

Sub-theme: People of future agriculture

**PREPARING GRADUATE STUDENTS FOR FUTURE WORKFORCE IN  
AGRICULTURE THROUGH INTERNATIONAL EXPERIENCES**

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## PREPARING GRADUATE STUDENTS FOR FUTURE WORKFORCE IN AGRICULTURE THROUGH INTERNATIONAL EXPERIENCES

### Abstract

*Internships have become an increasingly important and inseparable part of many educational degree programs. A good example is the Master of International Agricultural degree Program (MIAP) at Oklahoma State University. The completion of a meaningful hands-on international experience is a critical and required component of the MIAP degree. Understanding the impact of the international experience/internship on enhancing the students' academic and social learning is important in designing a curriculum that well-prepares students for the future workforce needs. Hence, the objective of this study is to measure the impact of the international experience component of the degree on students' preparation for their future career. This study analyzes primary data collected through an online survey instrument. The survey was sent to 120 MIAP Alums and Students. Forty-five usable responses were received, producing a 37% response rate. The results show that the international experience had a positive and significant impact on students' personal, interpersonal (social), academic, employment preparation (job specific), and civil effect.*

**Keywords:** international experiences, MIAP, effectiveness, future workforce.

### 1. Introduction

Internships can play a prominent role in preparing students for their future career. Some believe that the applied (hands-on) experience gained during an internship is an essential complement to the academic skills and knowledge and an experience that students cannot gain within a classroom (Bisoux, 2007, Warinda, 2013). An internship can provide students with the opportunity to gain insight into career opportunities, leadership and management, and to substantiate their career interests as well as improving their resume.

Additionally, the students that are emerged in an international setting are expected to gain greater maturity and self-confidence which can be positive traits in improving the quality of the workforce (Barber and Baukus, 1988, Ju et al., 1998, Busby and tourism, 2002). It is an undeniable fact that industry representatives prefer to hire graduates who have meaningful previous professional experiences (P. Maertz Jr et al., 2014). Lerner (1988) emphasize the fact that the internship had a positive effect on improving student's skills and helping them to have a successful career. Davies (1990) note that internship provides an ideal opportunity to prepare students for successful careers by integrating knowledge and applied skills. English and Koeppen (1993) show that students who completed internships performed better in theoretical courses as compared to noninternship students. This is because internships are expected to provide the opportunity to improve the student's knowledge base and motivation to learn.

From an internship provider (organizations) perspective, internship programs can be useful for the host organization by making and developing a connection with universities, using the students' academic experience and knowledge to improve their organization's performance, and at the same time gaining part-time employees (Beard, 2007, Beard, 1998). Turning to the other side of the argument, Lang (1979), Chandra and Paperman (1983), and Beard (2007) determine that internship programs may produce negative effects on interns. For example, Fox (2001) found that unsuccessful experiences during an internship program could lead to a change in the student's career path. Hite and Bellizzi (1986) indicated that there is a close connection between the lack of understanding that host organizations have of students' expectations from their internships and the disappointing results that internship providers experience from the students' work during their internships. Woods (1986) finds that the better the organizations' understanding of what students expect to gain from their internship and consequently adapting their internship descriptions and duties, the more positive the outcome of the internships will be. Some host organizations do not have a proper understanding of the learning needs of the students (Huyton, 1991) and therefore students are often dissatisfied and they complain about the quality of their internship because the internship programs are not well organized and structured (Kevin Jenkins, 2001, Lam and Ching, 2007).

The Master of International Agriculture Program (MIAP) was created to close the gap between theory and reality by enhancing the applied part of the students' learning through the international experience component of the program. MIAP is a multidisciplinary plan of study with two distinct degree programs: Master of Science (MS) and the Master of

Agriculture (MAG), in International Agriculture. MIAP was created in 2008 and offering only a master degree has become one of the largest graduate degree programs (master and Ph.D. combined) in agriculture at OSU. While the study of agriculture and internationalization is at the core of this discipline, the program also seeks to provide its students an opportunity to explore other areas of growth, including enhanced leadership and organizational skills, professional communication, and project management. Graduate degree candidates are expected to complete a four-week or longer international experience that allows them to apply principles learned in the classroom in a given focus area ( e.g. agritourism, education, international markets & trade, international development, sustainability, etc.). The evaluation of the effectiveness of the international experiences (internship) is an essential component of MIAP, because it provides useful information, allowing improvements to the curriculum for future MIAP students. Hence, the objective of this study is to measure the impact of the international experience component of the degree on students' preparation for their future career. The rest of the study is organized as follows: in the second section, material studied/methods are discussed. In the third section, the results are presented, and the final section offers discussion of results and conclusions from findings.

## **2. Material studied / area description/ methods**

The data for this study was collected, using an online survey instrument. The survey was designed through Google Forms and it was distributed using an embedded link that was sent through email. The online survey was activated from October 8, 2018 to October 20, 2018.

The completed surveys were submitted electronically, the results were transmitted to Google Doc and finally were exported to Microsoft Excel 2013. The survey was sent to 120 MIAP alumni and students who had completed their international experience between 2008 and 2018. In total 45 responses were received, making it a 37.50% response rate.

The survey questions were divided into three distinct parts. Questions addressing student information on the respondent's gender, focus of internship, marital status, and job status, constituted the first part of the survey. The second section of the survey sought to gather host organizations information. The third section of the questionnaire was divided into five separate parts (personal, interpersonal, academic, employment, and civil impacts). These sections provided useful data for evaluating the effectiveness of the MIAP's

internship program. These five parts were adapted from the questionnaires created by Jackel (2011) and Baird (1998). In this section, we used a modified Likert scale, ranging from “A great deal”= 5, “Quite a bit”=4, “Moderately” =3, “Slightly”=2, to “Not at all”=1. The mean of these points is 3. A mean of 3 or above shows agreement with the proposed item statement; while 3 or below indicates disagreement. We used the frequency distribution and mean values to answer the proposed research questions in the survey.

The factor analysis was used to create the various indices that included only positively correlated statements (Kim and Mueller, 1978, Jackel, 2011). Items (questions) within each main question part (factor) that had component loading values of less than 0.4, were removed from the analysis because of having a weak correlation with the main question part (factor). Cronbach’s Alpha test was used to test the internal consistency of the effectiveness-indices which included questions regarding the impact of internships on five main impact categories of personal, interpersonal, academic, employment, and civil. Test results suggest adequate reliability of scale.

### **3. Results**

In this section, the results are presented in three broad categories: demographic information, internship program information, and the impacts of international experiences. Detailed results are reported below:

#### **3.1 Personal Information**

Survey results show that 68.9% of respondents are female, while the rest are male (31.1 %). The majority of the respondents (82.2 %) are single, while the rest are married (17.8%).

Regarding employment status, the survey results show that a large percentage (82.2 %) of respondents were employed full-time at the time of survey collection, while the rest were unemployed (17.8%). Furthermore, about 35.6% of respondents were employed full-time during the period of their international experience.

With regard to the focus of international experience, survey results show that almost half of respondents completed their international experience in two fields: “Agricultural Outreach Education and Extension” and “International Ag Business Development” (See Table 1).

**Table 1. Focus of international experience**

	Frequency(N)	Percentage (%)
Agricultural economics	1	2.2
Agritourism	2	4.4
Agricultural outreach education and extension	11	24.4
Agricultural communications	1	2.2
Agriculture development	1	2.2
Commercial crops	1	2.2
Food animals	4	8.9
Food animals, agritourism, International ag business, outreach, and education	1	2.2
Food and water security	5	11.1
international ag business development	9	20.0
Marketing and public relations	1	2.2
Rural entrepreneurship	2	4.4
Sustainability	4	8.9
Urban agriculture	1	2.2
International trade	1	2.2
Total	45	100.0

### 3.2 Internship Program Information

As evidenced in Table 2, almost two-thirds (66.7 %) of respondents reported that the length of their international experiences were “8 weeks” and “More than 8 weeks” while about 11.1 % of respondents completed their international experiences in less than expected length (4 weeks).

**Table 2. Length of international experience period**

	Frequency(N)	Percentage (%)
Short term (2 weeks or less)	2	4.4
2-4 weeks	3	6.7
4 weeks	5	11.1
4-8 weeks	5	11.1
8 weeks	12	26.7
More than 8 weeks	18	40.0
Total	45	100.0

Of the 45 participants, 24 (53.3%) of interns dedicated more than 35 hours per week to international experience while the minority of respondents (4.4%) worked 0-5 hours weekly. About one-tenth (8.9%) of interns who completed the surveys worked an average of 6-15 hours a week. The findings further suggest that 8.9% and 24.4% of respondents

worked an average of 16-25 and 26-35 hours weekly, respectively (See Table 3). Furthermore, results indicate that about 40.0% of respondents were a recipient of Humphreys Travel Grant<sup>1</sup> while the rest did not receive these grants (60.0 %).

**Table 3. The number of hours dedicated to international experience (during a typical week)**

	Frequency(N)	Percentage (%)
0-5	2	4.4
6-15	4	8.9
16-25	4	8.9
26-35	11	24.4
More than 35 hours	24	53.3
Total	45	100.0

Table 4 indicates the continents and countries of the interns' international experiences. As shown in Table 4, Africa (26.7%), Europe (20.0 %), North America (22.2 %), and South America (17.8%) respectively, had the highest of share in hosting the MIAP interns, while Asia and Australia/Oceania had the lowest share (13.3 %). In addition, the results of this table show that two countries Uganda (17.8 %) and Mexico (11.1 %) were selected by more interns than other countries for their international experience.

<sup>1</sup> Humphreys Travel Grant provides funding to OSU students for international experiences of eight weeks or longer.

**Table 4. Location of the host organizations (continents and countries)**

	Frequency(N)	Percentage (%)
<b>Continents</b>		
Africa	12	26.7
Asia	4	8.9
Australia/Oceania	2	4.4
Europe	9	20
North America	10	22.2
South America	8	17.8
Total	45	
<b>Countries</b>		
Argentina	1	2.2
Australia	1	2.2
Brazil	1	2.2
Bosnia-Herzegovina	1	2.2
Canada	2	4.4
Chile	1	2.2
China	1	2.2
Costa Rica	3	6.7
Table 4. (Continued)		
	Frequency(N)	Percentage (%)
Ecuador	2	4.4
France	2	4.4
Iraq	1	2.2
Italy	1	2.2
Ireland	2	4.4
Mexico	5	11.1
New Zealand	1	2.2
Poland	1	2.2
Sierra Leone and Jamaica	1	2.2
South Africa	1	2.2
Thailand	1	2.2
UAE, Bahrain, Turkey, Greece, and Oman	1	2.2
Uganda	8	17.8
United Kingdom	2	4.4
Uruguay	1	2.2
Zambia	1	2.2
Nicaragua	1	2.2
Missing	2	4.4
Total	45	100.0

### 3.3 Impact of international experiences

In this section, the summary statistics for effectiveness items are reported (Table 5). As mentioned in the previous section, we employed five indicators for measuring the effectiveness of international experiences of MIAP students and responses to all items are



presented on a 5- point Likert scale. More specifically, personal, interpersonal, employment, academic, and civil impacts were measured by using 7, 4, 4, 5, and 4 items (sub-category questions). As shown in Table 5, the mean of all items and indicators are higher than 3.0 indicating agreement with individual items and pointing to consistent results and appropriateness of the design of survey questions.

In this study, Pearson's correlation is utilized to compare correlation coefficients between effectiveness indicators and more specifically to measure the correlation between the main category-questions. Table 6 demonstrates the inter-correlations for five effectiveness indicators (main category questions). Results show that there is a strong and significant correlation between interpersonal and personal impacts (0.6), employment and academic impacts (0.8), civil and personal impacts (0.7), and civil and interpersonal impacts (0.5). All correlations between all impacts were positive.

**Table 5. Summary statistics for effectiveness indicators (main- and sub-category questions)**

	Mean	Standard deviation
<b>Personal Impact</b>	4.4	0.6
1. I have a sense of satisfaction in doing something worthwhile	4.7	0.6
2. I believe in my ability to make a difference.	4.5	0.6
3. I have gained the capacity to be more productive.	4.3	0.9
4. I can recognize my personal strengths.	4.2	0.8
5. I can recognize my personal weaknesses.	4.2	0.8
6. I have a sense of personal achievement.	4.6	0.8
7. I have the ability to persevere in a difficult skill.	4.5	0.7
<b>Interpersonal (Social) Impact</b>	4.5	0.6
1. I demonstrate concern for the welfare of others.	4.5	0.8
2. I can be understanding and appreciative of people with diverse backgrounds.	4.8	0.4
3. I have the ability to communicate effectively.	4.4	0.7
4. I have increased my ability to be a leader.	4.3	0.9
<b>Academic (Learning) Impact</b>	4.3	0.8
1. I have acquired knowledge from the job duties I performed during my internship.	4.2	1.2
2. I have broadened my critical thinking skills (reasoning and problem solving).	4.4	1.0
3. I felt my classroom learning was enriched.	4.3	0.9
4. I have the ability to connect my academic subject matter to the "real world".	4.3	1.1
<b>Employment (Job specific) Impact</b>	3.9	1.1
1. I developed specialized technical skills for a specific job function(s).	3.9	1.3
2. I feel my hands-on knowledge was enhanced.	4.4	1.1
3. I broadened my future employment possibilities.	4.2	1.3
4. I received an opportunity to explore a specific career.	3.7	1.4
5. I developed realistic ideas about the work load.	3.9	1.3
6. I narrowed my future possible career choices.	3.4	1.5
<b>Civil Impact</b>	4.4	0.7
1. I developed a belief in becoming a better citizen.	4.4	0.8
2. I developed an awareness of community problems or social concerns.	4.6	0.7
3. I developed a commitment to making a difference in my community.	4.3	0.9
4. I have gained the capacity to contribute to society.	4.3	0.8

**Table 6. Correlation coefficients for effectiveness indicators**

Pearson's correlation coefficient matrix					
	Personal impact	Interpersonal impacts	Academic impacts	Employment impacts	Civil impacts
Personal impact	1				
Interpersonal impact	0.6***	1			
Academic impacts	0.3**	0.2	1		
Employment impacts	0.3*	0.1	0.8***	1	
Civil impact	0.7***	0.5***	0.2*	0.1	1

\*\*\* Correlation is significant at the 0.01 level.

\*\* Correlation is significant at the 0.05 level.

\* Correlation is significant at the 0.10 level.

#### 4. Discussion and Conclusion

This study accomplishes its objective of measuring the impact of international agricultural internships on preparing graduate students for the future workforce. Primary data are collected from an online survey distributed to the Master of International Agriculture Program (MIAP) graduates. The survey has questions on three main parts (demographics, internship provider information, and internship impact on MIAP students). The last part (internship impacts on students) is divided into five main category questions, each containing sub-category questions. The response rate was high (37.5%), which might point to the connection of students to their internships.

Results show that half of the students have chosen internships that are in the two fields of agricultural extension and agribusiness development. This is indicative of students' interest of gaining more experience in these fields and preparing themselves for the jobs they desire to work in after graduation. It is important to note that students choose their internships and the areas of internship work from a wide range of internships that MIAP offers or they themselves choose from their search results.

Although MIAP internship length requirement is a minimum of four weeks, almost two-thirds of the respondents reported internships of eight weeks or longer. Also, over half of the MIAP interns reported that they dedicated more than 35 hours per week to their internship work. The results regarding the internship length and hours per week worked might indicate the students' commitment to international work as well as their desire to learn from a hands-on experience. The length of stay results might also be a consequence

of the funding, which 40% of students had received. Note that Humphreys funding is for international experiences of eight weeks or longer.

Almost a third (26.7 %) of MIAP student international experience destinations were in Africa. Moreover, over half of the MIAP interns chose developing countries in Africa, Asia, and Latin America, in spite of the difficult travel conditions and culture and language barriers. This might point to the interest of students in helping the developing countries' agriculture and having an impact on agricultural development.

Last, but not least, is the long-term impact of international experience/internship as perceived by the MIAP graduates. Survey results show that students perceive their international experience as having a significantly positive impact on them as measured by the personal impact of 4.4 from a maximum of five, the interpersonal impact of 4.5, the academic impact of 4.3, employment (job specific) impact of 3.9, and civil impact of 4.4 (Table 5). It is important to note that the impact factor of more than 3 indicates respondents' perception of the impact of the internship is positive. The closer the impact factor to number five, indicates a more obvious impact.

More specifically, the respondents believe that their preparedness for their professional positions in terms of their applied, hands-on-knowledge as well as technical skills was significantly improved because of their international experience. Moreover, the graduates feel that their international experience played a significant role in the graduates developing a realistic idea about their work load at their professional position and helped them narrow down future possible career choices.

Correlation coefficients (Table 6) show the perceived impacts on students are strongly correlated among main impact categories. Most importantly, academic and employment impacts are strongly positively correlated, indicating that students who believed internships positively affected their academic standing, also believed that it improved their employability.

In summary, the survey respondents believed that their international experience had a significant positive impact on them as well as their future career success.

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