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Antecedents for Actual Usage Intentions of Open Access Journals in Agricultural Research Institutions in Tanzania

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Abstract

The purpose of this paper is to examine antecedents that predict researchers' usage intention of Open Access Journals (OAJs) in Tanzania, with a specific focus on the Agricultural Research Institutes (ARIs). Specifically, the study investigates major predictors of usage intentions of OAJs. Data were collected from pilot study. A total of 60 (85.71%) usable questionnaires out of 70 were returned. The study utilized the Theory of Reasoned Action (TRA). The results show that attitude, content respectability and predatory publishers have insignificant effect on usage intention, while subjective norms and intention shows statistically significant effect on OAJs usage behavior. The study findings are useful to OAJs publishers and ARIs management staff to identify important factors and safeguard policies on Open Access publishing and strategies to encourage long-term usage of OAJs for future studies and lifelong learning. By using TRA in the context of actual usage intentions and the integration of an additional construct "content respectability and predatory publisher", the extended TRA model fits very well in the OAJs in Tanzania, in particular where such studies are scant. The findings can be used in other institutions with similar conditions in investigating OAJs usage intentions.

Keywords: Open Access Journals, Agricultural Research Institutes, Tanzania, Theory of Reasoned Action, Gold Open Access.

Introduction

Open Access Journals (OAJs) development can be traced back to the 1980s when specialized press and scientific journals market collapsed due to increase in periodicals' price. The increase of price was attributed to rapid development of information and communications technologies (ICTs) which improved access to and efficiency of information dissemination globally; at the same time this increased the cost of subscription to commercial journals. Increased price affected subscription and purchasing of serials leading to uneven distribution of scientific publications. Research centers in less affluent countries were mostly hit by this decline in accessing scientific

researches (Josh, Vatnal & Manjunath, 2012). In response to this challenge, the information society group innovated Open Access (OA) publishing.

Induction of Open Access Journals (OAJs) and Open Access Repository (OAR) was unavoidable since they were the main alternatives for enhancing accessibility, reputation, dissemination, possibility of citation impact and creation of knowledge-based society. Open Access Journals (OAJs) are scholarly journals that are available online to readers without financial, legal, or technical barriers other than those inseparable from gaining access to the Internet itself (Josh, Vatnal & Manjunath, 2012). OAJs are considered as important tools in enhancing visibility and impact of one's own work since Open Access articles are downloaded and cited more frequently than articles from non-AOJs (Pandita, 2013 & Kousha, 2009), and they reach broader audiences. Importantly, OAJs serve developing countries and small or specialized research institutions and corporations to have access to all Open Access articles (Ezema, 2011; Nwagwu, 2013).

Since its inception, usage of OAJs has become popular in universities and research institutes across the world including Africa, where the number of articles published in OAJs increased from 40,000 in 2004 to 260,000 in 2014 (Ware & Mobe, 2015). However, the global trend indicates unevenness in access to and usage of OAJs. Developed countries are leading in exploitation of OAJs compared to African countries, despite its existence of more than a decade. Most African countries exhibit a slow gain in usage of OAJs which hinders circulation of African publications (Nwagwu, 2013; Pandita, 2013). This paper thus examines antecedents that predict researchers' usage behavior of OAJs publishing platform for the enhancement of scholarly communication in agricultural research institutes.

Agricultural Research Institutes and OAJs in Tanzania

This study was conducted in Tanzania's Agricultural Research Institutes (ARIs) in recognition of their multiplier effects on other sectors (Ngaiza, 2012). In sub-saharan African (SSA) countries, the agriculture sector has continuously remained an engine for economic growth and the cornerstone of poverty reduction (Oyeniya & Olaifa, 2013). It is approximated that about 65% of SSA population rely on agriculture as their primary source of livelihood, where 90% of them are categorized as small-scale farming

production (Materu-Behitsa & Diyamett, 2010). In Tanzania, the agriculture sector contributes to 85% of employment, provides 85% of the country's export, 75% of foreign exchange and contributes 25.8% to the country's Growth Domestic Product (GDP) (Benard, Dulle & Ngalapa, 2014; Kapange, 2010; Ngaiza, 2012; United Republic of Tanzania, 2006).

Regarding the influence of the agricultural sector on economic growth, Tanzania government has continually increased budget for research and development (R&D) from 1.5% in 2010/2011 up to 2.5% in 2013/2014 (URT, 2014). In understanding the role of accessibility and dissemination of research findings to stakeholders, the Tanzanian government has increased ICT expenditure, waved tax for ICT facilities and its accessories (Materu-Behitsa & Diyametti, 2010; Lwezaura, 2011), increased training institutes for Information Technology (IT) (Lwezaura, 2011). However, Tanzania's efforts for the enhancement of research dissemination and accessibility can be traced back to 1986, when the government established Tanzania Commission for Science and Technology (COSTECH). COSTECH aims to strengthen dissemination of and accessibility to scientific research through harmonization of research and innovation in its website and portal (COSTECH, 1986).

Further, in 2011 Tanzania established the Consortium for Tanzania Universities and Research Libraries (COTUL) with the aim of enhancing acquisition of electronic information sources, research, training, consultancy and others deemed critical in the attainment of academic excellence in learning, teaching and research for both academic and research institutions. In safeguarding the objectives of COTUL, the policy on OA was formulated. The policy advocates open access publishing through which researchers should provide open access to their peer-review research article in order to allow archival and accessibility through OAJs and OARs. Tanzania also joined Regional Universities Forum (RUFORUM) in 2013 in order to facilitate capacity building in agriculture through knowledge sharing and exchange. Likewise, the country joined sub-regional research organizations like the Southern African Center for Cooperation in Agricultural Research (SACCAR), Eastern and Southern Africa small scale Farmers' Forum (ESAFF), Natural Resource Management (NRM), and Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) in order to widen dissemination and

accessibility to research on technologies through regional and international collaboration programme (Ngaiza, 2012; Kapange, 2010).

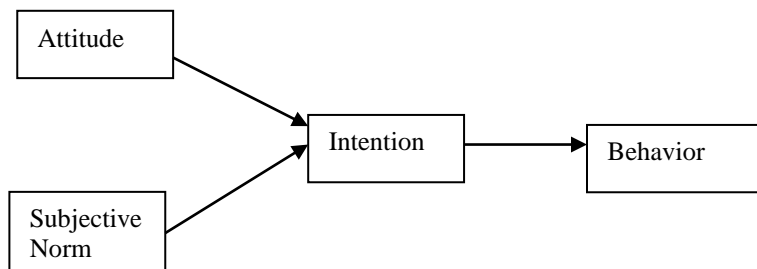
Despite the government's effort in facilitating accessibility and dissemination of research findings, previous studies has indicated low usage of OAJs among researchers which limits circulation. Studies by Dulle, Minish-Majanja & Cloete, 2010; Lwoga & Questier (2014; Twaakyondo, 2013) identified low attitude and lack of trust in OAJs detriment OAJs behavior. Further, study by Nwagwu (2013) highlight emergency of predatory publishers and predatory journal are among antecedents inhibiting low usage of OAJs. However, previous studies have been conducted in universities specifically on OA publishing in the African context (Dulle, Minish-Majanja & Cloete, 2010; Ezema, 2011; Nwagwu, 2013 & Pandita, 2013), there persistency low usage of OAJs in most of research institutions as well these ARIs are considered as factory for knowledge creation. As such, there are few empirical studies in Tanzania regarding researchers from non-university institutions on antecedents for usage of OAJs. It is important to note that there are different institutional cultures and characteristics (Greenfield & Rohde, 2009), and thus a deep understanding of an institution can help the global community to widen their perspective regarding the factors that influence researchers' decision toward usage of OAJs. Basing on the Theory of Reasoned Action (TRA), this study seek to establish the antecedents for usage behavior of OAJs and to investigate how these determinants can shape the researchers' intention to use OAJs in ARIs in Tanzania. Two objectives guide the study (i) to investigate the major predictors of OAJs usage of behavior among researchers from ARIs in Tanzania; and (ii) to examine if the major determinants of OAJs usage can predict intention to use OAJs.

Conceptual Model and Research Hypothesis Development

This study uses the Theory of Reasoned Action based on the fact that it originates from the psychological field, and is used in communication discourse as a theory of understanding persuasive messages. TRA has received much attention in Information System (IS) literature and is widely used to study acceptance and usage of information system/information technology (Ajzen & Fishbein, 1980). TRA has gained acceptance since its development in 1980 due to its comprehensiveness and strong explanatory

power in predicting individual's behavior. TRA comprises of four core constructs that play a significant role as direct determinants for usage behavior and user technology acceptance: attitude, subjective norm, intention and behavior. The research model for this study is formulated based on TRA, and it comprises of four constructs as illustrated in Figure 1.

Figure 1. Theory of Reasoned Action



Source: Ajzen and Fishbein (1980)

Attitude is a vital component of the TRA model which refers to an individual's disposition towards a behavior or conduct. According to Ajzen and Fishbein (1980), attitude is a catalyst which motivates an individual to practice particular behavior, and it is mediated by intention toward usage behavior. It should be noted that, intention precedes behavior and behavior is a product of rational choice that results from planning, thinking and execution. In the context of this study, it is considered that, before embarking on the actual usage of OAJs, researchers make value judgment on the effort to be invested which might raise attitude which spark intention to deploy new system (Fishbein, Ajzen, 1980; Pedersen, 2005). Thus, the hypothesis is constructed as:

H₁: Attitude has direct influence on intention toward usage of Open Access Journals.

Subjective norm is concerned with an individual's perception about what other people think of the behavior in question. Fishbein and Ajzen (1980) assert that subjective norm is a society's expectation of an individual's performance or behavior, which incorporates family's, friends' and colleagues' perception of and their degree of influence on that behavior. Previous studies reported the influence of subjective norm on usage of information system (Albarq & Alsughayir, 2013; Chuchinprakan, 2012). In this research, subjective norm construes researchers' beliefs or views about the opinion of other people

whom they regard in high esteem such as organization superintendents, colleagues, friends and professional organizations who can influence intention and attitude toward usage of OAJs (Hassandoust, Logeswaran & Kazerouni, 2011). Thus, the following hypotheses are constructed as:

H₂: Subjective Norm (SN) has direct influence on attitude on usage of open access journals.

H₃: Subjective Norm (SN) has direct influence on intention toward usage of open access journals.

Content Respectability (CR) denotes how an individual values the contents and context covered in the new system of publishing, especially OAJs in terms of speed, relevancy, coverage and authenticity. In the context of this study, content respectability refers to an individual perception on reputation of journals that influences intention to use new system of publishing (Narian & Fernandez, 2012). It is undoubtful that OAJs have undergone peer review for more than two decades. Interestingly, some academicians believe these journals based on their passing of the review process. Rodriguez (2014) adds that, even with increased knowledge and awareness, misconception on content respectability of OAJs has persisted alongside growth. Scholars may believe these journals have little or no quality control measures and thus have lower quality (Nwagwu, 2013; Royster, 2008). Thus, content respectability construct has been incorporated in the model in soliciting researchers' views regarding respectability of contents published in OAJs. Thus, the hypothesis is constructed as:

H₄: There is significant direct relationship between content respectability and intention towards usage of OAJs.

Predatory publishers denote publishers and journals which exist for the sole purpose of profit, not dissemination of high-quality research findings and furtherance of knowledge (Berger & Cirasella, 2015). The number of predatory journal publishers has been increasing at alarming rate which enhances doubt on the quality and impact on the OAJ publishing platform. According to Bells report (2015), predatory publishers have increased from 23 in 2011 to 923 in 2015. Globally, naïve authors are under pressure to publish without a support structure to help them identify suitable outlets for publishing

their research. Interestingly, it is noted that, a large number of these journals originate from developing countries where at the same time it is very difficult for articles from these countries to penetrate in developed countries' journals (Nwagwu, 2013). In the same vein, the presence of misleading and metrics hijacked journals has continually inflicted OAJs (Ware & Mobe, 2015). Interestingly, researchers from developing countries are more victimized by these publishers. In that case, most researchers caution on the continuance of this platform. With regard to this research, predatory publishers have been included in the variables as among the hindrances for OAJs' continual usage.

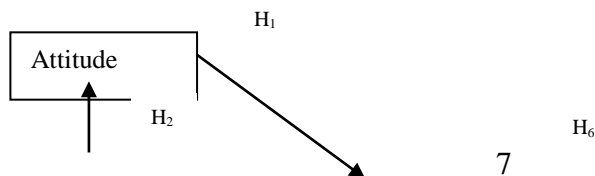
H₅: Predatory Publishers have a negative effect on intention towards usage of open access journals.

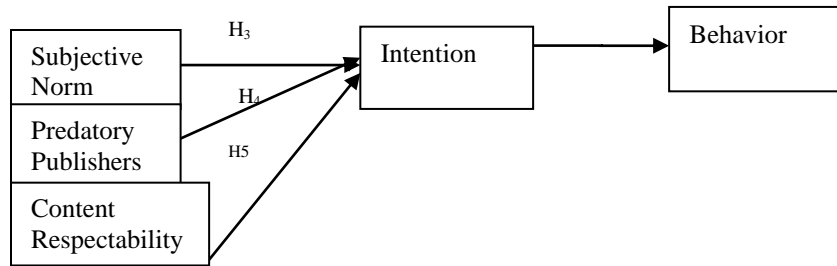
Intention denotes an individual's eagerness to know and apply new skills. Regarding this study, intention means an individual's avidness to identify and utilize new skills in publishing articles in OAJs and accessing information from OAJs rather than the traditional printed and subscribed journals. Intention has been reported by Yousafzai, Foxall and Pallister (2010) as having a significant and direct influence on an individual's decision to use the information system. In this study, the intention has been conceived in a similar way as that intention has positively influenced usage of OAJs in ARIs (Bhattacharjee, 2000 & Pedersen, 2005). Thus, the hypothesis is constructed as:

H₆: Intention has direct effects the on actual usage of Open Access Journals.

Usage behavior is the last component on the TRA model which denotes criterion variable, equivalent to proxy for behavior. Behavior variable corresponds with usage of OAJs as articulated by Pedersen (2005). Presently, there is a growing body of research from different disciplines such as education, technology, marketing, and library and information science investigating the influence of intention as immediate antecedent of behavior, attitude and subjective norm. Similarly, most models for studying technology adoption have incorporated intention as a central mediating factor for usage of system.

Figure 2: Conceptual Framework





Methodology

This study is based on empirical research involving staff of Agricultural Research Institutes (ARIs) from three agricultural zones in Tanzania (Eastern, Central and Southern zones). The four zones were purposively selected for pilot study with expectation that they represent the population of the researchers. The reason for employment of purpose sampling in ARI selection was due to fact that, some ARIs are no more operating (Lwezaura, 2011) while others have few number researchers. Systematic random sampling was used to select the respondents for the research in each ARI visited. Data were collected through a self-administered questionnaire. The major aim of the survey was to investigate the major predictors of OAJ usage behavior among researchers and to examine if the major determinants of OAJ usage can predict intention towards usage. The study developed survey questions based on existing, tested and verified instruments. The scales included the following: Subjective norm and attitude were measured by four items adopted from Pedersen (2005). The items for measuring intention and actual usage behavior were adopted from the works of Mishra et al. (2014), while questionnaire for predatory publishers and content respectability were developed by the researcher. The questionnaire consisted of the following three sections: demographic data including gender, age, position in institute and education level; second section presents antecedents for usage of OAJs, and third section measure predictor which negative inflict usage behavior.

A total of 60 (85.71%) usable questionnaires out of 70 were returned. Statistical Package for Social Sciences (SPSS) version 23.0 was used to analyze the hypotheses generated. This study used a two-step analytical procedure, including the exploratory factor analysis (EFA) which assessed the validity and reliability of the measurement model since questionnaire for two constructs predatory publishers and content

respectability were newly developed. Conceptualized hypotheses were analyzed to examine their prediction in the research model. The dependent variable assessed was the OAJ usage behavior, intention was mediating variable while (attitude=AT, subjective norm=SN, content respectability=CR, predatory publishers=PP) were independent variables. The independent variables were measured through seven seven-point Likert Scale (1=Strongly Disagree to 2=Disagree 3=Slight Disagree; 4=Neutral; 5=Slight Agree; 6=Agree; 7=Strongly Agree).

The EFA was conducted by using principal components analysis and varimax rotation. Factor analysis enabled the study to determine the items for creating the summated scales. Before proceeding with factor analysis, the Kaiser Meyer-Olkin (KMO) measure and Bartlett's test were conducted to determine whether or not it was appropriate to conduct factor analysis. The KMO values should be greater than 0.5 and Bartlett's test should be significant with a value less than 0.05, while the reliability should have Cronbach's alpha of 0.7 as acceptable threshold (Hair et al., 2010).

Findings

The findings indicate the KMO measure of sampling adequacy was 0.771. The Bartlett's test of sphericity was found to be significant at ($X^2=276.889$, $df=15$, $p=0.000$). The results suggest that the data could support factor analysis. The varimax rotation was used to obtain factor loading values and cumulative proportions of variance. Exploratory Factor Analysis (EFA) yielded six constructs with a total of 29 items. However, two items were deleted as they did not reach required cronbach's alpha, while two 2 items were deleted as they had multiple loadings. The Cronbach's alpha for the remaining 25 items was .822, KMO of 0.875, Eigenvalues was greater than 1, with 13% of variances explained and 72.297% of cumulative of all indicators. All items achieved a minimal communality of 0.5, with eigenvalues greater than 1. Total loadings ranged from 0.645 to 0.921, which were above recommended threshold of 0.5 and anti-image achieved was below .9 which is recommended threshold (Cohen, 2009; Hair et al., 2010). All the factors reached 0.7 and above which was acceptable Cronbach's alpha, and the correlation was significant at the 0.01 level (2-tailed).

Descriptive Results

Demographic profile of respondents was analyzed in terms of gender, age, experience, designation, education and location as well area of specializations. In terms of gender, the total number of male was 43 (71.7%) while female were 17 (28.3%).

Further, the majority of males (18) were age between 41-50 years old, followed by the group aged 31-40 years, 9 were between 22-30 years, whereas only 6 males aged above 50 years. Regarding females, 6 respondents were at aged 41-50, followed by 5 females who were 31-40 years old, 4 were between 22-30 years and only 2 female respondents were aged above 50 years. Table 1 shows the cross tabulation of respondents' age and gender.

Table 1: Age and sex of respondents

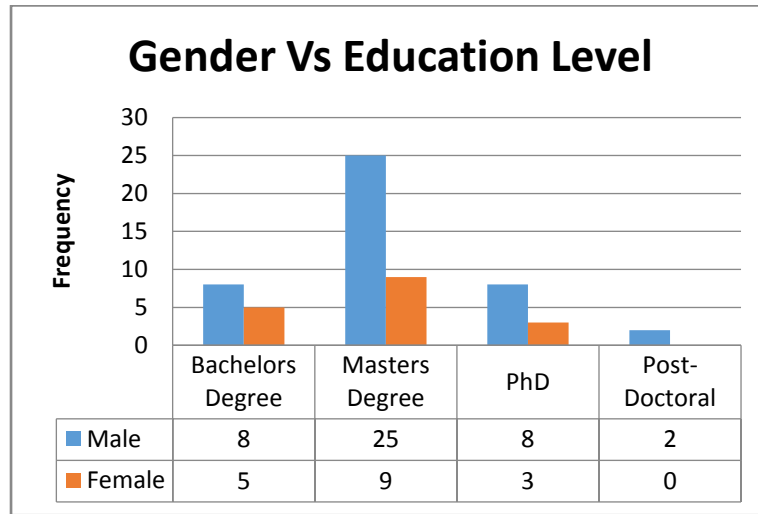
Gender	Age Groups				Total
	22-30	31-40	41-50	>50	
Male	9	10	18	6	43
Female	4	5	6	2	17
Total	13	15	24	8	60

Source: *Field Survey, Dec-2015*

The statistics indicates presence of large number of male in agricultural research, which accounts 43 (71.7%) male respondents and 17 (28.3%) were females. Presence of large number of males in ARIs has been attributed with the nature of tasks and education specialization, in which most of female were less attracted by this field and it is more on science background. Basing on the Tanzania education specialization, most of female students are attracted to pursue arts subject rather than science subject (URT, 2012).

As Figure 3 shows, respondents' education level ranged from bachelor's degree to postgraduate education level. Out of 60 respondents, 13 (21.7%) have Bachelor's degree, 34 (56.7%) hold Master's degrees, 11 (18.3%) hold PhD degrees and two (3.3%) did post-doctoral studies. Overall, the results indicate that over 78.3 of the respondents hold post-graduate degrees. However, the level of education differs across gender and out of 17 female respondents, only 3 hold PhD degrees and did post-doctorate.

Figure 3: Gender and Education Levels of Respondents



Source: Field Survey (2015)

Respondents were sampled from three zones namely Eastern zone, Central zone, Southern zone and South-highland zone. However, six institutions were selected from the mentioned zones which consist of six ARIs. The distribution of sample is as follows: (i) Eastern zone comprises Ministry of Agriculture, Livestock and Fisheries (MoALF) headquarters and Mikocheni Ari 46 (76.7%); (ii) Central Zone-ARI Makutopora 10 (16.7%); (iii) Southern zone-ARI Naliendele- 4 (6.7%).

Experience in Research

With respect to researcher experience, 26 (43.3%) of the respondents had 0-5 years, 18 (30.0%) had between 6-10 years, and another 5 (8.3%) had between 11-15 years of experience working in research institutes, and another 3 (5.0%) had between 16-20 years in research institutes. Only 8 (13.3%) of the respondents indicated that they had more than 20 years in conducting research.

Hypothesis Testing

Hypothesis testing was performed through multiple regression analysis to explore the effects of the five factors (i.e. ATT, INT, SN, CR and PP) on researchers' intention to use OAJs. The results of the effects of the five factors on researchers' usage of OAJs are shown in Table 2. Four hypotheses were supported. Attitude (ATT) has $\beta = -0.428$, $t=1.8532$ and $p<0.01$, thus H_1 was not supported, Subjective norms (SN) on intention (INT) has achieved $\beta 0.5645$, $t=2.5932$ which is greater than 1.96 and $p<0.05$, thus H_2 was supported. The hypothesis which states that, subjective norms (SN) has direct effect on attitude (ATT) has achieved $\beta =0.967$, $t=15.376$ and $p<0.01$, hence H_3 was supported. The hypothesis which states that, intention (INT) has direct effects on the OAJs' usage behavior (UB) has achieved $\beta=0.2306$, $t=4.299$, $p=<.001$, thus H_5 was supported. Content respectability (CR) has achieved $\beta=0.0038$, $t=0.2368$, $p=<.001$, thus H_4 was not supported. Predatory publishers (PP) has achieved $\beta=0.0987$, $t=1.6706$, $P<0.1$ which indicates small correlation, thus H_5 was supported due to fact that a negative directional relationship was hypothesized while the result revealed a positive relationship. Therefore, predatory publisher has a detrimental effect on the usage of OAJs among researchers in ARIs. Thus, four hypotheses out six were supported and the model accounted for 87% of the variance explained in OAJs usage behavior.

Table 2: Hypotheses Testing Results

Hypothesis	β	T=statistics	p-value	Remark
H ₁ : Attitude has direct influence on intention toward usage of Open Access Journals.	$\beta = -0.428$	$t=1.8532$	$p<0.01$	Not Supported
H ₂ : Subjective Norm (SN) has direct influence on intention toward usage of Open Access Journals.	$\beta=-0.3995$	$t=1.9101$	$p<0.05$	Supported
H ₃ : Subjective Norm (SN) has direct influence on Attitude on usage of Open Access Journals.	$\beta =0.967$	$t=15.376$	$p<0.01$	Supported
H ₄ : There is significant direct relationship between content respectability and intention towards usage of Open Access Journals.	$\beta =0.0038$	$t=0.2368$	$p<0.01$	Not Supported

H ₅ : Predatory Publishers has negative effects towards actual usage of Open Access Journals.	$\beta=0.09867$	t-1.6706	P<0.1	Supported
H ₆ : Intention has direct effects the actual usage of Open Access Journals.	$\beta=0.2306$	t=4.299	p<.01	Supported

Source: Field Survey (2015)

Discussion of Findings

The results suggest that variables from TRA are important in explaining researcher's usage intention of OAJs. Overall, path from attitude on intention was not supported, despite that fact that this variable was used in building TRA model. This implies that, attitude does not predict usage behavior. This finding contradicts with that of Hassandoust, Logeswaran and Kazerouni (2011) who found that attitude had effects on behavioral factors influencing virtual knowledge sharing. Attitude was not positively correlated ($\beta= -.428$) and ($t=1.8532$) which affects researchers' intention towards OAJs usage. Subjective norm was a strong determinant of usage of OAJs in the study, consonant with Mishra, Akman and Mishra's (2014) findings on acceptance of green information technology which in this study has predicted usage intention of OAJs with coefficient higher than others ($\beta=0.2306$). However, the result for H2 which hypothesized that subjective norm has direct influence on attitude towards intention to usage behavior was significantly supported. In that regards, subjective norm towards attitude appeared to be an important variable in the context of intention towards usage of OAJs. This finding highlight the essence that, colleagues, management, subordinates and heads of departments play significant role in raising attitude which leads to intention to use OAJs among ARIs researchers. This finding is agrees with (Hassandoust, Logeswaran and Kazerouns (2011) study which found subjective norm plays significant role in influencing virtual knowledge sharing.

Content respectability was found to have insignificant effect towards intention. The results indicate $\beta=0.0038$ and $t=0.2368$ which are below the threshold recommended by Cohen (2009) that, 0.02 as small, 0.15 as medium and 0.35 as large path coefficient. Thus, content respectability hypothesis was not supported. Predatory publishers were

strong determinants which demonstrate detrimental usage of OAJs. The hypothesis was formulated negatively and results indicate positive $\beta=0.0987$ and $t=1.6706$. Therefore, predatory publishers negatively inflict usage of OAJs.

In general, this study has found low attitude and content respectability does not predict usage of OAJs among researchers. Although previous studies conducted by Pandita (2013) and Lwoga and Questier (2014) have highlighted low adoption of OAJs is affected by low attitude. Further, the study found low credibility attached to content published in OAJs detriment usage. This findings is in harmony with Rodriguez (2014) and Narian & Ferdnandez, 2012) which found that, there persistence of mistrust among scholars that these journals are of low quality. This research used the items such as ‘OAJs provides update contents from reputable authors; Contents in OAJs are peer review by subject specialist; OAJs offers respectable content in terms of relevance; OAJs are monitored by reputable organizations, OAJs follow formulated procedures before registration’. Likewise predatory publishers were strong antecedent which contravene usage behavior. This is in line with Bealls (2016) and Berger & Cirasella (2015) which documented challenges facing OAJs. Further, it was noted that, usage of OAJs in ARIs has not been fully embedded into the institutional research policy and practice, though the policy on OAJs has existed since 2012. As such, although the factors discussed in this section are critical in determining levels of usage, it is important that ARIs implement the OAJs policies with more vigour in order to raise attitude and intention on OAJs usage behavior.

Practical and Theoretical Implications

This study provides useful findings that management support and information practitioners in ARIs can use to develop strategies to encourage usage of OAJs among researchers from research institutions and higher learning institutions. First, despite the fact that, the findings show that researcher’ attitude toward intention was not supported, still there is a crucial need to foster awareness among researchers in order to increase attitude which leads to intention. In creating attitude, the campaign should refer to the benefits offered by OAJs in comparison to subscribe journals. Further, the COTUL policy

on open access should be fully implemented as a way of improving attitude towards OAJs.

From a theoretical perspective, by utilizing TRA, as a base theory in the context of usage intentions and integrating an additional constructs ('content respectability and predatory publishers'), the extended TRA model fits very well in explaining researchers intention to use OAJs. The study has also contributed to the body of knowledge on the usage intentions of OAJs, addressing the scarcity of empirical studies in the Tanzanian context. Thus, the TRA can be adapted to investigate the usage intentions of OAJs in other institutions with similar conditions. The results can provide better understanding of how to plan and implement a successful usage of OAJs in Agricultural Research Institutions. The study further contributes to the field by revealing factors that affect positive or negative usage behavior. Finally, the findings of the present study provide possible opportunities for future studies on the assessment of various theoretical perspectives to understand OAJs usage intentions.

In conclusion, the results show that usage was determined by subjective norm while attitude and content respectability were not supported. Predatory publishers were supported as it inflicts usage of OAJs among researchers from ARIs since it was negatively hypothesized.

References

- Ajzen, I. and Fishbein, M. (1980). Understanding attitudes and predicting social behavior. Englewood Cliffs, NJ: Prentice-Hall.
- Albarq, N. A and Alsughayir, A. (2013). Examining Theory of Reasoned Action in Internet Banking Using SEM among Saudi Consumers. *International Journal of Marketing Practices*, 1(1), 16-30.
- Bhattacharjee, A. (2000). Acceptance of e-commerce services: the case of electronic brokerages, *IEEE Transactions of systems, Man and Cybernetics*, 30(4), 411-420.
- Bealls, J. (2016). Beall's List of Predatory Publishers 2015. Available <https://scholarlyoa.com/2016/01/05/bealls-list-of-predatory-publishers-2016/> accessed on 17th February 2016.

- Benard, R., Dulle, F. and Ngalapa, H. (2014). Assessment of information needs of rice farmers in Tanzania; A case study of Kilombero District, Morogoro. *Library Philosophy and Practice (e-journal)*, paper 1071
- Berger, M. and Cirasella, J. (2015). Beyond Beall's List: Better Understanding Predatory Publishers. *College and Research Libraries News*. 76(3), 132-135.
- Cohen, J. (2009). *Statistical power analysis for the behavioral sciences* (2nd Ed.). Psychology Press, London.
- Chuchinprakan, S. (2012). Application of Theory of Reasoned Action to On-line Shopping. Available www.bu.ac.th/knowledgecenter/epaper/jan_june2005/supanat.pdf accessed on 17th November 2015
- Dulle, W. F., Minish-Majanja, K. M., and Cloete, M. L. (2010). Factors influencing the adoption of OAJs scholarly communication in Tanzania public universities. World library and information congress: 76th IFLA general conference and assembly 10-15 August 2010, Gothenburg, Sweden Available <http://www.ifla.org/en/ifla76> accessed on 17th November 2014.
- Ezema, I. (2011). Building open access institutional repositories for global visibility of Nigerian scholarly publication. *Library Review*, 60(6), 473 – 485.
- Fishbein, M. and Ajzen, I. (1980). *Belief, attitude, intention, and behavior*. Reading, MA: Addison-Wesley.
- Greenfield, G. and Rohde, F. (2009). Technology acceptance: Not all organizations or workers may be the same. In: Eddy Vaassen and James E. Hutton, Proceedings of the 9th International Research Symposium on Accounting Information Systems (IRSAIS). *Ninth International Research Symposium on Accounting Information Systems (IRSAIS)*, Paris, France, (263-272). Available <http://espace.library.uq.edu.au/view/> accessed on 17th November 2014.
- Hair, F. J., Black, C. W., Babin, J. B. and Anderson, E. R. (2010). *Multivariate Data Analysis* (7th Ed.). Pearson Prentice Hall: New Jersey.
- Hassandoust, F., Logeswaran, R. and Kazerouni, F. M. (2011). Behavioral factors influencing virtual knowledge sharing: theory of reasoned action. *Journal of Applied Research in Higher Education*, 3(2), 116-134.

- Kapange, B. (2010). ICTs and National Agricultural Research Systems –The case of Tanzania. Available www.tzonline.org/pdf/ictsandnationalagriculturalresearchsystems.pdf. Accessed on 19 November, 2014.
- Lada, S., Tanakinjal, H. G and Amin, H. (2009). Predicting intention to choose halal products using theory of reasoned action. *International Journal of Islamic and Middle Eastern Finance and Management* 2(1), 66-76.
- Lwezaura, D. (2011). Government Funding For Agricultural R&D: A Case Study on the Tanzanian Division of Research and Development. Available at: www.fao.org/3/a-i4125e.pdf Accessed on 10th January 2015.
- Materu-Behitsa, M. and Diyametti, D. B. (2010). Tanzania ICT Sector Performance Review 2009/2010: Towards Evidenced-based ICT Policy Regulation, Vol.2, policy paper 11, 2010. Available www.researchictafrica.net. Accessed on 17th March 2015.
- Mishra, D., Akman, I. and Mishra, A. (2014). Theory of Reasoned Action application for Green Information Technology Acceptance. *Computers in Human Behavior*, 36, 29-40.
- Nariani, R., and Fernandez, L. (2012). Open access publishing: What authors want. *College & Research Libraries*, 73(2), 182–195.
- Ngaiza, S. R. (2012). Ministry of Agriculture Food Security and Cooperatives FAO-University of Nairobi -Regional Workshop on an Integrated Policy Approach to Commercializing Smallholder Maiza Production at Norfolk Hotel in Nairobi-Kenya June 6-7, 2012.
- Nwagwu, E. W. (2013). Open Access Initiatives in African-Structure Incentives and Disincentives. *The Journals of Academic Librarianship*, 39(1), 3-10.
- Oyeniya, O and Olaifa, P. (2013): The role of research libraries on the information needs of agricultural engineers (researchers) in Nigeria: A case study of National Centre for Agricultural Mechanization library. *Journal of Education Research and Behavioral Sciences* 2(10).

- Pandita, R. (2013). Publication Distribution of Open Access Journals at Continental Level; an Analysis of Directory of Open Access Journals (DOAJ). *International Journal of Digital Library Services*. 3(3), 65-83.
- Pedersen, P.E. (2005). Adoption of mobile Internet Services: An Exploratory Study of Mobile Commerce Early Adopters. *Journal of organizational computing and electronic commerce*. 15(3), 203.
- Rodriguez, J. (2014). Awareness and Attitudes about Open Access Publishing: A Glance at Generational Differences. *The Journal of Academic Librarianship* 40, 604–610.
- Royster, P. (2012). Open-Access Journals and Institutional Repositories: Library Conference Presentations and Speeches. Paper 82. http://digitalcommons.unl.edu/library_talks.
- Tanzania Commission for Science and Technology (1986). Role and Function. Available http://www.costech.or.tz/?page_id=1612 accessed on 15th November 2015
- Twaakyondo, M. H. (2013). Challenges to Open Access in Teaching at University of Dar Es Salaam (UDSM). *International Journal of Engineering Research and Applications*, 3(4), 694-696.
- United Republic of Tanzania. (2006). Agricultural Sector Development Programme, Government Printer, Dar es Salaam, available at: www.agriculture.go.tz/Publications/.pdf Accessed on 10th November 2014.
- United Republic of Tanzania. (2012). Report on Education Enrollment Profile. available at: www.tanzaniaeduca.go.tz/educ%subjects/.pdf Accessed on 10th November 2014.
- Ware, M. and Mobe, M. (2015). STM Report: An Overview of scientific and scholarly journals publishing, (4th Ed.) Available www.markwareconsulting.com Accessed on 17th February 2016.
- Yousafzai, Y. S., Foxall, R. G. and Pallister, J. (2010). Explaining Internet Banking Behavior: Theory of Reasoned Action, Theory of Planned Behavior, or Technology Acceptance Model? *Journal of applied social psychology*, 40(5), 1172-1202.