Forecasting the supply of graduates in the educational pipeline

In this month’s newsletter, the FAEIS team investigated the supply of graduates in the educational pipeline between 2004 and 2011. We investigated Baccalaureate, Masters, and Doctorate degrees awarded at 175 Land-grant and non-Land-grant institutions. We forecasted the degrees awarded for 2012 to 2015. Degrees awarded were forecasted by taking the mean of the growth for each year between 2004 and 2011. The predictions do not include socio-demographic factors that may impact degrees awarded, such as the number of students graduating from high school or changes in populations across the U.S. The error associated with the prediction was calculated by comparing the actual values for the 2011 reporting year by the predicted values for 2011. The percent difference between the actual values and the predicted values were determined to be the percent error. The percent error for prediction values for Baccalaureate degrees was +/- 1.05%, for Masters degrees was +/- 0.26%, and for Doctorate degrees was +/- 7.08%.

Figure 1. Degrees awarded from 2004 to 2011 in undergraduate and graduate programs (n=175 institutions). Source: FAEIS database.

Based on our analyses we found the following results. Click here to view degrees awarded report.

- Baccalaureate degrees awarded increased by 21.1% between 2004 and 2011, with an average increase of 2.8% per year.
- Masters degrees awarded increased by 14.1% between 2004 and 2011, with an average increase of 2.0% per year.
- Doctorate degrees awarded remained constant (0% change) between 2004 and 2011, with an average increase of 0.1% per year.
Forecasting Baccalaureate degrees awarded by program area

We investigated Baccalaureate degrees awarded in three major program areas, namely 1) agriculture, agriculture operations, and related sciences, 2) family and consumer sciences and human sciences, and 3) natural resources and conservation (Figure 2). Based on our analyses we found the following:

- Degrees awarded in Family and Consumer Sciences increased by 24.7% between 2004 and 2011, with an average increase of 3.3% per year.
- Degrees awarded in Agriculture increased by 16.1% between 2004 and 2011, with an average increase of 2.2% per year.
- Degrees awarded in Natural Resources and Conservation increased by 19.5% between 2004 and 2011, with an average increase of 2.6% per year.

![Baccalaureate Degrees Awarded](image)

Figure 2. Baccalaureate degrees awarded by program areas in 2004 to 2011 (n=175 institutions). Source: FAEIS database.

Forecasting Masters degrees awarded by program area

We investigated Masters degrees awarded in three major program areas, namely 1) agriculture, agriculture operations, and related sciences, 2) family and consumer sciences and human sciences, and 3) natural resources and conservation (Figure 3). Based on our analyses we found the following results:

- Degrees awarded in Agriculture increased by 11.4% between 2004 and 2011, with an average increase of 1.7 % per year.
- Degrees awarded in Family and Consumer Sciences increased by 25.5% between 2004 and 2011, with an average increase of 1.2% per year.
- Degrees awarded in Natural Resources and Conservation increased by 24.7% between 2004 and 2011, with an average increase of 0.5% per year.

![Masters Degrees Awarded](image)

Figure 3. Masters degrees awarded by program areas in 2004 to 2011 (n=121 institutions). Source: FAEIS database.

Forecasting Doctorate degrees awarded by program area

We investigated Doctorate degrees awarded in three major program areas, namely 1) agriculture, agriculture operations, and related sciences, 2) family and consumer sciences and human sciences, and 3) natural resources and conservation (Figure 4). Based on our analyses we found the following results:

- Degrees awarded in Agriculture increased by 0.4% between 2004 and 2011, with an average increase of 0.2% per year.
- Degrees awarded in Natural Resources and Conservation remained constant (0% change) between 2004 and 2011, with an average increase of 0.5% per year.
- Degrees awarded in Family and Consumer Sciences increased by 2.3% between 2004 and 2011, with an average increase of 1.2% per year.

![Doctorate Degrees Awarded](image)

Figure 4. Doctorate degrees awarded by program areas in 2004 to 2011 (n=64 institutions). Source: FAEIS database.
We investigated Baccalaureate degrees awarded in three major program areas, namely 1) agriculture, agriculture operations, and related sciences, 2) family and consumer sciences and human sciences, and 3) natural resources and conservation (Figure 2). Based on our analyses we found the following:

- Degrees awarded in Natural Resources and Conservation increased by 3.9% per year.
- Degrees awarded in Family and Consumer Sciences increased by 3.3% per year.
- Degrees awarded in Agriculture increased by 1.7% per year.

Masters degrees awarded by program area

We investigated Masters degrees awarded in three major program areas, namely 1) agriculture, agriculture operations, and related sciences, 2) family and consumer sciences and human sciences, and 3) natural resources and conservation (Figure 3). Based on our analyses we found the following:

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- Degrees awarded in Family and Consumer Sciences increased by 25.5% between 2004 and 2011, with an average increase of 2.3% per year.
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Doctorate degrees awarded by program area

We investigated doctorate degrees awarded in three major program areas, namely 1) agriculture, agriculture operations, and related sciences, 2) family and consumer sciences and human sciences, and 3) natural resources and conservation (Figure 4). Based on our analyses we found the following:

- Degrees awarded in Agriculture increased by 0.4% between 2004 and 2011, with an average increase of 0.2% per year.
- Degrees awarded in Natural Resources and Conservation remained constant (0% change) between 2004 and 2011, with an average increase of 0.5% per year.
- Degrees awarded in Family and Consumer Sciences increased by 2.3% between 2004 and 2011, with an average increase of 1.2% per year.
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