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**Citation Structure: An Analysis of the Literature Cited in the
Journal of International Agricultural and Extension Education from 1997 to 2006**

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Abstract

The Journal of International Agricultural and Extension Education (JIAEE) has been an outlet of international agricultural development and education publishing and research dissemination and publishing. The purpose of this study was to assess ten-years of JIAEE to determine literature cited. The study used a quantitative content analysis design. Analyzed in this study were 144 research articles published in JIAEE issues I and III, from 1997 through 2006. There were 2,286 cited literature works identified in the journal. The average number of citations per article was approximately 20. Cited works from premier agricultural education journals were tracked for citation frequencies, in terms of author(s) and year of publication. A total of 234 references were made to premier journals in agricultural education. Citation analysis indicates that JIAEE relies heavily on books published prior to the 1990s. Published articles also cited other journals and conference proceedings produced within the international agriculture arena. JIAEE does not exhibit compactness, indicating that it reaches past its citation boundaries and into interrelated areas of other disciplines. However, it does exhibit weak self-identity meaning it does little to build upon research previously cited in JIAEE.

Keywords: cited literature, citationology, content analysis, Extension, agricultural education

Introduction

In 1984, agricultural education faculty members interested in international development organized the Association for International Agricultural Education (Meaders, 2009). Now, twenty-five years later, this organization is named the Association for International Agricultural and Extension Education (AIAEE). In 1994, AIAEE published the first issue of the *Journal of International Agricultural and Extension Education (JIAEE)*. *JIAEE* has been a primary outlet for disseminating research, developmental activities, and publishing in international agricultural development and Extension education (Edgar, Rutherford, & Briers, 2008d).

During *JIAEE*'s lifespan, minimal research has focused on assessing the content of the journal. However, a number of researchers have examined various publishing and research aspects within the agricultural education profession. In 1994, research indicated the explicit need to analyze citation characteristics in agricultural education (Radhakrishna, Eaton, Conroy, & Jackson). The research further noted "a number of researchers in various scientific disciplines have considered citation structure as a good indicator of the nature of scientific activity" (p. 61). Also, quoting additional experts whom indicated analyses of citation structures "characterize a field of study, define its boundaries, and explain how a discipline is interrelated with other fields of study" (p. 61). An indication of scholars' behavior is citation use because it reflects an author's commitment to earlier works. The frequency of cited literature can provide a framework of important references and can be a way for researchers to identify a specific author's work and their relation/commitment to earlier research (Garfield, 1998).

Research identified a need to review previous literature in an effort to track citations and identify a sense of a disciplines research agenda (Miller, Stewart, & West, 2006). In 2007, the agricultural education discipline published a *National Research Agenda [NRA]: Agricultural Education and Communication 2007-2010* (Osborne, n.d.). Within the *NRA* international agriculture was noted as a component of the large umbrella of the discipline. Because international agriculture is a unique field of study that supports its own inquiry and the research and scholarly endeavors

of other disciplines, it is important to understand citation structures of research articles in the profession. Does international agriculture and Extension education primarily cite works created in the field, or does it rely on other disciplines as literary staples?

In 1994, a content analysis of the *Journal of Agricultural Education (JAE)* indicated the agricultural education discipline appeared to have a strong self-identify (building on other researchers work within the discipline of agricultural education) and compactness (citing from few "core" journals) (Radhakrishna et al.). However, a 1995 study indicated agricultural education should expand their focus to include other areas of research interests for professionals in the field (Radhakrishna). With this expressed need and the creation of the *NRA* it is important to understand how research journals, identified as premier in the discipline, are influencing the field.

JIAEE was identified as the premier international agricultural research journal in agricultural education (Edgar, Briers, & Rutherford, 2008b), and it should be examined to determine the level and depth of literature citations (Edgar, Briers, & Rutherford, 2008a). It is also important to determine how *JIAEE* cites itself and other identified premier agricultural education journals: *JAE*, the *North American Colleges and Teachers of Agriculture Journal (NACTA)*, the *Journal of Extension (JOE)*, the *Journal of Applied Communications (JAC)*, and the *Journal of Leadership Education (JOLE)*. Because citation structure has been used to characterize a field of study (Shinn, Wingenbach, Lindner, & Briers, 2009) and explain how a discipline is interrelated to other fields of study (Narin, Carpenter, & Berlt, 1972), it is important for researchers to be familiar and aware of literature previously cited in *JIAEE*.

Analyzing literature citations adds to understanding and the identification of the literature base. In an effort to better understand where international agriculture and Extension education is securing information a content analysis can be used to analyze literature cited. To better understand the scope of international agriculture and how it supports the larger umbrella of agricultural education *JIAEE* should be analyzed. Since 1994, little to no research has focused on work cited in the discipline. If international agricultural and Extension education researchers want to remain

progressive and determine their research impact and scope it is crucial to examine cited works used in its premier journal. This research answers the call from Radhakrishna, Eaton, Conroy, and Jackson (1994) to review citations in [premier] journals at least every ten years. Citation research allows a discipline to determine where “changes have taken place as a result of research and development efforts in the profession” (Radhakrishna et al., 1994, p. 64).

Citations can be used as indicators of scholars’ behavior because it reflects an author’s debt to earlier works. The frequency of cited literature can provide a framework of important references and can be a method for researchers to identify an author’s research focus and work and their commitment to specific lines of inquiry and other researchers in the field. Tracking cited literature in *JIAEE* is needed to better understand how international agricultural and Extension education is enhancing the agricultural education discipline.

Conceptual Framework

The future of international agricultural and Extension education depends on the acquisition and application of new knowledge via research (Dyer, Haase-Wittler, & Washburn, 2003). The conceptual framework of the study was grounded in work by numerous scholars in international and agricultural education. “Several researchers have completed various components of journal analyses in agricultural education: familiarity and quality of journals and importance of faculty publishing” (Edgar, Edgar, Briers, & Rutherford, 2008c, p. 4); research theme areas (Buriak & Shinn, 1993; Dyer et al., 2003; Edgar et al., 2008a; Edgar, Briers, & Rutherford, 2008d; Miller et al., 2006; Moore, 1991; Radhakrishna & Xu, 1997; Silva-Guerrero & Sutphin, 1990); prolific authors (Edgar et al., 2008a; Edgar et al., 2008b; Edgar, Edgar, Briers, & Rutherford, 2008c; Harder & Roberts, 2006; Radhakrishna & Jackson, 1995; Radhakrishna, Jackson, & Eaton, 1992); statistical methods used (Bowen, Rollins, Baggett, & Miller, 1990; Dyer et al., 2003; Edgar et al., 2008b; Edgar et al., 2008c; Mannenbach, McKenna, & Pfau., 1984), and cited literature (Edgar & Edgar, 2009; Moore, 1991; Radhakrishna et al., 1994; Radhakrishna, 1995; Miller et al., 2006). Conceptually this study focused on cited literature. Citationology, the theory and practice of analyzing citations, allows a discipline to

determine reference topology (Garfield, 1998, p. 69).

Purpose and Objectives

The purpose of this study was to review research published in *JIAEE* from 1997 to 2006, and examine the historical record of the journal to provide insight into its cited works. The objective was to describe and synthesize frequently cited literature in *JIAEE* during the ten year period by identifying: (a) premier journal articles (represented by author(s) and year); (b) books/texts; (c) journals; (d) proceedings, conferences, and meetings; (e) other works (dissertations, Extension and university manuscripts, newspapers, etc); and (f) WebPages.

Research Methods and Procedures

This study employed a quantitative content analysis design. Research methods involving content analysis has existed for decades (Weber, 1990). Discussed in previous literature, “content analysis can be used to give researchers insight into problems or hypotheses that can then be tested by more direct methods. Content analysis is a systematic, replicable technique for compressing many words of text into fewer content categories based on explicit rules of coding (Berelson, 1952; Krippendorff, 1980; Weber, 1990)” (Edgar et al., 2008c, p. 5).

This study maintained content validity by using previous research as a guide. The research frame was feature articles published in *JIAEE* issues I and III from 1997 to 2006. As previously discussed:

The principal investigator and a peer independently reviewed the material and formed a checklist of information required during the review of each journal article. The researchers compared notes and reconciled differences on their initial checklists via negotiations. Researchers used a consolidated checklist to independently apply coding. The researchers then checked for agreement in coding; if reliability was not acceptable, then the previous steps were repeated. Once reliability had been established, coding was applied on a large-scale basis. The final stage was a periodic quality control check (Weber, 1990). Inter-coder

reliability was completed with at least 10% overlap for the reliability test. Final reliability was calculated using a random sample of 5% of the analyzed articles. Reliability was assessed using Spearman's rho statistical analysis. Spearman's rho is a statistical calculation that takes two rankings and produces a numerical relation from 1 to -1 (a score of 1 means that the lists are identical, a -1 means that the lists are reversed, and 0 (zero) score means that there is no relation whatsoever between the two lists). Reliabilities met or exceeded the minimum standard of .70 (Bowen et al., 1990; Tuckman, 1999 as cited by Edgar et al., 2008c, p. 6).

Findings

All research feature articles ($N = 144$) published in *JIAEE* from 1997 to 2006 were analyzed for cited literature. A total of 2,286 cited works were identified. The average number of citations per article was approximately 20. Premier agricultural education (AGED) journals were tracked for their cited literature, in terms of author(s) and year of publication. A total of 234 references were made to premier AGED journals, representing 10.24% of the total cited literature in *JIAEE*. There were 65 cited works from previous publications of *Journal of Agricultural Education (JAE)*. Five groups of authors were identified as the most frequently cited *JAE* authors in *JIAEE*, referenced 4.6%. These referenced authors were: Chizari, Karbasioun, and Lindner (1998); Findlay (1992); Ibezim and McCracken (1994); Lindner and Dooley (2002); and Lindner, Murphy, and Briers (2001). Additional frequently referenced *JAE* articles, identified by the author(s) and year of publication, cited 3.1% or more are identified in Table 1.

Table 1

Frequently Cited Journal of Agricultural Education Authors Referenced in JIAEE 1997–2006 (n = 65)

Journal Author(s) and Year of Publication	<i>f</i>	<i>P</i>
Chizari, M., Karbasioun, M., & Lindner, J. R. (1998)	3	4.6
Findlay, H. J. (1992)	3	4.6
Ibezim, D. O. & McCracken, J. D. (1994)	3	4.6
Lindner, J. R. & Dooley, K. E. (2002)	3	4.6
Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001)	3	4.6
Chizari, M., Lindner, J. R., & Zoghie, M. (1999)	2	3.1
Clason, D. L. & Dormody, T. J. (1994)	2	3.1
Dyer, J. E. & Osborne, E. W. (1996)	2	3.1
McCormick, D. F. & Whittington, M. S. (2000)	2	3.1
Miller, L. E. (1998)	2	3.1
Waters, R. G. & Haskell, L. J. (1989)	2	3.1

There were 107 citations referenced works from previous *JIAEE* articles. Acker and Scanes 2000 and 1998 articles were the most frequently cited *JIAEE* articles in *JIAEE*, being cited in almost

5% of all the articles. Table 2 contains a list of frequently cited *JIAEE* articles cited 1.9% or more.

Table 2

Frequently Cited Journal of International Agricultural and Extension Education Authors Referenced in JIAEE 1997–2006 (n = 107)

Journal Author(s) and Year of Publication	<i>f</i>	<i>P</i>
Acker, D. G. & Scanes C. G. (2000)	5	4.7
Acker, D. G. & Scanes, C. G. (1998)	5	4.7
Bruening, T. H. & Frick, M. (2004)	4	3.7
Duffy, S., Toness, A., & Christiansen, J. (1998)	3	2.8
Pezeshki-Raad, G., Yoder, E. P., & Diamond, J. E. (1994)	3	2.8
Sammons, S. & Martin, R. (1997)	3	2.8
Acker, D. G. (1999)	2	1.9
Akpan, M. & Martin R. A. (1996)	2	1.9
Bruening, T. H. & Shao, X. (2005)	2	1.9
Martin, R. A. & Rajasekaran, B. (1994)	2	1.9
Place, N. T., Evans, D. E., Andrews, M. P., & Crago, N. E. (2000)	2	1.9
Radhakrishna, R. B. & Dominiquez, D. (1999)	2	1.9
Redmann, D. H., Schupp, A. R., & Richardson, W. B. (1998)	2	1.9
Wallace, I. R. (1999)	2	1.9

There were 49 citations referencing works from the *Journal of Extension (JOE)* represented in *JIAEE*. Miller and Smith (1983) article was the most frequently cited. The article was referenced

in 18.4% of the identified *JOE* articles. Table 3 contains a list of frequently cited *JOE* articles, identified by the author(s) and year of publication, referenced 4.1% or more.

Table 3

Frequently Cited Journal of Extension Authors Referenced in JIAEE 1997–2006 (n = 49)

Journal Author(s) and Year of Publication	<i>f</i>	<i>P</i>
Miller, L. E. & Smith, K. L. (1983)	9	18.4
Barao, S. M. (1992)	2	4.1
Bloome, P. (1993)	2	4.1
Ludwig, B. G. (1999)	2	4.1
Ludwig, B. G. (1993)	2	4.1

There were eleven referenced articles to the *North American Colleges and Teachers of Agriculture (NACTA)* Journal. Two *NACTA* articles: Mason, S., Eskridge, K., Kliewer, B., Bonifas, G., Deprez, J., Medinger Pallas, C., & Meyer, M. (1994) and Newcomb, L. H. & Clark, R. W. (1985) were referenced twice (27.3%). The remaining seven *NACTA* authors were each referenced once.

There were two referenced works to the *Journal of Applied Communications (JAC)*. The cited articles were Buchili, V. & Pearce, B.

(1974) and Suvedi, M, Campo, S., & Lapinski, M. K. (1999) (50%).

The *JIAEE* content analysis yielded no citations to the *Journal of Leadership Education (JOLE)*.

In *JIAEE*, there were 234 citations referencing the six premier agricultural education (AGED) journals as identified by Edgar et al. (2008a). An important component of this research was identifying how *JIAEE* was citing other journals in the large umbrella of the agricultural education discipline. The most

frequently cited referenced premier AGED journal article was produced by Miller and Smith (1983) for their work published in the *JOE*. Of all the referenced work from premier

AGED journals, their work was cited almost 4% of the total articles. Table 4 contains a list of frequently cited premier AGED journal articles, by author(s) and year, cited 1.3% or more.

Table 4

Frequently Cited Premier AGED Journal Authors Referenced in JIAEE from 1997–2006 (N = 234)

AGED Journal Author	Journal	<i>f</i>	<i>P</i>
Miller, L. E. & Smith, K. L. (1983)	<i>JOE</i>	9	3.8
Acker, D. G. & Scanes C. G. (2000)	<i>JIAEE</i>	5	2.1
Acker, D. G. & Scanes, C. G. (1998)	<i>JIAEE</i>	5	2.1
Bruening, T. H. & Frick, M. (2004)	<i>JIAEE</i>	4	1.7
Chizari, M., Karbasioun, M., & Lindner, J. R. (1998)	<i>JAE</i>	3	1.3
Duffy, S., Toness, A., & Christiansen, J. (1998)	<i>JIAEE</i>	3	1.3
Findlay, H. J. (1992)	<i>JAE</i>	3	1.3
Ibezim, D. O. & McCracken, J. D. (1994)	<i>JAE</i>	3	1.3
Lindner, J. R. & Dooley, K. E. (2002)	<i>JAE</i>	3	1.3
Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001)	<i>JAE</i>	3	1.3
Pezeshki-Raad, G., Yoder, E. P., & Diamond, J. E. (1994)	<i>JIAEE</i>	3	1.3
Sammons, S. & Martin, R. (1997)	<i>JIAEE</i>	3	1.3

The 10-year content analysis of *JIAEE* identified 886 cited books and texts. Books with multiple edition and publication dates are noted in the following table. The most frequently cited book was Rogers' (1995) *Diffusion of Innovations*, which was cited in 0.9% of the total books referenced. Additional frequently cited books and texts identified 0.34% or more, in *JIAEE* from 1997-2006, are identified in Table 5. Noteworthy is the numerous texts referenced from the 1990s or earlier.

JIAEE cited additional journals, other than those identified as premier AGED journals, 447 times. There was a tremendous amount of variation within the journal sources referenced. *South African Journal of Agricultural Extension* was the most frequently cited journal of all journal citations in *JIAEE*, this journal was referenced 3.13%. A list of frequently cited journals identified 1.12% or more (excluding the premier AGED journals) are identified in Table 6.

Table 5

Frequently Cited Books and Texts Referenced in JIAEE from 1997–2006 (N = 886)

Book and Text	<i>f</i>	<i>P</i>
Rogers, E.M. (1995; 1983). <i>Diffusion of innovations</i> (4th ed.). New York: The Free Press.	8	0.90
Dillman, D. A. (2000; 1987; 1978). <i>Mail and internet surveys: The tailored design method</i> (2nd ed.). New York: Wiley & Sons.	7	0.79
Davis, J. A. (1971). <i>Elementary survey analysis</i> . Englewood, NJ: Prentice-Hall.	6	0.68
Lincoln, Y.S., & Guba, E.G. (1985). <i>Naturalistic inquiry</i> . Beverly Hills: Sage.	6	0.68
Seevers, B., Graham, D., Gamon, J., & Conklin N. (1997). <i>Education through Cooperative Extension</i> . Albany, NY, Delmar Publishers.	5	0.56
Van den Ban, A. W., & Hawkins, H. S. (1988). <i>Agricultural Extension</i> . New York, NY: John Wiley & Sons, Inc.	5	0.56
Cohen, J. (1988). <i>Statistical power analysis for the behavioral sciences</i> (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.	4	0.45
Kerlinger, F. N. (1986). <i>Foundation of behavioral research</i> . New York: Holt, Rinehart, and Winston.	4	0.45
Patton, M. Q. (1990). <i>Qualitative evaluation and research methods</i> (2nd ed.). Newbury Park, CA: Sage.	4	0.45
Argyris, C., & Schön, D. A. (1996; 1978). <i>Organizational learning II: Theory, method, and practice</i> . Boston: Addison-Wesley.	3	0.34
Ban, A. W., & Hawkins, H. S. (1988). <i>Agricultural Extension</i> . England: Longman Scientific & Technical.	3	0.34
Chambers, R. (1997). <i>Whose reality counts? Putting the last first</i> . London: Intermediate Technology Publications	3	0.34
Knowles, M. S. (1980; 1970). <i>The modern practice of adult education: From pedagogy to andragogy</i> . Chicago: Association Press, Follett Publishing Company.	3	0.34
Swanson, B. E. (Ed.) (1990). <i>Report of the global consultation on agricultural extension</i> . Rome: Food and Agriculture Organization of the United Nations.	3	0.34

JIAEE cited proceedings, conferences, and/or meetings 194 times. The most frequently referenced proceeding, conference, and/or meeting was the *Association for International Agricultural and Extension Education Conference*. The conference was referenced 14.3% in all of the proceedings cited. Table 7 contains additional frequently cited proceedings, conferences, and/or meetings identified 1.0% or more, in *JIAEE* from 1997 to 2006.

The 10-year analysis of *JIAEE* identified other works cited 399 times. The most

frequently cited works were unpublished doctoral dissertations referenced 13.3%. Additional other works cited 1.3% or more, in *JIAEE* from 1997 to 2006, are identified in Table 8.

JIAEE from 1997 to 2006 cited WebPages 126 times. *JIAEE* relies heavily on citations from non-profit (.org) (37.3%) and education (.edu) (13.6%) WebPages. Additional cited WebPages referenced 2.3% or more are identified in Table 9.

Table 6

Frequently Cited Journals Referenced in JIAEE from 1997–2006 (N = 447)

Other Journals	<i>f</i>	<i>P</i>
<i>South African Journal of Agricultural Extension</i>	14	3.13
<i>Journal of Agricultural Education and Extension</i>	11	2.46
<i>World Development</i>	10	2.24
<i>Journal of Applied Psychology</i>	8	1.79
<i>Australian Journal of Experimental Agriculture</i>	6	1.34
<i>Educational and Psychological Measurement</i>	6	1.34
<i>European Journal of Agricultural Education and Extension</i>	6	1.34
<i>Journal of Teacher Education</i>	6	1.34
<i>Rural Sociology</i>	6	1.34
<i>Academy of Management Journal</i>	5	1.12
<i>Agricultural Systems</i>	5	1.12
<i>Agricultural Science</i>	5	1.12
<i>Journal of Extension Systems</i>	5	1.12
<i>Journal of Sustainable Agriculture</i>	5	1.12
<i>Research in Higher Education</i>	5	1.12
<i>Review of International Co-operation</i>	5	1.12
<i>Training and Development Journal</i>	5	1.12

Table 7

Frequently Cited Proceedings, Conferences, and/or Meetings in JIAEE from 1997–2006 (N = 194)

Proceeding, Conference, and Meeting	<i>f</i>	<i>P</i>
Association for International Agricultural and Extension Education Conference	28	14.3
Australian Institute of Agricultural Science	4	2.1
National Agricultural Education Research Conference	4	2.1
Proceedings of the New Zealand Society of Animal Production	3	1.5
Annual Teagasc National Dairy Conference	2	1.0
Forestry Education workshop	2	1.0
International Rangelands Congress	2	1.0
International Workshop on Transforming Agricultural Extension in Africa	2	1.0
Proceedings of a SACCAR/CIDA Workshop of Deans of Faculties of Agricultural Sciences and Representatives of Agribusiness in SADC Countries	2	1.0
Report of the Islamic Republic of Iran on Forestry Development and Key Events	2	1.0

Table 8

Frequently Cited Other Works Referenced in JIAEE from 1997–2006(N = 399)

Other Works	<i>f</i>	<i>P</i>
Unpublished Doctoral Dissertation	53	13.3
Unpublished M.S. Thesis	34	8.5
Unpublished Manuscripts or Reports	33	8.3
Extension Manuscript	29	7.3
University Manuscript	28	7.0
Food and Agriculture Organization Manuals	27	6.8
Annual or Final Reports	24	6.0
Census/Government Documents	23	5.8
ERIC Documents	21	5.3
National Research Reports	18	4.5
Newspapers	16	4.0
Magazines	10	2.5
World Bank Research Reports	10	2.5
Manuscript Submitted for Publication	5	1.3

Table 9

Frequently Cited WebPages Referenced in JIAEE from 1997–2006 (N = 126)

WebPages	<i>f</i>	<i>P</i>
.org	47	37.3
.edu	17	13.5
.com	16	12.7
.gov	11	8.7
.net	6	4.8
.ie	5	4.0
.br	4	3.2
.ca	3	2.3
.int	3	2.3
Other (.ac.nz; .ac.uk; au; .gc.ca; go.tz; .html; .mx; .nk; .nl; .ul.pt)	14	11.1

Conclusions

“Journal analysis can provide a means of assessing key factors that usually indicate the research and publishing characteristics of a profession” (Radhakrishna et al., 1994, p. 64). This study was an attempt to identify the characteristics of literature cited in the *Journal of International Agricultural and Extension Education*. As stated by Miller et al. (2006), there is a need to track citations and review literature to gain a clear sense of a disciplines research agenda. This study highlights an in-depth look into the citation habits of

researchers associated with the premier international agricultural and Extension education research outlet (*JIAEE*) during a ten year period. Radhakrishna et al. (1994) and Garfield (1998) indicated that by identifying a discipline’s cited literature base, a framework could be developed to define and characterize a field of study and help explain the disciplines interrelatedness to other fields of study (Shinn et al., 2009). This study was an attempt to identify the cited literature base in *JIAEE* and determine its self-identity and compactness.

All research feature articles ($N = 144$) published in *JIAEE* issues I and III from 1997 to 2006 were analyzed for cited literature. There were a total of 2,286 cited works identified. The average number of citations per article was approximately 20. In articles published in the *JIAEE*, from 1997 through 2006, there is evidence that the discipline pulls from a breadth of research works. This study identified approximately 10% of the total literature cited was from works published in identified premier agricultural education journals (Edgar et al., 2008a). However, premier journals such as *NACTA*, *JAC*, and *JOLE* were under-represented or not cited in the literature. Of the 234 literature citations to premier AGED journals, *JIAEE* represented 45.7% of these total citations thus representing 4.68% of the total cited works. This study concludes that *JIAEE* exhibits weak self-identity, meaning it does little to build upon research previously cited in *JIAEE*. However, it does not exhibit compactness, indicating that it reaches past its citation boundaries and into interrelated areas of other disciplines as noted by the breadth of research citations.

Premier agricultural education (AGED) journal articles were tracked by journal author(s) and year of publication. There were 65 citations from previous research in the *Journal of Agricultural Education (JAE)*. There were five groups of *JAE* authors identified as the most frequently cited authors in *JIAEE*, being referenced 4.6%. These referenced authors were: Chizari, Karbasioun, and Lindner (1998); Findlay (1992); Ibezim and McCracken (1994); Lindner and Dooley (2002); and Lindner, Murphy, and Briers (2001).

JAE was identified, in previous research, as the premier journal in agricultural education (Edgar et al., 2008a; Edgar & Edgar, 2009). Within cited literature represented in *JIAEE*, *JAE* was referenced about half as much as *JIAEE*. Does this have implications for the international agricultural and Extension education profession? It does imply that *JIAEE* authors rely most heavily on itself and *JAE*, followed by *JOE* for literary works (when looking specifically at identified premier AGED journals). *JOE* was previously identified as the third most premier journal in the agricultural education discipline (Edgar et al., 2008a). In this study, *JOE* research was cited less than *JAE*. Because of *JOE*'s potential implications and influence on *JIAEE* research and publishing,

should we as international agricultural and Extension education researchers and practitioners strive to cite from this source more frequently? Similarly, *NACTA* and *JAC* and *JOLE* were also minimally cited in articles published in *JIAEE*. It is further concluded that research published from these journals are not used with emphasis or, perhaps, thought.

Approximately 18% of the total number of citations from *JOE* stem from a single article by Miller and Smith (1983) regarding non-response research methodology. This same article was identified as the most frequently cited premier agricultural education journal article represented in *JIAEE* citations. When looking at *JIAEE* citations of its own published works, there were not predominate works identified. This may be due to relatively few researchers producing articles that cover the breath of international agriculture and development and international Extension education.

The 10-year analysis of *JIAEE* identified 886 cited books and texts. The most frequently cited book was Rogers' (1995) *Diffusion of Innovations*, which was cited in almost 1% of the total book references. Books and text citations are dominated by research methods with six of the fourteen most frequently cited books focusing on research. Coinciding with this finding, the most common citations from *JOE* and *JAE* were research methodology citations. Additionally, a large percentage of cited books also focus on Extension and adult education (five of the fourteen most cited books). Conversely, there is a tremendous amount of variety in cited books within *JIAEE*. This variety is an indication that there are multiple books being cited on a single construct of knowledge. The majority of cited books were from the 1990s or earlier and this may be affecting the literature relevance of international agricultural and Extension education and development.

Additional journals, other than those identified as premier AGED journals, were referenced 447 times. The most frequently cited journal was the *South African Journal of Agricultural Extension*; referenced 3.13% in the total journals cited. References to the *Journal of Agricultural Education and Extension* (2.46%), *World Development* (2.24%), *Journal of Applied Psychology* (1.79%), *Australian Journal of Experimental Agriculture* (1.34%), *Educational and Psychological Measurement* (1.34%),

European Journal of Agricultural Education and Extension (1.34%), *Journal of Teacher Education* (1.34%), and *Rural Sociology* (1.34%) indicate *JIAEE* research authors are using multiple international agriculture, agriculture development, and specialized construct (teacher education, measurement, sociology) journals to build on knowledge domains.

Following suit, citations referring to conference proceedings and/or meetings are diverse. With the most frequently cited conference being the Association for International Agricultural and Extension Education (AIAEE) Conference (14.3%); followed by the Australian Institute of Agricultural Science and the National Agriculture Education Research Conference (2.1%). There is a large frequency gap between the most frequently cited conference and the remaining conference citations. However, since AIAEE is the conference that most closely relates to the *JIAEE* this finding may have been anticipated. Similarly, unpublished doctoral dissertations (13.3%) and unpublished masters theses (8.5%) were the most referenced other works. It is unclear whether these unpublished dissertations and theses are being published later as research articles. What implications does this have for international agricultural education, development and Extension research? *JIAEE*, from 1997 to 2006, cited WebPages 126 times. The most frequently cited WebPages were .org sites; referenced 37.3%. The discipline relies heavily on citations from non-profit (.org) (37%) and education (.edu) (13.5%) sites. How these WebPages are being used has not been determined; however, it is encouraging that the majority of citations are from Web-based extensions associated with trustworthy information.

Citation analysis indicates that *JIAEE* relies heavily on books, journals, conference proceedings and other literacy works that cover an expansive breath of works both in and out of the international agriculture, Extension and development arena. *JIAEE* does not exhibit self-reliance, indicating that its authors reach past its citation boundaries, and into interrelated areas and disciplines. Additional replications of this study should continue to assess progress *JIAEE*. Research should be conducted to determine if/how this (premier) journal is being cited in other fields of study.

Literature citations characterize a field of study. Furthermore, they define a discipline's limits and clarify the interrelatedness with other fields of study (Radhakrishna et al., 1994). *JIAEE* exhibits an expansive cited literature (citationology) reach focusing on multiple disciplinary areas and fields of studies. It also exhibits connectedness to most of the identified premier journals in agricultural education. Because of the nature of international agriculture, extension, development and research, it is often necessary for researchers to expand into multiple research outlets, in an effort to find the best "suitable" outlet for their diverse works. This necessity to publish in other venues may be helping to eliminate compactness in the *Journal of International Agricultural and Extension Education*. It can be assumed, due to the lack of compactness, that international agricultural education, Extension, development and research is offering discovery in other fields of study. However, the non-compactness of the citation structure in *JIAEE* reveals limited published works from within itself and creates weak self-identity.

Recommendations

Based on the findings of this study recommendations include:

1. Further research should be completed to determine the depth of *JIAEE* citations in other identified premier journals in agricultural education in an effort to further identify the scope and influence of *JIAEE* on the agricultural education discipline and its literary works.
2. Further research should be completed to better determine how various cited books influence international agricultural development and research. It would also be important to determine if cited books are seminal or out-of-date works.
3. It may prove valuable to determine if conference proceedings, doctoral dissertations, and master's theses progress to permanent literature published in *JIAEE*.
4. Additional research should be completed to determine if this (premier) journal is being cited in other fields of study.
5. Expanding the quantity of research articles produced annually in *JIAEE* and

encouraging international agricultural researchers to cite from previous articles in *JIAEE* could help the identified weak self-identity.

6. This study should be replicated at a ten year cycle to assess progress in the *Journal of International Agricultural and Extension Education*.
7. Additional research should focus on determining what drives citations in international agricultural education, Extension, development and research. Is it primarily *who* citers know (social structure) or *what* they know (intellectual structure)?

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