

# **Final Report for Professional Development Grants**

**From**

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I thank the Vice Provost, Dean and Associate Dean of the College of Business, and Professional Development Committee Members for giving me the opportunity to present my research works in leading information systems conferences by approving my professional development grants. It should be noted that because of the professional development grants, I was able to attend conferences and received excellent and brilliant feedback on how to address reviewers' concerns; hence, recently, one of my manuscript was accepted for publication in the *International Journal of Technology Diffusion* as shown in the email in Appendix A.

**The conferences, I attended with my professional development grants to present my research works are:**

- 1) The Pre- **International Conference on Information Systems (ICIS 2012)** Workshop— CFP - SIG Cognitive Research (Formerly IS-CoRE) Workshop to present my manuscript entitled, the visual cognitive model for online market places and Internet advertising.
- 2) The Americas Conference on Information Systems (AMCIS 2013). We presented our work relating to big-data, knowledge management, and business intelligence. The title of our manuscript is “A novel business intelligence technique to improve high performance within an organization applying insights from hydrogeological case study “

This report is organized as follows: In section 1, I discuss the manuscript I presented in the Pre- **International Conference on Information Systems (ICIS 2012)** Workshop; and in section 2, I report the progress of the manuscript I presented in the Americas Conference on Information Systems (AMCIS 2013).

### **1 Pre- International Conference on Information Systems (ICIS 2012) Workshop**

The title of the manuscript I presented in the Pre- **International Conference on Information Systems (ICIS 2012)** Workshop is the visual cognitive model for online market places and

Internet advertising. The manuscript is now under third review in the *Journal of Electronic Commerce in Organization* (<http://www.igi-global.com/journal/journal-electronic-commerce-organizations-jeco/1076>). Also, Appendix B is a screen shot of the email indicating that the manuscript is under third review.

### **1.1 Restatement of problem researched, creative work, or professional enhancement opportunity**

Studying cognitive factors that enhance click-through rates is very important because it provides insight for social media and online firms. Options are presented for generating revenue from Internet advertising and explanation is provided as to why the click-through rates of online banner ads have been decreasing continuously for the past two decades. Also, our study provides important insights for social media firms and banner ad designers on how to evaluate and design effective online ads. Online banner ads are stationary or moving figures/images/graphics/photos that are displayed on the monitors of computers and cell phones to advertise products and services (Idemudia 2010 & 2012; Idemudia et al. 2007; Li et al. 2012).

### **1.2 Brief review of the professional enhancement opportunity, creative work, or research procedure**

This research started at Georgia State University. Data was collected for this study from 122 students with a wide range of majors. The hypotheses were tested in an experiment in which an online banner ad is displayed on each participant's monitor that shop online regularly, use the Internet in their daily activities, and are familiar with online ads. A 2 X 2 X 2 factorial design was used. It should be noted that the experimental design focuses on specific ads that were displayed on web users' monitors. The treatments for our study were perceived security (low

versus high), perceived match of banner ad content (low versus high), and perceived familiarity of online banner ads (low versus high).

### **1.3 Summary of findings, outcomes, or experiences had**

SEM analysis, indicates that perceived usefulness of online banner ads explains 60 percent of the intention to click online banner ads. Perceived security of online banner ads, match between a web user's needs, and banner ad content and perceived familiarity of online banner ads explain 71 percent of perceived usefulness of online banner ads. Thus, our study strongly indicates that there are other factors influencing click-through rates; as a result, our study open doors for future researchers and scholars to investigate other cognitive factors that might positively influence click-through rates. Knowing these factors can help social media and online firms develop strategies to enhance Internet advertising and click-through rates. This will also help social media firms generate more revenue through banner advertisements. Our model indicates that perceived security, perceived familiarity, and a match between web users' needs and banner ad contents have a positive influence on click-through rates.

### **1.4 Conclusions and recommendations**

We tested our model using an experimental design; and the results have a lot of practical and research implications. The manuscript I presented in Pre-ICIS 2013 is under third review in the *Journal of Electronic Commerce in Organization* (<http://www.igi-global.com/journal/journal-electronic-commerce-organizations-jeco/1076>) as shown in Appendix B

**2. The Americas Conference on Information Systems (AMCIS 2013).** We presented our work relating to big-data, knowledge management, and business intelligence in August 2013, AMCIS 2013. The title of our manuscript is "A novel business intelligence technique to improve high

performance within an organization applying insights from hydrogeological case study “. Currently, we are still working on this manuscript by collecting data to perform more data analysis using SAS Enterprise Miner. Also, we are planning to submit this manuscript to information systems journal next year.

## **2.1 Restatement of problem researched, creative work, or professional enhancement opportunity**

Unfortunately, the share volume, velocity, variety, and variability of spatio-temporal data pose serious challenges to the current spatio-temporal data analysis tools for understanding and identifying which information or data is critical to improve our tactic or strategic decision making. To address this issue, our study presents how Fourier Decomposition Analysis, a novel business intelligence technique, can be used to enhance the visualization of big data for business decision making and competitive advantage.

## **2.2 Brief review of the professional enhancement opportunity, creative work, or research procedure**

Fourier analysis helps in analyzing the periodic behavior of spatio-temporal data. It was named after Jean Baptiste Fourier (1768-1830), who first realize that one-dimensional data can be modeled as a linear combination of sinusoidal waveforms. Fourier analysis (also known as harmonic analysis identifies the periodicity in time series data. A typical Fourier analysis models time series data in terms of sine and cosine functions since they are periodic. Once the data is in sine and cosine form, their periods can be determined. Common visuals include periodogram which plots signal power against frequency. Fourier analysis is widely used in image processing and Geophysics to enhance data so that targets (object of interest) are exposed. What the conventional Fourier analysis does not do, however, is to represent data in the wavelength of the

electromagnetic spectrum which is why this article introduces the Fourier Decomposition Analysis.

### **2.3 Summary of findings, outcomes, or experiences had.**

We have not completed this project because we are still looking/collecting data to complete the data analysis.

### **2.4 Conclusions and recommendations**

We are still working on this research and as soon as the research is complete; we will submit it to a journal for publication.

## Appendix A

Manuscript for Publication August 6 2013 Review Complete - Windows Internet Explorer

<https://mail.atu.edu/owa/?ae=Item&a=Open&t=IPM.Note&id=RgAAAABmTPGUcC%2byTYD4nCHuNSaoBwCZHNRradbwRoK6tYy1zltrAAAAuleLAACZHNRradbwRo>

Reply Reply All Forward [Icons]

### Manuscript for Publication August 6 2013 Review Complete

IGI Global Journal Submission System [journalsubmissionsystemadmin@igi-global.com]

To: Efoa C. Idemudia

Tuesday, August 27, 2013 11:08 AM

- You replied on 8/29/2013 5:30 PM.

Dear Dr. Idemudia,

I am pleased to inform you that your manuscript 13-2005, entitled "The Influence of IT-related Beliefs on Emotional Trust for a Smartphone and Smartphone Continuance Usage: An Empirical Study," has been accepted for publication in an upcoming issue of the International Journal of Technology Diffusion (IJTD).

In order to proceed with typesetting, we will need the author(s) to submit the following materials:

- "Warranty and Transfer of Copyright Agreement" (<http://www.igi-global.com/AuthorsEditors/TitleSubmission/TransferOfCopyright.aspx?ProjectId=945d0575-dd99-4409-a60c-5fca781475c1>). In the case of multiple authors, all authors must sign
- A short biography for each author in one document
- Tables, figures and codes
- Complete final manuscript

For consistency of publication, we ask that you ensure that your paper meets APA style guidelines. Manuscripts should be limited to 20 double-spaced pages (including references). We ask that you kindly adhere to these guidelines. In addition, please carefully go over the Guidelines for Preparing Accepted Manuscripts:

<http://www.igi-global.com/AuthorsEditors/TitleSubmission/GuidelinesForAcceptedProject.aspx>

Comments about your article can be viewed at:

<http://www.igi-global.com/AuthorsEditors/TitleSubmission/ProjectComments.aspx?ProjectId=945d0575-dd99-4409-a60c-5fca781475c1>

Please ensure that your materials reach us no later than 30/8/2013. Please submit the materials at:

<http://www.igi-global.com/AuthorsEditors/TitleSubmission/AuthorFinalSubmission.aspx?ProjectId=945d0575-dd99-4409-a60c-5fca781475c1>

Thank you for your contribution to our journal. We are pleased to be able to work with you toward your goal of publication. A complimentary copy of the journal issue containing your manuscript will be sent to you upon publication. If you have any questions, please e-mail me at [alizolait@gmail.com](mailto:alizolait@gmail.com).

Sincerely,  
Ali Zolait

75%

4:11 PM  
9/18/2013

[Taskbar icons: Internet Explorer, File Explorer, Internet Explorer, Word, Skype, Tablet PC]

## Appendix B

The screenshot displays a Microsoft Outlook web interface. At the top, there is a browser address bar with the URL <https://snt146.m...> and several open tabs including "Outlook - efoid...", "Journal of Electron...", "atu.edu", and "Professional Devel...". Below the browser is the Outlook navigation bar with options like "File", "Edit", "View", "Favorites", "Tools", and "Help". The main content area shows an email titled "RE: JECO 13-5236 Revisions Requested" from "(Shared) In-House Journals (ih-journals@igi-global.com)". The email body contains the following text:

Hello Dr. Idemudia,

I hope you are well. After an initial review, it has been decided to place your revised article into the peer review process once more. As such, please resubmit at our online submission system at <http://www.igi-global.com/authorseditors/titlesubmission/newproject.aspx>.

Your paper will be given a new routing number, new reviewers, and a new associate editor. It will be treated as a new submission. Thank you and have a great day!

Best,  
Jamie

*Jamie M. Buckton*  
(formerly Jamie Wilson)  
Managing Editor

At the bottom of the Outlook interface, there is a footer with copyright information: "© 2013 Microsoft Terms Privacy Developers English (United States)".

The Windows taskbar at the bottom shows several application icons: Internet Explorer, File Explorer, a taskbar icon, Skype, a globe icon, and Microsoft Word. The system tray on the right indicates the time is 6:16 PM on 9/15/2013.



### 3 References

- Idemudia, E.C. Visual Perception Model for Online Target Marketing. 18th Americas Conference on Information Systems 2012, Seattle, USA.
- Idemudia, E. C. The Extended Advertising Network Model. 16th Americas Conference on Information Systems 2010, Lima, Peru.
- Idemudia E. and Jones D. (2011) Antecedents of the Intention to Click an Online Banner Ad, Working Manuscript.
- Li, K., Idemudia, E. C., Lin, Z., Yu, Y.,2012. A Framework for Intermediated Online Targeted Advertising with Banner Ranking Mechanism, *Inf Syst E-Bus Manage Journal*, 10, 2(2012), pp. 183-200 .