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# APPRAISING THE QUALITY OF MALAYSIAN UNION CATALOG

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## ABSTRACT

*This study attempted to highlights issues relating to authoritativeness and quality of Malaysian Union Catalog, known as Katalog Induk Kebangsaan (KIK). The development of KIK records involved participation of 101 “participating libraries” in Malaysia. The study adopted document analysis methodology where 500 bibliographic data have been selected from the database. The bibliographic data were analyzed based on its compliance with International Standards like MARC21 and AACR2R. Each data were screened before going through the analysis process. Only qualified data were analyzed in this study. The finding indicates that 90% of the qualified records analyzed in the study are developed according to the established standards like AACR2R and MARC21. As assessing the authoritativeness of the records in KIK consume so much time. Hence, random data are selected and evaluate by benchmarking with AACR2R and MARC21. The findings and discovery of the study are significant in highlighting the authoritativeness and quality of the Malaysian Union Catalog bibliographic.*

**Keywords** – Malaysian Union Catalog, Katalog Induk Kebangsaan, Authoritativeness, Malaysia, Quality Catalog Record

## **Introduction**

National union catalog is the catalog of combined holdings of several libraries. It combines the catalog records of multiple libraries into one database using a single or master bibliographic record with specific item records and summary holdings data for each institution attached to it (Beam & Copeland, 2001). Commonly, people always preferred union catalog to be known as directories on what is held by others where each institution makes details of the resources (Burnhill, Guy & Osborne, 2006). Initially, most union catalogs are regional or consortium based. Later, with the advent of technology it makes the union catalog becomes more accessible. With computer based networks, it has allowed the national and international sharing their holdings. Increases in the volume of information available, and the growing expectation of library users have put a new demand on libraries especially in resource sharing (Severt, 2003). As this resource sharing demands, union catalogs have become more crucial to libraries as a reference and resource sharing tools. This situation makes more libraries involved in producing their own union catalog while some union catalog project has been brought to national level. This scenario does not exclude Malaysia from having their union catalog.

## **Malaysian Union Catalog**

In 1978 the development of Malaysian Union Catalog started with printed catalogs and being used until end of 1990. During the period, only few “participating libraries” contributed their records to the project. It involved only few libraries which are National Library of Malaysia and five universities libraries such as Universiti Sains Malaysia, Universiti Kebangsaan Malaysia, Universiti Malaya, Universiti Pertanian Malaysia (now is known as Universiti Putra Malaysia) dan Universiti Teknologi Malaysia. Impressively, until 1990, 480,000 catalog records were accumulated and the project has been recognized as the biggest bibliographic database in the country. Later, with the advent of technology, MALMARC (Malaysia Machine-Readable Cataloging) was established and used for the union catalog as the standards format of cataloguing records where Computer Center of USM has acted as the host and organizer for the project. Unfortunately in the 1990s, the project rested since most of the participating libraries have their own integrated library system. However, in November 2005, a project called as Katalog Induk Kebangsaan (KIK) was established to pursue the older function of the national union catalog. The project was organized in three phases with the contribution and collaboration

of different types of participating libraries throughout Malaysia. At this time, the project established using the web-based version of KIK whereby the union catalog can be access remotely through internet at <http://kik.pnm.my>.

Until 2011, KIK project has been run using web portal for more than five years and the holdings of bibliographic data increases. ThereforeThe quality of the KIK bibliographic catalog

### **Summary of Issues**

Yushiana Mansor and Zuraidah Abd Manaf (2008) highlighted that catalog records are used as a tool to access the library's collection. Besides, it is crucial for these records to have some "quality". Graham (1990), Noryati Abdul Samad (1994) and Thomas (1996) agreed that the "quality" of the records is depending on its cataloging process. It must intellectually accurate, consistent and free of errors especially in their access points.

Coyle (2000) states that there are no measures of OPAC effectiveness that we could use to evaluate the virtual union catalog, but because we do have a centralized union catalog, we are able to make comparisons between catalogs. She studied the virtual union catalog based on the system search capabilities which the findings indicates that a virtual union catalog should have database consistency and search accuracy, system availability, capacity planning for campus OPACs and network and sorting, merging and duplicate removal process. Therefore, this study has inspired the researcher to look at the quality of Malaysia Union Catalog with main objectives to investigate the authoritativeness of KIK records. The study will assess the authoritativeness of the records by looking at the compliance of the records with AACR2R and MARC21.

### **Purpose of the Research**

The purpose of the study is to investigate the authoritativeness and quality of the records because, trustworthiness or reliability of a union catalog record is highly depends on the process of cataloguing the materials. The study attempted to appraise the level of compliance of KIK bibliographic data towards AACR2R and MARC21.

## **Literature Review**

Union Catalog housed multiple libraries' bibliographic records in the same repository according to certain standards with the provision of access to its information. It allows the patrons who want to dig out information scattered in many libraries by utilizing this single access gateway. The remarkable idea of initiating a cooperative access through union catalog was triggered since the concept of shared cataloging becomes the major concern in librarianship. In 1901, the first regional union catalog was initiated by California State Library which at that time printed catalog cards were massively used (Rupp-Serrano, 2000). These union catalog cards covered non-fiction books and periodicals. According to Weber (1976), dozens of new union card catalogs begun in 1930s and notes that a 1940-41 ALA survey of programs recommended future coordination to assure thorough coverage, minimum overlap and sound fiscal support. At this time, the function of union catalog cards were merely used to support shared cataloging or cooperative cataloging and inter-library lending facilities among cooperated libraries. From this general review of history, two gigantic type of union catalog emerged and both exist in different formats. These union catalog projects are Mansell and WorldCat. Mansell catalog is the enormous printed or physical union catalog project published by Mansell Information/Publishing Ltd while WorldCat is the online or virtual union catalog project handled by the OCLC.

National union catalog provides the paradigm of "one-stop shopping" where users' needs could be satisfied through single route of information searching. Whether the union catalog is a centralized or virtual union catalog, they provide simultaneous access to vast materials or collections (Hider, 2004). Hider (2004) highlighted, a union catalog served interlibrary documents delivery. Thus if a union catalog was made to be a national catalog, it should provide public access to the union catalog and stimulate the end-users to utilize all potentially valuable interlibrary loans and interlibrary transactions.

Abrera & Shaw (1992) in their investigation on the frequency of use of the cataloging rules provided that any resources can and most likely be catalogued with a set of pragmatically derived core rules. They stressed that assurance of standardised processes can only be achieved through consideration and execution of the activities as the official, codified exposition of the rules as provided by the Anglo American Cataloguing Rules 2nd Edition. According to

Svenonius & McGarry (1993), it has been widely agreed that one of the important factor in determining a quality catalog record is the aspect of consistency and accuracy in the forms of the headings. In authority control, the major goal is to achieve consistency and accuracy by adhering to standards and guidelines. In the case of subject authority control, these include the Library of Congress Subject Headings (LCSH), Subject Cataloguing Manual: Subject Headings, USMARC Formats, and Anglo-American Cataloguing Rules, second edition. In one of their research projects, Chan & Vizine-Goetz (1997) collected and analysed data regarding assigned subject headings, with the intention of helping to improve the quality and efficiency in subject authority control. Their findings indicated a relatively low rate of error, but managed to instil some understanding about the nature of error and obsolete elements in assigned subject headings and their pattern of occurrence and preponderance. They proposed this as a helpful situation in the effort of developing or enhancing automatic error correction.

## Methodology

This study adopted Record Analysis Method. Samples of records were extracted from the KIK databases via its portal. (<http://kik.pnm.my>). A search was done using keyword of “Information Communication Technology”. The data collected are only records of publications that were published from 2006 - 2009. Publications of year 2010 were not collected since it was assumed that all collections from 2010 were not yet catalogued in KIK database. This method of search was adapted from Jacso (2005) and Bosman et al. (2006) who used test searches in order to obtain holdings coverage of a database. After all the records obtained from KIK database, they were gathered in a Microsoft Excel file to ease the screening process in order to obtain only the necessary data for the study. Figure 1 indicates the research framework used in the study.

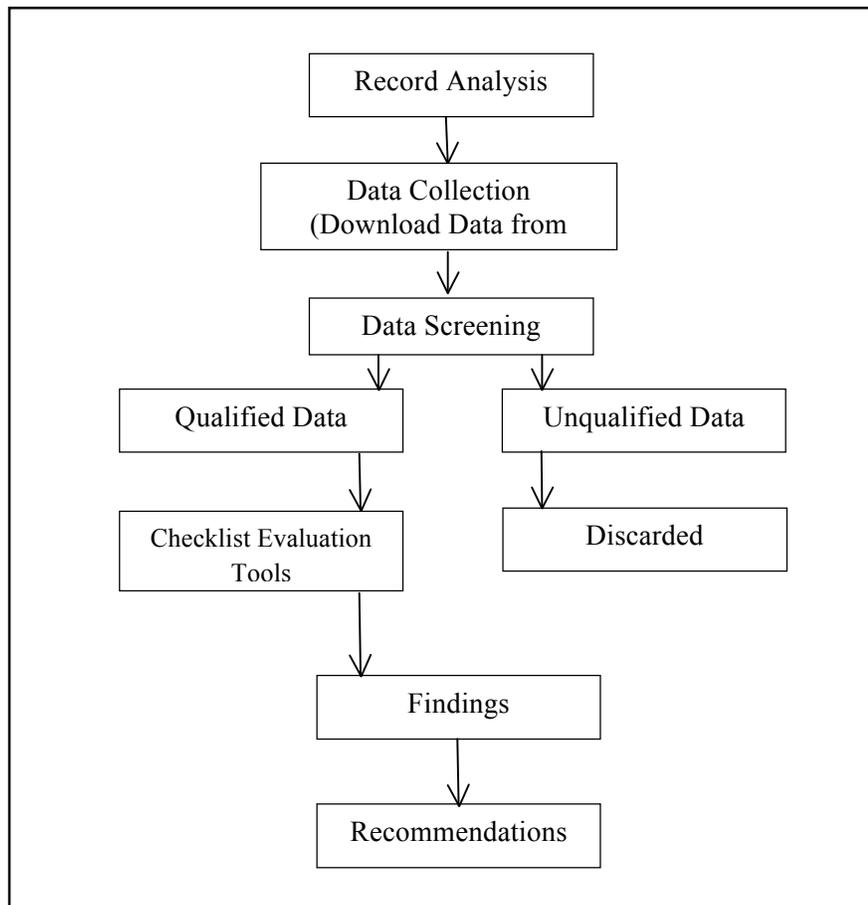


Figure 1: Research Framework

### *Data Screening*

Data screening is the process taken to eliminate unqualified data from the study. The process was done by utilizing Microsoft Excel 2010. Raw data obtained from the KIK must comply with certain criteria prepared for the data collection process in this study. The data obtained must:

- a. Published within the range of 2006 – 2009 only.
- b. Each MARC record of the collections must clearly display the publication year in the tag 260. If the publication year is not clearly display in this tag, the record is categorized as disqualified data.
- c. Unique and not a duplicate record of the same materials.

Data which did not meet with these criteria were discarded and only remaining “errors-free” data were analyzed for the study.

### *Data to be analyzed*

After the data screening, the scope of the record analysis focus on the Access Points of each bibliographic record. It was decided that the access points is the data to be studied since it enable users of KIK to obtain desired document or information. Besides, in information retrieval, the term access point refers to the mechanism that enables a user to discover a target document or other listed item (Chan, 2007 p.145). Therefore, it can be understand that error in access points could harm the process of information retrieval. Thus, the authoritativeness study initiated to focus on the evaluation of the Access Points of the records in order to ensure efficient information retrieval within access points in KIK.

### *Access Points Study*

Charles Ammi Cutter mentioned that type of access points fall under author’s names and under titles, while Chan include that subjects of particular materials are also an access points (Chan, 2007). From these three access points only two access points were studied and evaluated, (1) author’s names (Person, Corporate Bodies and Meetings) and (2) title. However, subject access points were not evaluated due to the un-similarities of subject cataloging scheme used among participating libraries. For example, some government agency libraries use Sears List of Subject Headings while Academic Libraries apply Library of Congress Subject Headings Schedule for

their materials. The mixtures of subject assignment in the KIK records restrict the records to be evaluated fairly. Besides, this inconsistency makes the data hard to be evaluated with simple standardized checklist evaluation method.

### *Checklist Evaluation Tool Design*

Bibliographic record samples acquired from KIK were evaluated using a checklist evaluation tool in order to determine their authoritativeness. Checklist evaluation tool was chosen as it able to evaluate the authoritativeness of those records. The same method was used by Chapman and Massey (2002) whereby two sets of checklist were developed by UK Office for Library and Information Networking (UKOLN) to evaluate the accuracy, validity and reliable catalog records. However, the checklist evaluation tool was modified and benchmarked with Anglo American Cataloging Rules 2<sup>nd</sup> Revision (AACR2R) and Machine-Readable Catalog (MARC21). By benchmarking to these International standards, the assessment of the authoritativeness of the bibliographic records creates two divisions within the evaluation checklist. First division is the checklist evaluation was created based on AACR2R and called as AACR2R Checklist while the second division grounded on Machine-Readable Catalog (MARC21) standard and named as MARC21 Checklist.

#### **A. AACR2R Checklist**

As the evaluation of the bibliographic records authoritativeness is based on Access Points, the first and second division of the evaluation checklist was purposely created to evaluate author access points and title access points. AACR2R Checklist was created by complying the checklist with AACR2R rules in Chapter 21 (Choice of Access Points), Chapter 22 (Heading for Person), Chapter 23 (Geographic Names), Chapter 24 (Heading for Corporate Bodies) and Rule for capitalization (Appendix A – AACR2R). Each rules and sub-rules of each chapter mentioned were applied in the evaluation checklist. Then, AACR2R Checklist was divided into two separate evaluations which cater for (1) Author Access Points and (2) Title Access Points. Checklist for Author Access Point named as AACR2R Checklist (A) while the other one named as AACR2R Checklist (T) for Title Access points. Each access point's evaluation utilized different checklist evaluation criteria depending on the type of access points.

i. AACR2R Checklist (A)

Table 1 is the example of AACR2R Checklist (A) which was used to evaluate access point of the records

Table 1: Example of AACR2R Checklist (A) – Author

No.	KIK Control Number	Year of publication	Evaluation Criteria		
			Improper Author's Name	Incorrect Choice of Main Entry	Acceptable Record
1	725550	2006			
2	1444434	2006			
3	7054959	2007			
4	7538260	2008			
5	8028881	2009			

Each records form KIK database were assigned with KIK control number. This control number gives each record a unique identification number to distinguish a record from another and it was used as the primary ID for each bibliographic records evaluated. The year of publication was also indicated in the checklist to separate the collection according to their publication year. In AACR2R Checklist (A), three criteria were utilized to evaluate the authoritativeness of KIK bibliographic records:

a. Improper Author's name

Improper Author's name is the evaluation criteria which identify wrong punctuation, wrong form of headings and wrong variation of heading (personal name) which involve rules in Chapter 21 (Choice of Access Points), Chapter 22 (Heading for Person), Chapter 23 (Geographic Names), and Chapter 24 (Heading for Corporate Bodies) of AACR2R, typographical error, contained in each records being analyzed.

b. Incorrect Choice of Main Entry

Main Entry in KIK portal was represented by the terminology of "Author (Pengarang)" or "Conference Name (Nama Persidangan)" when particular bibliographic information of a material is displayed. Therefore, the main entry was evaluated to identify whether such

main entry is properly selected or chose for each record. The evaluation criteria were based on all rules in Chapter 21(Choice of Access Points) of AACR2R.

c. **Acceptable Records**

Acceptable records are records that completely perfect and comply with AACR2R rules.

ii. **AACR2R Checklist (T)**

The Table 2 is the example of AACR2R Checklist (T) which was used to evaluate the Title access point in records analysis method.

Table 2: Example of AACR2R Checklist (T) – Title

No.	KIK Control Number	Year of publication	Evaluation Criteria		
			Improper Title	Improper/ Missing Statement of Responsibility	Acceptable Record
1	725550	2006			
2	1444434	2006			
3	7054959	2007			
4	7538260	2008			
5	8028881	2009			

a. **Improper Title**

Improper Title evaluation assesses each record by its incorrect punctuation for title, incorrect typography, invalid punctuation and general material designation (GMD) of the material. These evaluation criteria were based on Chapter 1 of AACR, Rule 1.1B – 1.1E6. Moreover, improper use of rules for capitalization was also checked (Appendix A – Capitalization).

b. **Improper/Missing Statement of Responsibility**

This evaluation assesses records with improper assignment of statement of responsibility (SOR) of the materials. Punctuation, missing SOR and improper use of omission for

author more than four SOR were evaluated. Each criteria checked by this evaluation were based on Rule on Chapter 1 of AACR, Rule 1.1F – 1.1F14.

c. **Acceptable Record**

Acceptable records are records that completely perfect and comply with AACR2R rules (Rule 1.1B – 1.1F14).

**B. MARC21 Checklist**

MARC21 Checklist is the evaluation tool used to assess bibliographic records based on MARC21 rules. The same records samples from AACR2R evaluation were also used for this assessment. Author Access Point and Title access point were assessed according to rules in MARC21 which involves rules for tag 100, 110, 111, 245. Rules in Tag 100 and 110 were applied to MARC21 Checklist (A) for author access point while rules in Tag 245 were applied to MARC21 Checklist (T) which meant for title access point. Moreover, both access points were evaluated using the same evaluation criteria. Table 3 demonstrates the example of MARC21 Checklist for both access points evaluation.

Table 3: Example of MARC21 Checklist (A) / (T) – Author / Title

No.	KIK Control Number	Year of publication	Evaluation Criteria			
			Improper Tag No	Improper Indicators	Improper/Missing Subfield Code & punctuation	Acceptable Records
1	725550	2006				
2	1444434	2006				
3	7054959	2007				
4	7538260	2008				
5	8028881	2009				

a. **Improper Tag Number**

Improper tag number evaluation was used to determine whether the Author access point or title access point was assigned with incorrect tag numbers. The tag number must be used accordingly such as:

- i. 100 for Main Entry - Personal Names
- ii. 110 for Main Entry - Corporate Names

- iii. 111 for Main Entry - Meeting Name
- iv. 245 for Title Statement

b. Improper Indicator

Improper Indicator evaluation determine the improper use of indicators in each access points according to Rules of MARC21 for tag 100, 110, 111 and 245. For tag 100, 110, and 111, only the first indicator was evaluated since the second indicator is undefined for all 1XX tag. However, for tag 245, both indicators were evaluated. Such indicators must be used properly like the following:

MARC21 Tag Description

Tag	Indicator	Purpose of Indicator
100	0	Forename
	1	Surname
	2	Family Name
110 and 111	0	Inverted Name
	1	Jurisdiction Name
	2	Name in direct order
245 (1 <sup>st</sup> Indicator)	0	No added entry
	1	Added Entry
245 (2 <sup>nd</sup> Indicator)	0-9	Number of non-filing characters

c. Improper/Missing subfield code and punctuation

Subfield code evaluation assesses both access point with improper or missing subfield code and inaccurate punctuation.

d. Acceptable records

Acceptable records are records that completely perfect and comply with MARC21 rules.

## Findings

Data for records analysis was collected by basic search using KIK portal. The search was done to collect bibliographic data of publications from year 2006 to 2009. Based on the basic search, 2,991 hits were resulted. However, only 552 bibliographic records were publications of year 2006 to 2009. However, from 552 records, only 23.4% (129 records) were qualified to be used in the study while the remaining 76.6% were unqualified data and discarded. The unqualified data were discarded due to two reasons. Firstly, 63.6% of the records (352 records) contain errors in their years of publication, and secondly another 13.0% (72 records) of the discarded records were duplicates of the same records. Therefore, only 129 qualified records were analyzed for the study. In order to analyze these data, two analyses were performed to the data, (1) AACR2R Analysis and (2) MARC21 Analysis to identify whether KIK records comply with the standards.

### *AACR2R Analysis*

AACR2R Analysis was done based on the rules regulated in the AACR2R which involved rules in chapter 21, 22, 23 and 24.

#### *AACR2R Checklist Analysis (A)*

AACR2R Checklist Analysis (A) was analyzed using AACR2R for author access point.

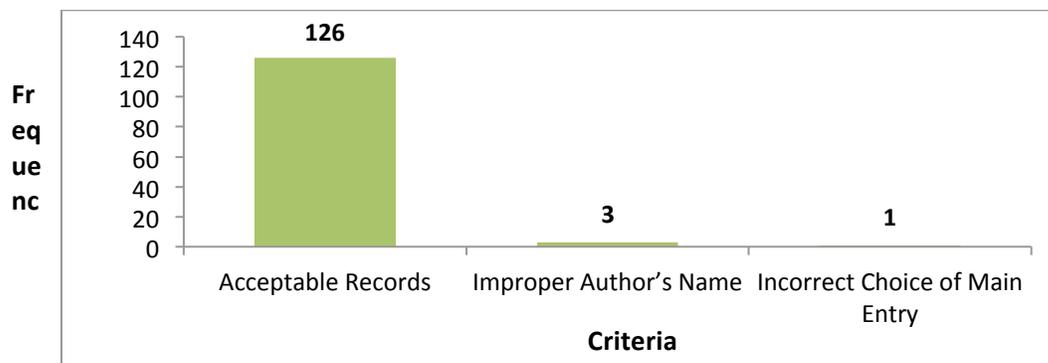


Figure 2: AACR2R Analysis on Author Access Points

Figure 2 shows the frequency of analysis on Author Access Point in KIK bibliographic records. From 129 records, 97.67% are acceptable records. Meanwhile, 2.33% (table 4.10) contain with

improper authors' name while 0.77% (Table 4) from all records contain with incorrect choice of main entry.

Table 4: Example of KIK records – AACR2R Author Access Point Analysis

No.	Control Number of KIK	Year of publication	Author / Main Entry	Title	Remarks
1	8029776	2006	-	International symposium on ICT for rural development: proceedings of ICT4rd, 19-20 April 2006, Faculty of Computer Science & Information Technology, Kota Samarahan, Sarawak, Malaysia / organized by University Malaysia Sarawak (UNIMAS), Asian Information Communication Council (AIC) in collaboration with Information and Communication Technology (ICT) Unit, Chief Minister's Department Sarawak, Malaysian Communications and Multimedia Commission (MCMC), National Institute of Information and Communication Technology (NICT), Japan-	Improper selection of Main Entry & Improper Authors' name. The authors name should be the Meeting Name or the Symposium Name - AACR2R Rule 21.1B2(d)
2	7408567	2007	Rashidah Hj. Bolhassan	Country report on information and communication technology (ICT) : Malaysia/Mrs. Rashidah Bolhassan	Authors name is not the same as in Statement of Responsibility
3	8029777	2009	The Sixth International Conference on Information Technology in Asia (2009 : Kuching, Sarawak)	Proceedings of CITA '07 : the sixth International Conference on Information Technology in Asia / organised by University Malaysia Sarawak ; in collaboration with Information & Communication Technology Unit (ICT) Chief Minister's Department Sarawak, Global Information & Telecommunication Institute (GITI) ; July 9-12, 2007.	The authors name is not assigned properly according to AACR2R Rule 24.7
4	7406204	2007	Ahmad Bakeri Abu Bakar-	Information and communication technology skills and mosque administrators /Ahmad Bakeri Abu Bakar-	Acceptable Record
5	7408558	2007	\$aThapa, Dasarath-	\$aCountry report on information and communication technology (ICT) :\$bNepal /\$cMr. Dasarath Thapa-	Acceptable Record

### AACR2R Checklist Analysis (T)

AACR2R Checklist Analysis (T) was analyzed using AACR2R for Title access point.

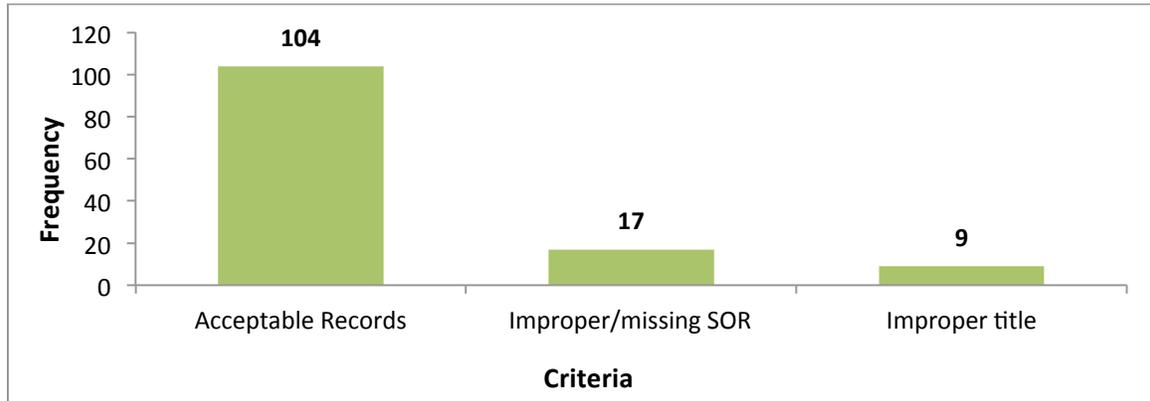


Figure 3: AACR2R Analysis on Title Access Points

Figure 3 shows the AACR2R analysis on Title Access Points of KIK records. It indicates that 80.6% are acceptable records. On the other hand, 13.2% (Table 5) were found to contain improper/missing “Statement of Responsibility” while 7.0 % (Table 5) contain improper titles.

Table 5: Example of KIK records – AACR2R Title Access Point Analysis

No.	Control Number of KIK	Year of publication	Title	Remarks
1	7083734	2006	Kesediaan teknologi maklumat dan komunikasi asas dalam pendidikan (TMKP) guruguru sekolah menengah /Rosnani Mahmud-	Improper title – Typographical error
2	7728328	2006	Kesan teknologi maklumat dan komunikasi (ICT) terhadap pelajar matematik /Kala Subramaniom -	Acceptable records
3	7048528	2006	\$aPerkhidmatan Awam Malaysia :\$bmeningkatkan kecekapan dan keberkesanan sistem penyampain perkhidmatan-	Improper title – Typographical error
4	7893559	2007	Perangkaan perkhidmatan teknologi maklumat dan komunikasi Malaysia 2007 = Information and communications technology services statistics Malaysia 2007	Improper/Missing Statement of Responsibility

5	7408560	2007	INFORMATION and communication technology lab manual-	Improper/Missing Statement of Responsibility
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**MARC21 Analysis**

MARC21 Analysis was done based on the MARC21 standard. Each rule related to Author and Access Point were referred to analyzed each records extracted from KIK database.

**MARC21 Checklist Analysis (A)**

MARC21 Checklist Analysis (A) was the method used to analyzed Author access point in KIK records.

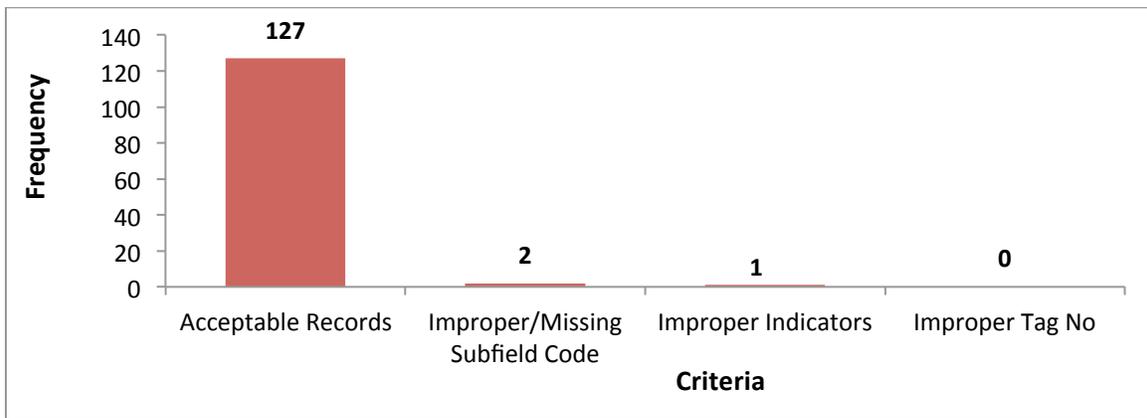


Figure 4: MARC21 Analysis on Author Access Points

Figure 4 highlights on MARC21 analysis on author access points. It shows that 98.4% are acceptable records, 1.6% (Table 6) contains with improper indicators and 0.8% (Table 6) of all records contain improper/missing subfield code. Moreover, no records contain improper tag number.

Table 6: Example of KIK records - MARC 21 Author Access Point Analysis

No.	Control Number of KIK	Year of publication	Author (Tag 100, 110, 111)				Remarks
			Tag	I1	I2	Item	
1	8029777	2009	111	1		\$aThe Sixth International Conference on Information Technology in Asia \$d(2009 : \$cKuching, Sarawak)-	Improper Indicator / Improper or Missing Subfield Code
2	8015391	2008	110	1		\$aMalaysia.Jabatan Perangkaan-	Improper or Missing Subfield Code
3	7054959	2007	100	1		\$aSuhaimi Kadir	Acceptable Records
4	7083228	2006	100	1		\$aHeeks, Richard.-	Acceptable Records
5	7240431	2006	110	2		\$aUniversiti Malaysia Pahang-	Acceptable Records

*MARC21 Checklist Analysis (T)*

MARC21 Checklist Analysis (T) was the method used to analyzed Title access point in KIK records.



Figure 5: MAC21 Analysis on Title Access Points

Figure 5 indicates the frequency of MARC21 Analysis on the Title Access Points. 97.7% of the records are acceptable and 2.3% (Table 7) records contain improper/missing subfield code. No records contain with improper tag number and improper indicators.

Table 7: Example of KIK records - MARC 21 Title Access Point Analysis

No.	Control Number of KIK	Year of publication	Title (Tag 245)			Remarks	
			Tag	I1	I2		Item
1	7764649	2007	245	1	0	\$aEmpowering information professionals :\$ba training programme on information and communication technology. :bModule 8 digital libraries and open access. :bTeacher's guide /\$cUnited Nations Educational, Scientific and Cultural Organization ; edited by Andrew Large-	Improper or Missing Subfield Code
2	7893559	2008	245	1	0	\$aPerangkaan perkhidmatan teknologi maklumat dan komunikasi Malaysia 2007 = Information and communications technology services statistics Malaysia 2007-	Improper or Missing Subfield Code
3	7959652	2009	245	0	0	\$aINFORMATION and communication technology lab manual-	Improper or Missing Subfield Code
4	5947181	2006	245	1	0	\$aCommunication technology and human development :\$brecent experiences in the Indian social sector\$cAvik Ghosh	Acceptable Records
5	6925003	2006	245	1	0	\$aTheories of the information society /\$cFrank Webster-	Acceptable Records

## Discussion

Noryati (1994) and Hider (2004) stated that quality cataloguing records must consistent, accurate, and one catalogue data must be used for same materials which can only be monitored through quality control. Moreover, records must be error-free in their access points, abide by nationally accepted cataloguing rules and standards and must be consistently maintained to ensure currency and accuracy of the bibliographic information (Noryati Abdul Samad, 1994). Therefore, the authoritativeness and quality of the records should be controlled in order to protect the quality of the cataloguing records by accurately assigned access points and comply with the appropriate established standards.

Records that comply with the standards was analyzed using records analysis and manually done by the researcher. Based on the records analysis conducted, more than 90% of the qualified records analyzed in the study are developed according to the established standards like AACR2R and MARC21.

In the phase of data collection, more than 70% of the raw data was discarded and disqualified from being analyzed. This percentage is too big and it indicates that the retrieval of the information during the data collection is not effective and efficient since the data contains with too many duplicates data and errors which leads to the discarding of the disqualified data. Then, an observation towards the discarded data was also done and surprising findings was discovered. It was found that the discarded data did not display the year of publication correctly during the search results generated. This is happened due to the incorrect subfield code used in the MARC format of the materials. The discarded data was identified as the data that within the range required (2006-2009) is when the data was observed from its MARC format.

Additionally, some of the discarded data were also the duplicate data of the same materials which cataloged by different libraries. These issues should not occur in union catalog since it should only utilized one catalog record for the same materials even though the same materials was cataloged by many libraries. This finding was supported by Hider (2004) who also found the same issues regarding union catalog. However, this could be solved by improving the quality of the bibliographic records.

## **Conclusion**

This paper provides highlights on issues relating to authoritativeness of Malaysian Union Catalog, known as Katalog Induk Kebangsaan (KIK). The development of KIK records involved participation of 101 “participating libraries” in Malaysia. They are institutions who contribute their library’s bibliographic data or catalog records to the National Library of Malaysia for the purpose of KIK project. The KIK project aims to serve as a centralized catalog database to hold all bibliographic and non-bibliographic information of “participating libraries”. As national union catalog is recognized as bibliographic information tracking device that could locate

information around the countries, hence it is crucial for these records to have some “quality”. It must intellectually accurate, consistent and free of errors especially in their access points.

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