4	4	2	4	3
2,3	2	5	3	5	5	5	4	3	2	3	1	4	2	1	5	1	3	2	5	5	5	4	2
2	2	4	4	4	2	3	2	3	4	4	1	3	1	2	3	5	3	2	5	4	2	3	3
2	2	4	99	5	5	5	4	3	4	4	2	3	2	4	3	2	4	4	4	3	3	3	4

Since 9 is a valid response to years enrolled, 99 is the missing value here.

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The highlighted columns are the responses for each question on the questionnaire. I typed the number that each participant wrote for each question.

Demographic				Questionnaire Items																			
Stu	Sex	Age	Years	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
2,3	2	4	4	4	3	4	4	4	3	3	4	3	3	4	4	3	4	3	4	5	4	4	4
2	2	3	3	5	1	4	1	4	1	2	1	4	3	1	3	1	3	2	4	4	1	3	2
2	2	4	2	5	2	3	2	5	2	1	4	3	1	3	1	2	2	3	3	1	1	1	
2	2	3	3	5	3	3	2	5	2	3	1	4	3	2	4	1	4	2	4	5	2	3	2
2	1	3	1	5	2	4	2	4	1	2	2	5	1	2	4	1	4	2	5	3	2	4	2
2	9	3	1	3	4	2	2	1	5	1	3	1	3	4	1	3	2	4	3	2	4	2	
2	2	3	1	5	2	3	2	3	4	2	1	4	3	3	4	1	3	4	5	4	4	3	2
2	2	3	1	5	2	3	2	3	4	2	1	4	3	3	4	1	3	4	5	4	4	3	2
2	1	3	3	5	2	3	1	3	1	1	2	4	5	1	2	1	3	1	4	5	2	4	1
2	1	3	3	5	2	3	1	3	1	1	2	4	5	1	2	1	3	1	4	5	2	4	1
2	2	3	4	5	2	4	2	3	1	5	1	4	3	1	4	1	4	3	4	4	2	4	3
2,3	2	5	3	5	5	5	4	3	2	3	1	4	2	1	5	1	3	2	5	5	5	4	2
2	2	4	4	4	2	3	2	3	4	4	1	3	1	2	3	5	3	2	5	4	2	3	3
2	2	4	99	5	5	5	4	3	4	4	2	3	2	4	3	2	4	4	4	3	3	3	4

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Demographics

I counted up the frequency that each demographic was selected in the questionnaires and made these frequency charts.

Two people selected two options in this category. Otherwise all values should add up to 14, the number of participants.

The countif function in Excel can count each code for you.

University Status		Gender	
Masters	0	Male	3
PhD	14	Female	10
Staff	2	Missing	1
Other	0		

Age		Years in Program	
20-29	0	1	4
30-39	0	2	1
40-49	9	3	5
50-59	4	4	3
60+	1	Missing	1

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- On the questionnaire, items 1, 3, 5, 9, 10, 12, 14, 16, 17, and 19 measured *Positive Affect*.
 - For each participant, I added the responses for these items to get a grand total for *Positive Affect*.

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I added up the responses for each participant in blue to get an overall Positive Affect (PA) score in green.

Questionnaire Items																					
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	PA	
4	3	4	4	4	3	4	3	4	3	3	4	4	3	4	3	4	3	4	4	4	39
5	1	4	1	4	1	2	1	4	3	1	3	1	3	2	4	4	1	3	2	37	
5	2	3	2	5	2	1	4	3	1	1	3	1	2	2	3	3	1	1	1	29	
5	3	3	2	5	2	2	1	4	3	2	4	1	4	2	4	5	2	3	2	40	
5	2	4	2	4	1	2	2	5	1	2	4	1	4	2	5	3	2	4	2	39	
3	4	2	2	2	1	5	1	3	1	3	4	1	3	2	4	3	2	4	2	29	
5	2	3	2	3	4	2	1	4	3	3	4	1	3	4	5	4	4	3	2	37	
5	2	3	2	3	4	2	1	4	3	3	4	1	3	4	5	4	4	3	2	37	
5	2	3	1	3	1	1	2	4	5	1	2	1	3	1	4	5	2	4	1	38	
5	2	3	1	3	1	1	2	4	5	1	2	1	3	1	4	5	2	4	1	38	
5	2	4	2	3	1	5	1	4	3	1	4	1	4	3	4	4	2	4	3	39	
5	5	5	4	3	2	3	1	4	2	1	5	1	3	2	5	5	5	4	2	41	
4	2	3	2	3	4	4	1	3	1	2	3	5	3	2	5	4	2	3	3	32	
5	5	5	4	3	4	4	2	3	2	4	3	2	4	4	4	3	3	3	4	35	

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- On the questionnaire, items 2, 4, 6, 7, 8, 11, 13, 15, 18, and 20 measured *Negative Affect*.
 - For each participant, I added the responses for these items to get a grand total for *Negative Affect*.

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I added up the responses for each participant in gray to get an overall Negative Affect (NA) score in blue.

Questionnaire Items																				PA	NA		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
4	3	4	4	4	3	3	4	3	3	4	3	4	3	4	3	4	5	4	4	4	39	35	
5	4	1	4	1	2	1	4	3	1	3	1	3	2	4	4	1	3	2	3	17	13		
5	3	2	5	2	1	4	3	1	1	3	1	2	2	3	3	1	1	1	1	29	17		
5	3	2	5	2	2	1	4	3	2	4	1	4	2	4	5	2	3	2	4	32	45		
5	4	2	4	1	2	2	5	1	2	4	1	4	2	5	3	2	4	2	4	2	39	15	
3	4	2	2	1	5	3	1	3	4	1	3	2	4	3	2	4	3	2	4	2	29	23	
5	3	2	3	4	2	1	4	3	3	4	1	3	4	5	4	4	3	2	3	2	37	25	
5	3	2	3	4	2	1	4	3	3	4	1	3	4	5	4	4	3	2	4	3	2	37	25
5	3	1	3	1	1	2	4	5	1	2	1	3	1	4	5	2	4	1	1	38	13		
5	3	1	3	1	1	2	4	5	1	2	1	3	1	4	5	2	4	1	1	38	13		
5	4	2	3	1	5	1	4	3	1	4	1	4	3	4	4	2	4	3	4	3	39	21	
5	5	4	5	2	3	1	4	2	1	5	1	3	2	5	5	5	4	2	4	2	41	26	
4	2	3	2	3	4	4	1	3	1	2	3	3	2	5	4	2	3	3	3	32	27		
5	4	5	4	3	4	4	2	3	2	4	3	2	4	4	3	3	3	3	4	3	35	36	

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- Now that I have grand scores for *Positive Affect* and *Negative Affect*, I want to know what the average scores for both construct are. By averaging the scores, I will then be able to interpret the scores on the Likert scale that was originally administered.
 - To do this, I divided the total *Positive Affect* and total *Negative Affect* scores by 10, the number of items that measure each construct.
 - By adding up the scores and dividing by the number of scores, I am in effect calculating the mean score for each construct.

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I divided the total PA score by 10, the number of items that measured PA to get the Average PA score in the next column.

I did the same for NA.

Questionnaire Items																				Avg PA	Avg NA		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
4	3	4	4	4	3	3	4	3	3	4	4	3	4	3	4	5	4	4	4	39	35	3.9	3.5
5	1	4	1	4	1	2	1	4	3	1	3	1	3	2	4	4	1	3	2	27	17	2.7	1.7
5	2	3	2	5	2	1	4	3	1	1	3	1	2	2	3	3	1	1	1	29	17	2.9	1.7
5	3	3	2	5	2	2	1	4	3	2	4	1	4	2	4	5	2	3	2	40	18	4.0	1.8
5	2	4	2	4	1	2	2	5	1	2	4	1	4	2	5	3	2	4	2	39	18	3.9	1.8
3	4	2	2	2	1	5	1	3	1	3	4	1	3	2	4	3	2	4	2	29	23	2.9	2.3
5	2	3	2	3	4	2	1	4	3	3	4	1	3	4	5	4	4	3	2	37	25	3.7	2.5
5	2	3	2	3	4	2	1	4	3	3	4	1	3	4	5	4	4	3	2	37	25	3.7	2.5
5	2	3	1	3	1	1	2	4	5	1	2	1	3	1	4	5	2	4	1	38	13	3.8	1.3
5	2	3	1	3	1	1	2	4	5	1	2	1	3	1	4	5	2	4	1	38	13	3.8	1.3
5	2	4	2	3	1	5	1	4	3	1	4	1	4	3	4	4	2	4	3	39	21	3.9	2.1
5	5	4	3	2	3	1	4	2	1	5	1	3	2	5	5	4	2	4	1	41	26	4.1	2.6
4	2	3	2	3	4	4	1	3	1	2	3	3	2	5	4	2	3	3	3	32	27	3.2	2.7
5	5	5	4	3	4	4	2	3	2	4	3	2	4	4	3	3	3	4	3	35	36	3.5	3.6

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- The average (Avg) PA and NA scores can now be interpreted on the Likert scale, i.e. an average score of 3.6 is midway between having *moderate* Positive Affect and *quite a bit* of Positive Affect.
 - 1 is low PA or NA
 - 5 is high PA or NA
 - 3 is average.
- Now that I have average PA and NA scores for each participant, I want to know the average PA and NA score for my overall sample.

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Each row lists the Avg PA and Avg NA score previously calculated for each participant.

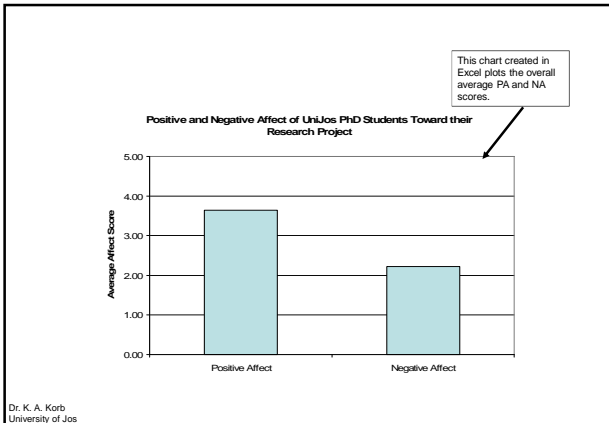
The Overall Mean was calculated by adding up all of the scores and dividing by 14, the number of scores.

For PA, an average of 3.64 means that the typical PhD student feels about midway between moderately and quite a bit of Positive Affect toward their Research Project.

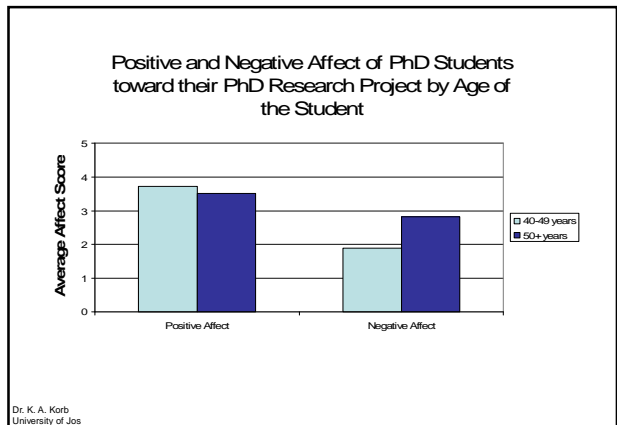
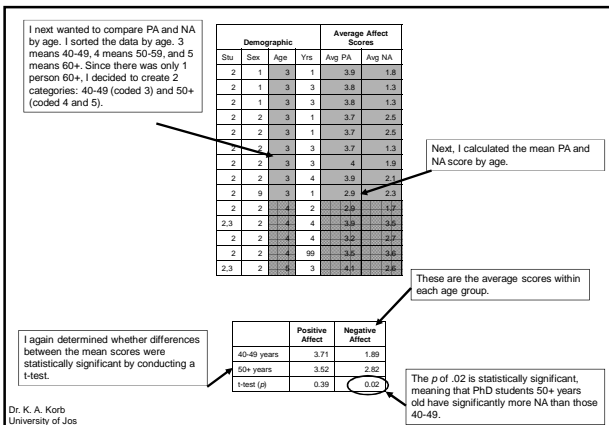
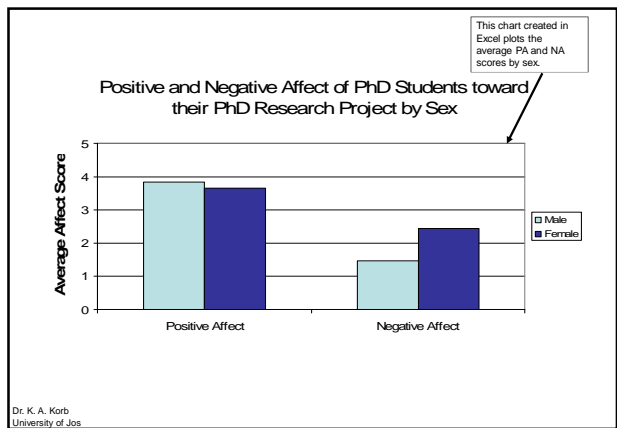
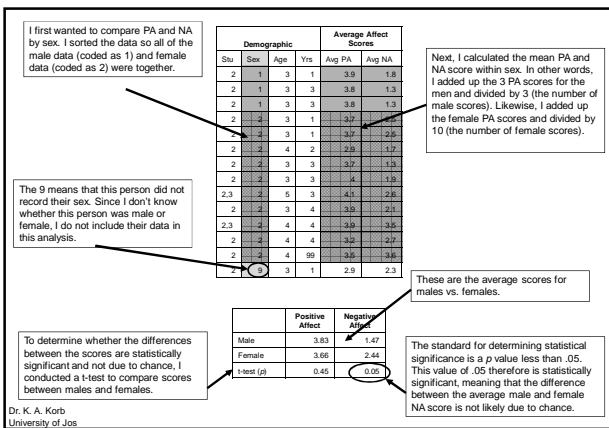
For NA, an average of 2.22 means that the typical PhD student feels close to a little Negative Affect toward their Research Project.

S/No	Avg PA	Avg NA
1	3.9	3.5
2	3.7	1.3
3	2.9	1.7
4	4.0	1.9
5	3.9	1.8
6	2.9	2.3
7	3.7	2.5
8	3.7	2.5
9	3.8	1.3
10	3.8	1.3
11	3.9	2.1
12	4.1	2.6
13	3.2	2.7
14	3.5	3.6
Overall Mean	3.64	2.22

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- Now that I have analyzed the Positive and Negative Affect for PhD students overall, I would like to compare Positive and Negative Affect by the demographic characteristics that I assessed.
 - When comparing results by demographic characteristics, this study turns into a *Causal-Comparative* Research Design (a subset of the Descriptive design) because I will be comparing PA and NA between naturally occurring variables (e.g., sex and age)
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- Since the differences in Negative Affect scores between males and females were different, we might be tempted to conclude that being female *causes* increased Negative Affect toward the PhD research project.
- Likewise, we might also be tempted to conclude that being older *causes* increased Negative Affect toward the PhD research project.
- However, you CANNOT do this. See the next slide to find out why.

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Note that the 3 males all happen to be in the 40-49 age category.

Demographic				Average Affect Scores	
Stu	Sex	Age	Yrs	Avg PA	Avg NA
2	1	3	1	3.9	1.8
2	1	3	3	3.6	1.3
2	1	3	3	3.6	1.3
2	2	3	1	3.7	2.5
2	2	3	1	3.7	2.5
2	2	3	3	3.7	1.3
2	2	3	3	4	1.9
2	2	3	4	3.9	2.1
2	2	4	2	2.9	1.7
2,3	2	4	4	3.9	3.5
2	2	4	4	3.2	2.7
2	2	4	99	3.5	3.6
2,3	2	4	3	4.1	2.6
2	0	3	1	2.9	2.5

However, the females are spread out in all 3 age categories.

Because the lower NA scores are associated with male students and students in the lower age bracket, AND because all 3 males are also in the lowest age bracket, we cannot determine whether the Negative Affect scores are *caused* by sex or by age. This is why we cannot make causal statements with a descriptive research design.

Finally, I wanted to compare PA and NA by years enrolled in the PhD program so I sorted the scores by Yrs. I decided to group the participants by those in the program 1-2 years and those in the program 3-4 years.

Demographic				Average Affect Scores	
Stu	Sex	Age	Yrs	Avg PA	Avg NA
2	1	3	1	3.9	1.8
2	2	3	1	3.7	2.5
2	2	3	1	3.7	2.5
2	2	3	3	3.7	1.3
2	2	3	3	4	1.9
2	2	3	4	3.9	2.1
2	2	4	2	2.9	1.7
2,3	2	4	4	3.9	3.5
2	2	4	4	3.2	2.7
2	2	4	99	3.5	3.6
2,3	2	4	3	4.1	2.6
2	0	3	1	2.9	2.5

Next, I calculated the mean PA and NA score by years in the program.

The 99 means that this person did not record their years in the program. Therefore, their scores were not included in this analysis.

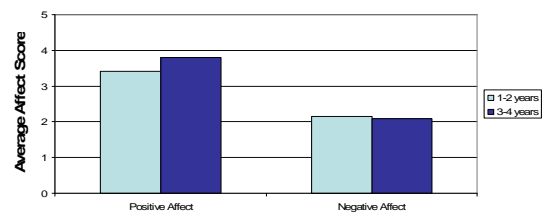
These are the average scores for each set of years in the program.

	Positive Affect	Negative Affect
1-2 years	3.42	2.16
3-4 years	3.80	2.09
t-test	0.09	0.86

I again determined whether differences between the mean scores were statistically significant by conducting a t-test. Since the p values were greater than .05, there were no statistically significant differences.

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Positive and Negative Affect of PhD Students toward their PhD Research Project by Years Enrolled in the Program



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5: Reach Conclusions

- **Conclusions**
 - Describing the current state of Affect by overall mean scores:
 - The typical PhD student at UniJos feels quite a bit of Positive Affect toward their Research Project.
 - The typical PhD student at UniJos feels little Negative Affect toward their Research Project.
 - Comparing the current state of Affect by demographic characteristics:
 - Female students tend to feel slightly more Negative Affect toward their Research Project than males.
 - Older students tend to feel slightly more Negative Affect toward their Research Projects than younger students.
 - There were no significant differences in Negative Affect by years enrolled in the PhD program.
 - There were no significant differences in Positive Affect for any of the demographic characteristics.

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6: Share Findings

- In my write-up for this research study, I would need to include the following information in the *Methods* section.
 - Participants
 - 14 PhD students at UniJos
 - Sex:
 - Male: 3
 - Female: 10
 - Missing: 1
 - Age:
 - 40-49: 9
 - 50-59: 4
 - 60+: 1
 - Years enrolled in program:
 - 1 year: 4
 - 2 years: 1
 - 3 years: 5
 - 4 years: 3
 - Missing: 1

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6: Share Findings

- **Methods Section, Continued**
- **Research Design:** Descriptive
 - Describing a phenomenon as it is
- **Instrument:** PANAS (Positive and Negative Affect Scale)
 - **Measures two affective state dimensions**
 - **Positive affect** – the state of high energy, full concentration, and pleasurable engagement
 - **Negative affect** – the state of unpleasurable engagement and distress
 - **Participants responded to how they feel when think about working on their PhD Research Project**
 - 10 items for Positive Affect
 - 10 items for Negative Affect
 - 5-point Likert scale from 1 (very slightly) to 5 (extremely)
 - Developed and validated by Watson, Clark, and Tellegen (1988)

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6: Share Findings

- **Methods Section, Concluded**
- **Procedure:**
 - Administer PANAS before PhD Research Seminar
- **Data Analysis:**
 - Mean for Positive Affect and Negative Affect
 - Calculated mean of PA and NA by demographic groups
 - Compared means by demographic group by t-test

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- **Results**
 - In the *Results* section, I would include the tables with mean values (for the sample overall in addition to sex, age, and years enrolled) as well as the charts.
 - I also need to include the standard deviation of scores for each mean value so the readers will know how much variation there is.

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Calculating the Standard Deviation

1. Subtract each score from the mean. (This gives you the deviation.)
2. Square each deviation.
3. Add up the squared deviations.
4. Divide the sum by total number of scores.
5. Take the square root of the product.

Therefore, the Standard Deviation is the square root of the average deviation.

Here I calculated the Standard Deviation (SD) for NA. The average NA score was 2.2.

Average Affect Scores		Standard Deviation Calculations	
Avg PA	Avg NA	Deviation	Dev Square d
3.9	1.8	-0.4	0.16
3.7	2.5	0.3	0.09
2.8	2.9	0.1	0.01
2.9	1.7	-0.5	0.25
3.8	1.3	-0.9	0.81
3.8	1.3	-0.9	0.81
3.7	1.3	-0.9	0.81
4	1.9	-0.3	0.09
4.1	2.6	0.4	0.16
3.9	2.1	-0.1	0.01
3.9	3.5	1.3	1.69
3.2	2.7	0.5	0.25
3.5	3.6	1.4	1.96
		Sum	7.19
		Avg Dev	0.51
		SD	0.72

First subtract each NA score from the mean of 2.2 (1.8 - 2.2 = -0.4)

Next square each deviation (-0.4 * -0.4 = 0.16)

Now add up all of the squared deviations (i.e., 0.16 + 0.09 + 0.09 + 0.25 + ...)

Divide the sum by 14, the number of scores.

Finally, take the square root of the Avg. Deviation to get the SD.

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Demographic				Average Affect Scores	
Stu	Sex	Age	Yrs	Avg PA	Avg NA
2	1	3	1	3.8	1.8
2	2	3	1	3.7	2.5
2	2	3	1	3.7	2.5
2	9	3	1	2.9	2.3
2	2	4	2	2.9	1.7
2	1	3	3	3.8	1.3
2	1	3	3	3.8	1.3
2	2	3	3	3.7	1.3
2	2	3	3	4	1.9
2.3	2	5	3	4.1	2.9
2	2	3	4	3.9	2.1
3.3	2	4	4	3.9	3.5
2	2	4	4	3.2	2.7
2	2	4	99	3.5	3.6

I calculated the standard deviation of the Avg scores for PA and NA separately. Once I calculated the standard deviations for the overall sample for PA and NA, I sorted the data by Sex, Age, and Yrs to find the standard deviations for those demographics. This procedure was similar to the procedure for calculating the average PA and NA scores.

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6: Share Findings

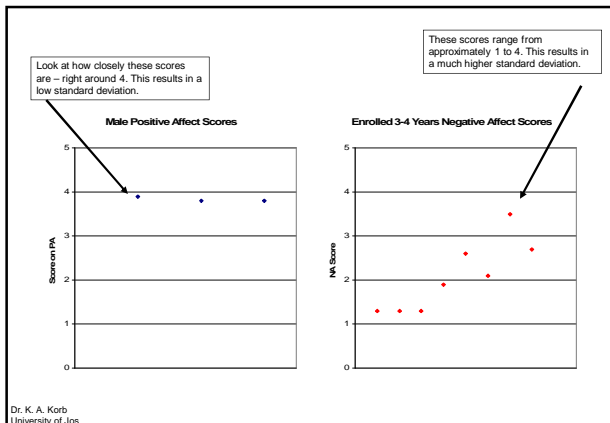
This low standard deviation means that there was very little variation in PA scores for the males (see next slide).

	Positive Affect	Negative Affect
Overall	0.38	0.72
Male	0.06	0.29
Female	0.37	0.73
40-49 years	0.32	0.50
50+	0.49	0.77
1-2 years	0.48	0.38
3-4 years	0.27	0.80

These are the standard deviations for each demographic where I reported a mean.

This large score means that there were great differences between NA scores for those enrolled in the program for 3-4 years (see next slide).

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6: Share Findings

- Discussion
 - In the *Discussion* section, I would discuss the conclusions that I reached in Step 5.
 - I should also include *Implications of the research*, *Limitations of the study*, and *Directions for Future Research*.
 - *Implications*: Supervisors should pay careful attention to the distress level of female and older students and provide additional support when necessary.
 - *Limitations*: Small sample size and is limited to ASSE students.
 - *Directions for Future Research*: Conduct a similar study with a broader range of departments; Examine whether counseling interventions decrease Negative Affect

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