Research Article

From Stacks to Sustainability: The Transformative Role of Academic Libraries in Achieving SDGs

Bangasree Dey

Librarian, Muralidhar Girls' College, Kolkata, India

I N F O

E-mail Id:
deybangasree@gmail.com
Orcid Id:

A B S T R A C T

Academic libraries have an essential role to play in the realisation of the Sustainable Development Goals (SDGs) of the United Nations, promoting equitable access to knowledge, lifelong learning, and research and innovation. In this somewhat thematic study, the part academic libraries may take in the globalisation of the SDGs via their educational, administrative and community functions has been investigated. The study proceeds from the secondary sources of academic journals and institutional reports, and adopts a qualitative exploratory approach to thematic interpretation. The results of this study highlight several areas wherein it can be shown that academic libraries play an important part in the realisation of the SDGs, such as the giving of quality education (SDG 4) in the form of information literacy programmes and open access materials; the promotion of reduced inequalities (SDG 10) by bridging the digital divide; the support of industry, innovation and infrastructure (SDG 9), in the giving of research support services, the administration of data and the dissemination of knowledge; and the support of climate action (SDG 13) by the implementation of green practices in the daily administration of libraries. They are also central to community engagement, promoting cooperation and partnerships (SDG 17) to address local and global sustainable development needs. Despite great difficulties due to underfunding, infrastructural inadequacies and provincial inequalities, academic libraries show an adaptability and responsiveness, in altering their aims and objectives to meet the SDG agenda. This study makes considerable contributions, inter alia, it is pointed out that not only are academic libraries information service providers but also agents of social change, being capable of transforming sustainable futures in higher education and beyond. Recommendations include more efficient policies to support academic libraries contribution to digital inclusion, improved resources to eliminate digital divides, and an increased emphasis on sustainable library operations.

Keywords: Academic Libraries, Sustainable Development Goals, Information Literacy, Higher Education, Digital Inclusion, Environmental Sustainability

Dey B
J. Adv. Res. Lib. Inform. Sci. 2023; 10(2)

26

Introduction

In September 2015 the world endorsed the United Nations' SDGs (United Nations, 2015),[1] a turning point in the global attempts to address pressing issues, including poverty, inequality, environmental degradation, the need for peace in the world, and so on. The SDG approach counts on the engagement of the community of nations in the realisation of 17 goals and the fulfilling of 169 goals. It is a call to governments to engage civil society, the business sector, and the academic sector in building a sustainable world. Higher education, with its knowledge infrastructure, and academic libraries in particular, is one sector supporting the SDGs by impact. Academic libraries are libraries that have associations with institutions of higher education, usually universities. They are nodes of knowledge, the digital points of access, and sources of intellectual engagement. The academic library sponsorship of education, research, and life-long learning directly affects numerous SDGs with Goal 4: Quality Education and Life-long Learning one of the most directly implicated. Their work helps to satisfy objectives such as SDG 10 (Reduced Inequalities), SDG 9 (Industry, Innovation and Infrastructure), and SDG 16 (Peace, Justice and Strong Institutions).

The role of academic libraries in the advancement of the SDG agenda is, not only that they can foster access to information resources, but also that the changing roles of academic libraries include, sustainability education partners, facilitators of digital equity, practitioners of sustainable practices, and supporters of global knowledge exchange. As higher education institutions continue to embed course delivery and research in line with the SDGs, Academic Libraries are essential to this role of transformation. Following a synthesis of international literature, case studies and policy frameworks, this paper examines the role of academic libraries in the global success story surrounding the SDGs. It attempts to answer the following questions:

1. In what ways do academic libraries support individual targets created as part of the SDGs (i.e. those surrounding educational outcomes, social justice and sustainability)?

2. What activities and innovations in libraries support the SDG agenda?

3. What barriers inhibit full integration of academic libraries within the sustainable development agenda? The article highlights the ways in which academic libraries work collectively towards the creation of sustainable development, as change agents rathethan service providers.

Literature Review

The literature concerning the role of libraries and sustainable development has expanded greatly since the 2030 Agenda was adopted. Library support for global sustainable development can be further understood through academic theses, international reports and documents published by professional associations. The following review highlights themes which are representative from this body of work.

Academic Libraries and Sustainable Development

Libraries are being recognised as institutions providing access to knowledge democratically. According to IFLA (2022),[2] libraries are critical institutions for sustainable development as they provide access to information, increase levels of literacy and empower citizens to participate in civic life. Basic functions of academic libraries can be determined as joining educational outcomes with sustainability goals. Mersand, Gasco-Hernandez, Udoh, and Gil-Garcia (2019) inform us that libraries are "anchor institutions" and in relation to their providing resources to meet both local and global needs for the betterment of the community is their mission.[3] These studies indicate that viewing libraries as marginal to the SDG would not be a proper understanding of justice, but rather they should be conceived of as essential enablers of informed and equitable societies.

Libraries And The Sdg 4: Quality Education

The goal of 4 of the SDG shows further correlation with libraries as libraries always are working to further the motto: Education for all. Academic libraries are the great providers of access to scholarly literature and open educational resources and digital learning platforms. Libraries, according to Mashroofa (2022)[4] facilitate the process of inclusive learning by providing equitable access to information, regardless of socio-economic status. Open access initiatives are among the preliminary movements towards this end. Suber (2012)[5] has stated that open access to scholarly publication makes knowledge available to all students and researchers throughout the world to gain access to their cutting edge research without financial probity. Academic libraries, by controlling institutional repositories and promoting open access publication, have to assist in dismantling the barriers to education and contribute directly to SDG 4. In addition, academic libraries conduct workshops, training on information literacy to assist students in developing the critical thinking skills necessary to assess sources, engage in life-long learning, and contribute in a responsible manner to society (Walton & Cleland, 2017). These types of skills converge with the SDG view that allows individuals to become informed citizens capable of facing the complex issues of the globe.

27

Dey B
J. Adv. Res. Lib. Inform. Sci. 2023; 10(2)

Digital Inclusion And Equity (Sdg 10- Reduced Inequalities)

The digital divide and unequal distribution of information technology is one of the world's worst problems. Each part of the world has its share of problems. Academic libraries play a vital role in aiding to overcome this problem. IFLA (2016) [6] shows how libraries can help increase the level of students in other underdeveloped areas where computers, digital literacy training, high speed internet and subsidised broadband are made available. Laura Graham-Clare (2022) [7] explains that the aim of SDG 10 is to reduce inequality, and there can be no better place to begin than through the local library. Libraries can assist with achieving SDG 10 through establishing inclusive and welcoming environments that facilitate learning by everyone, particularly underserved populations like minorities, indigenous peoples, migrants, refugees and people with disabilities. The library must take a number of access factors into account. The totally practical factors of access by way of physical libraries and digital access come into mind, but it is also necessary to ensure that the library is welcoming not only to all people, but also particularly for those with disabilities, needs to be taken into account.

Libraries And Environmental Sustainability (Sdg 13 And Sdg 15)

Environmental sustainability applies to all aspects and elements of society. Libraries are mainly engaged in education and information, but they also have some very special roles in environmental sustainability. Academic libraries have begun to employ eco friendly practices leading to the matter of environmental sustainability, like diminished usage of print materials through digital collections, more energy efficient technologies and green library buildings. Jankowska and Marcum (2010) [8] emphasised the contribution of "green libraries" in decreasing carbon footprints inside institutions of higher education through the implementation of energy-saving lighting, sustainable energy systems, rain water harvesting systems, and sustainable architecture. The libraries now promote digital resources and reduce their reliance on print material that in turn lessens the environmental ramifications of either publishing or logistics. These efforts correspond to SDG 13 (Climate Action) and SDG 15 (Life on Land), demonstrating the multidimensional contributions of academic libraries towards the goal of sustainability in addition to their academic obligations.

Libraries And Research Support For Sdg's (Sdg 9 And Sdg 16)

The academic libraries form the research and development hub of the business. They furnish to the researchers the scholarly materials while making available student research resulting from their work. In this role, they assist the researchers in the area of environmental decision making by furnishing materials on climate change, public health, justice and sustainable technology (Kennan et al., 2014). [9] Libraries maintain the institutional repositories where the faculty keeps its output available for others. It also maintains the interdisciplinary linkage by furnishing them with a common platform. Herein lies the significance of SDG 9 (Industry, Innovation and Infrastructure) and SDG 16 (Peace, Justice and Strong Institutions) in bringing to the fore the library's role in building transparent, knowledge-driven societies.

Scope Of The Study

Libraries of all types, public, national, school, and special, are engaged in some form of sustainability, but academic libraries are uniquely situated in the crossroads of education, research, and community outreach. As they are immediately involved in the means of higher education institutions (HEIs), it would be hard to overestimate the importance of the role academic libraries play in not only providing intellectual outcomes and generating value despite learning but also providing social issues through scholarship.

This scope can be broken down into the following sections:

1. Direct Connections with SDGs – This will involve library specific services and programs that have clear and immediate connections with expected outcomes of different goals, for example, sustainable education (SDG4), socio-inequalities of access to technical resources (SDG10), and sustainability research (SDG9) and others.

2. Indirect Connections with SDGs- The library also further sustainability by aiding in changing attitudes and practices-viz. information literacy education, continuous learning, civic centers for students to debate issues of the day, and social advocacy generally. Though these contributions are less measurable they are by no means less significant for the betterment of sustainable society.

3. Institutional and Operational Practices – Through their internal operations, libraries can demonstrate their commitment to sustainability. Perhaps better building designs, less paper used, and civic integration of alternate resources (electric) might be said to illustrate SDG13 (Climate Change) and SDG 15 (Life on Land).

The main purpose of the study is to highlight the different dimensions of libraries regarding getting the sustainable development goals.

Dey B
J. Adv. Res. Lib. Inform. Sci. 2023; 10(2)

28

Methodology

Research Design

The research plans to use a qualitative exploratory design to explore the ways academic libraries contribute to achieving the sustainable development goals. A qualitative approach is appropriate since it addresses the issue of exploring practices, innovations and challenges rather than measuring any statistical relationships. This design allows the study to explore the many dimensions of the contribution of libraries ranging from educational support to operational sustainability.

Data Sources

Data were sourced for the study from a variety of credible secondary sources. These included Academic journals and books pertaining to library science and sustainable development and higher education.

- Published reports and policy documents from several international bodies like the United Nations (2015) and the International Federation of Library Associations and Institutions (IFLA, 2016, 2022).

- Open access repositories and various institutions' websites emphasizing library initiatives aligned with the SDGs.

The use of various data sources would contribute to a balanced and comprehensive knowledge of the subject

Limitations of the Methodology

Although having a rich and broad dataset, the methodology has certain limitations:

- The dependence on secondary data may hamper capturing the emergent practices from the field immediately.

- The regional imbalance may stand since the available literature is mostly from developed countries so possibly produces under reporting of the libraries' experience in developing contexts.

- The absence of indicators from a quantitative point of view would debar from producing quantitative knowledge of the impact of libraries on the progress of sustainable development goals but rather only descriptive knowledge.

In spite of above limitations, the methodology chosen is nevertheless appropriate for the exploratory research aimed at producing a conceptual and thematic understanding of the role of academic libraries in sustainable development.

Findings & Discussion

The investigation of secondary literature, case studies and policy documents reveals that academic libraries assist in the attainment of Sustainable Development Goals (SDGs) in a variety of direct and indirect ways. The impact of academic libraries can be understood under various different themes that express libraries' changing role as educational partners, research supporters, promoters of digital inclusion, environmentally sustainable agents and democratic spaces. Simultaneously, libraries face various challenges that can serve to hamper their complete alignment with the SDG framework.

The Enhancement Of Quality Education (Sdg 4)

Libraries are directly related to Quality education. Academic libraries work under higher education institution to promote learning and supporting equitable education. It provides access to vast collection of digital and print resources to its users. It can be easily concluded that the SDG 4 asks for 'Quality Education' and all kind of libraries, especially academic libraries are directly related to this goal.

Open access initiatives are game changing development in the field of teaching- learning. Libraries all over the world are working to promote open access in order to facilitate the easy access to knowledge for all with no financial boundaries (Suber, 2012). These kinds of the initiative always favour towards the attainment of SDG 4.

Information literacy programmes and awareness programmes conducted by the libraries increases students' analytical thinking. Walton and Cleland (2017) pointed it out that this kind of programmes lately promotes permanent learning by increasing awareness regarding the knowledge sources and thus serve to the attainment of the SDG 4. The case studies analysed in Uttar Pradesh show how academic libraries provide a bridge between their users and various resources by converting local sources of information to a digitised form and integrating these into a worldwide platform such ct the National Digital Library of India (NDLI) (Singh & Mishra, 2021).[10] These kinds of initiatives can promote the accessibility of knowledge to all kinds of technology users with accessibility to various offsite resources and eliminate problems of price accessibility.

Strengthening Research for Sustainability (SDG's 9 and 16)

Research is the basis for sustainable development, and the actual placements of academic libraries provide the necessary intellectual infrastructure for scholarly investigation. Scholarly libraries are supportive of SDG 9 (Industry, Innovation, and Infrastructure) through working on specialised collections based on sources of information such as renewable energy, sustainable agriculture, climate change, social justice, etc. The libraries provide a conduit to international scholarship via global educational

29

Dey B
J. Adv. Res. Lib. Inform. Sci. 2023; 10(2)

databases available to faculty and students within the academic structures. The open access for laypersons connectivity to knowledge supports SDG 16 (Peace, Justice and Strong Institutions), as also stated by Kennan et al (2014). The transparency of access to knowledge is the basis for accountable and informed societies. Libraries provide access to institutional repositories, which besides preserving ultimately the outputs of scholarly researchers, can also have this information accessible for worldwide distribution, providing at the same time a universal outreach for information and research in systems of local or regional relevance. Academic libraries are providing increasingly collaboration opportunities to faculties in varied disciplines, producing interdisciplinary initiatives which can be productive in promoting certain aspects of sustainable development relationships. Furthermore, their efforts can promote an interaction facility for certain attendant disciplines for which a library environment may provide a source of direct involvement for initiatives and scholarly productivity. Academic libraries are also places where community engagement can successfully evolve into further community programmes for the sustainable development of communities from a geographical and a social perspective. These programmes may also be successful in Korean or Asian culture. Academic libraries act as spaces where general discussions of humanity can be addressed productively. They can also be generally accommodating to ways in which different disciplines can perhaps collaborate and change knowledge to integrate views of sustainability in different ways. Research and cooperation of academic libraries throughout the world convey how collaborative workspaces leading to interchange perspectives will promote new explorations of world issues relevant to sustainable development. In the instance once again cited by Tammaro (2020), many of the libraries in Europe and Asia are spending money on research commons having digital collaboration places, not only for e-learning and collective research, but for common research for interdisciplinary innovations.

Digital Equity and Inclusion (SDG 10)

The earlier literature has evinced the place of academic libraries as being a stoping point for the digital divide, because of the persisting deficiency of access to information and communications technologies (ICTs) in many localities, particularly the developing ones. If any given locality lacks access to information and communications technology there is no means of developing infrastructure or a work force in order to engender a more robust knowledge economy. So the digital divide will continue to widen and also the disparity of access to the educational paths that will lead to a more prosperous success.

Libraries will begin to mitigate deficiencies by providing free access or at subsidised cost computers, high speed internet and even digital learning. As IFLA (2018) has said libraries are in many instances the only place for access to the technology, particularly for the outcast groups, and thus also afford access to digital knowledge economy. Academic libraries are therefore attempting to retain the inclusion of the students in whom a digital divide may effectively smooth the transfer into educational opportunities and not offer further barriers to administrative means.

Libraries also play an important supporting role in the proper digital literacy training of students. By furnishing opportunities for access to technology ; we also are enabling students to have the knowledge, the technical proficiency and guidance to work efficiently and with confidence in the digital world. Numerous reports highlighted this approach and the work libraries have done to support SDG 10 (Reduced Inequalities). This methodology of access and training causes inclusion and equitable opportunity.

An example of this is the University of Pretoria Library in South Africa which offered digital literacy workshops for first generation students entering higher education to freely engage with online learning platforms (M. Jantjies & Dalasile, 2019).[11] These projects outline a number of ways that libraries help to reduce inequalities leading to a lack of access to digital tools and even skills, which are realised after tasks such as research development, during the included learning process.

Environmental Initiatives in Libraries (SDGs 13 and 15)

Academic libraries also have a positive effect on environmental sustainability through operational practices, and education. Newly constructed academic libraries are increasingly adopting green building programmes, energy efficient lighting, and sustainable designs (Jankowska & Marcum 2010). As a result of their reduction of their carbon footprint libraries show compatibility with SDG 13 (Climate Action).

Digital allocation is another practice contributing towards environmental sustainability, by also removing the reliance on print, thereby saving paper, and damaging effects on the environment caused through printing and distribution. Libraries which endorse the use of electronic resources, indirectly contribute towards SDG 15 (Life on Land) through the direct reduction of raw material need associated with industrial pollution, and deforestation.

Academic libraries also work as educational advocates on environmental awareness. By procuring collections on climate change, biodiversity, and environmental policy, the library collections can serve to engage students and or researchers with sustainability specific issues. Many libraries use exhibitions and contemporary awareness initiatives about sustainability to advance ecological stewardship within certain academic environments.

Dey B
J. Adv. Res. Lib. Inform. Sci. 2023; 10(2)

30

Libraries as Democratic Spaces (SDG 16)

Academic libraries support peace, justice, and strong institutions through their role as democratic spaces where they promote intellectual freedom, civic participation, and informed decisions. Libraries are neutral, inclusive spaces that support access to information without regard to the socio-economic or cultural condition of the users. Information literacy curricula facilitating academic success includes civic competencies enabling users to critically evaluate political information, discern misinformation, and participate in democratic processes. This dovetails with SDG 16 stressing access to information as a foundation of justice as connected to effective institutions (IFLA, 2017). By holding seminars, workshops, and public dialogues about issues they are involved in affecting, e.g. human rights, gender equanimity and social justice, academic libraries fulfill their role as engaged participants in the promotion of informed citizenry. Through these communal experiences academic libraries contribute to the betterment of the democratic institution, as well as the societal ability to demonstrate resilience.

Challenges and Barriers

Although academic libraries represent a significant contribution to sustainable development, there are barriers that prevent them from fully realizing the SDG agenda:

1. **Resource Limitations:** Many libraries (more particularly in developing countries) simply lack the funds to bring about technological enhancements, develop digital collections, or install greener infrastructures.

2. **Absence in Policy:** There is a possibility that libraries may not be referred to in policy documents concerning national SDG initiatives in certain areas which diminishes visibility and results in missed opportunities (Singh & Mishra, 2021).

3. **Digital Divide:** Library services can assist in bridging the digital divide, but there is still a considerable digital divide in areas with inadequate connectivity and little or no ICT infrastructure to assist individuals

4. **Librarian Capacity:** Librarians should look to improve their professional development, particularly in the areas of digital literacy, research data management, and education for sustainability, by acquiring new and appropriate skills for the provision of SDG (Sustainable Development Goals) related services.

5. **Evaluation:** The continued problems of evaluating whether libraries make a difference to SDG achievements persist, not least because of the fact that, since what libraries achieve is often more indirect and qualitative in nature, it is less easy to evaluate things of this kind.

The above barriers indicate a necessity for better policies, better funding, more investment, and enhanced capacity to leverage the contribution that academic libraries can make to sustainable development, better.

Conclusion and Recommendations

This study demonstrates the importance of academic libraries in the delivery of the Sustainable Development Goals (SDGs). Academic libraries are not simply passive hoarders of information, but instead more active partners in achieving change, thus contributing to the direct achievement of quality education for all, equity (SDG 4), greater access to resources, environmental sustainability (SDG 13, 15), and the promotion strong peaceful democratic institutions (SDG 16). Libraries render their duties and tribute as diverse as:

*   **Education:** Libraries encourage inclusion and equity in accessing resources, open access publication, life long learning through information literacy initiatives, all of which tie in with the SDG 4 goals of Quality Education.

*   **Research and infrastructure:** Libraries also form part of the research infrastructure to support sustainability research across the faculties and research centres. They develop and curate knowledge resources in order to build a regional, national and global knowledge base concerning sustainability and climate change. The libraries with this expertise offer an institutional repository for research output and involve their community in sustainability and interdisciplinary work (SDGs 16 - Peace, Justice and Strong Institutions, and SDG 9 - industry, innovation and infrastructure)

*   **Digital Inclusion:** Libraries close the inequality gap (SDG 10) and bridge the digital divide by giving access to information and communication technologies, ICT and developing digital literacy skills among those to whom marginalisation applies.

*   **Environmental:** Libraries contribute to environmental sustainability (SDG 13 and 15) through the design and operation of environmentally sustainable completed buildings, digital transformation and programming for sustainability by conservation, reuse and recycling of materials used and sustainable practices required of suppliers.

*   **Democratic:** Libraries promote inclusiveness, agree space for dialogue and engagement, civic participation for all which contribute to peace, inclusiveness in societies and institutional strengthening (SDG 16).

However, there are several limiting factors in case of academic libraries as lack of funding allocated towards library resources and initiatives, lack of ability to illustrate the worth of the library in terms of local, regional and

31

Dey B
J. Adv. Res. Lib. Inform. Sci. 2023; 10(2)

national policy frameworks, the inability to measure existing worth of contributions measured are performance indicators in order to report on for the future.

The following general recommendations given below emphasises how to expand libraries' contribution to the SDGs with the following requirements being every important to this aim:

1. **Integration Within Policy:** Governments and post secondary education institutions must ensure that libraries are actively included in any strategies, plans or funding arrangements as applicable to the relevant SDGs.

2. **Improvement Of Capacity Building:** Librarians will need to have an opportunity of ongoing professional development in anticipation of the learning requirements of the future from sustainability learning to digital technology and data base management.

3. **Collaborative Networks:** Libraries must build their partnerships in local, national and international terms so that library communities (include all libraries in this context) can share resource, expertise and good practice for others.

4. **Sustainability Measurement:** The development of appropriate instruments for the measurement of the impact of library activities on the care giving of the relevant SDGs will, if implemented duly, facilitate accountability and improvement planning processes which will assist advocacy in bettering support for libraries.

Finally, academic libraries are not peripheral factors in the world-wide movement towards sustainable development, they are core participators. Libraries are the fulcrum whereby knowledge is created, equity is espoused and innovation is pioneered so that both educational institutions and by extension all society become responsible for developing a more just, inclusive and sustainable future.

References

1. United Nations. (2015). Transforming our world: The 2030 Agenda for Sustainable Development. United Nations. Walton, Geoff, and Jamie Cleland. 2017. "Information Literacy." Journal of Documentation 73(4):582–94. doi: 10.1108/jd-04-2015-0048.

2. International Federation of Library Associations and Institutions (IFLA). (2022, January 6). IFLA Trend Report 2021 Update. Retrieved from https://repository.ifla.org/items/3db0ee79-d9c9-40b5-9c3f-c3e1b61d1f4cMersand, S., Gasco-Hernandez, M., Udoh, E., & Gil-Garcia, J. R. (2019). Public Libraries as anchor institutions in smart Communities: Current practices and future development. Retrieved from https://scholarsarchive.library.albany.edu/ctg/25/

3. Mashroofa, M. M. (2022, March). Contribution of academic libraries towards sustainable development goals. (South Eastern University of Sri Lanka), Annals of Library and Information Studies (Vol. Vol. 69, pp. 51–58).

4. Suber, P. (2012). Open access. The MIT Press eBooks. https://doi.org/10.7551/mitpress/9286.001.0001

5. International Federation of Library Associations and Institutions (IFLA). 2016. "Access and Opportunity for All: How Libraries Contribute to the United Nations 2030 Agenda." Retrieved (https://repository.ifla.org/items/3f128991-c391-4412-9d46-fcd4808b38cc).

6. Laura Graham-Clare. (2022). 5 things librarians can do right now to support the UN SDGs | For Librarians | Springer Nature. Retrieved from https://www.springernature.com/gp/librarians/the-link/sdgs-blogpost/5-things-librarians-can-do-to-support-the-sdgs/23222456

7. Jankowska, M. A., & Marcum, J. W. (2010). Sustainability challenge for academic libraries: Planning for the future. College & Research Libraries, 71(2), 160–170. https://doi.org/10.5860/0710160

8. Kennan, M. A., Corrall, S., & Afzal, W. (2014). "Making space" in practice and education: research support services in academic libraries. Library Management, 35(8/9), 666–683. https://doi.org/10.1108/lm-03-2014-0037

9. Singh, P., & Mishra, R. (2021). Environmentally Sustainable Approaches in Academic Libraries: A micro-study in Uttar Pradesh. Library Philosophy and Practice (E-journal). Retrieved from https://digitalcommons.unl.edu/libphilprac/6110

10. Jantjies, M., & Dalasile, V. (2019). Digital literacy amongst first year university students from under-resourced schools (pp. 235–242). https://doi.org/10.33965/es2019_201904l029