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## Evaluating the Use of Printed Resources Based on the Principle of Least Effort: A Study at Razi University

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### Abstract

**Purpose:** This study investigates the application of the principle of least effort in the usage of printed resources among students at Razi University. The principle posits that actions are performed in ways that minimize effort.

**Methodology:** A quantitative research design employing a survey method was used. Data were collected from 375 students using a structured questionnaire.

**Findings:** The study revealed that the use of printed resources by Razi University students aligns significantly with the principle of least effort. Undergraduate students exhibited greater adherence to this principle compared to postgraduate levels. Statistical analyses, including Pearson's correlation and multivariate regression, indicated that the principle of least effort significantly predicts printed resource usage.

**Conclusion:** The principle of least effort appears to be a valid framework for understanding students' resource usage behaviors. The findings underscore its importance for library and information center management.

**Value:** This study introduces a novel exploration of the principle of least effort within the Iranian academic context.

**Keywords:** *Principle of least effort, Zipf's law, printed resources, students, Razi University*

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## Extended Abstract

**Introduction:** The principle of least effort, introduced by George Kingsley Zipf, suggests that individuals naturally prefer actions requiring the least effort. While originally applied to linguistics, this principle extends to various human behaviors, including information-seeking practices. Despite the growing prevalence of electronic resources, printed materials remain crucial, necessitating an understanding of students' engagement with these resources through the lens of least effort. This study examines the extent to which Razi University students' use of printed resources aligns with this principle.

**Purpose:** This research seeks to evaluate the extent to which the principle of least effort influences students' use of printed materials, such as books and journals. The study explores whether demographic factors such as academic level, gender, and age affect this behavior.

**Methodology:** A quantitative survey was conducted among 375 students from Razi University, selected using Morgan's table. A researcher-designed questionnaire collected data on participants' usage of various printed resources, including textbooks, non-curricular books, magazines, and journals. Statistical analyses, such as multivariate regression and Pearson's correlation, were employed to examine the relationship between the principle of least effort and resource usage.

**Findings:** The study found that undergraduate students used printed resources more frequently and adhered to the principle of least effort to a greater extent than postgraduate students. The demographic analysis revealed that students aged 18–20 scored highest for resource usage under the principle, particularly with non-curricular books and magazines. Gender differences showed that male students followed the principle more in journal use, while female students exhibited greater adherence in other resource categories. Regression analyses indicated that the principle of least effort significantly influenced the use of all printed resource categories. For instance, scientific books and textbooks showed a strong correlation ( $R^2 = 0.94$ ), while non-curricular books ranked highest in stepwise regression analysis.



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Table1. Multivariate linear regression and ANOVA

Variables	Significance	Error Lever 0,05	Regression Coefficient	Pearson Correlation Coefficient	R2	F	Significance
Scientific books and textbooks	000.0	Significant	0.4	0.7	0.94	1238.999	000.0
Non- teaching books	000.0	Significant	0.25	0.6			

Magazines and newspapers	000.0	Significant	0.33	0.5			
Journals	000.0	Significant	0.26	0.8			

Table2. Stepwise linear regression

Rank	Variables	Error Level = 0.05	Significance	T
1	Non-teaching books	Significant	0	23/324
2	Magazines and newspapers	Significant	0	21/794
3	Scientific books and textbooks	Significant	0	21/755
4	Journals	Significant	0	15/246

**Conclusion:** The principle of least effort remains a robust predictor of students' use of printed resources, even decades after its initial formulation. The findings highlight the need for libraries to consider this principle when planning resource accessibility and usability strategies. Demographic variations suggest targeted approaches for different student groups to optimize resource engagement.

**Value:** This study provides a unique contribution by applying the principle of least effort to printed resource usage in Iran, offering insights for academia and library management.

**Keywords:** Principle of least effort, Zipf's law, printed resources, students, Razi University

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