



## User perceptions on the practices of QR codes in libraries: A brief study

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**Abstract:** QR code was introduced for marketing purposes; it is an advanced form of barcode that has a larger capacity to store data. In recent years, its popularity has increased, and it has been adopted for commercial as well as academic purposes. Similarly, libraries are also used for the dissemination of information. The present paper provides a brief survey to know the user perception of QR codes in libraries. This study explains the awareness, usefulness, and feasibility of QR codes in libraries.

**Key Words:** QR code, library service, technology, mobile.

### 1. INTRODUCTION:

It is well known that the mobile phone has become one of the most common gadgets in everyday life. It is also important for academics; many studies have shown that the trend of studying and searching for information has shifted from the desktop to the mobile phone. ICT has already played an innovative role in libraries in the form of digital libraries and electronic resources. In recent years, many countries have adopted QR codes for existing library services. This is an advanced version of the bar code that can deliver user information in small code. Quick Response Codes (QR Code) are two-dimensional images that, when scanned by a smart phone's camera, prompt the smartphone to open a web-page or display an image, video, or text (Kumar, Chikkamanju, and Mamtha 2014). After COVID-19, libraries are in a new normal environment, which has forced them to adopt handy and smart library services. A QR code is a matrix barcode that can be read by smartphones and mobile phones with cameras. They are also known as 2D codes, 2D bar codes, or mobile codes. It is easily accessible via a free app downloaded on a phone. The QR code generally appears as a small white square with black geometric shapes, though colored and indeed branded QR codes are now being used. QR codes can hold much more information than a regular barcode. Libraries can display their resources and services through a QR code that links to a website or other information. A pilot study was conducted by the random survey method in the central library of Mahatma Gandhi Kashi Vidyapith, considering the use and feasibility of QR codes in libraries, and also scanning secondary data to support the study.

### 2. Background knowledge:

Quick response (QR) codes are two-dimensional, machine-readable matrix bar codes originally developed and designed in 1994 by Denso Wave comprises for the purpose of accurate and fast inventory checks. (1) One-dimensional bar codes can store information only in a horizontal manner, while QR codes have the capacity to store information both vertically and horizontally. So more perfect and large information can be stored in QR codes than in one-dimensional conventional bar codes. (2) The stored information can be rendered as a URL, text, or other kinds of data, which can be effortlessly read by the cameras of mobile phones. (3) With the increasing popularity of camera-enabled smartphones, the use of QR codes is becoming more popular. Many enterprises in Japan rapidly adopted these codes as marketing tools in a broad range of marketing and promotional activities because of its high information storage and encoding capacities. But, this technology went zealous when Western and European countries adopted it and started using it in every sector like, news, media, public announcements, government activities, and so on. Similarly, libraries are also using this technology so far in this present age to exhibit their websites, for promotion, seminars, workshops, meetings, and mostly for URLs. This study is based on psychological model of SOR, The stimulus-organism-response (SOR) model explains that various environmental aspects can act as a stimulus (S) that influences an individual's internal state (O), which subsequently derives the individual's behavioral response (R). Here stimulate would be the QR codes, which effect the services of the library and In the end, the response depicted the satisfaction level of the user, usefulness, feasibility, and acceptability of QR codes in libraries. Technologically, QR codes are more advanced than barcodes; they can hold more item description-related information, including URLs, which has influenced the use patterns of library users.



### 3. Objective of study :

From the above discussion, some objectives for this study.

- The usefulness of QR codes has a positive impact on users.
- the acceptability of QR codes
- to understand what services are most popularly introduced using QR codes.
- to the feasibility of QR in libraries

### 4. Methodology:

To achieve the goal, a random survey method was adopted for data collection at MGKVP University. The sample size was 200, out of which 160 were retrieved (80%) with their responses . An online, web-based questionnaire was divided into three parts to gather information regarding awareness of QR codes. The first part contains some demographic information & general questions about respondents who had experience with QR codes and their backgrounds. The respondents' detailed demographic profile with percentages is presented in Table 1. Part two of the study included questions pertaining to what services are provided by libraries through QR codes. The first part contains a question to evaluate the usefulness, feasibility, and acceptability of QR codes. A Likert-type scale (five-point scale) option from 1 = *strongly disagree* to 5 = *strongly agree* was used for collecting information.

**Part I. Demographic Information**

Variables	Number	Percentage
<b>Gender</b>		
Male	85	53%
Female	75	47%
<b>Age (years)</b>		
18–25	90	56%
26–35	48	30%
Above 35	22	14%
<b>Education status</b>		
Undergraduate	86	54%
Masters	50	31%
PhD	20	12.5%
Other diploma short term course	4	3%
<b>Internet experience (years)</b>		
1–5	7	4%
6–10	88	44%
Above 10	65	41%
<b>Total hours spent on the Internet in a week</b>		
0–2	8	5%
3–5	18	11%
5–10	45	28%
Above 10	89	45%

Table 1. Profile of the respondents.

Presently, dependencies on the Internet and their applications shoot-up enormously, and the popularity of QR codes is also growing. These codes are used in mainly daily activities like in payment, social platforms, museum art galleries, as well as in school and other academic fields. Among the 160 respondents, 53% were male and 47% were female; the most common age-group of respondents was 18–25; the most common education level was undergraduate; and they spent more than 6 hours on the Internet.



**Part II. To know what services are like and prefers by student most in libraries through QR code.**

Variables	Strongly dis agree	disagree	neither	agree	Strongly agree
Link to library e- resources	10	10	10	85	55
News paper clipping	-----	-----	5	85	75
Marketing /promotional material	-----	-----	10	60	90
Linking from print to electronic journals holdings	2	2	1	53	77
Providing an electronic alternative to physical books	---	11	5	70	77
Taking the catalog record with you	-----	-----	2	68	90

Table 2.0 services are like and prefers by student most in libraries through QR code.

**Part-III. to evaluate usefulness, feasibility, and acceptability of QR code**

variables	Strongly dis agree	disagree	neither	agree	Strongly agree
<b>Usefulness</b>					
Very easy to use	2	13	20	55	70
Easily connect with website	5	15	22	49	76
Effective for online services	7	8	5	64	76
User-centered design from the user perspective	2	4	1	73	80
<b>Acceptability</b>					
Graphics matched with texts	15	13	7	65	60
It is usable	1	1	-----	63	95
Provides online information	-----	----	-----	62	98
<b>Suitable for user</b>	---	-----	----	64	96
<b>Feasibility</b>					
feeling captivated while using the QR code	5	4	1	72	77
works quickly while using the QR code	2	2	1	65	90
I was very satisfied while using the QR code	1	1	1	66	91
I feel positive attitude while using QR codes for getting information	--	---	---	63	95
using QR code was very satisfying	1	1	1	80	77
I want to more services with QR codes in near future	2	--	----	77	83

Table 3.0 usefulness, feasibility, and acceptability of QR code

**5. Data interpretation and Analysis :**

The table 1.0 presented is about the general demographic data of users of the library, which explains that most of the students are graduate as well as familiar with the internet and spend lots of time on internet applications, and awareness of QR codes in shopping is quite familiar to them. While the data in Table 2.0 are represented in a graphical chart that explains user preference, It shows a positive attitude toward QR code based services. Almost all services are liked by the users in the library . As from the graphical representation in 1.0 most preferable service through QR code is linking library resources and news clippings, followed by marketing information products.



Strongly disagree, niether, agree and strongly agree

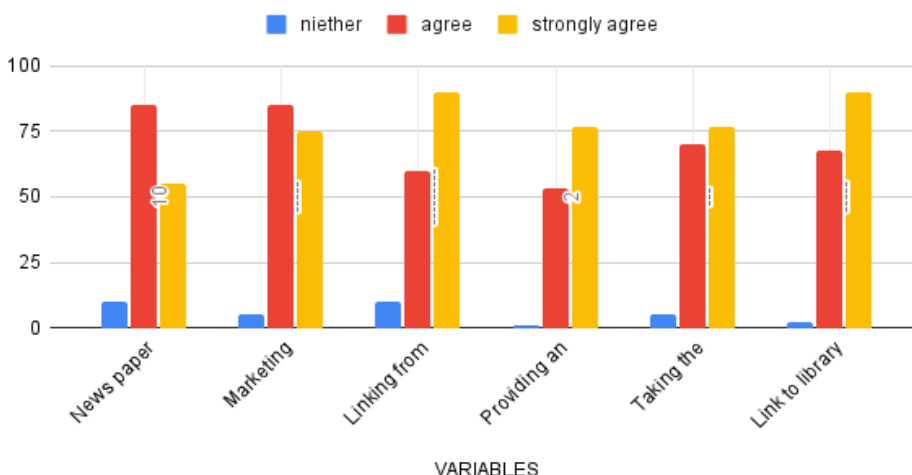


Fig1.0 services preferred by users though QR code in library

The third table depicts the usefulness, feasibility, and acceptability of QR codes. Fig. 1.2 represents the analytical representation of user satisfaction.

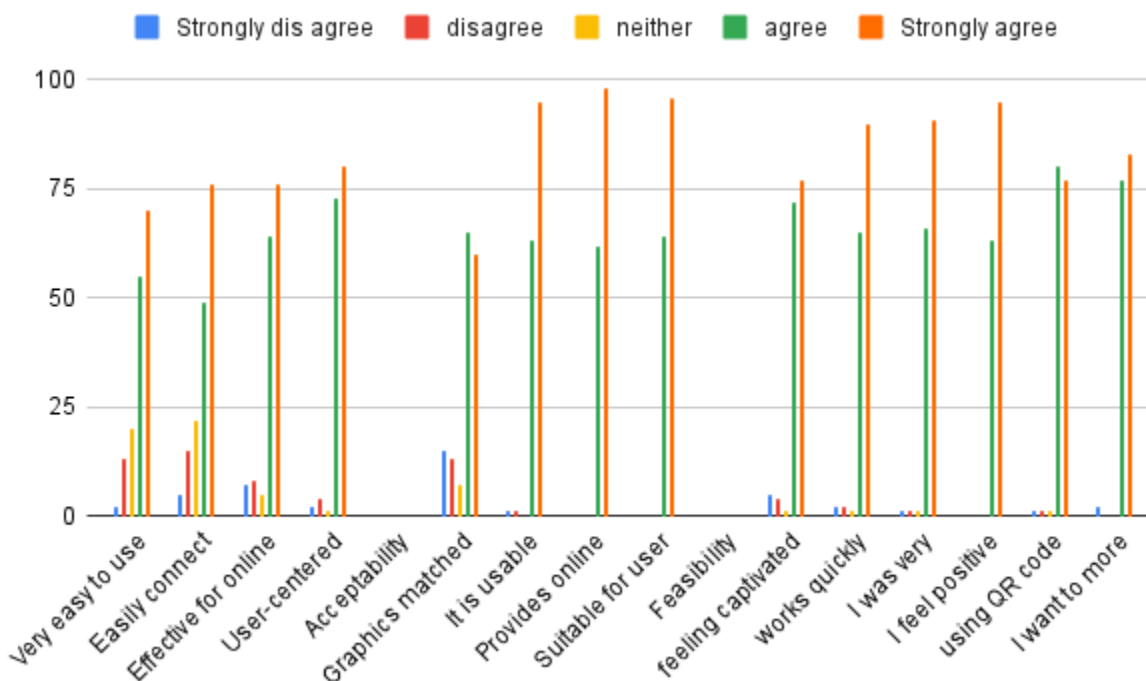


Fig2.0 usefulness, feasibility, and acceptability of QR code.

The present graph depicts the analytical representation of Table 3.0. and shows that QR codes are used for their usefulness, feasibility, and acceptability, which enhance the satisfaction level of users in libraries. Most of the users found QR codes to be very easy to use, and 75% found it is user centered. Nearly 98% found it very useful to exhibit their online resources. More than 80% of users have a positive attitude toward it but don't want any implementation because they are not very technocratic. This finding of this study is practically significant for both users and library professionals. Librarians can use QR codes as a handy tool with particular URLs that will lead toward more sophistication.



## 6. Findings :

Libraries value their relevance as the gateway to information. QR code technology is easy to implement, free to use, and growing in popularity. Incorporating them into QR codes. Users are eager to use QR codes for the sake of technological curiosity. The following figure depicts that more than 75% of users are ready to accept QR code implementation in libraries. However, approximately 28% of users are unaware of or uninterested in QR codes and their benefits, while 15% of the student population is exposed to library services publicity and marketing campaigns, either in the library building or on the website, which provides users with a more interactive learning experience. Although QR codes are easy and convenient to use, they are still not very popular in academic organizations. In libraries, it is still in the initial phase of implementation. Libraries are not fully utilized for their services. There is a need for a well structured information literacy program (ILP) to raise awareness of QR codes and maximize the use of QR technology.

## 7. Conclusion:

Libraries are witnesses to the continuous change and transformation of information technology. From barcode to RFID and now QR codes with the proliferation of online resources and changes in user reading habits, library services must adapt new technology like QR Codes. Users want to feel more connected and involved than before. The interaction between the library and the user would benefit from QR code technology provides an opportunity to facilitate library services as well as an interconnection between users

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