



## Application of The FRBR Concept in the Digital Library Catalog System Research and Development Agency of the Ministry of Home Affairs of the Republic of Indonesia

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ABSTRACT	ARTICLE INFO
<p>Library institutions have several essential elements, using one of information retrieval in the library's online catalogue. The method for cataloguing the online catalogue is Functional Requirements for Bibliographic Records (FRBR). This writing aims to provide an overview of the implementation of the FRBR structure in the online catalogue of the BPP Kemendagri digital library to simplify the information retrieval process and provide insights to those who access catalogued information. This research is a type of qualitative research with literature study and observation. A literature study is used for FRBR concepts and theories while observing as a user keeps the digital library catalogue belonging to BPP Kemendagri by looking at the existing fields and then analyzing them. The data were then analyzed using thematic analysis. The results of this study show the online catalogue display of the BPP Kemendagri digital library displays the relationship between the first group entity, the item entity, and work. Manifestation and expression also relate to the second group entity, the entity associated with the party responsible for intellectual or artistic content, namely individuals or individuals. Corporate body. The online catalogue of BPP Kemendagri provides information and certain features related to the content, language and physical descriptions, gives users access to other sources of information by clicking on the sections, and the application of this FRBR has helped users search for information sources through information retrieval facilities.</p> <p>© 2021 Edulib</p>	<p><b>Article History:</b> <i>Submitted/Received 17 Jan 2021</i> <i>First Revised 21 Mar 2021</i> <i>Accepted 10 May 2021</i> <i>First Available online 17 May 2021</i> <i>Publication Date 31 May 2021</i></p> <hr/> <p><b>Keyword:</b> <i>FRBR,</i> <i>Information Retrieval,</i> <i>Online Catalog.</i></p>

## 1. INTRODUCTION

Information institutions, especially libraries, have several essential elements, one of which is an information retrieval system. Users will experience difficulties and obstacles when accessing information resources available in the library without a retrieval system. In line with that, libraries will also experience problems communicating the information resources they have and are open to users if the information retrieval system is inadequate. With that, through a library catalogue, users can access information resources in the form of collections to a library.

The library will communicate the state of its collection resources to users through its catalogue. Libraries need catalogues to show the availability of their collections. The library needs a list containing bibliographic information from its collections. Usually, the list is called a library catalogue. The library catalogue is a systematic list of books or other packs in the library, which contains descriptive information about the title, author, year of publication, publisher, subject, physical form, material characteristics, and place. In conclusion, the catalogue contains descriptive information such as title, author, publisher, and others. The catalogue records several bibliographic data from a collection or library material.

A reference collection in the form of a list of books from a particular scientific field and arranged systematically, such as author, subject, and period is called a bibliography. The bibliography does not contain specific subject content, only a list. The online public access catalogue (OPAC) is an automated catalogue listing contents from one or even several libraries, stored on magnetic disks or other recording media, and made available online to users pecified access (Septiansa & Firdaus, 2012). One of the advantages of library automation, in which there is a cataloguing activity between libraries, makes it possible to exchange bibliographic data with each other. However, standard rules are needed in the catalogue creation process to fulfil this. This cataloguing rule aims to make bibliographic collection data easily searchable by users based on the type of classification. This cataloguing rule must know what information in a bibliography is included in an entry, how the information can be displayed in a catalogue record, and how access should be ordered.

One method of managing this catalogue is Functional Requirements for Bibliographic Records (FRBR). This writing aims to provide an overview of the application of the FRBR structure in the online catalogue of the BPP Ministry of Home Affairs digital library to facilitate the process of information retrieval and provide insight to access to catalogued information.

The FRBR concept strongly supports interoperability. This term is an ability to exchange metadata between different databases. This interoperability positively contributes to developing the metadata structure in a database catalogue. It encourages various libraries to share bibliographic listings through online access and facilitates the exchange of bibliographic listings between these databases. The FRBR concept has an effective data exchange mechanism (Croissant, 2012). The service base for the data model in AustLit is FRBR (Functional Requirements Bibliographic Record), the first fundamental concept of RDA (Resource Description and Access). IFLA (International Federation of Library Associations) developed The FRBR concept in 1998, which is technically specific for representing bibliographic relationships and applying the entityrelationship model of an information source. This model is used as a change step to leave the single record concept used in the previous cataloguing system (Hart, 2016). The FRBR concept can make it easier for users to search for information because it can accommodate users' information needs from various

points of view. Secondly, it can improve the information retrieval process and increase cataloguing productivity.

The discourse of implementing FRBR as a substitute for AACR sparked debate among librarians. Some opponents of this discourse thought that FRBR would be challenging to apply to current catalogues. They assume that implementing the Functional Requirements Bibliographic Record (FRBR) will encounter technical and non-technical obstacles. Technically, the application of FRBR affects the conversion of data in the Machine Readable Catalog (MARC), especially the modification of metadata on digital objects. Meanwhile, the MARC mechanism works optimally on a simple relationship pattern.

Meanwhile, FRBR is designed to work on complex relationship patterns (Beall, 2014). The proponents argued that the implementation of FRBR positively contributed to the development of new cataloguing rules due to the clarity of criteria regarding Manifestations. The proponents compared the Manifestations criteria on the FRBR with the AACR. The comparison results show that the AACR rule paragraph 0.24 does not explain the requirements for manifestations in detail. Paragraph 0.24 of the AACR does not clearly distinguish between published and unpublished material (Jonsson, 2017).

According to (Tillett, 2005), using an entity-relationship model that supports four levels of representation for bibliographic sources, namely work, expression, manifestation, and item. Especially for work and phrases, these two entities reflect intellectual products or artistic works in abstract forms, such as ideas, concepts, storylines, and so on. If work is an abstract concept in the author's tacit knowledge or the author's, the expression is more about how the work is realized. There is also an internal division of entities in group one, which has an essential point of understanding. The examples of the three entities can be explained as follows: (i) The first group is the product of intellectual or artistic work, which includes labour, expression, manifestation, and items; (ii) The second group of parties who are responsible for the product of the intellectual work, individuals or corporations; (iii) The third group is the subject of intellectual or artistic work that includes one or two groups, such as concepts, objects, events, and places. The first group divides the work concept entity into four hierarchies: the work entity, expression, manifestation, and item.

The second group of corporate bodies or individuals involved in the creation of the work, then the third group of the subject or work entities, in this group includes concepts or ideas, concrete objects or objects, and events. According to Barbara (in Hendrawan, 2012), the FRBR method has a purpose and function for the library catalogue based on the point of view of the end user. Finding the material you are looking for (see), identifying the entity (identify), selecting the entity (select), and getting the entity you want (obtain). In other words, to find the reading material sought in the catalogue, the arrangement of the data in the record must be descriptive enough so that the user can quickly identify and select the correct entity according to his wishes. In the data search process, the four entity processes sequentially: work is an abstract entity that is not recognized as an object material; The results of this entity level search can only be recognized at the Expression entity level. Then it is transformed into physical form at the Manifestation entity level. This level represents all physical forms of objects that have the same characteristics as their original contents. A manifestation contains only one thing (e.g., to search for the author's name of the material).

The results of this Manifestation entity can then be in the form of the number of copies or the number of collections owned by the Ministry of Home Affairs BPP library into item entities. Reading material data or books will be displayed, which explains the desired book data. One of the advantages of library automation for cataloguing activities is that several

libraries can exchange bibliographic data with each other. For the exchange to take place properly, uniformity in the listing format is required. For this reason, a form called the Machine Readable Catalog, abbreviated MARC, has been developed. One of the purposes of using the MARC format in automated cataloguing activities is to build a bibliographic database of library collections.

The mechanism in the FRBR concept in information retrieval can be seen as follows: An information seeker is looking for a book entitled 'The Life and Strange Surprising Adventures of Robinson Crusoe' written by Daniel Defoe. The information seeker searches by entering the author's name or title in the search field. Furthermore, search engines whose metadata structure is based on FRBR will relate the book title entity to the author name entity, the manifestation entity, and the item entity (Oliver, 2013). Qualitative descriptions, mathematical models, or tools directly related to the problem under study. The sources referred to in this section must be included in the sentences/statements referenced in the bibliography.

The library's digital and electronic collections are predicted to increase significantly over the next few decades. The digital and electronic collections include electronic books, journals, and audiovisuals. Electronic displays have complex bibliographical entity relationships because they can be produced and distributed in an intangible form. However, complex bibliographic listing entities can be linked using the Resource Definition Framework (RDF). In addition, the basic principle of Resource Description Access (RDA) allows connectivity between abstract material (abstract content) and a tangible medium (physical carrier) in the listing (Kelley, 2014).

## **2. METHODS**

This research is a type of qualitative research. According to Sugiyono (2016, p.9), using qualitative research methods to examine the condition of natural objects where the researcher is the key instrument. The data collection method in this study is study literature, observations, and interviews. The literature study is used for the concepts and theories of FRBR. At the same time, the user observes the digital library catalogue belonging to the BPP Ministry of Home Affairs by looking at the existing sections and then conducting interviews with librarians.

## **3. RESULTS AND DISCUSSION**

The bibliography development is increasingly not limited to digital and recorded works due to technological developments that present files in digital form. The existence of computer network connectivity brings the internet. The story of the times and the rapid flow of globalization have provided many changes to life, one of which is the growing pace of information and communication technology. The high rate of development of information technology has become one of the main reasons for the emergence of the information explosion phenomenon. However, the problems that arise between so much information will undoubtedly become more challenging to choose the information that is relevant to needs and evaluate information between valid or hoaxes. Because of this, finding information on the internet as needed is not an easy thing.

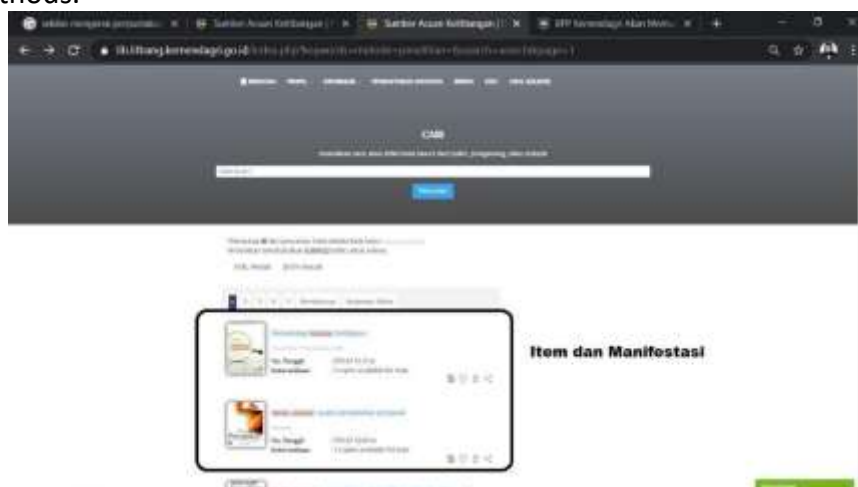
Libraries are documentary institutions that must be alert in addressing user needs, especially information needs. So the library must provide access to an online catalogue to make it easier for users to find the information they need. The pace of increasingly developing

technology requires libraries to build digital libraries to provide the best service to users. In digital libraries, an information retrieval system is called the Online Public Access Catalog (OPAC). The OPAC information retrieval system displays bibliographic listings or brief representations of information or documents owned by the library. The OPAC system in the BPP Ministry of Home Affairs digital library applies the FRBR concept because it can provide search results that display relationships between entities in a bibliography collection. This can assist users in identifying, finding, and selecting information that suits their needs. Using the FRBR concept in online catalogues can provide adequate information organizing and essential preservation of an artistic or intellectual work (Hendawan, 2012).

The Ministry of Home Affairs BPP Library was established to achieve the vision and mission of the Ministry of Home Affairs Research and Development. The Ministry of Home Affairs BPP library is called the Soepardjo Roestam Library. In carrying out its duties, this library implements an open service system. Users utilizing services and services are free of charge or free of charge. In efforts to improve services, the Ministry of Home Affairs BPP library provides a digital library to continue providing information to the user community amid the rapid pace of information technology development. According to the informant, a librarian from the Ministry of Home Affairs BPP library, the online catalogue provided has applied the FRBR concept in building this digital library. However, based on the analysis and studies by researchers, the BPP Kemendagri digital library catalogue has a relationship or relationship only with the first and second groups.

### 3.1 The existence of a relationship between the Entities of the First Group with the Online Catalog of the Ministry of Home Affairs BPP Digital Library

The online catalogue display of the BPP Kemendagri digital library shows the relationship between the first group of entities, namely the entity of items, works, manifestations, and expressions. The author uses the keyword a career related to the Ministry of Home Affairs BPP, namely Research Methods. When the author types the research method keywords that are entered in the search tools in the online catalogue, then the BPP Kemendagri online catalogue displays the search results in the form of information related to the author, then expressed in what form and in what form adapting from work. So this indicates that the online catalogue of the Ministry of Home Affairs BPP shows derivative works of expression from research methods.



**Figure 1.** Display of items and manifestations in the Ministry of Home Affairs BPP online catalogue.

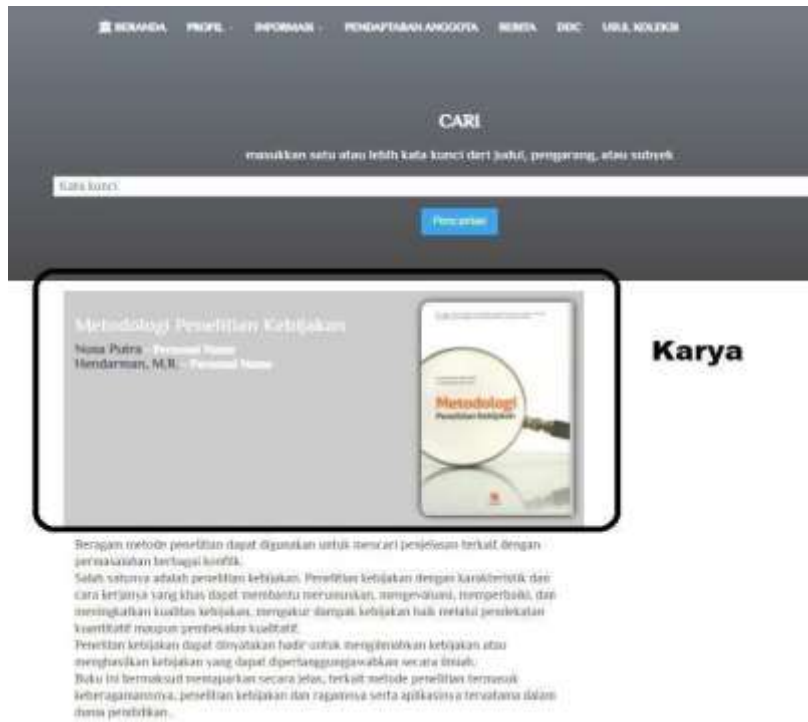


Figure 2. Display of works in the Ministry of Home Affairs BPP's online catalogue.

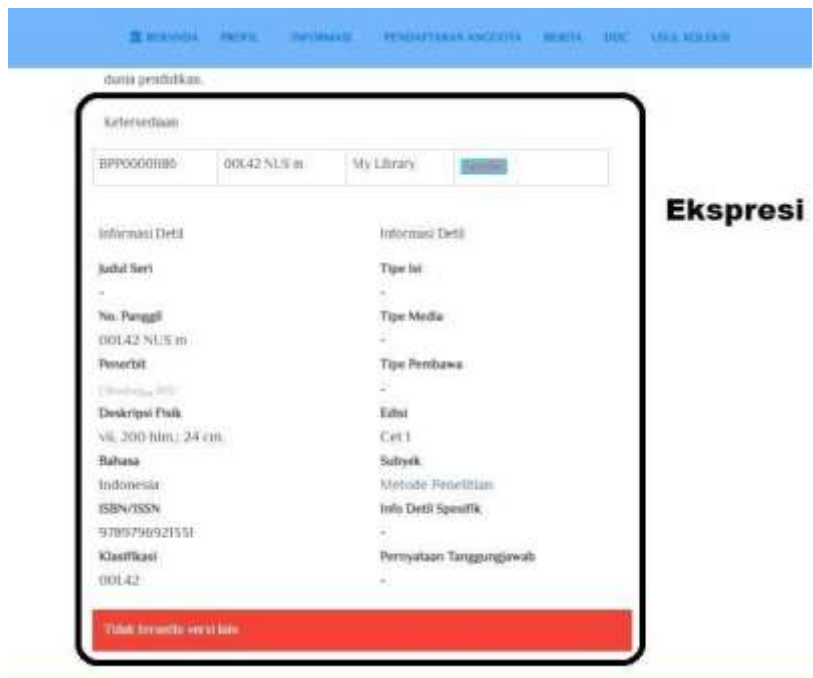


Figure 3. Expression display in the Ministry of Home Affairs BPP online catalogue.



**Figure 4.** Display of corporate bodies and works in the Ministry of Home Affairs BPP online catalogue

In the entity of the work, the names of the authors are displayed, namely Nusa Putra and Hendraman, then below is given a brief explanation of the work of the research method, starting from a brief synopsis of the contents of the work, then the title of the series, calling number, language publisher, no. ISBN and physical description. The information displayed is simple, but this will help users know the initial report of the work of the research method so that users can guess and analyze for themselves whether the work has met their needs. While the expression entity shows how the research method works are adapted in other forms, this can help provide users with information about different work states. However, in the BPP online catalogue of the Ministry of Home Affairs, the research methods work is not available in other versions. However, at least this has shown a link between the entity of the work and the expression.

Entities of manifestation in the online catalogue display of the Ministry of Home Affairs BPP are displayed together on one screen with the item entity in the search results for presentations of research method works that can be displayed when the user clicks on the title of the blue piece. When a user enters that section, the Ministry of Home Affairs BPP's online catalogue will display the manifestation of research method works published by anyone. As for item entities, the Ministry of Home Affairs BPP online catalogue presents item form listings as a concise representation of a collection belonging to the Ministry of Home Affairs BPP library. When the user clicks on the listing of the BPP online catalogue item, the Ministry of Home Affairs will direct the user to a work or collection page that contains more information.

More about keywords when searching. Including the BPP online catalogue of the Ministry of Home Affairs directs the user to the information item the user is looking for. So

conceptually, the Ministry of Home Affairs BPP's online catalogue has helped users get to know several entities from work better by displaying the relationships between the entities.

### **3.2 Relationship with the Ministry of Home Affairs' BPP Digital Library Online Catalog with the Second Group Entities**

Relationships between entities in the second group, entities related to parties responsible for intellectual or artistic content, namely individuals or corporate bodies. The author has tested using the keyword "Guidelines," and the work has something to do with the Ministry of Home Affairs BPP. The search results for the keyword "Guidelines" are in Figure 4. The figure shows that the BPP online catalogue of the Ministry of Home Affairs shows the relationship between work entities and corporate bodies. The search results show works that are related to the Minister of Home Affairs made by corporate bodies (BPP Ministry of Home Affairs), online catalog of the Ministry of Home Affairs BPP provides an overview of the relationship between work entities and corporate bodies, which can help users in finding information about the search results of the keywords entered.

## **4. CONCLUSION**

The FRBR concept has solved the problem in the cataloguing system, namely the content carrier. The FRBR concept emphasizes digital cataloguing of information that can and has helped users find sources of information in the BPP online catalogue of the Ministry of Home Affairs, both in finding, identifying, or selecting specific sources of information. The application of FRBR in the BPP online catalogue of the Ministry of Home Affairs has assisted users in finding sources of information that match their search criteria by using keywords. Thus, users can identify and select information sources according to their needs. The Ministry of Home Affairs BPP online catalogue provides information and specific characteristics related to content, language, physical descriptions, and others. The Ministry of Home Affairs BPP online catalogue also shows and makes it easy for users to access other sources of information by clicking on the section. In conclusion, the results of this study indicate that the application of FRBR in the BPP online catalogue of the Ministry of Home Affairs has helped users trace information sources through information retrieval facilities.

## **5. REFERENCES**

- Beall, J. (2014). Some Reservations about FRBR. *Library Hi Tech News*, 23(2), 15–16.
- Croissant, C. R. (2012). FRBR and RDA: What They Are and How They May Affect the Future of Libraries. *Theological Librarianship: An Online Journal of the American Theological Library Association*, 5(2), 6–22.
- Hart, A. (2016). *The RDA Primer: a Guide for Occasional Cataloger*. Linworth.
- Hendrawan, M. R. (2012). Implementasi Konsep FRBR pada Portal AustLit. *Visi Pustaka*, 14(3), 60–63.
- Jonsson, G. (2017). The Basis for a Record: In the Light of Functional Requirements for Bibliographic Records. *IFLA Journal*, 29(1), 41–46.



- Kelley, S. (2014). RDA and the Future of Machine-Generated Bibliographic Records. *Technicalities*, 3, 10–17.
- Oliver, C. (2013). *Introducing RDA: A Guide to the Basics*. American Library Association.
- Septiansa, Y., & Firdaus, Y. (2012). Analisis Penerapan Metode Functional Requirements For Bibliographics Records (FRBR) pada Sistem Katalog Perpustakaan Digital.
- Sugiyono. (2016). *Metode Penelitian Kuantitatif, Kualitatif dan R & D*. Alfabeta.
- Tillett, B. (2005). What Is FRBR? A Conceptual Model for the Bibliographic Universe. *The Australian Library Journal*, 54(1), 24–30.