

Study on Influence Factors Model of Technology Acceptance and Information System Success of University Library Websites Based on User Satisfaction

Thet Mon Swe¹[0000-0002-9290-6744]

Siluo Yang²[0000-0003-3228-1102]

School of Information Management, Department of Library Science,
Research Center for Chinese Science Evaluation (RCCSE), Wuhan University, China.

Abstract:- After years of instalment E-libraries in many universities in our country, there is a need to investigate basic information facilities on university library websites. Information Technology (IT) has an enormous opportunity to enhance digital library services, but it depends on user satisfaction. It is crucial to accept the materials and services universities offer to utilize the university library websites of the electronic collection fully. Based on ISSM and TAM, this paper develops a model of how users' satisfaction with university library websites' electronic collections is influenced by nine factors: information system, Librarian's services, computer self-efficacy, English literacy, user experience, perceived ease of use, perceived usefulness, actual usage, and user satisfaction. It also thoroughly analyses the relative structure model and measurement model, which is willing to serve as a guide for improving the use of university libraries.

Keywords:- University Library Websites; User Satisfaction; Influence Factors Model, TAM, ISSM.

I. INTRODUCTION

With the rapid development of information technology (IT) in the digital environment, human being in daily life has been progressing in the information field. The 21st century is observed as the century of technological revolution [1], and libraries adjust to meet these new opportunities how to describe and advertise their services advertise their services [2]. Later, software technology began to computerize different operations services, and then digital technology created remarkable measurements to store, give, and retrieve knowledge. This technology provides unique possibilities for communication between individuals, the development of cultural industries, and the manipulation of work worldwide [3]. In this technology age, the academic library's role has challenges in providing suitable learning environment to users who are required to change in time quickly. Both libraries and librarians need services to satisfy the user requirement. On the other hand, librarians should know soft, listening, and communication skills. In the existing challenges situation, the smart library has adopted the concepts such as users do not come to the library, the library should go to the users [4].

Nowadays, the University library website has become necessary for all library users who use library resource information for their tasks to accomplish and to authority. In library websites, effectiveness, efficiency, information quality, service quality, and user satisfaction are primary challenges for enhancing and improving the library website. University library websites are developing in other developing countries worldwide [5]. Nevertheless, the development of university library websites in Myanmar is slower than in other developing countries, as observed by my previous research. In Myanmar's university library website services, there is no detailed investigation of factors influencing user satisfaction with ULW services by library science researchers. Therefore, this study aims to fill the gap of previous literature on library science research in Myanmar academics. The quality of library website structures is affected by many factors; think about all the factors. Utilization of all information is not actual; meanwhile, website evaluation is received from the user's perspective. It is an acceptable factor by user knowledge, experience, and many other known, unknown, or unsure factors.

II. THE BUILDING ON TECHNOLOGY ACCEPTANCE MODEL AND INFORMATION SYSTEM SUCCESS MODEL OF UNIVERSITY LIBRARY WEBSITES BASED ON USER SATISFACTION SELECTING A TEMPLATE

The acceptance of the technology model (TAM) and information system success model (ISSM) of university library websites based on user satisfaction comprises structural equation modelling (SEM) and measurement models. Research focuses on the connection between latent variables, also referred to as the structural model, and the entire study is known as the structural equation model. Manifest indicators, or observation variables, must be measured because the latent variable cannot be directly assessed. The purpose of a measuring model is to explain how a latent variable and an indicator are related. The importance of university library websites and knowing the user's requirements, this study prepares to explore user satisfaction by integrating two models of TAM and ISS, which factors influence university library websites. Myanmar proposes a

quantitative method based on empirical analysis with confirmatory analysis factors using AMOS.

III. THE BUILDING OF A STRUCTURAL MODEL

Therefore, this study has been considered the main acceptance factors of university library website characteristics from the user's perspective, such as information quality, Librarian's service, perceived usefulness, perceived ease of use and user satisfaction turn, to assess user' information literacy from influence factors on overall previous theoretical literature such as user experience, computer self-efficacy, English literacy and actual use. Integrating TAM and ISSM models, this paper builds a technology acceptance structural model of university library websites based on user satisfaction, as Fig. 1 shows.

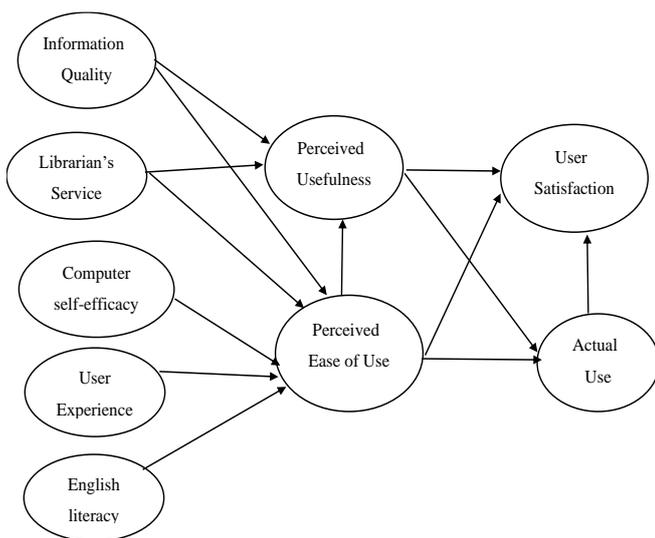


Fig.1 Technology acceptance model and Information System Success Model of university library websites based on user satisfaction

A. Information quality

Information is reliable, timely, concise, subscribed, and valuable, satisfying user requirements [6]. Information quality can be measured with information relevance, sufficiency, accuracy, and timeliness. [7] highlighted that a university information quality Web portal was a key factor to consider developing and implementing as a Web portal that would be satisfactory to users. [8] recommended that the awareness and information quality available are the most important factors for user satisfaction with electronic resources. So, this paper assumes that information system positively influences perceived usefulness (H1) and information system influences perceived ease of use(H2).

B. Librarian's Service

When serving, librarians should be helpful, kind, and modest. Users deemed the librarians "friendly" and "helpful" and expressed satisfaction with their collaboration and attitude while providing services [9]. Moreover, all academic libraries should be introduced and trained in information literacy programs and education courses for users by the university administration and library professionals. Then, the Librarian's assistance needs to guide the users by effectively

accessing digital library resources and considered as a factor and hypothesis of librarian assistance to make the current dissertation's perceived usefulness and ease of use. [10] pointed out that the respondents demand help with digital library resources from IT skill in librarians and enough library staff to affect their research activities. They argued that many skills needed by librarians for digital library integration, such as web scripting, database management and web design [11]. So, this paper assumes that the Librarian's service positively influences perceived usefulness (H3) and the Librarian's service positively influences perceived ease of use(H4).

C. Computer Self-Efficacy

Computer Self-Efficacy creates obstacles in accessing the internet. [12] asserted that users have low confidence, making computer self-efficacy not in e-training adoption. [13] stated that computer experience may not directly connect with digital library usage but can help users learn new systems quickly. Moreover, computer self-efficacy measures the user's confidence level while using new software packages, and computer experience measures a user's computer experience, whereas the more computer experience, the higher the level of familiarity with various software packages [14]. So, this paper assumes that Computer Self-Efficacy positively influences perceived ease of use(H5).

D. User Experience

Information technology needs user access to experience on IT usage experience. [15] highlighted that without a good usage experience, a user is not likely to continue using mobile internet sites. He suggested that user experience and reduction of user's effort spent on information search depended upon service providers. User experience concerns the system's perceived usefulness through the user's actual use of the system [15]. The previous research has been observed by Chan and Storey, Room and et al., and Szajna (1996) that user experience usage significantly impacts IT patterns. Moreover, Park and Park (2020) presented that IT usage experience positively impacts perceived ease of use, perceived usefulness, and the standard of use [16]. So, this paper assumes that user experience positively influences perceived ease of use(H6).

E. English Literacy

Library of distance services for users should avoid jargon and provide specific examples with context for the target audience [17]. [14] recommended that a successful digital library is a generation of information retrieval systems, depending upon the user's interaction with the system and how the user understands the terminology used by the digital library. They mentioned that users and vocabulary of digital library terminology usually have a mismatch. The vocabulary used in digital libraries may include officials, technical or professional terms that general users are unfamiliar with. [2] argued that library vocabulary should evolve to convey value to users of all types. So, this paper assumes that English Literacy positively influences perceived ease of use(H7).

F. Perceived Ease of Use

Perceived ease of use and usefulness are a construct taken from the famous Technology Acceptance Model (TAM) [18]. Perceived usefulness was a stronger predictor of intention to use digital library compared with perceived ease of use and, perceived ease of use also had an indirect effect on intention to use through perceived usefulness [14]. So, this paper assumes that Perceived ease of use positively influences perceived usefulness (H8), Perceived ease of use positively influences actual usage (H9); and Perceived ease of use positively influences user satisfaction (H10).

G. Perceived Usefulness

Perceived usefulness and ease of use greatly influence the attitude of librarians to using IT. They considered "the attitude to use of IT", perceived usefulness and ease of use defined as dependent variables and the "intention to use" as an independent one. They recommended that organizations need to provide the role of IT and training to employees for IT use and then update their skills [18]. According to my previous research, users were unaware of the technology such as university library website services. Hence, the user acceptance factor needs to be considered as a hypothesis by integrating the two models. So, this paper assumes that Perceived Usefulness positively influences user satisfaction (H11) and Perceived Usefulness influences actual use (H12).

H. Actual Use

[19] "The more satisfied a user is with his/ her user experience of an IT, the more likely he/she will continue to use the technology". [15] recommended that continuance usage intention improve users' experience to facilitate their usage. Therefore, the current research has considered that satisfaction makes the actual usage on ULW and assumes that actual usage positively influences user satisfaction (H13).

I. User Satisfaction

User satisfaction is a factor in DeLone, and McLean's (1992,2003) IS success model. The US improves user continued use and actual usage [20]. The authors measured the use of perceived value to influence user satisfaction. Their study hypothesized that perceived value and hedonism positively influenced paid knowledge platforms of user satisfaction [21]. Their time is saved, and their contentment is increased by the convenience of the digital library, which raises their level of satisfaction [13].

IV. THE BUILDING OF THE MEASURING MODEL

This paper proposes and weighs establishing nine measurable structural variables, every 54 measurable variables, and finally, variables corresponding to structural variables, as Table 1 shows. This was done after reading a lot of empirical research based on the experience of other mature measured variables.

Table 1. Structural Variables and Measured Variables

Structural Variables	Measured Variables	Reference
Information quality	1.information quality is accurate and up to date, and the authority of information 2.information quality is sufficient, interactive and provides detail. 3.Information quality is high quality. 4.Information quality easily accomplishes my research assignments and tasks. 5.Information quality is relevant to my research assignments and tasks. 6.Information quality makes perceived usefulness & ease of use.	[22], [23], [24], [25], [26], [27], [28], [29],[30], [31], [32] ,[33], [34], [35], [5], [36], [22] , [37], [38], [39], [40], [41]
Librarian's Service	1. Librarian's service needs for users to get the requirements of information. 2. Librarian's orientation program helps to search library resources. 3. The Librarian's orientation program is essential for users. 4. The Librarian's orientation program is useful for my search. 5. The Librarian's orientation program supports the use library resources easily. 6.The librarian's orientation program makes it easy for my search	
Computer Self-Efficacy	1.Librarian's service needs for users to get the requirements of information. 2.Librarian's orientation program helps to search library resources. 3. The Librarian's orientation program is essential for users. 4. The Librarian's orientation program is useful for my search. 5. The Librarian's orientation program supports the use library resources easily. 6.The librarian's orientation program makes it easy for my search	
User experience	1. All users should have search experience and domain knowledge. 2.I have good search knowledge of library website usage. 3.3.I recommend that search knowledge experience is needed for library website usage.	

	<p>4.I recommend that search knowledge experience makes it easy to use library websites.</p> <p>5.I recommend that search knowledge experience save time and accomplish my tasks.</p> <p>6.I recommend that the user's search experience makes good results on library website usage.</p>	
English Literacy	<p>1. All users should have English Literacy.</p> <p>2. I have good proficiency in English Literacy.</p> <p>3. English Literacy is essential for library website usage.</p> <p>4. English Literacy makes it easy to use library websites.</p> <p>5. English Literacy makes me save time and accomplish my tasks.</p> <p>6. English Literacy has good results on library website usage</p>	
Perceived Ease of Use	<p>1.Users easily use library website services.</p> <p>2.Easily using the university library website's services has saved time and accomplish my research, assignments, and tasks.</p> <p>3.Easily use of the university library website's services makes good results on library website usage.</p> <p>4.Easily using the university library website's services is more reliable information than other search engines and enhances the quality of my academic performance.</p> <p>5.Easily using university library website services satisfies my research assignments and tasks.</p> <p>6.12.Easily using the university library website's services makes frequent usage for my research assignments and tasks.</p>	
Perceived Usefulness	<p>1.Library website services have useful services for users.</p> <p>2.The university library website's services have saved time and useful me accomplish my research, assignments, and tasks.</p> <p>3.The usefulness of the university library website's services results in good library website usage.</p> <p>4.The university library website's services provide more reliable information than other search engines and enhance the quality of my academic performance.</p> <p>5.The usefulness of the university library website's services satisfies my research assignments and tasks.</p> <p>6.The university library website's usefulness makes frequent usage for my research assignments and tasks.</p>	
Actual Usage	<p>1.I prefer to use university library website services frequently.</p> <p>2.I prefer using university library website services more frequently than other search engines.</p> <p>3.I recommend that library website services be frequently used.</p> <p>4.I recommend that frequency use makes satisfy on university library website services.</p> <p>5.I recommend frequent use of university library website services to accomplish my research assignments and tasks.</p> <p>6.I recommend that library website services satisfy the frequency of use for my research assignments and tasks.</p>	

V. CONCLUSION AND FUTURE STUDY

This study develops a TAM and ISSM-based user acceptance structural model of university library websites from the standpoint of user pleasure. It is crucial to accept the digital library's contents and services to fully realize its potential and accept its IT on university library websites. As a result, this article uses nine criteria to construct an influence user acceptability model of digital libraries on university library websites. There is only a conceptual model. Therefore, the next step is to determine whether it helps direct the creation of the digital library on university library websites. As a result, this study will create a questionnaire

based on the above factors and then conduct interviews with website visitors and users of university libraries. The last section of this study introduces a newly created assessment model for the university library website system in Myanmar from the viewpoints of the users' satisfaction.

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REFERENCES

- [1]. Malraj, M. I., and el-hadI, W. M. (2011). Use of university library Website: A Case Study. Le Symposium International Le livre. La Roumanie. L'Europe., 2010. Ed. III(VIII), 161-176. Retrieved February 19, 2022
- [2]. Benedetti, A. R. (2017). Promoting Library Services with User-Centered Language. portal: Libraries and the Academy, 17(2), 217-234. doi:10.1353/pla.2017.0013
- [3]. Library & Information Science Academic Blog. (2018, October 18). Retrieved 10 15, 2021, from LIS BD Network: <https://www.lisbdnetwork.com/digital-library-services/#comment-6261>
- [4]. Laskar, P. (2021). Website E website Evaluation of Central University Libraries: A Compararies: A Comparative Study Between Tripura University and Mizoram University in Terms of Resources and Services. Library Philosophy and Practice (e-journal), 64-74. Retrieved February 19, 2022, from <https://digitalcommons.unl.edu/libphilprac>
- [5]. Gao, J. s., and Zheng, Y.-I. (2012). Study on Evaluation Method of University Library Website. Springer-Verlag Berlin Heidelberg, 135, 693-700.
- [6]. Zhang, K., Min, Q., Liu, Z., and Liu, Z. (2016). Understanding microblog continuance usage intention: an integrated model. Aslib Journal of Information Management, 68(6), 772-792. doi:<https://doi.org/10.1108/ajim-03-2016-0025>
- [7]. Adeyemi, I., and Issa, A. O. (2020). Integration of Information System Success Model (ISSM) and Technology Acceptance Model (TAM): Proposing Students' Satisfaction with University Web Portal Model. Record and Library Journal, 6(1), 69-79. Retrieved April 4, 2021, from <https://e-journal.unair.ac.id/index.php/RLJ>
- [8]. Sharma, C., Singh, L., and Sharma, R. (2011). Usage and acceptability of e-resources in National Dairy Research Institute (NDRI) and National Bureau of Animal Genetic Resources (NBAGR), India. The Electronic Library, 29(6), 803-816. doi:<https://doi.org/10.1108/>
- [9]. Ijaz Mairaj, M., and Naseer, M. M. (2013). Library services and user satisfaction in developing countries: a case study. Health Information & Libraries Journal, 318-326. doi:DOI: 10.1111/hir.12038
- [10]. Jabeen, M., Qinjian, Y., Yihan, Z., Jabeen, M., and Imran, M. (2017). Usability Study of Digital Libraries: An Analysis of User Perception, Satisfaction, Challenges, and Opportunities at University Libraries of Nanjing,China. Library Collections, Acquisitions,& Technical Services, 40(1-2), 58-69. Retrieved November 11, 2022, from <https://doi.org/10.1080/14649055.2017.1331654>
- [11]. Anunobi, C., and Ezeani, I. M. (2011). Digital library deployment in a university. Library Hi Tech, 29(2), 373 - 386. doi:doi.org/10.1108/07378831111138233
- [12]. Zainab, B., Awais Bhatti, M., and Alshagawi, M. (2017). Factors affecting e-training adoption: an examination of perceived cost, computer self-efficacy and the technology acceptance model. Behaviour & Information Technology, 36(12), 1261-1273.
- [13]. Xu, Y., Gan, L., and Yan, D. (2010). Study on Influence Factors Model of Technology Acceptance in Digital Library Based on User Cognition and TAM. EEE
- [14]. Thong, J. Y., Hong, W., and Tam, K. Y. (2002). Understanding user acceptance of digital libraries: what are the roles of interface characteristics, organizational context, and individual differences? Int. J. Human-Computer Studies, 215-242. doi:<https://doi.org/doi:10.1006/ijhc.1024>
- [15]. Zhou, T. (2014). Understanding-continuance-usage-intention of mobile internet sites. Univ Access Inf Soc, 13, 329-337. doi:10.1007/s10209-013-0313-4
- [16]. Park, E. S., and Park, M. S. (2020). Factors of the Technology Acceptance Model for Construction IT. Applied Sciences, 10(2). Retrieved December 4, 2021, from <https://doi.org/10.3390/app10228299>
- [17]. Onwuegbuzie, A. J., and Jiao, Q. G. (2014). Academic library usage: a comparison of native and non-native English-speaking students. The Australian Library Journal, 46(3), 258-269. Retrieved from <https://doi.org/10.1080/00049670.1997.10755807>
- [18]. Masrek, M., and Gaskin, J. (2016). Assessing user's satisfaction with web digital library: the case of Uniersiti Teknologi MARA. The International Journal of Information and Learning Technology, 33(1), 36-56. Retrieved September 12, 2021, from <https://doi.org/10.1108/IJLT-06-2015-0019>
- [19]. Deng, L., Turner, D., Gehling, R., and Prince, B. (2017). User experience, satisfacion and continual usage intention of IT. European Journal of Inforamtion Systems, 19(1), 60-75. Retrieved October 2, 2021, from <https://doi.org/10.1057/ejis.2009.50>
- [20]. Xu, F., and Du, J. T. (2018). Factors influencing users' satisfaction and loyalty to digital libraries in Chinese universities. Computers in Human Behavior, 8(3), 64-72. Retrieved from <https://doi.org/10.1016/j.chb.2018.01.029>
- [21]. Jin, X., and Xu, F. (2020). Examining the factors influencing user satisfaction and loyalty on paid knowledge platforms. Aslib Journal of Information Management, 73(2), 254-270. doi:10.1108/ajim-07-2020-0228
- [22]. Joo, S., and Choi, N. (2015). Factors affecting undergraduates' selection of online library resources in academic tasks: Usefulness, ease-of-use, resource quality, and individual differences. Library Hi Tech, 33(2), 272-291.
- [23]. Venkatesh, V., and Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. Decision sciences. 39(2), 273-315.
- [24]. Fathema, N., Shannon, D., and Ross, M. (2015). Expanding The Technology Acceptance Model (TAM) to Examine Faculty Use of Learning Management Systems (LMSs) In Higher Education Institutions. MERLOT Journal of Online Learning and Teaching, 11(2), 210-232.
- [25]. Izuagbe, R., Saheed, A. H., and Edith, I. J. (2016). Elecronic Information Resources(EIR) Adoption in Private University Libraries: The Moderating Effect of

- Productivity and Relative Advantage on Perceived Usefulness. *Journal of Information Science Theory and Practice*, 4(1), 30-48. doi:10.1633/JISTaP.2016.4.1.3
- [26]. Noh, Y., and Chang, R. (2020). A study on the factors of public library use by residents. *Journal of Librarianship and Information Science*, 52(4), 1110-1125. Retrieved from <https://doi.org/10.1177/0961000620903772>
- [27]. Omosebi, F. E., and Okhakhu, D. O. (2017). Psychological factors and the use of e-library resource among undergraduates in South-West Nigeria. *Library Philosophy and Practice*.
- [28]. Karaman, E., and Bolen, M. C. (2015). Validating Information System Success Model. *ekev akademi dergisi yıl*, 19(64), 113-114.
- [29]. Sheikh, A. (2017). Evaluating the usability of COMSATS Institute of Information Technology library website A case study. *The Electronic Library*, 35(1), 121-136. doi:<https://doi.org/10.1108/EL-04-2014-0067/a>
- [30]. Kim, D., and Chang, H. (2007). Key functional characteristics in designing and operating health information websites for user satisfaction: An application of the extended technology acceptance model. *international journal of medical informatics*, 790-800. doi:10.1016/j.ijmedinf.2006.09.001
- [31]. Khan, A., Ahmed, S., Khan, A., and Khan, G. (2017). The impact of digital library resources usage on engineering research productivity: an empirical evidences from Pakistan. *Collection Building*, 36(2), 1-20. doi:doi: 10.1108/CB-10-2016-002
- [32]. Isaac, O., Abdullah, Ramayah, T., Mutahar, A. M., and Alrajawy, I. (2018). Integrating User Satisfaction and Performance Impact with Technology Acceptance Model (TAM) to Examine the Internet Usage Within Organizations in Yemen. *Asian Journal of Information Technology*, 17(1), 60-78. Retrieved from <https://doi.org/10.3923/ajit.2018.60.78>
- [33]. Yoon, H.-Y. (2016). User Acceptance of Mobile Library Applications in Academic Libraries: An Application of the Technology Acceptance Model. *The Journal of Academic Librarianship*, 1-7. doi:doi.org/10.1016/j.acalib.2016.08.003
- [34]. Soltani-Nejad, N., Taheri-Azad, F., Zarei-Maram, N., and Saberi, M. K. (2020). Developing a model to identify the antecedents and consequences of user satisfaction with digital libraries. *Aslib Journal of Information Management*, 72(6), 979-997. doi:<https://doi.org/10.1108/AJIM-04-2020-0099>
- [35]. Wixom, B. H., and Todd, P. A. (2005). A Theoretical Integration of User Satisfaction and Technology Acceptance. *Information Systems Research*, 16(1), 85-102. doi:<https://doi.org/10.1287/isre.1050.0042>
- [36]. Lei, G. (2020). Research on the Sustainable Intention of Users in Digital Library of Colleges and Universities One-base "Integrated models of user experience, TAM and ECM. *China Academic Journal Electronic Publishing House*, 2(288), 48-59. Retrieved from <http://www.cnki.net> 94-2020
- [37]. Oktal, O., Alpu, O., and Yazici, B. (2016). Measurement of Internal User Satisfaction and Acceptance of the E-Justice System in Turkey. *Aslib Journal of Information Management*, 68(6), 1-32.
- [38]. Adeyinka, T. (2019). Empirical analysis of undergraduates' satisfaction with access to the University Library Websites. *Journal of Access Services*, 16(2-3), 94-115. doi:10.1080/15367967.2019.1639511 [39] Maditinos, D., Mitsinis, N., & Sotiriadou, D. (2008). Measuring User Satisfaction concerning Websites. *Zagreb International Review of Economics & Business(Special Conference Issue)*, 81-97.
- [39]. Maditinos, D., Mitsinis, N., & Sotiriadou, D. (2008). Measuring User Satisfaction with Respect to Websites. *Zagreb International Review of Economics & Business(Special Conference Issue)*, 81-97.
- [40]. Dickinger, A., and Stangl, B. (2013). Website performance and behavioural consequences: A formative measurement approach. *Journal of Business Research*, 66(6), 771-777. Retrieved from <https://doi.org/10.1016/j.jbusres.2011.09.017>
- [41]. Semertzaki, E., & Walker, G. (2008). Internet usage in Greek libraries. *The Electronic Library*, 26(5), 735-756. Retrieved from <https://doi.org/10.1108/02640470810910756>