

THE ESTABLISHMENT OF STRATEGIC PROGRAM IN RESEARCH SUPPORT SERVICE (SPIRESS) IN USM LIBRARY

Muhammad Akmal Ahmat, Shahriza Fadly Misaridin, Noor Adilah Azmi, Lizawati Muhammadan, Jamilah Hassan Basri, Musa Mohamed Ghazali, Abd Halim Ismail, Mohd Kamal Mohd Napiah, Cik Ramlah Che Jaafar, Husriati Hussain, Noor Azlinda Wan Jan, Rosnani Ahmad, Mohd Ikhwan Ismail, Mohd Pisol Ghadzali, Ali Hj. Abd. Rahim, Mohd Nasir Hj Mohd Rashid

Librarians

Perpustakaan Hamzah Sendut, Universiti Sains Malaysia,

11800 USM, Pulau Pinang, Malaysia.

Tel: 04-6535373

Emel: akmal_ahmat@usm.my

ABSTRACT

Along with the modernization, Malaysia Higher Learning Institutions (HLIs) have implemented multiple kinds of transformation plans. Currently, there is a comprehensive transformation plan written in Malaysia Education Blueprint 2015-2025 (Higher Education) (MEB) (HE) as a guideline for Higher Learning Institutions (HLIs), Polytechnics and Community Colleges. Hence, the HLIs Libraries or known as Academic Libraries were intangibly pressured to perform new roles and services in order to fulfil the future demands in the rapid pace of Research and Development (R&D) landscape. This paper shares Universiti Sains Malaysia (USM) Library's experience in developing the new service segments called Strategic Program in Research Support Service (SPiReSS). The introduction of SPiReSS was intended to facilitate students and academicians research activities. Five service segments were introduced namely as Mendeley, Easy-to-Write with Microsoft (MS) Word, Open Access Publication, Google Drive, and Google Scholar. This paper described comprehensively on how the USM Library implement the SPiReSS project especially in terms of developing the service model, enhance the Academic Librarians capabilities, analyzing the participants' feedback, and explain the types of challenges the Academic Librarians

encounter. The SPiReSS project has triggered the interest of HLIs community especially in USM. Due to the remarkable result, the SPiReSS project should create more service segments in order to substantially supporting the research activities in HLIs.

Keywords: Research Support Service, Reference Services, Research Management, Library Services, Universiti Sains Malaysia.

Introduction

Since the era of Plato, there were multiple series of academia transformation plans in Higher Learning Institutions (HLIs). The respective series of transformation plans were frequently focus on mission, strategies, organizational structure, culture, knowledge, policies, technology, products, and services. The reason for the transformation was to stimulate the changes either the internal environment or external environment of academia work. Hence, the transformation output were focus on one mission; develop and sustain the prosperity of intellectual and wisdom of people through effective teaching, learning, philosophy and research work to contribute better lifestyle of society (Harvey & Knight, 1996).

Currently, the HLIs have become an exclusive place for academia. There are two different types of HLIs, the public funded and private-owned HLIs; the work of academia has already implementing higher standard practice within the administrations and leaderships. There were also currently advanced in developing curriculum which covering extensive multidisciplinary subjects known as science, technology, engineering and mathematics (STEM), social science, art and humanities. The key to a successful transformation process is the government support and conscientious beliefs. Through good administrative practice by the Ministry of Education, the education system was developed efficiently. However, there are numerous HLIs in the third world countries persisted in irregular conditions. On the other hand, numbers of HLIs have been given an autonomy power which enables them to execute independent control over its daily operations and curriculum. However, when the time comes to develop new policies, legislation legislative order to change any transformation plans; the respective HLIs still need to follow the guidelines by the Ministry.

For instance, the public funded HLIs' in Malaysia currently need to follow the Ministry of Higher Education (MoHE) transformation blueprint designated as Malaysia Education Blueprint 2015-2025 (Higher Education) or the MEB (HE). The plan was drafted

since the year 2013 and finalized in year 2015. Moreover, the MEB (HE) was announced as the executive plan that gives direction to the HLIs' community to move forward on the right track with high standard vision and mission statements. There are many objectives to be achieved; but, the most important is to uphold the high performance of universities in order to attain better result in Quacquarelli Symonds (QS) and Times Higher Education (THE) ranking. Additionally, various strategy objectives (SO) to be executed especially soaring upwards Malaysian universities status towards world-class universities through multiple programs such as Accelerated Program for Excellence (APEX) and Research Universities (RU) programs. It was also intended to enhance the capabilities of Polytechnics and Community Colleges to put on par with world ranking Technical and Vocational Education and Training (TVET) institutions. Specifically, the MEB (HE) mentioned that there were ten (10) shifts to be executed:-

- i. Holistic, entrepreneurial and balanced graduates.
- ii. Talent excellence
- iii. Nation of lifelong learners
- iv. Quality TVET graduates
- v. Financial sustainability
- vi. Empowered governance
- vii. Innovation ecosystem
- viii. Global prominence
- ix. Globalized online learning
- x. Transformed higher education delivery

On the other hand, the HLIs' communities were pressured to take concern about the MEB (HE) especially in terms of supporting the advancement of Research & Development (R&D) landscape. There were often mentioned about strengthening the commercialization of research works. Moreover, there were also encouragement for the HLI's administrators to embed with researchers to expand the task; be a mediator of inter-relationship between HLIs and industries. There is an expectation for HLIs to create more joint venture R&D projects between HLIs and the industries during the implementation of MEB (HE).

Eventually, the implementation of MEB (HE) also has intangibly pressured the Academic Librarians to change the roles and responsibilities. Although the MEB (HE) document did not specifically point on enhancing the academic library's resources, daily operations and

services; it actually hinted and giving a signal to the Academic Librarians to change their traditional identity. The Academic Librarians needed to push forwards in order to be more relevance in supporting HLIs to achieve the MEB (HE) objectives and the advancement of the R&D landscape.

For that reasons, the Universiti Sains Malaysia (USM) Library has taken immediate actions since the first hearing of MEB (HE) on the year 2013. The actions emphasized on the review of the current services transformation plan towards changing the traditional identity to the new dimension of identity that capable to work under the R&D landscape rapidly.

Therefore, this case study intended to investigate on:-

- i. How the USM Academic Librarians got embedded in R&D landscape?
- ii. What are the new skill-sets offered by Academic Librarians to the researchers?
- iii. What are the researchers' responses towards USM Academic Librarians' new approaches?
- iv. What are the challenges that the Academic Librarians have to encounter?

Literature Review

There were several case studies that explained how Academic Librarians participated or embedded in R&D landscape within two different types of environment; physically and electronically. One of the approaches frequently mentioned among the Academic Librarians in United Kingdom (U.K.) and Australia was the library should implement the Research Support Service (RSS) (Brown, & Swan, 2007, Borchert, & Callan, 2011). However, The Association of College & Research Libraries (ACRL) has implemented similar type of service in a different way known as Research Data Services (RDS) (Tenopir, Birch, & Allard, 2012). Both RSS and RDS were based from multiple types of service models. Nevertheless, most of the studies revealed three major phases that the Academic Librarians have surpass before implementing the RSS or RDS. The first phase is related to collecting facts about the researchers' perceptions towards the current library services in terms of research works support. In the U.K., the Research Information Network (RIN) (2010), a policy unit funded by the U.K. higher education funding councils; have embarked a study to investigate whether the current information-related services were able to support researchers through the research lifecycle, and how those services were used and valued by researchers. Based on the study, it was found that there was a huge gap between researchers' needs and library services. The

findings stated that the library staff especially the professional Academic Librarians were being neglected by the research demands. The statement was:-

“From the perspective of researchers, library staffs are less proactive in reaching out to researchers with customized information support. Thus, while libraries provide information skills training to researchers, especially doctoral students, many researchers see them as focused more on collection management, and on services to students, than on serving the needs of the research community in their institution.”

On the other hand, previous study conducted in the United States; through the Association of College and Research Libraries (ACRL) (2006) similar findings revealed about the researchers’ perceptions. Majority of young researchers in the United States only got engaged with the Academic Librarians at least one to two times per year.

Therefore, it is suggested that the Academic Librarians should begin to configure out and setup a new service model that could support the research cycle along the way from research ideas until the scholarly publication. The suggestions added that the Academic Librarians have to improve themselves in terms of:-

- i. Being able to create understanding and communicate on specific research discipline in a group of researchers.
- ii. Able to act as the custodians of digital materials and open access materials.
- iii. Develop information literacy skills not only to access the document but able to convey the facts of research, data analysis, and assist in the process of publishing research effectively.

Secondly, the phase that needs to be faced by the Academic Librarians with regard to the execution process of workforce skill analysis. A consultant to the Research Libraries UK (RLUK), Mary Auckland (2012) has executed workforce skill analysis for the subjects and liaison Academic Librarians. The analysis has identified on how to develop the future subject Academic Librarians’ skill-sets in making them able substantially embedded in the R&D landscape. It also identified on how to close the skills gap as well as the training needs for such purposes. Moreover, it suggested on how to enhance subject Academic Librarians’ capability in terms of developing deep understanding on researchers’ behavior and respond

accordingly. The analysis reported that there were nine (9) new skill-sets that have to be strengthened by the subject Academic Librarians. There were:-

- i. Ability to advice on preserving research outputs.
- ii. Knowledge to advise on data management and curation, including ingest, discovery, access,
- iii. Dissemination, preservation, and portability.
- iv. Knowledge to support researchers in complying with the various mandates of funders including open access requirements.
- v. Knowledge to advice on potential data manipulation tools used in the discipline/subject.
- vi. Knowledge to advice on data mining.
- vii. Knowledge to advocate, and advice on, the use of metadata.
- viii. Ability to advice on the preservation of project records e.g. correspondence.
- ix. Knowledge of sources of research funding to assist researchers to identify potential funders.
- x. Skills to develop metadata schema, and advise on discipline/subject standards and practices, for individual research projects.

Upgrading the skill-sets is important in order to increase the Academic Librarians' visibilities and also to enable the Academic Librarians able to apply any appropriate skills to adapt to any situation to fulfill the researchers' demands (Simons & Searle, 2014). Ignoring the needs to develop a variety of skill-sets for the Academic Librarians would probably disrupt the initiative to develop RSS. It has already happened to Queensland University of Technology (QUT) Library (Lewin, 2016). Following the changing trends happened in QUT that currently rapid on advancing the R&D landscape, it pressured the Academic Librarians to be consistent broad in knowledge, well connected, agile in nature and possess all-encompassing skills. As the following statements:-

“QUT Library has reviving a new liaison team model established in 2012 where Faculty Teams are assigned to the QUT International College and each of the 6 faculties within QUT. Within each team there are three lead roles - Learning and Teaching Lead, Research Lead, and Information Resources Lead. Although this model was a success library staff highlighted that often

plans and strategies were developed in isolation, skills gaps were an issue and too much time was spent on reporting.”

Moreover, the skills gap among the Academic Librarians requires support and alliance from relevance parties. As stated in the Research Information Network (RIN) (2010):-

“Libraries should work together with Research Offices to review their provision of support for researchers, and in particular the scope for embedding information specialists, with relevant subject-based research experience, in departments and research teams.”

Additionally, the collaborations were also known as the key factor of successful implementation of RSS especially in term of strengthening the functions of the Subject or Liaison Academic Librarians (Jaguszewski, & Williams, 2013).

Thirdly, the phase whereby the Academic Librarians need to develop the fundamental modules for RSS. Wijayaratne, A. (2014) mentioned that there were seven inclusive modules that need to be adhered by Academic Librarians to make visible in the R&D landscape. There were:-

- i. Enhancing the Academic Librarians' roles, skill and knowledge
- ii. Engaging the nature of the researchers
- iii. The introduction of service segments for RSS
- iv. Strengthening library collection for facilitating the literature search
- v. Optimization usage of ICT tools
- vi. The development of institutional research infrastructure in the library
- vii. Evaluation and promotion for the RSS

However, when a particular method to be applied to make Academic Librarians substantially participated in R&D landscape, they must adhere to the existing principle especially considering not to remove the legacy of Librarian's core values as well as not to remove the Librarian's professional entitlement. For instance, Lisa Federer (2013) has found the specific solutions to enhance the capabilities of University of California, Los Angeles (UCLA) Academic Librarians to work together with the UCLA medical researchers in term of giving more values directly to the scientific output. Her team has introduced the new designation roles for Academic Librarians known as informationist. The informationist is a person that capable to meets regularly the research necessity of their library patrons provide guidance related to data management, preservation, and other information-related issues.

They were rapidly taking part in the process of data gathering, storage, and curation. They were expertise in using Data Management Plan (DMP) tool to facilitate the research activities. Hence, the UCLA clients were found to be highly satisfied with the new approaches provided by the UCLA Academic Librarians. However, the UCLA Library's decision to eventually change or rebrand Librarian's professional entitlement to informationist was revoked. Although they stated that the informationist's role provides an opportunity for the Academic Librarians to become more effective members as part of any research team in UCLA, to remove the entitlement name for the Librarians was not highly recommended.

Discussions

Universiti Sains Malaysia Library Embed in R&D Landscape through RSS

Although the MEB (HE) was first mentioned for the public attention in 2013, the USM Library has already started to transform the library services in early 2011. At that time, the first phase of five years transformation plan (2011-2015) has been designated based on the USM top management master plan (Ghadzali, Rahim, Yusof, & Rashid, 2010). The first five years of the transformation plan formulated based on six themes. They were:-

- i. Transform Customer Service.
- ii. Collection Development Transformation.
- iii. Info-structure and Knowledge Management Transformation.
- iv. Transformation of Human Capital Development.
- v. Physical Development Transformation.
- vi. Transformation of the Information Literacy.

Throughout the six themes, the first phase of transformation plan focused to change the multiple sections of services by using the Blue Ocean Strategies (Jamilah Hassan Basri, Mohd Pisol Ghadzali, & Mohd Ikhwan Ismail, 2011). However, there was an inadequacy found in the "Transformation of the Information Literacy" theme after MEB (HE) was announced. The transformation theme, under responsibility of Reference and Research Division; was noted to emphasize on the same service models known as the User Education Services with minimum customization on service delivery. Moreover, it was found that the strategies were deemed to be immutable with the unchangeable teaching subjects; known as the Information Literacy Skill and EndNote training. Furthermore, it was also noted that the

introduction of Bibliometrics service was the only segment of the RSS. It was shown that the USM Library was not providing any other segment of services that could make high visibility and involvement of Academic Librarians' roles in supporting the community's research works. This also shown that the RSS at that time was neglected. Therefore, in the year 2013; the top leaders of USM Library had decided to review the themes and formulate new strategies in the transformation plan in order to meet the MEB (HE) visions.

Transform the User Education Services to the Strategic Program in Research Support Service (SPiReSS) as New Library Service Model

USM Library has started operating the User Education Services since the library existence with a series of exchange training modules and methods. Based on the performance report in the year 2011 until 2012; there was a decreased number of participants for the User Education training sessions although the programs were conducted every week (Reference & Research Division: Hamzah Sendut Library, 2013). Moreover, there were fewer attractions for researchers to get help from the USM Academic Librarians to facilitate their research work (Ahmat, M. A., 2013). Based on that situation, the USM Library top management; the Chief Librarians, and two Deputies of Chief Librarians have come up with the idea to start a transformation project especially for the User Education Services. In 23rd January 2013, there was a brainstorming session held and conducted by the Deputy of Chief Librarians, Mr. Mohd Nasir Md. Rashid with the participation of seventeen (17) young Academic Librarians. The objective of the session was to listen to the young Academic Librarians' project ideas transforming the old User Education Services model to the new service model. During the session, he challenged the young Academic Librarians to present any project ideas that could promote high visibility of the Academic Librarians' roles especially as mediator of inter-relationships in R&D landscape inside and outside the USM premises. The challenge was accepted by the young Academic Librarians and they were enthusiastic debating as well as presenting various types of project ideas. In the end, the young Academic Librarians came out with one project idea known as Strategic Program in Research Support Service (SPiReSS). This SPiReSS idea was actually derived from the RSS model. However, the USM Library has modified it to meet the purposes for R&D landscape within the Malaysian HLIs. Under SPiReSS project there were five new service segments being introduced. The five service segments consist of:-

- i. Open Access Publication,
- ii. Mendeley: Bibliography Management Tool,
- iii. Google Drive,
- iv. Google Scholar, and
- v. Easy-to-write with MS Word for thesis writing.

Additionally, the top leaders of USM Library have appointed one special task force to execute the SPiReSS project. The special task force was appointed to spearhead, conduct and expertize on the five (5) new service segments of RSS. Moreover, the appointment members of special task force were not prioritized given for the Reference Librarians and Liaison Librarians; but it were open to any Librarians whoever willing to work voluntarily. On the other hand, the objectives of SPiReSS establishment were:-

- i. To facilitate the researchers to work smart in academic writing and scholarly publishing.
- ii. To help researchers on managing the research data.
- iii. To help researchers to use interactive online applications that could simplify the research works.

Enhance the USM Librarians' Skill-Sets for Implementing the SPiReSS Training and Consultation Sessions Effectively

Thirteen Academic Librarians based from multiple divisions of the USM Library volunteered as the team_members of SPiReSS. They were working multitasks as researchers, facilitators, consultants, enablers, experts and promoters for each service segment. The team members were also working in small specific groups and went to study abroad, implementing research and got mentoring from authentic experts to gain variants of skill-sets. The development of various skill-sets focused on two aspects. There were:-

- i. Develop the skills-set that makes the SPiReSS team members proficient in technical knowledge especially related to features all-around service segments so that they will be able to train and consult the researchers efficiently.
 - a. For instance, the SPiReSS team members were not only able to use Mendeley to manage bibliographies but also to use it as bibliometrics analysis tool efficiently.

- ii. Next, to develop the skills-set that makes the SPiReSS team members proficient in knowledge creation and innovation so that they will be able to present new discoveries effectively.
 - a. For instance, the SPiReSS team members were not only be able on giving advice on how to find the most trustworthy Open Access Journals but also do research on how to create a new title journal that able to achieve status Quartile 1 (Q1) within 2 years.

Once they have completed developing new skill-sets in manner of showing confidence, well-prepared and particularly get certified by authoritative agencies; they are eligible to start develop training modules, conducting the training and pioneer the consultation sessions.

It has actually begun with a pilot training session conducted by SPiReSS team members. It was held purposely to develop confidence and makes them fluent applying the new sets of knowledge. It takes two days; on 19th and 20th November 2013. They were divided into five groups based on five service segments (Open Access Publication, Mendeley, Google Drive, Google Scholar, and Easy-to-write with MS Word for thesis writing). At that time, the participants were USM administrative staff and Senior Academic Librarians only. During the session being conducted, there were a lot of two ways communication discussions focuses on the features provided within the service segments. At the end of the pilot training session, there were enormous pros and cons feedback which highlighted positively for the SPiReSS team to improve on various aspects especially on the presentation style. The team members were not sit backs and striving to improve. It took 5 months for the SPiReSS team members practiced to close up the weaknesses on stated aspect. After the SPiReSS team members had high confidence successfully to overcome the weaknesses, they were excited to launch a full training session. The first open training session was planned to be launched and offered for USM researchers to participate on February 2014. However, there were a lot of marketing works to perform one month before the opening training session. Nevertheless, the SPiReSS training session was officially offered on 21st March 2014. The Mendeley group was chosen for the first offered training session in the USM Library. Two months later, the other groups of SPiReSS were followed to start being offered multiple series of training sessions. On the 1st January 2015, all five (5) SPiReSS training sessions were fully been offered based on the constant schedule. The SPiReSS training sessions were held on Thursday and Friday every

week with rotation of different programs. Meanwhile, the consultation session was officially operated 24 hours / 7days via online and face-to-face approach on the same year.

Participants' Feedback on the New USM Library Service Model

Referring on the Appendix 1, there were totally 494 participants have joined the SPiReSS training session started from January 2015 until March 2016. There were 35% male participants and 65% female participants. As for level of graduate study, 62% participants were postgraduate students (consist 43% PhD candidates and 19% Master candidates), and 38% were undergraduate students. Out of the number of total participants, 29% attended the Open Access Publication training, followed by Mendeley (27%), Easy-to-Write with MSWord (21%), Google Scholar (16%) and Google Drive (7%).

On the other hand, feedbacks from the 88% of all participants were satisfied and they (82% of the participants) indicated that the SPiReSS training segments were successfully developed their proficiency in research writing higher than before. Moreover, 86% of them also agreed that the time spent for the training sessions were appropriate and 96% of participants felt that the topics covered in SPiReSS training were highly relevant to facilitate their research work. The 94% of participants also agreed that the presentations from trainers were good and they (95% of participants) also rated that the trainers had giving effective answers for questions delivered from participants during the training session.

The Challenges for SPiReSS Team Members

The SPiReSS team members encountered multiple challenges to develop and operate SPiReSS project which embed the RSS model efficiently. The first challenge was that; the team members have to surpass any technical difficulties to develop various skill-sets in short period. They need to be well-prepared mentally and physically to break the old mind-set shifted to the new paradigm of mind-set to enable them to master and become an expert in the new skill-sets. After that, they have to embed and apply it within their routine work. Hence, the team members have to reschedule their routine work wisely and manage their work time properly. Next, the second challenge was to confront budget constraints in terms of paying multiple costs for operating the SPiReSS. The budget constraints were giving a headache for the SPiReSS team because the costs not only covers in term of fees for the formal training series but also included to subscribe full packages of training resources as well as purchasing

expensive software licenses. There were also included the cost to pay a fee to register as official members of group or prestigious associations to make the SPiReSS team members received the expert qualification status. For instance, the team has to participate in the Open Access Publication advocacy programs that originally based in United States and Europe countries. Both regions successfully established various recognized organizations as well as creating the accredited programs and already efficiently operated good resources to uphold Open Access agenda. Whoever wants to join the Open Access efforts and redeem expert qualification status; they have to pay fees to be recognized as official members. Although they were providing waiver privileges covers with several supported programs but the hidden cost was still very high. Nevertheless, although the USM Library received small amount of budget but the team members still have successfully used it to developed SPiReSS project as embed RSS model. In fact, the SPiReSS team has successfully found multiple alternatives to cope with the budget constraints. Next, the third challenge was searching prominent local experts that have high experiences in RSS. In the year 2013, the SPiReSS team was unable to find any reliable experts in Malaysia. Therefore, the SPiReSS team has to pioneer the development of RSS by using their own model that currently known as SPiReSS and requested guides from the experts based in other country such as Singapore, Hong Kong and Korea.

Conclusion

As a conclusion, the establishment of SPiReSS was derived from RSS fundamental model was seen as a good example for the Academic Librarians to sustain its relevance in the eyes of researchers. The Academic Librarians should reaffirm the performance level of the Library services with the R&D landscape at their institutions. Then, the Academic Librarians should identify the required skill-sets and know how to close the skill gaps that existed among the Academic Librarians. Next, investigate the segments of products or services suitable for the research community. Each Academic Library is encouraged to create a custom-made RSS model to fit the demands of their own research community.

Furthermore, to support the Malaysia HLI mission upholding the research excellence in the country, Academic Librarians have to be alert and transform its pivotal roles to support research activities in their respective institutions. USM Library took up the challenge by transforming existing User Education Program into RSS once MEB (HE) was called for

public attentions. The RSS has introduced five new segments namely Open Access, Mendeley, Google Scholar, Google Drive and Easy-to-Write with MS Word in the form of hands on training session to help researchers in completing their research works effectively. The valuable experiences from the early establishment of SPIRESS until its current achievement, together with challenges that Librarians need to face throughout the development of this program are shared in this paper. In order to ensure that SPIRESS roles in supporting research remains relevant, the team is in the process of introducing more new segments or classes to the researchers in the near future.

References

- Association of College and Research Libraries (ACRL). (2006). Changing Roles of Academic and Research Libraries. Retrieved from <http://www.ala.org/acrl/issues/value/changingroles>
- Auckland, M. (2012). Re-skilling for research: An investigation into the role and skills of subject and liaison librarians required to effectively support the evolving information needs of researchers. *RLUK Report, available at:* <http://www.rluk.ac.uk/files/RLUK%20Re-skilling.pdf> (accessed 29 December 2012).
- Brown, S., & Swan, A. (2007). *Researchers' use of academic libraries and their services: a report commissioned by the Research Information Network and the Consortium of Research Libraries*. Retrieved from <http://eprints.ecs.soton.ac.uk/13868>
- Federer, L. (2013). The librarian as research informationist: a case study. *Journal of the Medical Library Association: JMLA*, 101(4), 298.
- Ghadzali, M. P., Rahim, A. H. A., Ali, M. I. H., Yusof, A., & Rashid, M. N. M. (2010). *Pelan strategik Perpustakaan Universiti Sains Malaysia 2011 - 2015*. Pulau Pinang, Malaysia.
- Harvey, L., & Knight, P. T. (1996). *Transforming Higher Education*: ERIC.
- Jamilah Hassan Basri, Mohd Pisol Ghadzali, & Mohd Ikhwan Ismail. (2011). Blue Ocean Strategy: Application in Universiti Sains Malaysia Library. *Jurnal PPM*, 5.
- Jaguszewski, J., & Williams, K. (2013). *New roles for new times: Transforming liaison roles in research libraries*. Retrieved from Washington, DC: <http://www.arl.org/component/content/article/6/2893>

- Lewin, K. (2016). *Taking library liaison faculty teams from good to great*. Paper presented at the 37th International Association of Univeristy Libraries (IATUL) Conference, Halifax, Nova Scotia, Canada. <http://eprints.qut.edu.au/96565/3/96565.pdf>
- Malaysia Ministry of Higher Education (MoHE). (2013). *Malaysia Education Blueprint 2015-2025 (Higher Education)*. Retrieved from <http://www.mohe.gov.my/en/download/public/penerbitan-dan-jurnal/pppm-2015-2025-pt>
- Reference & Research Division: Hamzah Sendut Library. (2013). *User Education Programme Report 2011 & 2012*. Retrieved from Pulau Pinang, Malaysia: www.lib.usm.my
- Research Information Network (RIN). (2010). *Research Support Services in UK Universities: A Research Information Network report*. Retrieved from London: http://www.rin.ac.uk/system/files/attachments/Research_Support_Services_in_UK_Universities_report_for_screen.pdf
- Simons, N. J., & Searle, S. (2014). *Redefining 'the librarian' in the context of emerging eResearch services*. Paper presented at the VALA2014 Conference. <http://www98.griffith.edu.au/dspace/handle/10072/63599>
- Tenopir, C., Birch, B., & Allard, S. (2012). *Academic libraries and research data services. Association of College and Research Libraries*.
- Wijayaratne, A. (2014). *Reviewing the e-research support environment: A case study at the Library of Open University Sri Lanka*. Paper presented at the the 5th International Conference on Libraries, Information and Society (ICoLIS 2014), Kuala Lumpur, Malaysia, 4-5 November 2014.

APPENDIX 1: CHART FIGURES

NOTE OF ABBREVIATIONS:

1. EZ2W = Easy-to-Write Microsoft Word
2. GD = Google Drive
3. GS = Google Scholar
4. M = Mendeley
5. OA = Open Access Publication
6. UG = Undergraduate
7. MA = Master
8. PhD = Doctorate of Philosophy

Figure 1: Participant (By Gender)

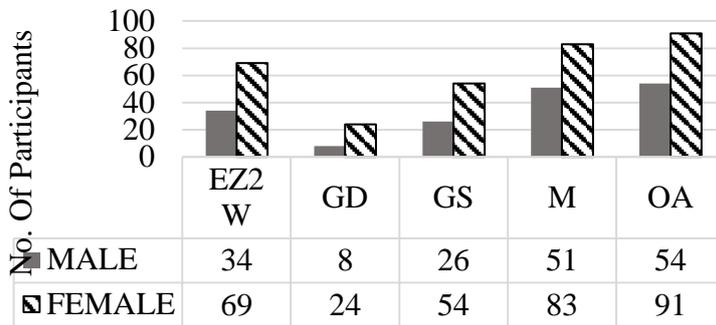


Figure 2: Participant (By Percentage)

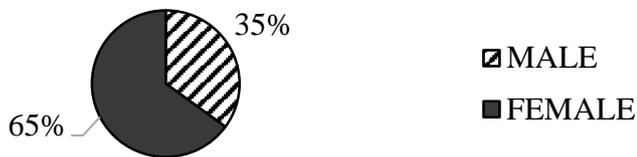


Figure 3: Participant (Level of Study)

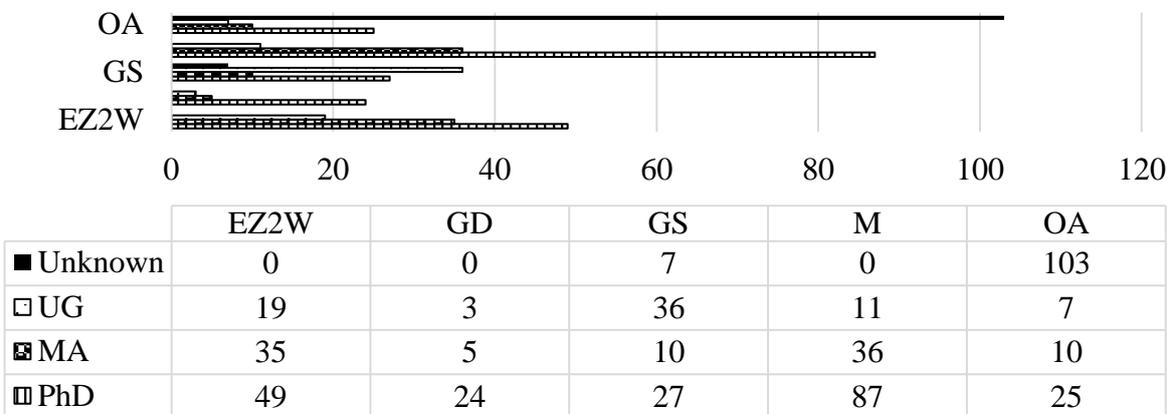


Figure 4: Workshop Attendance By Subject (Percentage)

■ EZ2W ■ GD □ GS ■ M ■ OA

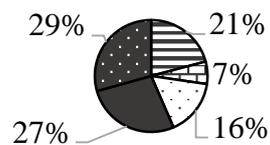


Figure 5: Participant (By Country)

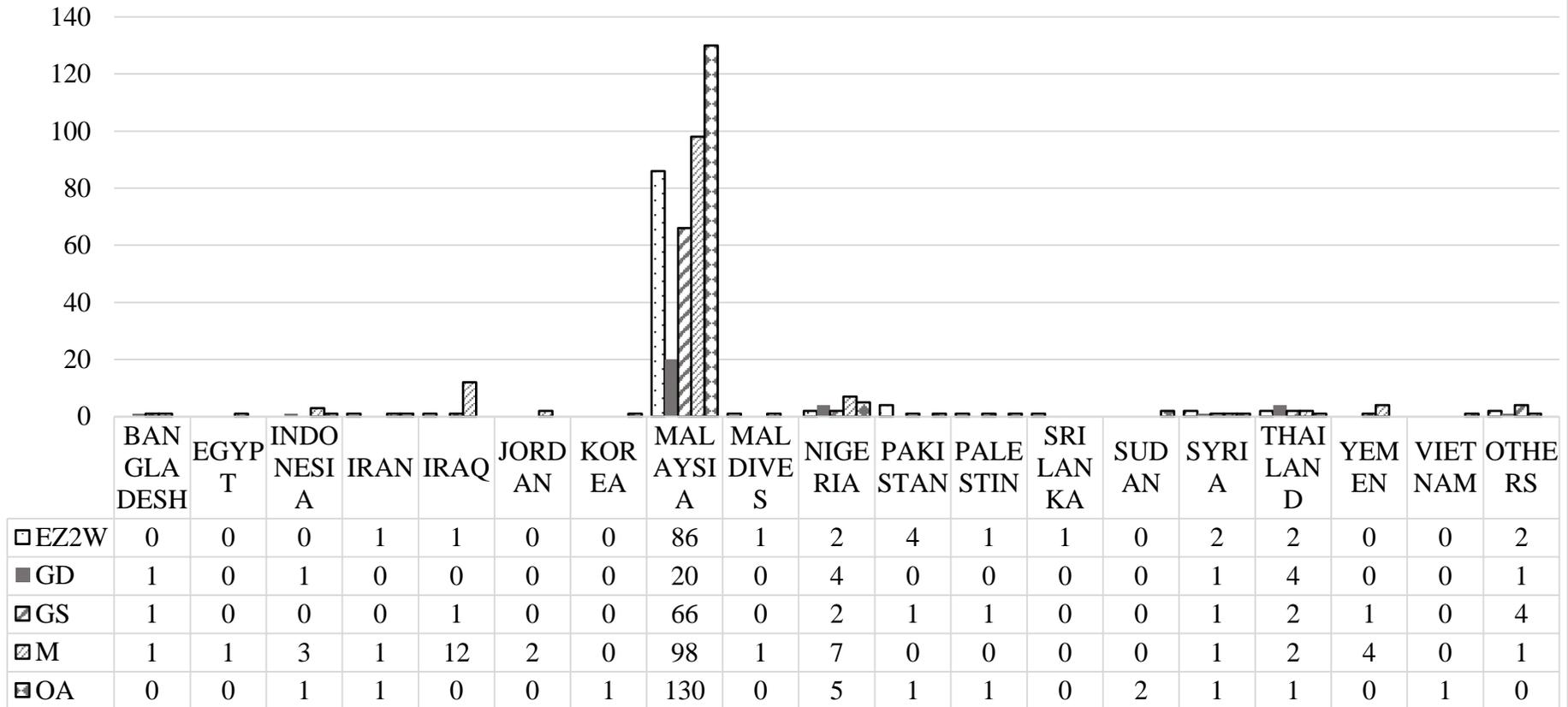


Figure 6: Level of Proficiency After Attending the SPiReSS Training

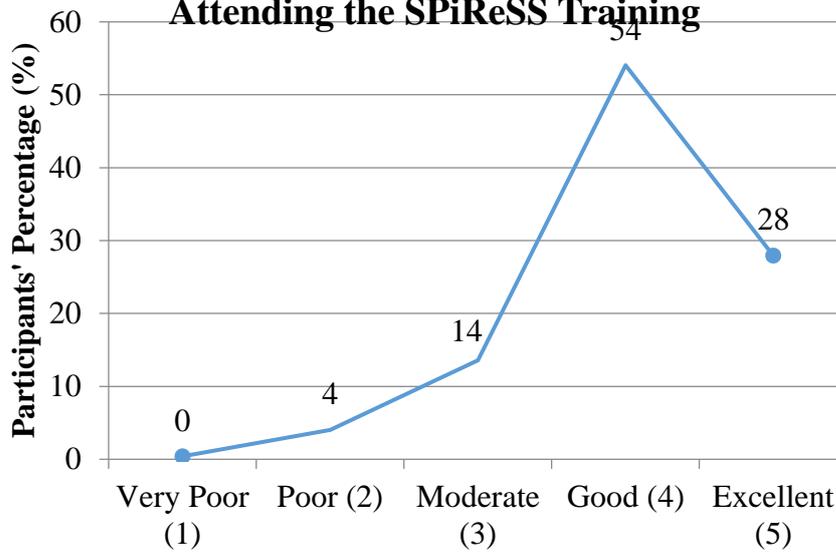


Figure 7: The Effectiveness of Times Spent in SPiReSS Training

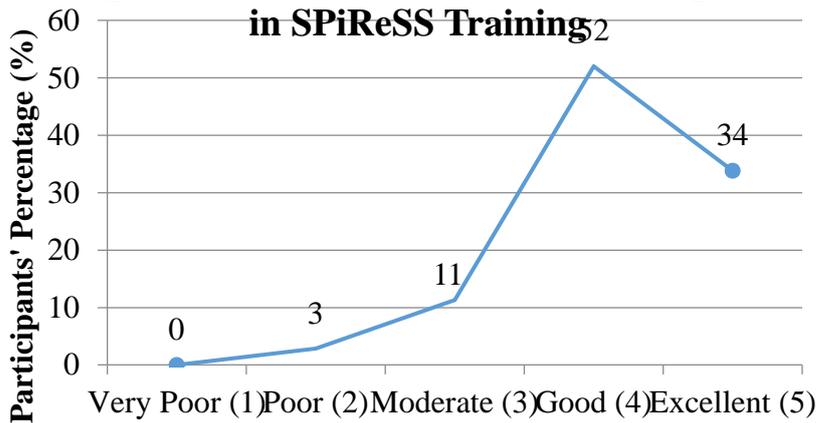


Figure 8: The Relevance of SPiReSS Training towards R&D Landscape

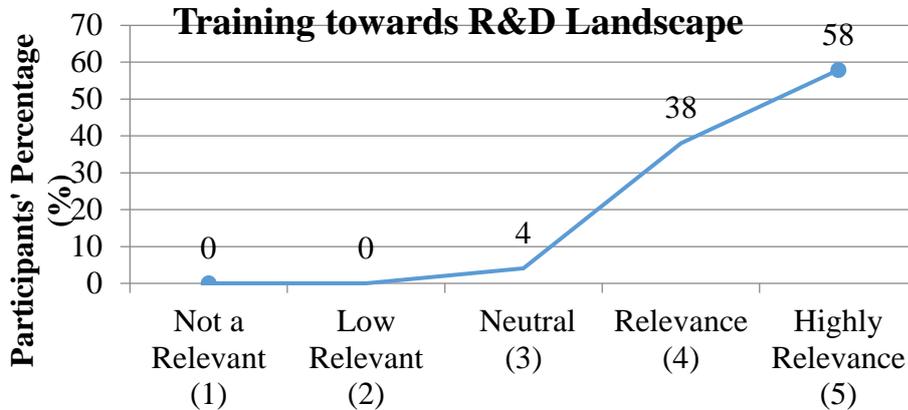


Figure 9: The Effectiveness to Answer Participants' Enquiries

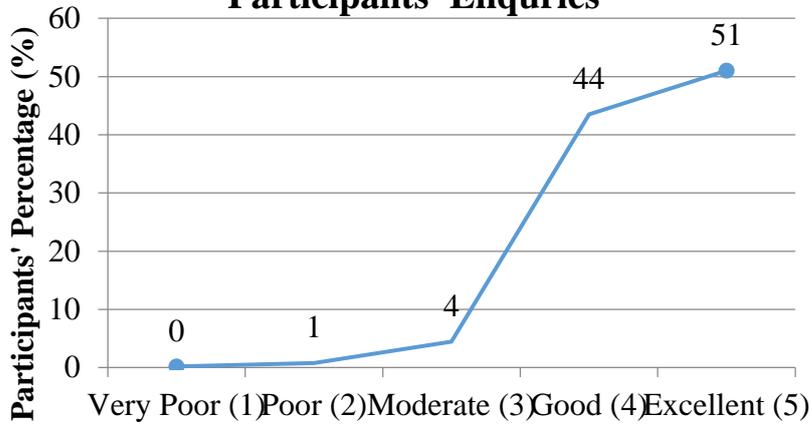


Figure 10: Overall Satisfaction Towards the SPiReSS Training Sessions

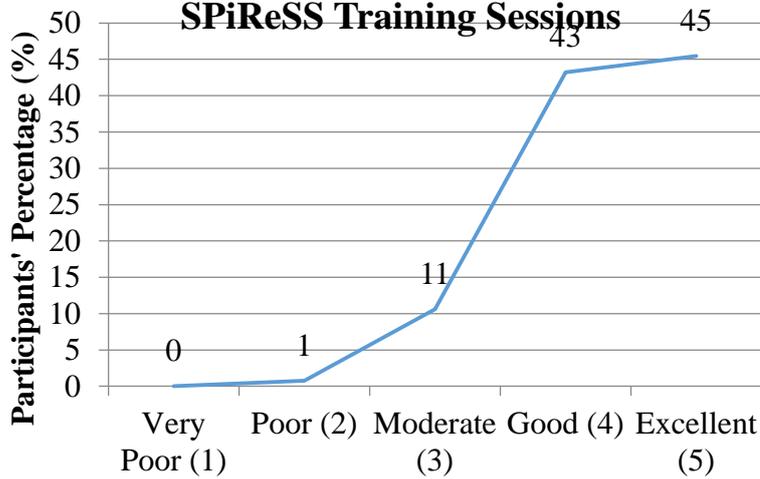


Figure 11: The SPiReSS Trainers' Presentation Performance

