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Investigating the Use of Modern Current Awareness Services in Central Libraries of Public Universities in Tehran

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Abstract

With the advancement of information and communication technologies, and the variety of information storage media, information services in libraries have become a prominent alternative to traditional reference services. Current information services play a huge role in speeding up the retrieval and access to information needed by users. The main purpose of this study was to identify ways of presenting modern current information services in central libraries of public universities in Tehran. The study was descriptive, applied, and survey-based. At first, the process of presenting the modern current awareness services and criteria were extracted through the study of existing literature. In the next step, a questionnaire consisting of the obtained criteria was prepared to obtain information on the current information provision in central libraries of public universities in Tehran, and information on how to provide these services was collected in the centers under study. At the end of the analysis of the information obtained using SPSS statistical software. done. the research population consisted of 10 central libraries. based on the results of the research, the status of central libraries of public universities in tehran in terms of providing modern current awareness services with a significant level(0) indicates that modern current awareness in libraries is in a good condition. The status of the service, technical, and infrastructure components is at a desirable level (0/001) the status of the managerial component with a significant level (0/025) and the human component with a significant level(0) are in good and desirable status.

Keywords: Current libraries, Selective information dissemination, University

Libraries, Central libraries, Public universities, Tehran

1- Introduction to the Research

1-1. Introduction

Information is considered an essential resource for the scientific and technological advancements of any country.

Providing correct and reliable information to the audience in a timely manner and in a usable form can prevent the waste of resources, time, and redundant work in research, explorations, and inventions.

Among different types of libraries, the role of academic libraries, as part of the higher education system, is evident as centers for gathering and transferring scientific information, and as the core provider of research facilities for researchers and the development of sciences.

Academic libraries are directly connected to the educational and research needs of professors, students, and researchers, and their fundamental goal is to preserve, disseminate, and promote knowledge and support the university's educational and research programs.

In fulfilling their objectives and duties, academic libraries are faced with the ever-increasing quantity, volume, diversity, and format of information and publications, and a phenomenon called information explosion, as well as data filtering and pollution.

Failure to control this massive amount of information causes confusion for users and researchers among the unimaginable plethora of data in the research process, while they lack access to the needed information resources.

Given that researchers need both new and past information, a mechanism for finding new information can simplify the entire process of acquiring information.

Therefore, for users to access high-quality and new information of interest, appropriate measures must be devised (Pirabi, 2009).

One of the services consistently provided by libraries to their clients is information services.

With the advancement of societies towards industrialization and increasing daily occupations on one hand, and the increase in information and the difficulty of accessing desired information amidst the large volume of data on the other hand, this service has gained increasing attention.

This is to save the client's time while providing them with relevant and appropriate information.

Because one of the goals of any library is to answer users' questions and help meet their information needs.

Libraries have always tried to achieve this goal through various methods and new information and communication technologies (Hasanzadeh, 2003).

Among different types of libraries, academic libraries, due to the diversity of needs of students and professors, must provide information services tailored to the information needs of their user community.

To achieve this purpose, libraries must employ "Current Awareness Services."

In this regard, the present research aims to, while examining the level of familiarity and use of modern current awareness services in the central libraries of public universities in Tehran, provide the opportunity for planners and managers of these libraries to identify their strengths and weaknesses in the field of employing and benefiting from modern current awareness services for providing information services, and to strive to remove obstacles and problems or strengthen positive aspects.

Consequently, it prevents the waste of time, facilities, and budget.

1-2. Problem Statement

One of the main duties of libraries is to provide the information needed by users for easy and timely access from the plethora of information produced domestically and internationally.

However, given the ever-increasing growth in the quantity, volume, diversity, and physical form of information and publications, and the lack of access to all resources, libraries are forced to resort to selective acquisition tailored to their users' needs.

On the other hand, despite all investments made for university central libraries and the provision of information resources, optimal and efficient use of this stored information does not occur, leading to the waste of part of the material and human capital.

The explosive increase of information and the diversity of information resources, the lack of easy access to them, the lack of timely awareness of the existence of suitable and up-to-date information, lack of time, high workload, excessive time waste in the information gathering stage, users' unfamiliarity or low familiarity with appropriate information resources for their research and their applications and information search methods, inappropriate information indexing, lack of centralized services, and the absence of documented policies and strategies, the expansion of databases and online systems and the Internet, advancements in technologies and interdisciplinary collaborations, make it difficult for users to find their needed information among the massive amount of data (Pirabi, 2009).

Libraries and librarians are no exception to this rule.

Librarians are responsible for meeting the information needs of clients and must quickly identify the situation of the library user community and provide them with appropriate and useful information and services.

Generally, the facilities and advantages that encourage libraries and information centers to use new technologies include: speed, memory, very high accuracy in providing, storing, and retrieving information with the help of computers, and saving human resources, value creation, flexibility in facing diverse needs, integrated access to information, the possibility of inexpensive use of information from other libraries and databases, the possibility of updating and correcting information in a simple and fast manner, and resource sharing (Hoshiyar Yazdian, 2002).

The main problem of the present research stems from the fact that factors such as the growing increase in clients, the improvement of education levels, the growth in the amount of published materials, and the ability of new technologies to disseminate information, make the use of modern current awareness services essential in academic libraries.

Therefore, given the undeniable impact of new technologies on the workflow of academic libraries and the enhancement of their information service functions, library and information

science specialists must identify the extent of the impact of modern current awareness services on their various professional activities, and one of their important duties is to identify the extent of this impact on information services so that based on this, they can strive to improve these services.

Thus, before any action, it must first be examined what the status of familiarity, use, and usefulness of these technologies is in the libraries under study.

By examining it, the current status of the library in this regard is determined.

As long as information specialists and librarians are not aware of their current situation, they cannot plan properly to achieve the desired situation.

The present research has sought to achieve this goal in a way that can be helpful and guide library and information science specialists in academic libraries so that they can strive to successfully improve university library services in using new technologies.

1-3. Importance and Necessity of the Research

The main goal of current awareness is to provide the most appropriate information matching the researcher's field of study and to save time and human resources in the information finding process.

Among the most important goals of current awareness services, the following can be mentioned:

1. Updating the research profile of academic library users; 2. Extracting the information needs of academic library users; 3. Saving costs and human resources in the information gathering stage; and 4. Assisting researchers in scientific research.

The present research, by studying the status of providing modern current awareness services in the central libraries of public universities in Tehran, strengthens the theoretical foundations of current awareness services and provides the practical possibility of its implementation.

1-4. Research Objectives

Main Objective: Diagnosing the status of providing modern current awareness services in the central libraries of public universities in Tehran from the perspective of managers and staff.

Subsidiary Objectives:

1. Diagnosing the status of the service component for providing modern current awareness services in the central libraries of public universities in Tehran from the perspective of staff.
2. Diagnosing the status of the technical and infrastructural component for providing modern current awareness services in the central libraries of public universities in Tehran from the perspective of staff.
3. Diagnosing the status of the managerial component for providing modern current awareness services in the central libraries of public universities in Tehran from the perspective of staff.
4. Diagnosing the status of the human component for providing modern current awareness services in the central libraries of public universities in Tehran from the perspective of staff.
5. Ranking the variable components of providing modern current awareness services in the central libraries of public universities in Tehran from the perspective of staff.
6. Diagnosing the status of the service component for providing modern current awareness services in the central libraries of public universities in Tehran from the perspective of managers.
7. Diagnosing the status of the technical and infrastructural component for providing modern current awareness services in the central libraries of public universities in Tehran from the perspective of managers.
8. Diagnosing the overall status of the central libraries of public universities in Tehran in providing modern current awareness services from the perspective of staff.

1-5. Main Research Questions

This research seeks to answer the following main questions:

1. What is the status of the service component of the central libraries of public universities in Tehran for providing modern current awareness services from the perspective of staff?
2. What is the status of the technical and infrastructural component of the central libraries of public universities in Tehran for providing modern current awareness services from the perspective of staff?

3. What is the status of the managerial component of the central libraries of public universities in Tehran for providing modern current awareness services from the perspective of staff?
4. What is the status of the human component of the central libraries of public universities in Tehran for providing modern current awareness services from the perspective of staff?
5. How is the ranking of the variable components for providing modern current awareness services in the central libraries of public universities in Tehran from the perspective of staff?
6. What is the status of the central libraries of public universities in Tehran regarding the provision of modern current awareness services in the service component from the perspective of managers?
7. What is the status of the central libraries of public universities in Tehran regarding the provision of modern current awareness services in the technical and infrastructural component from the perspective of managers?
8. What is the overall status of the central libraries of public universities in Tehran in providing modern current awareness services from the perspective of staff?

1-7. Research Variables

This research is of a single-variable type titled "Modern Current Awareness."

1-8. Conceptual and Operational Definitions of Specialized Terms

1-8-1. Current Awareness

Conceptual Definition: A process in which the need and interest of users in receiving new information on a specific subject is received, and a specific file is created for each applicant; each time, with the entry of new documents, they are matched against those files, and relevant documents are identified and placed in each file. Using this method, each member can view the information specific to them, which they have previously declared to the library, on the computer or in the specific file or folder that librarians have provided for them (Neshat, 2000).

Operational Definition: In this research, it refers to a manual, semi-manual, semi-mechanized, or mechanized information retrieval system in which the information needed by each individual can be sent to them through various methods, including in-person notification, telephone notification, notification via mail, notification via email, sending awareness bulletins regularly (daily, weekly,

monthly) or irregularly (occasional), preparation of article lists, indexes, and abstracting services, library bulletin boards, university and faculty bulletin boards, or other means, considering the subject area, time period, language, and type of document such as bibliographic information, abstract, or the original document.

1-8-2. New Technologies

Conceptual Definition: New technologies refer to technologies that overcome spatial barriers for awareness and significantly reduce the need for local information repositories (Hajeebha, 2009, p. 12).

Operational Definition: In this research, new technologies refer to new information and communication technologies that are used for the benefit of information services in libraries and lead to the comprehensive development and improvement of access to information. The new technologies available in the libraries covered by the General Administration of Central Libraries of Public Universities in Tehran include email, RSS, virtual reference, and mobile phones.

Recent advancements in information and communication technology have increasingly demonstrated organizations' inclination to use new technologies to achieve organizational goals and also create value for audiences in terms of improving service quality, increasing speed and accuracy, reducing costs, and overall improving productivity more than ever before. With the entry of new technologies into today's societies, humans are experiencing life in a society with specific characteristics, such that living in today's world requires knowledge and skills in using new technologies, and lack of access and skills in using these tools leads to the loss of numerous opportunities in the daily lives of individuals and societies.

1-8-3. Academic Libraries

Conceptual Definition: A library established within a university for use by university students and professors, and its management and maintenance are also the responsibility of the university (Soltani, 2000).

Operational Definition: In this research, a central public university library refers only to libraries that operate as a single unit within the university, providing services to all users (students, professors, researchers) in all fields existing in the university. Therefore, faculty libraries, student

workshops, academic departments, and research institutes affiliated with the universities are not considered in this research. Also, only the central libraries of those public universities located in Tehran that are affiliated with the Ministry of Science, Research, and Technology have been examined. In fact, the research population includes the central library of the University of Tehran, the central library of Tarbiat Modares University, the central library of Shahid Beheshti University, the central library of Allameh Tabataba'i University, Sharif University of Technology, Amirkabir University of Technology, Kharazmi University, Shahed University, Alzahra University, and Khaje Nasir Toosi University of Technology.

2-Theoretical Foundations and Research Background

2-1. Introduction

Given the extensive and abundant information, users try to keep themselves updated with new publications, and librarians are expected to find ways to help and prevent their users from being overwhelmed by excessive information they are drowning in (Guzman et al., 2015).

Subsequently, librarians must take more action in providing access to them by using Current Awareness Services (Naqvi, 2013).

These services are carried out through the publication of new lists of information resources, a new book review section, production of journal tables of contents, display boards, etc.

This information makes users aware of current trends inside and outside the library.

It also helps in tracking studies, promoting excellence, and expanding users' knowledge, according to their interests.

In Current Awareness Services, users with different tastes can find relevant information depending on their own selection and interest.

However, they must make more effort to become aware of new information.

Furthermore, users' areas of interest do not match the conventional concepts of disciplines.

Therefore, there is a perceived need to devise a mechanism in the information system for quickly deciding about the relevance of each document from each user's perspective (Jaber Hussain, 2008).

2-2. Current Awareness

The emergence of the printing industry with movable type, the Industrial Revolution, the increasing expansion of public education, the expansion of public awareness, the publication of newspapers, specialized journals, books, and increasing innovations, the more frequent holding of scientific assemblies and consequently the establishment of close relationships among intellectuals, the growth and expansion of specialized and professional associations, the democratic movements of accountable governments, research and educational needs, etc., started from the end of the Middle Ages and the beginning of the cultural Renaissance, and its effects peaked and matured from the early 20th century.

The combination of these factors together led to the expansion of the production and consumption of information, and alongside these two important factors of production and

consumption of information, the issue of distribution or dissemination of information emerged. On one hand, information producers needed suitable strategies for presenting their research products in the real market of information consumption, and on the other hand, information consumers needed appropriate access to information in the minimum time.

This procedure gave rise to the idea of current awareness.

The concept of this term was that appropriate information could be transferred and presented to a wider range of interested individuals in a suitable manner.

This process was aimed at informing individuals whose interest in a topic had been documented in some way.

This process could range from preparing a list of titles of new books and journals that had entered a collection, to separating political, economic, social news, etc., in the pages of journals and newspapers.

The main audience for this type of service were enthusiasts who expressed interest in a subject, according to their professional or study background.

Consequently, the spectrum of audiences in this field was very wide, and the existing knowledge and information covered more general topics.

Moreover, the knowledge and information discussed in a general subject area fit into broad subject spectra (Jafar Biglou, 2001).

Fidoten believes that determining the first use of the term Current Awareness Services is difficult.

It suffices to say that these kinds of services originate from the need to stay updated.

Current Awareness Service is the process of disseminating current information.

Here, "current information" refers to information published in primary current sources such as journals, newspapers, and the like.

Generally, the disseminated information texts are a collection of published current information that can be in a daily, weekly, bi-weekly, etc., order.

This method helps the user in finding new materials received by a research center (Fidoten, 1971).

The Encyclopedia of Library and Information Science defines "Current Awareness" as follows: A system by which clients of libraries and information organizations are continuously and

consistently informed about new publications or materials of interest to them.

For example, through Selective Dissemination of Information, publishing bulletins, indexing services, and publishing lists and bibliographies (Soltani, 2000).

Kumar believes that current awareness means knowledge of recent developments related to specific topics of interest to each individual.

He believes that current awareness includes knowledge of:

- o New theories and hypotheses;
- o New problems that need to be solved;
- o New methods for solving old and new problems;
- o New conditions that affect what individuals do and how they do it.

He sees Current Awareness Services as meaning different things to different people and states:

These are systems for reviewing newly available documents, selecting items related to personal or group needs, and recording them, so that individuals or groups can be informed about materials relevant to their needs.

Current Awareness Services include reviewing publications immediately upon receipt, selecting information related to the parent organization's program, and announcing individual items by any means, for the purpose of notifying persons to whom they are relevant.

Fundamentally, Current Awareness Service is a means for informing specialists about the latest developments and newly acquired publications, by the library or information center (Kumar, 2008).

Shokraneh (2007) says in her study: Current Awareness Services include all methods through which up-to-date information is quickly provided to individuals who have previously requested to receive up-to-date information from the system.

Providing this service is mostly done via email.

Bashiri (1997) defines Current Awareness Services as follows: It is a continuous and permanent service that is based on various information resources such as books, journals, etc., and is provided to users in different forms such as selective dissemination of information and current tables of contents, preparation of current bibliographies, bulletins, newsletters, etc.

This service is provided to keep the user community's information updated and to save their

time.

The more specific the information community, the more specialized the information becomes. Awareness of the research activities and study interests of users plays a vital role in the success of Current Awareness Services.

This service must have appropriate coverage of existing information resources in an up-to-date and selective manner to be able to stimulate users' interests.

Among the applications of this service on the Internet are websites that are constantly being updated and notify users of each update.

Such a service is sometimes known as Alert Service (Bashiri, 1997).

In general, Current Awareness Service is one of the new methods of disseminating up-to-date information.

Through this, librarians inform users about new information resources available in their field of interest in the shortest possible time.

By performing these services, a lot of time spent searching for information will be saved overall.

2-2-1. Types of Current Awareness Services

1. **Selective Current Lists:** Includes the latest list of books and other information materials available in the collection. This service informs the user about new materials that have arrived in the collection and might be of interest to them.
2. **Circulation of Periodicals:** Refers to the circulation (passing of magazines, journals, newspapers among individuals based on their names on a circulation list). It can be done in two ways: In the first method, a list of articles from new periodicals is prepared and sent in a circulating manner to the first person on the list, and after studying, they refer the list to the second person, and the last person on the circulation list returns the list of articles to the library, and they visit the library to obtain the full text of the articles. The second method is sending the new periodicals themselves, which circulates in the same way (Kumar, 2010). A drawback of this service is that it might take a long time for these materials to reach the next person in the circulation.
3. **New Arrivals of Information Materials at the Information Center:** Helps users become aware of new resources and makes the center's resources attractive.
4. **Bulletin Boards:** Are very suitable for displaying tables of contents of new journal issues, or images of book covers, for reports and new audiovisual materials.

5. **Current Awareness Bulletins:** Include details of new materials, book reviews, announcements about meetings and conferences, and news from active center resources. This service helps the user stay informed about new developments in specific subject areas.
6. **Selective Dissemination of Information (SDI):** Is carried out to inform an individual or group of users about information resources related to their subject of interest. The goal of this service is to inform the user about new developments in their field of interest without extra, irrelevant, and unwanted information.

Prasher states the different methods of Current Awareness Services as follows:

- o Subscription to centralized commercial services;
- o Preparation and distribution of awareness bulletins;
- o Selective Dissemination of Information services;
- o Journal tables of contents;
- o Routing of periodicals;
- o Display of new arrivals;
- o Telephone notification to individuals (Prasher, 1997).

Kumar divides Current Awareness Services into two groups:

1. Services that are provided directly to individual users or user groups. This may include transferring information to individuals or groups through informal interviews, or via telephone, messages on information receipt forms, Selective Dissemination of Information services, dissemination of selected documents, automatic sending (automatic loan), and other documents.
2. Services that are provided directly to all users. These services may include lists of received materials (a list of recently acquired materials), bibliographies, indexing and abstracting services, bibliographic reviews, literature reviews, tables of contents of periodicals received in the library, etc. This service can be in the form of a Current Awareness Bulletin which may include any type of these items as well as information about current developments regarding opinions, problems, methods, etc. (Kumar, 2008).

2-2-2. Steps of Current Awareness

The steps for providing Current Awareness Services are as follows:

- a. Review or careful examination of documents immediately upon receipt;

- b. Selection of important individual document information and records related to the program of the individuals of the parent organization; this can be done by comparing documents/information with the needs of the target users;
- c. Informing users about items or information of interest to them (Kumar, 2008).

2-2-3. Main Components of Current Awareness Services Database

A range of databases that may be used during the Current Awareness Service process include: bibliographic databases, journal title page and document databases, full-text databases, websites, and multimedia databases.

Searching for current awareness is done from more than one source, and where sources have similar information, it is identified as duplicate information.

- o User Interest Profile: Which is basically created based on Boolean search facilities or the like, and during searching from databases and websites, the found information is matched with the keywords of this profile;
- o Notification (Informing): Which is mostly done electronically (sending to email) rather than in print form;
- o Feedback: Information providers thereby become aware of the result of their work. In Current Awareness Services, the request for introduced information can be considered appropriate feedback;
- o Document Delivery: Appropriate speed and responsiveness of document delivery is always a challenge for Current Awareness Services; this service is often done through mail or fax, which varies according to the type of requested documents, and operates in a chain between Current Awareness Services and Document Delivery Services (Jaber Hussain, 2008).

2-2-4. Advantages of Current Awareness Services

- o Informs the user about what is being published on subjects of interest to them, and assures them that information is filtered in a way that only appropriate information remains;
- o Can provide methods, ideas, concepts, experiences, and useful information, the results of which save the user's time and inform them about their subject of interest (Jafar Biglou, 1997).
- o By providing new and relevant information in a timely manner, the user's time is saved. These services are carried out through the publication of library news, guides to using resources, preparation of computerized current awareness systems, updating members' information, and

regular and systematic awareness of scientific news (such as receiving a new journal, article, or book).

2-2-5. Current Awareness Services in Academic Libraries

Universities are the main centers for the production and dissemination of knowledge.

Creating innovations and consequently generating new knowledge has long been one of the most important functions of academic institutions, and in this regard, the greatest effort of the academic community has been in promoting knowledge and strengthening intellectual capital, by utilizing available resources.

Among different types of libraries, the role of academic libraries, as part of the higher education system, is evident as centers for gathering and transferring scientific information and the core provider of research facilities for researchers and the development of sciences.

Academic libraries are directly connected to the educational and research needs of professors, students, and researchers, and their fundamental goal is to preserve, disseminate, and promote knowledge and support the university's educational and research programs.

The exponential growth in the volume, diversity, and format of information resources in various fields has made it almost impossible for professors and researchers, who are typically busy individuals, to regularly follow published materials.

Under such circumstances, librarians must make more effort to develop information services and related methods.

In other words, keeping pace with scientific advancements for professors, students, and researchers depends on the rapid dissemination of new information by libraries and information centers.

Given the importance of information dissemination in the present era, the most fundamental characteristic is speed in absorbing and transferring information, and the up-to-dateness of the information collection of any library or information center.

Identifying and selecting the maximum required information with minimum cost and disseminating it as soon as possible to the maximum number of applicants has been and is the wish of all information stakeholders.

This is gradually becoming more achievable with the achievements of the information technology revolution.

Selective Dissemination of Information services, which aim to continuously inform researchers

about new documents by announcing their title or abstract, especially in universities and higher education and research centers, is an effective step in accelerating the production of information, which is an urgent need of our current scientific community in facing tremendous global advancements.

In academic libraries, appropriate information can be provided to interested parties using any possible method, for example, telephone contact, circulating journals, preparing and sending journal tables of contents, lists of documents and standards, abstracts of theses, descriptive lists of new books, current awareness newsletters, and the like.

Through these services, professors, researchers, and students can be promptly informed about up-to-date information in their fields of interest to facilitate their study and research activities, and they can be made aware of new developments in these fields, such as new theories and hypotheses, and new methods and techniques (Pirabi, 2010).

2-3. Methods of Information Transfer

Once important information is selected and a systematic record is prepared, the information is sent to users through appropriate methods and various means:

- o Telephone contact;
- o Sending a message to the user to contact the reference desk;
- o Sending to the office;
- o Automatic sending of periodicals and other documents (automatic loan);
- o Sending via email;
- o Sending via the user's personal page;

Current Awareness Services will be successful when they are up-to-date and cover as many types of information resources as possible to be able to stimulate users' interests and thereby meet part of their information needs (Sayyadi Far, 2006).

2-4. Selective Dissemination of Information Services

Jafar Biglou (2000) believes that "Selective Dissemination of Information" is one of the modern methods of Current Awareness Services that was created to adapt information to the demands of clients for greater and better use of library and information center resources.

In fact, in Selective Dissemination of Information, the information system does not wait for repeated requests to arrive; rather, with a one-time declaration of individuals' needs and interest

in information, the selection and sending of information is performed automatically upon the arrival of new documents.

Jaber Hussain (2008) also considers Selective Dissemination of Information services within the realm of Current Awareness Services, which not only provides Current Awareness Services but is also customized to the user and provided in the specific domain of their requests.

When Current Awareness Services are provided to users in the specific domain of their requests, Selective Dissemination of Information takes shape.

He displays the flow of changing stages from Current Awareness to Selective Dissemination of Information services as follows:

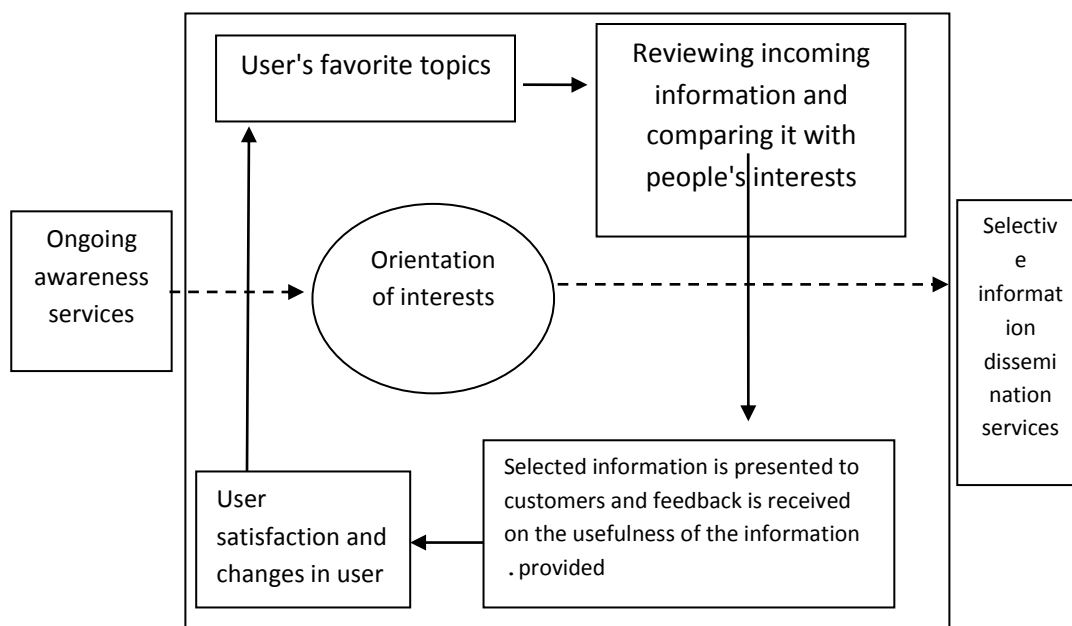


Figure 2-1. The process of transforming current awareness into selective information

2-5. Context-Awareness Technology

The next generation of digital library encompasses the concept of the ubiquitous library, and context-awareness is one of the emerging technologies essential for its implementation.

Context-aware computing is a system designed to search for and provide services that users need in their current situation, obtained by analyzing available context information (the user's current state) such as the user's current location, time, nearby people and devices, and user behavior and input data.

This contextual information can be identified by analyzing data collected from various sensors. Location-based services are a known field of applied context-aware computing technology (Yonghui, 2013).

2-6. Context-Awareness Process

The context-awareness process is similar to human communication and is divided into the stages of perception, analysis, and notification states.

This process adapts to the recognized place of use, environment, objects, user conditions and environment, etc., and continues to adapt throughout the entire process to provide different services to users (Yonghui, 2013).

2-7. Environmental Information Sensor Configuration

Context-awareness sensors are configured according to the environment and spatial characteristics.

To ensure user comfort, the first stage of information collection through sensors should not cause the user to feel discomfort or fatigue.

Sensors should be selected to meet the user's best performance.

Various types of sensors are designed to capture different types of data, such as motion sensors, electrical sensors, temperature sensors, light sensors, audio sensors, frequency sensors, humidity sensors, chemical sensors, sensitive sensors, informational sensors (Yonghui, 2013).

2-8. Virtual Reference

The provision of virtual reference services in libraries began after the 1980s, i.e., when personal computers became common and the possibility of user communication through web-based communication tools became available.

Virtual reference is a reference service that is electronically based, and the user communicates with reference staff via computer and other internet technologies without the need for physical presence.

Virtual reference service is not merely a search in online resources to find an answer, and reference questions followed up via telephone, fax, or mail are not considered virtual reference services.

Therefore, virtual reference services are reference services where the entire process related to

asking a question by the user to providing an answer by the librarian is done using internet communication tools (Mohammadi & Bozorgi, 2011).

2-8-1. Types of Virtual Reference Service Delivery Methods

Email Reference Service: This is a type of service where the library user submits an information request via email, and the librarian sends the necessary and possible answer via email.

Sometimes the librarian also sends the reference question to subject specialists and ultimately provides the final answer to the user.

If a library provides services via this method, it can design a database to initially store all emails, then embed forms to determine the scope of answers so the librarian can use it as needed, and finally, the service system can share its existing data (Hasanzadeh, 2003).

2-8-2. Real-Time Reference Services

Real-time reference service is a type of reference service during which the library user, using special software from the library's reference section placed on the library's website, poses their reference question, and the reference librarian simultaneously provides a possible answer.

2-8-2-1. Methods of Real-Time Reference Services

Chat Technology: This technology has been used in providing electronic reference services since 1995.

Users, by running a specific program placed in the library's reference section, often labeled 'Live Chat', connect with the librarian and pose their question.

The librarian simultaneously provides answers and available resources (Mohammad Esmail & Dehnavi, 2007).

Instant Messaging: This software allows the librarian and the user to communicate by sending multiple messages.

This software activates when the reference librarian's computer is turned on and actively announces message reception until the computer is turned off.

If the librarian does not respond, it sends them to the user, and if the user has disconnected from the reference desk, it sends the response to their email address.

Web Call Center: These software, with the help of routers between institutions and creating interaction between the user and the librarian, have both the capability to send questions simultaneously to partner institutions in reference services and to display web pages from the librarian on the user's computer screen (Hasanzadeh, 2003).

2-9. User Profile

Creating a user profile is the first step in the process of providing Current Awareness Services, which is prepared based on the interests and information needs of the users of these services.

To provide appropriate information, Selective Dissemination of Information (SDI) service systems are built based on the user's profile (Altmel, 2000).

Just as network creation is a very essential element in document delivery, profile creation is the key to any Selective Dissemination of Information service.

A profile is a concise description of the user's subject areas of interest.

Conventionally, a profile includes a list of keywords linked by Boolean operators, representing the user's areas of interest.

The success of a current awareness system and its related services depends on the accuracy of the profiles, which in turn largely depends on the work done in building and creating the profiles and reviewing them (Pao, 1999).

2-9-1. Type One User Profile

This user profile is designed based on approved academic disciplines taught in departments of universities and higher education institutions, and the retrieved information is sent to members.

The working method is such that all headings, outlines, and fundamental topics of each discipline are extracted, and the obtained titles are categorized under several main categories.

These categories encompass the most fundamental topics of each subject and field of study.

Then, the completed user profiles are analyzed and placed in one of these categories.

Information, after search, retrieval, and packaging, will be sent by a specified method.

The complete and accurate design of these categorizations will be done in collaboration and consultation with a group of subject specialists in each field.

This type of user profile will be sent to all academic departments.

2-9-2. Type Two User Profile

This type of user profile will be designed and sent for all faculty members who have approved research projects.

It is evident that without a strategic plan for information categorization, societies will face problems in research, education, development, and management.

On the other hand, the important role of 'time' in research, and the high speed of information production which, if access to information resources is not achieved before any result is obtained, makes research obsolete, and on the other hand, the spatio-temporal access costs for this vast amount of information and data necessitate selection.

2-9-3. Structure of a User Profile

Jafar Biglou (1997) defines a user profile as the process of optimally analyzing the topics of a research project, considering the main and auxiliary titles and keywords listed in the inquirer's interest list through standard sources and methodically, and to achieve maximum response and define an appropriate search strategy.

He believes that in designing a user profile, the following steps should be considered:

1. Discovering user needs
2. Designing a general subject schema using research titles and the reference interview process;
3. Determining subject thesauri appropriate to the research project;
4. Using reference resources related to the subject to complete the subject schema;
5. Determining appropriate descriptors for the user profile;
6. Composing the appropriate structure of search strategies according to the type, purpose, and scope of the subject;
7. Feedback;
8. Review, and performing necessary modifications and changes;

In addition to these, this process includes converting the inquirer's natural language into a machine-readable controlled language.

Determining need indicators by separating research titles into main and auxiliary keywords is one of the main stages of converting natural language into controlled language.

2-9-3-1. Discovering User Needs

Jaber Hussain (2008) says discovering user needs is the essential part of any information provision.

When the service provided is meeting user needs, it becomes particularly important.

This is because a current awareness service, by its nature, must be closely tailored to the interests of the individuals.

Finding information about user needs and interests is called a 'User Profile'.

This is something that must be done with significant detail.

A user profile includes information about the user that affects the user.

The information needs of a user profile are similar to a query.

It consists of a set of key terms.

Such a profile was originally created for the simple need to use current awareness information.

Unlike simple user profiles, an extensive user profile designed for researchers contains information whose connection to documentary information is more difficult but may still affect retrieval.

	Question date		type of question
			Name
			: Local Address
			: Official
			: Permanent
Contact number			
	Email		Mobile
	Telephone		

	Ability		Occupation
			Experiences
☐	As far as using the internet	☐	Medium
☐	Beginner	ity to work with a computer	

	Generalities		Area of Interest
	Details		
☐ etc	☐ Speech	☐ Essay writing	☐ Scope of work
☐ Research	Purpose of the		
			Study title
☐ etc	☐ France	☐ Arabic	☐ Persian
☐ English	Use of the desired language		
			Publication date
☐ etc	☐ Internet resources	☐ Magazin	☐ book
Referral sources			

☐	Bibliographic information along with the	☐	Bibliographic information	Presentation type
☐	Attached to email	☐	cd	☐ Printed version
				Type of publication

	Delivery date
☐ Monthly	☐ Weekly
Delivery frequency	

. User signature .19

(Figure 2-2. Example of a user needs discovery file (Jaber Hussain, 2008))

2-9-3-2. Matching

With a user profile that represents the user's search concepts, the profile creator must translate the concepts and terms into the system's language.

To enhance the retrieval system and syntax (combination) for better retrieval results, it is better to use thesauri for translating and expanding keywords.

Some keywords are also preserved for searching exactly as they appear in the title or abstract.

After such actions, the found vocabulary is consulted with the user for confirmation (Pao, 1999).

2-9-3-3. Search

Generally, databases typically use methods for searching information which are summarized as follows:

1. Limited Search (Search within previous search results);
2. Search using Boolean operators;
3. Keyword search;
4. Field search;
5. Hypertext search;
6. Phrase search;
7. Truncated search;
8. Free text search;

Note: Among the search methods, Limited Search (searching within previous search results) will be the best option for performing information matching in the function of continuous Selective Dissemination of Information services (Jaber Hussain, 2008).

Kaminiki (1977) discusses the role of costs in performing searches and believes that users, due to the amount they pay, expect an excellent retrieval, and information officials must try to perform the most suitable search with lower cost for them.

2-9-3-4. Notification

Citations, documents, or abstracts retrieved based on the test profile are delivered to the user.

These materials may be in the form of printed copies or article title pages.

Electronic text can be viewed through an electronic messaging system and printed copies can be made from it.

It is essential to also deliver the profile itself so the user can check its relevance to the various types of resources included in the delivered information set.

Sending information or notifying the user is also done via email, mobile phone, the user's personal page, and office automation.

Among these, email has gained great acceptance among users.

Ease of use, transmission speed, low cost, quality, and the ability to transmit a high volume of information through this technology have made it an efficient tool for information exchange (Zarbodast, 2010).

2-9-3-5. Methods of User Notification

a. In-person;

b. Telephone;

c. Mail;

d. Email: The affordability and accessibility of email have made this method the most common method of sending in electronic Current Awareness Services. In this way, first a summary of the information needed by the user is sent, and then, upon the user's request and need for the full text, this information is also sent via email (Zarbodast, 2006).

e. Sending to the User's Personal Page: This type of delivery is also very popular. Specific pages or spaces are facilities that some information systems provide to users. These spaces are graphical interfaces where the user can store, maintain, or delete specific information from the system, especially those sent to them through the Current Awareness Service. These spaces also have the ability to search the entire information system collection. These pages should also contain a copy of the user's profile so they can compare the sent results with it and modify it if necessary.

f. Office Automation: In administrative systems and with specific office automation software, each user has their own personal page, through which the needed information can be sent. Privacy and ease of use are among the advantages of this method.

g. Using Mobile Phones: One type of delivery method uses mobile phone capabilities. In this method, the user can be informed about the existence of information of interest to them, so that if needed, the full text of the information can be made available to them through an in-person visit or using the two mentioned methods. This type is mostly used for collective user awareness

about available information and Current Awareness Services. Speed and ease of use are among its advantages.

2-9-3-6. Feedback

This part of the current awareness system evaluates the efficiency of the retrieval system in terms of the retrieved materials.

Based on this kind of evaluation, the profile of individuals' areas of interest can be reviewed and modified for subsequent retrievals.

This action is also a useful strategy for updating profiles regarding the user's current and possibly changing interests.

Feedback can take different forms.

The user's reaction to each notification can be written or oral.

In the initial stage of profile creation, holding a personal meeting with the profile creator after delivering the first retrieved materials will be very beneficial; this meeting is especially essential if the result of the first retrieval is weak.

This has been an important factor in the success of any Selective Dissemination of Information service and requires the full cooperation of the requester.

The feedback mechanism should require minimal time and effort from the user.

Many organizations attach a returnable postcard with the delivered materials to receive feedback information, taking minimal time from the user.

In an electronic communication situation, asking for opinions before the connection ends can remind the user and encourage them to comment (Pao, 2008).

2-9-3-7. Profile Review and Modification:

Interviews with participants in Current Awareness Services show that almost all users of these services desire to modify their user profiles.

The conducted interviews indicate that most of the sent abstracts are accepted, but requests for modification still exist.

Among the reasons for this request are the necessity of referring to a broader topic than the intended one or a more specific topic.

Also, changes or modifications in the research topic or differences in the researched aspects can be reasons for users of these services to request modification of their user profile (Kashyap,

1998).

After receiving feedback from users and analyzing it carefully and identifying the problematic points, the user profile may need modification or adjustment due to the following possibilities: Writing problems, logical errors, accuracy of data in fields, issues with operators in retrieval, excessive complexity in assigning appropriate codes to each profile (record), phrase limits, and improper singular/plural forms of words.

Jafar Biglou believes these issues are among the most common errors in the user profile creation process.

In addition to modifying the structure and content of user profiles after receiving feedback from users and the system, continuous and ongoing adjustment of the research process over time and during service provision is also very important and essential.

The occurrence of any change in the users' research interest list over time, problems in the process of retrieving information contained in the user profile, low recall due to false drops, reduction in the database's recall, and poor performance of logical operators in the information retrieval process are among the most important factors that increase the necessity and importance of adjusting the content and structure of the user's profile (Jafar Biglou, 1997).

Finally, many user profiles may remain relatively unchanged.

For a person engaged in research in one field, the profile needs minimal change.

However, continuous awareness and modification can ensure and identify any changes in the individual's subject area.

As users become more aware of the system's capabilities and limitations, their demands also change over time.

User suggestions should also be considered (Zarbodast, 2010).

2-10. Categorization of Current Awareness Service Delivery Methods

- o Manual (Traditional) System
- o Electronic (Mechanized, Automated) System

2-10-1. Manual System

This method of providing Current Awareness Services has existed since the beginning of these services.

Even before the term Current Awareness Services was used, librarians prepared resources and

articles of interest to users.

Many librarians who remembered users' interests would match received information with these interests.

They also informed users about the existence or selection of new information through a message via communication tools such as telephone and email.

In 1850, the library of the Royal Institute of Technology in Stockholm established Current Awareness Services for the Swedish industry sector.

Librarians scanned the library's journals, selected articles based on users' interests, and distributed a list of sources and references among users (Zarbodast, 2010).

In 1969, manual Current Awareness Services in the medical field began at the Hershey Section Central Library.

This service was provided to faculty members based on core Hershey medical topics searched in 10 journals selected by reference librarians or faculty members.

In this plan, faculty members approved all 26 topics, and journals were selected for scanning. The original form for providing manual Current Awareness Services was based on the initial model.

Journals were scanned weekly by reference librarians.

Faculty members received recommended articles, which reference librarians found by matching the article with the requested topic, via a notice.

A record of each searched journal was kept on 4x6 inch cards along with useful information from the scanned journals.

Files were also maintained for each user containing the requested topics and titles of scanned journals.

From these files, subsequent journal issues for searching and the number of articles received in each journal issue could easily be determined separately (Wood & Sides, 1974).

Currently, some scientific organizations still provide Current Awareness Services manually (with a limited number of researchers).

When there is a close and tight connection between the user and the library such that the user's needs are fully known, this method is very suitable or even unparalleled for supporting and providing Current Awareness Services.

But on a larger scale, computerized methods must be adopted.

For implementing manual Current Awareness Services, library staff must have a close relationship with users; this ensures the provision of useful information services to the user (Kashyap, 1998).

2-10-1-1. Implementing Manual Current Awareness

Selection Operation: The first step in planning Current Awareness Services is the important plan of selecting the topics covered by the system. This stage must be done based on selected priorities.

User Profile Creation Operation: Users' topics of interest are identified, and an appropriate user profile is provided.

Document Profile: When the selection and user profile creation work is done, documents must be scanned and a document profile provided (Zarbodast, 2010).

Comparison and Matching: When the user profile and document profile are prepared, these two files must be compared and matched.

Evaluation: The system must be evaluated periodically.

Wood and Sides (1974) in their study greatly emphasize continuous evaluation of services. They believe that in none of the services do users take the initiative to change topics, and it is the librarian's duty to constantly consider evaluation and improvement of services and provide necessary feedback.

2-10-1-2. Conceptual Model of Traditional (Manual) Current Awareness Services

The steps involved in current awareness information work show that manual services include separate steps explained below:

Step One: Starting Point

Receiving new articles and documents;

Receiving the user's profile.

Step Two: Document Scanning

Determining and recording bibliographic details of new information items;

Scanning new documents in the form of subject terms and based on appropriate subject headings and the number of possible keywords with the appropriate reference page;

Scanning new and old items on the user's topics of interest (request) and creating an index file

for these items by selecting appropriate keywords related to these topics.

Step Three: Examining and Refining User Need

Carefully studying the user's profile;

Asking the user about their needs expressed in unstructured interviews;

Preparing the user profile by selecting appropriate terms to describe the user's information need.

Step Four: Information Matching

Studying the search profile;

Studying the document index file;

Studying the descriptive bibliography of relevant documents.

Step Five: Informing the User

Sending a bibliographic list of publications related to the user's need;

Preliminary evaluation of the received information by the relevant user.

Step Six: User Response to the Information Center

The user may request the delivery of the full text of the information whose details were previously communicated to them;

The sent information may not be suitable for the user. Therefore, they may request modification or change of their profile;

The user may request adding to their topics of interest or want more information than what was sent.

Finally, the information center will try to identify or match the user's additional needs and will therefore modify previous actions (Jaber Hussain, 2008).

Although using this model leads to high accuracy in the process of analyzing and matching document content and need indicators, in today's large and complex organizations where the scope, volume, and complexity of information needs have increased significantly and the number of users is itself unparalleled, it seems that using this model is impossible or at least inefficient.

In recent years, information officers (reference librarians) have been forced to face issues that influence the choice of using new technologies in service delivery. These issues are:

- o The volume and variety of texts published in various fields, especially in pure sciences and technology, have become very large.

o Knowing all the interests of the users being served has become very difficult, and these interests are often changing.

Due to the above issues, matching document content with user interests manually has become very difficult.

For this purpose, H.P. Luhn proposed a mechanized system for controlling matching on a large scale.

Thus, he designed a system with the help of electronic processing equipment at the institute.

In this system, computers are used to automate the action of matching IBM users' interests with document content.

There is no doubt that for a successful operation, Selective Dissemination of Information must be computer-based.

However, if the operation is on a small scale, the manual method can also be used (Kumar, 2008).

2-10-2. Electronic (Modern) Current Awareness Services

Current Awareness Services are provided through an electronic database system, with the difference that in manual Current Awareness Services, some of these steps are performed by or under the supervision of specialized human force.

The implementation steps of electronic services consist of 3 steps explained below.

Step One

This step involves reviewing new information resources, registering, and storing user profiles within the database.

This task is not an internal operation of the Current Awareness Service program, but the full performance of the Current Awareness Service program in databases is based on this stored information.

Step Two

Reviewing New Resources: To ensure maximum subject coverage of incoming resources to the library, reviewing each new document received by the library in terms and subjects is a very precise and heavy task.

Step Three

Reviewing User Profiles: The database must include different functions for providing Current Awareness Services based on user profiles.

The user can open a profile in their name and submit their information.

This can be done through personal computers or manually; if done manually, the operator must carefully enter the user's information into the database.

2-10-2-1. Conceptual Model of Electronic (Modern) Current Awareness Services

1. Document Identification: In this stage, information is matched. For this, all information texts available in the center are reviewed and matched with subject terms. This stage has three levels:
 - Level One: Search and select the main subject areas of all information records in the center's database.
 - Level Two: Search and select subsidiary subject areas, in addition to the previous search results of main subject areas.
 - Level Three: Broad search according to pre-determined keywords in the user's profile, in addition to the previous search results of subsidiary subject areas, to select appropriate information terms.
2. Determining Time Period: In this stage, the search operation is performed according to the determined time range of published information, in addition to the previous search results in the searched subject areas.
3. Specific Required Language: In this stage, the search operation is performed based on the required language of the information resources, in addition to the previous search results in the searched subject areas.

Note: If the user's query does not specify the desired time and language, the search is performed based on the final match from the latest search results.

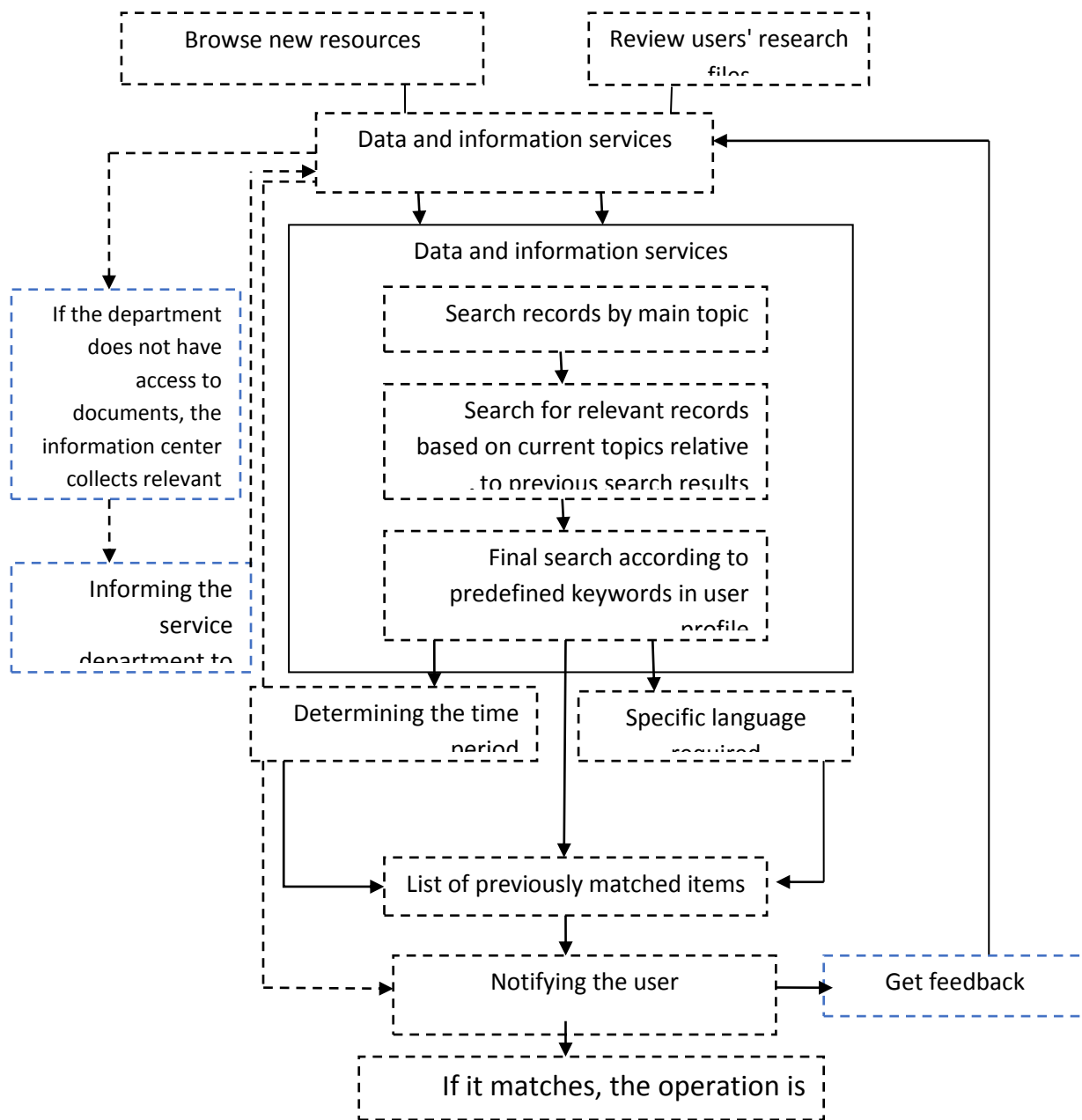


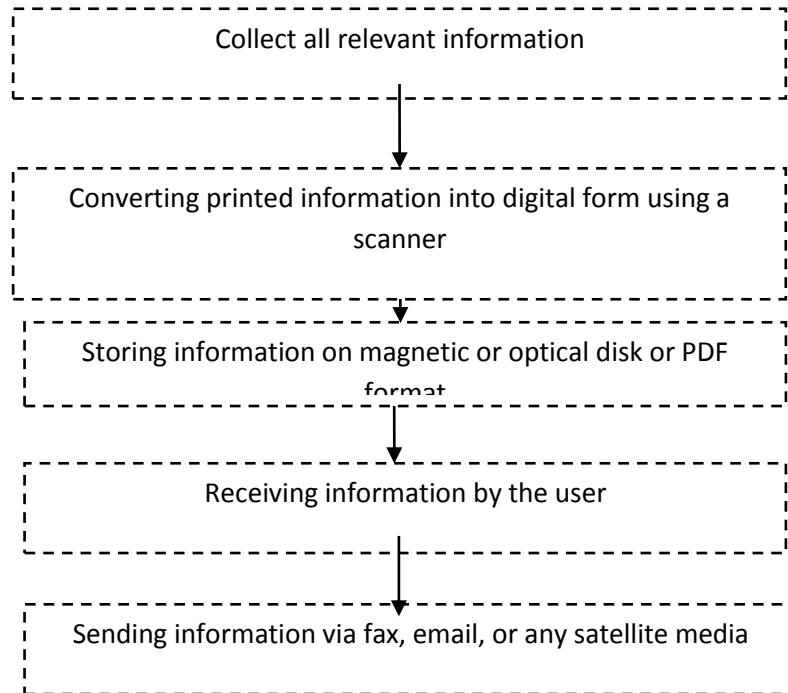
Figure 2-3. Conceptual diagram of modern current awareness raising

Step Three

1. The function of this stage relates to notifying interested users based on the search query for required information, which includes the following actions:
2. Notifying Users: The list of the latest matches or related information is initially sent to the target user in the form of a provided bibliography.
3. Final Matching: In this stage, the user will try to confirm the received bibliographic items for the final matching with the terms related to their required information.
4. Sending User Feedback to the Information Center: After confirmation, the user will send their feedback to the information center. Receiving feedback is essential for determining the usefulness of the information. The user may also request the full text of the selected information from the information officer.

Delivery of Bulk Textual Information: Based on the feedback results, detailed textual information corresponding to the user's need is sent to them by any means (manual, postal service, email, etc.). When using communication methods for delivering bulk textual information, for printed information, the following can be done:

Figure 2-4: Steps for electronic delivery of information



2-11. Library Management

Management is an element that requires special attention.

The existence of management tools for monitoring and organizing in the current awareness service system seems very appropriate.

This tool has access to the contents of document and person databases through a tree structure. Every message sent to the user is stored in this tool, such that the message title and time are visible in a list, and one can focus on it to see the message contents.

This tool also monitors the processing and matching section as well as the correctness of information exchange.

This aspect can be implemented by the system or by an individual within the current awareness service system.

The manager's perspective plays a fundamental role in selecting and using current awareness tools and models and expanding these services.

Jaber Hussain (2008) states the factors that must be observed in the management and administrative performance of Selective Dissemination of Information services as follows:

1. There must be a separate section for providing current awareness.
2. The connection between this section and other sections of the library or information center for gathering needed information must be maintained.
3. There must be a connection with a number of subject specialists for cases requiring consultation.

Requirements for Staff and Managers Implementing Current Awareness Services

The manager is someone responsible for providing current awareness services and must have the minimum standard degree, experiences, and knowledge of service provision.

1. All staff in this section must have at least a Bachelor's or Master's degree in fields related to Library and Information Science Management.
2. They must have at least 2 years of work experience in libraries or information centers.
3. They must have good accuracy skills to precisely identify the subject content of documents as well as the information needs of users.
4. Staff must have the ability to use all modern technology tools related to implementing current awareness information services.
5. Staff must be fully familiar with the seven ISDL skills.

2-11-1. Costs of Improving the Performance of Selective Dissemination of Information Services (From the Users' Perspective)

Generally, libraries and information centers are established for providing non-profit services. However, implementing some services and considering some information products may consume a large part of the budget of libraries and information centers.

Therefore, costs for services such as information retrieval might be charged to users innovatively.

These costs may be as follows:

- Printing costs;
- Cost of preparing copies or other products (CD, floppy disk, etc.);
- Costs of packaging information or delivery costs including: fax, email, postal costs;
- Communication costs such as telephone conversation, email, etc.;
- Consultation costs including: consultation with subject specialists;
- Costs related to information gathering, including downloading from websites,
- Gathering information from other centers and costs of purchasing information, if this information is not available.

Table 2-1. Dimensions of Modern Current Awareness Services

Sources	Indicator	Sub-dimension	Component
Dika (2019), Zarbodast (2012), Pirabi (2009), Ozuha (2016), Javid Khan (2016), Singh (2018), Amaozur (2014), Jabr Hussein (2008), Bashirzadeh (2014)	Print	Service Delivery Format	Service
	Electronic		
Zarbodast (2012), Saeednia (2017), Pirabi (2009), Bashirzadeh (2014), Singh (2018) Jabr Hussein (2008), Dika (2019), Zarbodast (2012), Pirabi (2009), Ozuha (2016), Singh (2018), Amaozur (2014), Karak (2017)	Web-based	Software Used Document Delivery (File Type Sent)	
	Network-based		
	Specified File Type		
	User-Requested File Type		
Jabr Hussein (2008), Dika	Electronic	Creating Research	Technical &

Sources	Indicator	Sub-dimension	Component
(2019), Zarbodast (2012), Pirabi (2009), Jimenez (2009), Rozhesky (2018), Javid Khan (2016), Jafar Biglu (1997), Bashirzadeh (2014), Pandy (2016)	Print	Profiles	Infrastructural
	Manual Preparation & Computer Entry		
Zarbodast (2012), Javid Khan (2016), Adneriran (2017), Jafar Biglu (1997), Pandy (2016), Bashirzadeh (2014)	Electronic Form	Identifying User Information Needs	
	Reference Interview		
Jabr Hussein (2008), Dika (2019), Zarbodast (2012), Pandy (2016), Pirabi (2009), Adneriran (2017)	Monthly	Statistics Preparation Method	
	Annually		
Zarbodast (2012), Saeednia (2017), Jafar Biglu (1997), Pandy (2016), Karak (2017)	Group Search	Developing Search Strategy Based on User Interests	
	Specific Search		
	Feedback		
Bashirzadeh (2014), Adneriran (2017), Jabr Hussein (2008), Dika (2019), Zarbodast (2012), Pirabi (2009)	Alphabetical by Title	Information Sorting Method	
	Subject Relevance Degree		

Sources	Indicator	Sub-dimension	Component
	Publication Date		
	Combination of Methods		
Adneriran (2017), Jabr Hussein (2008), Dika (2019), Zarbodast (2012), Pirabi (2009), Saeednia (2017), Karak (2017)	Bibliographic Information	Type of Information Sent	
	Full Text		
	Bibliographic & Full Text		
Adneriran (2017), Jabr Hussein (2008), Dika (2019), Zarbodast (2012), Pandy (2016), Pirabi (2009), Saeednia (2017), Karak (2017)	Email	User Notification Method	
	In-person		
	Phone		
Zarbodast (2012), Bashirzadeh (2014), Saeednia (2017), Javid Khan (2016), Jafar Biglu (1997), Pandy (2016)		Using Thesauri for Documenting User Requests	
Bashirzadeh (2014), Saeednia (2017), Pandy (2016), Jafar Biglu (1997), Zarbodast (2012)		Using Reference Sources to Complete Subject Schema	
Adneriran (2017), Jabr	Daily	Information	

Sources	Indicator	Sub-dimension	Component
Hussein (2008), Dika (2019), Pandy (2016), Zarbodast (2012), Saeednia (2017), Pirabi (2009)	Weekly	Sending Time Interval	
	Monthly		
	Written (Electronic Form)	Feedback	
	Oral (Face-to- Face)		
Jafar Biglu (1997), Saeednia (2017), Zarbodast (2012), Bashirzadeh (2014), Adneriran (2017)	Matching & Selection by Specialist	Matching Information Resources to User Needs	
	Matching & Selection by Computer		
Pirabi (2009), Adneriran (2017), Bashirzadeh (2014)		Budgeting	Managerial
Pirabi (2009), Adneriran (2017), Bashirzadeh (2014)		Codifying Services	

Sources	Indicator	Sub-dimension	Component
Adneriran (2017), Jabr Hussein (2008), Dika (2019), Zarbodast (2012), Pirabi (2009)		Management's View on Service Expansion	
Bashirzadeh (2014), Adneriran (2017), Jabr Hussein (2008), Dika (2019), Zarbodast (2012), Pirabi (2009)	Continuous	Evaluation	
	Periodic		
Jabr Hussein (2008), Dika (2019), Zarbodast (2012), Pirabi (2009), Adneriran (2017), Bashirzadeh (2014)	Service to Specific Users	Service Scope	
	Service to All Users		
Pirabi (2009), Adneriran (2017), Ozuha (2016), Bashirzadeh (2014)	Interest	Staff Preparedness Level	Human Resources
	Knowledge		
	Experience		
Pirabi (2009), Adneriran (2017), Ozuha (2016)	Library & Information Science	Training Courses	

Sources	Indicator	Sub-dimension	Component
	Seven ICDL Skills		
	Familiarity with Other Library Software		

2-12. Mobile Social Networks

Virtual social networks are web-based services that allow individuals to create public and semi-private profiles within a specific system.

They also allow users to exchange opinions and information with other users present in that system.

Another important aspect is the possibility of sharing events and inviting individuals for direct communication with each other.

Individuals' presence in social networks increases the likelihood of their social participation and actions.

Therefore, the more extensive and dense the connections between individuals and members in the networks, the more likely companionship, interactions, closeness of views, and coordinated, shared movement become.

Hence, using such a space for introduction, advertising, and also aligning the audience with the goals of one's own media plays a very significant and highly impactful role.

2-13. RSS

RSS is a novel method mostly used for Current Awareness Services.

These services are not personal and can be used for a group of users.

This method is used on organizational websites and intranets to inform organizational colleagues

about news and updates in their specific field of activity.

The main applications of RSS are the following two:

- Displaying the latest titles from other websites on one's own website or vice versa (sharing new content);
- Receiving the latest content from favorite websites using special software (more efficient web browsing).
- Alert technology is also implemented in Current Awareness Services and Selective Dissemination of Information services using databases and electronic journal collections. Its types include:
 - TOC Alert: In this method, the table of contents of new electronic journals is sent to the user's email.
 - Citation Alert, Search Alert: These two types are used in databases, informing the user about new articles related to search results or the latest articles citing the searched article (Zarbodast, 2010).

2-13-1. Applications of RSS in the Field of Information (Especially Libraries)

RSS can have various applications in the field of information, especially in libraries. Below are some of the general functions of RSS in libraries:

a) Current Awareness Services

Current Awareness Services such as table of contents services are possible through RSS. Journal publishers and agents provide RSS feeds with links to abstracts or full text.

b) Book Lists

The most practical application of RSS in libraries is creating various types of book lists. Because users are always curious to know what new resources and books have been added to the library. For this purpose, RSS feeds can be provided with titles like "New Titles on the Library Website" or even "List of Most Requested Resources" or "List of Reserved Books". These lists can be published daily, weekly, or at any desired interval.

c) Training and Reference

Libraries can use RSS to expand training and reference services (Nik-Khah, 2007).

2-13-2. Advantages of RSS

a) Saving User Time

While these tools have been around for several years, students and professors are not always aware of them. Even those who use RSS to read websites and news may not be aware of the usefulness of this tool for their research tasks. Using RSS technology for information management saves users time and energy and increases their access to the knowledge they need by creating an alert for new information from websites and article databases. RSS technology allows users to access information from other viewers to find information related to the topics they are researching, even in areas not specifically connected to the main topic.

b) Helping to Update Librarians' Services

Another result of educating users about RSS and social bookmarking is an improved perspective of what the library can offer researchers. Through teaching and talking with students and university researchers, we found that they have changed their view of librarians: they no longer consider academic librarians "old-fashioned". They believe that modern academic librarians know more about new information technologies and can help in the information management process. New technologies have created opportunities for academic librarians to be innovative educators in their community. Therefore, academic librarians must understand this opportunity to show their community that their knowledge, skills, and ability to help them manage information are very effective.

c) Increasing Information Literacy

One of the goals of the academic library is to develop users' information literacy skills. One of the ACRL information literacy standards states that an information-literate student must possess the need to keep current in their subject field and the ability to use various methods and emerging technologies to drive information with new information technologies, and new demands appear with every new technology. Information literacy is now completely related to information technologies and requires an individual to utilize digital technologies, communication tools, and networks to solve information problems to function in an information society (Sweeny, 2011).

2-14. Library Websites

Library websites require special attention for various public and technical reasons in design, implementation, deployment, and support, because the library website has a combined function and plays the role of the most important web-based support and training resource, information provider, consultant, tutor, and intermediary for sharing information.

The core work in designing library websites is transferring part of the library activities that are theoretically and practically efficient and effective in the web environment.

Therefore, the library service section, which has such capability, receives more attention.

Given information and communication technologies, and the increasing creation of websites in libraries, the quality of their informational content should be considered so that clients can search for their needed information on library websites with more confidence.

Strategic Planning Process:

According to Peter Drucker, "Strategic planning is a continuous process of making systematic, risky decisions with maximum knowledge and awareness of future outcomes, which systematically organizes the efforts and endeavors required to implement these decisions and measures the results of these decisions against expectations through systematic and organized feedback." Strategic planning is a process in which intentions, goals, and plans are set and implemented. Of course, both the setting and implementation processes are gradual and continuous. The time scale for strategic plans is about three years and will not exceed five years, although a long-term vision is considered at a more general level, it must be flexible enough to respond to changes. Also, strategic planning should be defined as a management action to determine the environment of the library website and its direction and to respond to organizational challenges. Strategic planning creates a useful structure for establishing the website and developing it in the future, as well as a method for maintaining and updating the website. The planning process, which is certainly ongoing in all sections of the library, is also transferable to the library website (Ryan, 2003).

The first step in performing strategic planning is defining and creating a committee or planning group that will undertake the planning responsibility and will interact with other working groups at the appropriate time in the planning process.

Given that the strategic planning process interacts with the internal and external environment of the library, understanding the environment is a fundamental aspect of the planning process.

The external environment includes all conditions and factors that affect strategic options.

A useful framework for analyzing the external environment is to consider issues and influences in the form of political, economic, sociological, and technological topics. This is known as PEST analysis.

For analyzing the internal environment, the conditions of the library and the parent organization, strengths and weaknesses, and opportunities and threats must be assessed.

Most of this information is accessible through planning documents and reports.

The image of the external environment and the internal analysis environment come together as a combined process to develop strategies and convert them into plans, policies, and procedures, and help focus planning based on the organization's mission.

The library website manager must first examine the strategic planning questions:

1. What is the mission of the website?
2. What is the purpose of the website?
3. What are the objectives of the website?

Answering these questions leads to identifying potential users and their information needs, and this understanding is an essential and fundamental prerequisite before any decision-making.

In the next stage, the website manager should formulate the mission statement, which is a public and foundational statement for developing the website's objectives, and always pay attention to the mission of the library, which is organizing, providing access to, and disseminating information needed by users; because the website's mission must align with the overall mission of the library.

The mission statement should be sufficiently general, specific, actionable, and flexible.

Generally, a mission statement is a statement of the organization's attitude, vision, and direction, not detailed and measurable destinations; in fact, the primary value of a mission statement is specifying the ultimate intentions.

If the mission statement is formulated correctly, it will be the basis for sustainable planning.

After the website's mission is determined and formulated; the purpose of the website must be clearly specified.

In the next stage, the website's objectives should be determined more specifically and in

accordance with the website's mission and purpose, and each objective should be stated with the work steps that support it.

After the work steps for each objective are specified, the responsibilities, budget, scheduling, and evaluation criteria for each must also be determined.

In fact, if the strategic planning process is followed from beginning to end, managers gain the opportunity to fully identify the necessary skills, human resources, financial resources, time, and software and hardware tools needed at each stage of the planning process for creating and managing the website.

Step-by-step planning ensures that the website's objectives are guaranteed and implemented (Ryan, 2003).

In the next stage, strategies and action plans must be developed, which itself requires defining and determining financial resources and developing policies and methods in line with the website's objectives.

In fact, strategies are defined as main actions or patterns of actions to achieve objectives and purposes and fulfill the mission, and they specify the practical steps for fulfilling the website's mission and must include a timeline, responsibilities, and performance indicators.

In the next stage, the selected strategies are converted into more specific operational plans.

To evaluate performance related to the goals and review and modify plans based on results and changing conditions, it is essential to monitor the progress regularly.

The monitoring process is important at all levels and control and monitoring methods must also be specified.

The strategic planning itself also needs review.

2-14-1. Policy for Academic Library Websites

During the strategic planning process, the website policy is determined.

In fact, the main goal of preparing and implementing the strategic planning process is to create a comprehensive, efficient, and effective policy.

Policies are guidelines developed to guide managers' thinking, decisions, and actions in implementing the organization's strategy.

Policies are often standard operational instructions and an effective tool for transmitting decisions to lower levels in the organization.

A good definition for policy can be as follows: A verbal, written, or implicit guide that determines the boundaries and general path of managerial performance.

In fact, policies are formulated to implement strategies (Ryan, 2003).

2-14-2. Specific Needs of the Library Website

The portion of needs related to website design: In the design section, the specialist librarian, as a core member of the implementation team, must try to make the user's interaction with the website as coordinated and simulated as possible with the process of their interaction when visiting the library.

1. These needs include special forms (like electronic book request forms, etc.), Frequently Asked Questions (predictable questions for user guidance), online guides (providing advisory services to users alongside other existing guides like site maps and FAQs), searching databases, new arrivals, introducing specialist website librarians (creates closer connection between user and librarian), categorizing users and their needs, links to other libraries, and training short-term courses, search training, training on the quality of using information resources, and the like.
2. The need for planned support of the website by the website content manager and librarians, which stems from the following necessities:
 1. Updating resources
 2. Responding to needs
 3. Continuous communication with users
 4. Publishing new information on the web
 5. Revising the website structure based on new needs and the approach to website optimization
 6. Organizing topics and subjects raised on the website by users
 7. Monitoring the execution of processes in the web environment and organizing information shared on the website environment

Given the vast volume of information on the web and the possibility of creating various types of websites with any quality and content by users, this section examines quality in websites (Forward, 2009).

2-14-3. Quality in Websites

The World Wide Web is a very complex network of information and communication technologies that currently includes several billion web pages and several hundred million users. On the web, users search for information by moving from one page to another through network connections.

The content of these pages, which is related to the searched topic, usually appears to the user as snippets of text or graphics.

Today, finding many categories and materials on web pages is possible, for example: marketing information for products, services, organizations, and the like; texts, sounds, and images produced by mass media including journals and electronic resources; email messages, newsgroup posts, and the like.

The design of each web page has three basic components: Header, Main Text, and Footer. By fully examining these components, questions like the following can be answered:

1. Who is the author of the website?
2. When was the website created or revised?
3. Who is the sponsor and supporter of the website?
4. Who are the intended audiences of the website?
5. What is the purpose of the information on the website?

Some websites use an email link with the webmaster to facilitate interaction, meaning communication between the user and the information producer for continuous and ongoing improvement of the website's quality based on feedback collected this way from various users. Further investigations show that each of the criteria are themselves results that have specific activators for detection, definition, and evaluation.

Therefore, any efficient evaluator can, after carefully evaluating all these results and activators, have a relative judgment about the quality of various websites and their information producers. Creating an ideal website is probably impossible, but striving to meet the user's basic needs is a practical and possible task, and this effort can be carried out more easily and quickly, continuously, using specific quality management mechanisms, methods, and tools (Kolayan, 2005).

2-15. Research Background in Iran

Jafar Biglou (1999), in his thesis titled "Plan for a National Selective Dissemination of Information (SDI) System for Faculty Members of Universities and Higher Education Institutions in the Country," provided an eight-layer strategic-applicational planning and proposed an organizational chart for policy-making and systematizing the components of the national SDI service system and formulating strategic, operational, and technical policies and appropriate solutions.

Farhadpour (2001), in a research study, investigated the status of current awareness services in specialized libraries of institutions affiliated with the Ministry of Science, Research, and Technology and its impact on collection usage from the perspective of managers. The results indicated that 100% of the studied libraries provide current awareness services. Current awareness through informational databases (57.28%) was the most used method, while Selective Dissemination of Information (SDI) services were usable at 0%. This research had three hypotheses; the first hypothesis was proven, meaning that current awareness increases the use of the collection; the second hypothesis was rejected, meaning there is no significant difference between the two groups regarding current awareness problems; and the third hypothesis was also proven based on the findings, meaning that 87.28% of libraries use informational databases in current awareness.

Pirabi (2009) investigated the existing status of Selective Dissemination of Information (SDI) services among central libraries of public universities in Tehran from the perspective of managers and staff and provided suggestions for its improvement. This research, aiming to examine the existing status of SDI services in central libraries of public universities in Tehran from the perspective of managers and staff to propose appropriate suggestions in the studied community for providing better services to users, was conducted using a descriptive survey method. A questionnaire was used for data collection. The identified and studied population included 15 central academic libraries of public universities affiliated with the Ministry of Science, Research, and Technology located in Tehran. Individuals selected as the research population to answer the questions were management staff (director or deputy), heads or employees working in reference, circulation, periodicals, website, or information center sections of the studied libraries. The research findings showed that out of 12 libraries that returned the questionnaire, 4 libraries (33.03%) lacked SDI services, and in 8 libraries (66.07%), SDI services

were provided relatively. This investigation showed that SDI services are not provided completely in any of the studied libraries. 35% of staff considered the necessity of implementing SDI services as very high, 53% as high, and 12% as medium. 45% of managers considered the necessity of implementing SDI services as very high, 36% as high, and 18% as medium. None of the respondents considered the necessity of implementing these services as low or very low. Overall, among five user groups of SDI services, the most frequent users (100%) were faculty members and visiting professors at the university and postgraduate students. None of the respondents were disinterested in providing SDI services. The interest of 47% of staff in implementing SDI services in libraries was very high, 41% was high, and 12% was medium. The interest of 54% of managers in implementing these services in the library was very high, 36% was high, and 10% was medium.

Zarbodast (2010), in his thesis titled "Comparison of Methods for Providing Selective Dissemination of Information Services in Information Centers and Libraries of Iran and Selected Countries," examined the methods of providing SDI services in libraries and information centers offering these services and, by comparing the methods used with the process of providing these services, prepared a suitable model for its implementation. The research population included 16 libraries and information centers providing these services in Iran, identified through web searching. His research findings indicated that in most information centers and libraries studied in Iran, SDI services are performed in a semi-electronic manner. In total, out of 16 centers studied, in 13 centers (81.2%) the service implementation process was semi-electronic, in 2 centers (12.5%) all stages were electronic, and in 1 center (6.2%) the process of these services was performed entirely traditionally. However, considering the percentage of process implementation in the traditional method, it can be said that in all centers, on average, 20.8% of the process is performed traditionally, and this number reaches 49% for the electronic method. It was also found that there is a significant relationship between the type of resources used for implementing SDI services and the method of implementing these services in the centers.

Hosseinzadeh (2013), in his thesis titled "Investigating the Status of Familiarity, Use, and Usefulness of New Technologies in Libraries Covered by the General Department of Public Libraries of Isfahan City from the Perspective of Clients to Improve Information Services," examined the status of familiarity, use, and usefulness of new technologies in libraries covered

by the General Department of Public Libraries of Isfahan City from the perspective of clients to improve information services. The research population included all clients of libraries covered by the General Department of Public Libraries of Isfahan City, and a descriptive-survey method was used. The data collection tool was a researcher-made questionnaire. Sampling was done based on the Krejcie and Morgan table with a size of 377 people. Overall, the level of respondents' familiarity with new technologies available in public libraries of Isfahan City and other technologies available in other libraries was below average. Also, the level of clients' use of new technologies available in public libraries of Isfahan City was below average and close to low. Based on clients' opinions, the level of usefulness of existing technologies in public libraries for providing information services was below average, and the level of recommendation to use other technologies available in other libraries was above average. The results of this research showed that due to the low familiarity and use of new technologies by library clients, necessary measures should be taken to increase clients' familiarity and use, and public libraries should apply more seriousness in training volunteers. Also, given the level of usefulness of these tools for improving information services, it is necessary for managers and officials of public libraries to pay attention to introducing and analyzing the content provided by these tools to increase their usefulness.

Valizadeh (2016), in his thesis, investigated the role of mobile social networks in developing university services with an emphasis on the Telegram social network. The research aimed to develop university library services with the help of the Telegram social network. The research, using a survey method and descriptive-analytical approach, examined the attitudes of managers and librarians of central libraries of Iranian universities (Sharif University of Technology, Isfahan University, Ferdowsi University of Mashhad, and Shahid Chamran University of Ahvaz). A researcher-made questionnaire inspired by a checklist of the activities of the mentioned libraries on the Telegram network and a checklist of general services of university libraries was used for data collection. The research population consisted of 102 managers and librarians of the central libraries of the mentioned universities in Iran who had set up Telegram, determined by non-probability (purposive) sampling. Findings from the checklist showed that information services are provided in three central libraries of Sharif University of Technology, Ferdowsi University of Mashhad, and Shahid Chamran University of Ahvaz, and at Isfahan University, only lending services are provided. Questionnaire findings based on the opinions of managers

and librarians showed that lending services with an average of 50.3% and reference services with an average of 29.3% received the highest and lowest opinions, respectively. Results indicate that all services have a considerable impact on the application of the Telegram social network in libraries, and the attitude of managers and librarians is at a medium level.

2-16. Research Background Outside Iran

Aharoni (2009), in a research study, examined the level of librarians' familiarity with new technologies and their use of web tools. The data collection tool was a questionnaire. The results of this research showed that personality traits, expertise in computer use, motivation, importance, level of study, and integration of web tool applications are effective in librarians' use of these tools. He also examined tools such as blogs, wikis, Flickr, RSS, and social networks and finally concluded that the highest level of use is related to wiki tools and the lowest level of use is related to RSS tools.

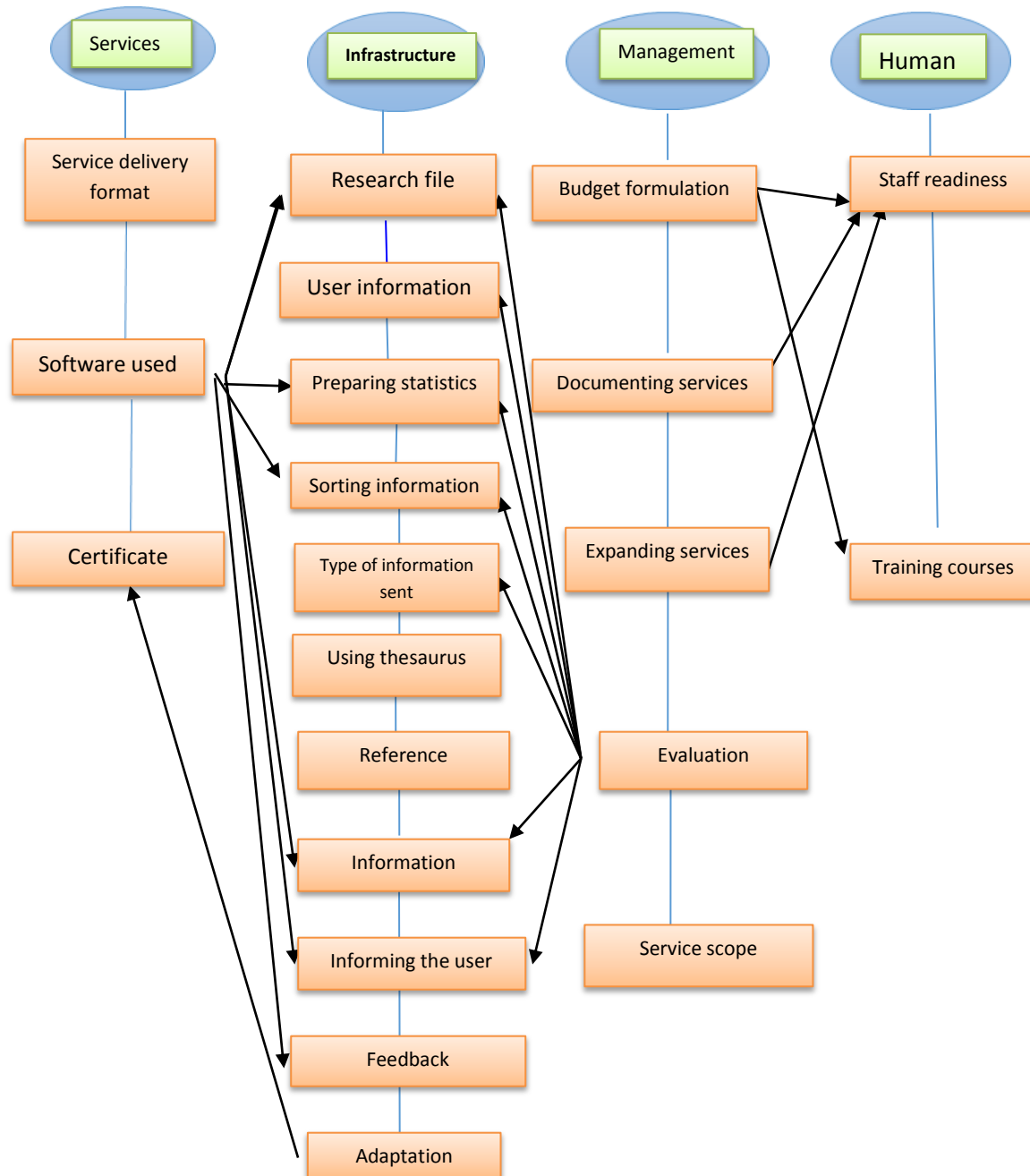
Dickson and Holley (2010) state the purpose of their article as examining the use of social network tools, opportunities, and threats in academic libraries in the United States. Since students are numerous users of these networks, this is an effort to provide facilities to assist students of academic libraries who do not use the physical library. This article also examines the concerns of students and library librarians regarding their use. Findings showed that these networks can be an effective method for service development in academic libraries if the library protects students' privacy and uses equal coverage for all topics.

Chip Dratani (2012), in a study titled "Investigating the Level of Understanding of Librarians in Algerian Libraries Regarding the Use of Social Media in the Library," examined the level of use of social media tools on the websites of Algerian libraries. He considered his population as 218 libraries, out of which 118 libraries participated in this research. A web-based questionnaire was also distributed among librarians of the 118 libraries for data collection. Results indicated that the level of use of social media tools in libraries is weak, and the most use is related to Twitter with 12% and Facebook with 8%. Other tools like Flickr and YouTube were used little or not at all.

S.N. Amuzor (2014), in a study conducted to assess the impact of current awareness services and library environment on students' use of the library in the libraries of the Federal University of Southern Nigeria. A total of 1510 registered users participated. A researcher-made questionnaire was used for data collection. Results showed that for the four components of current awareness services, the average positive response of students ranged from 13.3% to 23.3% in the studied university. For the eight components, the average positive response rates were 62.1%, 63.8%, 71.8%, and 75.3% for Calabar, Oyo, Port Harcourt, and Benin universities, respectively. Furthermore, an independent t-test showed that current awareness services and the library environment had significant effects on students' use of the library. Effective use of these two strategies increases library use.

Aderninan (2017) investigated the acceptance and use of Selective Dissemination of Information (SDI) services by academics at the University of Harcourt, Nigeria. From the collected statistics, a total of 135 academics from this institution participated. Results show that most academics seeking SDI services were staff from the Faculty of Management Sciences. This research indicates that most academics are pursuing research in the field of SDI services. User feedback from existing records indicates that users' information needs have been sufficiently met. User feedback also indicates areas for service improvement.

2-5. Conceptual model of the present research



2-17. Summary and Conclusion from Research Background

Libraries and information centers have always informed users about the existence of new information resources according to their facilities and objectives.

Various definitions have been mentioned for these services, whose commonality and emphasis are on providing new information needed by users in a timely and appropriate form and without receiving a request from the user.

These services can be provided in different forms.

Current Awareness Services, which are the most important form of this type of service, are not considered a new service.

Their distinction from what was done before lies in the use of computers and modern tools for information retrieval and processing.

The most important feature of Current Awareness Services is their emphasis on providing services personally, and their basis is matching new information with the information needs contained in the user's profile.

The user profile, which is the first and most important step in establishing Current Awareness Services, has various types and different sections, the most important of which is the user needs indicator, which has been documented based on specific thesauri and for which the user profile has been created.

Examining the research background outside Iran indicates the importance of the existence of current awareness and the need of today's researchers to quickly receive specialized information needed in their subject area.

A review of scientific articles published in this field shows research on new tools and methods for better implementation of these services, the most important of which are filtering strategies in processing user information needs and creating new technologies for sending information.

A review of research related to the topic of Current Awareness Services and Selective Dissemination of Information in Iran also indicates the existence of limited research and studies in this field at the level of Master's and PhD theses, especially regarding the methods of providing these services, on which no research has been conducted so far.

Domestic writings have focused more on designing Selective Dissemination of Information service databases.

Research has mostly examined the historical course of Current Awareness Services, and none of them has referred to modern Current Awareness Services.

The conducted studies clarified the need for more attention by information centers and existing specialized and large libraries in the country to implementing Current Awareness Services using modern

methods, which itself requires research such as the present study and examining these methods specifically with an emphasis on the role of management and also user-centricity in providing these services. A macro and national perspective in this field can be fruitful.

3-Research Methodology

3-1. Introduction

This chapter examines the methodology used in this research.

In the first part of this chapter, the research population and the method of conducting the research are described.

Subsequently, the tools and methods of data collection, the validity and reliability of the measurement instrument, and finally, the methods used in data analysis will be mentioned.

3-2. Research Population

The sample size of the first population in the present study is 27 managers from the central libraries of universities in Tehran.

The sample size of the second population is 118 employees from the central libraries of universities in Tehran.

The libraries in the research population of the present study are as follows:

1. Central Library of the University of Tehran
2. Central Library of Tarbiat Modares University
3. Central Library of Alzahra University
4. Central Library of Allameh Tabataba'i University
5. Central Library of Khaje Nasir Toosi University of Technology
6. Central Library of Kharazmi University
7. Central Library of Amirkabir University of Technology
8. Central Library of Shahed University
9. Central Library of Sharif University of Technology
10. Central Library of Shahid Beheshti University

3-3. Research Method

This research is applied in nature, meaning the results obtained from this research can assist managers and staff of libraries in selecting the appropriate method for implementing modern current awareness services in the target libraries.

The method of this research is survey-based and descriptive because it describes the current methods of the target libraries for providing modern current awareness services, and the

researcher does not change the variables but merely observes and examines the facts. Due to the need to examine and analyze data and information regarding the methods of providing current awareness services in the centers offering these services in this research, a descriptive and analytical method was chosen, and a questionnaire was used for data collection.

3-4. Data Collection Tool

In the first stage, the target libraries were identified and examined.

Identification was done through the internet and by retrieving the websites of the libraries under study.

Then, by visiting each library in person, the purpose and method of the research were explained, and their cooperation was requested.

Fortunately, all the target libraries responded positively to the researcher's request for cooperation.

After distributing the questionnaire, which was developed for this research based on the selected criteria for the method of providing these services, full cooperation was provided for conducting this research.

After receiving the intended questionnaires, the collected information was recorded and then organized.

In the next stage, the recorded information from the centers was analyzed, and the research results were obtained.

In this way, each method was identified and examined.

Data collection is based on a questionnaire.

The questionnaire includes criteria and standards related to the implementation of various stages of providing modern current awareness services, encompassing components such as: how modern current awareness services are provided, examination of the technical and infrastructural components of the target libraries, support from library managers for implementing current awareness services, and the ability of librarians to implement current awareness services were examined and analyzed.

3-5. Questionnaire

The data required for this research to answer the research questions were collected through a questionnaire.

In this regard, two combined but separate questionnaires were prepared: one checklist was distributed among the statistical population of library management staff, and one questionnaire based on the Likert scale was distributed among the librarians of the target statistical population (the questionnaire sample is available in the appendix).

In the first part of the questionnaire, according to the research objectives and to collect demographic information, five questions were placed at the beginning of the questionnaire, asking for general information about the sample in terms of gender, age, field of study, level of education, and work experience in the library.

The designed questionnaire includes 29 questions (10 checklist questions and 19 questionnaire questions) incorporated into four sections.

These four sections include the components:

1. Service;
2. Technical and Infrastructural;
3. Managerial;
4. Human Resources.

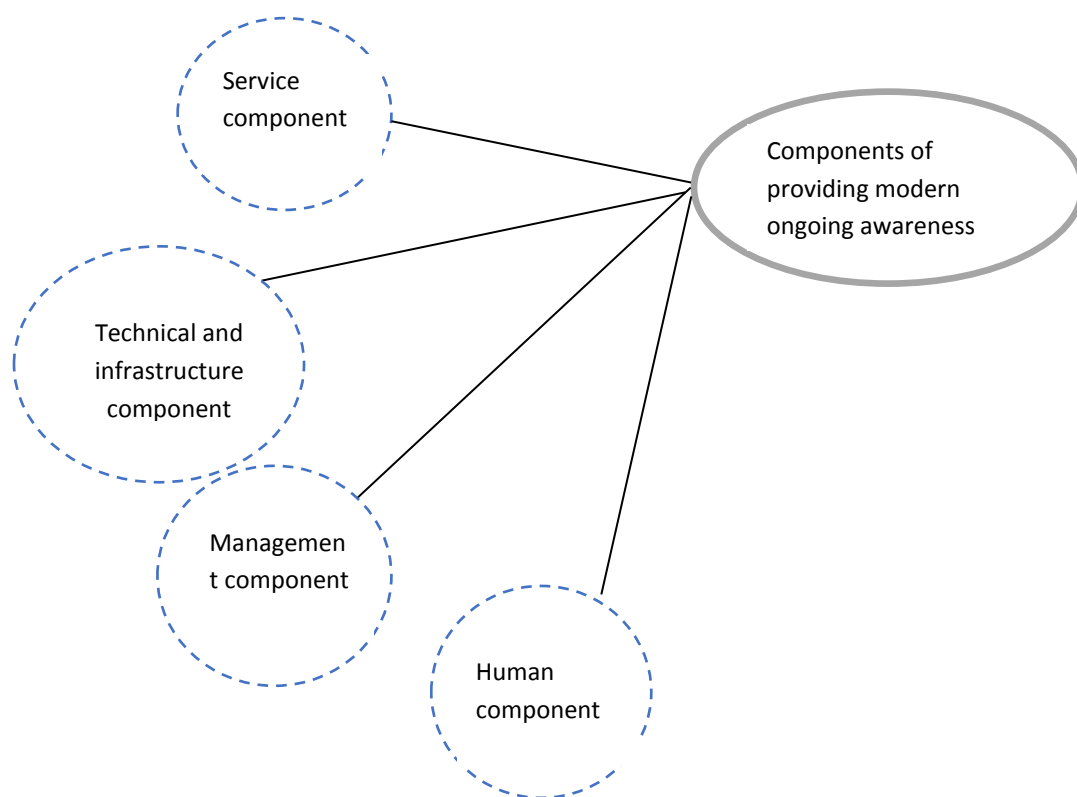


Figure 3-1. Components of the current awareness service collection process

Checklist

- Variables in the Service Section are:
 - Software used for current awareness services in libraries
 - Status of document delivery services
- Variables in the Technical and Infrastructural Section are:
 - Creating user profiles for users
 - Method of collecting user information
 - Search strategy for finding resources needed by users
 - Matching information resources with user needs
 - Method of sending information to the user

- Type of information sent to users
- Method of organizing the sent information
- Time interval for sending information
- Feedback process
- Method of preparing statistics

Questionnaire

- Variables in the Service Section are:
 - Providing current awareness services in print form
 - Providing current awareness services in electronic form
- Variables in the Technical and Infrastructural Section are:
 - Status of using thesauri for documentation
 - Status of using reference resources for subject schema
- Variables in the Managerial Section are:
 - Status of dedicated budget for providing current awareness services
 - Status of policy documentation for providing current awareness services
 - Management support for expanding current awareness services
 - Status of continuous evaluation of current awareness services
 - Status of periodic evaluation of current awareness services
 - Providing service to specific users
 - Providing service to the general user base
- Variables in the Human Resources Section are:
 - Librarians' interest in providing services
 - Librarians' knowledge for providing services
 - Librarians' experience in providing services
 - Status of holding library and information science training courses
 - Status of librarians' proficiency with ICDL skills
 - Status of librarians' familiarity with library software

Because the duty of managers in a library includes macro goals, policymaking, and budget allocation for providing current awareness, the executive duty of current awareness services is not part of management's responsibilities; rather, these services are the duty of the library librarians. For example, management plays no role in checking out books; that is the duty of the library librarians. Therefore, the implementation of current awareness services falls upon the librarians. Despite this, librarians should be surveyed regarding their experience, knowledge, and interest in implementing current awareness services.

3-5-1. Validity Assessment

The purpose of questionnaire validity is to determine whether the intended questionnaire can measure the characteristic or feature it was designed for. In other words, the concept of validity answers the question: To what extent does the measurement tool measure the intended characteristic? The opinions of specialists and experts can be a great help in improving and assessing the validity of the measurement tool. To assess the validity of the questionnaire, it was provided to 3 specialist experts and professors in the field of Library and Information Science for review and examination. After incorporating their stated comments and perspectives, the validity was confirmed.

3-5-2. Reliability Assessment

There are several methods for determining reliability. One of these methods relates to the internal consistency of the scales. The internal consistency method emphasizes the uniformity of the items or components that make up a scale. In this research, Cronbach's alpha coefficient was used to determine the reliability of the questionnaire (Pallant, 2007; translated by Rezaei, 2010: 124). After collecting data from the initial sample, the data were entered into SPSS software version 21, and Cronbach's alpha coefficient was calculated. In Table 3-1, the Cronbach's alpha value for each component is presented separately.

Table 3-1. Cronbach's Alpha for the Modern Current Awareness Provision Variable and Its Components

Variable	Total Alpha	Components	Questions	Alpha
Modern Current Awareness Provision	0.938	Service	How is the status of providing current awareness services in print form in your library?	0.860
			How is the status of providing current awareness services in electronic form in your library?	
		Technical and Infrastructural	How is the status of using thesauri in documenting user requests in your library?	0.789
			How is the status of using reference sources (e.g., encyclopedias, dictionaries, thesauri, and subject headings) for completing the subject schema in your library?	
		Managerial	How is the status of the dedicated budget for providing current awareness services in your library?	0.941
			How is the status of codifying current awareness services by	

Variable	Total Alpha	Components	Questions	Alpha
			having specific regulations in your library?	
			How supportive is the library management towards expanding current awareness services?	
			How do you evaluate the status of constant evaluation of current awareness services in the library?	
			How do you evaluate the status of periodic evaluation of current awareness services in the library?	
			How is the provision of current awareness services for serving a number of specific users (library members) in your library?	
			How is the provision of current awareness services for serving the general users in your library?	

Variable	Total Alpha	Components	Questions	Alpha
		Human	How interested are you in implementing current awareness services in the library?	0.750
			How is your knowledge for implementing current awareness services in the library?	
			How is your experience for implementing current awareness services in the library?	
			How is the status of holding library and information science training courses (virtual services in the library, reference interviews, etc.) in your library?	
			To what extent is your expertise in the seven (ICDL) skills?	
			How is your familiarity with library software (Pars Azarakhsh, Nosa, Pasargad,	

Variable	Total Alpha	Components	Questions	Alpha
			Kavosh, etc.)?	

Based on Table 3-1, the entire questionnaire for providing modern current awareness services, with a Cronbach's alpha ($\alpha = 0.938$), possesses desirable and appropriate internal consistency.

3-6. Data Analysis Method

This research is applied in nature and is conducted using a descriptive-analytical method with the aim of finding and identifying the methods and models for providing modern current awareness services in the central libraries of public universities in Tehran.

First, steps were taken to prepare and develop the criteria for measuring modern current awareness services in the studied population.

In preparing these criteria, aspects such as information resources, the role of service components, technical and infrastructural components of the library, library management, and human resources in providing current awareness services were addressed, which pay increasing attention to the user and their needs.

The methods of providing these services in the studied centers were examined by comparing and matching them with the obtained criteria and the questions in the questionnaire, and thus the methods of providing current awareness services in the centers under review were identified. Subsequently, the data were analyzed using the SPSS statistical software.

Analysis of Findings

4-1. Introduction

Data analysis is of particular importance for verifying the hypotheses and answering the research questions in any type of research. Today, in most research that relies on information collected from the subject under investigation, data analysis is considered one of the most essential and crucial parts of the research. In this stage, the raw data obtained from the statistical population are analyzed using appropriate statistical methods and SPSS software, and after processing, are presented as information to the users. In this research, descriptive and inferential statistical indicators, including descriptive tables and frequency charts, were first used to describe the data. Then, the research questions were answered using inferential statistics. In Chapter Four, we will analyze the data obtained from the questionnaire. First, we will present descriptive data on the demographic characteristics of the questionnaire respondents. In the demographic information section, variables such as gender, age, level of education, university of employment, etc., of the managers and staff of the central libraries of public universities in Tehran are examined. Then, we will continue this chapter by answering the research questions and providing information related to descriptive and inferential statistics.

4-2. Demographic Information

4-2-1. Gender

The sample size of the first population in the present study is 27 managers from the central libraries of universities in Tehran. Out of 27 respondents to the questionnaire, 9 (33.3%) were male and 18 (66.7%) were female.

The sample size of the second population is 118 employees from the central libraries of universities in Tehran. Out of 118 respondents to the questionnaire, 25 (21.7%) were male and 93 (78.8%) were female.

Chart 4-1 shows the gender of the respondents to the two questionnaires.

4-2-2. University

Table 4-1 presents the distribution of respondents according to the variable of their workplace university.

Evidence from the research indicates that managers from the University of Tehran and Tarbiat Modares University, each with 14.8%, and staff from the University of Tehran, with 25%, constituted the highest percentage of respondents.

Furthermore, managers and staff from Kharazmi University and Khaje Nasir Toosi University had the lowest percentages among the universities.

Table 4-1. Frequency distribution of respondents' workplace university

Employees		Managers		University
Frequency %	Frequency	Frequency %	Frequency	
3.3	4	7.3	1	Kharazmi
20	30	8.14	4	Tehran
7.12	15	8.14	4	Tarbiat Modares
2.9	11	1.11	3	Shahid Beheshti
8.5	7	4.7	2	Shahed
8.5	7	1.11	3	Allameh Tabataba'i
3.13	16	1.11	3	Alzahra
8.11	14	1.11	3	Sharif University of Technology
10	12	1.11	3	Amirkabir University of

Employees		Managers		University
				Technology
7.1	2	7.3	1	K. N. Toosi University of Technology

4-2-3. Age

In this section, the frequency and percentage frequency of the age variable of the respondents to the two questionnaires are presented. To facilitate the presentation of the respondents' ages, they have been categorized into 4 age groups as follows. Table 4-2 shows the descriptive information related to the age of the respondents.

Table 4-2. Frequency Distribution of Respondents' Age

Employees		Managers		Age Group
Frequency %	Frequency	Frequency %	Frequency	
15.8	19	0.0	0	Under 30 years
32.2	38	37.0	10	30-40 years
38.9	46	55.6	15	41-50 years
12.5	15	7.4	2	Over 50 years
100	118	100	27	Total

As Table 4-2 shows, none of the responding managers were younger than 30 years old. 10 (37%) of the managers were between 30 and 40 years old, 15 (55.6%) were between 41 and 50 years old, and 2 (7.4%) of the managers were older than 50 years old. Also, 19 (15.8%) of the employees were younger than 30 years old, 38 (32.2%) were between 30 and 40 years old, 46 (38.9%) were between 41 and 50 years old, and 15 (12.5%) of the employees were older than 50 years old. Figure 4-2 shows the age of the respondents to the questionnaire.

4-2-4. Education

Table 4-3. shows descriptive information related to the education of the respondents.

Table 4-3. Frequency Distribution of Respondents' Education Level

Employees		Managers		Education Level
Frequency %	Frequency	Frequency %	Frequency	
4.2	5	3.7	1	Associate Degree
21.1	25	11.1	3	Bachelor's Degree
69.4	82	70.4	19	Master's Degree
5.0	6	14.8	4	Doctoral Degree
100	118	100	27	Total

As Table 4-3 shows, 1 person (3.7%) of managers have an associate's degree, 3 people (11.1%) have a bachelor's degree, 19 people (70.4%) have a master's degree, and 4 people (14.8%) have a doctorate. Also, 5 people (4.2%) of employees had an associate's degree, 25 people (21.1%) had a bachelor's degree, 82 people (69.4%) had a master's degree, and 6 people (5%) had a doctoral degree. As the results show, managers and employees with master's degrees were more than other educational levels.

4-2-5. Field of Study

Table 4-4. Frequency Distribution of Respondents' Field of Study

Employees		Managers		Field of Study
Frequency %	Frequency	Frequency %	Frequency	
61.8	73	70.4	19	Information Science & Knowledge Studies
37.5	45	29.6	8	Other Fields
100	118	100	27	Total

As Table 4-4 shows; 19 people (70.4%) of managers have studied in Information Science and Knowledge Studies, and 8 people (29.6%) of managers have studied in other fields. Also, 73 people (61.8%) of the employees had university education in Information Science, and 45 people (37.5%) had university education in other fields.

4-2-6. Work Experience

Table 5-4 shows the distribution of employees according to the work experience variable. Research evidence indicates that managers with more than 10 years of work experience have the highest percentage in terms of work experience. The lowest percentage related to managers' experience belongs to one manager (3.7%) with less than 5 years of work experience. Also, the most work experience of employees belongs to more than 10 years of experience with a frequency of 81 people (68.6%). The least work experience also relates to employees with 6-10 years of experience with a frequency of 14 people (11.8%).

Table 4-5. Frequency Distribution of Respondents' Work Experience

Employees		Managers		Work Experience
Frequency %	Frequency	Frequency %	Frequency	
19.4	23	3.7	1	Under 5 years
11.8	14	7.4	2	6-10 years
68.6	81	88.8	24	Over 10 years
100	118	100	27	Total

4-3. Research Questions

In this section, the research questions will be addressed using descriptive statistics (including frequency distribution and mean) and inferential statistics (using appropriate statistical tests). The main questions related to the questionnaire were examined on a 5-point Likert scale from 1 to 5. To use inferential statistical tests, it is first necessary to determine the status of the data in terms of being normal or non-normal. For this purpose, the Kolmogorov-Smirnov test is used (Table 4-6). If the null hypothesis of data normality is confirmed, parametric tests can be used for further analysis; otherwise, non-parametric tests should be used.

Table 4-6. Results of Kolmogorov-Smirnov Test for Research Variable and Its Components

Variable Components	Kolmogorov-Smirnov Statistic (Z)	Significance Level	Status
Service	1.781	0.004	Non-normal
Technical &	1.757	0.004	Non-

Variable Components	Kolmogorov-Smirnov Statistic (Z)	Significance Level	Status
Infrastructural			normal
Managerial	0.675	0.752	Normal
Human	0.914	0.374	Normal
Current Awareness Provision	0.709	0.697	Normal

As can be seen, for the two components of services and technical and infrastructural, the significance level of the test is less than 0.05, and for the managerial and human components and the main research variable, namely current awareness provision, the significance level is greater than 0.05. This indicates that the skewness of the data is not significant, and in other words, the population distribution is normal. Therefore, parametric tests will be used to answer the research questions.

4-3-1. First Research Question: What is the status of the service component of the central libraries of public universities in Tehran for providing current awareness from the employees' perspective?

To investigate the suitability or unsuitability of the status of the service component of the central libraries of public universities in Tehran, a one-sample t-test was used. Table 4-7 shows the results of this test for the service component. The status of current awareness provision in the central libraries of public universities in Tehran in the service component shows a significant difference with the theoretical mean, which indicates that the service component of the libraries is above average and in a suitable condition.

Explanation: It should be noted that in this study, considering the scoring range of the items (1 to 5) and calculating the overall score of this component based on this range, the theoretical mean of the population was considered to be 3.

4-3-2. Second Research Question: What is the status of the technical and infrastructural component of the central libraries of public universities in Tehran for providing modern current awareness from the employees' perspective?

To investigate the suitability or unsuitability of the status of the technical and infrastructural component of the central libraries of public universities in Tehran, a one-sample t-test was used. Table 4-8 shows the results of this test for the technical and infrastructural component. The status of providing current awareness in the central libraries of public universities in Tehran in the technical and infrastructural component shows a significant difference with the theoretical mean, which indicates that the technical and infrastructural component of the libraries is above average and in a suitable condition.

Table 4-7. Determining the Status of the Service Component in Central Libraries of Tehran Universities Based on One-Sample T-Test (Theoretical Mean = 3)*

Component	Frequency	Mean	Standard Deviation	Standard Error	t-value	Degrees of Freedom	Significance Level	Overall Status
Service	115	3.34	1.06	0.09	3.46	114	0.001	Suitable

*Explanation: It should be noted that in this study, considering the scoring range of the items (1 to 5) and calculating the overall score of this component based on this range, the theoretical mean of the population was considered to be 3.

4-3-3. Third Research Question: What is the status of the managerial component of the central libraries of public universities in Tehran for providing current awareness from the employees' perspective?

To investigate the suitability or unsuitability of the status of the managerial component of the central libraries of public universities in Tehran, a one-sample t-test was used. Table 4-9 shows

the results of this test for the managerial component. The status of providing current awareness in the central libraries of public universities in Tehran in the managerial component shows a significant difference with the theoretical mean, which indicates that the managerial component of the libraries is above average and in a suitable condition.

Table 4-8. Determining the Status of the Technical and Infrastructural Component in Central Libraries of Tehran Universities
Based on One-Sample T-Test (Theoretical Mean = 3)*

Component	Frequency	Mean	Standard Deviation	Standard Error	t-value	Degrees of Freedom	Significance Level	Overall Status
Technical and Infrastructural	116	3.31	1.06	0.09	3.46	115	0.001	Suitable

*Explanation: It should be noted that in this study, considering the scoring range of the items (1 to 5) and calculating the overall score of this component based on this range, the theoretical mean of the population was considered to be 3.

4-3-4. Fourth Research Question: What is the status of the human component of the central libraries of public universities in Tehran for providing modern current awareness from the employees' perspective?

To investigate the suitability or unsuitability of the status of the human component of the central libraries of public universities in Tehran, a one-sample t-test was used. Table 4-10 shows the results of this test for the human component. The status of providing current awareness in the central libraries of public universities in Tehran in the human component shows a significant difference with the theoretical mean. Based on the results of this test, the central libraries of

public universities in Tehran are in a suitable condition and above average in the human component.

Table 4-9. Determining the Status of the Managerial Component in Central Libraries of Tehran Universities Based on One-Sample T-Test (Theoretical Mean = 3)*

Component	Frequency	Mean	Standard Deviation	Standard Error	t-value	Degrees of Freedom	Significance Level	Overall Status
Managerial	116	3.19	0.97	0.08	2.27	115	0.025	Suitable

*Explanation: It should be noted that in this study, considering the scoring range of the items (1 to 5) and calculating the overall score of this component based on this range, the theoretical mean of the population was considered to be 3.

4-3-5. Fifth Research Question: What is the overall status of the central libraries of public universities in Tehran in providing modern current awareness from the employees' perspective?

To investigate the suitability or unsuitability of the status of the central libraries of public universities in Tehran in providing modern current awareness, a one-sample t-test was used. Table 4-11 shows the results of this test. The status of providing modern current awareness in the central libraries of public universities in Tehran shows a significant difference with the theoretical mean. Based on the results of this test, the central libraries of public universities in Tehran are in a suitable condition and above average in the variable of providing modern current awareness

Table 4-10. Determining the Status of the Human Component in Central Libraries of Tehran Universities Based on One-Sample T-Test (Theoretical Mean = 3)*

Component	Frequency	Mean	Standard Deviation	Standard Error	t-value	Degrees of Freedom	Significance Level	Overall Status
Human	118	3.69	0.60	0.05	12.48	117	0.000	Suitable

*Explanation: It should be noted that in this study, considering the scoring range of the items (1 to 5) and calculating the overall score of this component based on this range, the theoretical mean of the population was considered to be 3.

4-3-6. Sixth Research Question: What is the status of the central libraries of public universities in Tehran regarding the provision of modern current awareness in the service component from the perspective of managers?

To answer this question, the frequency and percentage frequency of the questionnaire items in the service component have been used. The results of the managers' responses to the items of the service component of the questionnaire are presented in Tables 4-12 and 4-13.

Table 4-12. Response Status of Managers Regarding the Software Used for Modern Current Awareness Services

Component	Items	Options	Frequency	Frequency Percentage
Service	Software used for modern current awareness services	Web-based	17	65.4
		Network-based	9	34.6

As the results in Table 4-12 show, from the managers' perspective, 65.4% of the software for providing modern current awareness services in the central libraries of public universities in Tehran is web-based, and 34.6% of the software is network-based.

Table 4-13. Response Status of Managers Regarding Document Delivery Services in Libraries

Component	Items	Options	Frequency	Frequency Percentage
Service	Document delivery service process	Based on a specified file	13	48.1
		Based on the type of file requested by the user	13	48.1

As the results in Table 4-13 show, regarding the document delivery services in the libraries, managers stated that 48.1% of the information is provided based on a specified file and 48.1% of the information is provided based on the type of file requested by the user.

4-3-7. Seventh Research Question: What is the status of the central libraries of public universities in Tehran regarding the provision of modern current awareness in the technical and infrastructural component from the perspective of managers?

To answer this question, the frequency and percentage frequency of the questionnaire items in the technical and infrastructural component have been used. The results of the managers' responses to the items of the technical and infrastructural component of the questionnaire are presented in Tables 4-14 and 4-23.

Table 4-14. Response Status of Managers Regarding the Creation of User Research Profiles

Component	Items	Options	Frequency	Frequency Percentage
Technical and Infrastructural	Creation of research profiles for users	Electronic	22	81.5
		Print	0	0
		Manual and computer entry	2	7.4

According to the results in Table 4-14, from the managers' perspective, 81.5% of user research profiles in the central libraries of public universities in Tehran are created electronically, and only 7.4% of the profiles are created manually. In none of the universities are the profiles created in print format.

Table 4-15. Response Status of Managers Regarding the Method of Gathering User Information

Component	Items	Options	Frequency	Frequency Percentage
Technical and Infrastructural	Method of gathering user information	Electronic Form	18	66.7
		Reference Interview	6	22.2

According to the results in Table 4-15, regarding the item on methods of gathering user information, managers stated that 66.7% of the information is collected through electronic forms and 22.2% of the information is collected through reference interviews

Table 4-16. Response Status of Managers Regarding Search Strategy for Finding Required User Information Resources

Component	Items	Options	Frequency	Frequency Percentage
Technical and Infrastructural	Search strategy for finding required user information resources	Group Search	1	3.7
		Specific Search	10	37.0
		Based on User Feedback	12	44.4

According to the results in Table 4-16, based on the managers' views, 44.4% of the search strategy for finding required information resources for users is based on their feedback, 37% is based on specific search, and 3.7% is based on group search.

Table 4-17. Response Status of Managers Regarding Matching Information Resources to User Needs

Component	Items	Options	Frequency	Frequency Percentage
Technical and Infrastructural	Matching information resources to user needs	Matching and selection by specialist	21	77.8
		Matching and selection by computer	4	14.8

According to the results in Table 4-17, based on the managers' views, 77.8% of the matching of information resources with user needs is performed by a specialist and 14.8% is performed by computer.

Table 4-18. Response Status of Managers Regarding the Method of Sending Information to Users

Component	Items	Options	Frequency	Frequency Percentage
Technical and Infrastructural	Method of sending information to users	15	55.6	
		In-person	6	22.2
		Phone	0	0

According to the results in Table 4-18, based on the managers' views, 55.6% of information is sent to users via email and 22.2% is sent in person.

Table 4-19. Response Status of Managers Regarding the Type of Information Sent to Users

Component	Items	Options	Frequency	Frequency Percentage
Technical and Infrastructural	Type of information sent to users	Bibliographic Information	5	18.5
		Full Text	3	11.1
		Combination	15	55.6

According to the results in Table 4-19, based on the managers' views, 55.6% of the information sent to employees is a combination of bibliographic information and full text, 18.5% is bibliographic information, and 11.1% is only full-text information.

Table 4-20. Response Status of Managers Regarding the Method of Organizing Information Sent to Users

Component	Items	Options	Frequency	Frequency Percentage
Technical and Infrastructural	Method of organizing information sent to users	Alphabetical by Title	2	7.4
		Subject Relevance Degree	2	7.4
		Publication Date	2	7.4
		Combination of Methods	16	59/3

According to the results in Table 4-20, based on the managers' views, 59.3% use a combination of alphabetical title methods, subject relevance degree, and publication date; 7.4% use the alphabetical title method; 7.4% use the subject relevance method; and 7.4% use the publication date method.

Table 4-21. Response Status of Managers Regarding the Time Interval for Sending Information to Users

Component	Items	Options	Frequency	Frequency Percentage
Technical and Infrastructural	Time interval for sending information to users	Daily	14	51.9
		Weekly	1	3.7
		Monthly	9	33.3

According to the results in Table 4-21, based on the managers' views, the frequency of sending information to users is as follows: 51.9% daily, 33.3% monthly, and 3.7% weekly.

Table 4-22. Response Status of Managers Regarding the User Feedback Process for Research Profile Modification

Component	Items	Options	Frequency	Frequency Percentage
Technical and Infrastructural	User feedback process for research profile modification	Written Feedback	16	59.3
		Oral Feedback	7	25.9

According to the results in Table 4-22, based on the managers' views, 59.3% of the process of receiving feedback from users to modify their research profiles is through written feedback and 25.9% is through oral feedback

Table 4-23. Response Status of Managers Regarding the Method of Preparing Statistics on Current Awareness Service Performance Levels

Component	Items	Options	Frequency	Frequency Percentage
Technical and Infrastructural	Method of preparing statistics on current awareness service performance levels	Monthly	12	44.4
		Annually	7	25.9

According to the results in Table 4-23, based on the managers' views, the preparation of statistics on the performance level of current awareness services is done 44.4% monthly and 25.9% annually.

4-3-8. Seventh Research Question

How are the components of the modern current awareness provision variable ranked in the central libraries of public universities in Tehran from the employees' perspective?

To rank the components of the modern current awareness provision variable, which includes four components—service, technical and infrastructural, managerial, and human—the Friedman test was used.

Table 4-24. Friedman Test for Examining the Significance of Ranking the Components of the Modern Current Awareness Provision Variable

Significance Level	Degrees of Freedom	Test Statistic	Number
0.000	3	32.620	113

As observed in Table 4-24, the significance level of the Friedman ranking test is lower than the acceptable error level (0.05). Therefore, it can be concluded with 95% probability that the ranking among the components is significant. Table 4-23 shows the ranks of each factor compared to one another from the perspective of the employees in the central libraries of public universities in Tehran.

Table 4-25. Ranking of Components of the Modern Current Awareness Provision Variable

Mean Rank	Components of Current Awareness Provision	Row
2.53	Service	1
2.39	Technical and Infrastructural	2
2.08	Managerial	3
3.00	Human	4

According to the information in Table 4-25, from the employees' perspective, among the components of the modern current awareness provision variable, the human component ranks

first, the service component ranks second, the technical and infrastructural component ranks third, and the managerial component ranks fourth.

4-4. Supplementary Findings of the Research

4-4-1. Is there a significant difference between the mean of the main research variable and the demographic variables?

4-4-1-2. Comparison of the status of the modern current awareness provision variable according to the gender of the employees

To examine the significance of responses to the modern current awareness provision variable based on the gender of the employees, and due to the normality of the variable, an independent t-test was used for the two independent groups. For the analysis of the gender variable, since the significance level of Levene's test is greater than 0.05, the first row of the table (homogeneity of variances) was used.

Table 4-26. Examining the Difference in Means of the Modern Current Awareness Provision Variable Between the Demographic Variable of Employee Gender Based on Independent Two-Group t-test

Indicators	Variable	Levene's Test (Homogeneity of Variances)		t-test for Equality of Means				
				t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Gender	Homogeneity of Variances	F	Sig.					
		2.07	0.1	0.8	11	0.40	0.144	0.172

Indicators	Variable	Levene's Test (Homogeneity of Variances)		t-test for Equality of Means				
			5	3	6			

As indicated in Table 4-26, the significance level of the t-test for the gender variable is greater than 0.05, which shows that there is no significant difference between the mean responses of male and female employees regarding the variable of providing modern current awareness.

4-4-1-3. Comparison of the status of the modern current awareness provision variable according to the age of the employees

To compare the response status of employees regarding the modern current awareness provision variable based on age, Analysis of Variance (ANOVA) was used

table 4-27. Examining the Significant Difference in the Mean of the Modern Current Awareness Provision Variable Based on the Demographic Variable of Employee Age

Variables	Source of Variation	Sum of Squares	Degrees of Freedom	Mean Square	F	Significance Level	Result
Age	Between Groups	85.362	105	0.813	0.856	0.68	The calculated F is not significant at the 0.05

Variabl es	Source of Variati on	Sum of Squar es	Degree s of Freedo m	Mean Squar e	F	Significan ce Level	Result
							level.
	Within Groups	9.500	10	0.95			
	Total	94.862	115				

As shown in Table 4-27, based on the estimated F-test at a significance level higher than 0.05, there is no significant difference between the mean responses of employees regarding the variable of providing modern current awareness based on age.

4-4-1-4. Comparison of the status of the modern current awareness provision variable according to the education level of the employees

To compare the response status of employees regarding the modern current awareness provision variable based on education level, Analysis of Variance (ANOVA) was used.

Table 4-28. Examining the Significant Difference in the Mean of the Modern Current Awareness Provision Variable Based on the Demographic Variable of Employee Education Level

Variabl es	Source of Variati on	Sum of Squar es	Degree s of Freedo m	Mean Squar e	F	Significan ce Level	Result
Educati on	Between Groups	41.373	106	0.390	1.43 1	0.26	The calculate d F is not

Variabl es	Source of Variati on	Sum of Squar es	Degree s of Freedo m	Mean Squar e	F	Significan ce Level	Result
							significa nt at the 0.05 level.
	Within Groups	3.000	11	0.273			
	Total	44.373	117				

As indicated in Table 4-28, based on the estimated F-test at a significance level higher than 0.05, there is no significant difference between the mean responses of employees regarding the variable of providing modern current awareness based on education level.

4-4-1-5. Comparison of the status of the modern current awareness provision variable according to the field of study of the employees

To examine the significance of employee responses to the variable of providing modern current awareness based on field of study, and due to the normality of the variable, an independent t-test was used for the two independent groups. For the analysis of the field of study variable, since the significance level of Levene's test is greater than 0.05, the first row of the table (homogeneity of variances) was used.

Table 4-29. Examining the Difference in Means of the Modern Current Awareness Provision Variable Between the Demographic Variable of Employee Field of Study Based on Independent Two-Group t-test

Indicators	Variable	Levene's Test (Homogeneity of Variances)		t-test for Equality of Means				
				t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Field of Study	Homogeneity of Variances	F	Sig.					
		1.68	0.19	-0.41	115	0.67	-0/061	0/148

As indicated in Table 4-29, the significance level of the t-test for the field of study variable is greater than 0.05, which shows that there is no significant difference between the mean responses of the two groups of employees—those with a field of study in Information Science and Knowledge Studies and those with other fields of study—regarding the variable of providing modern current awareness.

4-4-1-6. Comparison of the status of the modern current awareness provision variable according to the work experience of the employees

To compare the response status of employees regarding the modern current awareness provision variable based on work experience, Analysis of Variance (ANOVA) was used.

Table 4-30. Examining the Significant Difference in the Mean of the Modern Current Awareness Provision Variable Based on the Demographic Variable of Employee Work Experience

Variable s	Source of Variati on	Sum of Squar es	Degree s of Freedo m	Mean Squa re	F	Significan ce Level	Result
Work Experien ce	Between Groups	69.466	104	0.668	1.33 6	0.31	The calculate d F is not significa nt at the 0.05 level.
	Within Groups	5.500	11	0.500			
	Total	74.966	115				

As shown in Table 4-30, based on the estimated F-test at a significance level higher than 0.05, there is no significant difference between the mean responses of the participants regarding the variable of providing modern current awareness based on the work experience of the employees.

4-4-1-1. Comparison of the status of the modern current awareness provision variable according to the employees' university of service

To compare the response status of employees regarding the modern current awareness provision variable based on their university of service, Analysis of Variance (ANOVA) was used.

Table 4-31. Examining the Significant Difference in the Mean of the Modern Current Awareness Provision Variable Based on the Demographic Variable of University of Service

Variabl es	Source of Variati on	Sum of Squar es	Degree s of Freedo m	Mean Squa re	F	Significan ce Level	Result
Universi ty of Service	Between Groups	736.42 4	106	6.94	0.67 9	0.84	The calculate d F is not significa nt at the 0.05 level.
	Within Groups	111.50 0	11	10.22			
	Total	848.92 4	117				

As indicated in Table 4-31, based on the estimated F-test at a significance level higher than 0.05, there is no significant difference between the mean responses of employees at public universities in Tehran regarding the variable of providing modern current awareness.

Conclusions and Suggestions

5-1. Introduction

Libraries and information centers are always striving to achieve their goal, which is meeting the information needs of their users and clients when they need this information, and in this path, providing library services assists them in reaching this goal, a goal that necessitates having suitable facilities and providing modern services. Among these, information services, which are an advanced type of reference services in libraries, have a special role and position. Libraries always rely on providing modern and efficient services. Services such as electronic reference, current awareness, and Selective Dissemination of Information (SDI). Libraries and information centers naturally have various and diverse information resources, and these resources are updated regularly and new resources are added to the collection. On the other hand, users and researchers have information needs that draw them towards libraries and the resources within them. Responding to this need for clients and researchers is time-consuming and costly; because it requires exploration and search. Current awareness services are a bridge for faster connection of clients with information resources and in this, the role of information specialists is clear and evident. Libraries and information centers each provide current awareness services according to their level of facilities and their clients, which is why the method and type of provision are different. In this research, an attempt was made using the specified criteria regarding the method of providing this type of information service, which are scattered in different texts, to identify these methods and patterns and provide a suitable model for providing these services for interested centers.

5-2. Discussion on the Components of Modern Current Awareness

At a time when the speed of science production in the world is higher than its retrieval and use speed, and the internet and various databases in diverse scientific and technical fields continuously provide new information, and information users spend a lot of their time connecting to global networks and receiving information, the role of information and communication technologies is very striking. Databases in this cycle of competition each engage in providing new and different services to attract more users. One of these facilities and services is providing modern current awareness services where the user can use this service and provide new information for as long as they want with their first use of the information in the database and

declaring interest in using information related to the received information. This method has more ease and breadth than the traditional method; but in terms of document retrieval and accurate diagnosis of information needs and matching new information, it has the problems of machine systems. Now, citing the studies conducted in the field of modern current awareness in the past and the results obtained in this research in terms of alignment or non-alignment of the obtained results, discussion and conclusion are made.

5-3. Answers to Research Questions

1. What is the status of the service component of the central libraries of public universities in Tehran for providing modern current awareness from the employees' perspective?

A one-sample t-test was used to investigate the suitability or unsuitability of the status of the service component of the central libraries of public universities in Tehran. The results of the one-sample t-test show that based on the calculated significance levels (0.001) and their being smaller than the numerical value of 0.05, it can be concluded that at the 95% confidence level, there is a significant difference between the mean of each of the service component indicators and the theoretical mean value (3), which indicates that the service component of the libraries is above average and in a suitable condition.

Zarbodast (2010) in a study titled "Comparison of methods of providing Selective Dissemination of Information services in information centers and libraries of Iran and several selected countries" concludes that the highest frequency of research profiles is electronic. Based on the results of this research, the highest percentage of user research profiles in the central libraries of public universities in Tehran is created electronically. This indicates that the results obtained in this research for the type of research profiles are aligned with the results of the mentioned study. Also, Jabr Hussein (2008) in a research titled "Conceptual model of Selective Dissemination of Information" mentions that the electronic research profile is the basis of the conceptual model of modern current awareness. It can be inferred that the results of the present research are aligned with the research that was mentioned. According to the mentioned data, it can be said that the formation of research profiles electronically, which has also been considered in most centers, seems necessary with today's needs and the increasing number of users and the need to save time. The format of this information should be considered in such a way that it exists if needed to change or modify the user's research profile.

2. What is the status of the technical and infrastructural component of the central libraries of public universities in Tehran for providing modern current awareness from the employees' perspective?

A one-sample t-test was used to investigate the suitability or unsuitability of the status of the technical and infrastructural component of the central libraries of public universities in Tehran. The results of the one-sample t-test show that based on the calculated significance levels (0.001) and their being smaller than the numerical value of 0.05, it can be concluded that at the 95% confidence level, there is a significant difference between the mean of each of the service component indicators and the theoretical mean value (3), which shows that the technical and infrastructural component of the libraries is above average and in a suitable condition.

Zarbodast (2010) in a study titled "Comparison of methods of providing Selective Dissemination of Information services in information centers and libraries of Iran and several selected countries" concludes that in approximately half of the centers, the search strategy is a group strategy and in the other half, a specific search strategy is performed. According to the results of the present research, the highest percentage of search strategy for finding information resources for users in the central libraries of public universities in Tehran is based on user feedback and after that as a specific search and the lowest percentage is group search strategy (the search process is performed in batches for a group of users with the same subject). Based on the results of the present research and the results of studies conducted in the past, it can be inferred that the search strategy for finding information resources for users is not aligned. Also, Jabr Hussein (2008) in a research titled "Conceptual model of Selective Dissemination of Information" mentions that the search strategy using user feedback improves the modification and change of the used search strategy, which should be given more attention by libraries. Therefore, it can be inferred that the results of the present research are consistent and aligned with the research that was mentioned. Zarbodast (2010) in a study titled "Comparison of methods of providing Selective Dissemination of Information services in information centers and libraries of Iran and several selected countries" concludes that the adaptation and selection of documents needed by users is done by information specialists, i.e., manually. According to the results of the present research, the highest percentage of matching information resources with user needs in the central libraries of public universities in Tehran is using information specialists and the lowest percentage of matching is based on computer. Based on the obtained results and the results of the study that was mentioned, it can be concluded that the adaptation and selection of documents

needed by users is aligned with the results of previous research. Also, Jabr Hussein (2008) in a research titled "Conceptual model of Selective Dissemination of Information" mentions that it is more appropriate for this stage to be done by computer and for accuracy in the matter of adaptation and selection under the supervision of information specialists. Therefore, it can be inferred that the results of the present research are somewhat aligned with the research that was mentioned. Zarbodast (2010) in a study titled "Comparison of methods of providing Selective Dissemination of Information services in information centers and libraries of Iran and several selected countries" concludes that the most common method of sending information in the selected centers is by email. Based on the results of the present research, the highest percentage of the method of sending information to users is done through email in the central libraries of public universities in Tehran and after that in person and in none of the libraries is it done by phone. Therefore, it can be inferred that the results obtained in the present research in terms of sending information are aligned with the results of the mentioned research. Also, Jabr Hussein (2008) in a research titled "Conceptual model of Selective Dissemination of Information" mentions that email is very effective due to the ease of access and sending information and also in receiving feedback from the user. Therefore, it can be inferred that the results of the present research are aligned with the research that was mentioned. Zarbodast (2010) in a study titled "Comparison of methods of providing Selective Dissemination of Information services in information centers and libraries of Iran and several selected countries" concludes that the most common form of information sent to users in the selected centers is in the form of bibliographic information. According to the present results, the highest percentage of the type of information sent for users in the central libraries of public universities in Tehran is done as a combination of bibliographic and full text in the libraries and after that as bibliographic and the lowest percentage of the type of information sent is done as full text. Based on the study that was mentioned and the results obtained in the present research, it can be inferred that the form of information sent based on the result of the mentioned research is not consistent and aligned with the results of the present research. Zarbodast (2010) in a study titled "Comparison of methods of providing Selective Dissemination of Information services in information centers and libraries of Iran and several selected countries" concludes that the most common method of organizing sent information is by subject relevance degree. Based on the results of the present research, the highest percentage of the method of organizing sent information in the central libraries of public

universities in Tehran is from the method of combining alphabetical title methods, subject relevance degree and publication date and after that as the alphabetical subject method, and the lowest percentage is used from the subject relevance method and the publication date method. Based on the study that was mentioned and the results obtained in the present research, it can be inferred that the method of organizing sent information based on the result of the mentioned research is not aligned with the results of the present research. Also, Jabr Hussein (2008) in a research titled "Conceptual model of Selective Dissemination of Information" mentions that the subject relevance method is the most practical method for sending found information to the user, which libraries should practice more. Therefore, it can be inferred that the results of the present research are not aligned with the research that was mentioned. Zarbodast (2010) in a study titled "Comparison of methods of providing Selective Dissemination of Information services in information centers and libraries of Iran and several selected countries" concludes that the most common time interval for sending information to the user in the selected centers is daily. According to the results of the present research, the highest percentage of time interval for sending information for users in the central libraries of public universities in Tehran is daily and after that monthly and the lowest percentage is weekly. Based on the study that was mentioned and the results obtained in the present research, it can be inferred that the time interval for sending information based on the result of the mentioned research is consistent with the results of the present research. Also, Jabr Hussein (2008) in a research titled "Conceptual model of Selective Dissemination of Information" mentions that the daily or weekly time interval is more suitable for receiving updated information. Therefore, it can be inferred that the results of the present research are aligned with the research that was mentioned. Zarbodast (2010) in a study titled "Comparison of methods of providing Selective Dissemination of Information services in information centers and libraries of Iran and several selected countries" concludes that the most feedback is in the form of written feedback in the selected centers. Citing the results of the present research, the highest percentage of user feedback in the central libraries of public universities in Tehran for modifying the research profile is in written form (electronic form) and the lowest percentage is in the form of oral feedback (face-to-face). Based on the study that was mentioned and the results obtained in the present research, it can be inferred that feedback from users based on the result of the mentioned research is consistent with the results of the present research. Also, Jabr Hussein (2008) in a research titled "Conceptual model of Selective

Dissemination of Information" mentions that written feedback using electronic form has more accuracy and validity. Based on the study that was mentioned and the results obtained in the present research, it can be inferred that preparing statistics based on the result of the mentioned research is consistent with the results of the present research. Zarbodast (2010) in a study titled "Comparison of methods of providing Selective Dissemination of Information services in information centers and libraries of Iran and several selected countries" concludes that the preparation of statistics in the selected centers is mostly annual. According to the results of the present research, the highest percentage of preparing statistics from the performance level of current awareness services in the central libraries of public universities in Tehran is done monthly and the lowest percentage is done annually. Based on the study that was mentioned and the results obtained in the present research, it can be inferred that preparing statistics based on the result of the mentioned research is aligned with the results of the present research. Also, thesauri and reference sources are used for the internal and content organization of research profiles. Jabr Hussein (2008) in a research titled "Conceptual model of Selective Dissemination of Information" mentions that preparing statistics monthly is more applicable due to the novelty of the data and will be more effective in the speed of correcting the service delivery process. Based on the study that was mentioned and the results obtained in the present research, it can be inferred that preparing statistics based on the result of the mentioned research is not consistent with the results of the present research.

3. What is the status of the managerial component of the central libraries of public universities in Tehran for providing current awareness from the employees' perspective?

A one-sample t-test was used to investigate the suitability or unsuitability of the status of the managerial component of the central libraries of public universities in Tehran. The results of the one-sample t-test show that based on the calculated significance levels (0.025) and their being smaller than the numerical value of 0.05, it can be concluded that at the 95% confidence level, there is a significant difference between the mean of each of the service component indicators and the theoretical mean value (3), which indicates that the managerial component of the libraries is above average and in a suitable condition.

4. What is the status of the human component of the central libraries of public universities in Tehran for providing modern current awareness from the employees' perspective?

A one-sample t-test was used to investigate the suitability or unsuitability of the status of the

human component of the central libraries of public universities in Tehran. The results of the one-sample t-test show that based on the calculated significance levels (0) and their being smaller than the numerical value of 0.05, it can be concluded that at the 95% confidence level, there is a significant difference between the mean of each of the service component indicators and the theoretical mean value (3), which indicates that the human component of the libraries is above average and in a suitable condition.

5. What is the overall status of the central libraries of public universities in Tehran in providing modern current awareness from the employees' perspective?

A one-sample t-test was used to investigate the suitability or unsuitability of the status of modern current awareness in the central libraries of public universities in Tehran. The results of the one-sample t-test show that based on the calculated significance levels (0) and their being smaller than the numerical value of 0.05, it can be concluded that at the 95% confidence level, there is a significant difference between the mean of each of the service component indicators and the theoretical mean value (3), which indicates that modern current awareness in the libraries is above average and in a suitable condition.

6. What is the status of the central libraries of public universities in Tehran regarding the provision of modern current awareness in the service component from the perspective of managers?

Based on the research results and managers' statements, 65.4% of the software for providing modern current awareness services in the central libraries of public universities in Tehran is created as web-based and 34.6% of the software is network-based. Due to the ease of distribution among users and also platform independence in web-based software, it is better for libraries to use this software as much as possible. In the implementation of the modern current awareness service process, facilities can be considered for users that are very effective in accessing and receiving correct and accurate information. Among these facilities, we can mention the support of various computer file types for sending information to the user, this allows the user to receive the required information based on the facilities. In the conducted research, the service-providing centers were also inquired about providing these facilities, and it was found that 48.1% of the delivery of the required information to the user is based on the type of file requested by them and 48.1% of the delivery of information is based on the specified file type.

7. What is the status of the central libraries of public universities in Tehran regarding the provision of modern current awareness in the technical and infrastructural component from the perspective

of managers?

Based on the research results and managers' statements, 81.5% of the user research profiles in the central libraries of public universities in Tehran are created electronically and only 7.4% of the profiles are formed manually. Also, regarding the method of gathering information, managers stated that 66.7% of the information is gathered by electronic form and 22.2% of the information is gathered by reference interview. 44.4% of the search strategy for finding the required information resources for users is based on feedback in order to modify and change the used search strategy, which should be given more attention by libraries, 37% is based on specific search and 3.7% is based on group search. Based on the findings, in 78.8% of libraries, the stage of adapting and selecting the documents needed by users is done by information specialists, i.e., manually, and 14.8% of libraries perform this stage with the help of computers, i.e., electronically. Although it is more appropriate for this stage to be done by computer and for accuracy in the matter of adaptation and selection under the supervision of information specialists. 55.6% of sending information to users is through email, which is very effective due to the ease of access and sending information and also in receiving feedback, and more libraries should use this method, 22.2% is in person. Also, 55.6% of the information sent to employees is a combination of bibliographic information and full text, 18.5% bibliographic information and 11.1% only full text information. For organizing the information sent to users, 59.3% use the method of combining alphabetical title methods, subject relevance degree and publication date and 7.4% use the alphabetical subject method, 7.4% use the subject relevance method, this method which is the most practical method for sending found information to the user, libraries should practice it more. Also, 7.4% use the publication date method. Based on managers' statements, the interval for sending information to users is respectively 51.9% daily, 33.3% monthly and 3.7% weekly. It seems that the daily or weekly time interval is more suitable for receiving updated information. Also, 59.3% of the process of getting feedback from users to modify the user's research profile is in writing and 25.9% is orally, which seems that written feedback using electronic form has more accuracy and validity; and finally, preparing statistics from the performance level of current awareness services, 44.4% is done monthly and 25.9% is done annually. It can be said that preparing statistics monthly is more applicable due to the up-to-dateness of the data and will be more effective in the speed of correcting the service delivery process. Therefore, it should be given more attention by centers.

8. How are the components of the modern current awareness provision variable ranked in the central libraries of public universities in Tehran from the employees' perspective?

To rank the components of the modern current awareness provision variable, which includes four components: service, technical and infrastructural, managerial, and human; the Friedman test was used. It is observed that the number related to the significance level of the Friedman ranking test is less than the acceptable error level (0.05). Therefore, it is determined that with a probability of 95%, the ranking among the components is significant.

5-4. Conclusion

Based on the research findings, most of the software used in libraries for providing modern current awareness services is web-based. Also, the document delivery process in libraries is both based on specified file type and the type of file sent for the user and the use of both cases is almost equal. Creating research profiles is mostly done electronically. The method of gathering information is mostly done by electronic form. The search strategy for finding the required information resources for users is mostly based on user feedback. Adapting and information resources to user needs is mostly done by a specialist.

The method of sending information to the user is mostly applied by email. The type of information sent for users is mostly a combination of full text methods and bibliographic information. The method of organizing information sent to users is mostly a combination of alphabetical title methods and subject relevance degree and publication date. The time interval for sending information to users is mostly done daily. The feedback process from users to modify the research profile is written feedback. The method of preparing statistics from the performance level of modern current awareness services is mostly done monthly. Also, based on the research findings, all components of modern current awareness provision are at a desirable and suitable level.

5-5. Research Limitations

Regarding the realization of the modern current awareness process in the central libraries of public universities in Tehran, some limitations are worth mentioning which are:

1. Lack of awareness of some managers and librarians about the advantages of implementing modern current awareness services, which improving this process leads to more dynamism of the library space and more interaction between the user and the librarian.
2. Unwillingness and lack of interest of some librarians towards implementing current awareness services.

5-6. Suggestions

5-6-1. Suggestions Arising from the Research

- Based on the research results, it was found that most software of the central libraries of public universities in Tehran is of web-based type. Due to the ease of distribution among users and also platform independence in web-based software, it is suggested that libraries use this type of software as much as possible.
- According to the research results, it was found that the highest percentage of search strategy for finding the required information resources for users is based on feedback. Feedback contains valuable information that is used in important decisions and improves the performance of an activity. It is suggested that libraries pay more attention to this activity for performing modern current awareness services.
- Based on the findings, the lowest percentage of adaptation and selection of documents needed by users is done by information specialists manually. It is suggested that libraries perform the adaptation and selection of documents by computer, and for accuracy under the supervision of information specialists.
- According to the research findings, a small percentage of the central libraries of public universities in Tehran use the subject relevance method for organizing the information sent to users, this method which is the most practical method for organizing information sent to the user. Therefore, it is suggested that libraries practice it more.
- Based on the findings, the highest percentage of the interval for sending information to users is daily. Considering that the daily or weekly time interval is more suitable for receiving updated information, it is suggested that libraries use this method more.
- Based on the research findings, the highest percentage of feedback from users to modify the research profile is in writing. It seems that written feedback using electronic form has more

accuracy and validity. Therefore, it is suggested that libraries use this method as much as possible.

- According to the research findings, the highest percentage of preparing statistics from the performance level of current awareness services is done monthly. It can be said that preparing statistics monthly is more applicable due to the up-to-dateness of the data and will be more effective in the speed of correcting the service delivery process. Therefore, it is suggested that it be given more attention by libraries.

5-6-1. Suggestions for Future Research

It is suggested that in order to improve the current situation and solve the present research problem, the following subjects should also be researched:

- In libraries interested in implementing modern current awareness services, a feasibility study of providing these services accurately and completely should be done before its implementation.
- A survey should be conducted from users who are the users of these services about satisfaction with the method of provision and how it is implemented.
- Research should be done on how to design and create a suitable database for implementing current awareness services at the national level in Iran.

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Appendices

In the Name of God

Dear Respondent,

Greetings and respect,

With greetings and wishes for your success, this questionnaire has been prepared and compiled to complete a research titled "**Investigating the Level of Use of Modern Current Awareness Services in the Central Libraries of Public Universities in Tehran**" for the development of a Master's thesis. Since your valuable information and experiences can assist the researcher in model development, please help me achieve the objectives of the current research by answering the questions of this questionnaire as accurately as possible.

It is worth mentioning that the confidentiality of the respondent's name and personal opinions will be maintained in the thesis. I thank you in advance for your complete cooperation.

Reza Dehghan

Master's Student of Information Management

Faculty of Management, University of Tehran

Demographic Information Form

Category	Options
Gender	☐ Female ☐ Male
Age	☐ Under 30 years ☐ 30-40 ☐ 41-50 ☐ Over 50
Field of Study	☐ Information Science and Knowledge Studies (Library and Information Science) ☐ Other Fields: _____

Category	Options
Education Level	☐ Associate Degree ☐ Bachelor's ☐ Master's ☐ PhD
Work Experience in Library	☐ Under 5 years ☐ 6-10 years ☐ Over 10 years

Current Awareness Services: A process in which users' interests in receiving new information on a specific topic are first collected; thereafter, a specific profile is created for each user, and each time new documents arrive, they are matched with these profiles and placed in each profile.

A) Service-Related

1. What type of software is used for modern current awareness services in your library?

- ☐ Web-based with global scalability
- ☐ Network-based

2. How is the document delivery service status in your library?

- ☐ Based on a specified file type
- ☐ Based on the file type requested by the user

B) Technical and Infrastructural

1. How are research profiles for users created to provide current awareness services in the library?

- ☐ Electronic
- ☐ Print
- ☐ Manual preparation and computer entry

2. How is user information collected in the library?

- ☐ Electronic form
- ☐ Reference interview

3. **What search strategy is used to find required information resources for users in the library?**
- ☐ Group search (Batch search process for a group of users with the same topic)
 - ☐ Specific search (Search performed in the stored system and repeated with each information update)
 - ☐ Based on user feedback
4. **How are information resources matched to user needs in the library?**
- ☐ Matching and selection by an information specialist
 - ☐ Matching and selection by computer
5. **How is information sent to users?**
- ☐ Email
 - ☐ In-person
 - ☐ Phone
6. **What type of information is sent to users?**
- ☐ Bibliographic information
 - ☐ Full text
 - ☐ Combination of bibliographic information and full text
7. **How is the information sent to users organized in the library?**
- ☐ Alphabetical by title
 - ☐ Subject relevance degree
 - ☐ Publication date
 - ☐ Combination of methods
8. **What is the time interval for sending information to users in the library?**
- ☐ Daily
 - ☐ Weekly
 - ☐ Monthly
9. **How is user feedback collected to modify research profiles in the library?**

- ☐ Written feedback (Electronic form)
- ☐ Oral feedback (Face-to-face)

10. How are statistics on the performance level of current awareness services prepared?

- ☐ Monthly
- ☐ Annually

In the Name of God

Dear Respondent,

Greetings and respect,

With greetings and wishes for your success, this questionnaire has been prepared and compiled to complete a research titled "**Investigating the Level of Use of Modern Current Awareness Services in the Central Libraries of Public Universities in Tehran**" for the development of a Master's thesis. Since your valuable information and experiences can assist the researcher in model development, please help me achieve the objectives of the current research by answering the questions of this questionnaire as accurately as possible.

It is worth mentioning that the confidentiality of the respondent's name and personal opinions will be maintained in the thesis. I thank you in advance for your complete cooperation.

Reza Dehghan

Master's Student of Information Management

Faculty of Management, University of Tehran

Item	Options
Gender	☐ Female ☐ Male
Age	☐ Under 30 years ☐ 30 to 40 ☐ 41 to 50 ☐ Over 50

Item	Options	
Field of Study	☐ Information Science and Knowledge Studies (Library and Information Science) ☐ Other Fields: _____	
Education Level	☐ Associate Degree ☐ Bachelor's ☐ Master's ☐ PhD	
Work Experience in Library	☐ Under 5 years ☐ 6 to 10 years ☐ Over 10 years	
Section	Question	Rating Scale
A) Service-Related	1- Status of providing current awareness services in print format in your library?	☐ Very Poor ☐ Poor ☐ Average ☐ Good ☐ Very Good
	2- Status of providing current awareness services in electronic format in your library?	☐ Very Poor ☐ Poor ☐ Average ☐ Good ☐ Very Good
B) Technical and Infrastructural	1- Status of using thesauri in documenting	☐ Very Poor ☐ Poor ☐ Average ☐ Good ☐ Very Good

Item	Options	
	user requests in your library?	
	2- Status of using reference sources (e.g., encyclopedias, dictionaries, thesauri, and subject headings) for completing subject schema in your library?	☐ Very Poor ☐ Poor ☐ Average ☐ Good ☐ Very Good
C) Managerial	1- Status of dedicated budget for providing current awareness services in your library?	☐ Very Poor ☐ Poor ☐ Average ☐ Good ☐ Very Good
	2- Status of codifying current awareness services with specific regulations in your library?	☐ Very Poor ☐ Poor ☐ Average ☐ Good ☐ Very Good
	3- How	☐ Very Poor ☐ Poor ☐ Average

Item	Options	
	supportive is the library management in expanding current awareness services?	☐ Good ☐ Very Good
	4- How do you evaluate the status of continuous evaluation of current awareness services in the library?	☐ Very Poor ☐ Poor ☐ Average ☐ Good ☐ Very Good
	5- How do you evaluate the status of periodic evaluation of current awareness services in the library?	☐ Very Poor ☐ Poor ☐ Average ☐ Good ☐ Very Good
	6- How is the provision of current awareness	☐ Very Poor ☐ Poor ☐ Average ☐ Good ☐ Very Good

Item	Options	
	services for serving specific user groups (library members) in your library?	
	7- How is the provision of current awareness services for serving general users in your library?	☐ Very Poor ☐ Poor ☐ Average ☐ Good ☐ Very Good
D) Human Resources	1- How interested are you in implementing current awareness services in the library?	☐ Very Poor ☐ Poor ☐ Average ☐ Good ☐ Very Good
	2- How is your knowledge for implementing current	☐ Very Poor ☐ Poor ☐ Average ☐ Good ☐ Very Good

Item	Options	
	awareness services in the library?	
	3- How is your experience for implementing current awareness services in the library?	☐ Very Poor ☐ Poor ☐ Average ☐ Good ☐ Very Good
	4- Status of holding library and information science training courses (virtual services in the library, reference interviews, etc.) in your library?	☐ Very Poor ☐ Poor ☐ Average ☐ Good ☐ Very Good
	5- To what extent is your expertise in the seven ICDL skills?	☐ Very Poor ☐ Poor ☐ Average ☐ Good ☐ Very Good
	6- How is your	☐ Very Poor ☐ Poor ☐ Average

Item	Options	
	familiarity with library software (Pars Azarakhsh, Nosa, Pasargad, Kavosh, etc.)?	☐ Good ☐ Very Good