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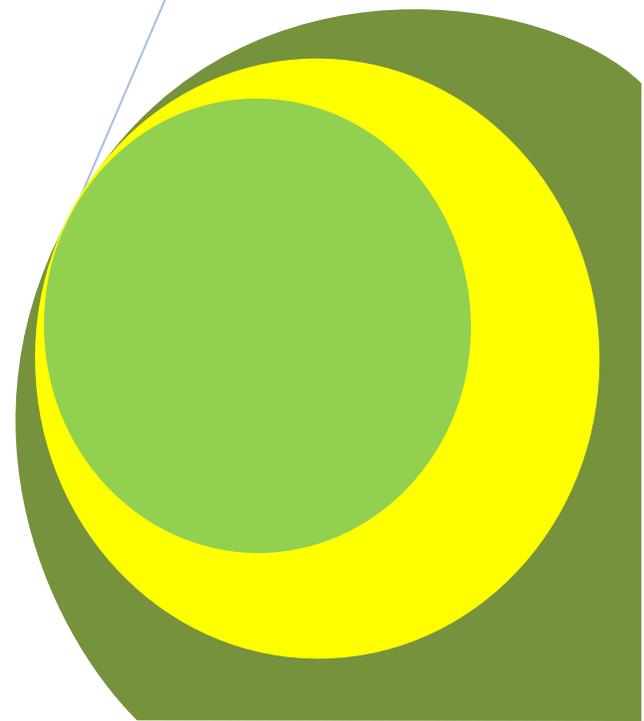
Research Article

Changing Roles of Academic and Research Libraries in Scholarly Information Communication Landscape: Case Study of Ahmadu Bello University, Zaria, Nigeria

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ABSTRACT

This study examines the changing roles of academic and research libraries in scholarly information landscape using Ahmadu Bello University, Zaria as a case study. Two research questions and one null hypothesis were formulated and tested with respect to changing scholarly information needs of faculty members and postgraduate students as well as influence of online environment on scholarly activities of the scholars in A.B.U., Zaria, Nigeria. A total of 868 samples comprising of 487 faculty members and 381 PG students were drawn from the population and used as sample of this study. The data collected through questionnaire were analyzed using frequency tables and percentages, while the hypothesis was tested using T-test for independent variables. The results indicated that most of the scholars preferred online information environment to print and library-based environment for their scholarly activities. There is also a significant difference in the influence of online environment to scholarly achievements of the scholars. The study concludes by advocating ways by which academic libraries could remain a formidable element to reckon with in Scholarly Information Environment, regardless of the proliferation of the Internet in the scholarly landscape. The study also suggests that libraries must evolve from institutions primarily as the domain of books to institutions that users can recognize as providing pathways to high-quality information in a variety of media and information sources.

Keywords: academic libraries, research libraries, information environment, information and communication technology, online information environment.

INTRODUCTION

Information Environment (IE) has been defined as a setting that is created and developed to provide resources and services which enable people to find and manage information efficiently and effectively in their learning, teaching and research activities or functions (JISC, 2009). The People in the above context are commonly referred to as scholars - faculty and students while the setting created and developed to provide resources and services that assist scholars in their academic engagements, such as teaching, learning and research, is referred to as an Information Environment.

Information Environment assists scholars to find and manage information efficiently and effectively. These eventually facilitate production, exchange, dissemination, management and preservation of scholarly output for immediate and future use. Although the information resources needed by various scholars range from books, journals, research papers, teaching resources, Digital Versatile Discs (DVDs), video, maps, databases and so on, however, all these are well accommodated in the scholarly Information Environment, both in prints and electronic formats (Borgman, 2000). In essence, Information Environment (IE) can be described as a setting, which provides free and uninterrupted interaction among scholars and their outputs, irrespective of their location (Womack, 2002). IE also encourages the promotion of scholarly interactions among the faculty and students, within and outside an academic community (Adigun, 2011). The environment referred to above could be a physical library building and its

collections; it could be an offline or online database; it could be a printed or electronic journal archive; it could be an Internet search engine or the World Wide Web (WWW); etc.

Statement of Problem

Academic Libraries once seemed like the best answer to the question, "Where do I find…?" the Internet and search engines now rules. Researchers according to Bevan (2008) – be they senior scholars or freshmen – no longer make the library and its content the first stop in their search for knowledge. Numerous findings such as those reported by Liu (2003), Sirkemaa (2003), Wilson (2005), Courant (2008), Larsen (2008), Lynch (2008), and Smith (2008), also observed the existence of shift from producing and consuming information in hard copy to multimedia digital form, which has moved the center of information gravity from research and academic libraries to the Internet in a dramatically brief period. This trend is becoming common and universal in various universities including higher institutions in Nigeria, for example, as reported in Ahmadu Bello University, Zaria, Nigeria by Adigun et al. (2010) that scholars are now jostling for the Internet to the detriment of academic libraries for their information quests.

From the above therefore, it is important to empirically note the extent at which the roles of academic and research libraries are changing and consequently respond to the changes if any, by suggesting possible solutions to reposition the academic libraries towards responding to the changes in the information demand of its present and future users, using Ahmadu Bello University, Zaria, Nigeria as a case study.

Research Questions / Hypothesis

This study will find answers to the following research questions:

1.)   What type of scholarly environment is preferred for scholarly activities by Faculty members and Postgraduate students of Ahmadu Bello University, Zaria?
2.)   What are the reasons for the choice of Information Environment by the Faculty and Postgraduate students of Ahmadu Bello University, Zaria?
3.)
The study also tested the following null hypothesis:

Ho1: There is no significant difference between the faculty members and postgraduate students of Ahmadu Bello University, Zaria in the influence of online information sources on their scholarly achievements.

Significance of the Study

This study was carried out to provide empirical evidence on changing scholarly roles of academic and research libraries in the scholarly communication landscape. The study will provide A.B.U., Zaria library in particular, as well as libraries generally and content providers with an understanding of the changing patterns of information use by scholars, which affect demand for and use of library collections and services as well as other sources and services. The data generated by this study will make it possible to evaluate academic library's current and possible future roles within the boarder of scholarly information landscape.

METHODOLOGY

This study adopted survey research method to ascertain changes in the roles of academic and research libraries. Faculty members as well as postgraduate students of A.B.U., Zaria served as population for the study. Stratified random sampling was adopted to arrive at the needed sample because the population consists of two distinct sub-groups – Faculty members and Postgraduate students (Muranda, 2004). The researchers selected 487 out of 1,980 Faculty members and adopted the krejcie and Morgan table to select 381 out of 6.155 Postgraduate students as posited by Nworgu (1991) that for large population of 6,000 and above, 381 is representative. In all, a total of 868 respondents comprising of 487 faculty members and 381 postgraduate students was selected for the study. The instrument for data collection was the questionnaire and the data from the survey were analyzed using frequency tables and percentages, while the null hypothesis was tested using T-test for independent variables at 0.05 level of significance.

Literature Review:

Scholarly Information Environment

Scholarly Information Environment (SIE) according to Saiti and Prokopiadou (2008) is the place in which individuals transform information that makes them the bearers of the values, attitudes, and beliefs held to be important by the society and by the institution in which they find expression. Gabelnick *et al.* (1990) earlier reported that the versatility of SIE is based on its ability to create or facilitate connection, both physical and non–physical, between and among scholars, irrespective of their location. Thus, they suggested restructuring of communication to link scholars' works or outputs, in order to achieve coherence in what they are teaching, learning, and researching, as well as boost intellectual interaction, such as collaboration and networking, with other faculty and students. Scholarly Information Environment (SIE) assists scholars in finding and managing information efficiently and effectively especially through the production/creation, organization and management, preservation, dissemination, access and exchange of scholarly output. The SIE is also an integrated and unifying environment comprising multiple sources and each serves a specific, though complementary, function within the environment, despite the fact that each source operates in an independent yet closely coordinated manner. Users have the autonomy and flexibility to use either all the sources in a unified manner, or independently according to needs.

Papin-Ramcharam and Dawe (2006) identified the stakeholders in the Scholarly Information Environment (SIE) to include academic and research libraries, library directors, publishers/presses, vendors, content providers and users - faculty and students. Each of the environments comes with its unique features and opportunities. The SIE contains seamless and joined-up services, with the underlying assumption that each information resource is potentially related to every other resource, for the benefit of the users. Moreover, Dunsire (2006) observed that SIE supplies services and resources to support the end user's need for processing information such as the standard procedure of finding, identifying, obtaining and use of information as defined by the Functional Requirements for Bibliographic Records (FRBR) (IFC, 2008). Other tasks required by professionals and mediators in the scholarly information environment include the creation, management and preservation of information resources (Borgman, 2001). The scholarly information environment therefore offers the widest range of resources including physical and digital information.

Changing Roles of Academic Libraries in Scholarly Information Landscape

Libraries generally serve as access points to information and a well established and functional library is essential for the survival of an academic institution (Cisse, 2004). Thus academic library as a focal point for teaching, learning, and research, is expected to provide standard information resources and services. The iconographic power of a College or University Library, expresses a purpose not just to collect, but also to organize, preserve and make knowledge accessible (Association of College and Research Libraries – ACRL, 2006). In its placement and prominence, the academic library conveys its integral role in supporting higher education's core missions of teaching, research and education, as such the library occupies a central position, in academic environment and administration. Information, such as scholarly information, was distributed to its consumers by a familiar and relatively stable system until the rise of electronic networks. Womack (2002) noted that publishers gathered edited and marketed author's contributions while information consumers procure discrete bundles of information in the form of periodicals and monographs. The libraries, on the other hand, amass large collections of published materials for the communities they served and individuals circulated materials among themselves via formal and informal information-sharing networks. The roles and responsibilities of each of the parties were well understood and defined in the scholarly communication landscape.

However, electronics networks such as the World Wide Web (WWW) and other internet facilities are rapidly altering this landscape. Periodicals are moving to electronic distribution, quickly and hugely, that commercial firms such as Questia have digitized monographs and offer large homogenous repositories of information open to anyone willing to pay the subscription fees. Similarly, individuals post information on the Internet with the aid of librarians and publishers, either on personal sites or at information portals that collect materials on a particular topic, as such libraries now, often, rent access to information collections or produce their own information, instead of buying materials out rightly (Womack, 2002). However, traditional print methods of information distribution continue to function alongside newer methods, despite these challenges.

Moreover, empirical studies conducted by various authors such as Borgman (2000), Lougee (2000), Halliday (2001), Friedlander (2002), Liu (2003), Smith (2008) and Courant (2008) among many others, showed that academic libraries are struggling to keep their place as the major source of inquiry in the face of emerging digital technology. The digital technology has revolutionized, immensely, not only the way information is packaged, processed, stored and disseminated, but also how users seek and access information (Anunobi and Okoye, 2008).

Furthermore, the users' perception of the library's role in the new scholarship environment has attracted interests. It is evident that users choose alternative which is more convenient and 'qualitative' sources of information (the Internet) as submitted by Anunobi and Okoye (2008). In addition, that users of academic and research libraries perceive themselves as becoming decreasingly dependent on the library for their research, teaching and learning (Friedlander (2002), Healy et al. (2002), OCLC (2002), Foster (2004), Steinerova and Susol (2005), etc). etc). In contrast, Schonfeld and Guthrie (2007) observed that librarians generally think their role will remain unchanged and that their responsibilities will only grow in the future. According to Schonfeld and Guthrie (2007), over four–fifths of libraries believe that the role of the library as the starting point for locating scholarly information will be very important in the next few years.

Indices of Transition from Print to Electronic/ Online Environment

The time in which the library stood as the sole repository and guardian of knowledge has given way to an era in which both the production and consumption of information exceeds the library's ability to contain. However, academic and research libraries continue to perform the roles of organizing, cataloguing, storing and disseminating information in ways that faculty and students can readily access and use. Most academic libraries have made remarkable strides in providing users with organizational paradigms and strategies for accessing information resources beyond their own holdings. Moreover traditional structures of authority and qualitative certification, which the library embedded both in its own collection and in the scholarly apparatus it supported, have been engulfed in a flood of information from multiple sources, disseminated primary in digital form, and retrievable by means that the library, and hence, the academy , no longer control (ACRL, 2006).

Notably, the explosion of information produced in digital form has dramatically changed expectations about the production as well as the use of knowledge. Given the Web's ability to expedite the dissemination of information in all forms, "time to market" has become a growing value and source of advantage, in the academy as well as in other domains (ACRL, 2006). The sciences, to some extent, have led other academic disciplines in this respect, particularly, in Physics, Chemistry, and increasingly Biology, data and findings commonly circulate among peers in digital form and have greatest impact prior to formal publication (Garner *et al.*, 2001). Within the field of science in particular according to Garner *et al.*, traditional means of access to the scholarly record are no longer sufficient to meet researchers' needs and expectations, or even to follow the fast pace of scientific development. They argue that rapid advances in information technology are dramatically altering the nature of scientific communication.

Researchers at different times have highlighted different reasons for the changing roles of academic and research libraries in the scholarly information landscape. Liu (2003) noted that traditional scholarly communication is experiencing tremendous pressure for change under the confluence of forces and trends such as the exponential growth of information production, the dramatic increase in subscription fee, the increasing storage cost of printed document and the increasing power and availability of digital technology. Similarly, ACRL, (2006) attributed the changing roles of academic and research libraries to intense competition for resources within higher education institutions, growing segment of post secondary education entrusted on for profit institution that cater for market demand and make no commitment to expanding or preserving the store of human knowledge and changing paradigm of knowledge production, expanding sources and modes of dissemination, faster and broader accessibility to a growing range of information as result of application of information technology.

Similarly, Courant (2008) observed that the radical changes in the practice of scholarship derived from IT take place principally via two mechanisms – networking and copying. According to Courant, it used to be expensive to get information from one place to another and very expensive to do so quickly. But it is now relatively fast and indeed approximately costless at margin, to get huge information from close or distance places worldwide via ICT, due to the advancement in the hard and soft ware that sustain ICT.

Scholarly Activities in Ahmadu Bello University, Zaria

The Ahmadu Bello University, Zaria was founded on October 4, 1962 as the University of the Northern Nigeria by the then Northern Region Government, but was taken over as a federal institution in 1975 (ABU Portal, 2012). The University engages in scholarly activities and functions such as conferences, seminars, workshops, journal and other media publications, which reflect the programmes, departments and faculties in the university. Although the university could be considered a scholarly community with varied and ever changing need for information sources and services, yet it remains focused in order to meet its goals and objectives as well as the needs of its faculty members and students in the ever changing information landscape. Currently, the University is embracing new technologies so as to serve its community optimally as reflected in the University's huge investment in ICTs which has included the University Library's Digitization (ULD) and Retrospective Conversions of its holding, as well as the

University's partnership with MTN Foundation for the development and maintenance of the University's Reference/Net Library.

METHODOLOGY

This study adopted survey research method to ascertain changes in the roles of academic and research libraries. Faculty members as well as postgraduate students of A.B.U., Zaria served as population for the study. Stratified random sampling was adopted to arrive at the needed sample because the population consists of two distinct sub-groups – faculty members and postgraduate students (Muranda, 2004). The researchers selected 487 out of 1,980 faculty members and adopted the krejcie and Morgan table to select 381 out of 6.155 postgraduate students as posited by Nworgu (1991) that for large population of 6,000 and above, 381 is representative. In all, a total of 868 respondents comprising of 487 faculty members and 381 postgraduate students was selected for the study. The instrument for data collection was the questionnaire distributed personally by the researcher alongside five (5) research assistants and the data from the survey were analyzed using frequency tables and percentages, while the null hypothesis was tested using T-test for independent variables at 0.05 level of significance.

RESULTS AND DISCUSSIONS

Out of 868 copies of questionnaire distributed to the respondents, a total of 773 (89.1%) copies were returned duly completed and found useable for this study. Their response is as presented in table 1.

Table 1: Response Rate by Academic Status of Respondents in the University

Academic Status	No of Questionnaire Distributed	No of Questionnaire Returned	% Of Questionnaire Returned
Faculty Member	487	425	87.3%
P.G Students	381	348	91.3%
Total	**868**	**773**	**89.1%**

Table 2(a): Scholarly Environment Preferred for Scholarly Activities by the Faculty Members in A.B.U., Zaria.

Scholarly Environment	Level of Preference			
	Most of the time	Sometimes	Almost Never	N (%)
Do you use the Internet/web for your research?	172 (40.5%)	207 (48.7%)	46 (10.8%)	425 (100%)
Do you use print/library-based databases for your research?	136 (32%)	204 (48%)	85 (20%)	425 (100%)
For all my research/teaching, print/ library-based databases are more appropriate.	140 (32.9%)	207 (48.7%)	78 (18.4%)	425 (100%)
For all my research/scholarly activities, online facilities are more appropriate.	115 (27.0%)	172 (40.5%)	138 (32.5%)	425 (100%)

Table 2 (b):   Scholarly Environment Preferred for Scholarly Activities by Postgraduate Students in A.B.U., Zaria.

Level of Preference			
Scholarly Environment	Most of the time	Sometimes	Almost Never	N (%)
Do you use the Internet/web for your research?	181 (52%)	139 (40%)	28 (8%)	348 (100%)
Do you use print/library-based databases for your research?	87 (25%)	139 (40%)	122 (35%)	348 (100%)
For all my research/teaching, print/ library-based databases are more appropriate.	80 (23%)	146 (42%)	122 (35%)	348 (100%)
For all my research/scholarly activities, online facilities are more appropriate.	188 (54%)	136 (39%)	24 (7%)	348 (100%)

Source: Field Survey Data

From table 2 (a) and (b), it is evident that most of the faculty members and postgraduate students in A.B.U., Zaria were using the Internet / online – based environment most of the time as against the print and library-based database for their scholarly pursuit. The findings are not in consonance with the central scholarly information role with which academic libraries are known for as observed by Schonfeld and Guthrie (2007).

The above findings further echoed the findings of Anunobi and Okoye (2008) that users (scholars) are opting for alternatives, more convenient and "qualitative" sources of information on the Internet. Faculty members and students consequently perceive themselves as becoming decreasingly dependent on the library for their research, teaching and learning. By contrast as observed by Schonfeld and Guthrie (2007), librarians generally think their role will remain unchallenged and that their responsibilities will only grow in the future. According to them, over four-fifths of libraries believe that the role of the libraries as the starting point or gateway for locating scholarly information will be very or extremely important in the next few years, a decided mismatch with the faculty and students view as evident from the findings above.

Attempt was made by the researcher to find out from the respondents the reasons for their choice of scholarly information environment. They were asked to indicate the reasons for their preferred scholarly environment using the Likert Scale. However, the options were collapsed into three: strongly agreed (S.A.), undecided (U.D.) and strongly disagreed (S.D.) in order to ease analysis. Table 3 is the summary of their responses:

Table 3: Reasons for Choice of Information Environment by the Faculty and Postgraduate Students of A.B.U., Zaria

Reasons for Choice of Information Environment	Types of the Respondents/Response							
	Faculty Members				Postgraduate Students			
	S.A.	Undecided	S.D.	Total (N)	S.A.	Undecided	S.D.	Total (N)
It is more convenient	263 (62%)	85 (20%)	77 (18%)	425 (100%)	226 (65%)	73 (21%)	49 (14%)	348 (100%)
It allows for opportunity to follow up cited articles	289 (68%)	83 (19.5%)	53 (12.5%)	425 (100%)	240 (69%)	77 (22%)	31 (9%)	348 (100%)
Facilitates more comprehensive treatment of literature.	285 (67%)	95 (22.4%)	45 (10.6%)	425 (100%)	237 (68%)	80 (23%)	31 (9%)	348 (100%)

Table 3: continues

Encourages collaboration among colleagues	200 (47%)	155 (36.5%)	70 (16.5%)	425 (100%)	157 (45%)	132 (38%)	59 (17%)	348 (100%)
Promotes interdisciplinary collaboration.	247 (58.1%)	121 (28.5%)	57 (13.4%)	425 (100%)	198 (57%)	104 (30%)	46 (13%)	348 (100%)
It allows easy and remote access.	217 (51%)	136 (32%)	72 (17%)	425 (100%)	191 (55%)	115 (33%)	42 (12%)	348 (100%)
It saves time and energy.	230 (54%)	123 (29%)	72 (17%)	425 (100%)	209 (60%)	104 (30%)	35 (10%)	348 (100%)
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It saves time and energy.	230 (54%)	123 (29%)	72 (17%)	425 (100%)	209 (60%)	104 (30%)	35 (10%)	348 (100%)

Source: Field Survey Data

Table 3 found that most postgraduate students and faculty members with 240(69%) and 289(68%) scores respectively, strongly Agreed that opportunity to follow up on relevant cited articles is the best reason for their choice of information environment. Other reasons included comprehensive treatment of literature, convenience, promotion of interdisciplinary collaboration as well as ability to save time and energy.

Form the table, it is evident that most scholars choose an information environment that allow them to follow up on relevant cited articles and that present them with comprehensive treatment of literature. Also, conveniences and promotion of interdisciplinary collaboration were the other reasons for choosing an information environment most especially the online environment. Notably, some sizeable number of respondents strongly agreed that other reasons for their choice could be hinged on encouragement of collaboration among geographically dispersed colleagues as well as easy and remove access to the environment.

Through the application of ICTs as evident in online environment, a great many faculty and students interact in an online collaborative environment. Major research collaborations now take place in academic teams whose members may never have met face to face. Online environment has also made it possible for scholars to have easy and remote access to information and allows interaction in real time via Instant Messaging services (IMs), Web 2.0 applications and other social networking services and groups such as Facebook, NetLog, Twitter, Blog, LinkedIn, etc.

Hypothesis

There is no significant deference between the faculty members and postgraduate students of Ahmadu Bello University, Zaria on the influence of online information sources on their scholarly achievements.

Table 4 : Test of Significant difference between faculty members and postgraduate students of Ahmadu Bello University, Zaria on the influence of online information sources on their scholarly achievement.

	N	Mean	Std. dev.	Variance	T Value	T Critical	Prob.
Faculty members	425	2.58	0.47	0.036	5.349	1.96	0.000
P.G. Students	348	2.79	0.33	0.021			
Total	773						

Source: Field Survey Data

Table 4 above shows the test of significant difference on the influence of online information sources between faculty members and postgraduate students of Ahmadu Bello University, Zaria at 5% level of significant. From the table, the observed or calculated t value of 5.349 is greater than the t tabulated value of 1.960 at the same degree of freedom. This implies that the null hypothesis is rejected and the alternative hypothesis is accepted. It can therefore be concluded that, online information sources as scholarly information environment has a significant influence on the scholarly achievements of faculty members and postgraduate students of Ahmadu Bello University, Zaria. The results also indicated that online information sources has significant influence on scholarly achievements of postgraduate students, that they use online information sources than the faculty members, as confirmed by the mean value as that of the postgraduate students is higher than that of faculty members.

CONCLUDING REMARKS / RECOMMENDATIONS

Evidently from the study, the scholarly roles of academic and research libraries are changing and still evolving. More Information is also emerging in different media and therefore there is a need to reposition academic libraries in its job of information provision. There are three essential actions academic institutions, through their libraries, must take to achieve the necessary transformation and, thus, remain vital forces on campus for scholarly quest and aspirations of their teeming beneficiaries:

1.   Libraries must evolve from institutions perceived primarily as the domain of the book to institutions that users clearly perceive as providing pathways to high-quality information in a variety of media and information sources.
2.   The culture of libraries and their staff must proceed beyond a mindset primarily of ownership and control to one that seeks to provide service and guidance in more useful ways, helping users find and use information that may be available through a range of providers, including libraries themselves, in electronic formats.
3.   Libraries must assert their evolving roles in more ways, both in the context of their institutions and in the increasingly competitive markets for information dissemination and retrieval. Libraries must descend from what many have regarded as an increasingly isolated perch of presumed privilege and enter the contentious race to advance in the market for information services – what is termed "taking it to the streets."

        Academic and research libraries could achieve the above, by allocating more time and resources to negotiating licensing agreements with digital providers and repositories, developing consortia and acquiring access to important databases and digital collections, re-profiling approval plans, or implementing new software to provide federated searching. The academic and research libraries can also strengthen their impacts on scholars in an information intensive environment by implementing information literacy programmes to its teeming present and future customers. Libraries should also continue in providing intermediary services, either in libraries or through entrepreneurial ventures. Arising from this, when users retrieve tens of thousands of matches from digital libraries or repositories, they will realize that searching and filtering information can be a complex task worth delegating to professionals. Therefore, modern day libraries should be occupied with the provision of intermediary services between the information sources and its users.

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