

# Dataset 5 Analysis

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# Summary of the Terms

<i>Term</i>	Number of Students	<i>Term</i>	Number of Students	<i>Term</i>	Number of Students
<b>06/2003</b>	<b>14</b>	<b>05/2007</b>	<b>28</b>	<b>05/2011</b>	<b>1</b>
<b>08/2003</b>	<b>1232</b>	<b>08/2007</b>	<b>1382</b>	<b>08/2011</b>	<b>1662</b>
<b>01/2004</b>	<b>3</b>	<b>01/2008</b>	<b>1</b>	<b>01/2012</b>	<b>6</b>
<b>06/2004</b>	<b>9</b>	<b>05/2008</b>	<b>49</b>	<b>05/2012</b>	<b>24</b>
<b>08/2004</b>	<b>1301</b>	<b>08/2008</b>	<b>1430</b>	<b>08/2012</b>	<b>1648</b>
<b>05/2005</b>	<b>9</b>	<b>01/2009</b>	<b>3</b>	<b>01/2013</b>	<b>1</b>
<b>08/2005</b>	<b>1318</b>	<b>05/2009</b>	<b>31</b>	<b>05/2013</b>	<b>59</b>
<b>01/2006</b>	<b>3</b>	<b>08/2009</b>	<b>1445</b>	<b>08/2013</b>	<b>1793</b>
<b>05/2006</b>	<b>23</b>	<b>01/2010</b>	<b>2</b>	<b>01/2014</b>	<b>1</b>
<b>08/2006</b>	<b>1284</b>	<b>05/2010</b>	<b>12</b>	<b>05/2014</b>	<b>59</b>
<b>01/2007</b>	<b>3</b>	<b>08/2010</b>	<b>1666</b>	<b>08/2014</b>	<b>1702</b>

\* 3 Students entered in 01/2015 haven't GPA yet.

# Index

- From 06/2003 to 01/2004, use campssi as index. (4.00)
- Start from 06/2004 to 01/2012, use campuspgpa as index. (4.00)
- From 05/2012 till now, use AcademicIndex as index. (100)

- Model 1  $EngineeringGPA \sim Index$
- Model 2  $EngineeringGPA \sim Gender$
- Model 3

$EngineeringGPA \sim Index + Gender + Index*Gender + Degree$

*Index*: three kinds of academic index.

*Gender*: male/female.

*Index\*Gender*: to test whether the index effects on EngineeringGPA are *different* between males and females.

*Degree*: whether earned a degree from University of Illinois.

Term	Students	Model 1	Model 2	Model 3
06/2003	14			0.94*degree
08/2003	1232	1.617	0.1435*F	1.35*index, 0.65*degree
08/2004	1301	0.667		0.564*index, 0.83*degree
05/2005	9	1.857		1.97*index
08/2005	1318	1.352	0.156*F	0.977*index, 0.89*degree
08/2006	1284	1.52		1.23*index, 0.755*degree
05/2007	28			0.66*degree
08/2007	1382	1.21		0.975*index, 0.764*degree
05/2008	49			0.967*degree
08/2008	1430	1.44	0.1168*F	1.16*index, 0.797*degree
08/2009	1445	1.24	0.136*F	0.86*index, 0.758*degree
05/2010	12	2.72		
08/2010	1666	1.24	0.137*F	0.832*index, 0.654*degree
08/2011	1662	1.3	0.099*F	1.14*index, -2.54*F, <b>0.79*index*F</b> , 0.457*degree
08/2012	1648	0.026	0.119*F	0.029*index, 1*F, <b>-0.01*index*F</b>
05/2013	59	0.053		0.0019*index
08/2013	1793	0.0486		0.048*index
05/2014	59	0.0368		0.036*index
08/2014	1702	0.047		0.049*index

- If model is not significant for a term, it doesn't show in table.
- The coefficients show in table mean they're significant in that model (significance level 95%).
- Index has a positive effect on the EngineeringGPAs if the model fits.
- Female has greater EngineeringGPAs.

Term	Students	Model 1	Model 2	Model 3
06/2003	14			0.94*degree
08/2003	1232	1.617	0.1435*F	1.35*index, 0.65*degree
08/2004	1301	0.667		0.564*index, 0.83*degree
05/2005	9	1.857		1.97*index
08/2005	1318	1.352	0.156*F	0.977*index, 0.89*degree
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08/2009	1445	1.24	0.136*F	0.86*index, 0.758*degree
05/2010	12	2.72		
08/2010	1666	1.24	0.137*F	0.832*index, 0.654*degree
08/2011	1662	1.3	0.099*F	1.14*index, -2.54*F, 0.79*index*F, 0.457*degree
08/2012	1648	0.026	0.119*F	0.029*index, 1*F, -0.01*index*F
05/2013	59	0.053		0.0019*index
08/2013	1793	0.0486		0.048*index
05/2014	59	0.0368		0.036*index
08/2014	1702	0.047		0.049*index

- In 08/2011, it shows the index effects on EngineeringGPAs are ***different*** for males and females. The index effect is ***higher*** for females.
- In 08/2012, it shows the index effect on EngineeringGPAs are ***different*** for males and females. The index effect is ***lower*** for females.
- If a student graduates from U of I, his EngineeringGPA is ***higher***.

# Academic Index Analysis

Term	Effective Observation	Missing
08/2012	1282	366
08/2013	1361	432
08/2014	1362	340

# Academic Index Analysis

Term	mean	Min	max	25%	50%	75%	100%	Group 1/2
08/2012	87.25	63	107	83	88	91	107	83
08/2013	88.04	62	107	84	88	92	107	84
08/2014	90.45	69	108	87	91	94	108	87

# Academic Index for 2012

Quantile=1

Analysis Variable : index				
N	Mean	Std Dev	Minimum	Maximum
331	79.4592145	3.5718595	63.0000000	83.0000000

Quantile=2

Analysis Variable : index				
N	Mean	Std Dev	Minimum	Maximum
396	86.1035354	1.3950682	84.0000000	88.0000000

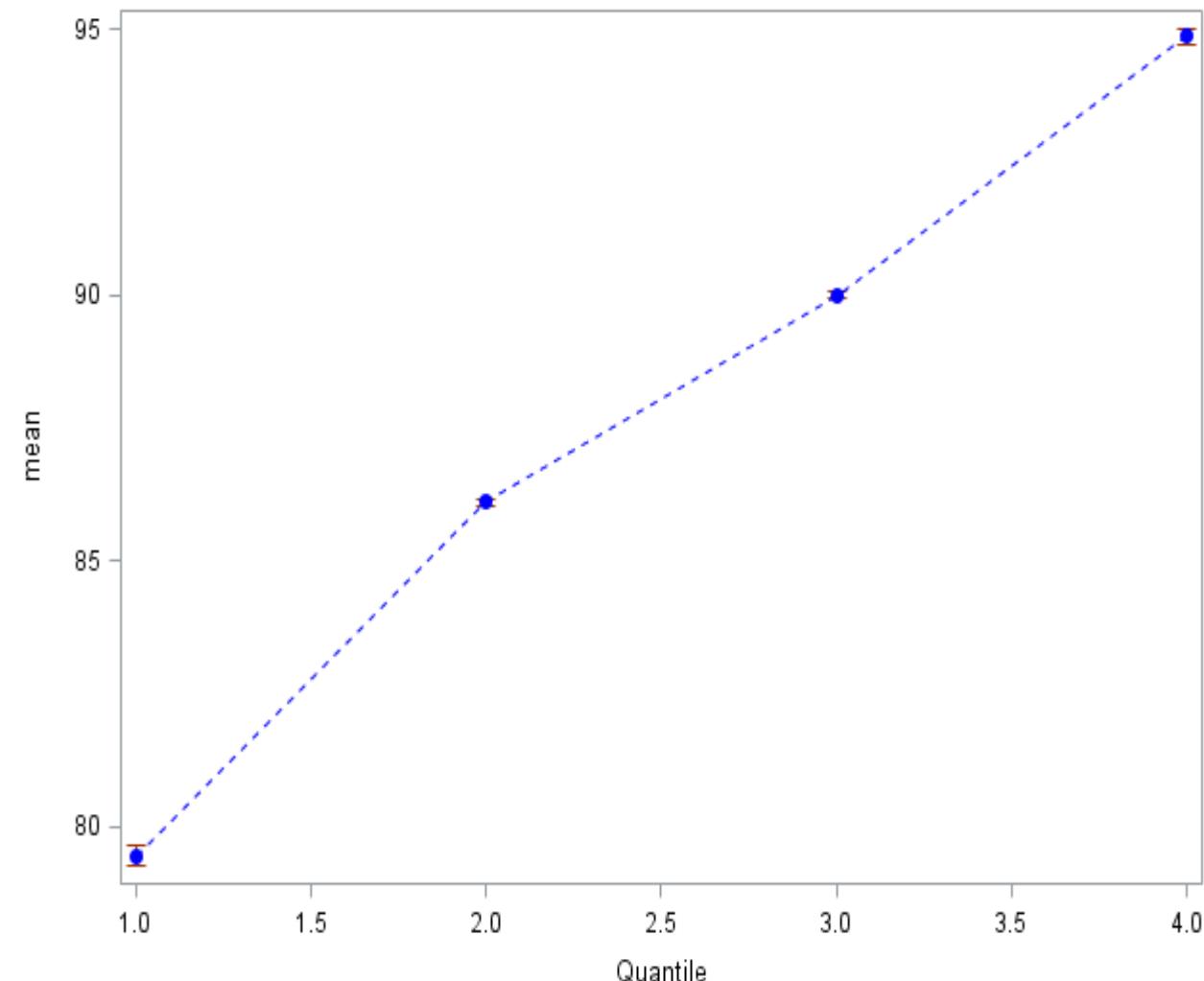
Quantile=3

Analysis Variable : index				
N	Mean	Std Dev	Minimum	Maximum
239	90.0041841	0.8326222	89.0000000	91.0000000

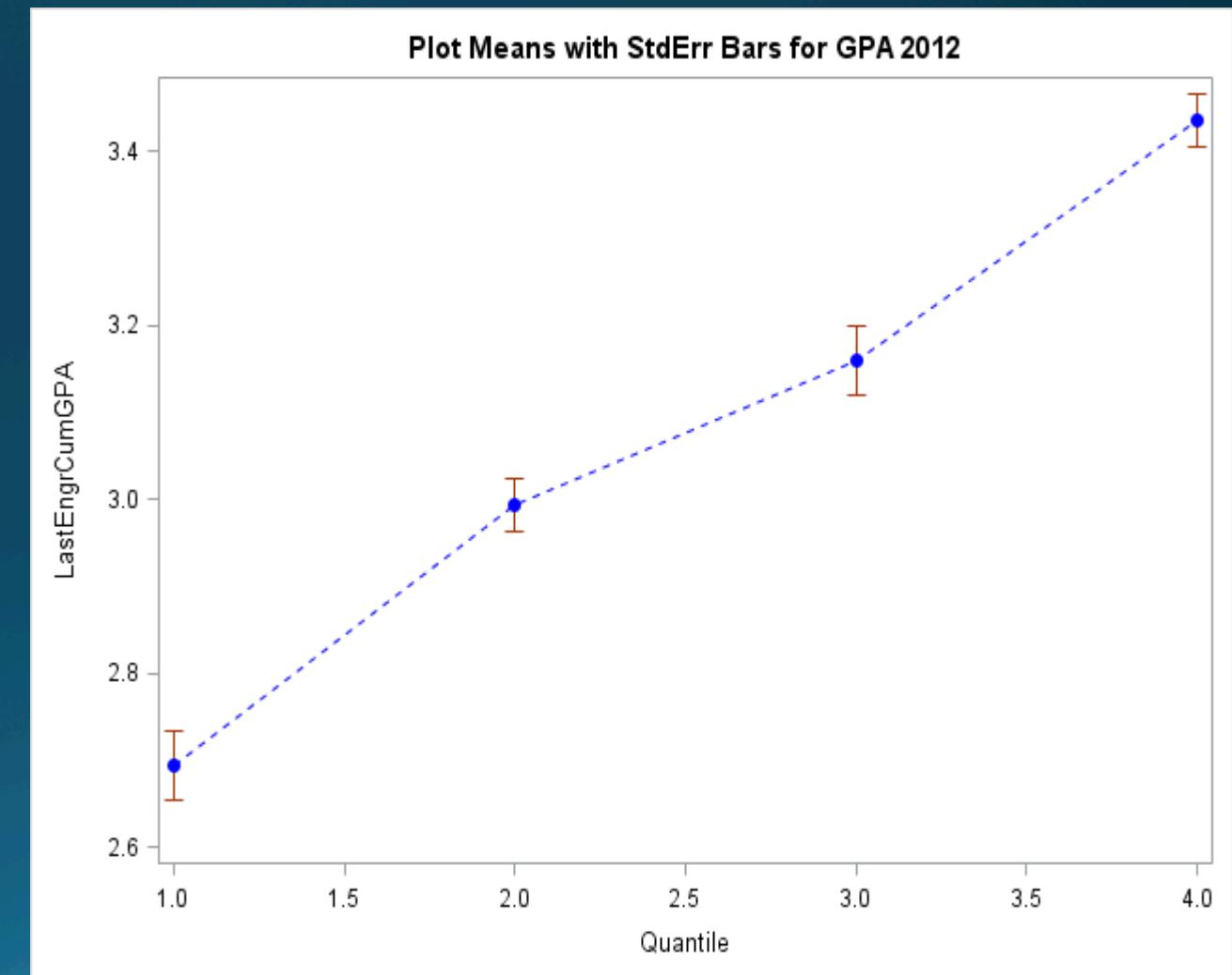
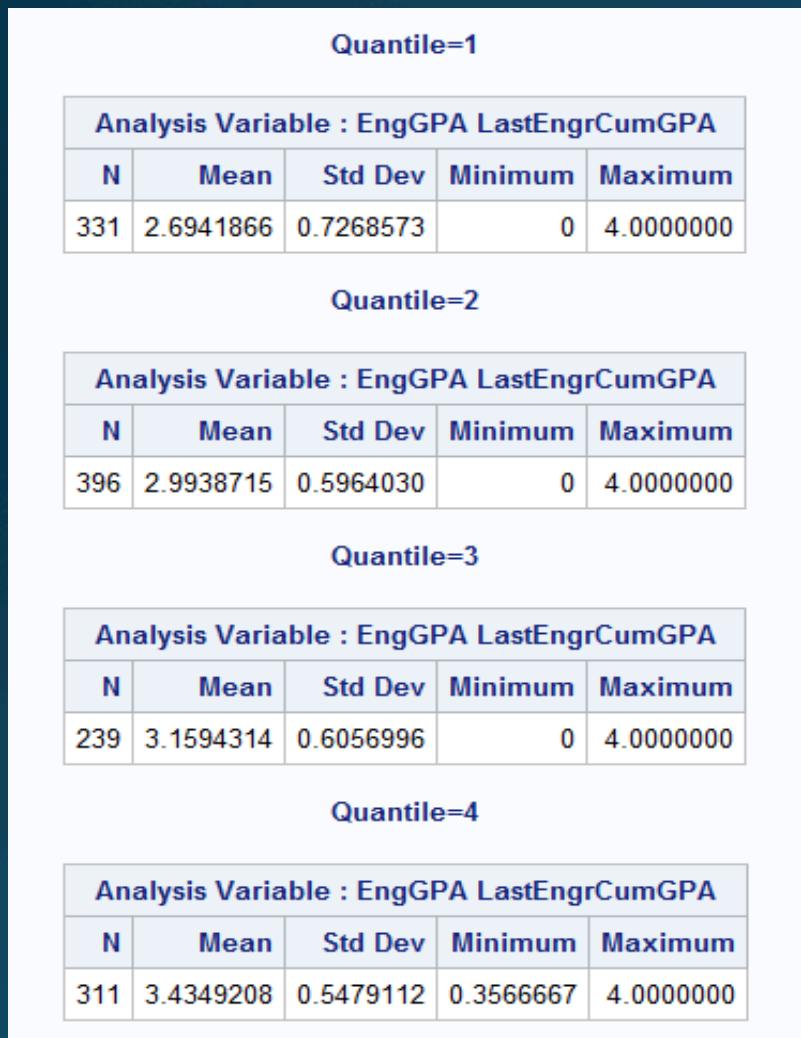
Quantile=4

Analysis Variable : index				
N	Mean	Std Dev	Minimum	Maximum
311	94.8649518	2.5108333	92.0000000	107.0000000

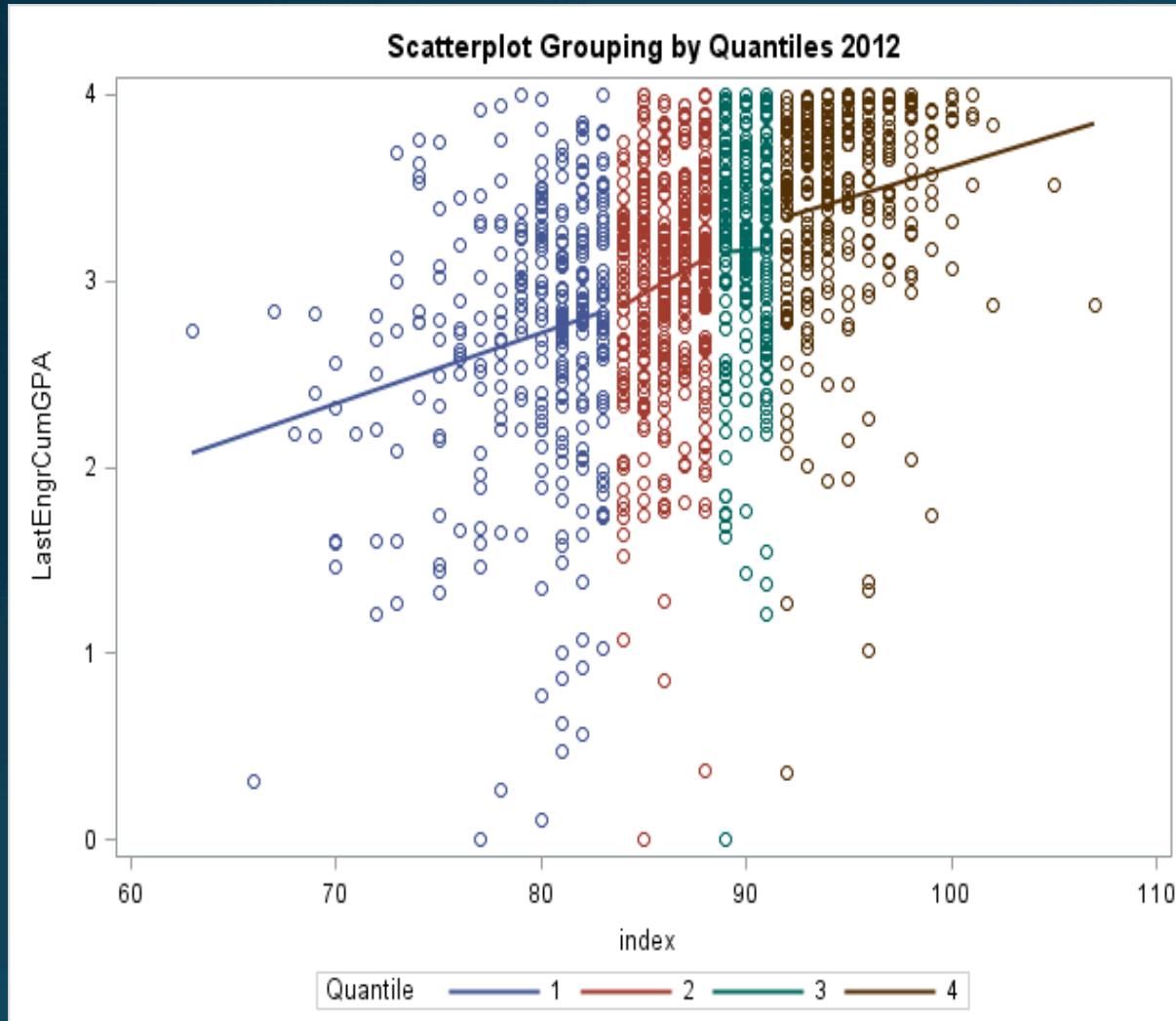
Plot Means with StdErr Bars for AI 2012



# EngineeringGPA for 2012

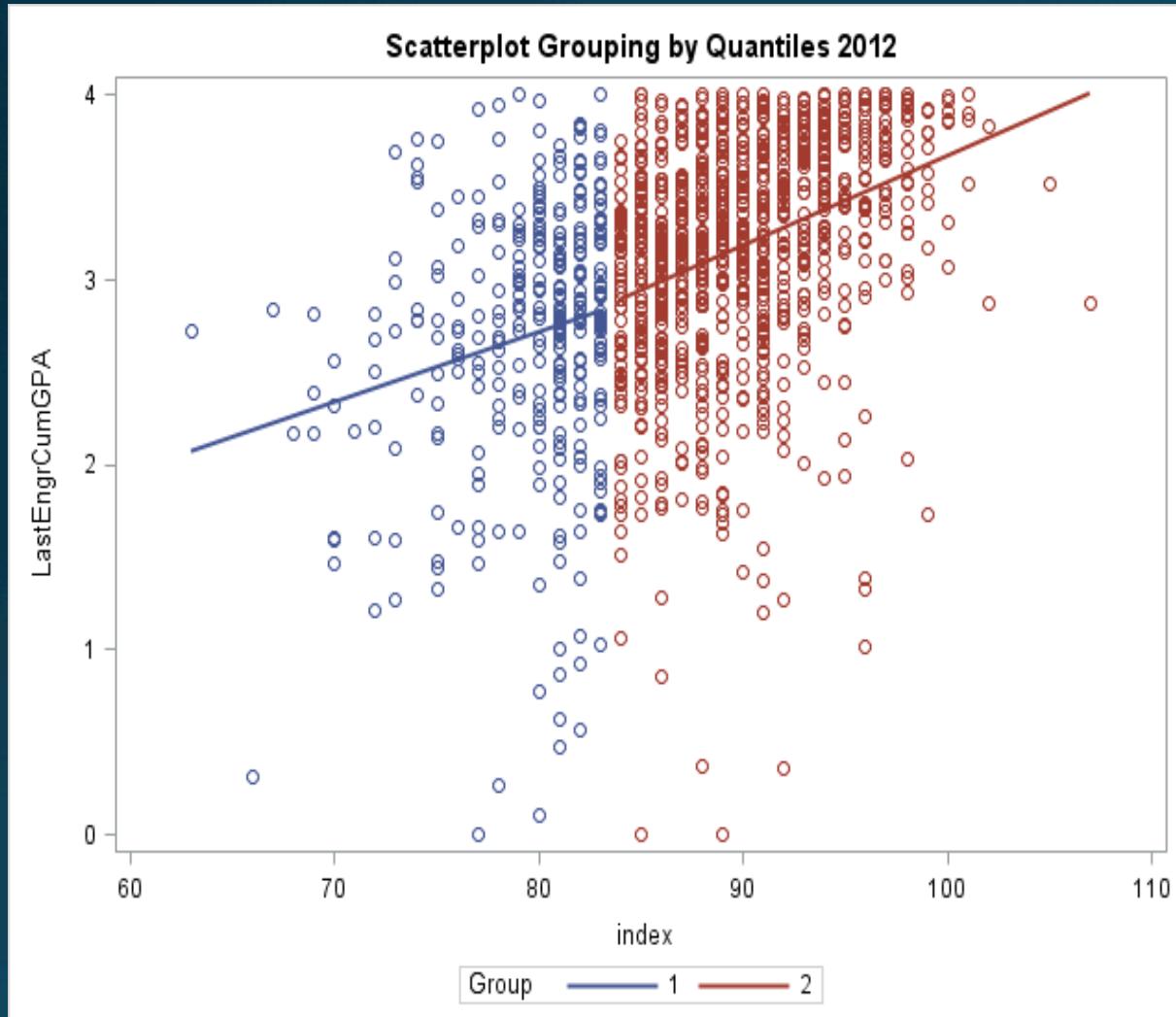


# Academic Index vs. GPA for 2012



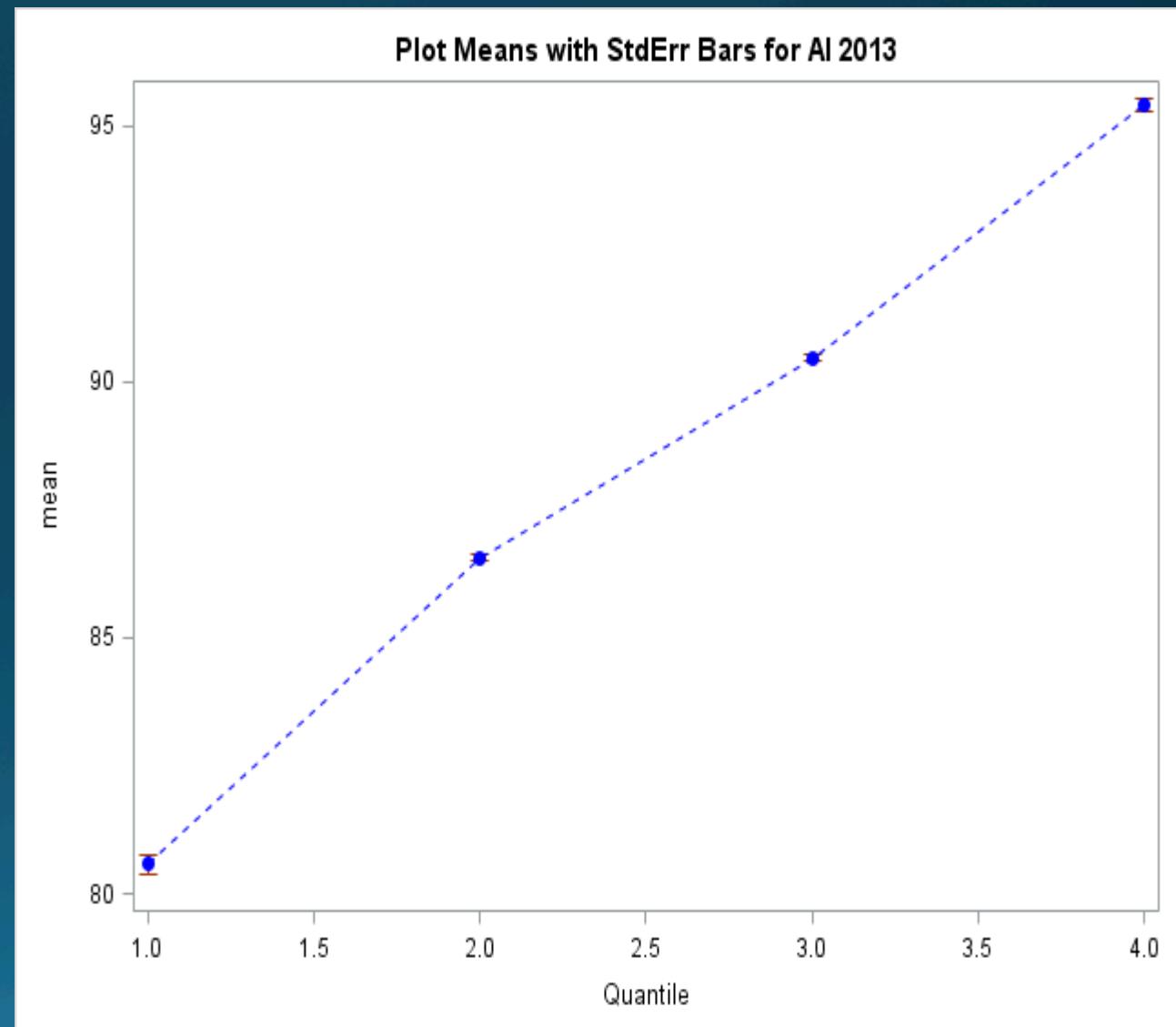
- The effect of AI is different for different groups.
- In the 3<sup>rd</sup> quartile, 1 point increase in AI has the **lowest** increase in GPA.
- In the 2<sup>nd</sup> quartile, 1 point increase in AI has the **highest** increase in GPA.

# Academic Index vs. GPA for 2012



- The effect of AI is different for different groups.
- For the lowest 25 percentile, 1 point increase in AI has the *lower* increase in GPA.
- In the highest 75%, 1 point increase in AI has the *higher* increase in GPA.

# Academic Index for 2013



# EngineeringGPA for 2013

Quantile=1

Analysis Variable : EngGPA LastEngrCumGPA				
N	Mean	Std Dev	Minimum	Maximum
351	2.7097765	0.7144527	0.2330000	4.0000000

Quantile=2

Analysis Variable : EngGPA LastEngrCumGPA				
N	Mean	Std Dev	Minimum	Maximum
360	2.9880866	0.6398788	0	4.0000000

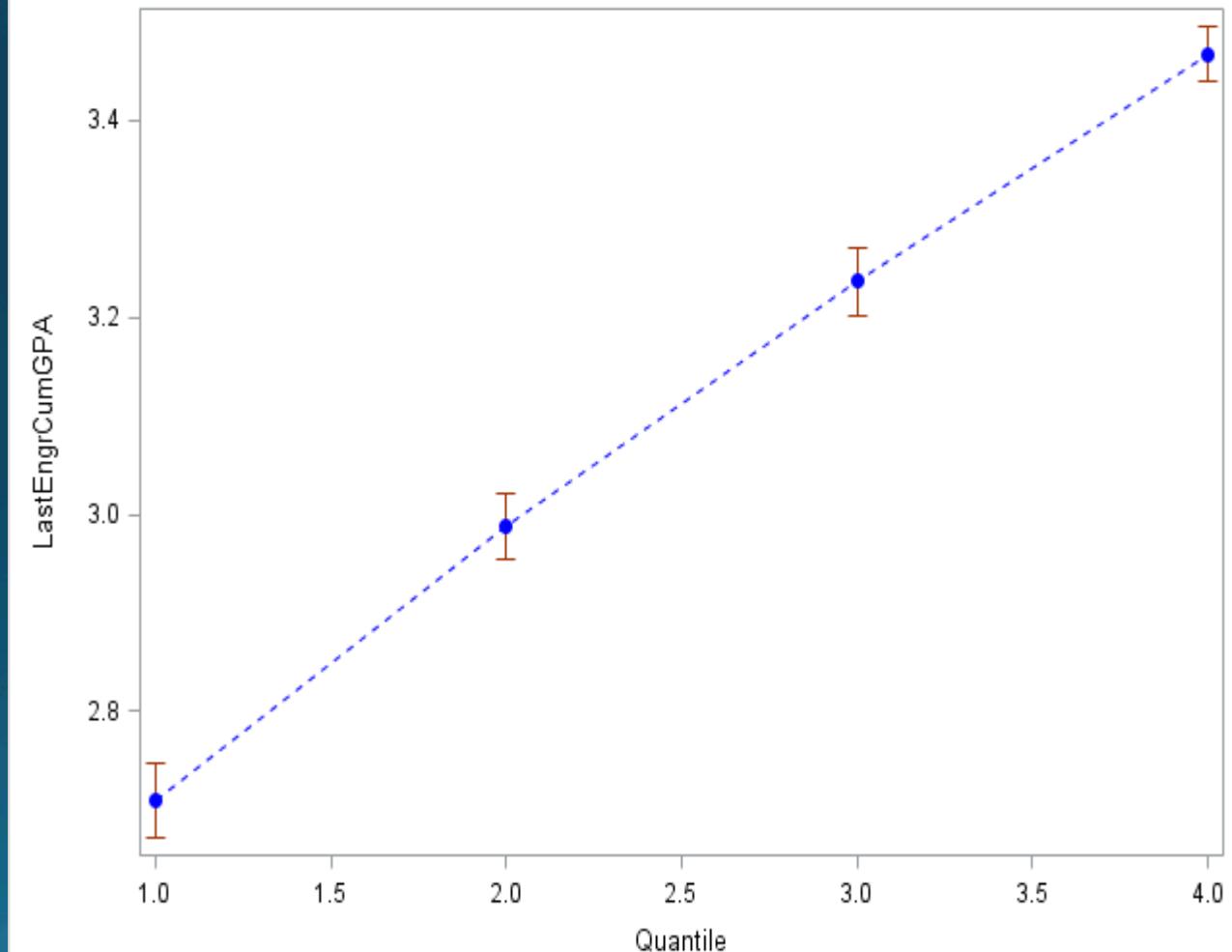
Quantile=3

Analysis Variable : EngGPA LastEngrCumGPA				
N	Mean	Std Dev	Minimum	Maximum
333	3.2361551	0.6283810	0	4.0000000

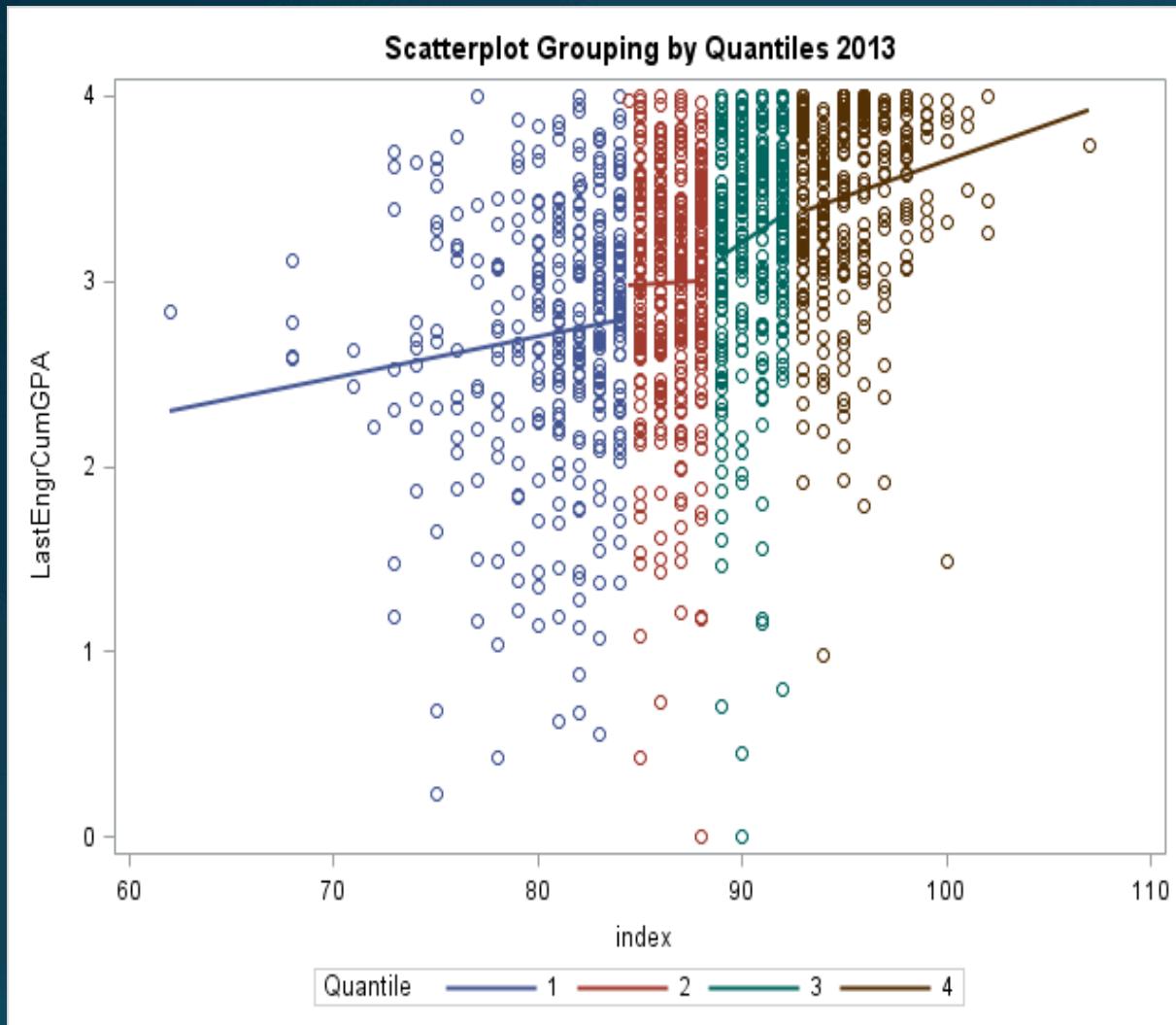
Quantile=4

Analysis Variable : EngGPA LastEngrCumGPA				
N	Mean	Std Dev	Minimum	Maximum
317	3.4669718	0.5060268	0.9768966	4.0000000

Plot Means with StdErr Bars for GPA 2013

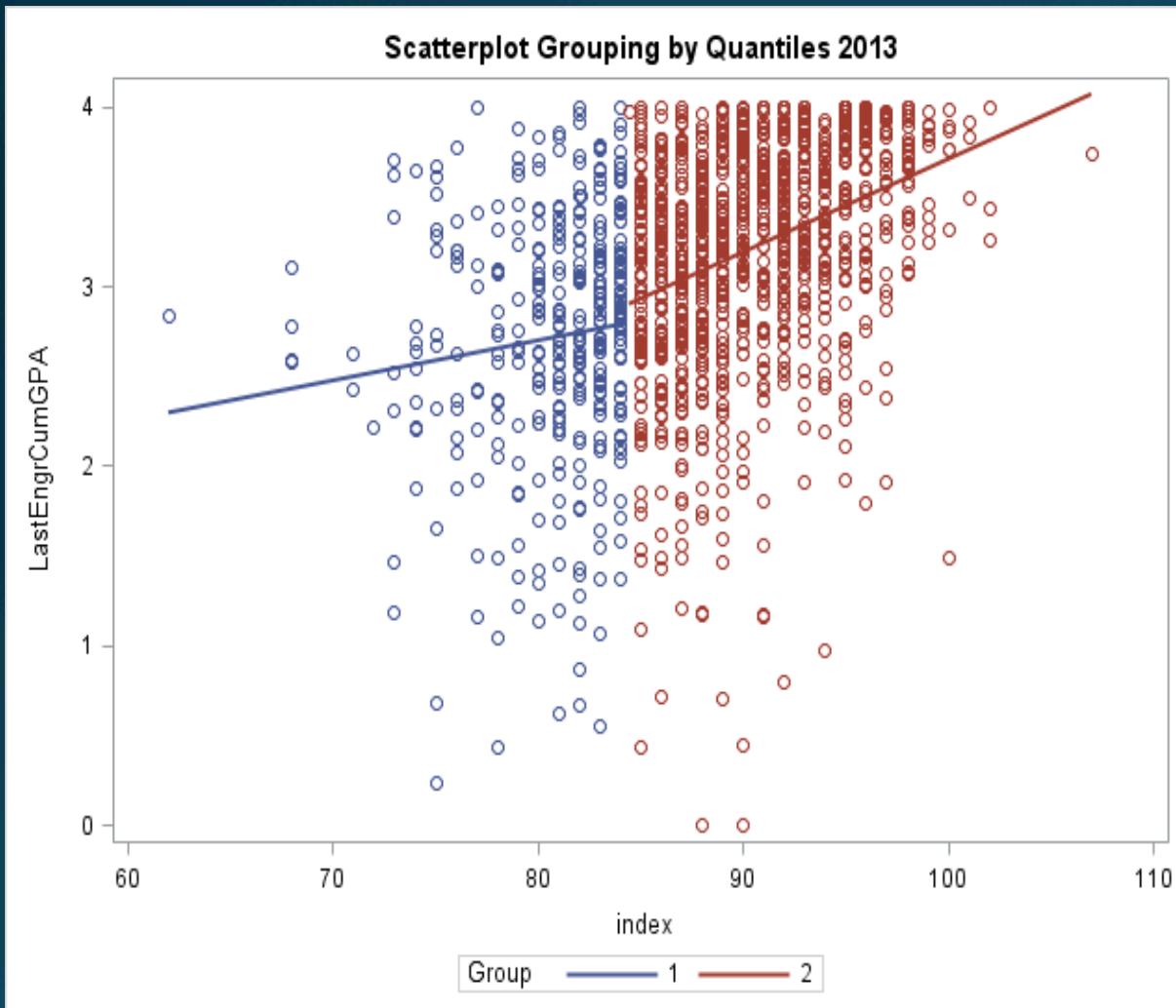


# Academic Index vs. GPA for 2013



- The effect of AI is different for different groups.
- In the 2<sup>nd</sup> quartile, 1 point increase in AI has the **lowest** increase in GPA.
- In the 3<sup>rd</sup> quartile, 1 point increase in AI has the **highest** increase in GPA.

# Academic Index vs. GPA for 2013



- The effect of AI is different for different groups.
- For the lowest 25 percentile, 1 point increase in AI has the **lower** increase in GPA.
- In the highest 75%, 1 point increase in AI has the **higher** increase in GPA.

# Academic Index for 2014

Quantile=1

Analysis Variable : index				
N	Mean	Std Dev	Minimum	Maximum
390	84.0820513	3.1432690	69.0000000	87.0000000

Quantile=2

Analysis Variable : index				
N	Mean	Std Dev	Minimum	Maximum
376	89.5664894	1.1007122	88.0000000	91.0000000

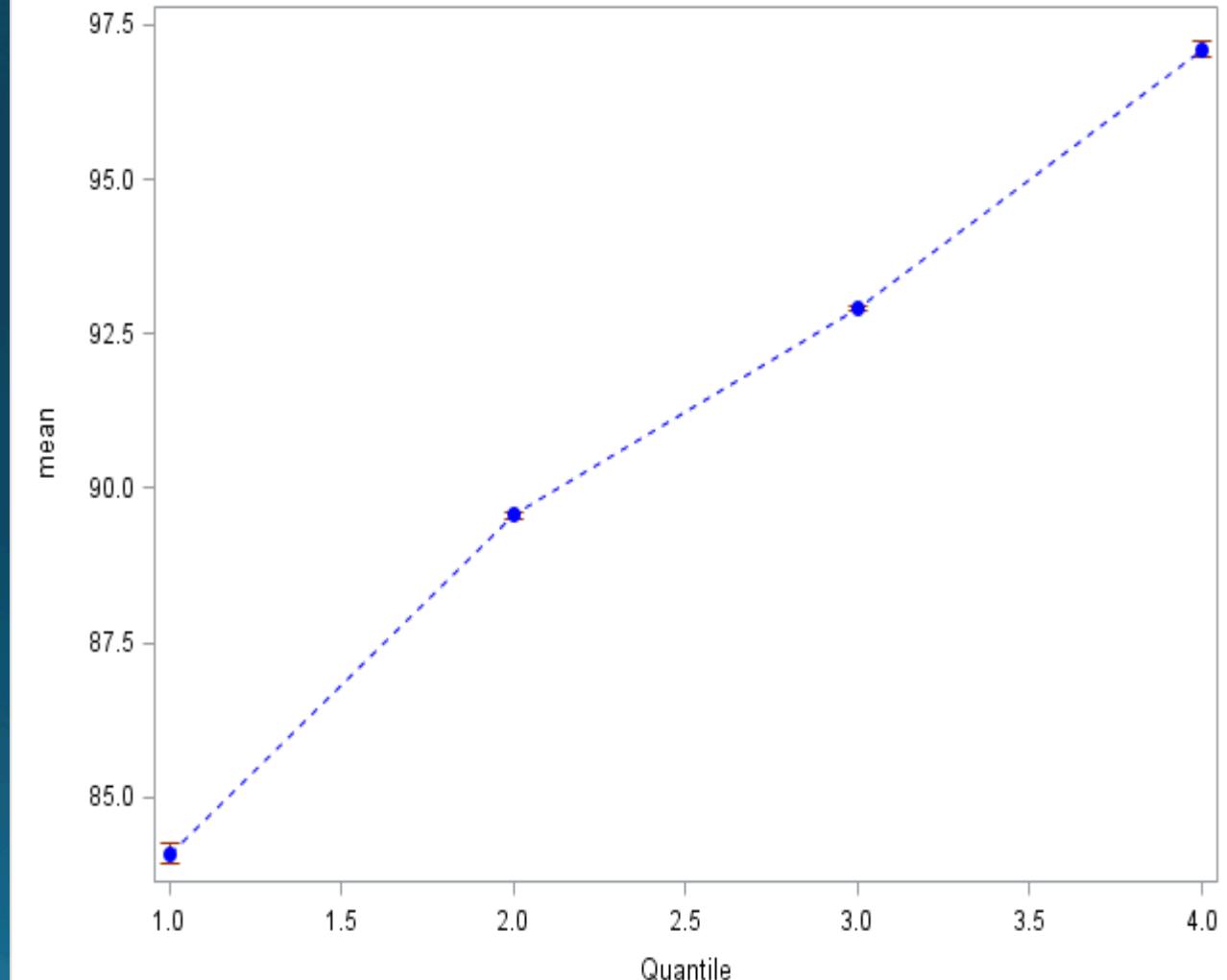
Quantile=3

Analysis Variable : index				
N	Mean	Std Dev	Minimum	Maximum
276	92.9130435	0.8133277	92.0000000	94.0000000

Quantile=4

Analysis Variable : index				
N	Mean	Std Dev	Minimum	Maximum
320	97.1093750	2.1343378	95.0000000	108.0000000

Plot Means with StdErr Bars for AI 2014



# EngineeringGPA for 2014

Quantile=1

Analysis Variable : EngGPA LastEngrCumGPA				
N	Mean	Std Dev	Minimum	Maximum
390	2.9481726	0.7469722	0	4.0000000

Quantile=2

Analysis Variable : EngGPA LastEngrCumGPA				
N	Mean	Std Dev	Minimum	Maximum
376	3.2535290	0.6114721	0	4.0000000

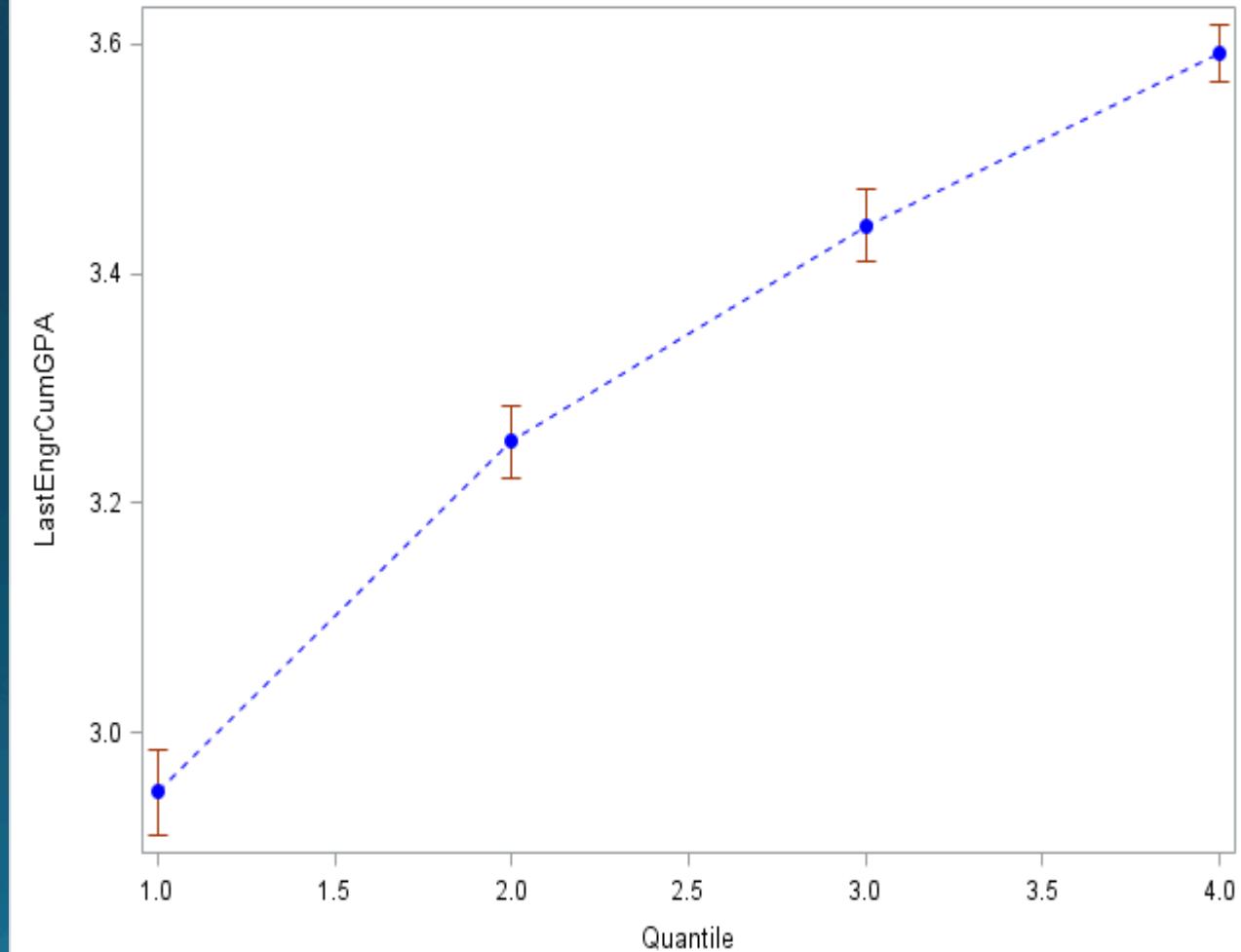
Quantile=3

Analysis Variable : EngGPA LastEngrCumGPA				
N	Mean	Std Dev	Minimum	Maximum
276	3.4419024	0.5184624	1.1091667	4.0000000

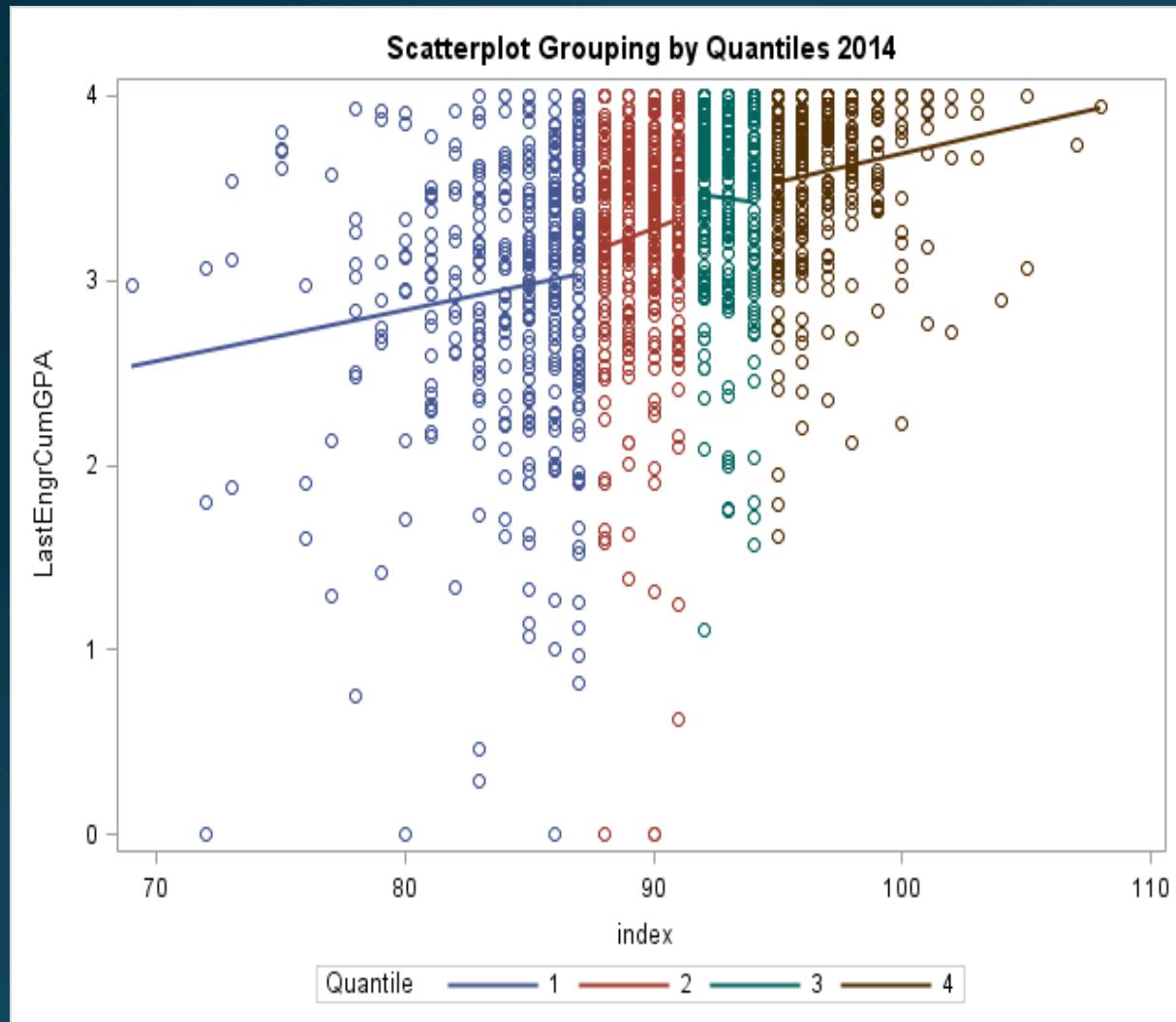
Quantile=4

Analysis Variable : EngGPA LastEngrCumGPA				
N	Mean	Std Dev	Minimum	Maximum
320	3.5928385	0.4373997	1.6185714	4.0000000

Plot Means with StdErr Bars for GPA 2014

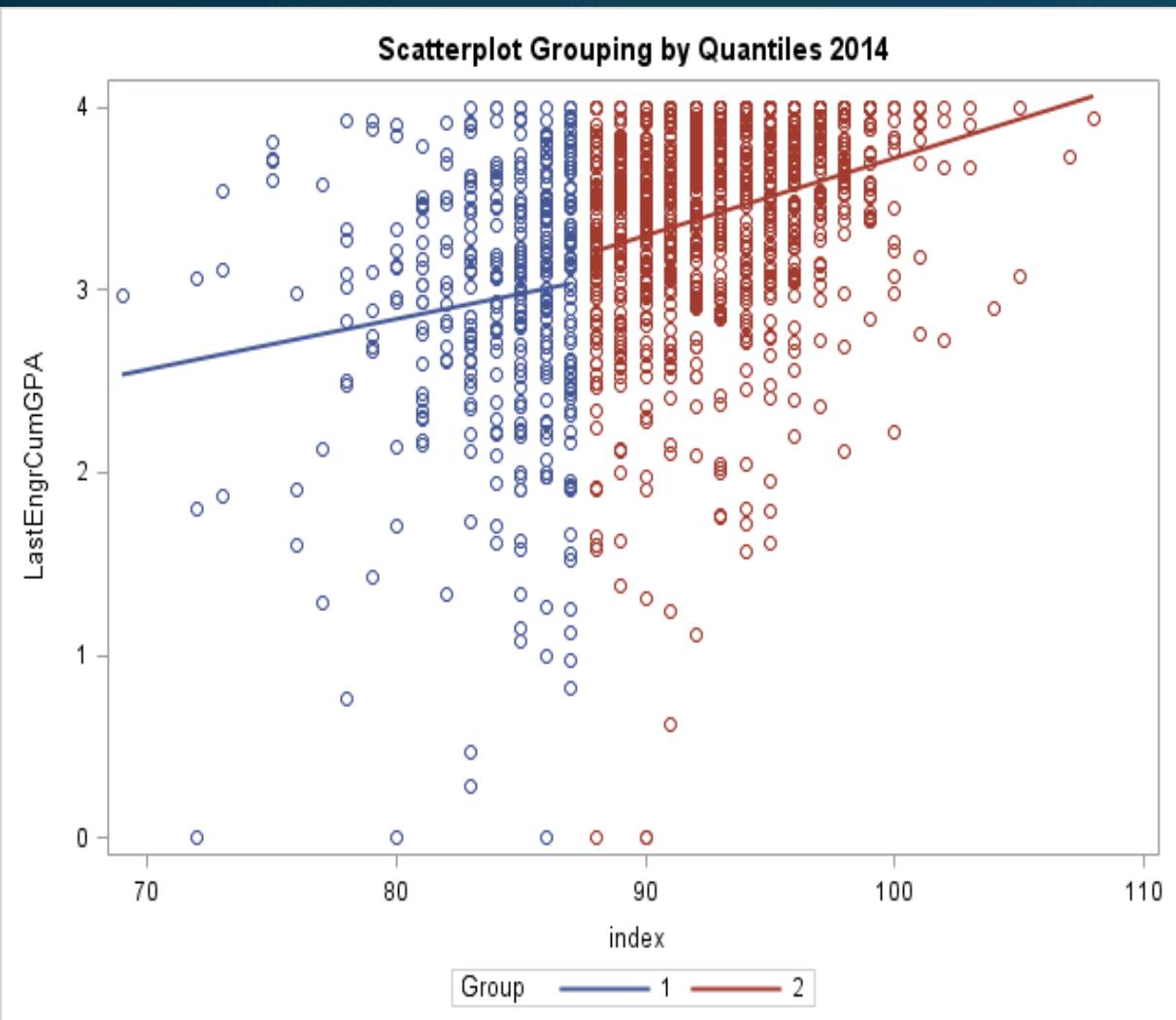


# Academic Index vs. GPA for 2013



- The effect of AI is different for different groups.
- In the 3rd quartile, 1 point increase in AI has the decrease effect in GPA.
- In the 2<sup>nd</sup> quartile, 1 point increase in AI has the **highest** increase in GPA.

# Academic Index vs. GPA for 2013



- The effect of AI is different for different groups.
- For the lowest 25 percentile, 1 point increase in AI has the *lower* increase in GPA.
- In the highest 75%, 1 point increase in AI has the *higher* increase in GPA.

Any questions?