Relationship between information overload syndrome (IOS) and stress management of post graduate students

Saralah Devi Mariamdaran

devi@uum.edu.my

School of Applied Psychology, Policy and Social Work, College of Arts and Sciences, University Utara Malaysia, Malaysia

Arsaythamby A/L Veloo

arsay@uum.edu.my

School of Education and Modern Languages, College of Arts and Sciences, University Utara Malaysia, Malaysia

ABSTRACT

The objective of the study is to investigate the moderating role of stress management on the relation of information overload syndrome and performance of university students. It has been noticed that owing to rapid growth of internet, conducting research has become comparatively easy where data is readily available, but such immense information act as a noise and students face problem in selecting the exact information that results in stress and influences students' performance. Data has been collected through the students of University Utara Malaysia which has been used to draw research framework. The results of the paper concluded that information overload syndrome has an inverse effect on the performance of students. Moreover, the inclusion of moderating variable i.e. stress management changes the inverse impact into positive impact and has expanded the worth of explained deviation. Hence, the comprehensive framework has been accepted and the study underlined that there is a vital impact of stress management on the relation between information overload syndrome and students' performance.

Keywords: Information Overload Syndrome, Psychology, University Utara Malaysia, Postgraduates

INTRODUCTION

Outcome of students can be observed when there is over load of information on the students which results inverse productivity by virtue of information overload syndrome. In this era, the word overload is traditional. Students also get information blogs, emails and other sources where people are linked with each other and afterwards students share information and feelings on social media with others DeAndrea, Ellison, LaRose, Steinfield, and Fiore (2012).

Information overload consists difficulty level when students are burdened through extra load of information. Every student around the globe has its own capability that contains understanding level. Numerous tests can be applied to identify the level of understanding of a student. Understanding level of students can also be examined by giving assignments or tasks to them. Teachers can get high productivity if they know about the abilities of their students (Toffler, 2013).

The studies of information overload system are rapidly growing. In 20th century, the idea of information overload has introduced. The problem of information overload has expanded with the passage of time (Groes, & Sebastian 2016). Today, work overload can be found in students' groups as well as in various fields. But, it is a main problem for the students that they have a plenty of load of their projects and assignments (Csikszentmihalyi, Mihaly, & Robinson, 2014). To complete the task, students are connected with internet from dawn to dusk. Owing to these problems, the performance of both psychological and other students are adversely suffering.

In simple words, information overload conveys notion and receives huge information in optimum time. Immense communication and information can lead to issues for the graduates and postgraduates. Under the student's community, it can be observed that this is a term which is too ordinary and is growing immensely. The information overload, affects the performance of students who are normally lacking expertise to handle information overload Ruiz-Gallardo, José-Reyes, González-Geraldo, and Castaño, (2016). If student faces cognitive strain in addition to higher level of stress, then it will diminish the satisfaction level and that will cause stress. Students may study more efficiently when they are not being stressed on account of information overload syndrome.

When students have plenty of load because their studies and they are not satisfied then stress occurs. Students are unable to take good decision owing to lack of information which results in poor performance (Larcombe, Wendy, Letty Tumbaga, Ian Malkin, Penelope Nicholson, & Tokatlidis, 2013). University students may be unable to take decision in this situation because they are doing research work that further expands information overload.

Different scholars quoted that information overload is a concept, in which students have plenty of information in a particular field but they overlap and students cannot make specific decisions. Likewise, it shows that information requirement is more but student possess less information. These are the things which are incorporated in the work overload whilst making research work and projects. According to Klapp (1986) huge amount of information feels like irritation and this is happening only when students have too much irrelevant information. The students have to oversee immense subjects which are featuring regularly.

They should study all the courses in a short time. Hence, the information is not endorsed in an optimal way. Students will show lack of efficiency and effectiveness. The term information overload can be defined as, there are two different persons where one has no idea of collecting information and doesn't even know how to process is while other has plenty of data (English, Mary, & Kitsantas, 2013). In this era, communicational gadgets and programs also overload the supply of data (Joseph, et al., 2013). The purpose of sending the vision causes stress among academicians (Abbott & Andrew, 2014).

Since the data is being collected for last 50 years and now it is readily available (Pineteh & Ernest, 2012) nd information can be found globally (Kaplan, 2012). This is the point where issue appears and students cannot judge relevant information and force overload syndrome. So it makes a confusion and creates difficulties for the researchers and students what to choose or reject. Moreover, in addition to the ease of information availability, there are many issues which were proclaimed by the university students and the researchers. Students have proclaimed that magnitude of information causes stress and one becomes unable to be satisfied (Twenge, 2013).

Few years back, the machines took the place of human resource that diminishes the quantity of human power in the market (Compagni, Amelia, Mele, & Ravasi, 2015). In some areas, the information is a tool to take right decisions (Bono, Glomb, Shen, Eugene & Koch, 2013). It is very difficult to take decisions through virtue of less information and these elements have started diminishing the potential of decision making. Hence, it has been proved that information overload has both positive and negative influences. The scholars have made this particularly for the management but these things also apply in education sector especially for the universities (DomíNguez, et al., 2013). These circumstances are not long lasted and students start losing control on the studies. In the modern era anyone can see the huge inundation of information around the world (Stark & John, 2015).

Students can easily find the information and that can result in overload of information. Through emails, people are spreading information, it is increasing day by day. One is able to produce new things through new and unique knowledge. These things might be extremely valuable and particularly every one of the happenings in the most recent decade. The volume of information is growing and it will increase each day. The problem of workload and syndrome has been growing step by step and leading us to critical challenges (Carrigan, 2016). It has created psychological as well as other. Such problems and conflicts between information and students' performance must be solved through most favorable solution.

Now educational institutes have started facing overload problems. These problems were ignored because management was taking the issue seriously and now issue can be easily noticed. Admissions were badly affected owing to diminishing trend of students due to burning candle on both ends (Schoenfeld-Tacher, Regina M., Lori R. Kogan, Beatrice Meyer-Parsons, Kenneth D. Royal, & Shaw, 2015). The current statistics of Social Sciences department of University Utara Malaysia have shown poor trends.

Table 2

UUM CAS Student Registration

Program / Year	2010	2011	2012	2013	2014	2015
PhD	142	152	151	183	151	144
Sarjana	660	668	783	841	736	618
Total	802	820	934	1024	887	762

The researchers noticed have certain aspects that are creating issues and have lessen students' admissions in higher education. The main cause of this problem is information overload. In current era, everyone must decrease the impact of information overload syndrome. Consequently, this study has been conducted with the facet of universities. So students are being targeted as respondents. Students are getting overload with the data as the students of university are assigned by immense tasks, therefore, they are not working with such efficiency and effectiveness (Davison, Ou, & Martinsons, 2013).

Hence, research has been conducted to investigate the effect of information overload which is growing rapidly and constructing information overload syndrome among students. The object of this research is to sort out the cause to provide an optimal solution. Probably, these problems are occurring in current circumstances. Therefore, the aim of this research is to examine the results of previous studies of information overload syndrome and numerous contradictions have been taken place and leave the issue unresolved. According to the scholars, analysis must be made on more data because past studies and information is not sufficient to resolve this problem (Garvey, 2014).

The research is being conducted among the students admitted in northern university in Malaysia. Hence, there is a dreadful need to carry out this research to give optimal solution for the problems discussed above.

The objectives of the study are as follows: To find the relation between information overload syndrome and performance of university students. To find the moderating impact of stress management on the relation of information overload syndrome with performance of university students.

LITERATURE REVIEW

The idea which has been debated in this research is about students' performance at University Utara Malaysia. The performance of university students is repeatedly worsening. The major cause affecting students' performance is information overload syndrome. Stress is also a factor that inverse the impact of information overload syndrome. Therefore, it is argued that if the information intensity increased, then the level of stress will certainly grow (Webster, & Frank. 2014) and if stress management is done properly then it has significant influence on the performance of university students.

Performance of the University Students

There is no particular definition to explain the performance of students. The standard just focuses on attainment and procedure that how a student can get his degree and or his marks whilst understanding his course outline. Nevertheless, an extensive explanation of performance of university students attends to the attitudes, competencies, and skills that the student learns during his tenor in university.

In higher education, the impact of information overload syndrome on students' performance is not significantly clear, yet there are some controversies in the previous literatures (Cho, Jaehee, & Lee, 2016). Economists failed to give clear harmony concerning the influences on performance of students in university. Whether students' traits and educational environment explained students' performance, Information overload syndrome might be having an effect over these factors that results consequences of education. So differences in students' attainments can be noticed (Kuh, Cain, Hutchings, & Kinzie, 2014).

The direct connection of information overload syndrome with performance of university students is focusing on substantial literatures over the last twenty years. Some research work explains that there is no confirmation regarding information overload syndrome in higher education concerning downturn in the performance of students. Contrarily, several studies showed immense effect of information overload syndrome on performance of university students (Cho, Jaehee, & Lee, 2016).

Connection of stress management is missing whilst looking at the link between performance of university students and information overload syndrome (Bartholomew, 2013). It must be specified to the needs and wants of the university students and adapted to the domestic constraints and contexts. Information overload syndrome shows broader possibilities to diminish learning process that can be easily reduced by stress management.

Information Overload

Information overload simply refers to the level of trouble that each student faces in understanding problem and to make right decision. This deficiency in decision making potential is owing to having extra information. Information overload develops when the quantity of inserting information in the brains of university students exceeds its capacity (Gouws, Rufus, & Tarp, 2016). Students of university often have limited cognitive processing place. Resultantly, when communication and information overload develops, it is somehow that a depletion in quality of decision will develop and that will resultantly reduce the performance of students of university.

Primarily, information overload is related to the intelligence of the students and purely depends on the expertise and skills of a student that are being employed to finish their assignments. Information overload is frequently faced while taking decisions (Adamson, et al., 2014). Information overload is highly dependent on the human sentiments and intelligence level that if the student is free from stress and burdens then he may take productive measures and right decisions (Ahn, 2012). If information overload fails to be managed, then more inverse factors can be generated and may affect the performance of students. They can suffer with the troubles both physically and mentally (Harish, Jeya, Kumar, & Raja, 2013).

Impact of Information Overload Syndrome on the Performance of University Students

The main impact of information overload syndrome cause the damage of productive time of the students which can be used for other purposes if the mind of the students is not variated. Information overload syndrome diminishes the mental capability of students. Information overload syndrome remarkably impacts the thinking time as student variated his mind from productive things and consuming more time in thinking about irrelevant things. Information overload syndrome not only influence the mind of students but also affects communication procedure. Information overload syndrome inversely impacts the planning of work. Owing to variated minds, university student requires more time to plan their tasks. All these factors have adverse effect on life because students are consuming more time on irrelevant things and having less time for healthy activities or for sleeping (Zhang, Shuwei, Ling Zhao, Yaobin Lu, & Yang, 2016). It is fascinating to be noted that university students feel the need to seek more information and resultantly, they get confused by collecting immense amount of data through information (Anderson, 2014). Thus, it revealed that one having redundant information is like he doesn't have enough information to complete the task. Information overload syndrome intervenes problem solving and creative learning and thus, lengthen the process of thinking.

Moderating Role of Stress Management

Significance of information technologies cannot be ignored in education sector. No doubt, information technology has great importance in educational institutes but universities have to manage their works efficiently and that is only done by effective application of stress management. The only point to be noted that if there is an increase information, then stress will also grow and lead towards psychological issues. Hence, psychological issues impact performance of students. As information is collected in huge quantity, it results in bad performance. But, if students learn how to manage time and stress, then they will lead to better performance (Kim, Murrmann, & Lee, 2014).

Theoretical Framework

This segment contains the examination of information that causes overload in no time and is also used to diminish stress of the students in Malaysian universities. Consequently, this paper shows the research framework of three unique variables that can be understood easily and clearly. The study used the words, Information overload, Stress management,

and performance of students of university through this, a framework has been drawn which is shown below:
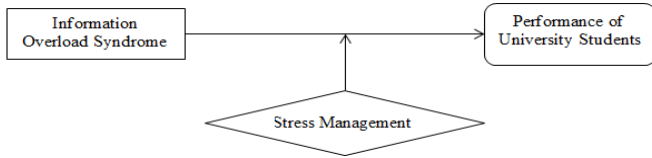
Figure 1: Conceptual framework connecting information overload, stress management and performance of students of university

In above figure, it has been shown that information overload syndrome is taken as independent variable and performance of students is taken as dependent variable. The theoretical framework shows information overload syndrome has an inverse impact on the performance of students. Bad performance is the major reason behind stress (Hystad, Eid, Laberg, Johnsen, & Bartone, 2009). Productive time is killed by stress, resultantly, owing to the previous studies and theories, it has been argued that stress management has strong moderating impact on the relation between information overload syndrome and performance of students.

RESEARCH METHODOLOGY

The methodology segment consists of research design, sample size, population of the study, hypothesis development, and sample frame. Sources of data, procedures and strategies for interpreting the data. It also contains the techniques and methods which has been utilized for data analysis and collection. They contain time, unit of analysis and time in addition to the size of the sample and sampling frame to be utilized.

On account of above theoretical framework, hypothesis has been drawn below:

Ha1: *Information overload syndrome impacts the performance of university students*

Ha2: *Stress management moderates the relation between information overload syndrome and performance of university students*

Research design is a way which is used in analyzing and collecting data to reach at a solution. Quantitative method is used to analyzed the data numerically that represents the occurrence that studied (Sekaran, 2007). Survey research has been adopted by the study (Zikmund, Babin, Carr, & Griffin, 2012). Primary data collection has been utilized to get data on performance of students and information overload syndrome as well as stress management. In this paper, sample has been collected through University Utara Malaysia. In this research data was collected at a point in time.

In this paper the unit of analysis are the post graduate students of last semester studying in University Utara Malaysia. In this study, various items have used to compute the variables by using Likert scale of five points (Hair, Ringle, & Sarstedt, 2013). This type of Likert scale measures the behaviors. Hence, both seven and five Likert Scales can be used but five is preferable on account that it eradicates the occurrence of errors.

Data has been collected through adapted questionnaire. It has also been taken into account that questionnaire which has been used, must be according to the conceptual definition of variables and define variables in coherent and marvelous way. Cronbach's Alpha is used to examine the reliability of questionnaire. Moreover, for face validity of questionnaire, the instrument has been adopted from the apparatuses that are well-established to measure variables of study. Correct sample size shows the quality of research. Sample size depends on population size. Table given by Zikmund, which was used to calculate appropriate sample size (Zikmund, 2007).

RESULTS AND DISCUSSIONS

SPSS was to measure reliability and descriptive of the data of this study. After confirming the reliability of data as it is free from all errors as well as there is no difference in early and late response, structural equation model was done in PLS-3 (Hair, Sarstedt, Ringle, & Mena, 2012). To develop a theory and test a model, PLS-SEM is the most appropriate software. The findings of the direct impact and moderating influences are following:
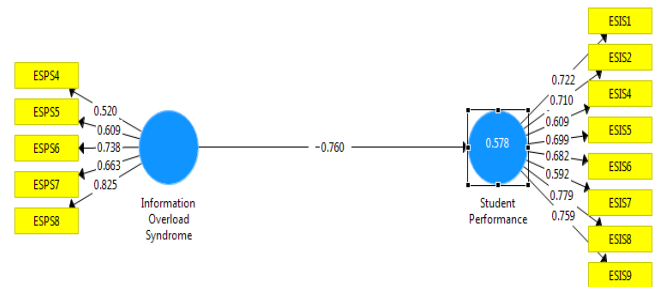
Figure 2: PLS Algorithms

Figure 2 reveals the impact of information overload syndrome on performance of students of university. The findings shows inverse effect of information overload syndrome on students' performance. The value of R square is .578 which shows 57.8% explanation of students' performance is made by information overload syndrome. Furthermore, to find significance level of the model, bootstrapping model is being used.
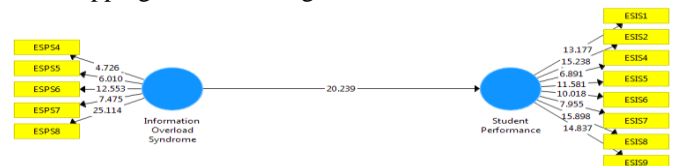

Figure 3: PLS Bootstrapping

In the figure 3 results of bootstrapping reveals significance of the model there is significant effect of information overload syndrome on students' performance. Following table shows the p values and t values that results in significance relationship of information overload system with students' performance
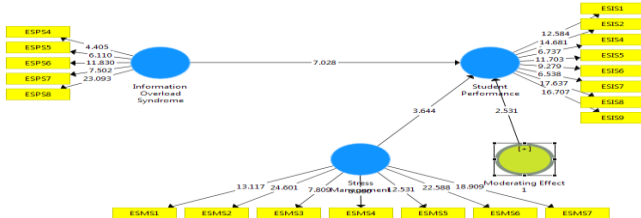
Table 2
Path Coefficients

Relationships	Path Coefficients	T statistics	P Value
Information Overload Syndrome -> Student Performance	- 0.760	20.239	0.00

After investigating that there is a negative relationship between information overload syndrome and students' performance. Consequently, stress management has been introduced as a moderating in theoretical framework. The outcomes of the moderating impact are following:
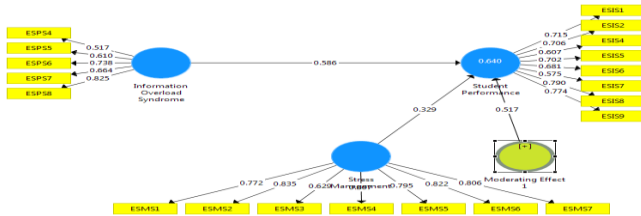
Figure 4: PLS Algorithms Moderation

The path coefficients result 0.517 beta value which has been calculated for moderating impact, in addition to, R square value has been increased to 0.64 that shows significant effect of the moderating variable. Moreover, point to be noted that inverse effect of information overload syndrome is converted into positive that defines the significance of moderating variable. Furthermore, boot strapping has been analyzed to investigate the significance level of variables

Figure 5: PLS Bootstrapping Moderation

The above diagram reveals that the outcomes of moderating effect are significant. The moderating variable has been constructed and is shown as significant which can be observed in table 3.

Table 3
Path Coefficients

Relationships	Path Coefficients	T Statistics	P Values
Information Overload Syndrome -> Student Performance	0.586	7.028	0.000
Information Overload Syndrome * Stress Management -> Student Performance	0.517	2.531	0.000

In simple words the proposed framework has been supported by the results that have been calculated with the help of primary data collected from the students of University Utara Malaysia.

CONCLUSIONS

The results show that the learning capacity of humans can be enhances by managing stress properly which was caused through information overload syndrome. Reasonable load of information is unhelpful for most of the assignments but if stress is managed in a good way then it can expand the productivity of the students. Above all, there is no ambiguity that information overload badly affects the students' performance but after managing stress then there is no any adverse impact of information overload syndrome. Results of this research introduced new framework model which can be understood for phenomenon of information overload. This paper gives results which are based on small sample size. Hence, it is recommended for the researches to increase sample size in their further research and make comparison with various fields.

REFERENCES

Abbott, & Andrew. (2014). the problem of excess. *Sociological Theory, 32*(1), 1-26.

Adamson, Colin, Chris Gennaro, George Kinchen, Joshua Koehler, Peter Liu, Zhang, J. (2014). Adamson, Colin, Chris Gennaro, George Kinchen, Joshua Koehler, Peter Liu, Derek May-West, and Jason Zhang. Reducing Electronic Information Overload.

Ahn, & J. M. (2012). Effective Public Policy Delivery System in the Age of Information Overload–The Role of Imagery on Citizen Perception and Compliance of Public Policy. *The Korean Social Science Journal, 39*(1), 1-17.

Anderson, D. M. (2014). Introduction in leveraging. *Springer International Publishing, 6*, 3-34.

Bartholomew, & P, C. (2013). Time: An Empirical Analysis of Law Student Time Management Deficiencies. *University of Cincinnati Law Review, 81*(3), 51-62.

Bono, Joyce E., Theresa M. Glomb, Winny Shen, Eugene Kim, & Koch, A. J. (2013). Building positive resources: Effects of positive events and positive reflection on work stress and health. *Academy of Management Journal. 56*(6), 1601-1627.

Carrigan, M. (2016). The fragile movements of late modernity. In Morphogenesis and the Crisis of Normativity, 191-215.

Cho, Jaehee, & Lee, A. S. (2016). International Research International Students' Proactive Behaviors in the United States: Effects of Information-Seeking Behaviors on School Life. *Journal of College Student Development*, 5, 590-603.

Compagni, Amelia, Valentina Mele, & Ravasi, D. (2015). How early implementations influence later adoptions of

innovation: social positioning and skill reproduction in the diffusion of robotic surgery. *Academy of Management Journal, 58*(1), 242-27.

Csikszentmihalyi, Mihaly, & Robinson, R. E. (2014). Culture, time, and the development of talent. The Systems Model of Creativity. *Springer Netherlands, 8,* 27-46.

Davison, M, R., Ou, C. X., & Martinsons, M. G. (2013). Information technology to support informal knowledge sharing. *Information Systems Journal, 23*(1), 89-109.

DeAndrea, C., D., Nicole B. Ellison, Robert LaRose, Charles Steinfield, & Fiore, A. (2012). Serious social media: On the use of social media for improving students' adjustment to college. *The Internet and higher education, 15*(1), 15-23.

DomíNguez, AdriáN, Joseba Saenz-De-Navarrete, Luis De-Marcos, Luis FernáNdez-Sanz, Carmen PagéS, & MartíNez-HerráIz, J. J. (2013). gamifying learning experiences: Practical implications and outcomes. *Computers & Education, 63*, 380-392.

English, Mary C., & Kitsantas, A. (2013). Supporting student self-regulated learning in problem-and project-based learning. Interdisciplinary journal of problem-based learning, 7(2), 61-68.

Garvey, W. D. (2014). Communication: the essence of science: facilitating information exchange among librarians, scientists, engineers and students. Elsevier.

Gouws, Rufus H., & Tarp, S. (2016). Information overload and data overload in lexicography. *International Journal of Lexicography, 12*, 1-30.

Groes, & Sebastian. (2016). Information overload in literature. Textual Practice, 1-28.

Haider, S. H., Asad, M., & Aziz, A. (2015). A survey on the determinants of entrepreneurial training effectiveness among micro finance institutions of Malaysia. *Mediterranean Journal of Social Sciences, 6*(6 S4), 396-403. doi:10.5901/mjss.2015.v6n6s4p396

Harish, HG Jeya, R. Krishna Kumar, & Raja, B. W. (2013). Bringing ICT to Teach Science Education for Students with Learning Difficulties. *I-Manager's Journal on School Educational Technology, 8*(4), 1-15.

Hystad, Sigurd W., Jarle Eid, Jon C. Laberg, Bjørn H. Johnsen, & Bartone, P. T. (2009). Academic stress and health: Exploring the moderating role of personality hardiness. *Scandinavian Journal of Educational Research, 53*(5), 421-429.

Joseph F. Hair, J., Hult, G. T., Ringle, C., & Sarstedt, M. (2013). A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM). SAGE Publications.

Kaplan, A. M. (2012). If you love something, let it go mobile: Mobile marketing and mobile social media 4x4. *Business horizons, 55*(2), 129-139.

Kim, BeomCheol Peter, Suzanne K. Murrmann, & Lee, G. (n.d.). Moderating effects of gender and organizational level between role stress and job satisfaction among hotel employees. *International Journal of Hospitality Management, 28*(4), 612-619.

Kuh, G. D., Timothy Reese Cain, Pat Hutchings, & Kinzie, J. (2014). Using evidence of student learning to improve higher education. John Wiley & Sons.

Larcombe, Wendy, Letty Tumbaga, Ian Malkin, Penelope Nicholson, & Tokatlidis, O. (2013). Does an improved experience of law school protect students against depression, anxiety and stress? An empirical study of wellbeing and the law school experience of LLB and JD students. Sydney Law Review, 35(2), 256-275.

Mark, George, & Smith, A. P. (2012). Effects of occupational stress, job characteristics, coping, and attributional style on the mental health and job satisfaction of university employees. *Anxiety, Stress & Coping, 25*(1), 63-78.

Pineteh, & Ernest. (2012). Using virtual interactions to enhance the teaching of communication skills to information technology students. *British Journal of Educational Technology, 43*(1), 85-96.

Ruiz-Gallardo, José-Reyes, José L. González-Geraldo, & Castaño, S. (2016). What are our students doing? Workload, time allocation and time management in PBL instruction. A case study in Science Education. *Teaching and Teacher Education, 10,* 51-62.

Schoenfeld-Tacher, Regina M., Lori R. Kogan, Beatrice Meyer-Parsons, Kenneth D. Royal, & Shaw, J. R. (2015). Educational Research Report: Changes in Students' Levels of Empathy during the Didactic Portion of a Veterinary Program. *Journal of Veterinary Medical Education, 42*(3), 194-205.

Sekaran, U. (2007). Research Methods for Business: A Skill Building Approach. New York: John Wiley & Sons, Inc.

Stark, & John. (2015). Product lifecycle management. In Product Lifecycle Management. Springer International Publishing, 1-29.

Toffler, A. (2013). Revolutionary wealth. *New Perspectives Quarterly, 30*(4), 122-130.

Twenge, & M, J. (2013). Overwhelming Evidence for Generation Me a Reply to Arnett. Emerging Adulthood 1, 21-26.

Webster, & Frank. (2014). Theories of the information society. Routledge.

Zhang, Shuwei, Ling Zhao, Yaobin Lu, & Yang, J. (2016). Do you get tired of socializing? An empirical explanation of discontinuous usage behaviour in social network services. Information & Management.

Zikmund, W. G. (2007). Business Research Methods. New York: McGraw Hills.

Zikmund, W., Babin, B., Carr, J., & Griffin, M. (2012). Business Research Methods. Masson: Cengage Learning.