



TIME SERIES ANALYSIS OF DAILY WALKINS: CASE STUDY OF ACADEMIC LIBRARY IN DAKSHINA KANNADA, KARNATAKA

Rajesh P

Librarian, R R Institute of Technology, Chikkabanavara, Bengaluru-560090

Corresponding Author - Rajesh P

Email - rajeshp.katapady@gmail.com

DOI - 10.5281/zenodo.7306337

Abstract:

Libraries or Library and Information Centres (LIS) are passing through a challenging time. Question is thrown upon their relevance. The LIS need to give importance to the usage-either physical or remote-by the users to keep their relevance in the fast-changing world. The paper gives a time series analysis of daily walkins or physical visits by the students to a first grade college library in Dakshina Kannada district of Karnataka state in India.

Key words: Time series analysis, Daily walkins, Academic libraries-usage, Trend.

Introduction:

Usage of library is a very important concept. Effectiveness, relevance and quality of a library can be known by its usage by the clientele. How much resourceful a library may be, top-class infrastructure it may have or highly automated environment a library has, less used LIS will not be noted by the society. Accreditation agencies like NAAC and NBA have given importance to the library usage in quality indicators.

Concept of usage of library has changed over the years. Nowadays, that a person using the library does not mean, they are visiting the library physically. Remote access of libraries has made an entry. Automation has been an important factor for the libraries to maintain their relevance.

Study of usage of library is important from the viewpoint of understanding users' satisfaction of the library and its resources and services.

Time series is an arrangement of data in accordance with time of occurrence

or in chronological order. Analysis of time series helps one know the dynamic pace of movements of a phenomenon. The general tendency of the time series data to increase or decrease or stagnate during a long period of time is called the secular trend or long-period trend. (Pillai, 2016)

Alva's College:

Alva's College is affiliated to Mangalore University conducting both graduate and post-graduate programmes in science, computer science and applications, arts and commerce. The present study is with respect to the undergraduate library. The library gives quality services to the users-the students and the faculty-with the blend of technology and print resources. The library subscribes to 10 journals and various e-resources. The library is a member of INFLIBNET-NLIST and DELNET.

Objective:

To find out the trend of library visits by the students of

1. Each programme individually
2. Total strength of students, taken together

By using

1. Graphical methods
2. Moving averages methods

Methodology:

The entries the students make in the daily register manually are taken as data for the study. To carry out time series analysis of daily walkins of each programme individually and the total, data from December 2015 to May 2019 were taken. To observe a secular trend, the period is long enough. Since the academic year is split into semesters, the data was split semester wise. Before analysing the time series, the following adjustments were made to avoid bias.

1. While calculating the daily average, the number of days the library was open each month was taken into account to divide the number of footfalls (daily walkins) in each month for getting average in each month.
2. Since comparison must be made among the different periods of time intervals, the percentage of daily walkins was obtained by dividing the average daily walkins in each semester by the number of students in each programme at that particular year. The total student strength was taken while the percentage of total daily walkins must be obtained.

The paper uses graphs and moving averages methods to study the trends in visits by the students to the library.

Limitations:

1. In this study, though the faculty members are also the users of the library, they are excluded for the

sake of convenience and focus. So, overall usage of the library cannot be known.

2. The cause for the increasing or decreasing trends are not gone into.
3. Since the library was fully automated in 2018, the data pertaining to the remote access of the library through WEBOPAC are not considered. This study fully relies on the manual entries made by the students in the daily register.
4. This paper does not give an account of usage of individual library services like circulation, reference services.

Literature Review:

Lois, Ezra Shiloba and Imoisili Ojeime (2020) attempted to analyse the library visits to the Kashim Ibrahim Library. The paper explains different factors like Durran theory of willingness to return in the students' visits to the library. The authors opine that "all libraries would be neglected if they fail to attract their patron to visit and revisit. Sahaand and Padhan (2018) studied the usage of KIIT deemed university library including the visits to the library, etc. Sujatha, et al. (2021) tried to study the usage patterns of select libraries of Andaman & Nicobar Islands. van Kempen, et al (2021) provide in their paper an overview of usage trends in the Netherlands and Finland public libraries. They see a downward trend in physical lending and increase in the number of visitors and digital lending.

There is not much literature on time series analyses of library visits in any academic library. Not many authors used time series analysis for the data of daily walkins. From that account, this study is a little unique one.

Graphical Representation of Trends of Daily Walkins:

Table 1: Percentage daily walkins

	BA	B Com.	BBA	BSc.	BCA	BHS	BSW	BVA	BA (HRD)	Total
Nov15-May16	2.80	2.00	1.60	2.14	0.94	0.17	0.75	0.23	0.77	1.84
June 16- Nov16	5.74	6.55	3.93	3.85	2.94	3.86	3.04	0.78	3.48	4.66
Dec.16-May 17	3.34	5.00	2.07	4.70	2.64	1.96	1.50	0.29	1.19	3.73
June-Nov. 2017	8.41	4.65	1.71	7.27	4.44	1.73	4.00	0.37	2.89	4.14
Dec.17-May18	5.63	5.62	1.69	6.11	3.18	2.64	3.53	0.15	2.60	4.97
June-Dec.2018	7.84	4.92	1.52	6.79	1.87	4.83	6.94	0.22	4.86	3.73
Jan.-May 2019	5.91	6.46	1.00	4.80	1.22	1.73	4.17	0.03	2.95	4.66

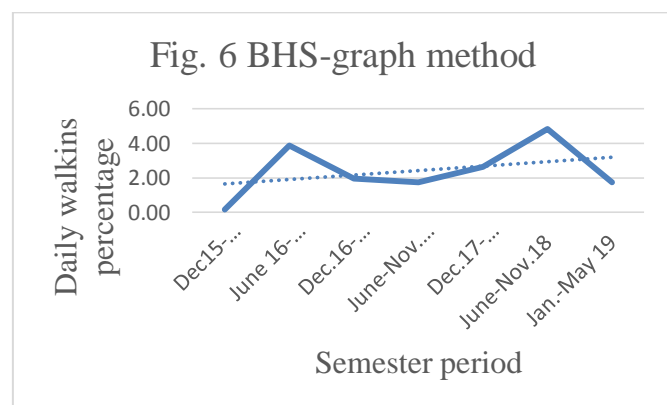
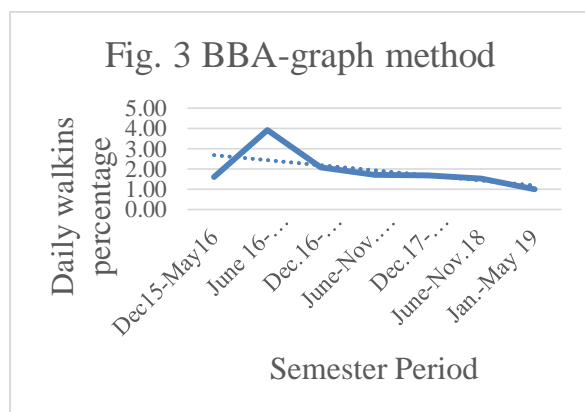
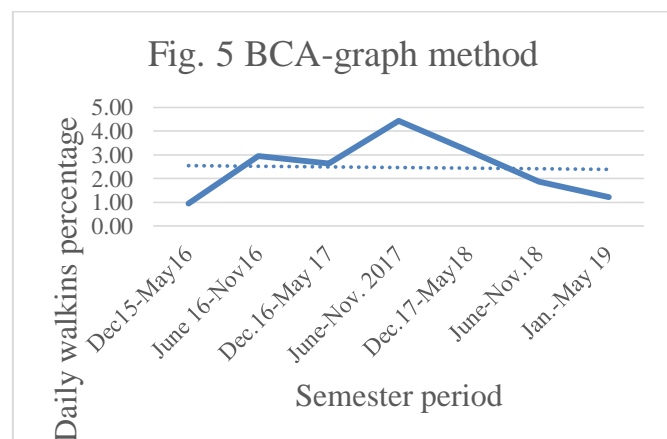
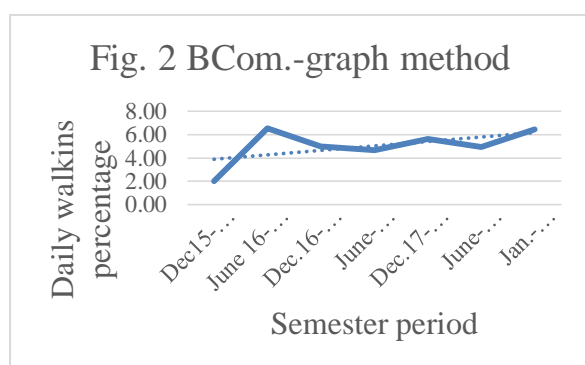
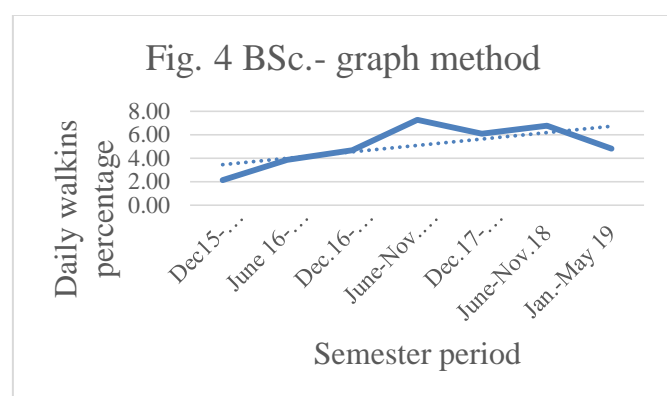
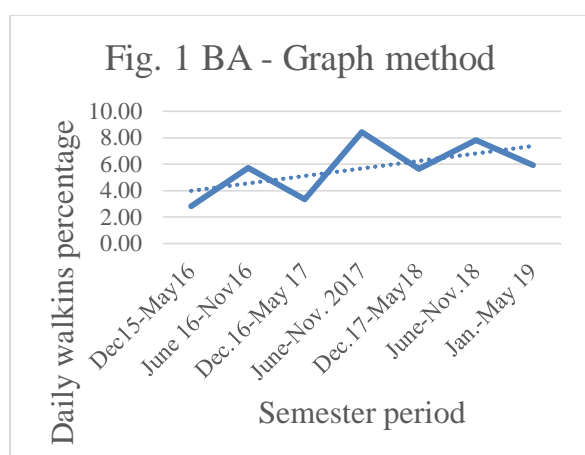


Fig. 7 BSW-graph method

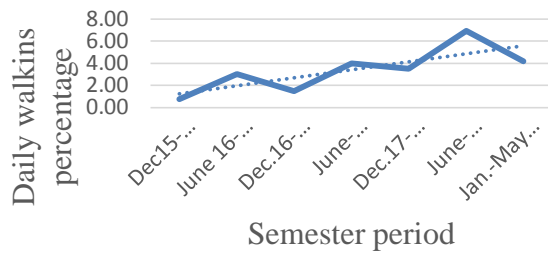


Fig. 8 BVA-graph method

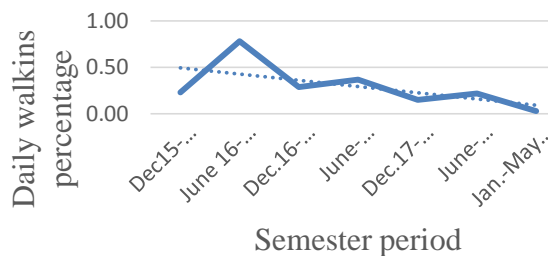


Fig. 9 BA (HRD)-graph method

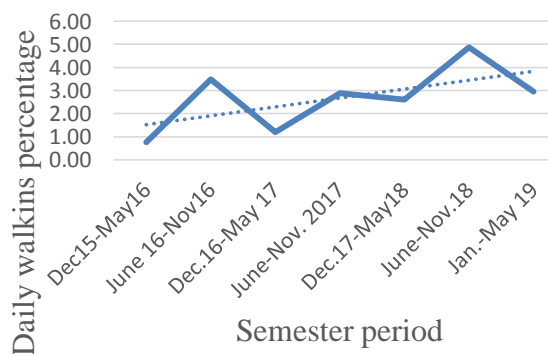


Fig. 10 Total

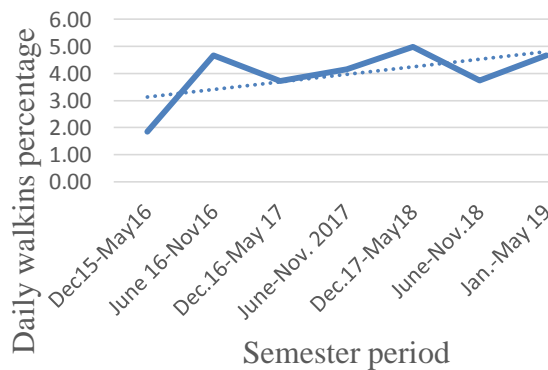
**Trend by Moving Averages Method:**

Fig. 11 BA-moving average

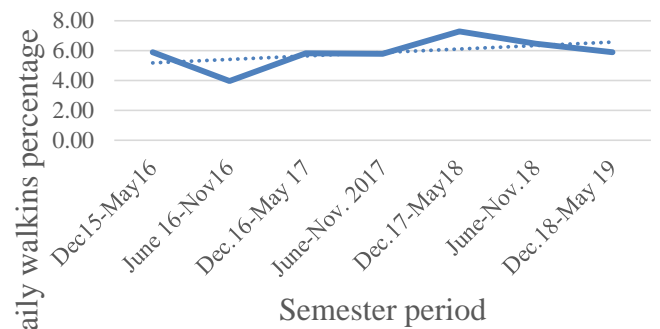


Fig. 12 BCom.-moving average

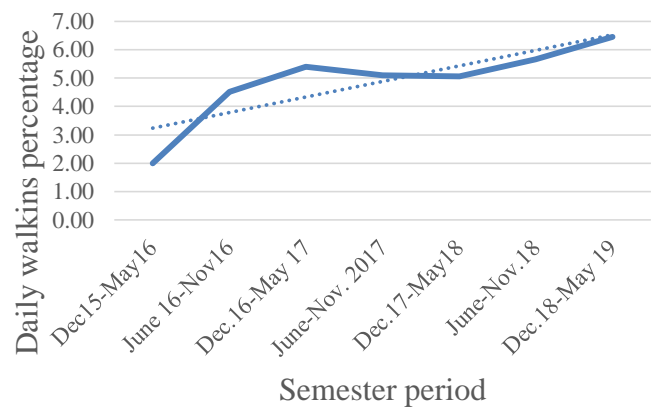


Fig. 13 BBA-moving average

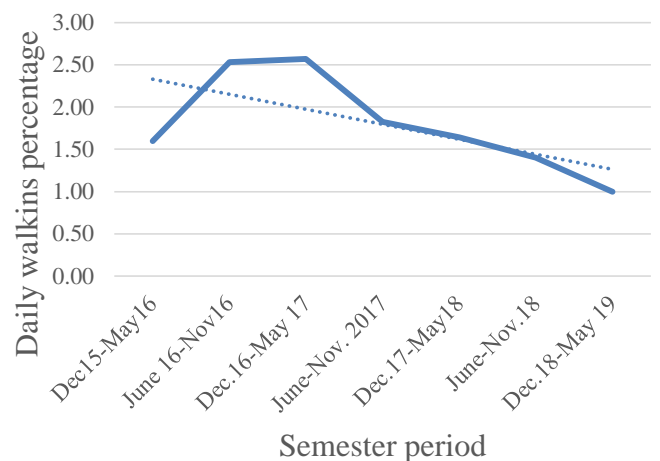


Fig. 14 BSc. -moving average

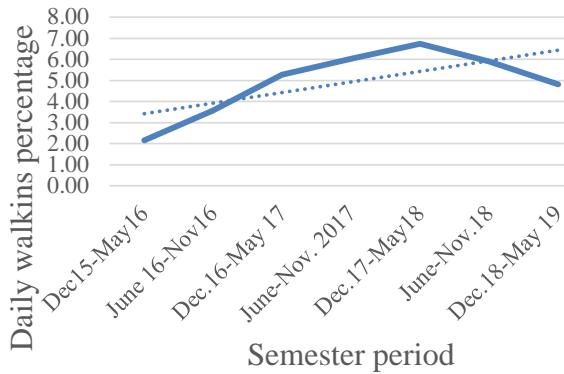


Fig. 18 BVA-moving average

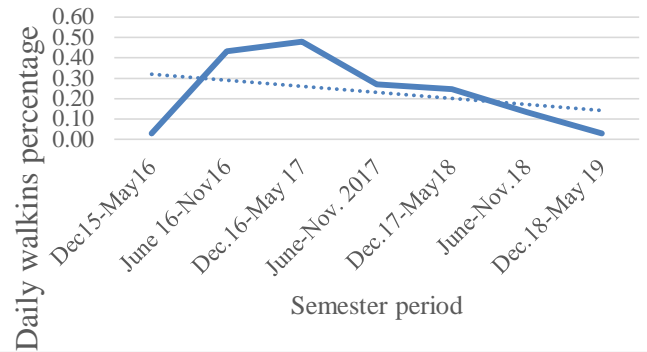


Fig. 15 BCA-moving average

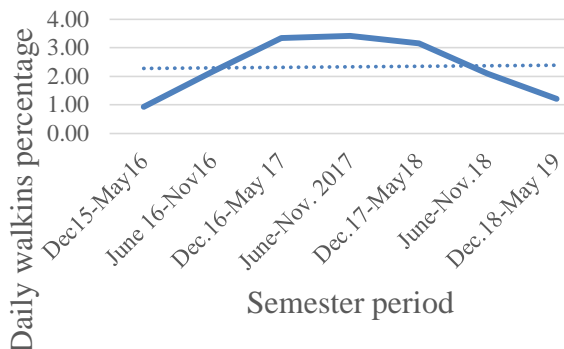


Fig. 19 BA (HRD)-moving average

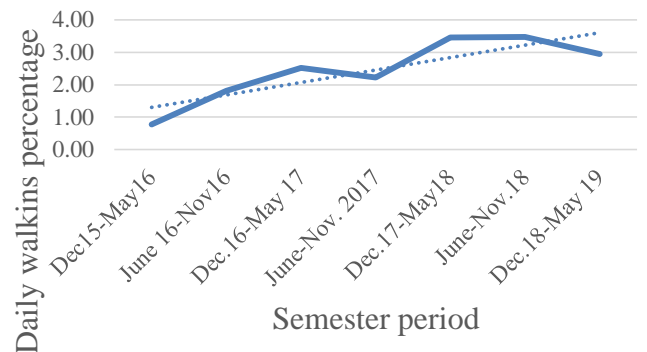


Fig. 16 BHS-moving average

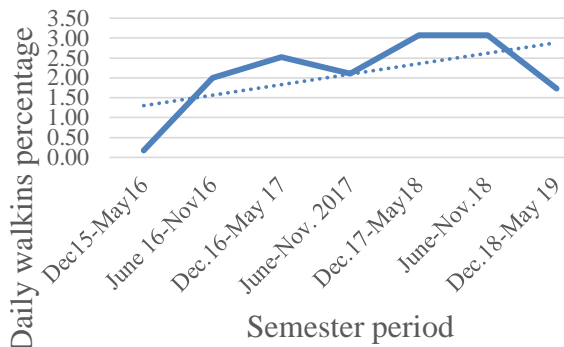


Fig. 20 Total - moving average

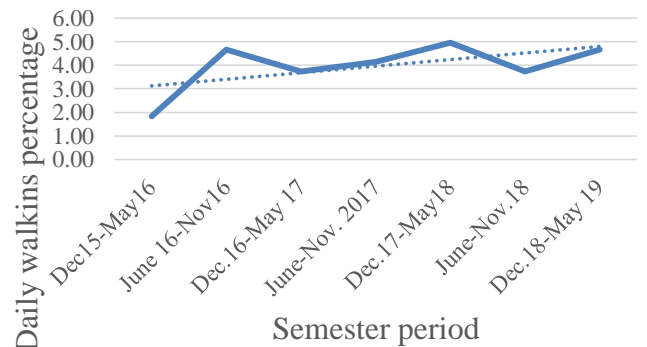
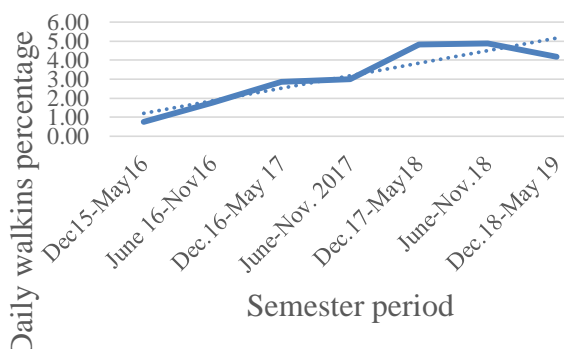


Fig. 17 BSW-moving average



Observations and Discussions:

As Isenburg, M. (2010) opined, “we see, use/visits of library vary according to the discipline.”

1. Library visits by the students of BA and BCA programmes show a very slight increase over the period, though looking stagnating.

2. Students of B.Com., BSc., BHS, BSW and BA (HRD) show a gradual and steady increase in their trend of visiting the library.
3. Students of BBA and BVA exhibit a declining trend in the library visits.

Conclusions:

Studying trends in library visits by the users is important from the viewpoint of determining the causes for the declining trend in the visits, stagnating or increasing trend in the visits to the library. This study will pave the way for further study to find a way out to increase the library visits and its usage as a consequence.

Reasons for the increasing trend in the library visits will be useful for plugging the gap in the declining or stagnating trend in library visits. As the graphs show, library visits by the students as a whole, i.e., full student strength of the college, show a gradual increasing trend over the period. But trend by the students of different programmes vary. Considering the upward trend in visits by the students as whole may lead to complacency. But stagnating trend of BA and BCA students and declining trend of BBA and BVA students make the policy makers to rethink the strategy about the usage of library. The time series analysis helps the policy makers, the authorities in stabilising the library visits by the users on a long-term basis.

References:

1. Pillai, R S N and Bagavathi. *Statistics: theory and practice*. New Delhi: S Chand, 2016. P. 591. Print.
2. YABANET, Lois and GBAJE, Ezra Shiloba and ODIGIE, Imoisili Ojeime. "Understanding Library Visits: Perceptions of Postgraduate

Students on Information Services in Kashmir Ibrahim Library" *Communicate: Journal of Library and Information Science*, 2020, vol. 20, n. 1, p. 77. [Journal article (Paginated)]. Web. 3 Oct. 2022. "<<http://eprints.rclis.org/43254/1/Understanding%20Library%20Visits%20the%20Perceptions%20of%20Postgraduate%20Students%20on%20Information%20Services.pdf>>"

3. Sahaand, Payel and Padhan, Hrudayananda. "Students usage of Library in KIITDeemed to be University, Bhubaneswar: A Case Study from the Students Point of View" *Library Waves*. 4(1) 2018p. 12-17. Web. 3 Oct. 2022. "<<https://www.librarywaves.com/index.php/lw/article/view/62/64>>"
4. T. Sujatha, Barl, Alex Praveen, B., Jerard, Augustine and Sushil Kumar Singh. "Library usage pattern of select libraries of Andaman & Nicobar Islands: a study". *International Conference of Agricultural Librarians & Users Community (ICALUC-2021) on Management of Knowledge Resource Centres in the Networked Digital Environment: Trends, Challenges and Opportunities* (25th - 26th FEBRUARY, 2021). p. 472-476 Web. 3 Oct. 2022. "<https://www.researchgate.net/profile/Madhav-Pandey-4/publication/352992731_AGRICULTURAL_LIBRARY_SERVICES_OF_CHHATTISGARH_DURING_COVID-19_PANDEMIC_AN_OVERVIEW/links/60e2b57da6fdccb74506be16/AGRICULTURAL-LIBRARY-SERVICES-OF-CHHATTISGARH-

[DURING-COVID-19-PANDEMIC-AN-OVERVIEW.pdf#page=489>”.](#)

5. [van Kempen, S., van den Dool, A., Lindberg, P. and Parviainen, L.](#) "Trends in the Dutch and Finnish library landscape", *Library Management* Vol. 42 No. 3 (2021). 167-183. [Web. 3 Oct. 2022.](#) “<<https://doi.org/10.1108/LM-03-2020-0040>>”.
6. von Isenburg, M. “Undergraduate Student Use of the Physical and Virtual Library Varies according to Academic Discipline” *Evidence Based Library and Information Practice* (2010) 5(1), 129–131. “<<https://doi.org/10.18438/B83046>>”.

Abbreviations

BA	:	Bachelor of Arts
BCom.	:	Bachelor of Commerce
BBA	:	Bachelor of Business Administration
BSc.	:	Bachelor of Science
BCA	:	Bachelor of Computer Applications
BHS	:	Bachelor of Hospitality Sciences
BSW	:	Bachelor of Social Work
BVA	:	Bachelor of Visual Arts
BA (HRD)	:	Bachelor of Human Resource Development