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# Exploring the Relationship between Adolescents' Use of Public Libraries and Their Academic Achievement

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## ABSTRACT

This research investigated through a survey and factual assessment the relationship between adolescents' use of public library services/resources and their academic achievement. The research population consisted of 12 to 15-year-old students who were registered in one of the seven public libraries in the city of Sabzevar in Khorasan Razavi Province, Iran. These students used to go to the public libraries at least 10 times per year. Members of the sample were selected by cluster random sampling. The instrument used to collect the data was a researcher-made questionnaire. The finalized questionnaire was distributed among the sample members. The adolescents' academic achievement was measured by using their final year grade point average (GPA) collected from their schools. The results showed that from the adolescents' point of view the public library facilities and accessibility affected academic achievement to a relatively large extent. Furthermore, a significant relationship was found between the adolescents' use of public libraries and their academic achievement indicated by their grade point average (GPA).

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## KEYWORDS

Adolescents; public library; academic achievement; GPA; Iran

## Introduction

The main duty of public libraries is providing their users with all the required resources to meet their information needs. In this sense, these libraries should be at the service of the whole society regardless of race, religion, language, social status, and education (IFLA/UNESCO 1994). However, groups of users that require the library and its services more than the other groups are children and adolescents. In fact, children meet a large part of their needs in schools (Wang and Holcombe 2010). Ahmadi Fasih (2006) believes that formal education at school begins with books and students get acquainted with them to learn the necessary skills. Thus, books and book reading play important roles in teaching and learning, and libraries are expected to help students learn the scientific concepts in that way.

It should be noted that all nations, either with a developed or developing political and social system, pay more attention to education than other social activities (López 2011). The issue of academic success or failure is one of the

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most important concerns of any educational system. Academic achievement in every society reflects the success of its educational system which pays attention to the individuals' needs; thus, an educational system is not considered effective unless the academic achievement of that society reaches the highest rank at all times (Tamanayifar and Gandomi 2011).

However, academic failure is one of the most common problems of educational systems in many countries of the world, imposing many scientific, cultural, and economic losses to the governments and families (OECD 2010). Therefore, identifying the factors associated with academic achievement is highly valuable. Achak (2005) believes that various factors affect the students' academic achievement to which the availability of non-academic resources is directly related. As such, the library is the best and most efficient educational tool which can help students gradually learn and follow their curricula. Book collections and other audio-visual materials, along with direct and indirect basic guidelines, can influence the direction and formation of students' thoughts in the best possible way.

Libraries can play a fundamental role in meeting students' different needs and fostering a variety of tastes and talents among them (Marchionini and Maurer 1995). Further, they are appropriate places for voluntary and informal activities. Thus, it is expected that the public libraries can play a significant role in the multifaceted development and education of children and adolescents, especially their academic achievement, in collaboration with school libraries and by supporting the students' curricula.

Although the libraries, especially school libraries, may have a significant effect on students' education and academic achievement, the existence of libraries in schools is still considered a new thought in the Iranian educational system. Furthermore, no effective measures have been taken for establishing them in schools. In addition, the conditions of libraries and book per capita in schools do not comply with international and national standards and even with the regulations approved by the Ministry of Education in Iran (Emad Khorasani 2008). Therefore, the role of public libraries becomes more important in this regard.

Due to lack of attention to school libraries in Iran and also the significance of public library resources and services in meeting the students' needs, it is not known to what extent the use of public libraries can improve the students' academic achievement. In other words, is there a relationship between the use of public library resources/services and the academic achievement of the adolescents as members of these libraries? The present study aims at addressing the following question and hypothesis:

Research question: To what extent do the public library facilities and accessibility affect academic achievement from the adolescents' perspective?

Research hypothesis: There is a significant relationship between the adolescents' use of public libraries and their academic achievement.

## Literature review

The review of the literature reveals that numerous researchers have studied the relationship between the use of university libraries and academic achievement (e.g., Goodall and Pattern 2011; Mao and Kinsley 2017; Massengale, Piotrowski, and Savage 2016; Soria, Fransen, and Nackerud 2014; Tewell 2015; Thorpe et al. 2016; Wong and Webb 2011; Baothman et al. 2018). Furthermore, a large number of studies confirm the impact of using school libraries on academic achievement (e.g., Clark and Hawkins 2010; Farmer 2006; Lance, Rodney, and Hamilton-Pennel 2000; Small, Snyder, and Parker 2009). However, little related literature exists with regard to the use of public libraries which is presented chronologically.

In a survey, Barrett (1999) found out that the students with an above-the-average level of reading were more likely to go to the library than those with a below-the-average reading level. Moreover, the former students were taken to the library by their parents at an earlier age than the latter students.

Using questionnaires, interviews, and written sources, Stone (1999) studied the relationship between the public library and academic achievement among children aged 5–6 and 9–10. It was found that most of the parents and child caregivers believe that using the public library would help their children with education because of the information resources they find in libraries. In the only relevant study conducted in Iran, Bigdeli and Ghassemi (2009) showed that the effects of physical conditions, staff, psychological atmosphere, the available information resources, and the rules and regulations of public libraries on academic achievement were slightly above the average from the viewpoint of high school students in Shahre Kord, Iran.

Using the Scholastic Reading Inventory (SRI), Fiore and Roman (2010) found that the reading programs of public libraries affected the academic achievement of third-grade students at 11 schools in eight states of the US. In addition, through an online survey of 17,089 students aged 8 to 16 from 112 schools in England, Clark and Hawkins (2010) also found a strong relationship between reading attainment and using the public library. The students who were reading above the expected level for their age were twice as likely to be public library users.

In her doctoral dissertation, Dent (2012) identified several factors related to the academic achievement of secondary school students, including the rural village library. The students who used the library for more months ranked higher in their class than the other students. Moreover, the students who had visited the library more frequently obtained higher overall averages than those with fewer visits.

In another study by Ferguson (2014), the exposure to banned books did not predict school grade point average (GPA), whereas the increased amount of

reading for pleasure predicted GPA in a sample of 282 adolescents and preadolescents.

The above insufficient literature indicates that few studies have been conducted on the relationship between using the public library and academic achievement both in Iran and around the world. Considering the importance of academic achievement in adolescents' lives, the main aim of the present survey was to explore the relationship between the use of the public library and academic achievement in Iranian adolescents. It is hoped that the findings of this research will help policymakers, school administrators, teachers, and parents better understand the importance of libraries, especially public ones.

## Methodology

The population of the research consisted of 12- to 15-year-old students who had registered in one of the seven public libraries of Sabzevar in Khorasan Razavi Province, Iran. These students used to go to the public libraries at least 10 times per year. As the total number of these adolescents could not be extracted from the software used in Sabzevar public libraries – Saman Software – it was impossible to determine the size of the research population. Therefore, it was considered an infinite population.

Using Cochran (1977) sampling size formula for an infinite population, the sample size was calculated ( $n = 180$ ). The sample members were selected through cluster random sampling in which every library was considered as a cluster. The instrument used to collect the data was a researcher-made questionnaire. The items of the questionnaire were designed based on a five-point Likert scale, starting from 'very low' to 'very much'. Some experts in the fields of knowledge and information science, and education were asked to comment on the validity of the primary questionnaire. After incorporating the experts' comments and revising the items, the questionnaire reliability was confirmed by Cronbach's Alpha coefficient (0.89) in the pilot study. The questionnaire was randomly assigned to the adolescents in each library in proportion to their number in each library. The researcher personally visited each library on different weekdays and administered the questionnaire to the adolescents. The adolescents answered the questionnaire in the presence of the researcher who clarified any ambiguities. Of 180 questionnaires distributed among the adolescents, 10 uncompleted questionnaires were removed. A total of 170 completed questionnaires were returned and analyzed through SPSS (version 23) using descriptive and inferential statistics. The academic achievement of the adolescents was measured using the grade point average (GPA) of their last academic year collected from their schools.

## Results

As shown in Table 1, there were more female than male respondents. The majority of respondents were in the ninth grade, followed by eighth and seventh grades, respectively.

The variable of academic achievement was an important variable in this study; its descriptive statistics shown in Table 2 indicate that the mean of the respondents' GPA was 18.41 (out of 20). In other words, it is safe to say that the majority of the respondents were high-grade and hardworking students.

Further, the respondents were asked how frequently they used public library services and resources. According to Table 3, the highest frequency in using public libraries was reported to be 'weekly' and the lowest one was reported to be 'rarely'.

### The impact of public library facilities and accessibility on academic achievement

On a five-point scale, the adolescents were asked to comment on the impact of public library facilities and accessibility on their academic achievement (four items). Library facilities and accessibility included library information resources (the availability of up-to-date information resources such as books, magazines, etc.), easy access to the library (library availability, and convenient route), the library physical facilities and conditions (convenient

**Table 1.** Characteristics of the respondents.

Variable	No.	Percent	
Gender	Male	76	44.7
	Female	94	55.3
Academic grade	7 <sup>th</sup>	48	28.2
	8 <sup>th</sup>	60	35.3
	9 <sup>th</sup>	62	36.5

**Table 2.** Descriptive statistics of GPA variable.

Variable	No.	Mean	Std.	Minimum	Maximum
Academic achievement (GPA)	170	18.40	1.59	13.30	20

**Table 3.** Frequency of public library usage.

Frequency	No.	%
Thrice Weekly	21	12.4
Weekly	46	27.1
Fortnightly	45	26.5
Monthly	41	24.1
Rarely	17	10
Total	170	100

**Table 4.** The impact of public library facilities and accessibility on academic achievement.

Library facilities and accessibility		Very much	much	moderate	low	Very low	Mean	Std.
Library information resources	No.	46	71	41	10	2	3.88	0.91
	%	27.1	41.8	24.1	5.9	1.2		
Easy access to the library	No.	31	66	52	15	6	3.59	1
	%	18.2	38.8	30.6	8.8	3.5		
Library physical facilities and conditions	No.	30	54	57	22	7	3.46	1.05
	%	17.6	31.8	33.5	12.9	4.1		
Library human resources	No.	43	64	41	18	4	3.73	1.03
	%	25.3	37.6	24.1	10.6	2.4		
Total							3.66	0.99

**Table 5.** The comparison of the impact of public library facilities and accessibility on academic achievement with a moderate extent.

Library facilities and accessibility	t	df	P	Mean difference	Inferences
Library information resources	12.44	169	0.001	0.88	Sig.
Easy access to the library	7.74	169	0.001	0.59	Sig.
Library physical facilities and conditions	5.66	169	0.001	0.46	Sig.
Library human resources	9.22	169	0.001	0.73	Sig.
Total	11.86	169	0.001	0.66	Sig.

location, existence of facilities like computer, internet, printer, etc.), and library human resources (enough number of librarians, presence of expert and patient librarians). Table 4 indicates that the calculated mean score for all of the library facilities and accessibility was above a moderate extent. From the respondents' point of view, the information resources had also the most impact on their academic achievement, while the physical facilities and conditions had the least impact.

To better compare and generalize the results of the research to the population, one sample parametric t-test was utilized. The results of the t-test indicated that from the adolescents' point of view the impact of each of the four groups of public library facilities and accessibility on academic achievement was significantly higher than a moderate extent ( $p = .001 < 0.05$ ) (Table 5).

### Relationship between adolescents' use of public libraries and their academic achievement

To test the hypothesis, the services provided by public libraries in Sabzevar for the adolescents were identified and categorized into four general categories: loan services (including four items such as book loan, book reserve, book review, study room), reference and research services (including five items such as users' education and guidance to use the library, help to do research, users' consulting services, etc.), information services (including four items such as announcing conferences related to adolescents' needs, announcing new programs and services, access to the Internet, etc.), and extension services

**Table 6.** Relationship between adolescents' public library use and their academic achievement.

Variables	Pearson Correlation Coefficient ( <i>r</i> )	P	Inference
Public library usage Academic achievement (GPA)	0.62	0.001	Significant

(including three items such as holding fairs and lectures, storytelling, and book reading contest). The respondents were asked to rate the degree of using each of the library services on a five-point scale. The adolescents' GPA was also regarded as the indicator of academic achievement. As Table 6 shows, the relationship between adolescents' use of public libraries and their academic achievement was confirmed ( $r = 0.62$ ,  $p = .001$ ).

### Discussion and conclusion

This study aimed to investigate the impact of public library facilities and accessibility on academic achievement from the adolescents' perspective, and also the relationship between adolescents' use of public library services/resources and their academic achievement indicated by their grade point averages (GPA). It was found that among the four categories of public library facilities and accessibility, library information resources had the most impact on academic achievement from the adolescents' point of view. Information resources are one of the main elements of a library (Zhang et al. 2016), as the significance of library resources on academic success has also been confirmed by several other researchers (e.g., Dent 2012; De Souza 2010; Murillo and Román 2011; Odeh 2012).

The most possible reason is that adolescents more commonly visit public libraries to do their homework (Clark and Hawkins 2010; Sin 2012). Thus, it is reasonable that library information resources have the most impact on academic achievement from the adolescents' point of view. Furthermore, the impact of all of the public library facilities and accessibility on academic achievement was more than a moderate extent. This result confirms the findings of Bigdeli and Ghassemi (2009), who proved that the impact of library physical conditions, human resources, psychological atmosphere, the available information resources, and the rules and regulations of public libraries on academic achievement of third-grade high school students in Shahre Kord (Iran) was above a moderate extent.

Of the public library facilities and accessibility, library staff also had a high impact on academic achievement from the adolescents' perspective. This result supports the findings of Lance (1994), who found out that the number of library staff was one of the main predictors of the reading score. Also, Francis, Lance, and Lietzau (2010) concluded that elementary school students with a minimum of one full-time librarian performed better on assessment

tests than those without a full-time librarian. It can be concluded that well-staffed libraries can play a role in their users' achievement.

Furthermore, the findings revealed that there was a direct and significant relationship between the adolescents' use of public libraries and their academic achievement (GPA). In other words, the adolescents who made more use of the library resources and facilities ultimately got higher grades. This shows the importance of public libraries in adolescents' academic life. In another similar study, Clark and Hawkins (2010) declared that most young people believed that the public library would help them perform better at school. Similarly, Francis, Lance, and Lietzau (2010) also found that students who visited the library more often obtained higher average scores on their standardized reading tests than the other students. Soria, Fransen, and Nackerud (2014), Tewell (2015), Cobblah and van der Walt (2016) also concluded that students who used the services or resources of the academic library obtained a higher GPA compared with their peers.

Overall, this study highlights the important role of the public library's resources and services in adolescents' academic achievement. As mentioned earlier, the current finding indicates the unsatisfying conditions of libraries in Iranian schools. Thus, the students should be guided toward public libraries at any time.

Therefore, given the role of libraries and their services in adolescents' academic achievement, the following statements are suggested:

- Public libraries' authorities are advised to allocate enough space in appropriate locations of the city for the construction of public libraries and equip them with appropriate facilities, suitable human resources, and up-to-date, efficient, and suitable resources tailored to the needs of adolescents.
- Given the current unsatisfactory status of school libraries, it is suggested that plans be developed for outsourcing library services in which public library librarians go to schools with special books for adolescents and lend them the books they require.
- As school libraries are more convenient places for adolescents to access libraries (Abbas 2008), education authorities in Iran should review their policies on school libraries and approve rules for cooperation between public libraries and the schools in every district.
- Education authorities (teachers and parents) should encourage children and adolescents to use public library resources and services.

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